

RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Dogger Bank South Offshore Wind Farms

Environmental Statement

Volume 7

Chapter 10 – Fish and Shellfish Ecology

Figure 10-1 to Figure 10-10

June 2024

Application Reference: 7.10.1

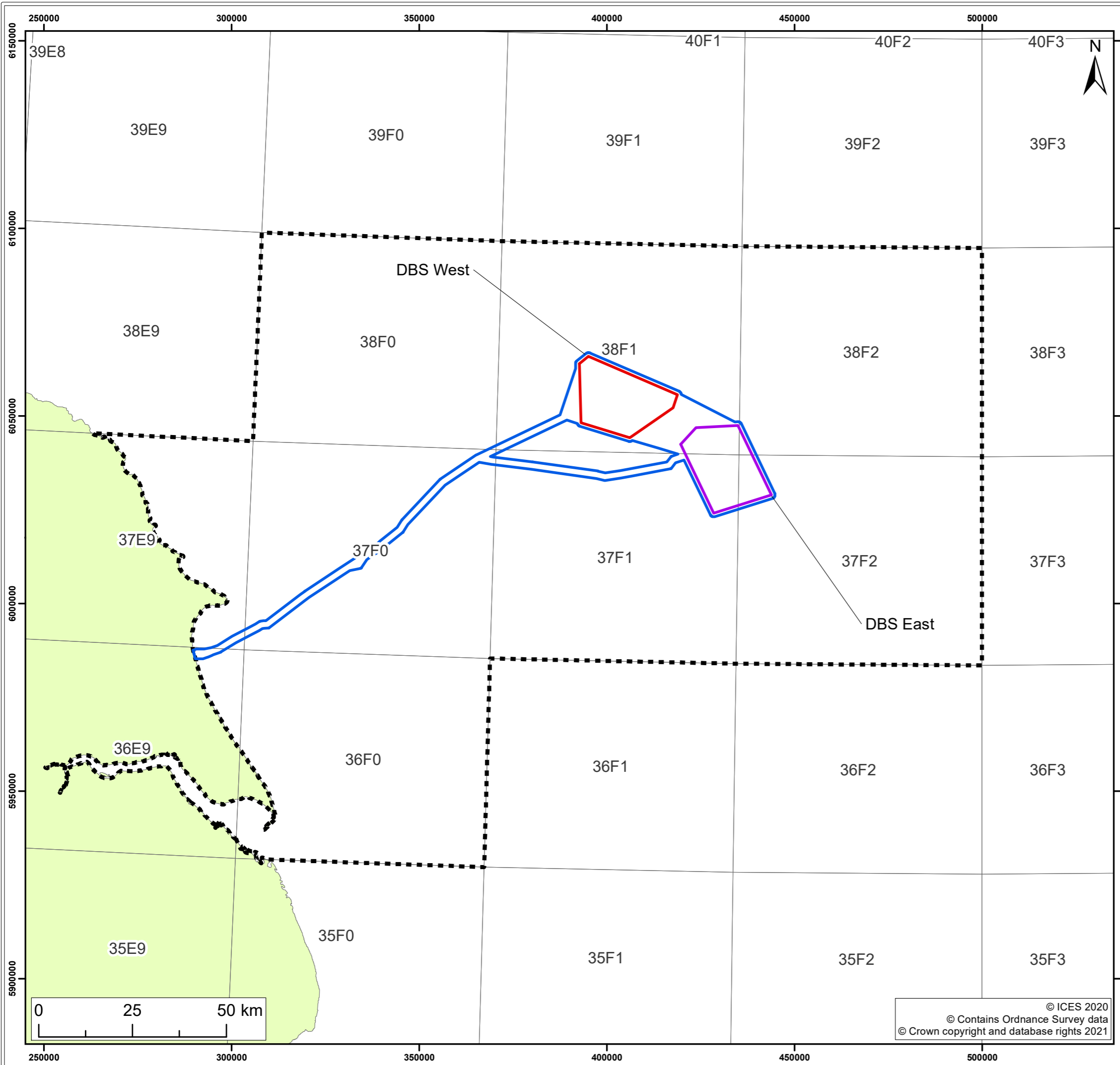
APFP Regulation: 5(2)(a)

Revision: 01

Unrestricted



Company:	RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited	Asset:	Development		
Project:	Dogger Bank South Offshore Wind Farms	Sub Project/Package:	Consents		
Document Title or Description:	Environmental Statement - Chapter 10 - Figure 10-1 to Figure 10-10				
Document Number:	004300151-01	Contractor Reference Number:	PC2340-RHD-OF-ZZ-RP-Z-0093		
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Rev No.	Date	Status/Reason for Issue	Author	Checked by	Approved by
01	June 2024	Final for DCO Application	MarineSpace	RWE	RWE



Legend:

- DBS East Array Area
- DBS West Array Area
- Offshore Development Area
- Fish and Shellfish Ecology Study Area
- ICES Rectangles

S4	PO4	29/02/24	PB2340-MAR-OF-ZZ-DR-Z-0001	AN	IW	TM
S3	P03	22/03/23	PB2340-MAR-OF-ZZ-DR-Z-0001	NB	IW	TM
S2	P02	20/04/22	PB2340-MAR-OF-ZZ-DR-Z-0001	BO	IW	TM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:
The Fish and Shellfish Ecology Study Area for the Projects, comprising International Council for the Exploration of the Sea (ICES) Rectangles 36E9; 36F0; 37E9; 37F0; 37F1; 37F2; 38F0; 38F1; and 38F2

Figure: 10-1 Drawing No: PB2340-MAR-OF-ZZ-DR-Z-0001

Co-ordinate system: WGS 1984 UTM Zone 31N Page Size: A3 Scale: 1:1,000,000

Project: Dogger Bank South Offshore Wind Farms Report: Dogger Bank South Offshore Wind Farms EIA



