



# Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

## Appendix A - Supporting Figures for the Applicant's Comments to Relevant Representations

Revision A

February 2023

Document Reference: 12.3.1

**Figure 1 – Zone of Theoretical Visibility Study (SEP)**



330000 340000 350000 360000 370000 380000 390000 400000



5910000

5900000

5890000

5880000

5870000

5860000

# Sheringham Shoal and Dudgeon Extension Projects

Title: **Figure 1**  
**Zone of Theoretical Visibility (ZTV) Study and Norfolk Coast AONB, Sheringham Shoal Extension Project**  
 Document: **12.3.1 Appendix A – Supporting Figures for the Applicant's Responses to Relevant Representations**  
[Application Doc. no.: 6.2.25](#)

**Legend:**

- Sheringham Shoal Extension Project indicative turbine locations
  - Order Limits
  - Dudgeon Offshore Wind Farm Extension Project Wind Farm Site
  - Sheringham Shoal Offshore Wind Farm Extension Project Wind Farm Site
  - Offshore Cable Corridors
  - Offshore Temporary Work
  - Existing Offshore Wind Farm
  - Existing Offshore Wind Farm Export Cable
  - Distance from Sheringham Shoal Offshore Wind Farm Extension Site (10,20,30,40,50km)
  - Representative Viewpoints for Seascape and Visual Impact Assessment
- Zone of Theoretical Visibility (ZTV) of Sheringham Shoal Extension Project turbines (computer generated)**
- Hub height 180m
  - Tip height 330m

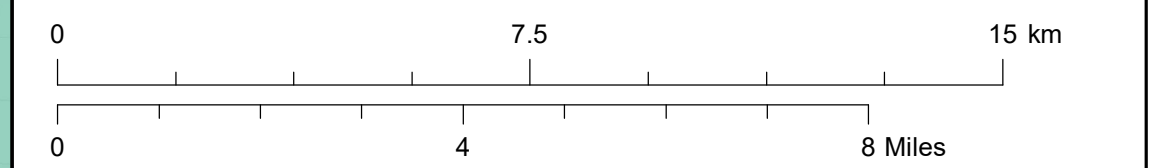
This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the viewshed routine in the ESRI ArcGIS Suite. The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and settlements, which have been included in the model with the heights obtained from Nextmap 25. It should be noted that in some areas woodlands included within the ZTV may comprise active forestry, resulting in the felling and replanting of some areas modelled in the ZTV study. The ZTV study reflects this pattern at a specific point in time, as it is based on real height information. Whilst the felling cycle will alter the heights of different areas of forestry over time, altering localised visual effects, the wider pattern will remain relatively constant.

The model does not take into account any localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. Land areas are based on Nextmap 25 terrain data and has a 25m<sup>2</sup> resolution.



Coordinate Reference System: WGS 1984 UTM Zone 31N  
 Transformation WGS84: OSGB\_1936\_To\_WGS\_1984\_7



Scale: 1:120,000 Scale at size: A1

[Equinor Doc. no.: C282-LD-Z-GA-00003](#)  
[RHDHV Doc. no.: PB8164\\_LDA\\_ZZ\\_OF\\_DR\\_Z\\_0000](#)

A	16/02/2023	First Issue	VW	NA	CG
REV	DATE	STATUS	DRW	CHK	APR

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**Figure 2 – Zone of Theoretical Visibility Study (DEP)**



330000 340000 350000 360000 370000 380000 390000 400000



5910000

5900000

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# Sheringham Shoal and Dudgeon Extension Projects

Title: **Figure 2**  
**Zone of Theoretical Visibility (ZTV) Study**  
**and Norfolk Coast AONB,**  
**Dudgeon Extension Project**

Document:  
 12.3.1 Appendix A – Supporting Figures for the  
 Applicant's Responses to Relevant Representations

Application Doc. no.: [6,2,25](#)

**Legend:**

- Dudgeon Extension Project indicative turbine locations
- Order Limits
- Dudgeon Offshore Wind Farm Extension Project Wind Farm Site
- Sheringham Shoal Offshore Wind Farm Extension Project Wind Farm Site
- Offshore Cable Corridors
- Offshore Temporary Work Area
- Existing Offshore Wind Farm
- Existing Offshore Wind Farm Export Cable
- Distance from Dudgeon Offshore Wind Farm Extension Site (10,20,30,40,50km)
- Representative Viewpoints for Seascape and Visual Impact Assessment

