

Co-existence between Brown Crab Fisheries and Offshore Wind Developments

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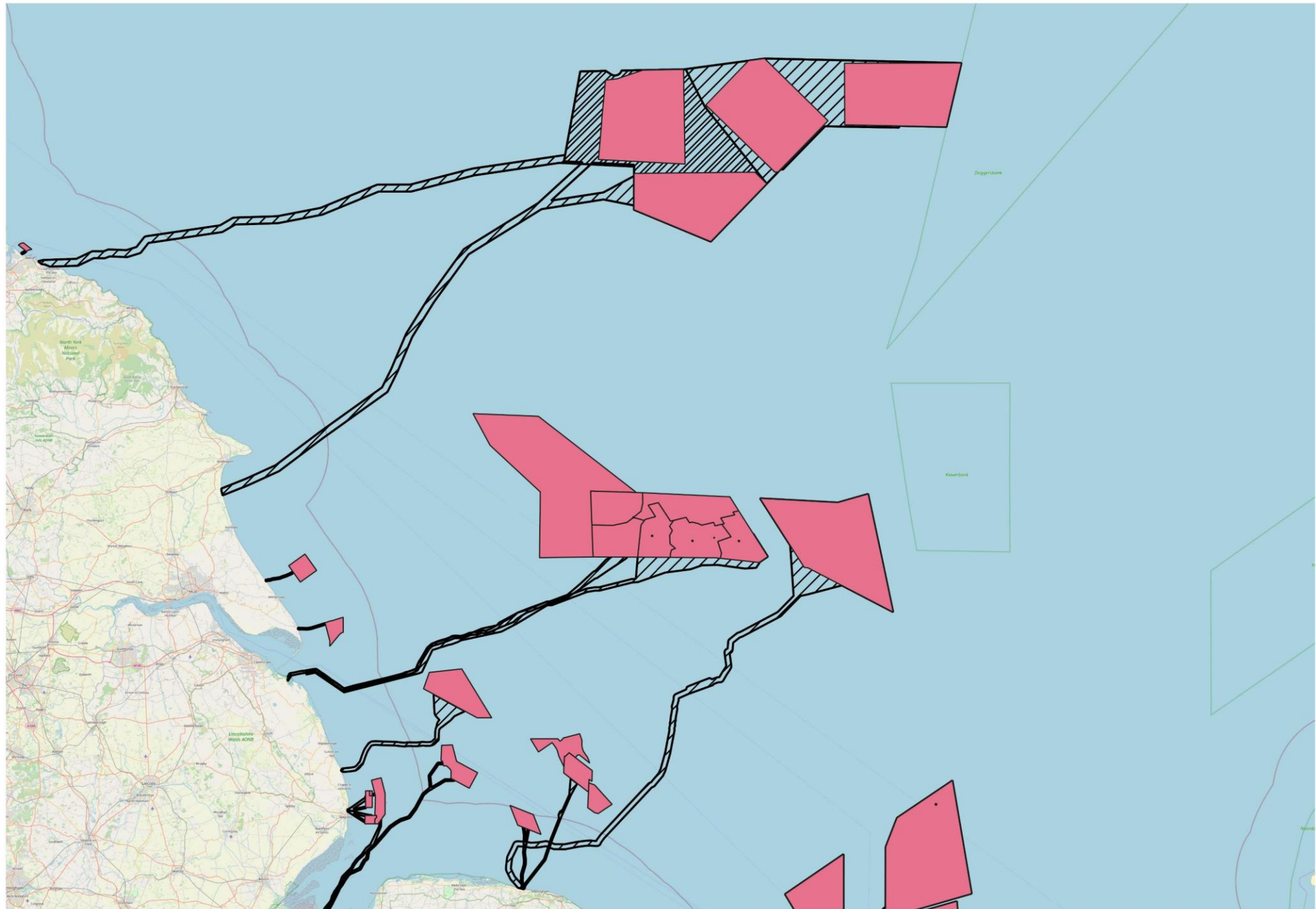
<https://www.nffo.org.uk/>