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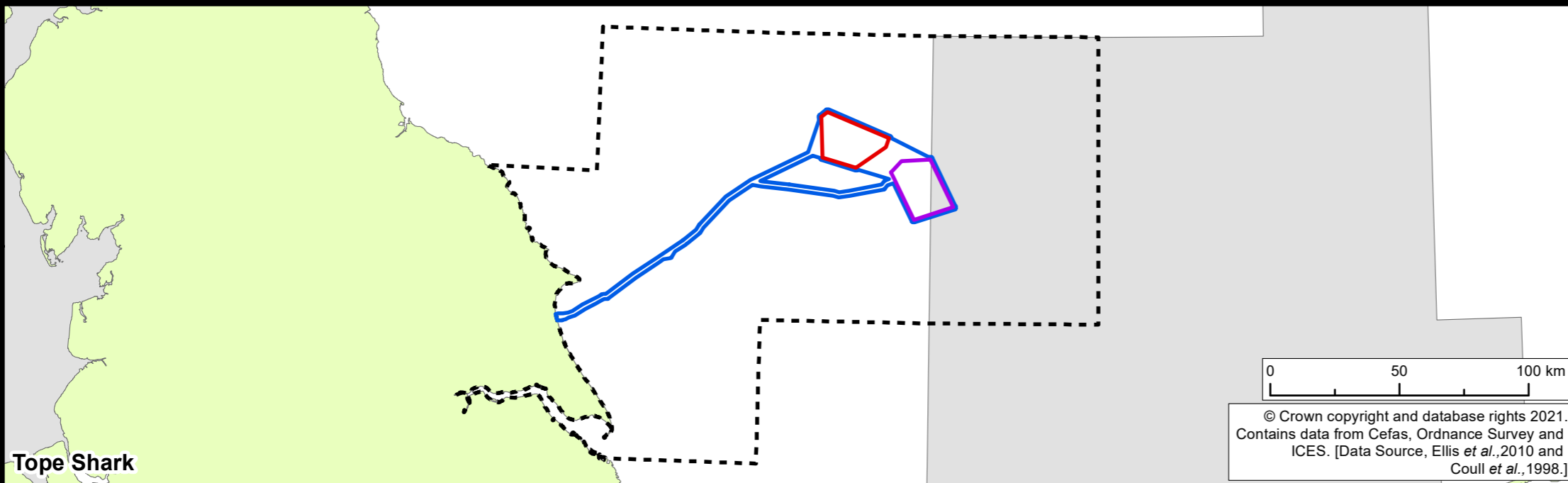


Spurdog

Dogger Bank South West

Dogger Bank South East

Thornbackray



Tope Shark



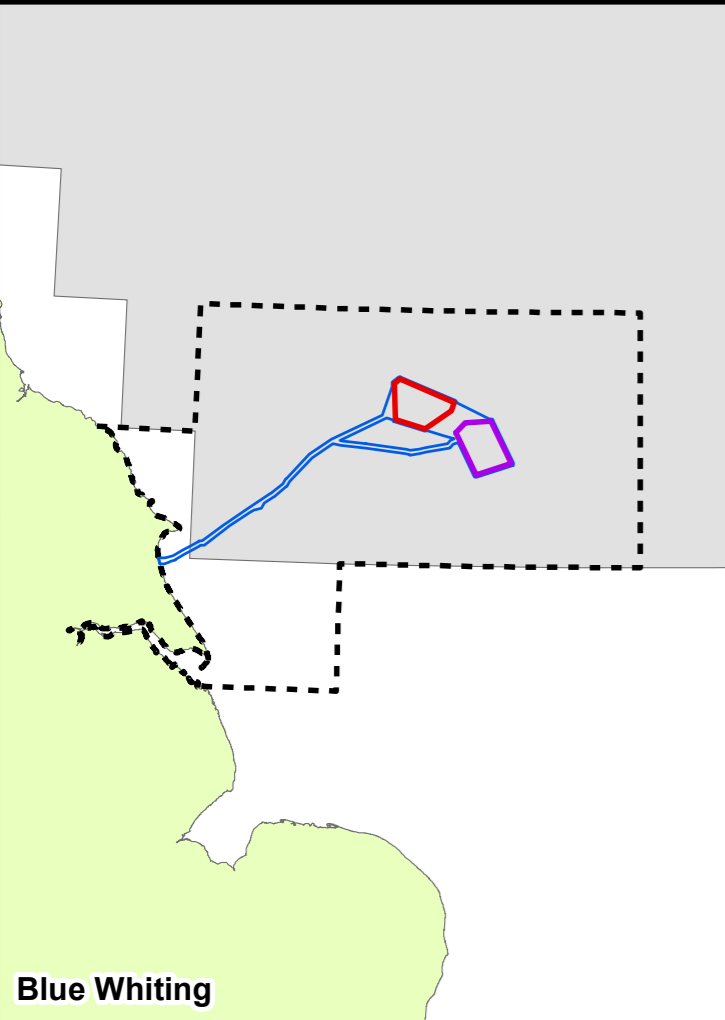
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Contains data from Cefas, Ordnance Survey and
ICES. [Data Source, Ellis *et al.*, 2010 and
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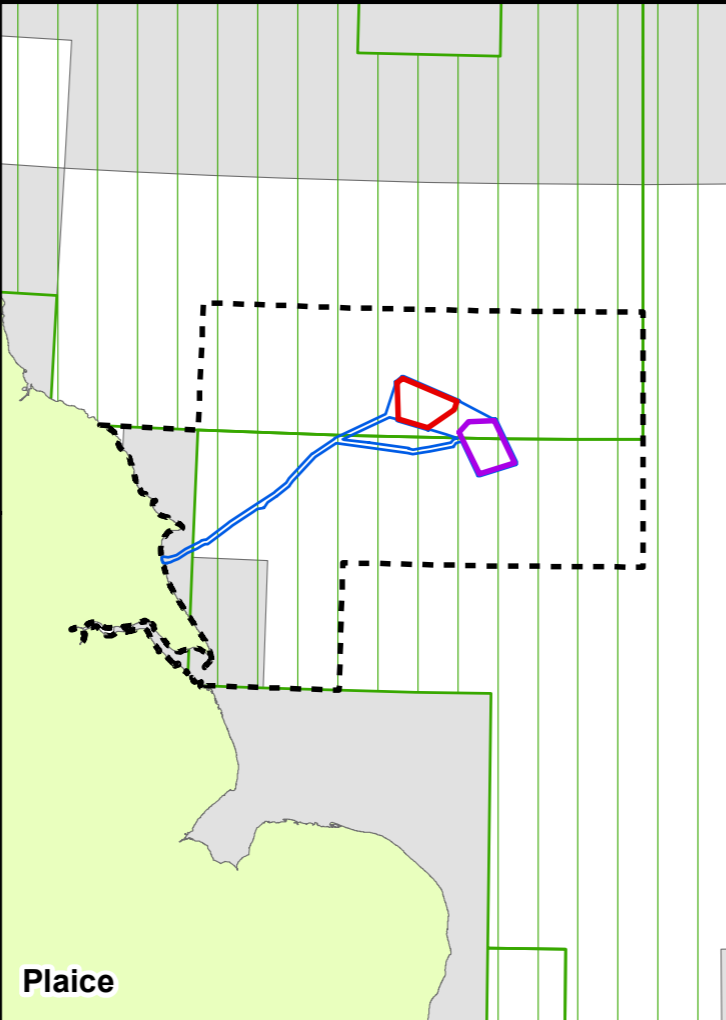


