

MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Environmental Statement

Volume 2, Figures - Part 3 of 5



~~December~~ June 2025⁴

Rev: F02~~ES01~~

MOR001-FLO-CON-ENV-FIG-0004

MRCNS-J3303-RPS-10161

PINS Reference: EN020028

APFP Regulations: 5(2)(a)

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F2.10//F02

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Version	Purpose of document	Approved by	Date	Approved by	Date
ES	For issue	AS	September 2024	IM	September 2024
ES01	S51 advice update	AS	December 2024	IM	December 2024
F02	Deadline 2	HK	June 2025	IM	June 2025

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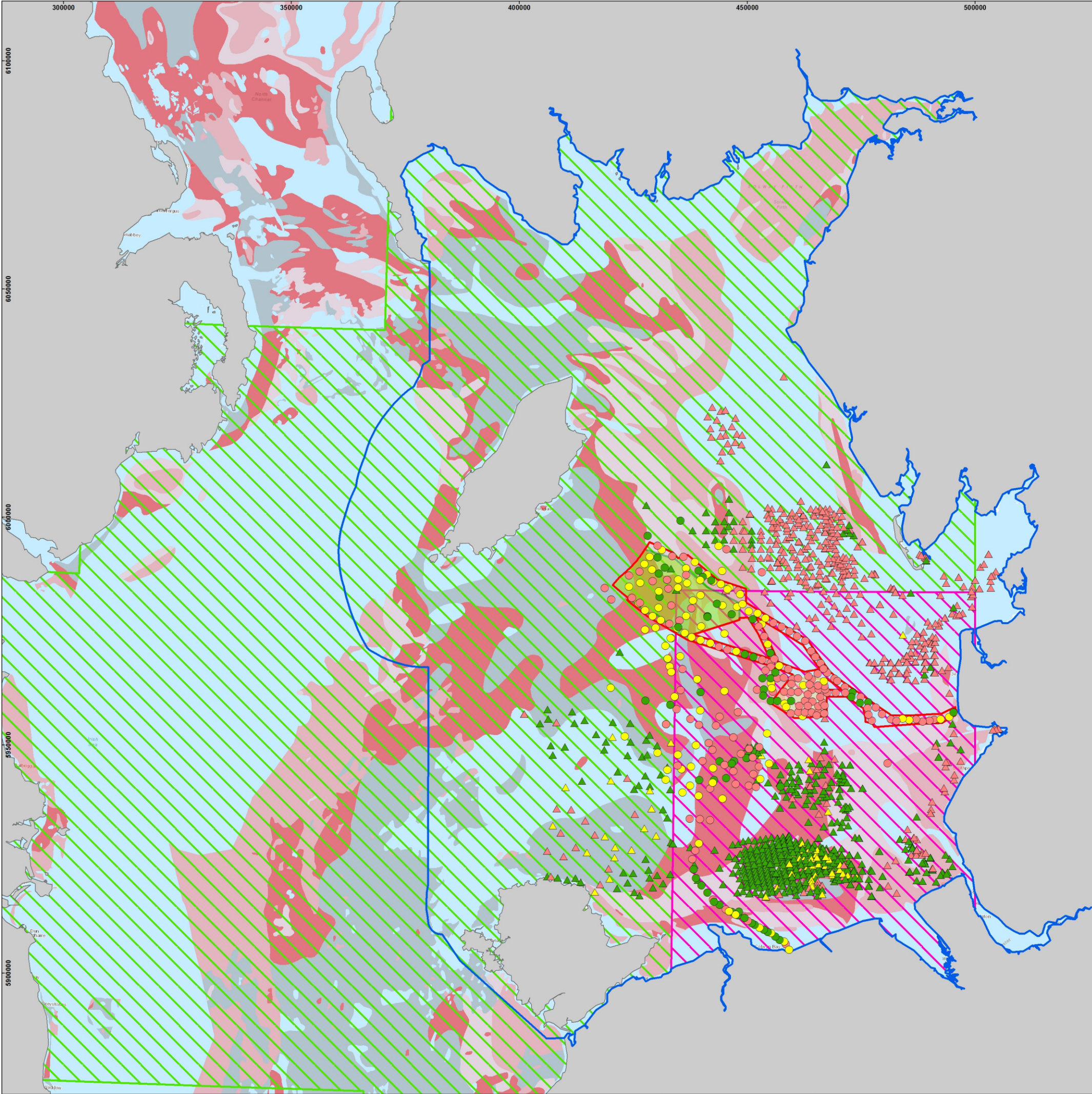
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Prepared by:

RPS

Prepared for:

**Morgan Offshore Wind Limited,
Morecambe Offshore Windfarm Ltd**



LEGEND

Morgan and Morecambe

Offshore Windfarms:
Transmission Assets Order
Limits – Offshore

Morgan Offshore Wind
Project: Generation Assets

Morecambe Offshore
Windfarm: Generation
Assets

Transmission Assets Fish
and Shellfish Ecology
Study Area

Spawning Ground - High
Intensity (Ellis *et al.*, 2012)

Spawning Ground - Low
Intensity (Ellis *et al.*, 2012)

Habitat Suitability (Latto *et al.*, 2013)

● Preferred

● Marginal

● Unsuitable

Habitat Suitability (Other
Survey)

▲ Preferred

▲ Marginal

▲ Unsuitable

EMODnet Seabed Substrates
Folk 16 Classification:

Sandeel Preferred Habitat

311. Gravelly Sand

212. (Gravelly) Sand

211. Sand

Sandeel Marginal Habitat

321. Sandy Gravel



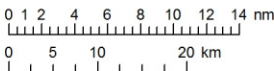
Figure 3.5

Drawing Number:

EOR0823-ES-FAS-E005-01

Project Name:
**MORGAN AND MORECAMBE OFFSHORE
WIND FARMS: TRANSMISSION ASSETS**

Drawing Title:
**REGIONAL SANDEEL SUBSTRATE SUITABILITY CLASSIFICATION (LATTO ET AL.,
2013)**

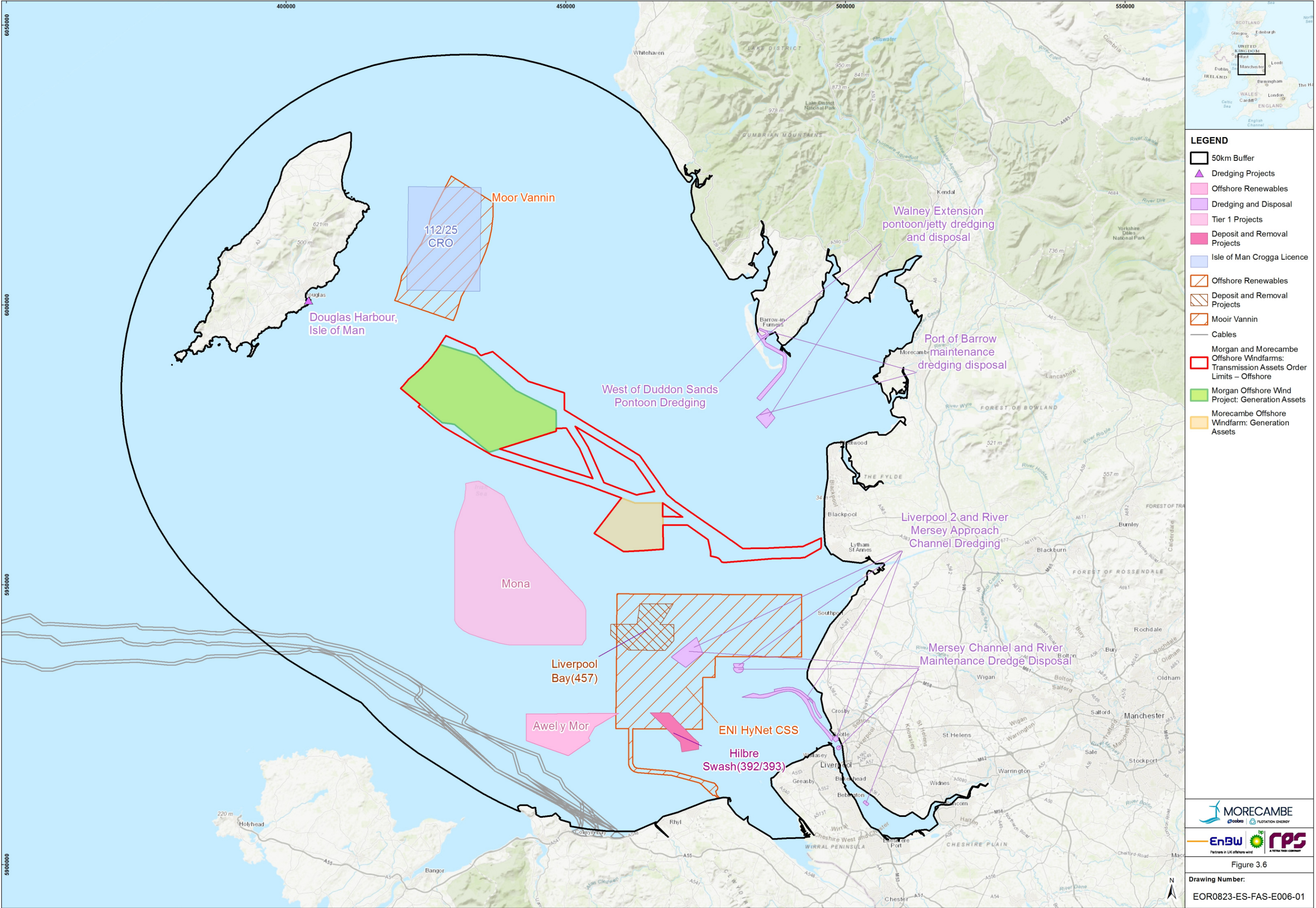


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Projection: ETRS 1989 UTM Zone 30N
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Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov,
MarineRegions.org, Marine Scotland, Natural Resources Wales,
CEFAS, EMODnet

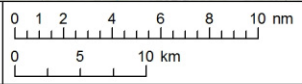
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO,
USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan,
METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

VER	DATE	DETAILS	BY	CHECK
00	27/08/24	Initial Issue	MJ	TH
01	17/09/24	Final	MJ	BM



Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
OTHER PROJECTS, PLANS AND ACTIVITIES SCREENED INTO THE CUMULATIVE EFFECTS ASSESSMENT.



Geodetic Information:
Datum: ETRS 1989
Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:575,000

Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov, MarineRegions.org, Marine Scotland, Natural Resources Wales, CEFAS, EMODnet