Introduction

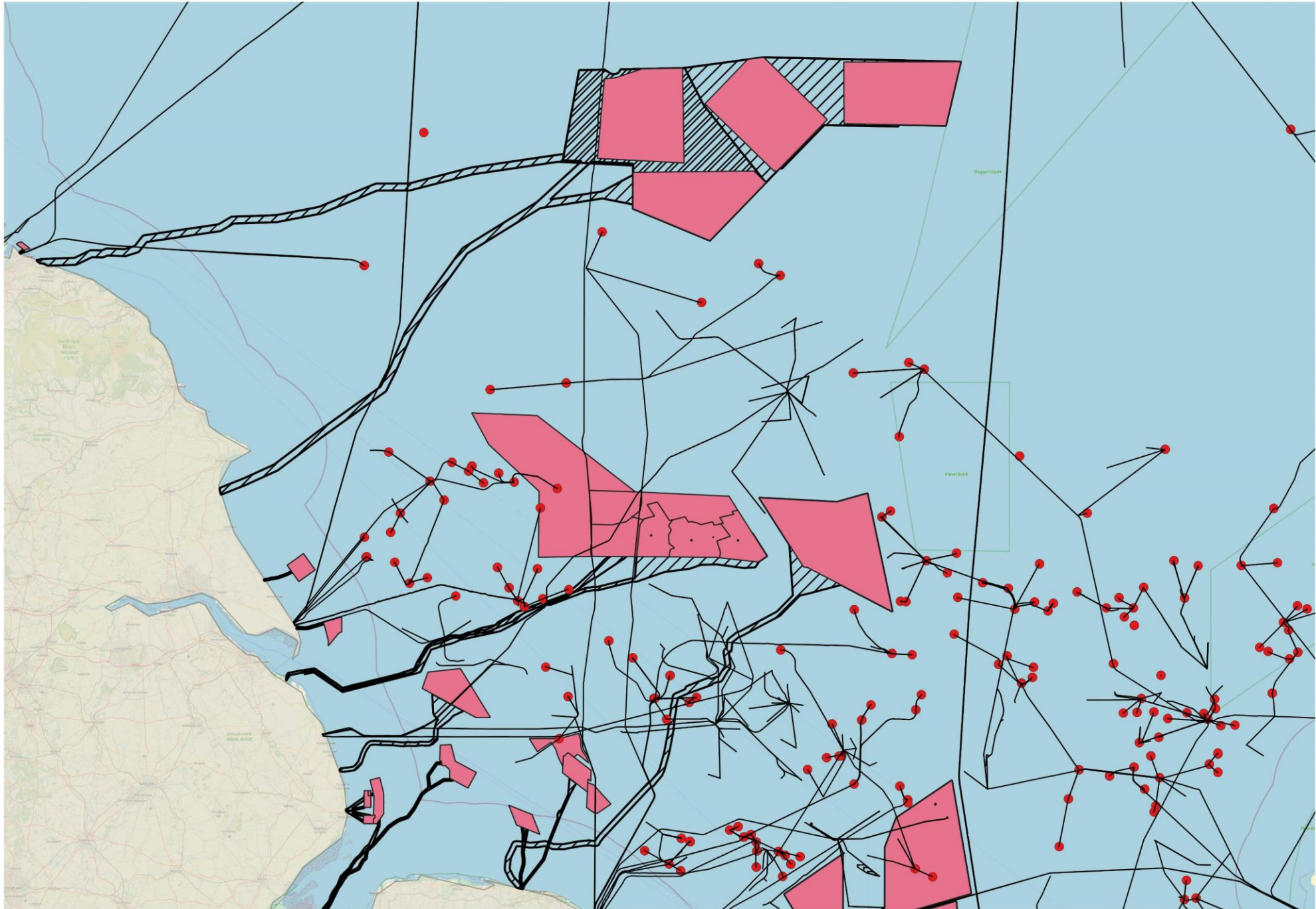
- Scale of the issue
- Concerns from the fishing industry
- Barriers and enablers to co-existence
- A working example of co-existence
- Caveats
- Summary