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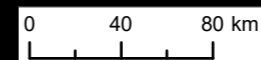
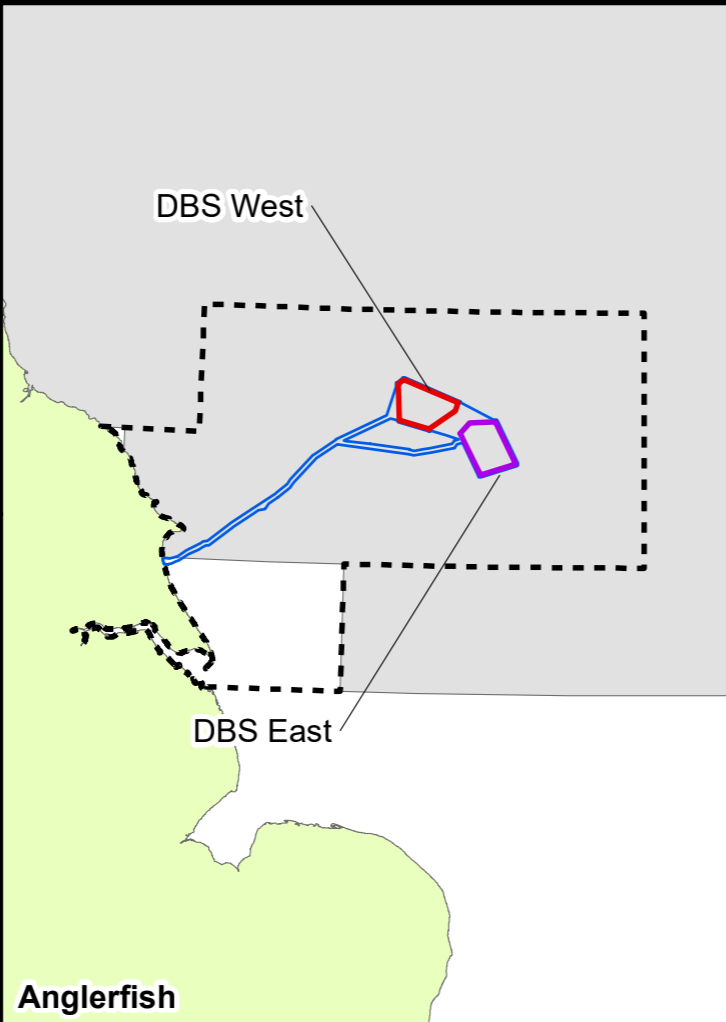
Blue Whiting