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

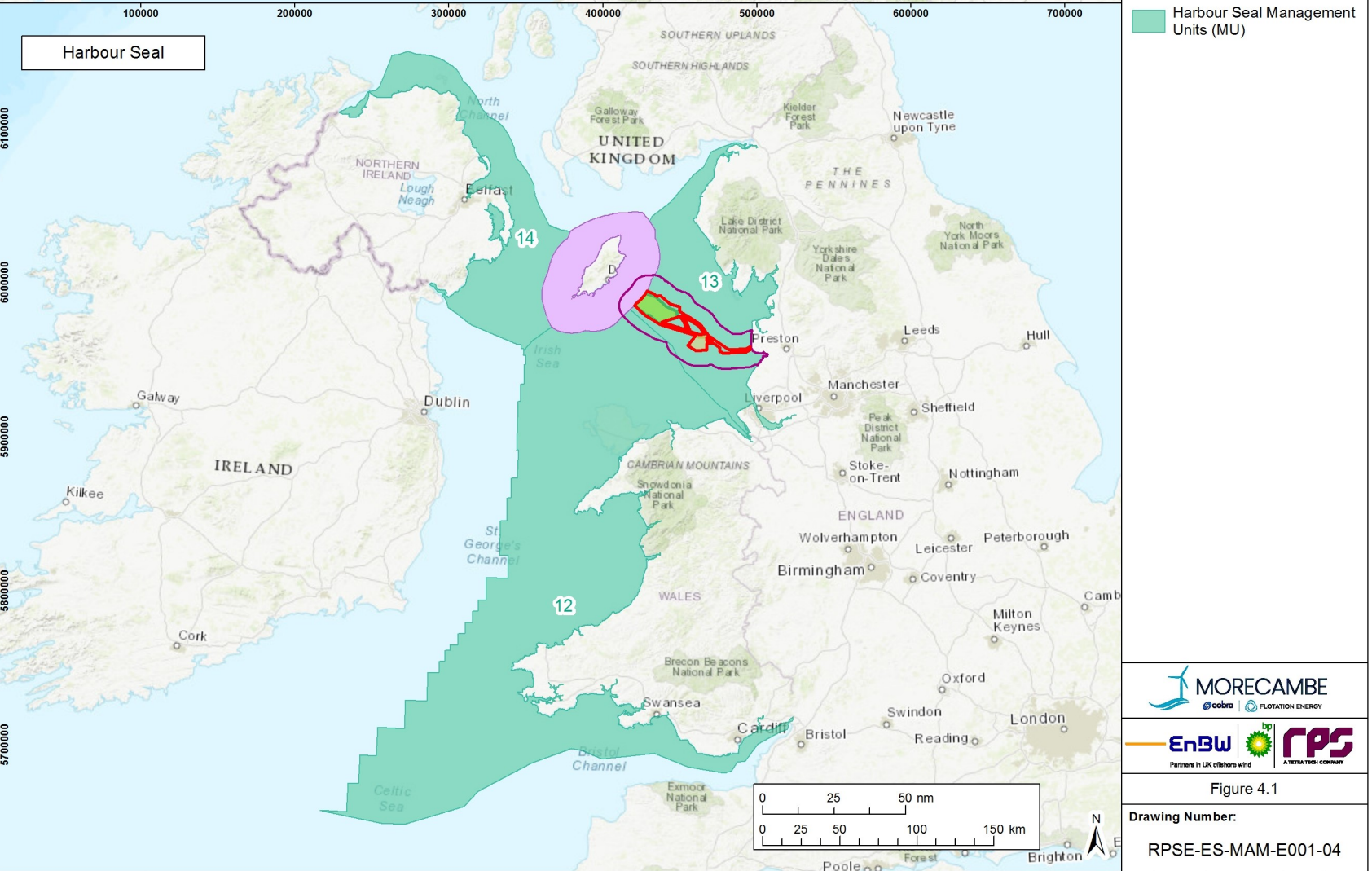
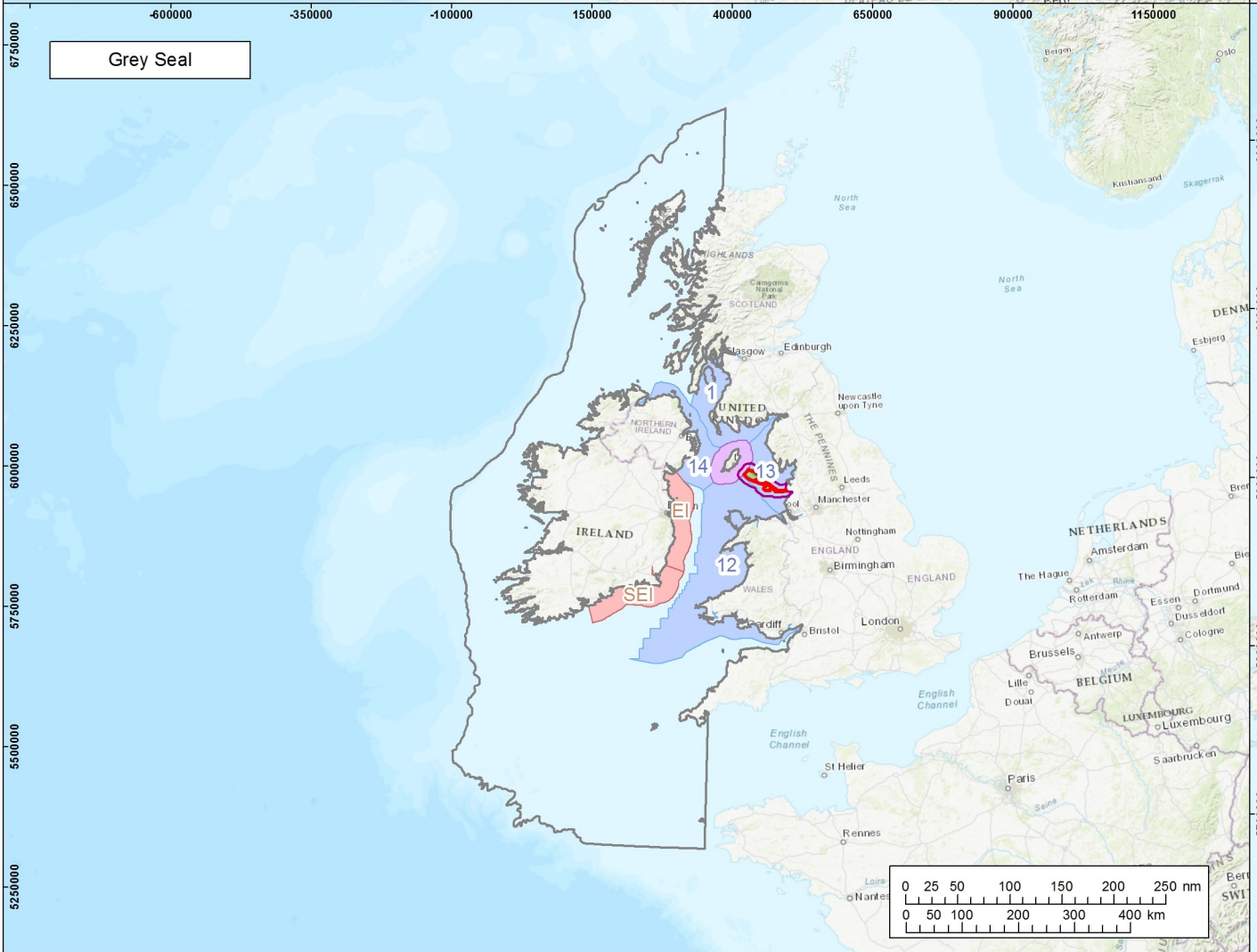
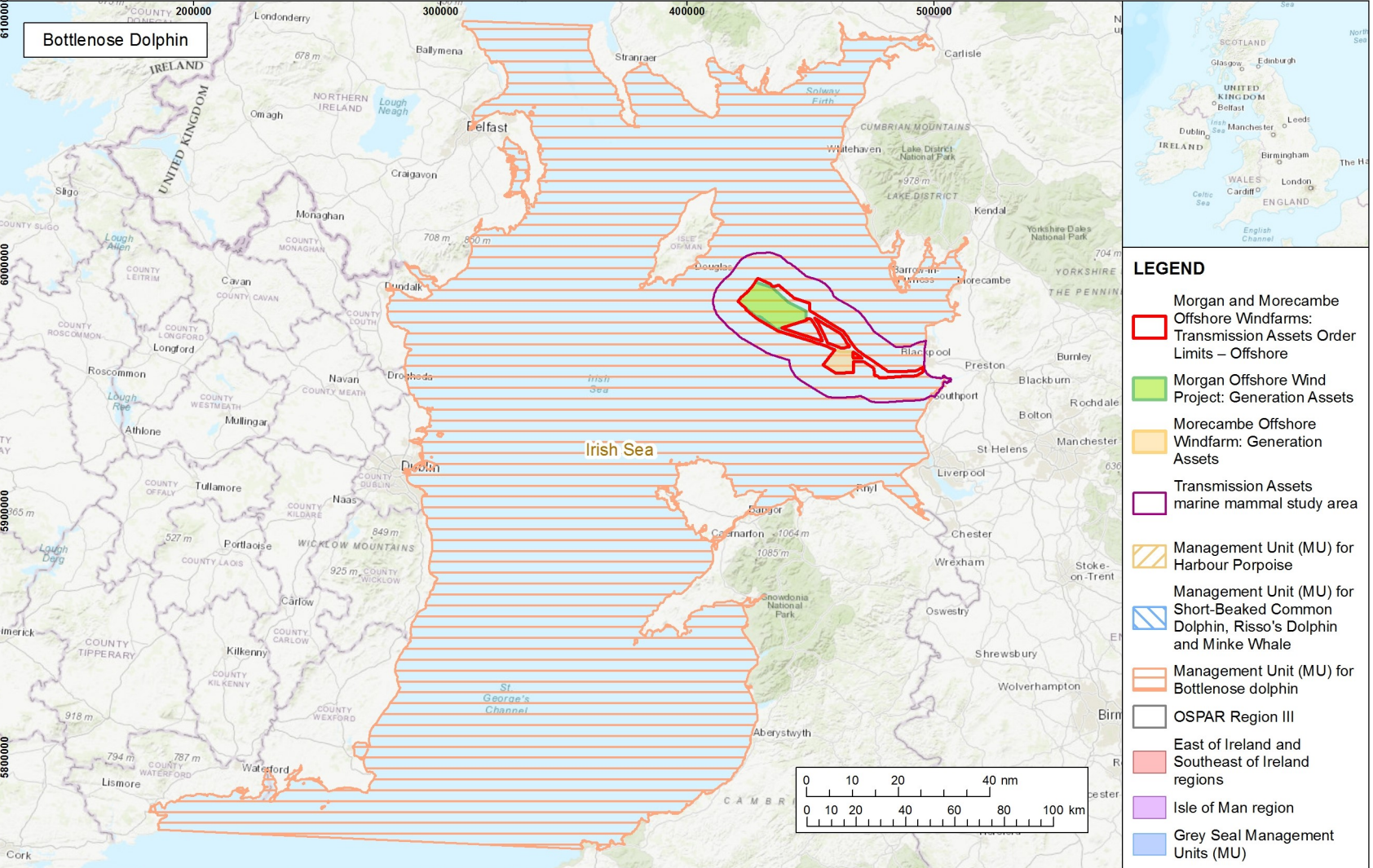
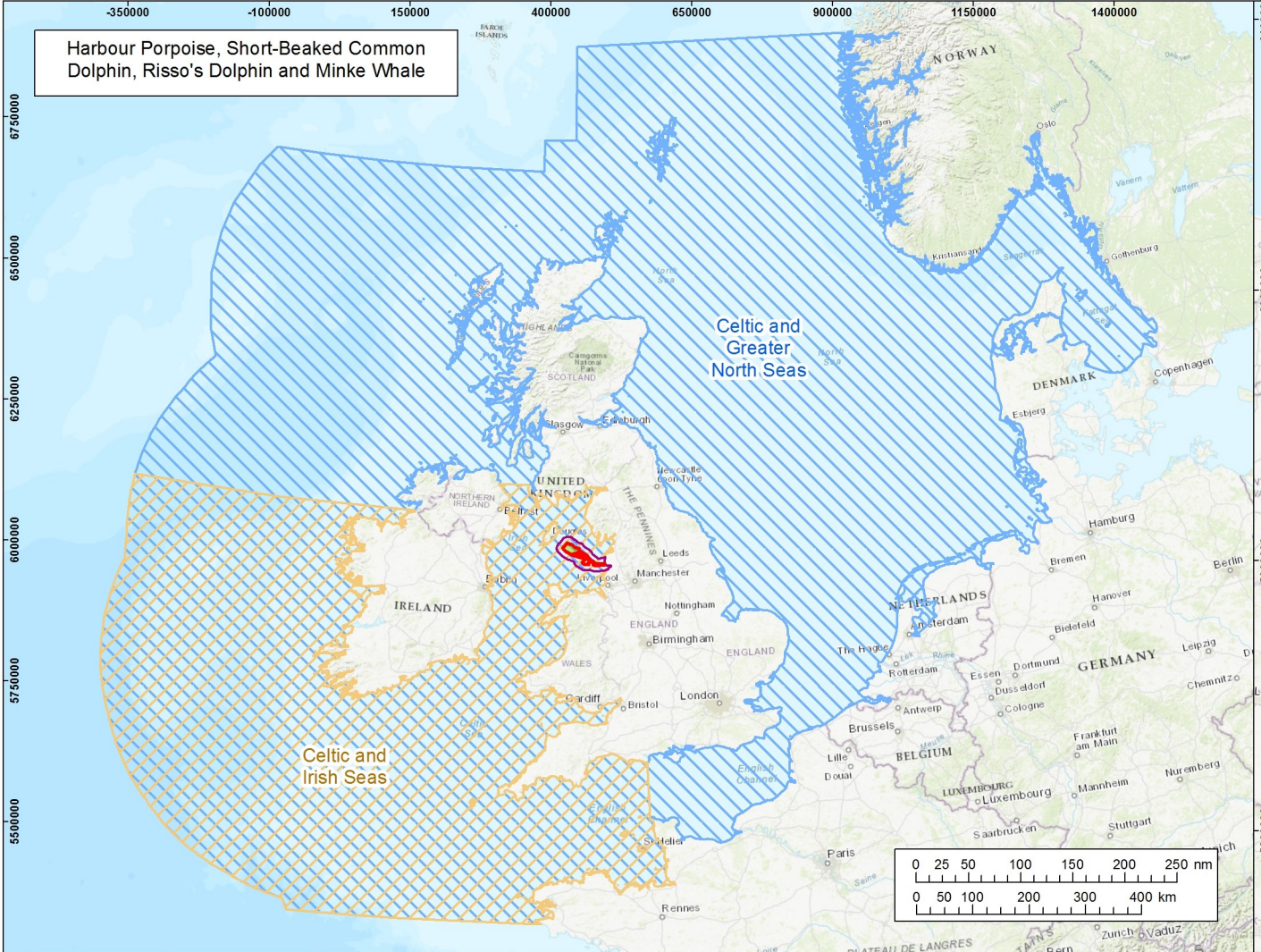
- LEGEND**
- 50km Buffer
 - Dredging Projects
 - Offshore Renewables
 - Dredging and Disposal
 - Tier 1 Projects
 - Deposit and Removal Projects
 - Isle of Man Crogga Licence
 - Offshore Renewables
 - Deposit and Removal Projects
 - Moor Vannin
 - Cables
 - Morgan and Morecambe Offshore Windfarms:
 - Transmission Assets Order Limits – Offshore
 - Morgan Offshore Wind Project: Generation Assets
 - Morecambe Offshore Windfarm: Generation Assets



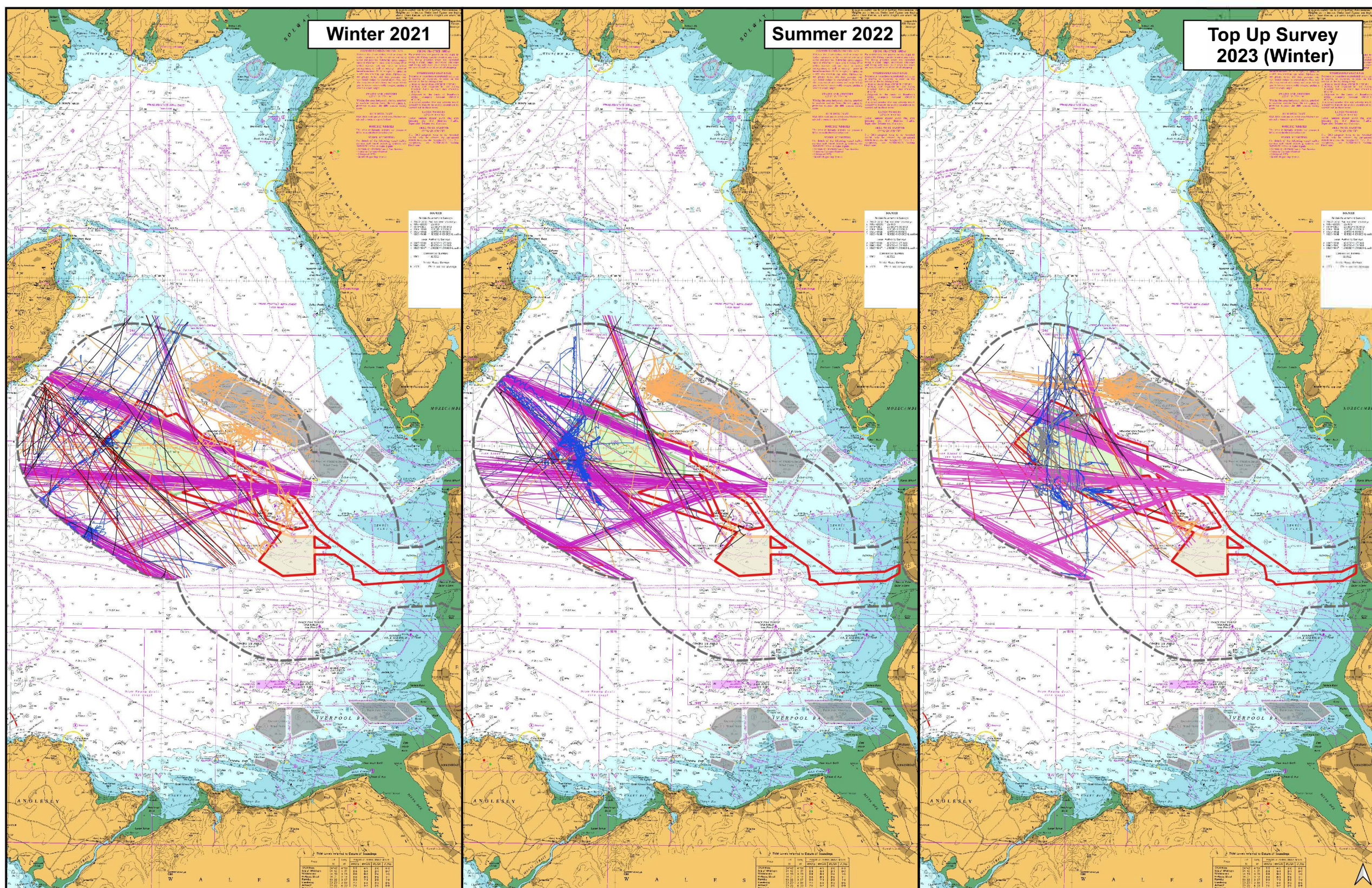
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Drawing Number:
EOR0823-ES-FAS-E006-01

VER	DATE	DETAILS	BY	CHECK
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01	17/09/24	Final	MJ	BM



- LEGEND**
- Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits – Offshore
 - Morgan Offshore Wind Project: Generation Assets
 - Morecambe Offshore Windfarm: Generation Assets
 - Transmission Assets marine mammal study area
 - Management Unit (MU) for Harbour Porpoise
 - Management Unit (MU) for Short-Beaked Common Dolphin, Risso's Dolphin and Minke Whale
 - Management Unit (MU) for Bottlenose dolphin
 - OSPAR Region III
 - East of Ireland and Southeast of Ireland regions
 - Isle of Man region
 - Grey Seal Management Units (MU)
 - Harbour Seal Management Units (MU)



LEGEND

- Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits - Offshore
- Morgan Offshore Wind Project: Generation Assets
- Morecambe Offshore Windfarm: Generation Assets
- Existing Offshore Windfarms
- Shipping and Navigation Study Area

Vessel Tracks

- Cargo
- Tanker
- Passenger
- Fishing
- Recreational
- Tug and Service



Figure 4.2

Drawing Number:
NASH-MMTA-SN-036-00

Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
Morgan Vessel Traffic Surveys

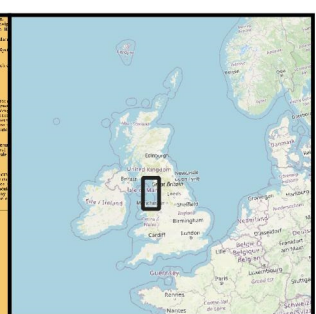
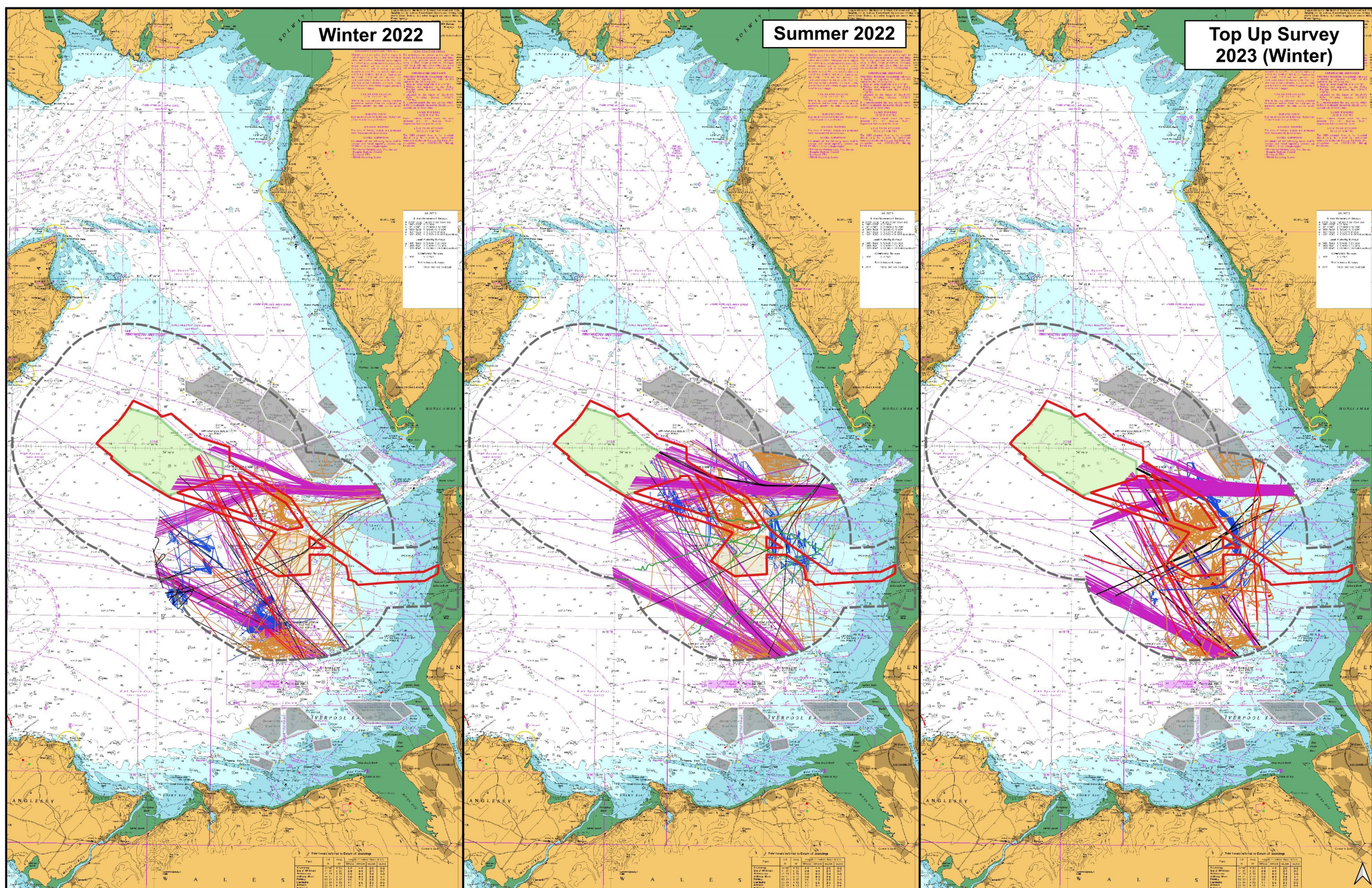
0 2 4 nm
0 5 10 km