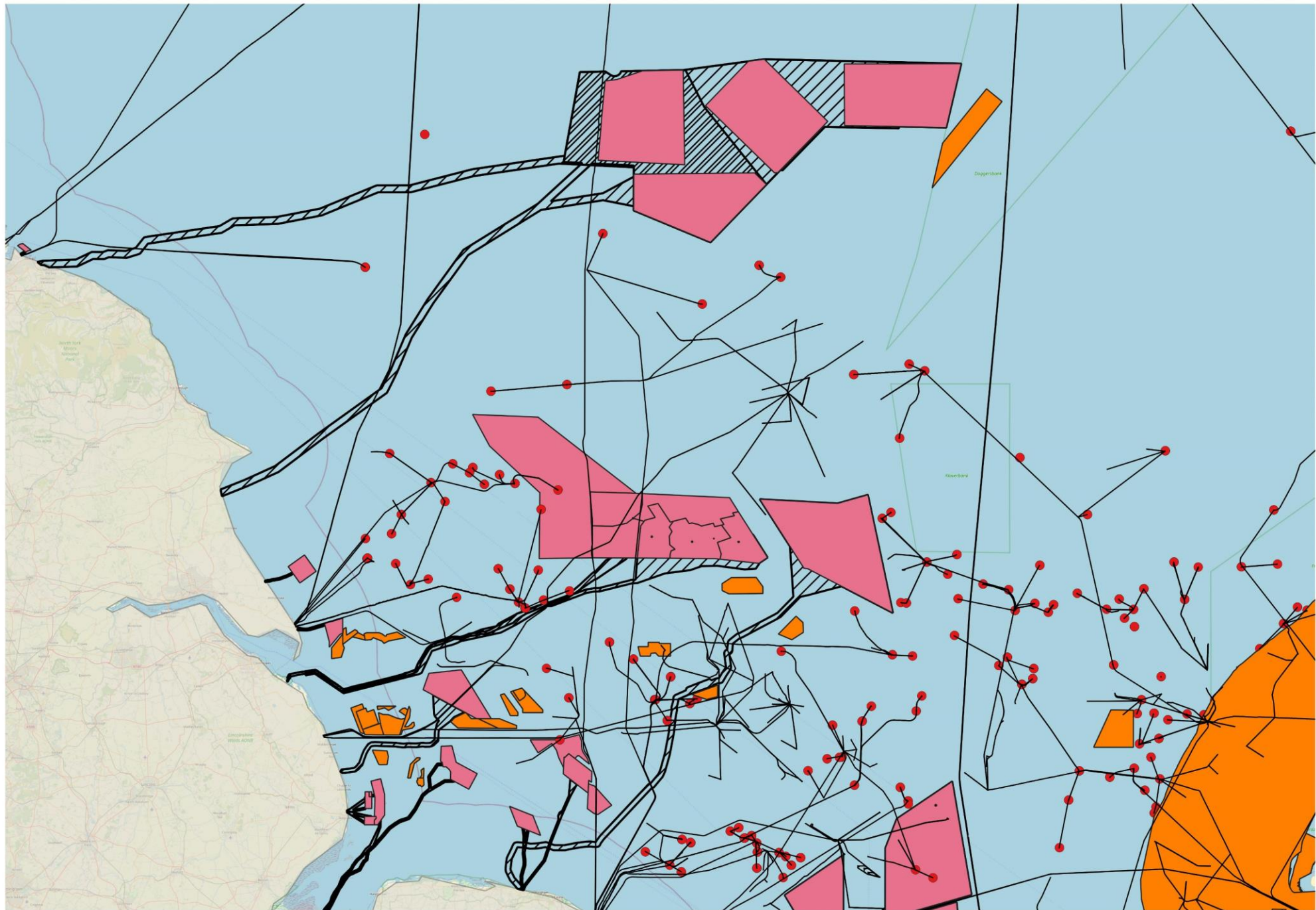
Offshore wind developments and export cable routes