Anglerfish



Plaice

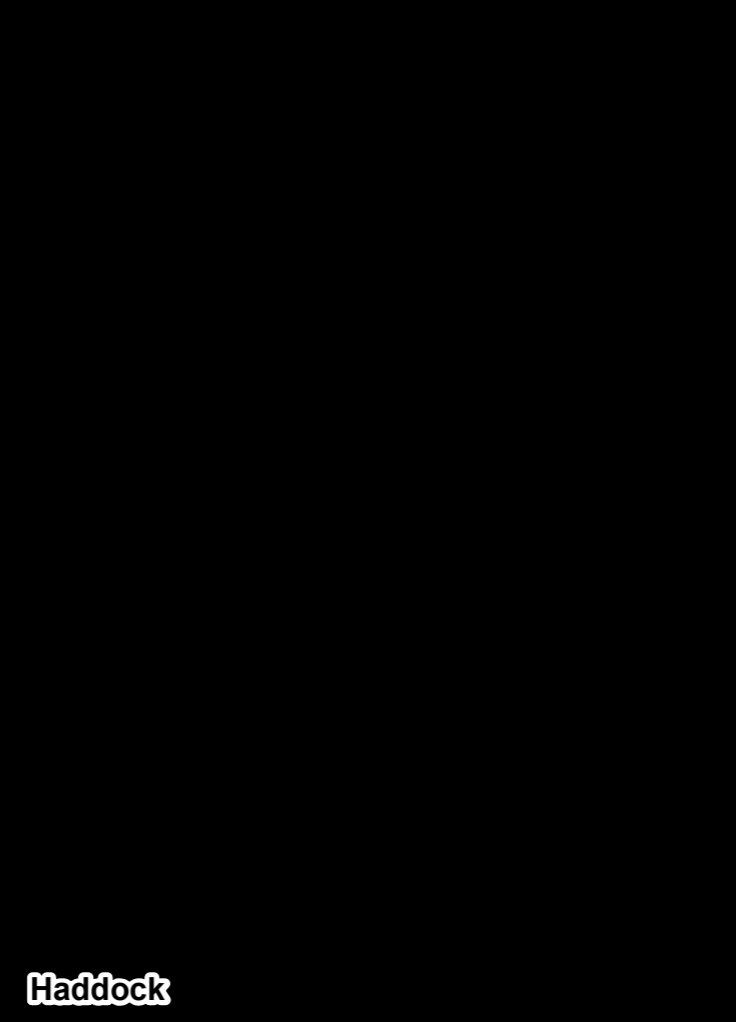
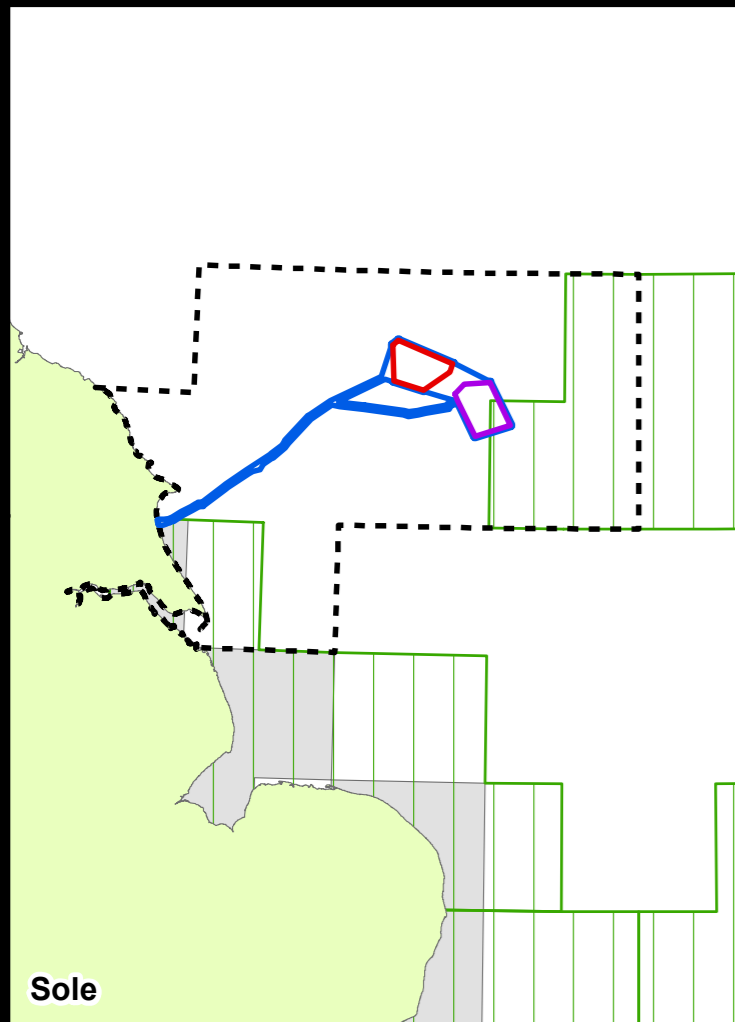
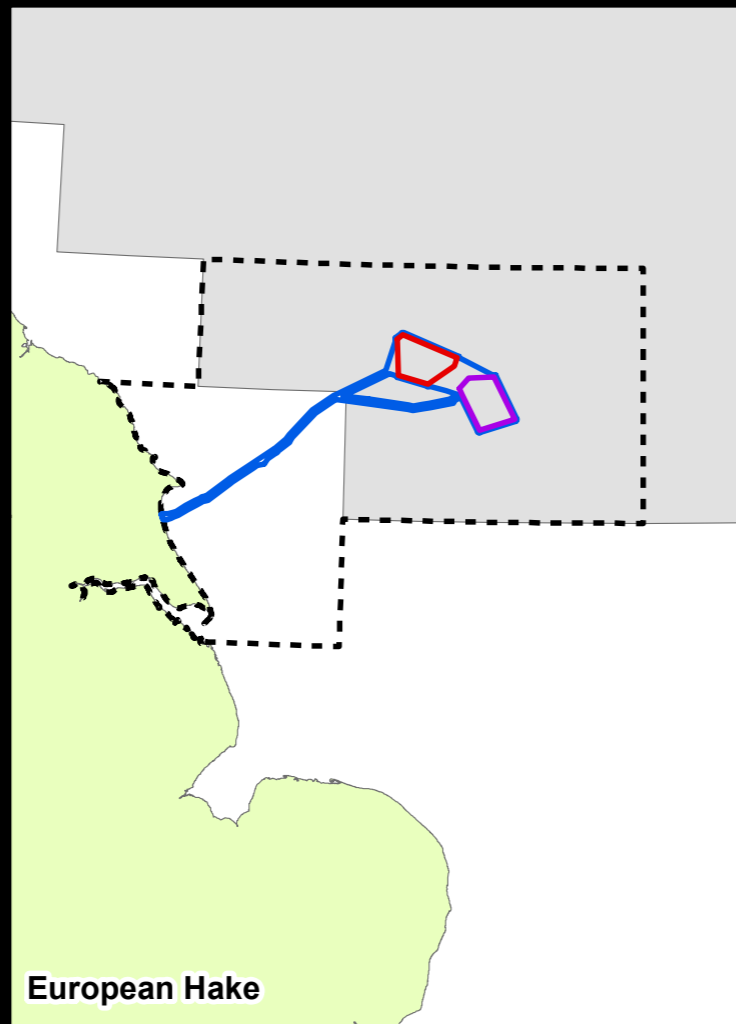
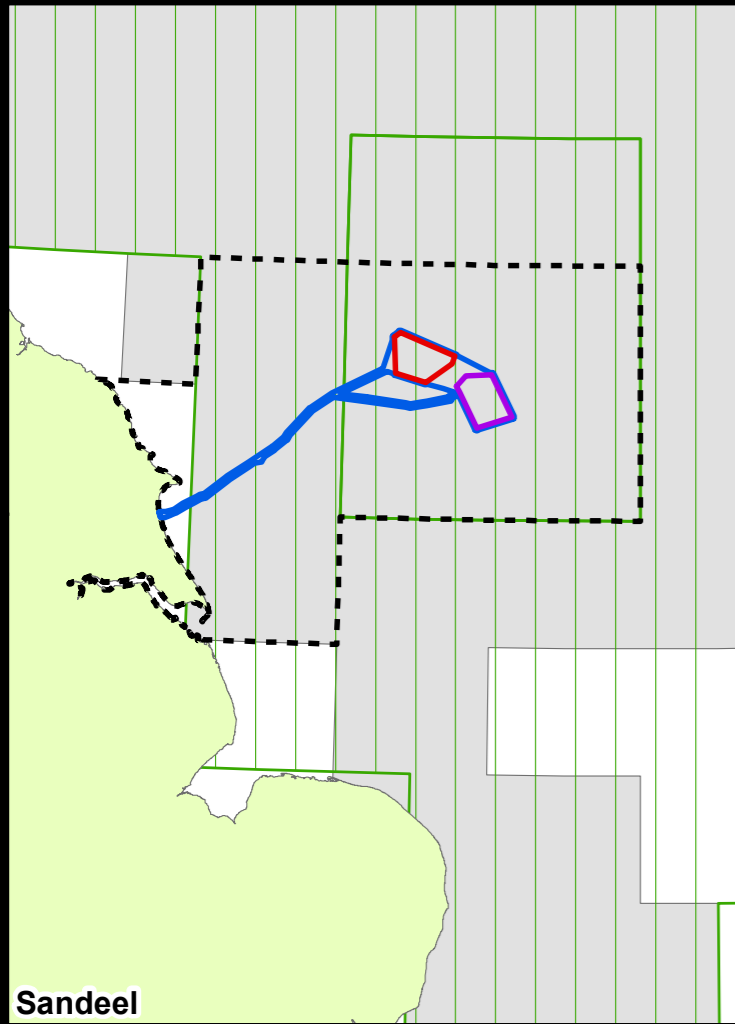
Whiting



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 Contains data from Cefas, Ordnance Survey and
 ICES. [Data Source, Ellis *et al.*, 2012.]