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Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:900,000

Data Sources: Admiralty Charts 1826 & 1981;
OWFs from The Crown Estate; NASH Maritime
Traffic Survey Data 2021-2023

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VER	DATE	DETAILS	BY	CHECK
00	18/09/24	FINAL	RM	AR
01	02/12/24	S51 update	RPS	RPS



LEGEND

- Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits - Offshore
- Morgan Offshore Wind Project: Generation Assets
- Morecambe Offshore Windfarm: Generation Assets
- Existing Offshore Windfarms
- Shipping and Navigation Study Area

Vessel Tracks

- Cargo
- Tanker
- Passenger
- Fishing
- Recreational
- Tug & Service



Figure 4.3

Drawing Number:
NASH-MMTA-SN-039-00

Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
Morecambe Vessel Traffic Surveys

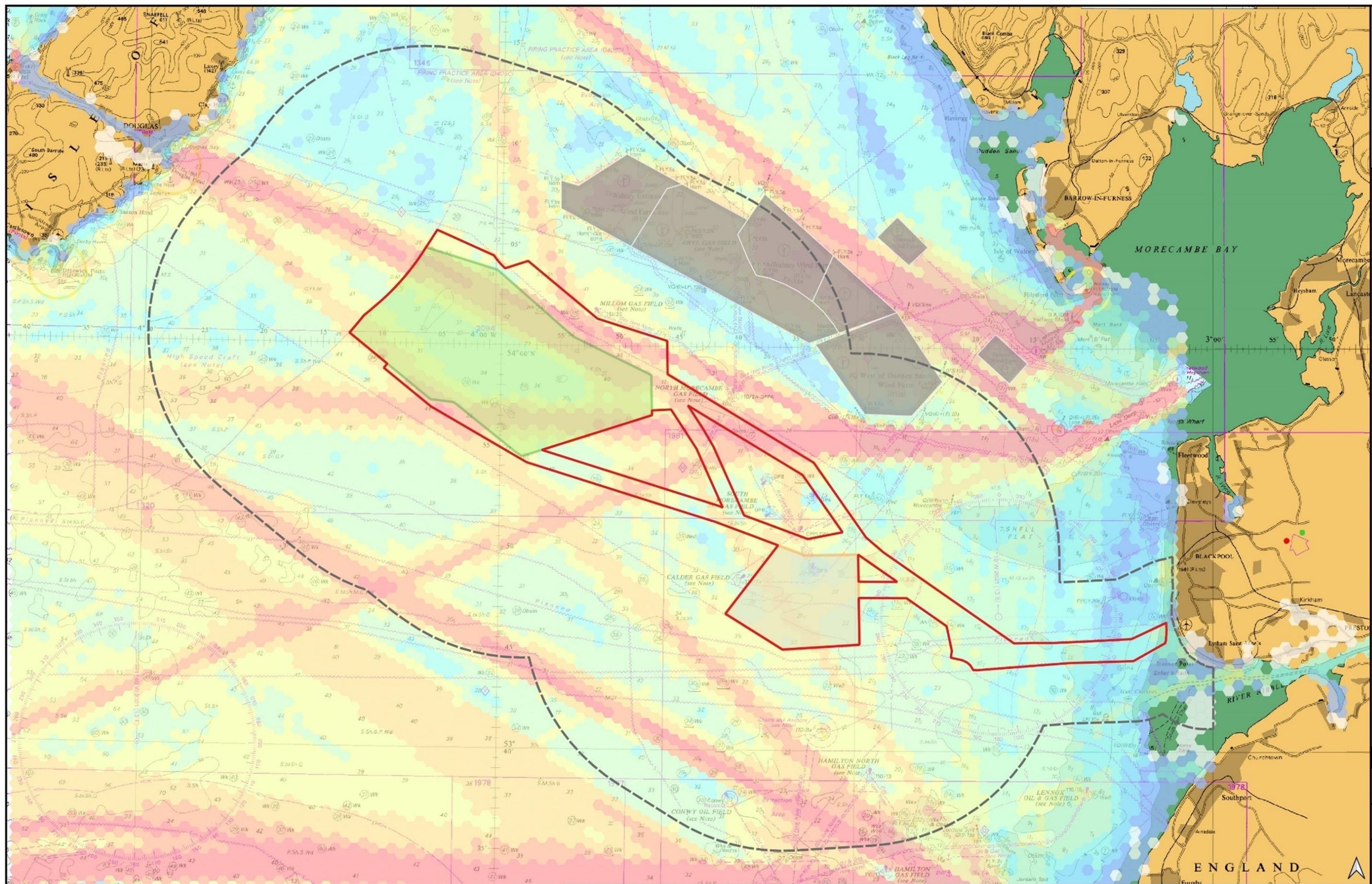
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0 5 10 km

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Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm:1:900,000

Data Sources: Admiralty Charts 1826 & 1981;
DWFs from The Crown Estate; NASH Maritime
Traffic Survey Data 2022-2023

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VER	DATE	DETAILS	BY	CHECK
01	18/09/24	FINAL	RA	AR
02	02/12/24	S51 update	RPS	RPS



LEGEND

- Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits - Offshore
- Morgan Offshore Wind Project: Generation Assets
- Morecambe Offshore Windfarm: Generation Assets
- Existing Offshore Windfarms
- Shipping and Navigation Study Area

Transits / Year

- <1
- 1 - 10
- 10 - 20
- 20 - 40
- 40 - 80
- 80 - 160
- 160 - 320
- 320 - 640
- > 640

Figure 4.4



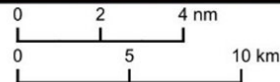
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Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
Vessel Traffic Density (2022)

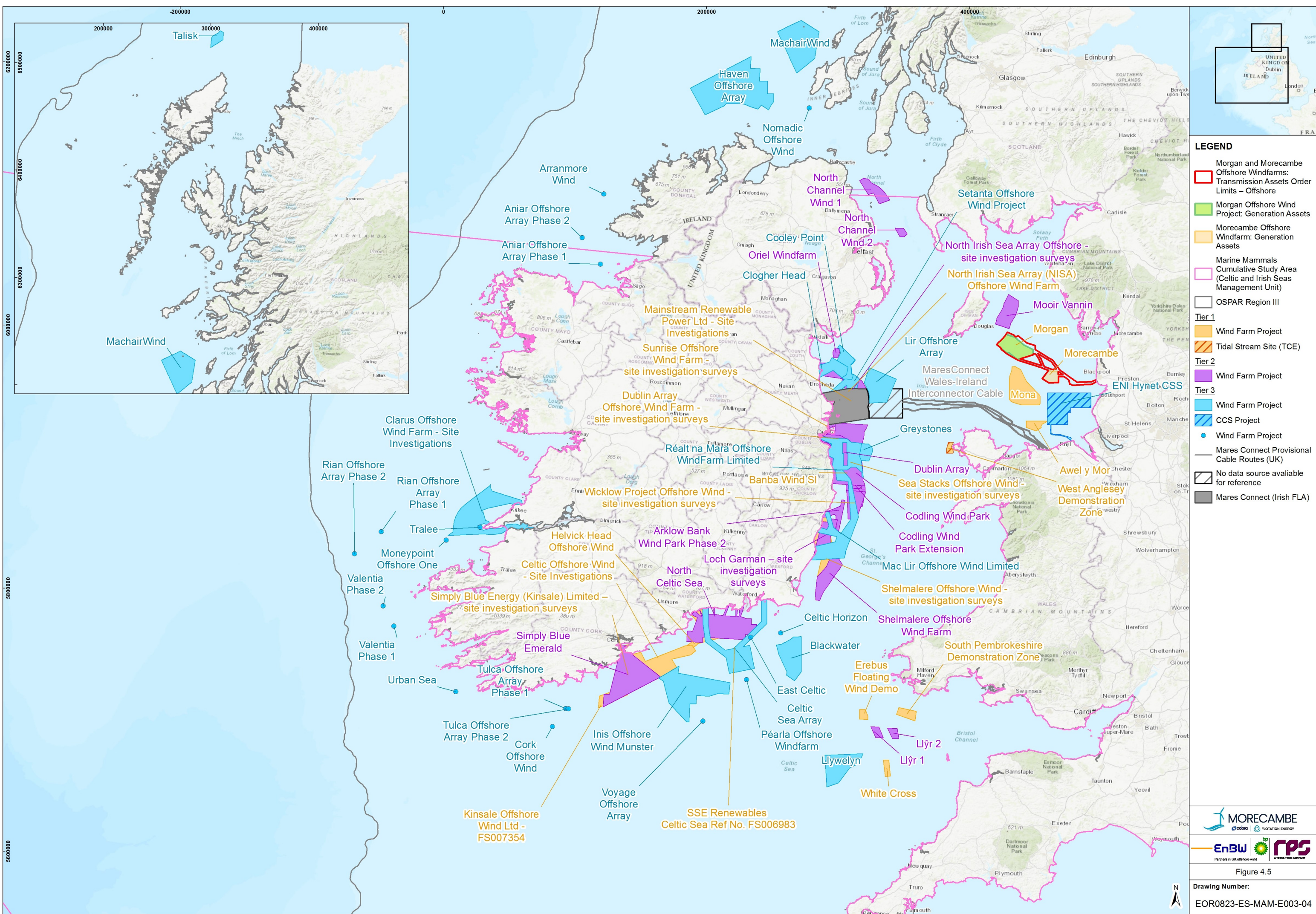


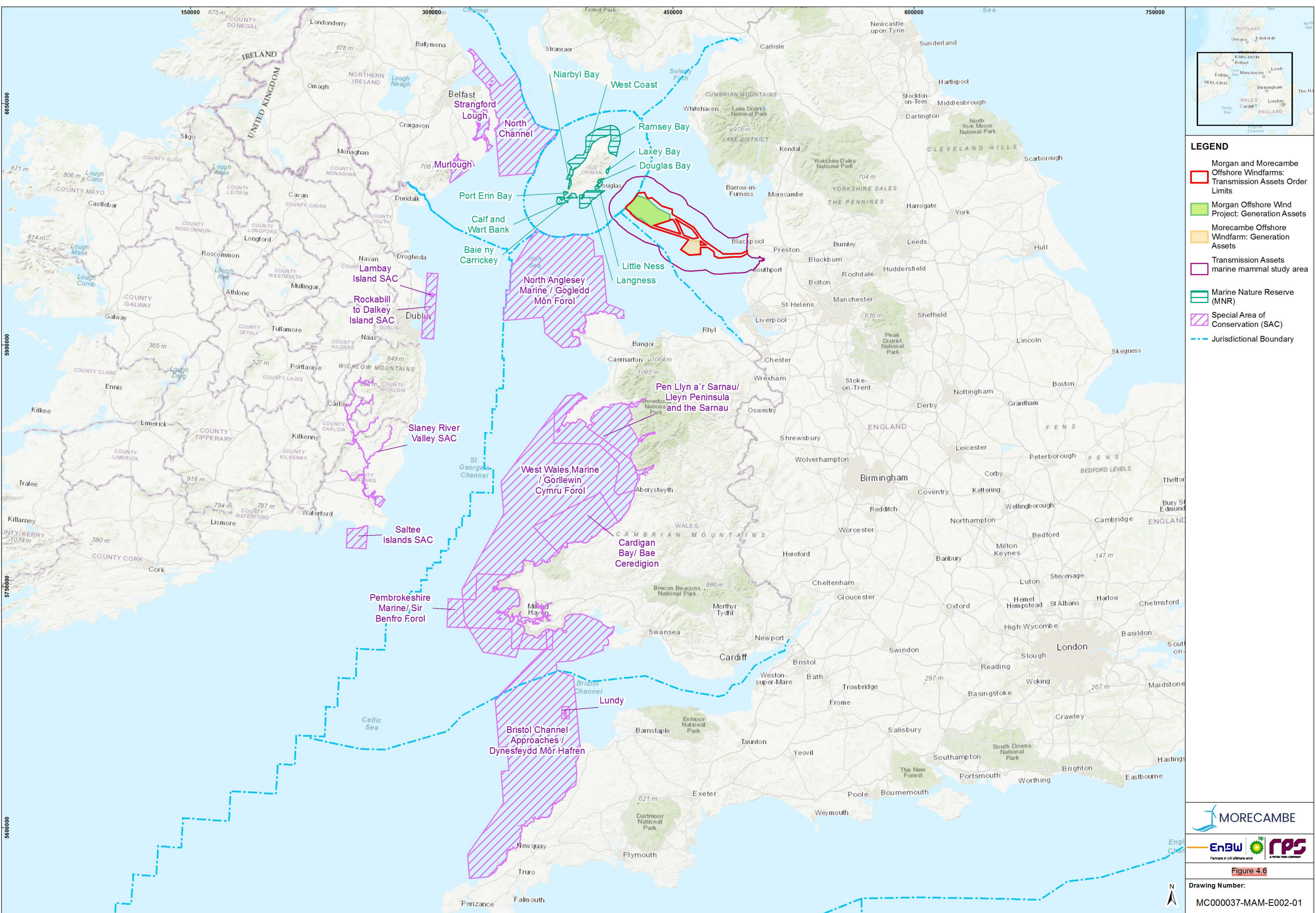
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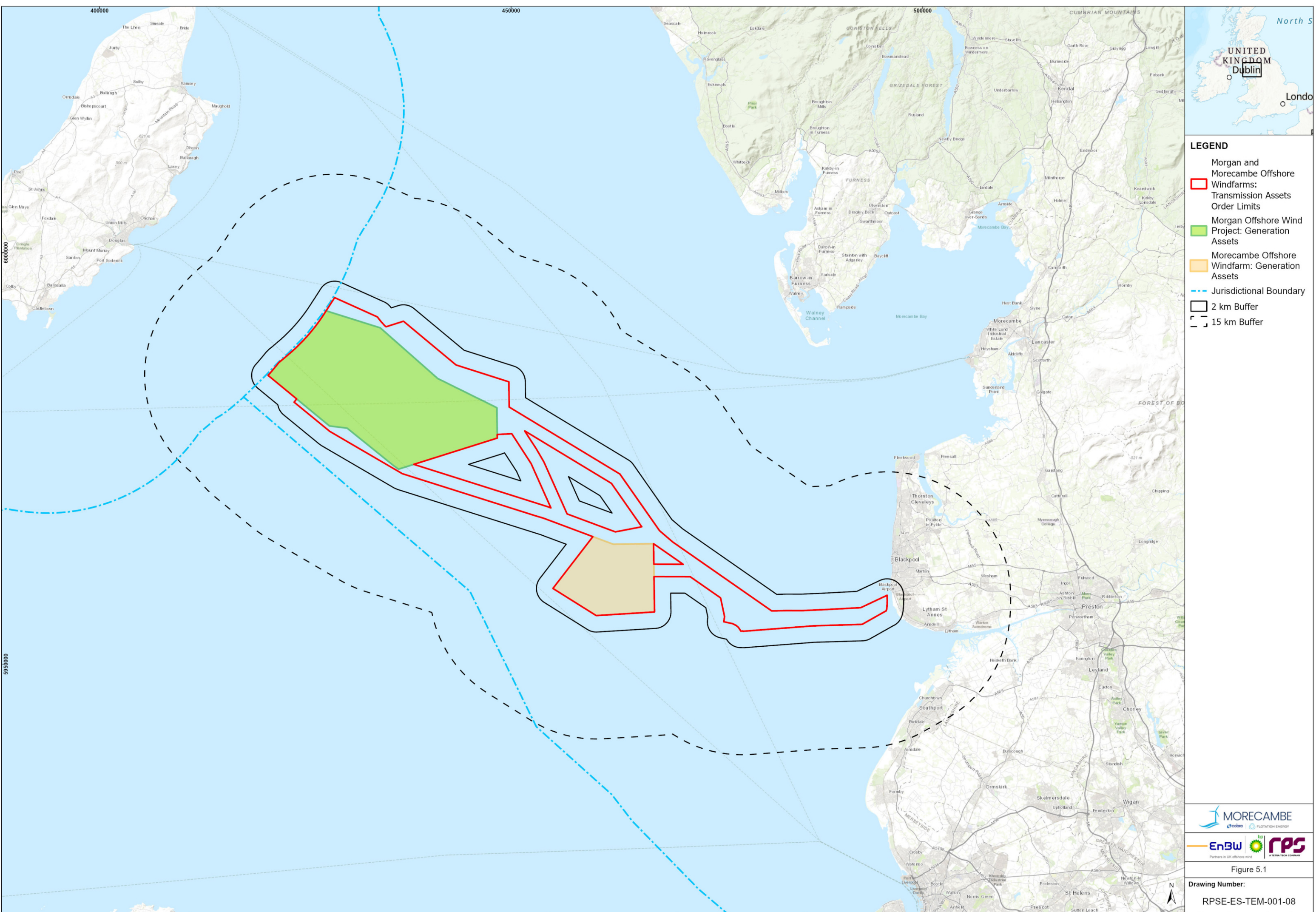
Data Sources: Admiralty Charts 1826 & 1981;
OWFs from The Crown Estate; Marine Traffic 2022
AIS Data

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contributors.