**Zone of Theoretical Visibility (ZTV) of Dudgeon Extension Project turbines (computer generated)**

- Hub height 180m
- Tip height 330m

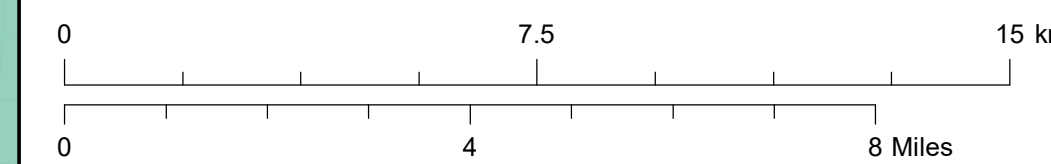
This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the viewshed routine in the ESRI ArcGIS Suite. The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and settlements, which have been included in the model with the heights obtained from Nextmap 25. It should be noted that in some areas woodlands included within the ZTV may comprise active forestry, resulting in the felling and replanting of some areas modelled in the ZTV study. The ZTV study reflects this pattern at a specific point in time, as it is based on real height information. Whilst the felling cycle will alter the heights of different areas of forestry over time, altering localised visual effects, the wider pattern will remain relatively constant.

The model does not take into account any localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. Land areas are based on Nextmap 25 terrain data and has a 25m<sup>2</sup> resolution.



Coordinate Reference System: WGS 1984 UTM Zone 31N  
 Transformation WGS84: OSGB\_1936\_To\_WGS\_1984\_7



Scale: 1:120,000 Scale at size: A1

Equinor Doc. no.: [C282-LD-Z-GA-00003](#)  
 RHDHV Doc. no.: [PB8164\\_LDA\\_ZZ\\_OF\\_DR\\_Z\\_0000](#)

A	16/02/2023	First Issue	VW	NA	CG
REV	DATE	STATUS	DRW	CHK	APR

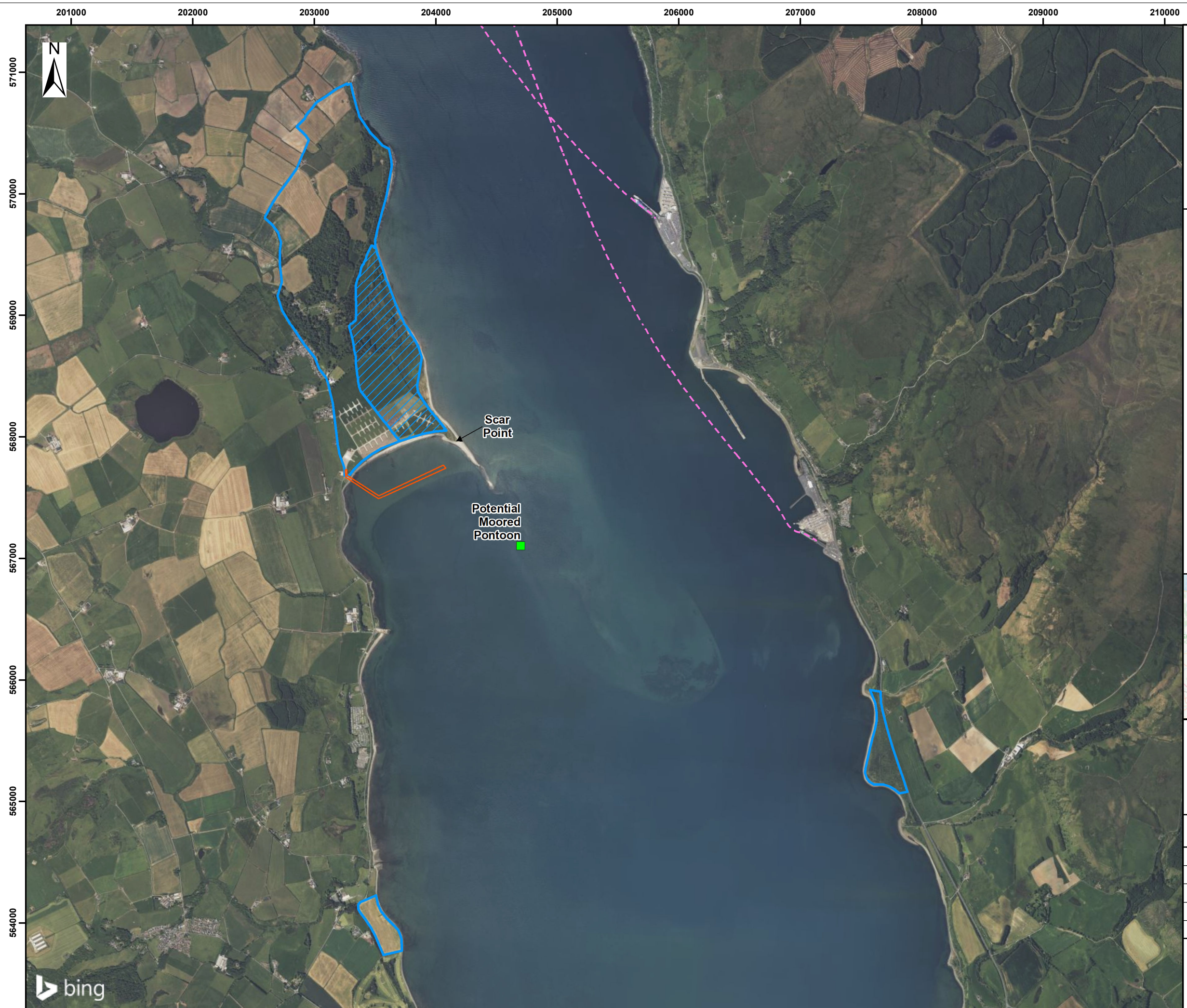
**Data Sources:** © Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2020. NextMap25.  
**Base Map:** © British Crown and OceanWise, 2021. All rights reserved. License No. EMS-EK001-627782. Not to be used for Navigation; Crown copyright and database rights 2020, Ordnance Survey 0100031673; © OpenStreetMap (and) contributors, CC-BY-SA