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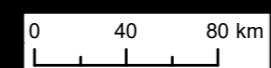




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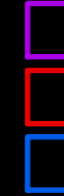
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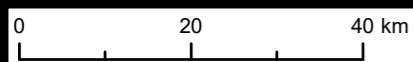
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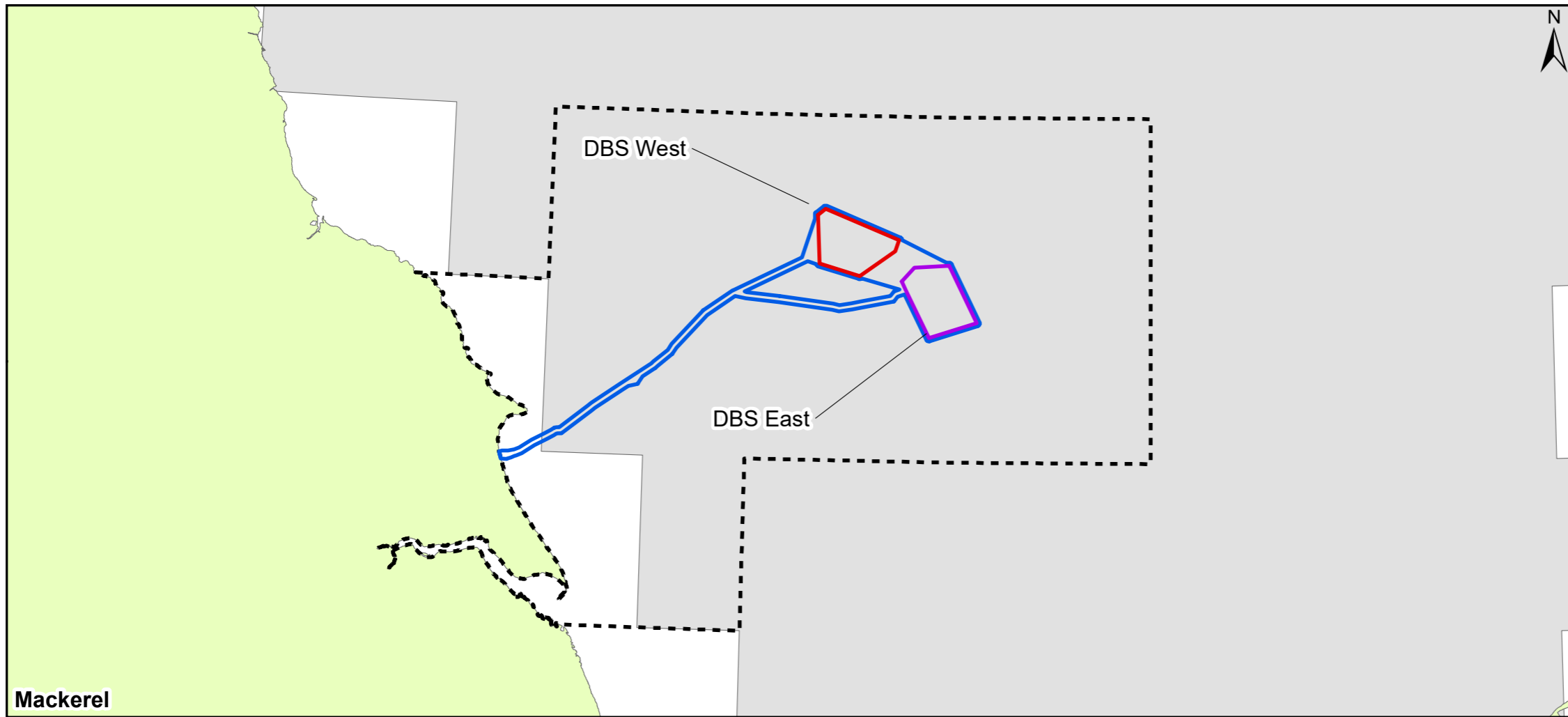
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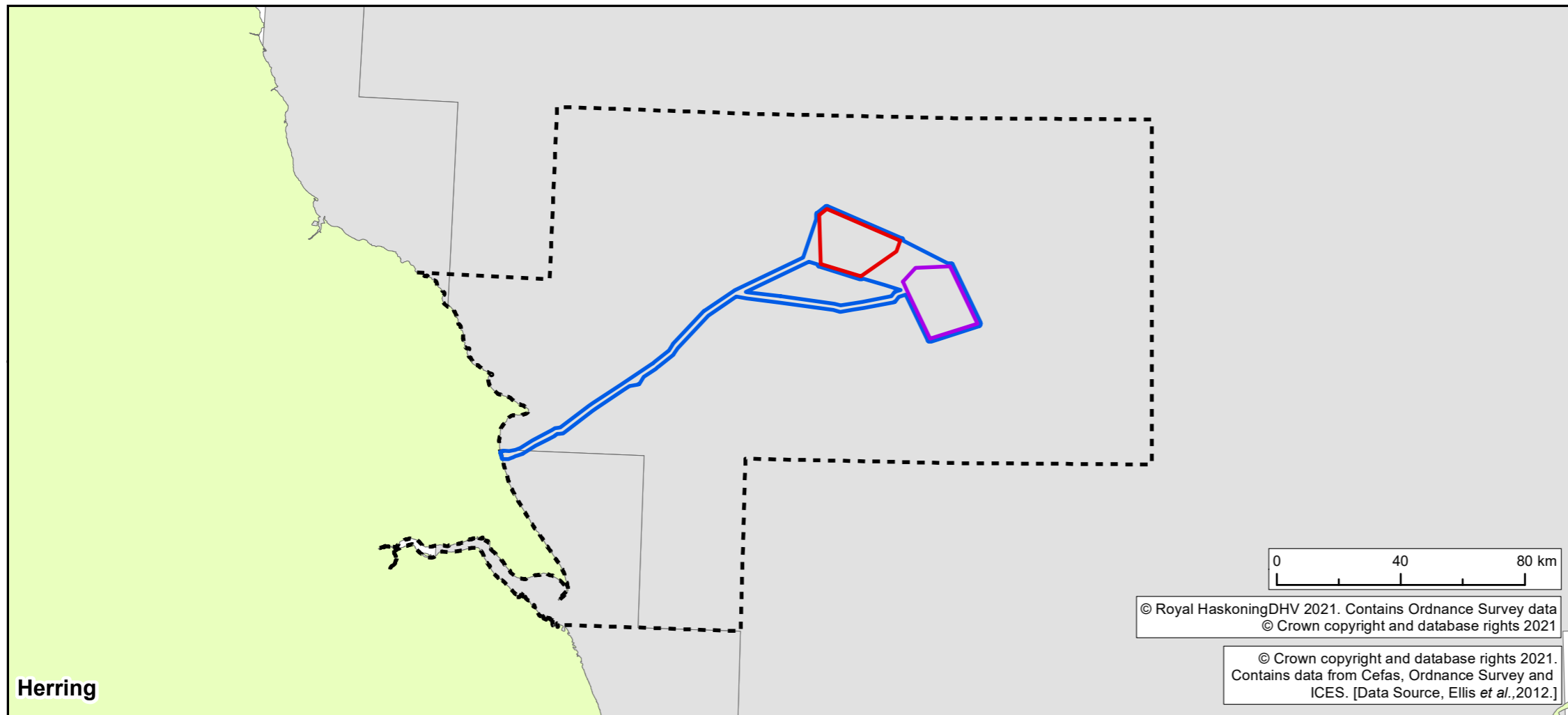
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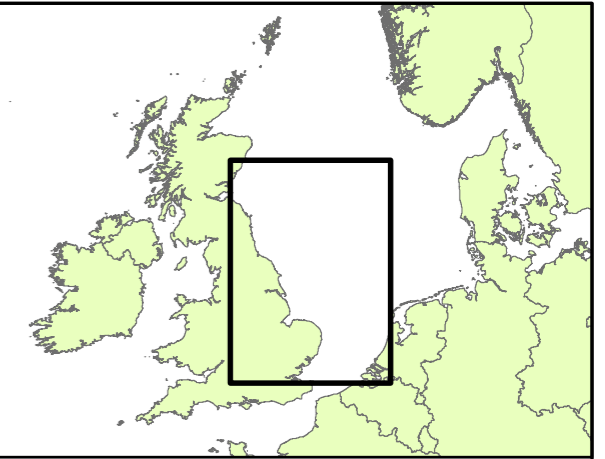
Mackerel