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V2	01/07/24	FINAL	RM	AR

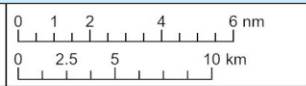






Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
Figure 5.1: Study areas associated with impacts relevant to offshore ornithological receptors with the Transmission Assets



Geodetic Information:
Datum: ETRS 1989
Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:390,625

Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov, MarineRegions.org

Service Layer Credits: World Topographic Map: Esri UK, Esri, TomTom, Garmin, FAO, NOAA, USGS
World Topographic Map: DoBH, OS, Esri, HE, Garmin, USGS, NGA
World Hillshade: Esri, USGS

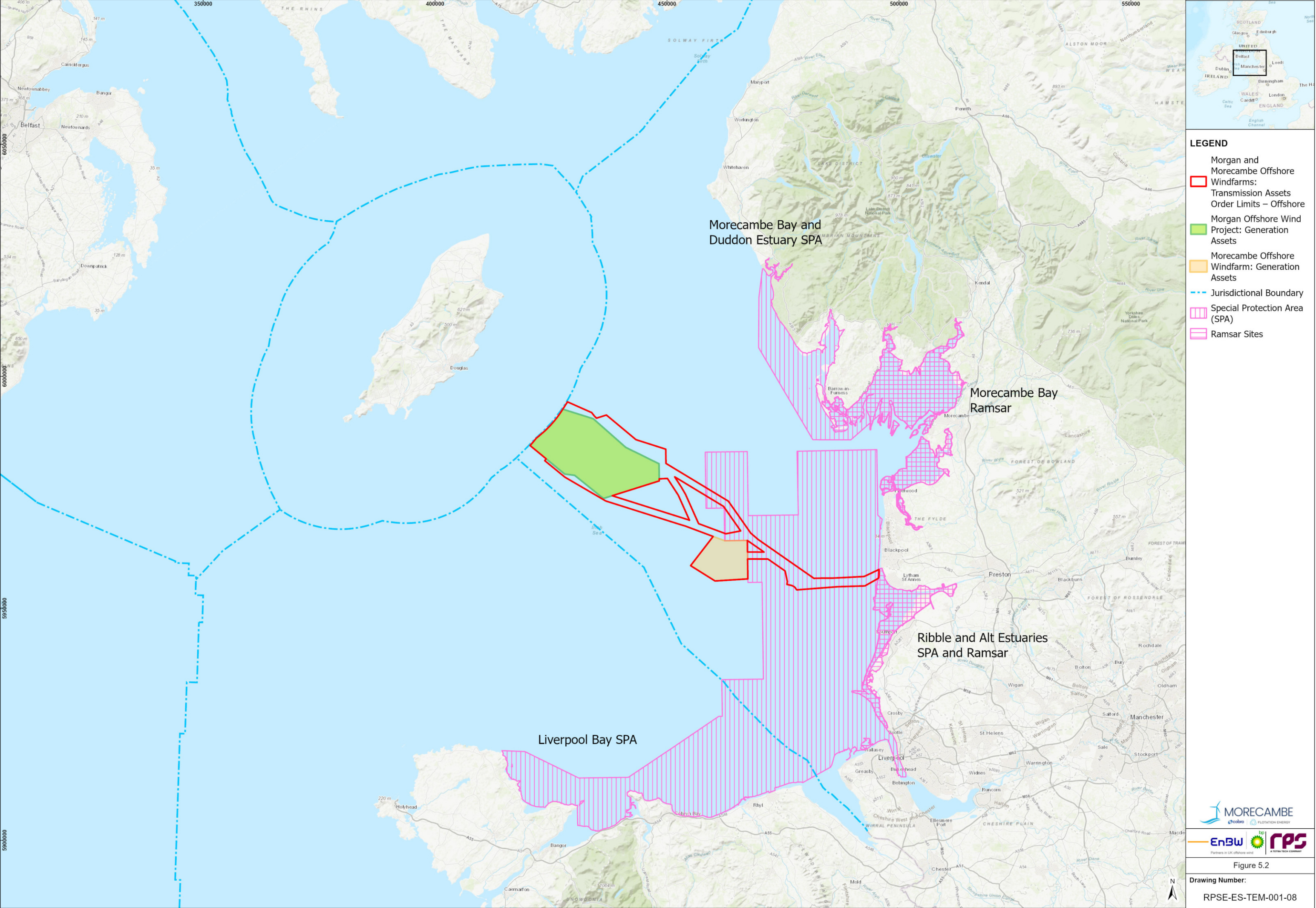
VER	DATE	DETAILS	BY	CHECK
00	16/04/24	First Issue	TEDE	HAZ
01	13/09/24	Final Issue	JOSW	WIGE

LEGEND

- Morgan and Morecambe Offshore Windfarms:
- Transmission Assets
- Order Limits
- Morgan Offshore Wind Project: Generation Assets
- Morecambe Offshore Windfarm: Generation Assets
- Jurisdictional Boundary
- 2 km Buffer
- 15 km Buffer

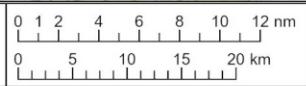
MORECAMBE
EnBW
bp
RPS
Partners in UK offshore wind
A TETRA TECH COMPANY

Figure 5.1
Drawing Number:
RPSE-ES-TEM-001-08



Project Name:
**MORGAN AND MORECAMBE OFFSHORE
WIND FARMS: TRANSMISSION ASSETS**

Drawing Title:
Figure 5.2: SPAs & Ramsar sites of relevance to the Transmission Assets
assessment



Geodetic Information:
Datum: ETRS 1989
Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:694,444

Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov,
MarineRegions.org

Service Layer Credits: World Topographic Map: Esri, HERE, Garmin, FAO, NOAA, USGS
World Topographic Map: DoBH, OS, Esri, HERE, Garmin, USGS, NGA

VER	DATE	DETAILS	BY	CHECK
01	16/04/24	Final Issue	TEDE	HAZ
01	13/09/24	Final Issue	JOSW	WIGE

- LEGEND**
- Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits – Offshore
 - Morgan Offshore Wind Project: Generation Assets
 - Morecambe Offshore Windfarm: Generation Assets
 - Jurisdictional Boundary
 - Special Protection Area (SPA)
 - Ramsar Sites

MORECAMBE
Partners in UK offshore wind

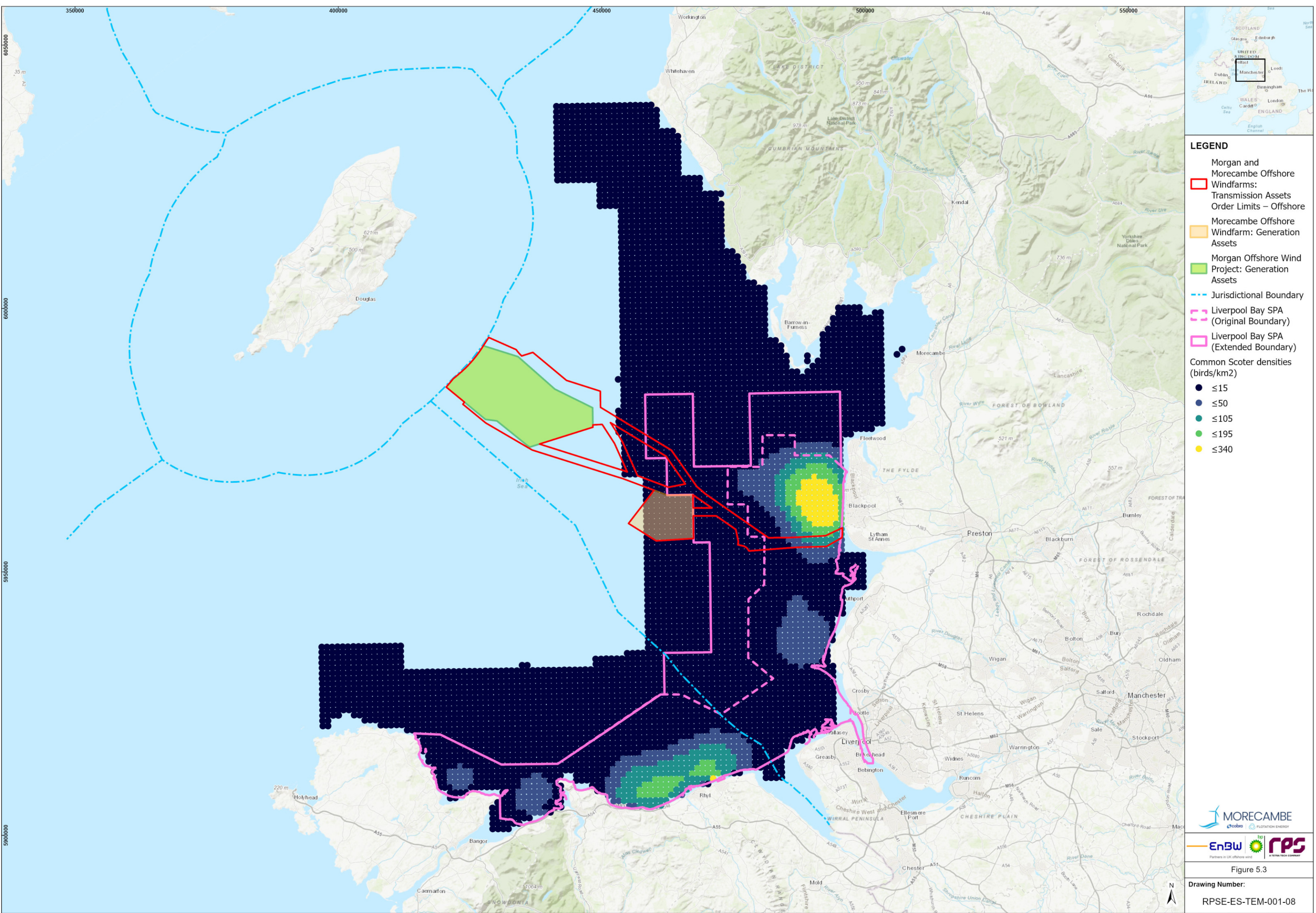
EnBW
Partners in UK offshore wind

bp
A TOTAL TECH COMPANY

RPS
A TOTAL TECH COMPANY

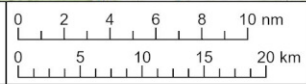
Figure 5.2

Drawing Number:
RPSE-ES-TEM-001-08



Project Name:
**MORGAN AND MORECAMBE OFFSHORE
WIND FARMS: TRANSMISSION ASSETS**

Drawing Title:
Figure 5.3: Common Scoter densities in the Liverpool Bay Area of Search
(Lawson et al., 2016)

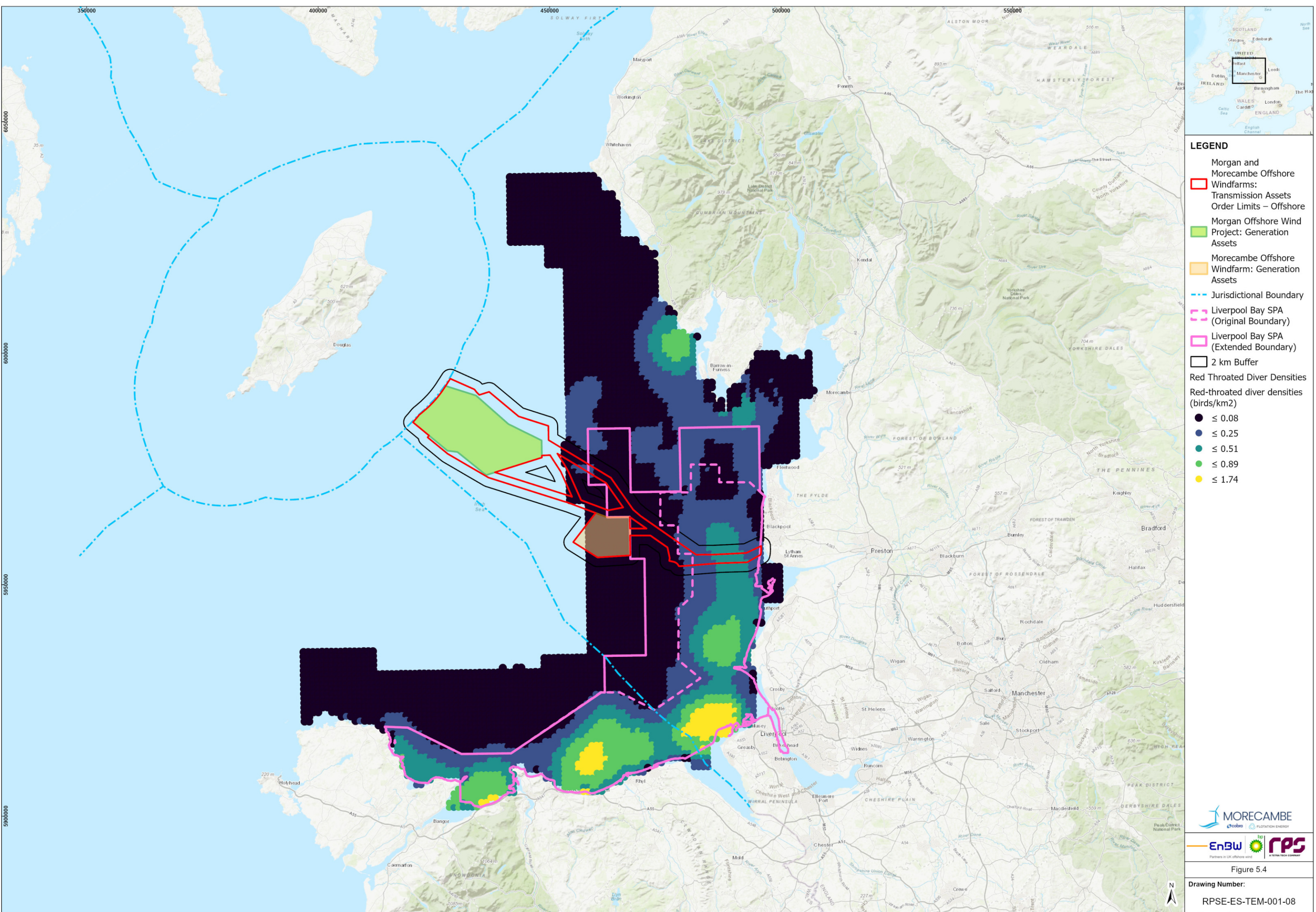


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Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov,
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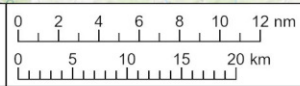
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VER	DATE	DETAILS	BY	CHECK
01	17/04/24	Final Issue	TEDE	HAZ
01	13/09/24	Final Issue	JOSW	WIGE



Project Name:
**MORGAN AND MORECAMBE OFFSHORE
WIND FARMS: TRANSMISSION ASSETS**

Drawing Title:
Figure 5.4: Red-throated diver densities in the Liverpool Bay Area of Search (Lawson et al., 2016)