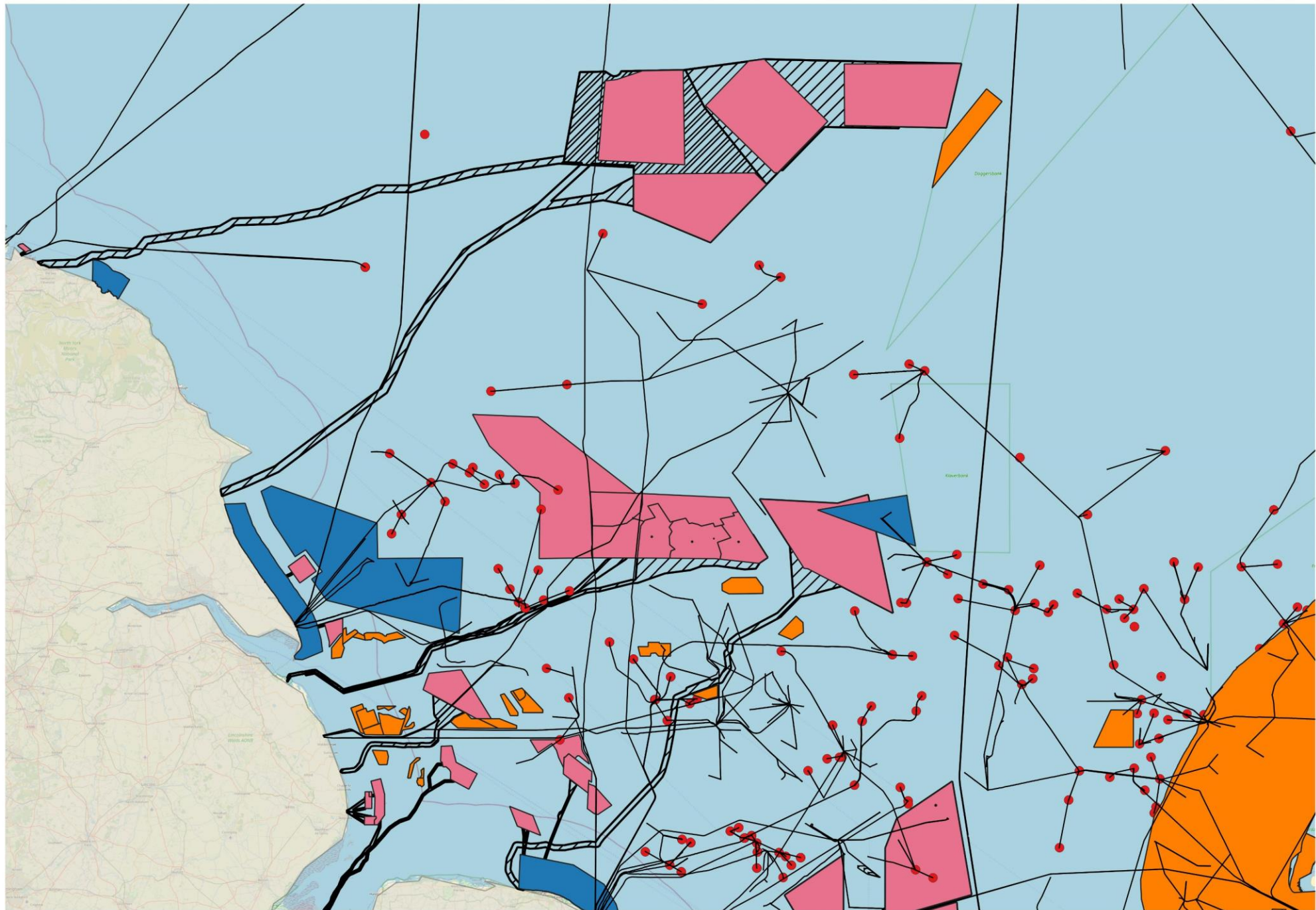
Gas wellheads and pipelines



Aggregate extraction areas

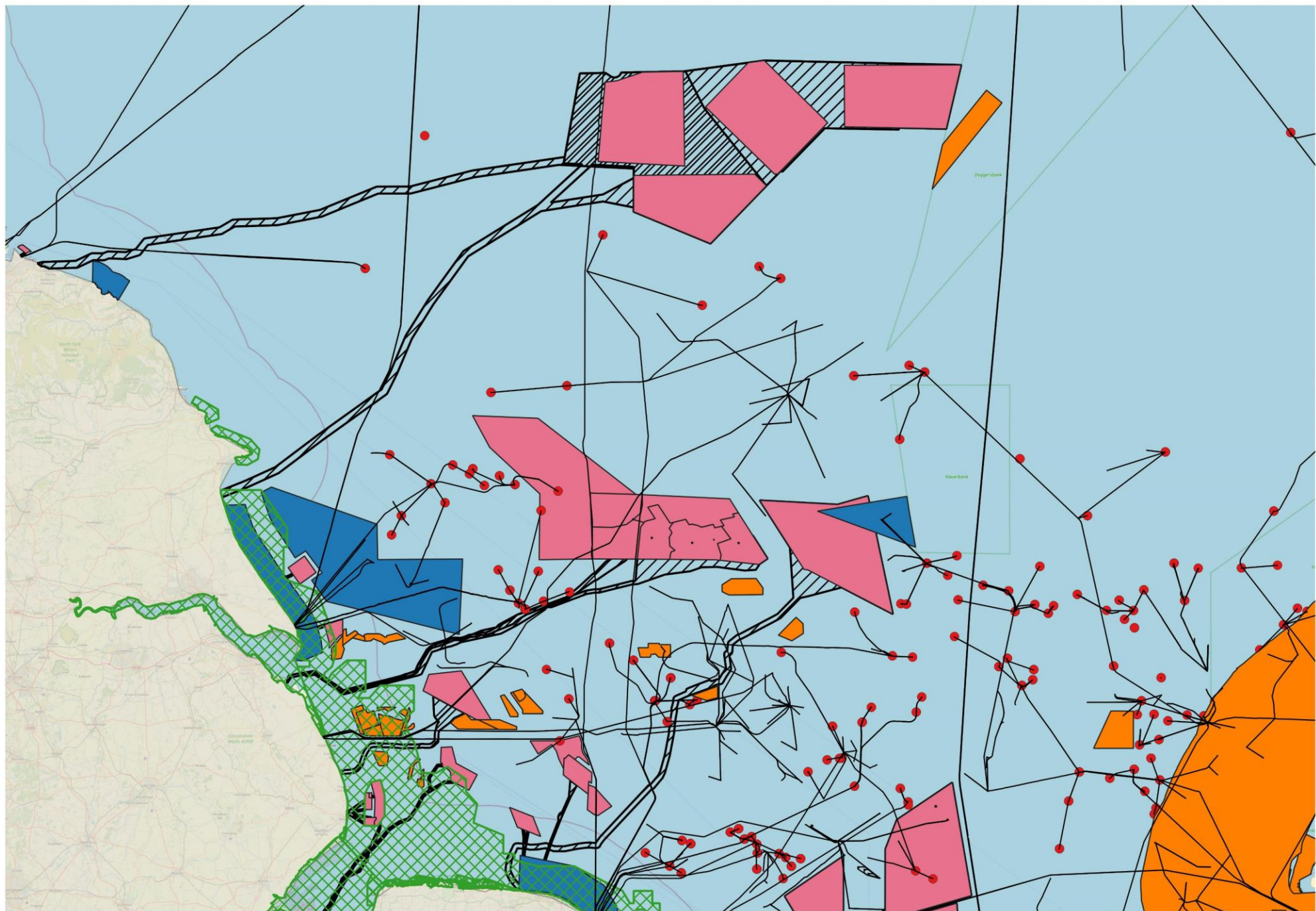


Marine Conservation Zones (MCZs)