Herring

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Legend:

- DBS East Array Area
- DBS West Array Area
- Offshore Development Area
- Fish and Shellfish Ecology Study Area
- Nursery grounds (Ellis *et al.*, 2012)

S4	PO4	08/01/24	PB2340-MAR-OF-ZZ-DR-Z-0005	AN	IW	TM
S4	P04	33/03/23	PB2340-MAR-OF-ZZ-DR-Z-0005	NB	IW	IW
S3	P03	26/01/23	PB2340-MAR-OF-ZZ-DR-Z-0005	NB	IW	TM
S2	P02	21/04/22	PB2340-MAR-OF-ZZ-DR-Z-0002	BO	IW	TM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:

Spawning and nursery grounds of pelagic species within the
Fish and Shellfish Ecology Study Area
(Source: Coull *et al.*, 1998; Ellis *et al.*, 2012)

Figure: 10-6 Drawing No: PB2340-MAR-OF-ZZ-DR-Z-0005

Co-ordinate system: WGS 1984 UTM Zone 31N Page Size: A3 Scale: 1:1,700,000

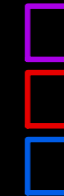
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DBS West

DBS East

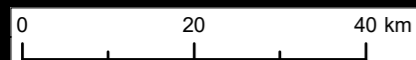


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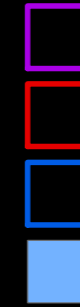
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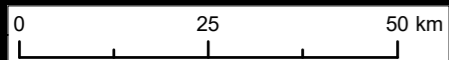
DBS West

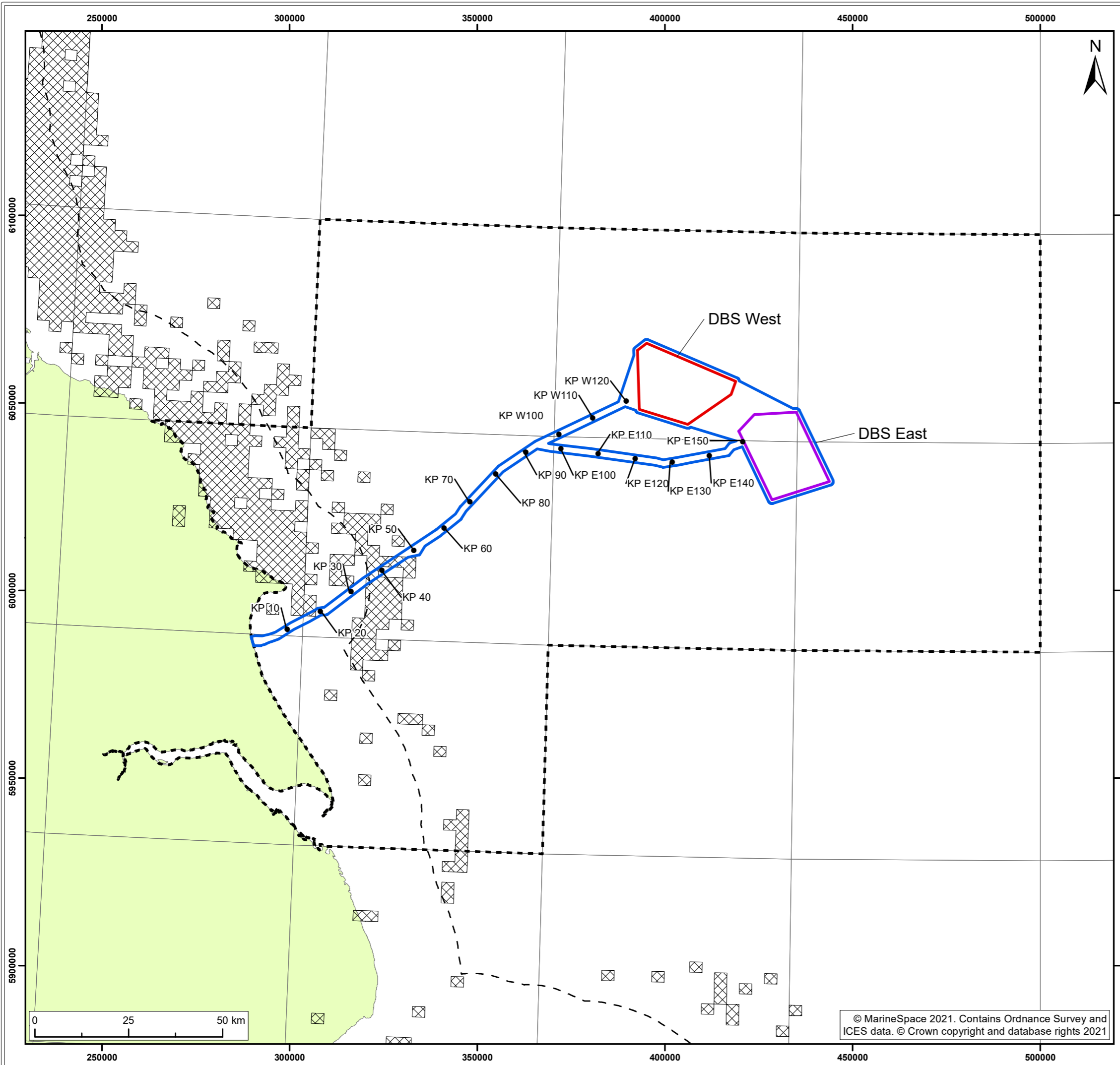
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Legend:

- DBS East Array Area
- DBS West Array Area
- Offshore Development Area
- Cefas Inshore Fishing Activity 2010 - 2012
- Fish and Shellfish Ecology Study Area
- Kilometer Point
- UK 12 nm limit
- ICES Rectangles

S1	P01	09/01/24	PB2340-MAR-OF-ZZ-DR-Z-0101	AN	IW	TM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:
**CEFAS Inshore Fishing Activity (2010 - 2012)
 across the Fish and Shellfish Study Area**

Figure:10-7c Drawing No: PB2340-MAR-OF-ZZ-DR-Z-0101

Co-ordinate system: WGS 1984 UTM Zone 31N Page Size: A3 Scale: 1:1,000,000

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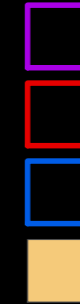
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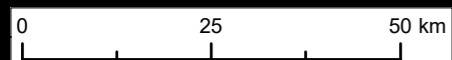
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DBS East



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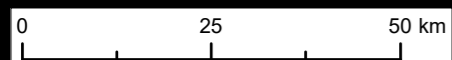
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DBS East



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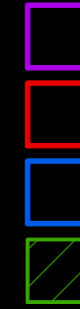
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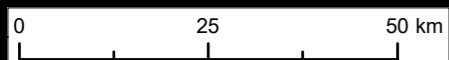
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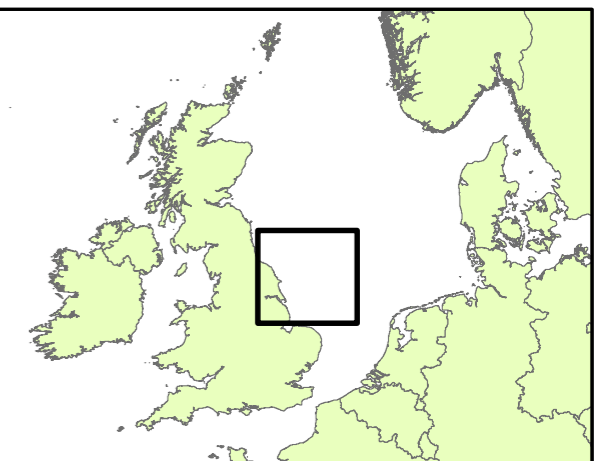
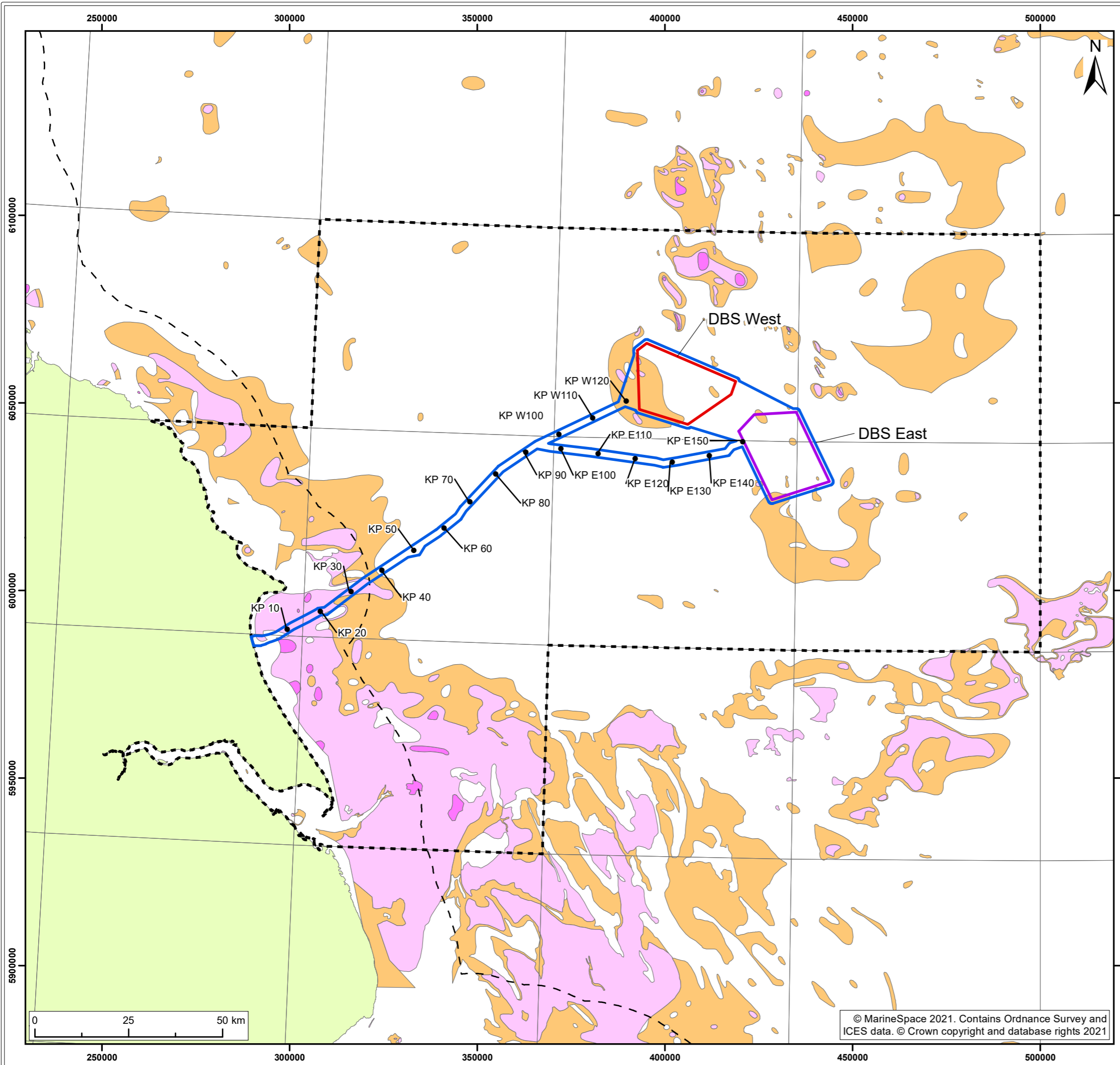
DBS East



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Legend:

- DBS East Array Area
- DBS West Array Area
- Offshore Development Area
- Fish and Shellfish Ecology Study Area
- Kilometer Point
- UK 12 nm limit
- ICES Rectangles

BGS Sediment Type

- Gravel
- sandy Gravel
- Sand

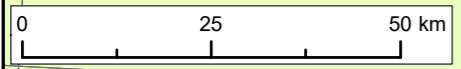
S1	P01	09/01/24	PB2340-MAR-OF-ZZ-DR-Z-0105	AN	IW	TM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:
BGS Sediment Type across the Fish and Shellfish Study Area