**Figure 3 – Area of Search and Loch Ryan**





**Sheringham Shoal and Dudgeon Extension Projects**

Title:  
Figure 3 Potential Location of Pontoon and Initial Area of Search for an Inland Pool at Loch Ryan

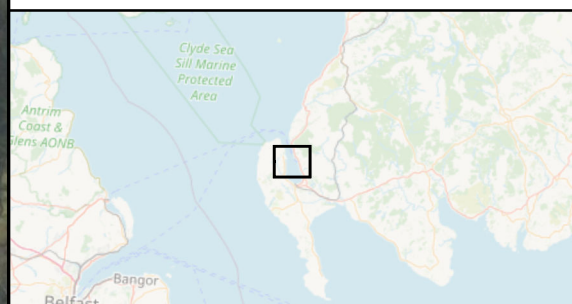
Document:  
Habitats Regulation Derogation:  
Provision of Evidence

Application Doc. no.: 5.5

- Legend:
- Potential Moored Pontoon Location
  - Inland pool wider area of search
  - Inland pool location preferred area of search
  - Ferry Route
  - RSPB common tern pontoon site area

Scar Point

Potential Moored Pontoon



Coordinate Reference System: British National Grid  
Transformation WGS84: OSGB\_1936\_To\_WGS\_1984\_7

0 324 648 972 1,296 1,620 Metres

0 390 780 1,170 1,560 Yards

Scale: 1:30,000      Scale at size: A3

Equinor Doc. no.: C282-RH-Z-GA-00013  
RHDHV Doc. no.: PB8164-RHD-ZZ-ON-DR-Z-0176