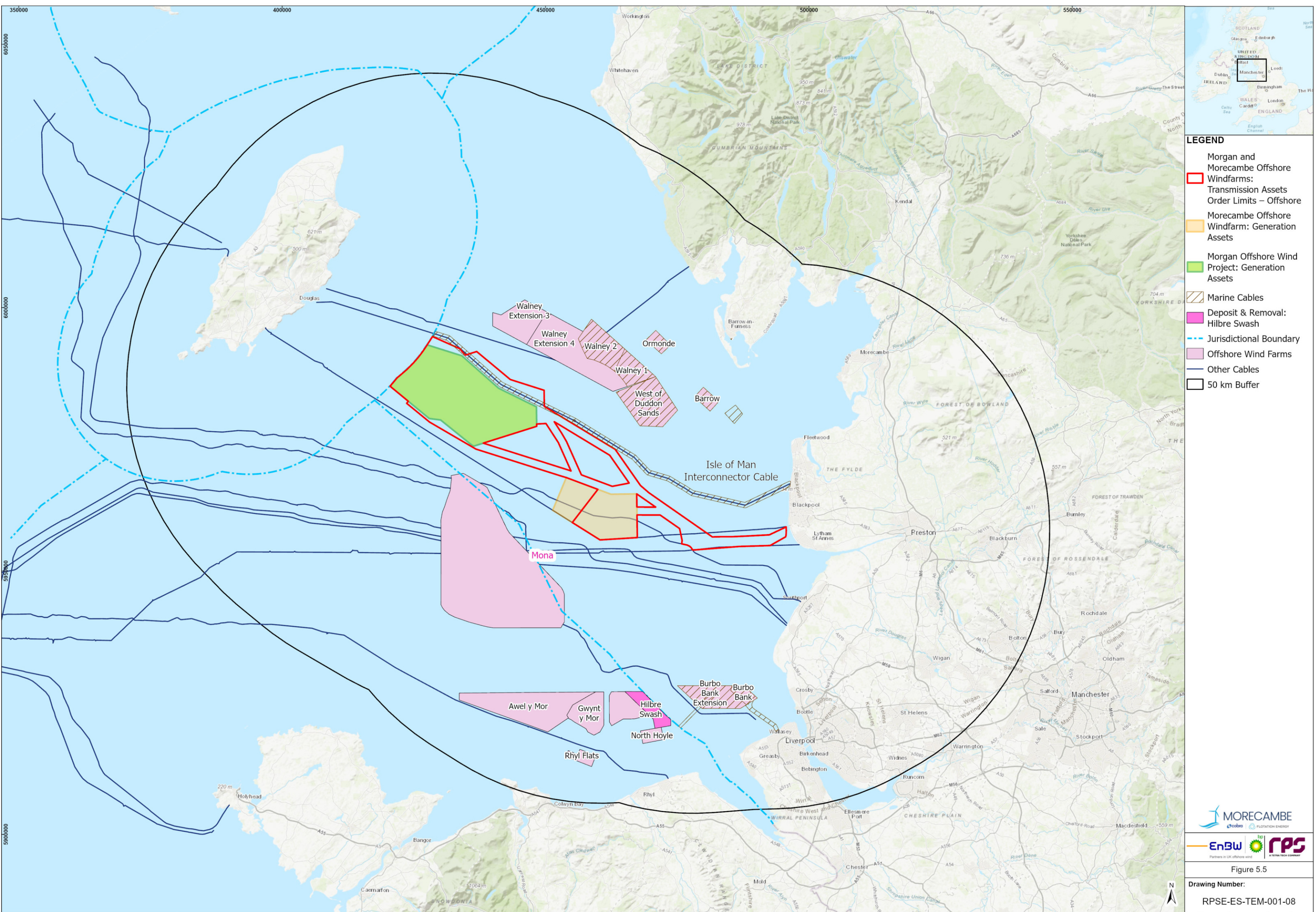


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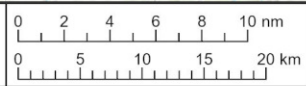
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VER	DATE	DETAILS	BY	CHECK
01	15/04/24	Final Issue	TEDE	HAZ
01	13/09/24	Final Issue	JOSW	WIGE



Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
Figure 5.5: Plans and projects considered in the in-combination assessment for the Transmission Assets



Geodetic Information:
Datum: ETRS 1989
Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:610,352

Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov, MarineRegions.org

Service Layer Credits: World Topographic Map: Esri, HERE, Garmin, FAO, NOAA, USGS
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VER	DATE	DETAILS	BY	CHECK
01	16/04/24	Final Issue	TEDE	HAZ
01	13/09/24	Final Issue	JOSW	WIGE

- LEGEND**
- Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits – Offshore
 - Morecambe Offshore Windfarm: Generation Assets
 - Morgan Offshore Wind Project: Generation Assets
 - Marine Cables
 - Deposit & Removal: Hilbre Swash
 - Jurisdictional Boundary
 - Offshore Wind Farms
 - Other Cables
 - 50 km Buffer



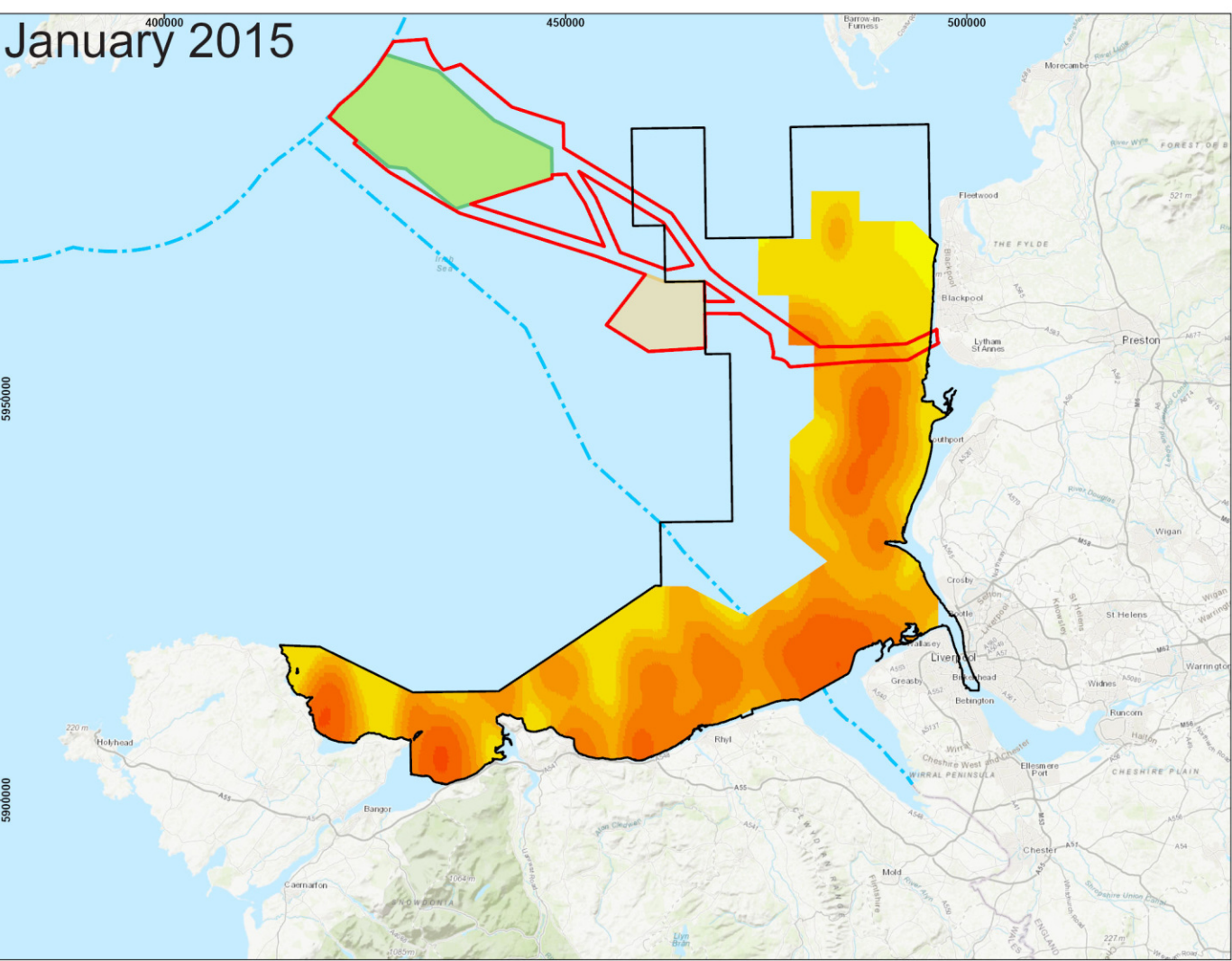
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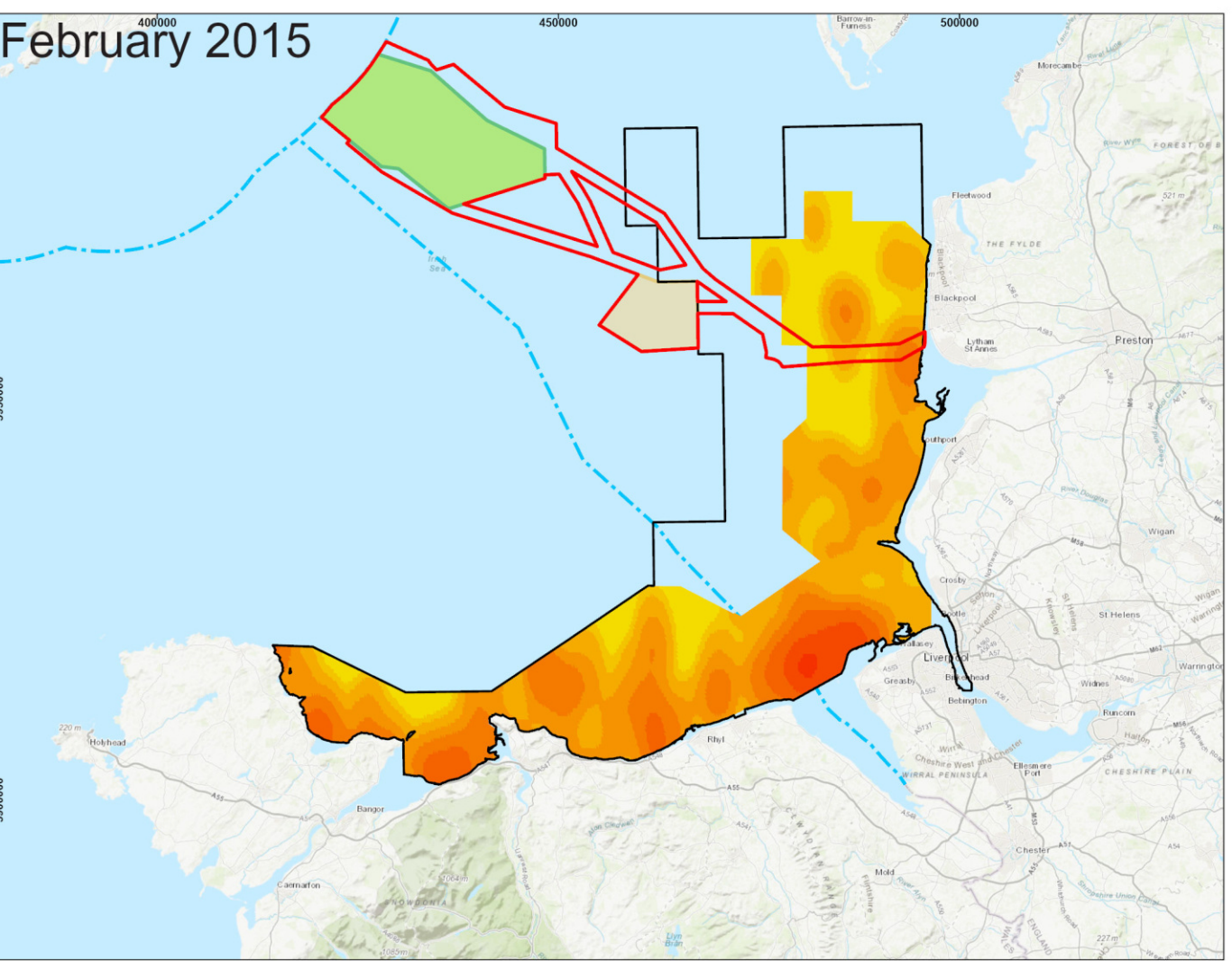
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Drawing Number:
RPSE-ES-TEM-001-08

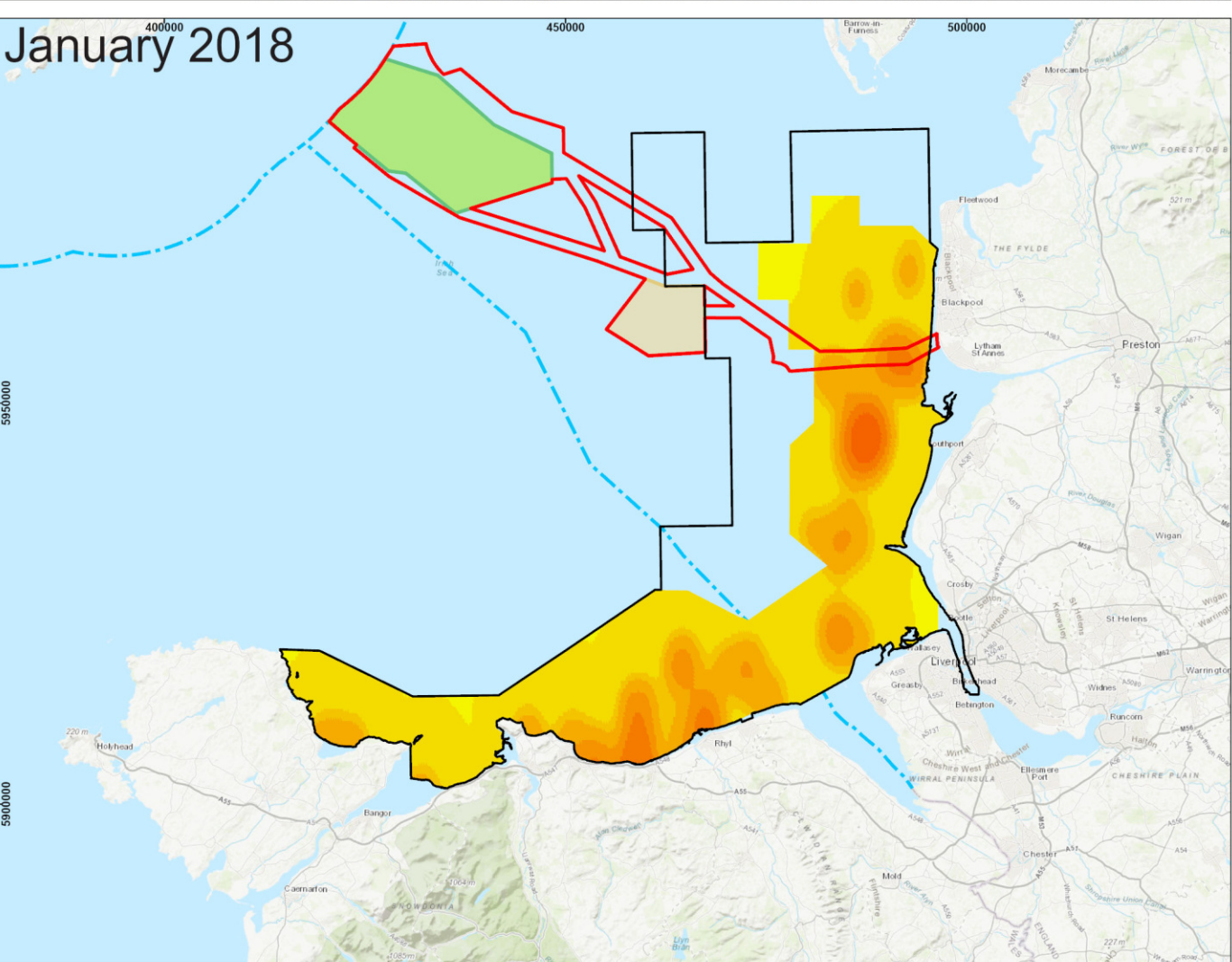
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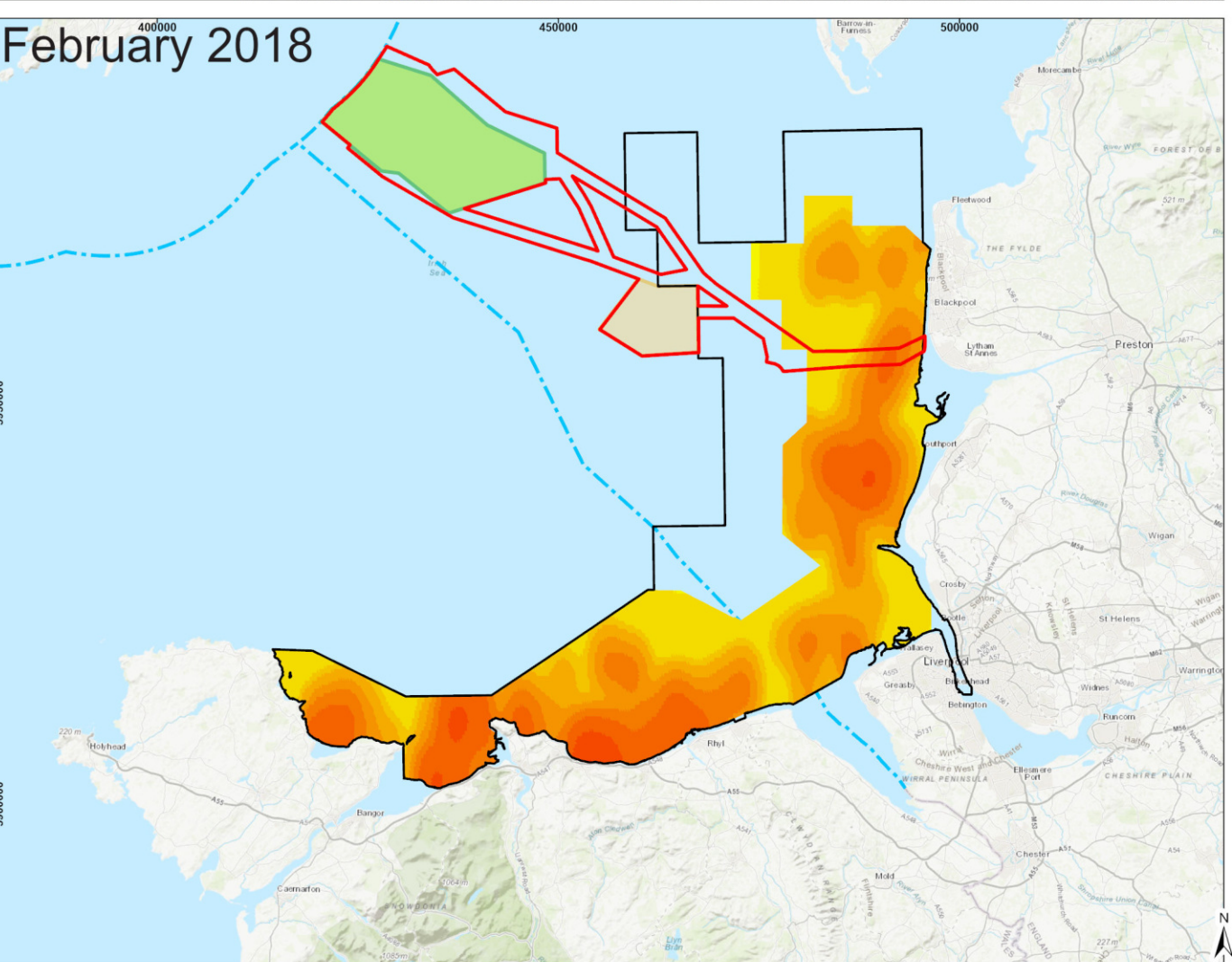
February 2015