Specially Protected Areas (SPAs)

Data sourced from
EMODnet



Offshore wind interactions

- Access to sites
- Cable hazards
- Displacement and spatial squeeze
- Ecological effects
- Scales of development
- Long-term strategy



Spatial Squeeze

Fishing is the oldest maritime industry, but many other claims are now made to the sea.

- Wind farms – 100 GW planned by 2050.
- Cables – calls for 0.25 mile buffer.
- Aquaculture – seaweed farming increasing.
- Aggregates
- Oil and gas
- Conservation – 371 MPAs = 38% of UK waters. Management measures still under discussion.

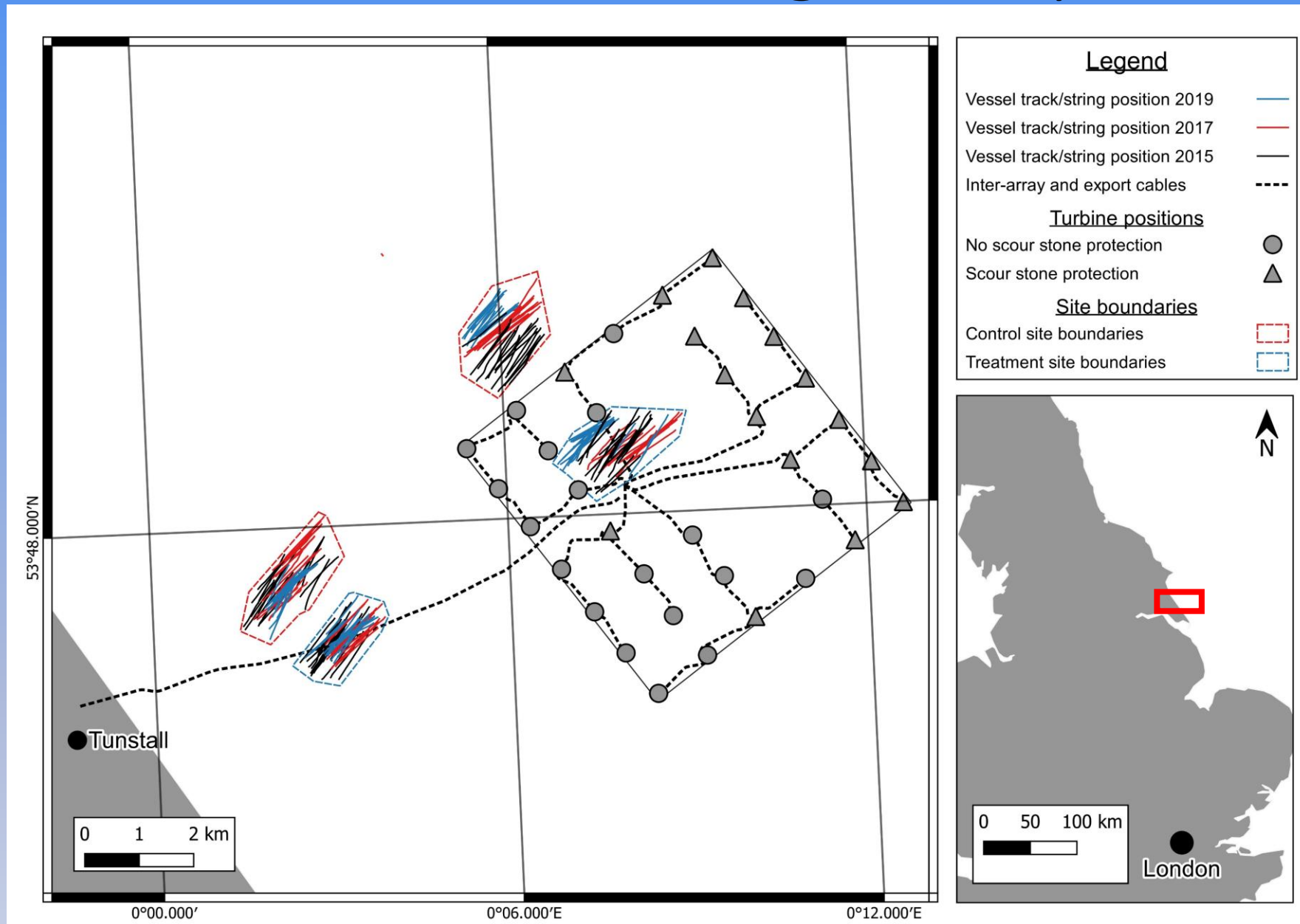


Barriers and enablers

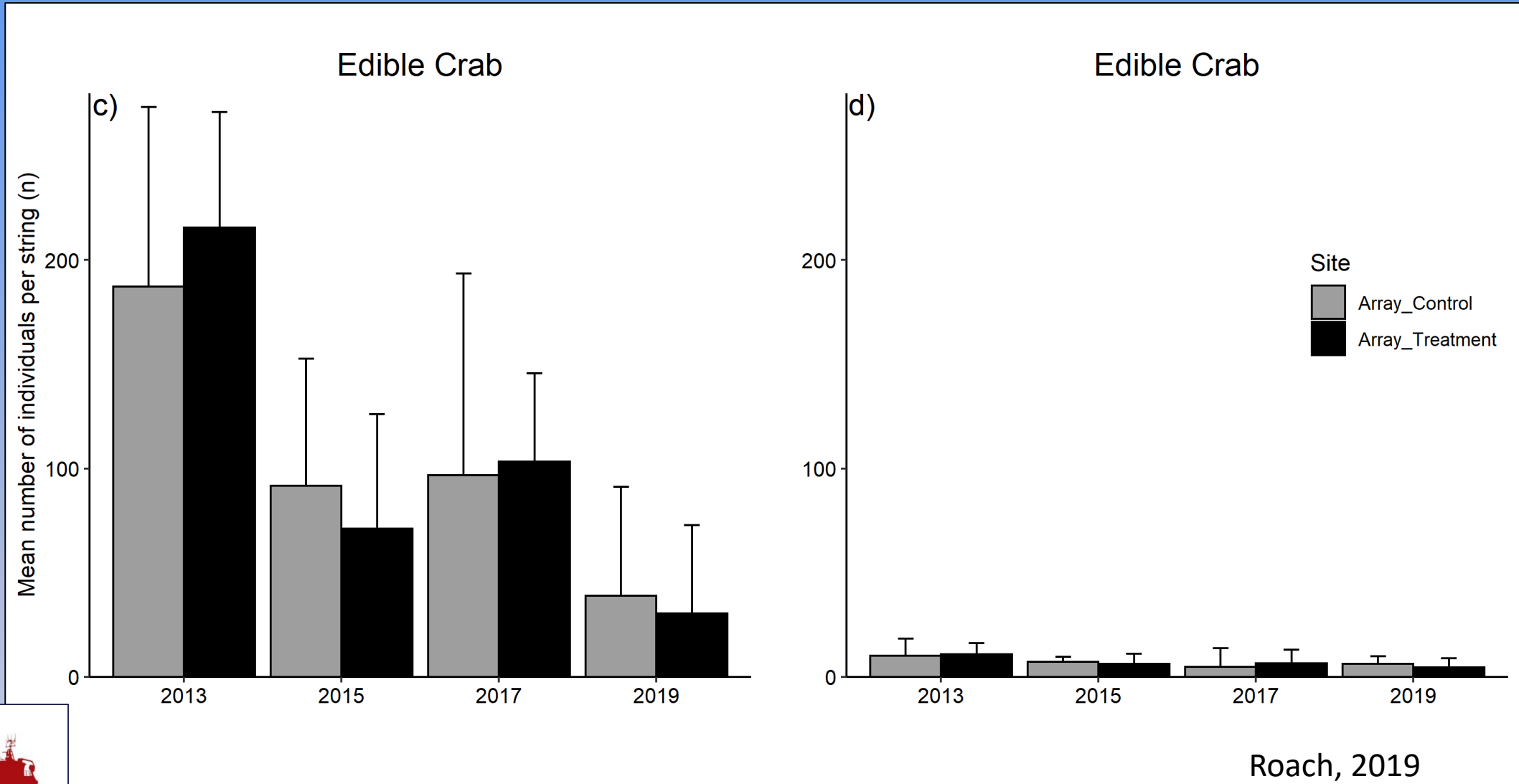
- Site design
 - Environmental conditions
 - Gear type
 - Engagement
-
- Necessity
 - Co-existence drivers and plans