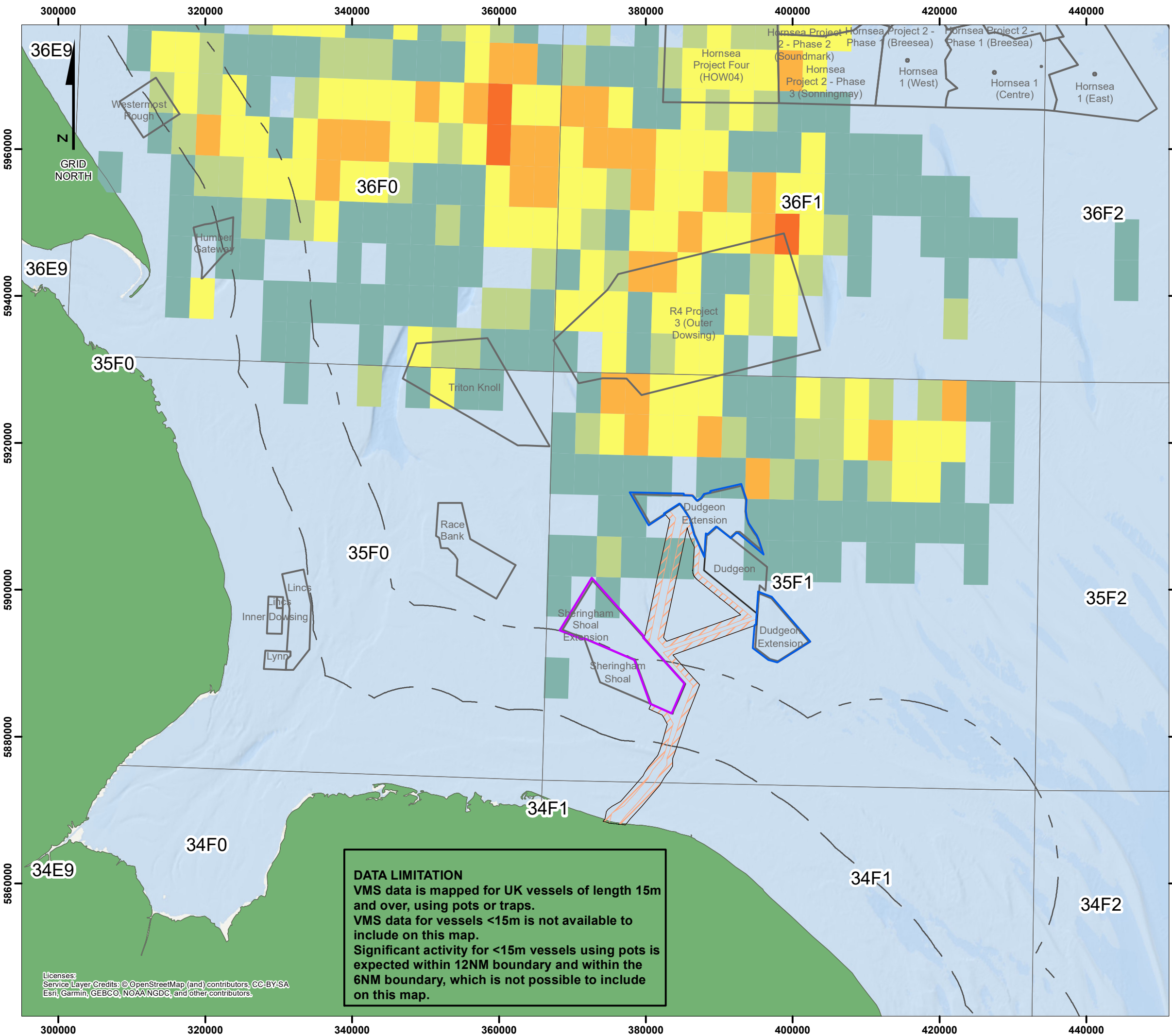
C	14/02/2023	Third Issue	ND	LA	AP
B	22/11/2022	Second Issue	GC	LA	AP
A	14/06/2022	First Issue	FC	LA	AP
REV	DATE	STATUS	DRW	CHK	APR





## Figure 4 – Commercial Fisheries 1





### Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

#### Legend:

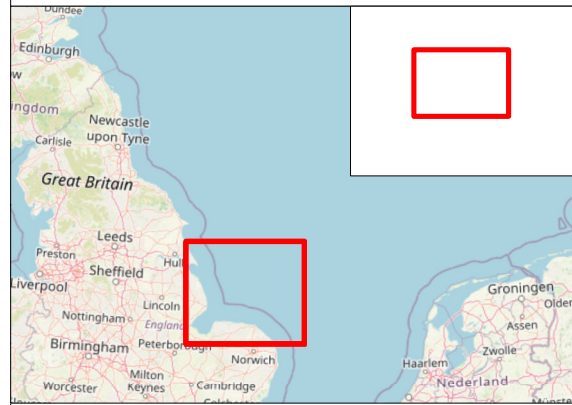
- Wind Farm Site Agreements
- Dudgeon Offshore Wind Farm Extension Project Wind Farm Site
- Sheringham Shoal Offshore Wind Farm Extension Project Wind Farm Site
- Offshore Cable Corridors
- Offshore Temporary Works Area
- ICES statistical rectangles

#### UK limits

- 12 NM
- 6 NM
- 200 NM EEZ

#### UK Potting Value (£), 2019 (vessels ≥15m)

- £0.01 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £145,000.00



Coordinate system: ETRS 1989 UTM Zone 31N  
 Scale@A3: 1:500,000  
 0 5 10 20 Kilometres  
 0 1 2 3 4 5 10 Nautical Miles