January 2018



February 2018



LEGEND

- Jurisdictional Boundary
- Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits
- Morgan Offshore Wind Project: Generation Assets
- Morecambe Offshore Windfarm: Generation Assets
- Liverpool Bay SPA
- Red-throated diver density (birds/km²)

- 0
- 0.01 - 0.1
- 0.11 - 0.2
- 0.21 - 0.5
- 0.51 - 1
- 1.01 - 2
- 2.01 - 5
- 5.01 - 10
- 10.01 - 20
- 20.01 - 50
- > 50



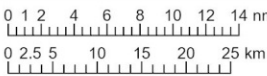
Figure 5.6

Drawing Number:

RPSE-ES-TEM-001-08

Project Name:
MORGAN AND MORECAMBE OFFSHORE
WIND FARMS: TRANSMISSION ASSETS

Drawing Title: Monthly density surfaces for red-throated diver in Liverpool Bay (HiDef Aerial
Surveying Limited, 2023)



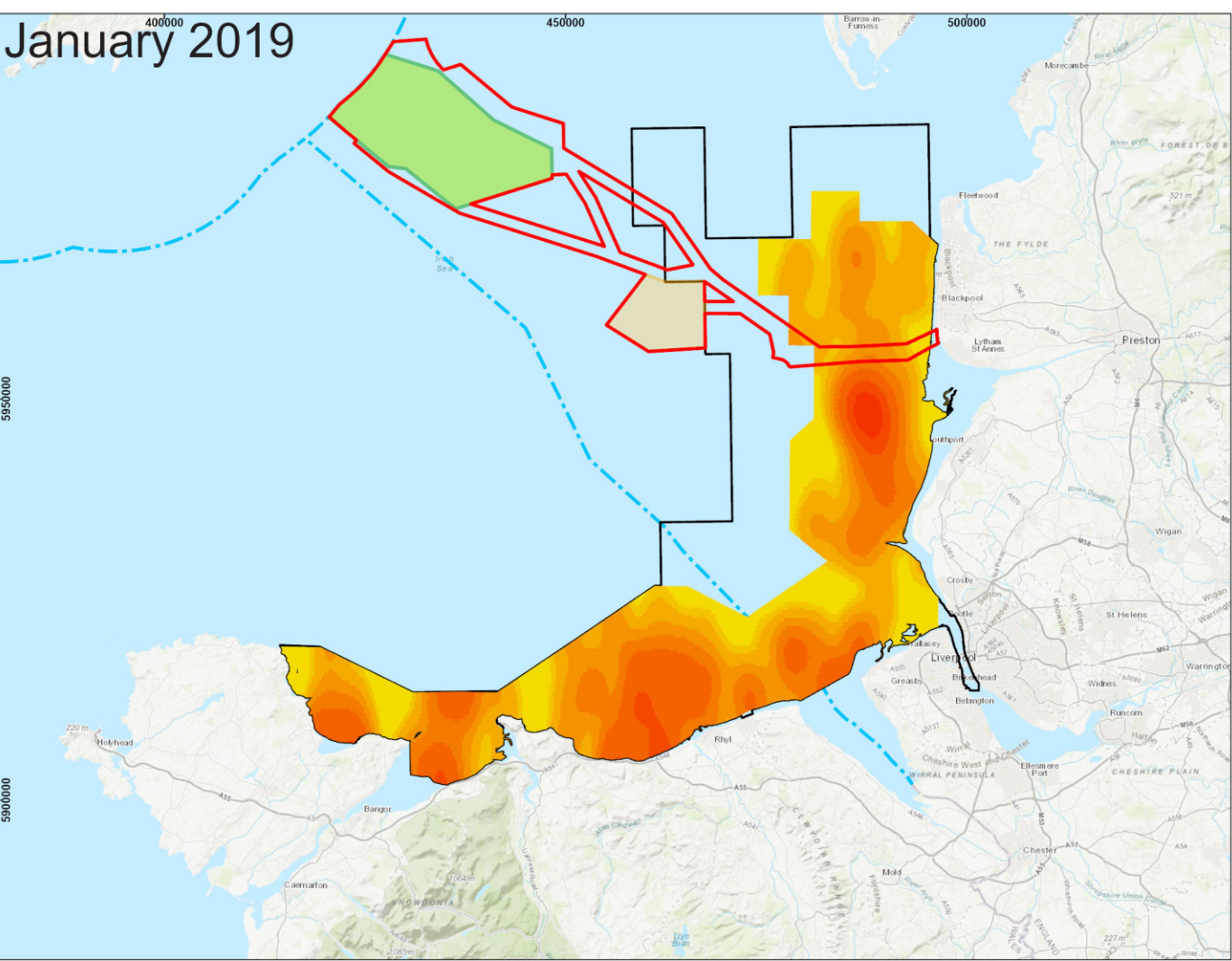
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Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov, MarineRegions.org, Natural England

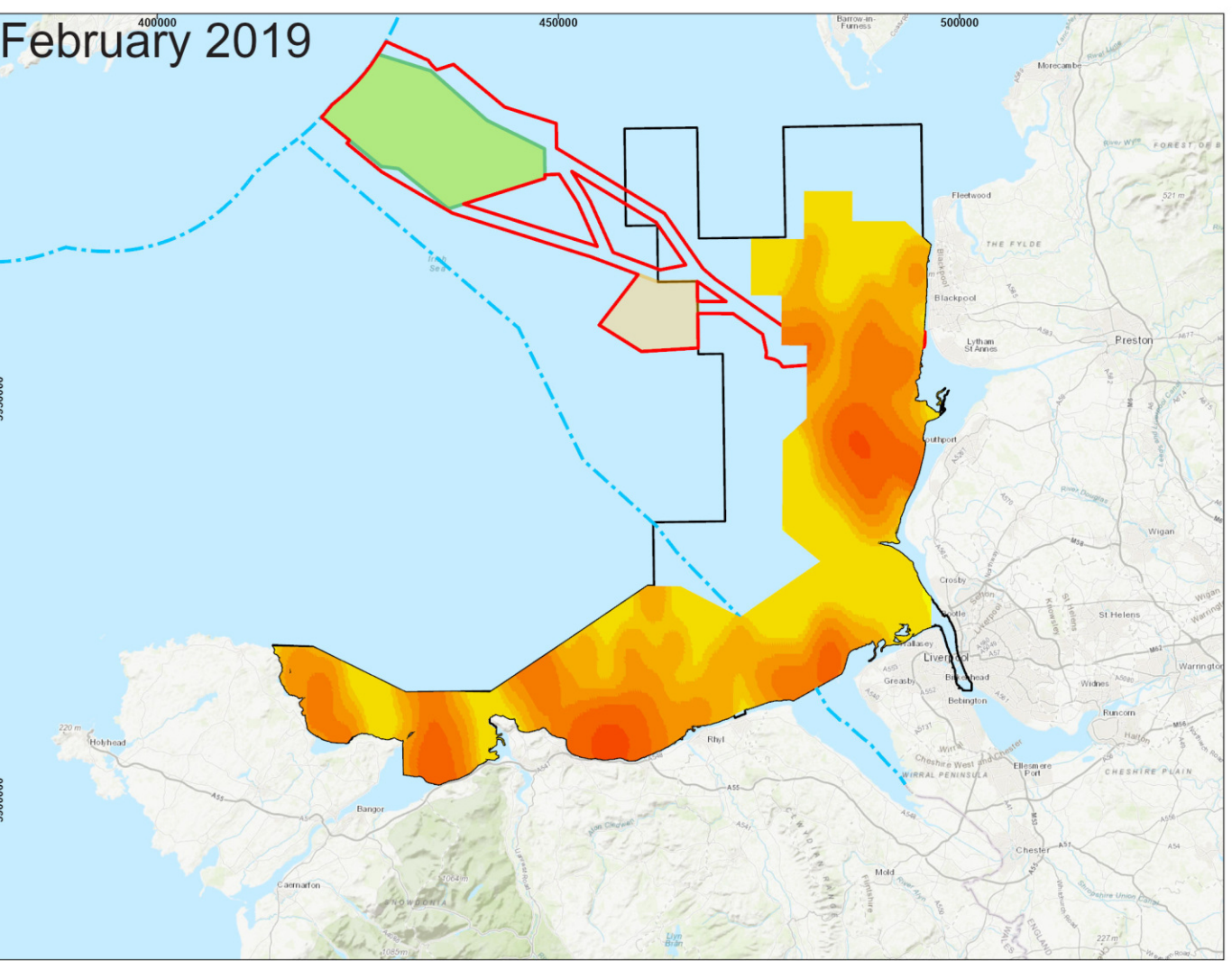
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World Topographic Map: DoBH, OS, Esri, HERE, Garmin, USGS, NGA

VER	DATE	DETAILS	BY	CHECK
00	10/05/24	Initial Issue	HAZ	RWA
01	13/09/24	Final Issue	JOSW	WIGE

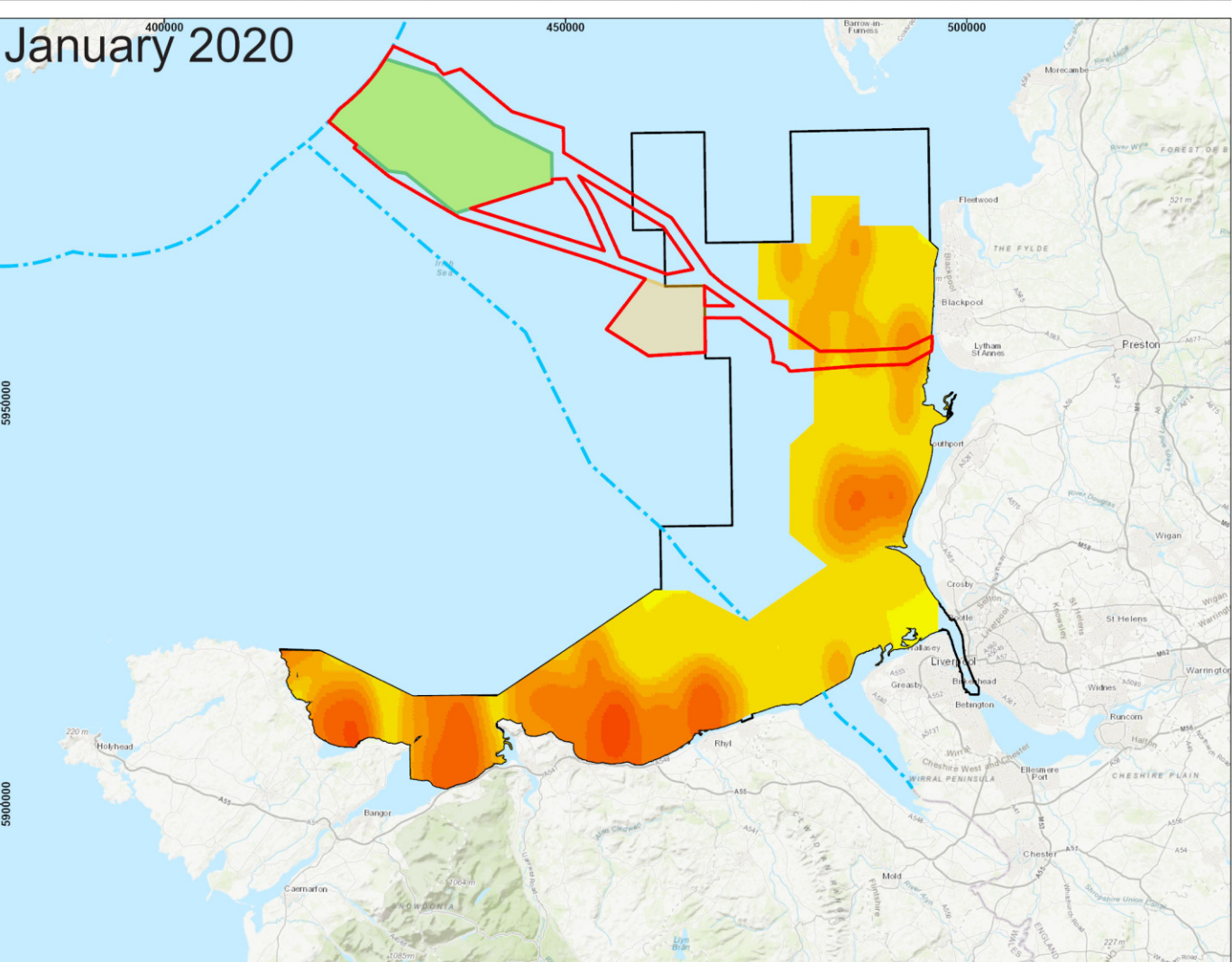
January 2019



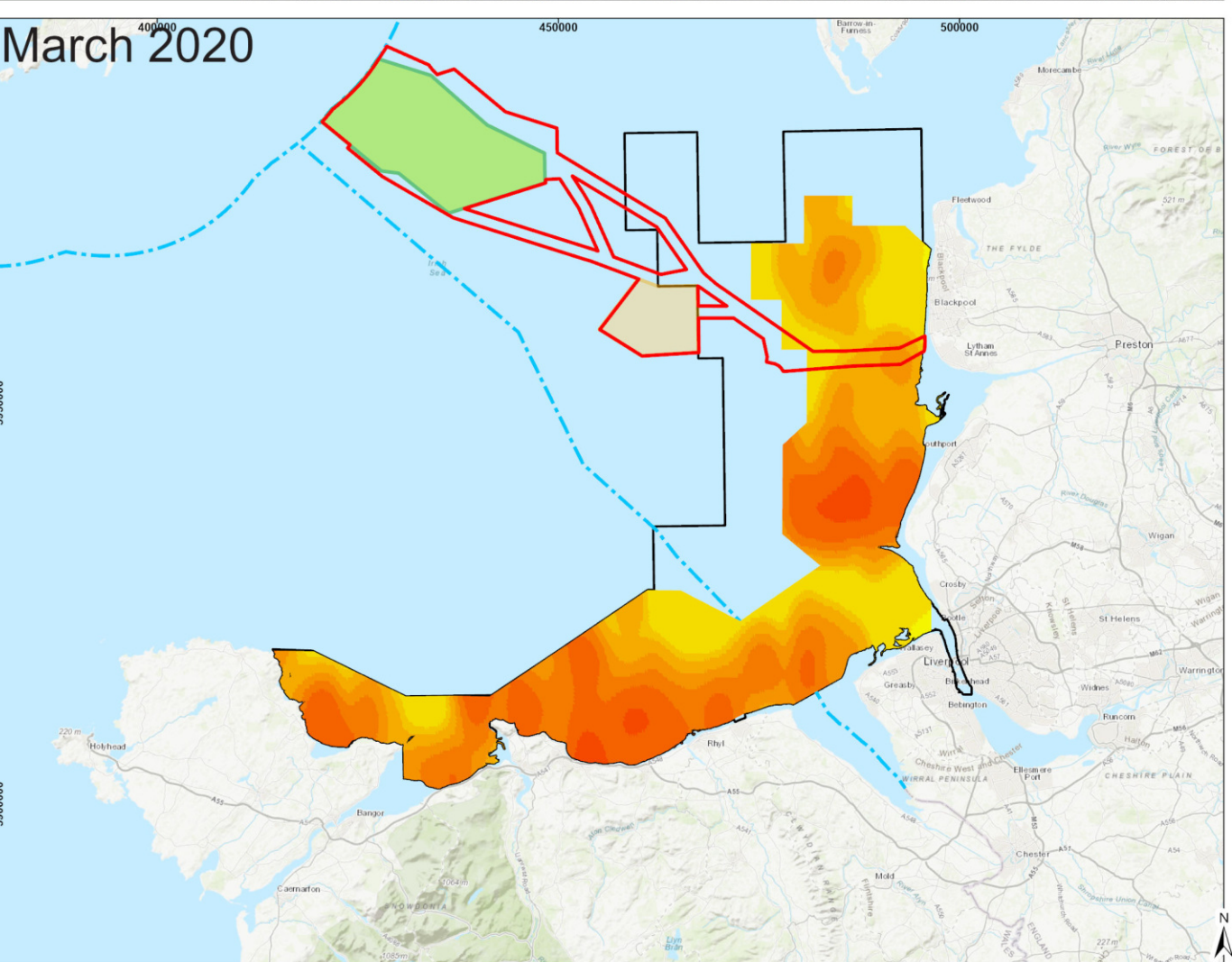
February 2019



January 2020



March 2020



LEGEND

- Jurisdictional Boundary
- Morgan and Morecambe Offshore
- Windfarms:
 - Transmission Assets
 - Order Limits – Offshore
- Morgan and Morecambe Offshore
- Windfarms:
 - Transmission Assets
 - Order Limits
- Morgan Offshore Wind Project: Generation Assets
- Morecambe Offshore Windfarm: Generation Assets
- Liverpool Bay SPA
- Red-throated diver density (birds/km2)