Figure:10-7g Drawing No: PB2340-MAR-OF-ZZ-DR-Z-0105

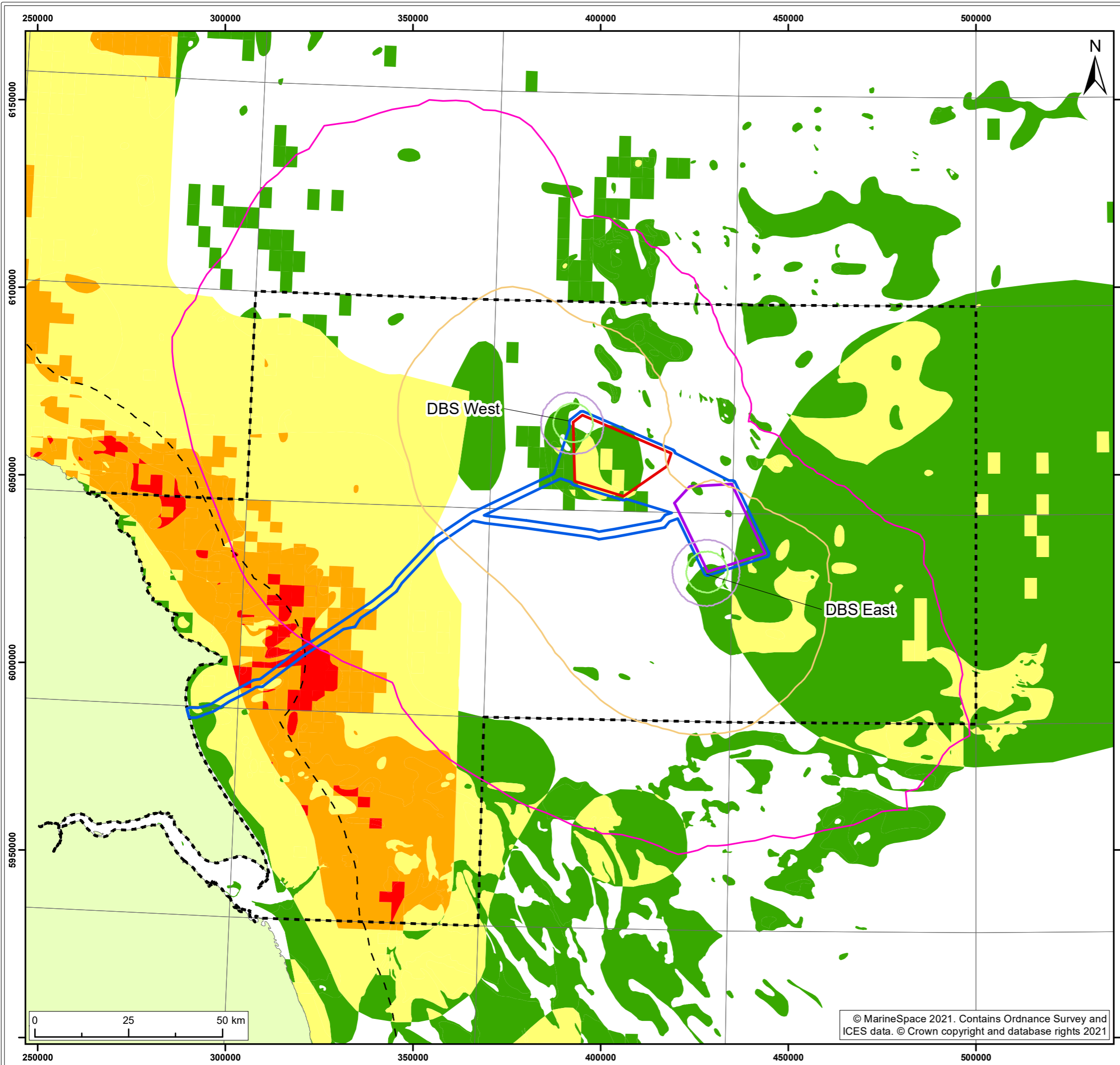
Co-ordinate system: WGS 1984 UTM Zone 31N Page Size: A3 Scale: 1:1,000,000

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Legend:

- DBS East Array
- DBS West Array
- Offshore Development
- Fish and Shellfish Ecology Study
- UK 12 nm limit
- ICES Rectangles

Herring spawning potential

- Low spawning potential
- Medium spawning potential
- High spawning potential
- Very High spawning potential

Disturbance Threshold (based on Hawkins et al., 2014)

- 135 dB re 1 $\mu\text{Pa}^2\text{s}$ SEL_{ss} (Behaviour **Threshold**)

Key UWN Thresholds (Popper et al., 2014)

- 186 dB re 1 $\mu\text{Pa}^2\text{s}$ SEL_{cum} (FTS)
- 203 dB re 1 $\mu\text{Pa}^2\text{s}$ SEL_{cum} (Recoverable **Injury**)
- 207 dB re 1 $\mu\text{Pa}^2\text{s}$ SEL_{cum} (Mortality/Potential Mortal **Injury**)

S4	PO2	09/01/24	PB2340-MAR-OF-ZZ-DR-Z-0009	AN	IW	TM
S1	P01	22/03/23	PB2340-MAR-OF-ZZ-DR-Z-0009	NB	IW	TM
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title: Underwater noise impacts from monopiling operations at Dogger Bank South West and Dogger Bank South East as a precautionary worst case for the development of one project in isolation, relative to potential spawning habitat of Atlantic herring from Reach et al., (2013)

Figure: 10-8 Drawing No: PB2340-MAR-OF-ZZ-DR-Z-0009

Co-ordinate system: WGS 1984 UTM Zone 31N Page Size: A3 Scale: 1:1,000,000

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DBS West

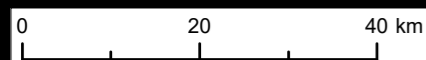
DBS East

Offshore
Platform

Key UWN Thresholds (Popper et al., 2014)

- 186 dB re 1 $\mu\text{Pa}^2\text{s SEL}_{\text{Lun}}$ (TTS)
- 203 dB re 1 $\mu\text{Pa}^2\text{s SEL}_{\text{Lun}}$ (Recoverable Injury)
- 207 dB re 1 $\mu\text{Pa}^2\text{s SEL}_{\text{Lun}}$ (Mortality/Potential Mortal Injury)

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DBS West

DBS East

Offshore
Platform



207 dB re 1 $\mu\text{Pa}^2\text{s SEL}_{cum}$ (Mortality/Potential Mortal Injury)

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XX P0X DD/MM/YY -----

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