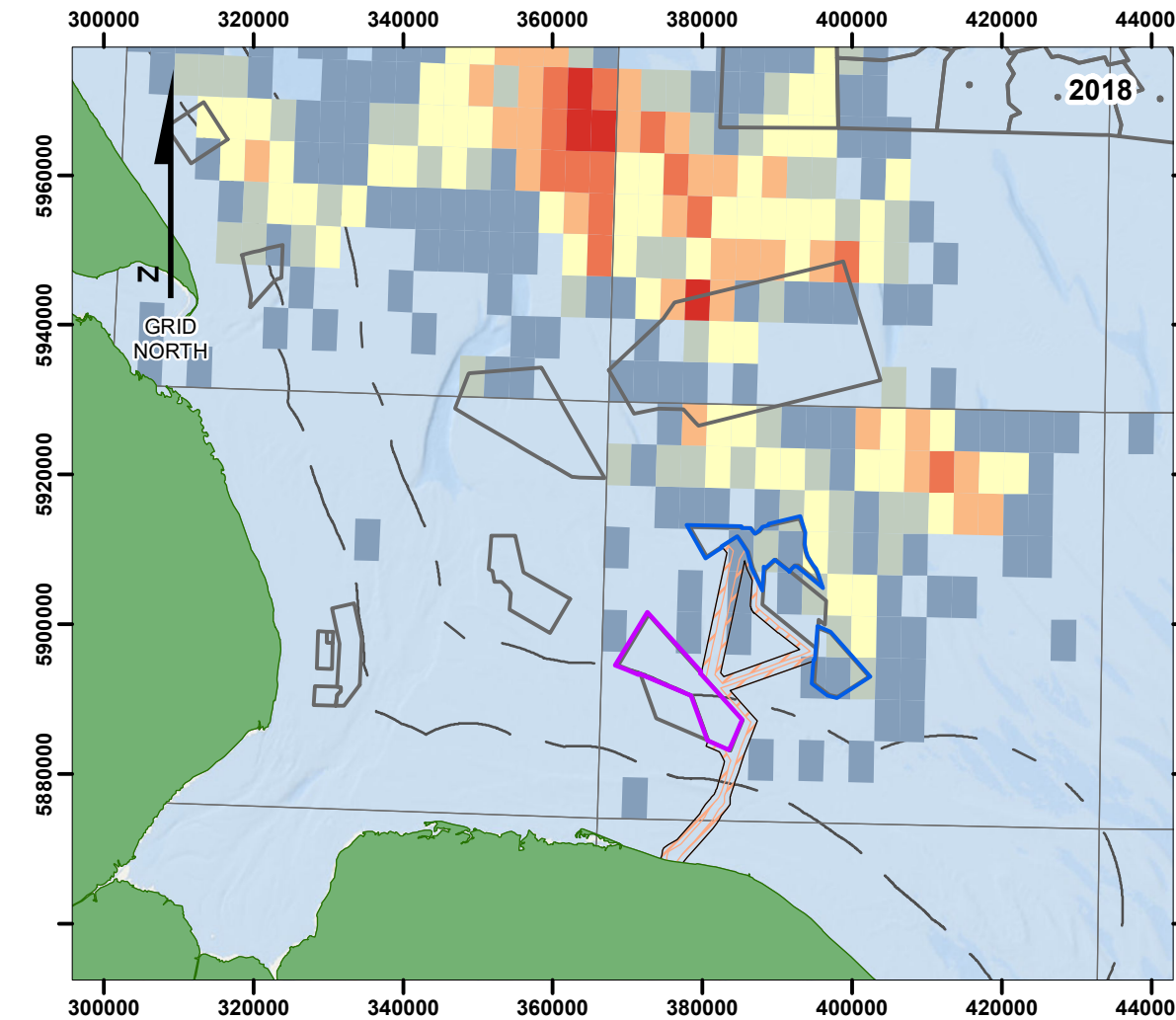
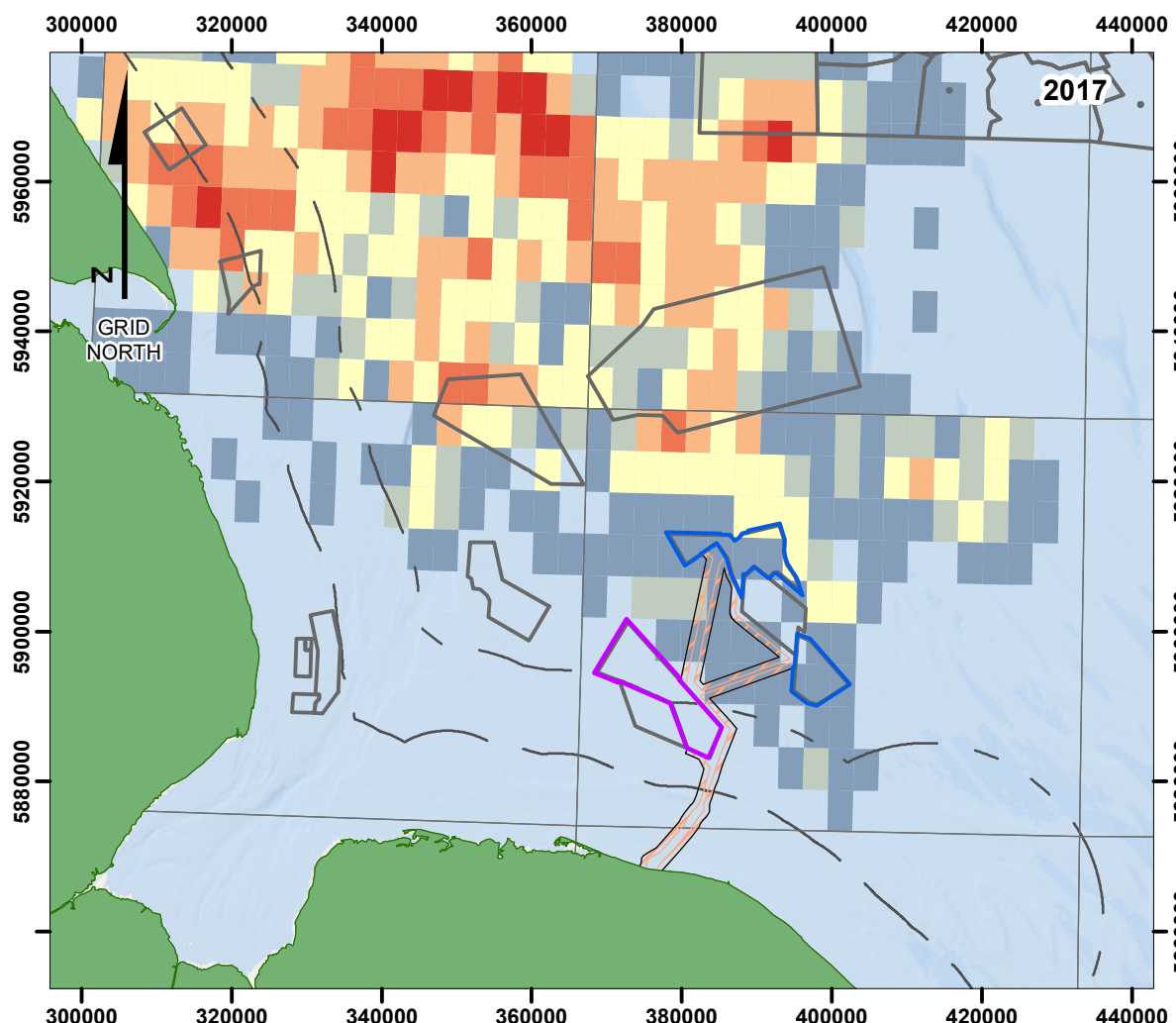
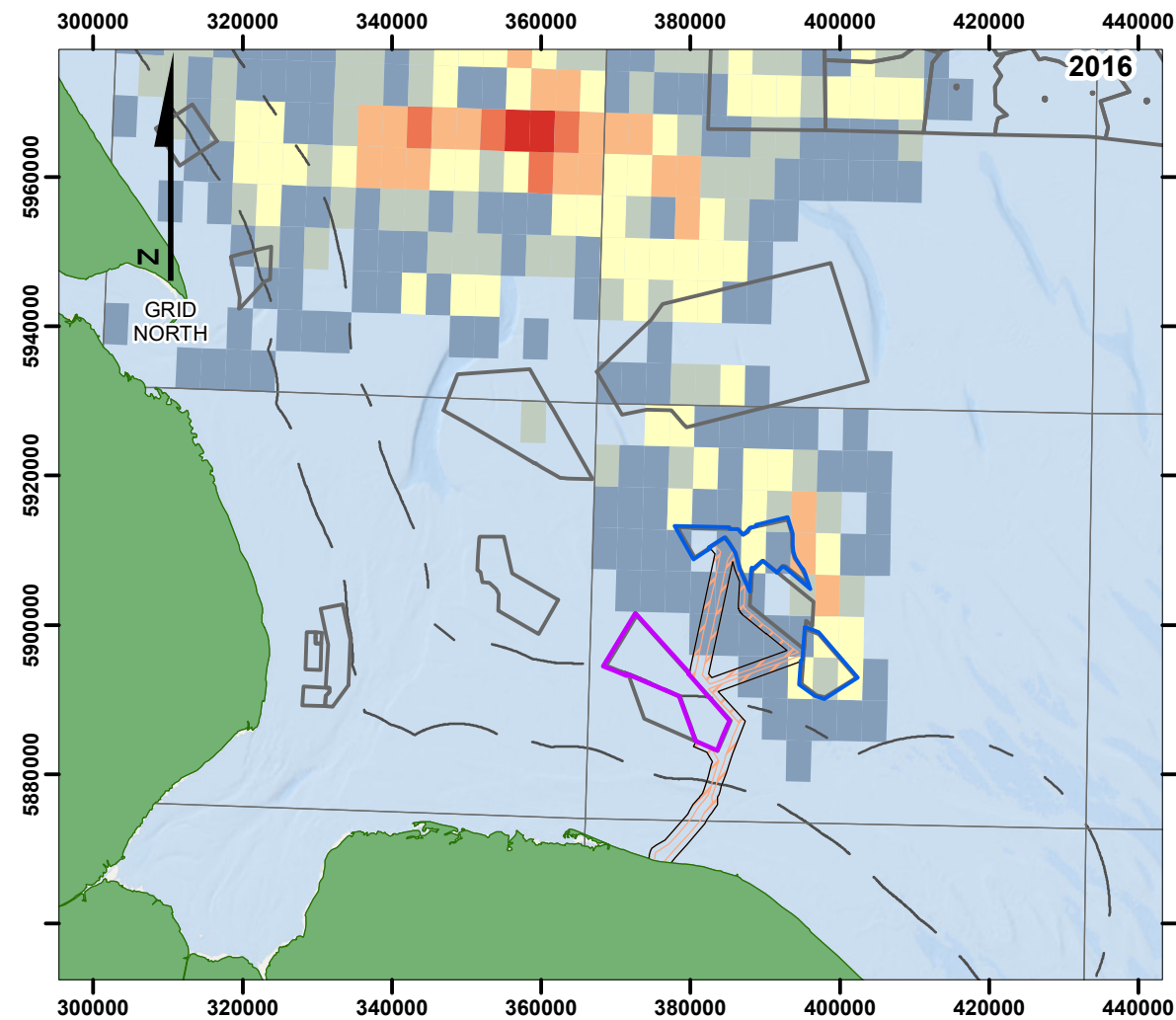
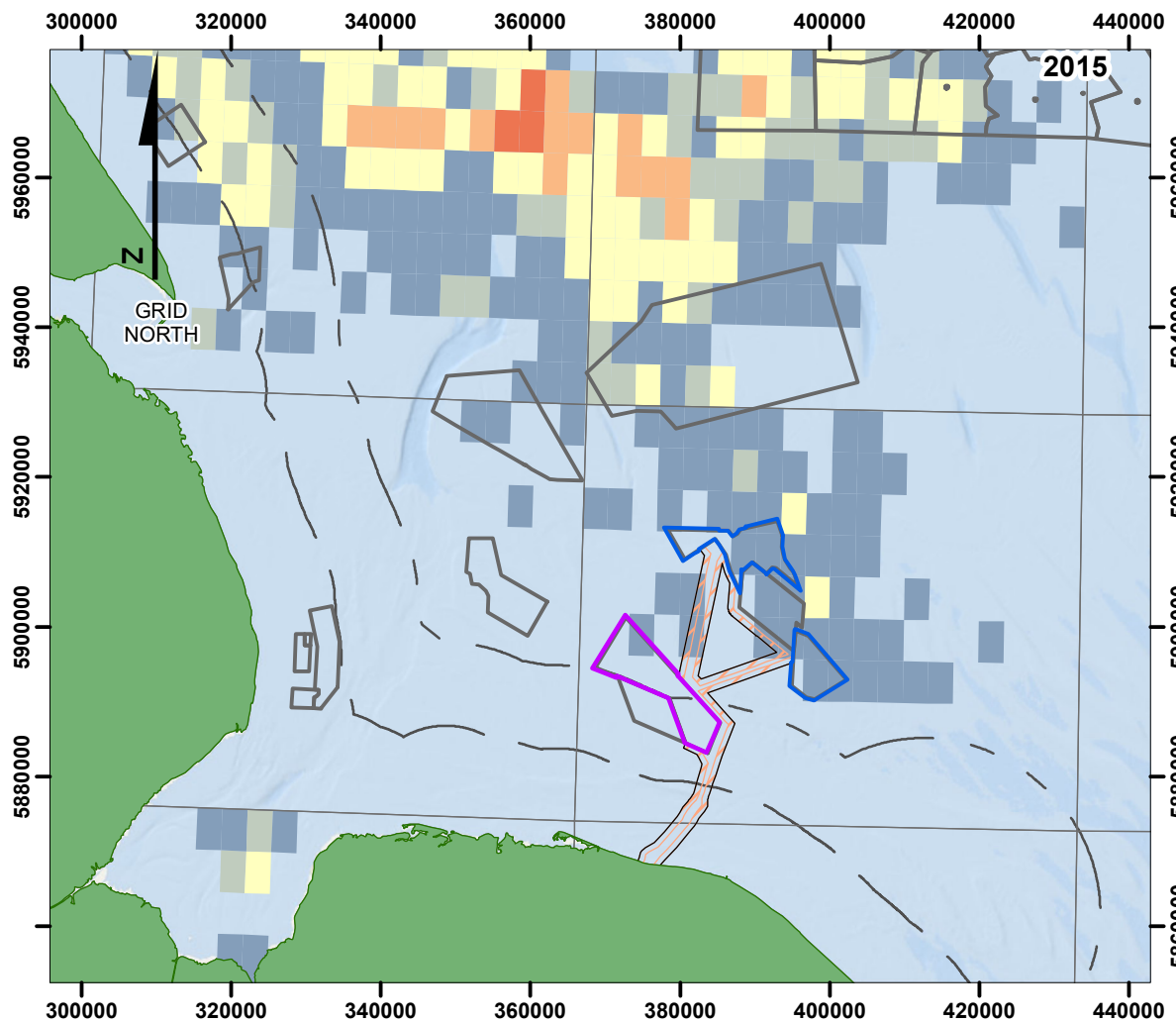
**DATA LIMITATION**  
 VMS data is mapped for UK vessels of length 15m and over, using pots or traps.  
 VMS data for vessels <15m is not available to include on this map.  
 Significant activity for <15m vessels using pots is expected within 12NM boundary and within the 6NM boundary, which is not possible to include on this map.