- 0
- 0.01 - 0.1
- 0.11 - 0.2
- 0.21 - 0.5
- 0.51 - 1
- 1.01 - 2
- 2.01 - 5
- 5.01 - 10
- 10.01 - 20
- 20.01 - 50
- > 50



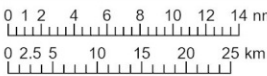
Figure 5.7

Drawing Number:

RPSE-ES-TEM-001-08

Project Name:
**MORGAN AND MORECAMBE OFFSHORE
WIND FARMS: TRANSMISSION ASSETS**

Drawing Title: Monthly density surfaces for red-throated diver in Liverpool Bay (HiDef Aerial
Surveying Limited, 2023)



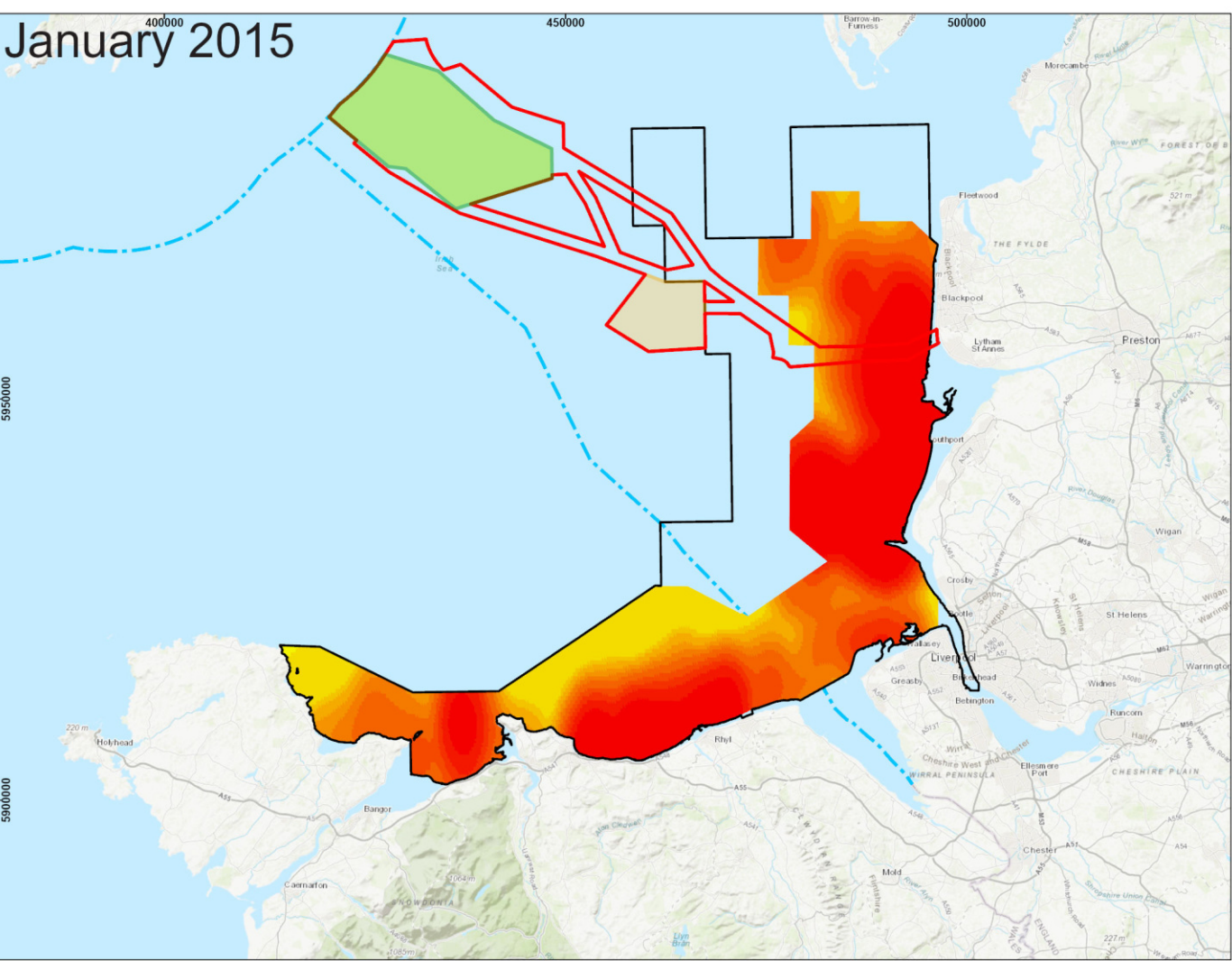
Geodetic Information:
Datum: ETRS 1989
Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:850,000

Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov,
MarineRegions.org, Natural England

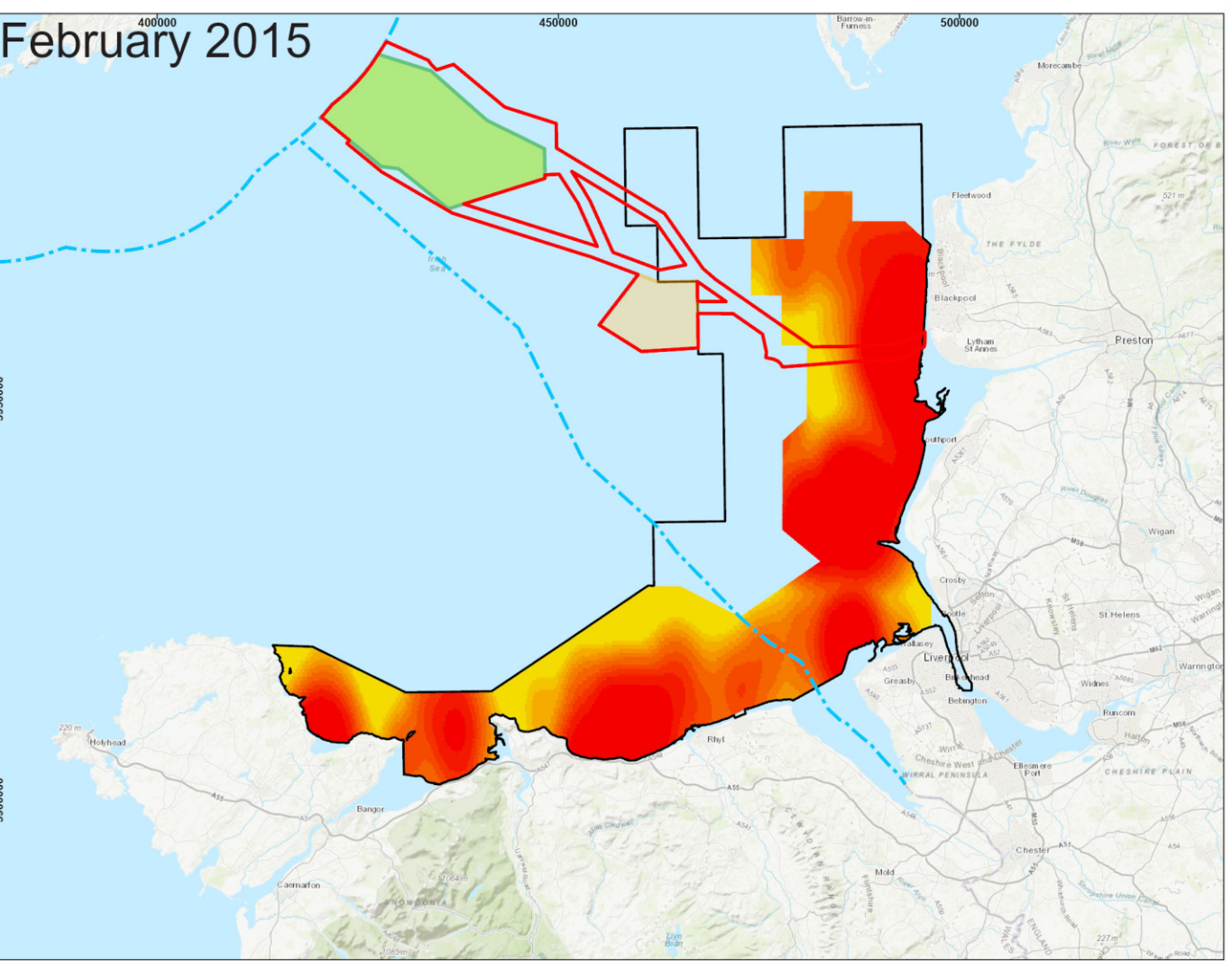
Service Layer Credits: World Topographic Map: Esri, HERE, Garmin, FAO, NOAA, USGS
World Topographic Map: Esri, HERE, Garmin, FAO, USGS
World Topographic Map: DoH, Es, Osi, HERE, Garmin, USGS, NGA

VER	DATE	DETAILS	BY	CHECK
00	10/05/24	Initial Issue	HAZ	RWA
01	13/09/24	Final Issue	JOSW	WIGE

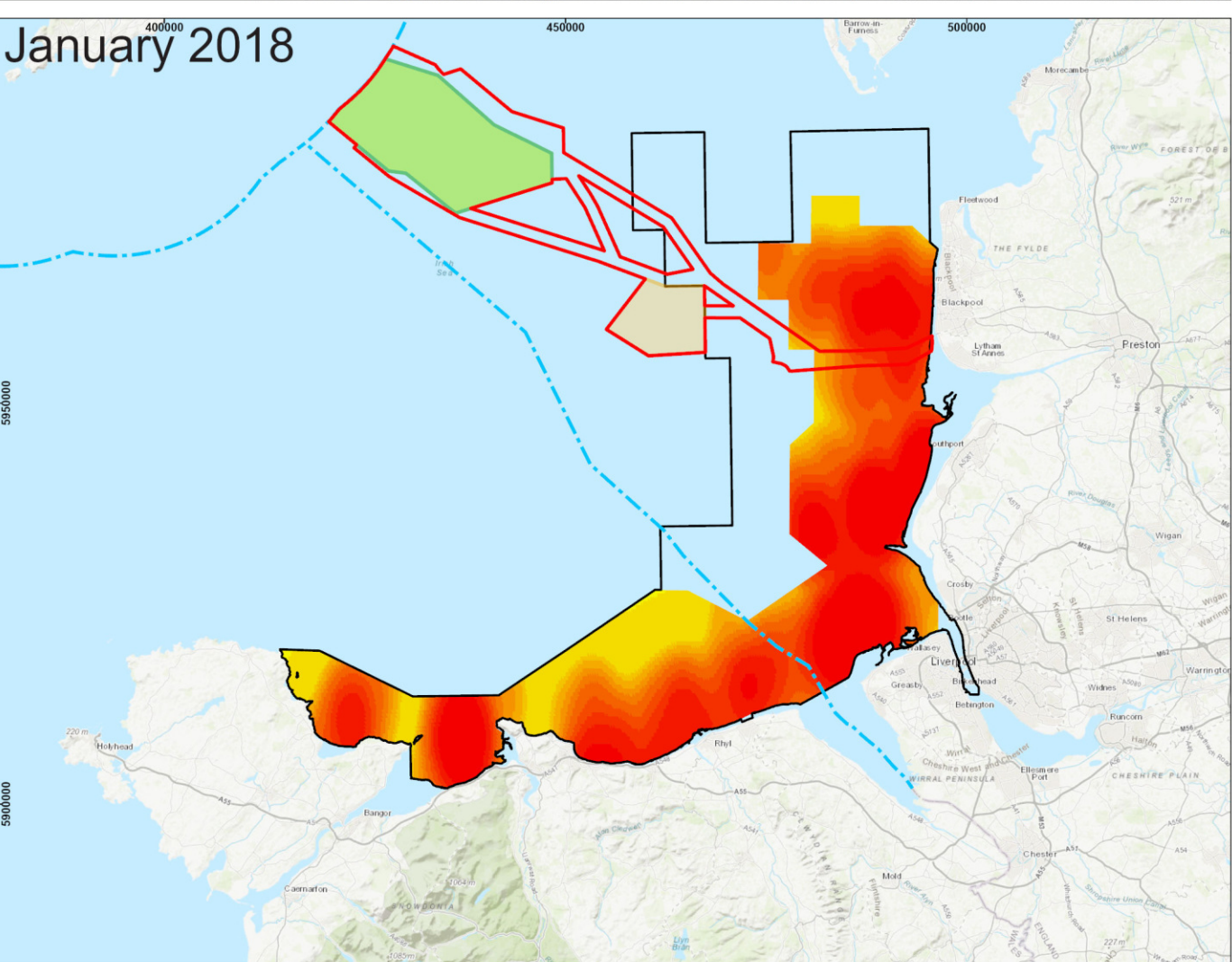
January 2015



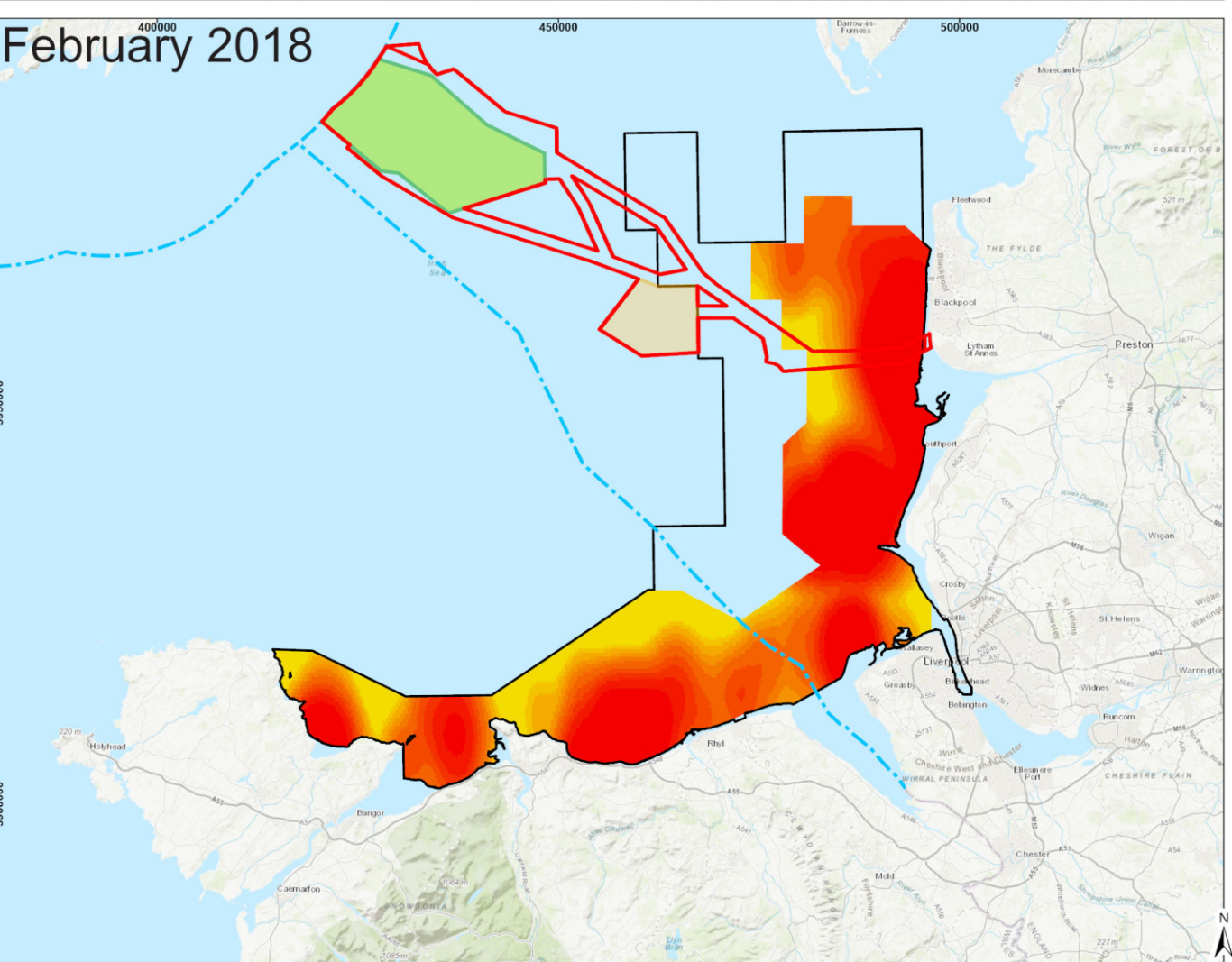
February 2015



January 2018



February 2018



LEGEND

- Jurisdictional Boundary
- Morgan and Morecambe Offshore
- Windfarms: Transmission Assets Order Limits – Offshore
- Morgan Offshore Wind Project: Generation Assets
- Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits
- Morecambe Offshore Windfarm: Generation Assets
- Liverpool Bay SPA