Westermost Rough Study

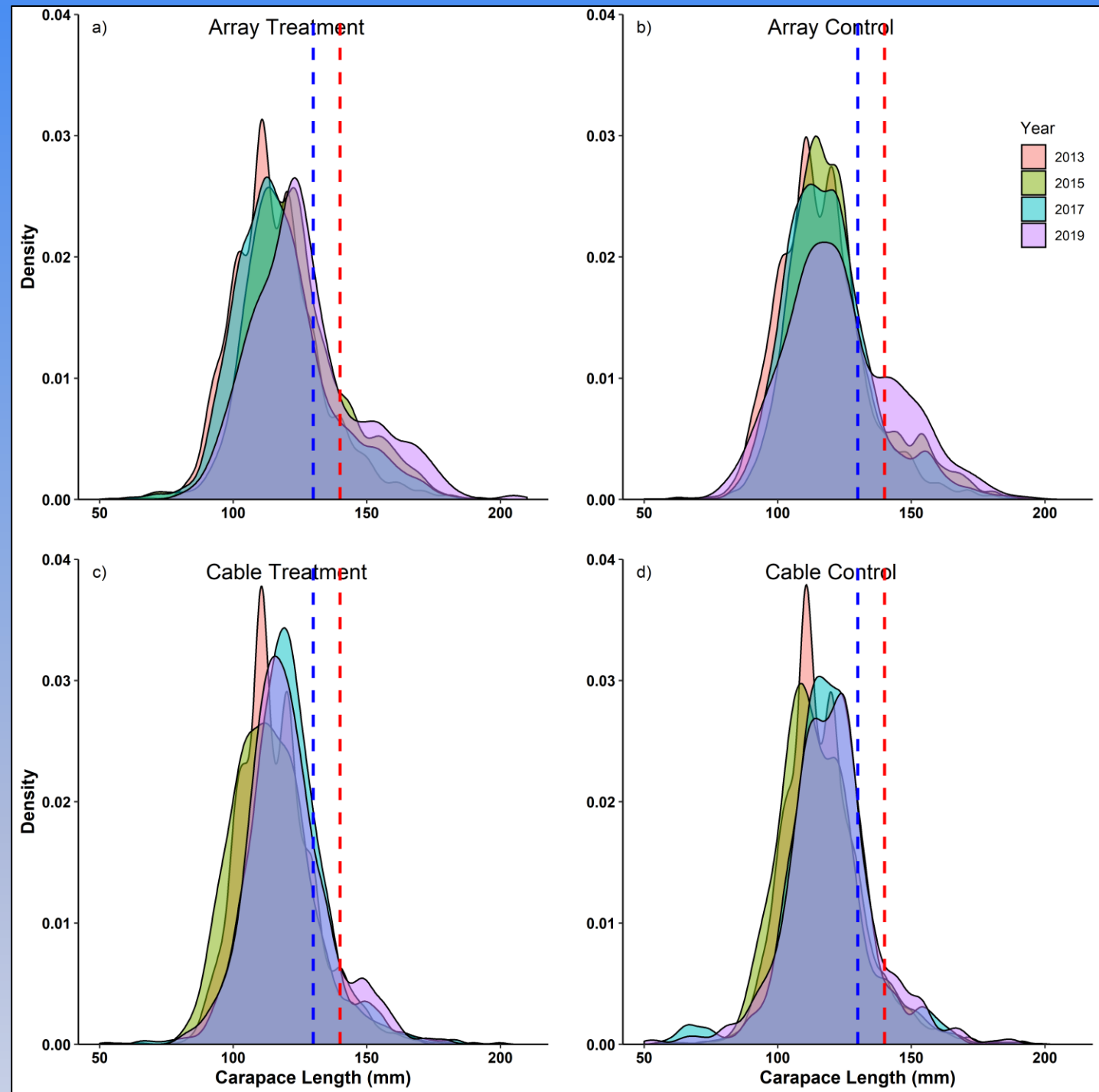


CPUE & LPUE



Size structure

- Closure effect observed in the array during 2015
- Change in MLS in the region late 2015
- Storm surge in March 2018 – changed composition of the inshore fishery



Caveats

- The survey design was focused on lobster
- Brown crab was a bycatch
- Site specific
- Season specific
- Issues surrounding a BACI design