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## Figure 5 – Commercial Fisheries 2





### Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

**Legend:**

- Wind Farm Site Agreements
- Dudgeon Offshore Wind Farm Extension Project Wind Farm Site
- Sheringham Shoal Offshore Wind Farm Extension Project Wind Farm Site
- Offshore Cable Corridors
- Offshore Temporary Works Area
- ICES statistical rectangles

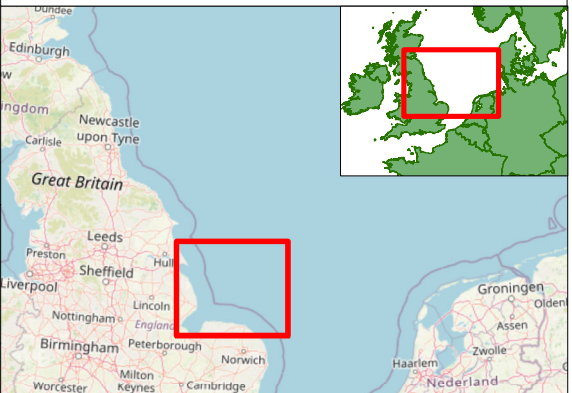
**UK limits**

- 12 NM
- 6 NM
- 200 NM EEZ


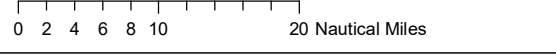
**UK potting, 15m and over**


Total value, £

- £1 - £5,000.00
- £5,000.01 - £10,000.00
- £10,000.01 - £25,000.00
- £25,000.01 - £50,000.00
- £50,000.01 - £75,000.00
- £75,000.01 - £112,000.00



Coordinate system: ETRS 1989 UTM Zone 31N  
 Scale@A3: 1:997,505



Commercial Fisheries  
Technical Report

Date: 06/02/2023  
Created by: FN  
Checked by: SM