Common scoter densities (birds/km2)

- 0
- 0.01 - 0.1
- 0.11 - 0.2
- 0.21 - 0.5
- 0.51 - 1
- 1.01 - 2
- 2.01 - 5
- 5.01 - 10
- 10.01 - 20
- 20.01 - 50
- > 50



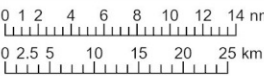
Figure 5.8

Drawing Number:

RPSE-ES-TEM-001-08

Project Name:
MORGAN AND MORECAMBE OFFSHORE
WIND FARMS: TRANSMISSION ASSETS

Drawing Title: Monthly density surfaces for common scoter in Liverpool Bay (HiDef Aerial Surveying Limited, 2023)

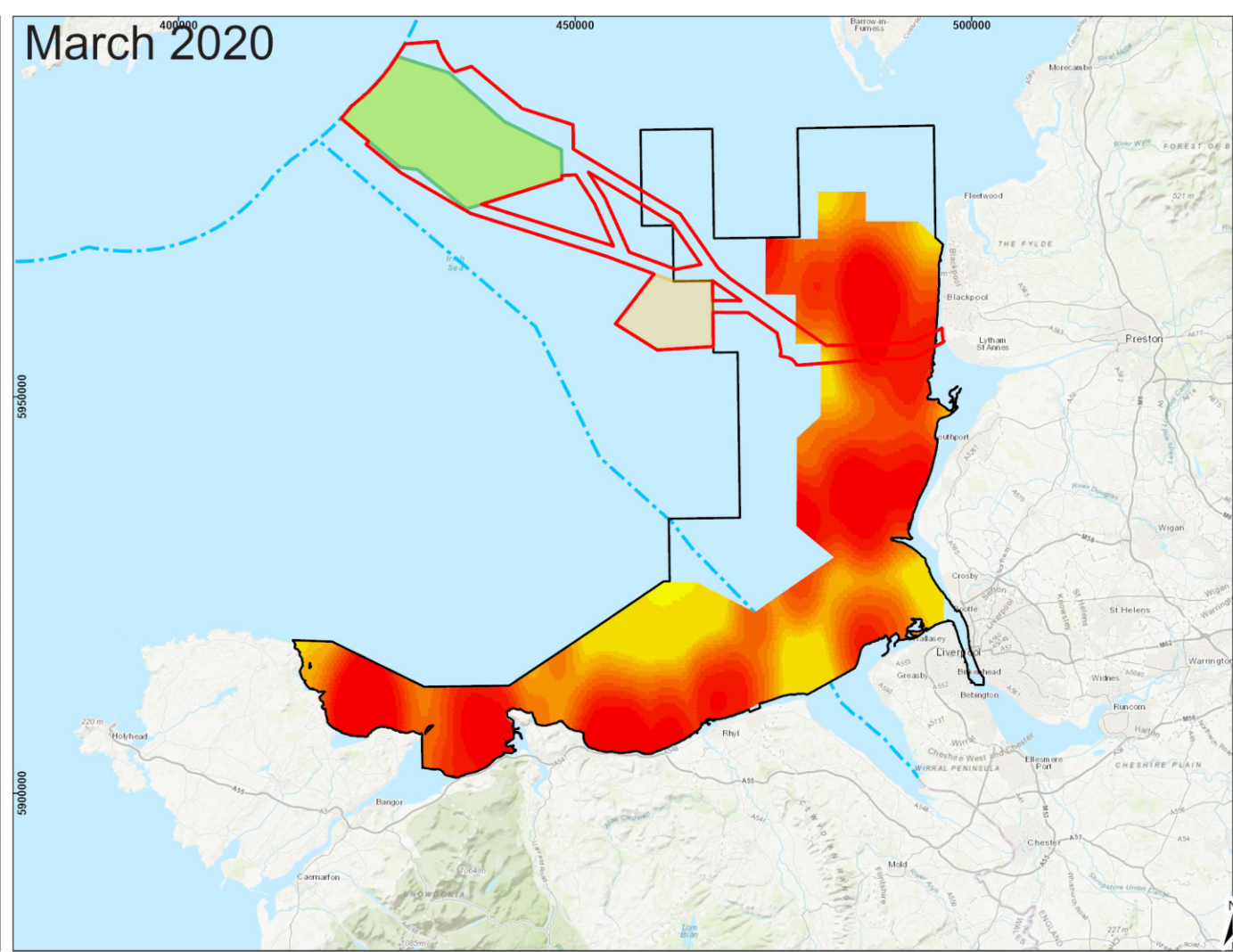
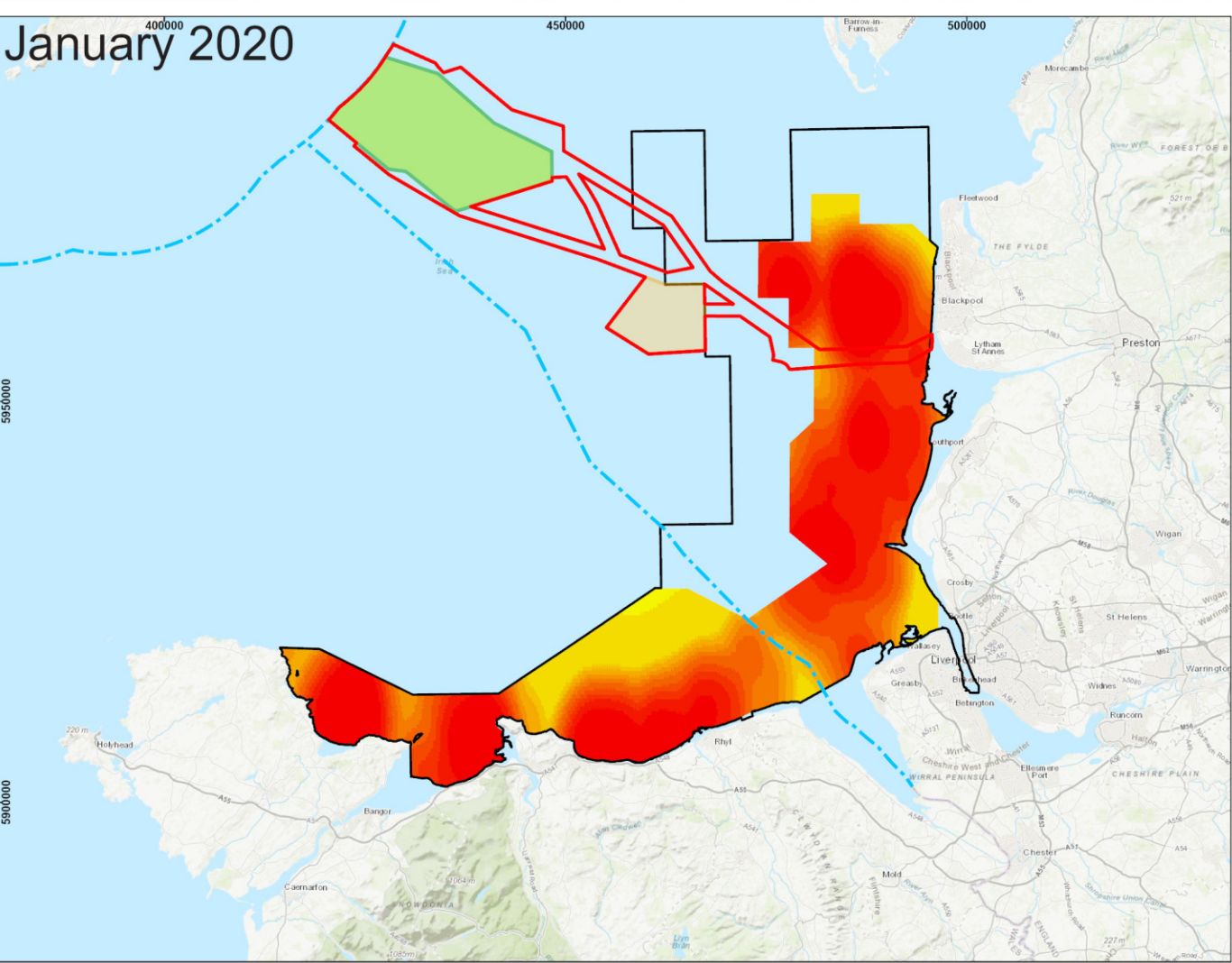
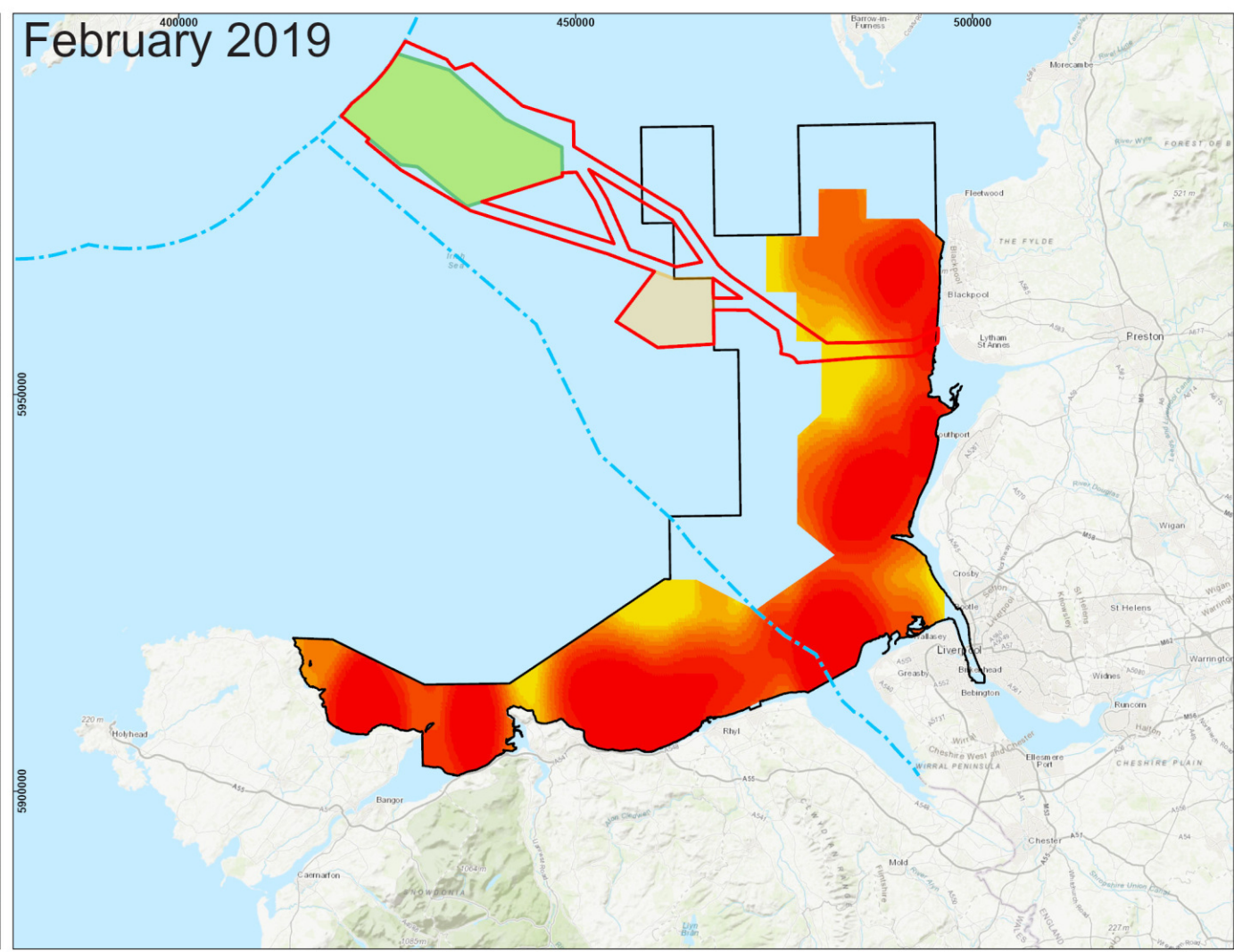
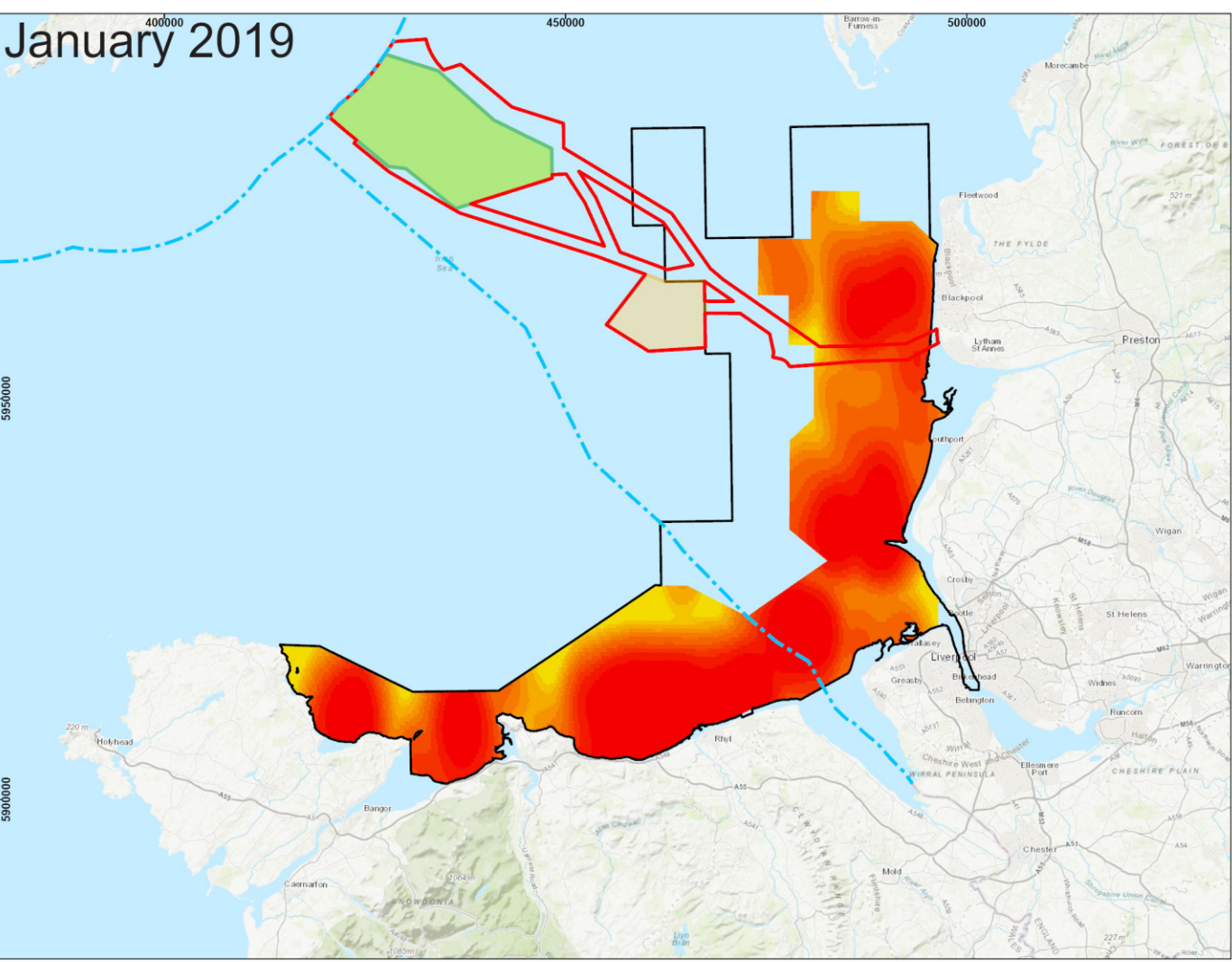


Geodetic Information:
Datum: ETRS 1989
Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:850,000

Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov, MarineRegions.org, Natural England

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VER	DATE	DETAILS	BY	CHECK
00	10/05/24	Initial Issue	HAZ	RWA
01	13/09/24	Final Issue	JOSW	WIGE



LEGEND

- Jurisdictional Boundary
- Morgan and Morecambe Offshore Windfarms:
 - Transmission Assets
 - Order Limits
- Morgan Offshore Wind Project: Generation Assets
- Morecambe Offshore Windfarm: Generation Assets
- Liverpool Bay SPA

Common scoter densities (birds/km²)

0
0.01 - 0.1
0.11 - 0.2
0.21 - 0.5
0.51 - 1
1.01 - 2
2.01 - 5
5.01 - 10
10.01 - 20
20.01 - 50
> 50