Co-existence enablers and barriers

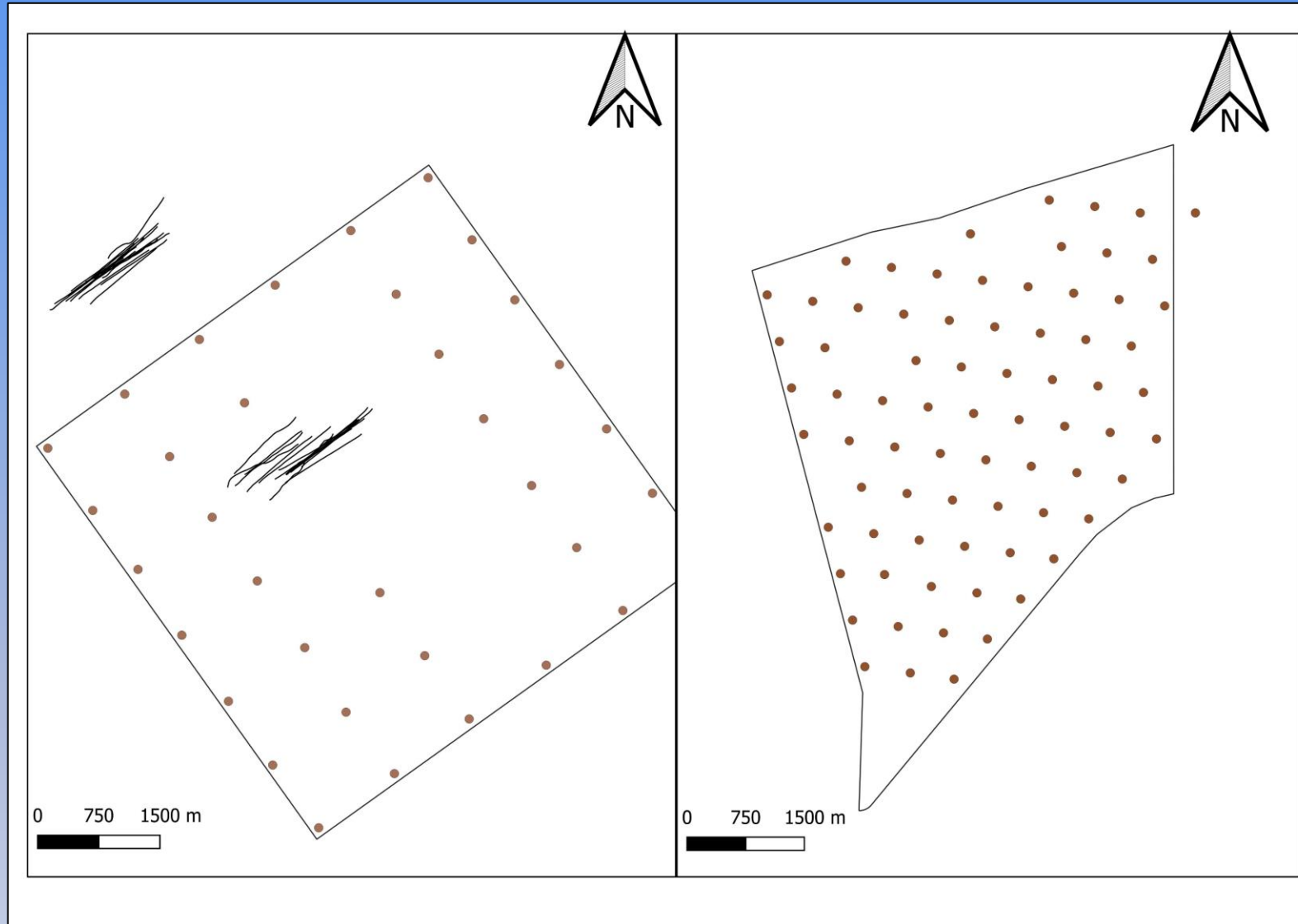
Westermost Rough

Commissioned:
2015

Turbines:
35, Siemens 6MW

Footprint:
35 km²

Output:
210 MW



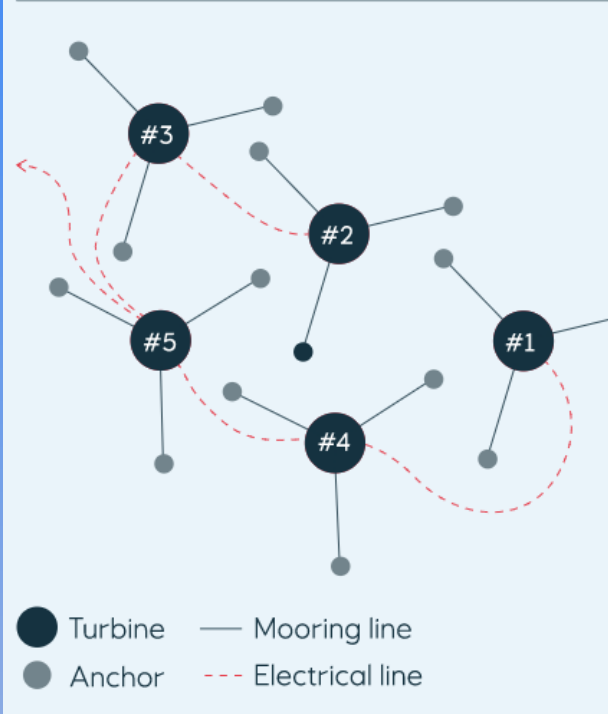
Humber Gateway

Commissioned:
2015

Turbines:
73, Vestas 3MW

Footprint:
35 km²

Output:
219 MW



The future; floating wind turbines

- Expansion into deeper waters
- Greater spatial footprint
- Overlap of mooring chains prevent fishing
- Possibly prevent navigation through the site
- What are the ecological effects?



Lessons for the future

- Integrated marine spatial planning.
- Better evidence base for fisheries in marine spatial planning.
- Co-existence is site and fishery specific.
- Avoid, minimise, mitigate.

