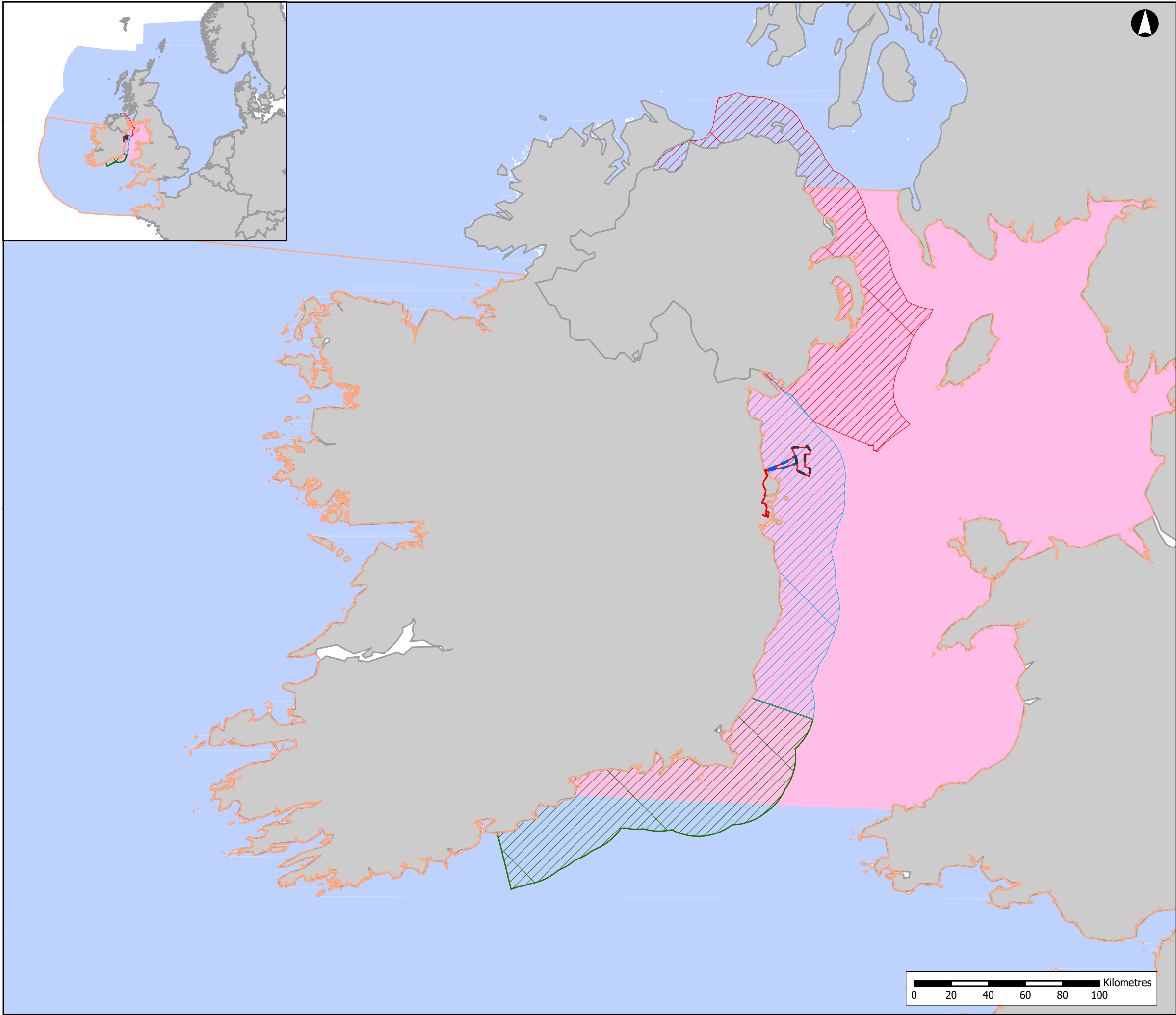


Volume 7A: Figures

Figures for Chapter 14 Marine Mammal Ecology



Array Area

Offshore Export Cable Corridor

Proposed Development Boundary

Northern Ireland MU (seals)

Southeast Rol (seals)

East Rol (seals)

Celtic and Irish Sea MU (harbour porpoise)

Celtic and Greater North Seas MU (minke whale, common dolphin, Risso's dolphin)

Irish Sea MU (bottlenose dolphin)

NISA

North Irish Sea Array

ARUP

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Project

North Irish Sea Array

Offshore Wind Farm

Figure Title

Marine Mammal Managment

Units

Job No: 281240

Datum: WGS84 Projection: UTM30N

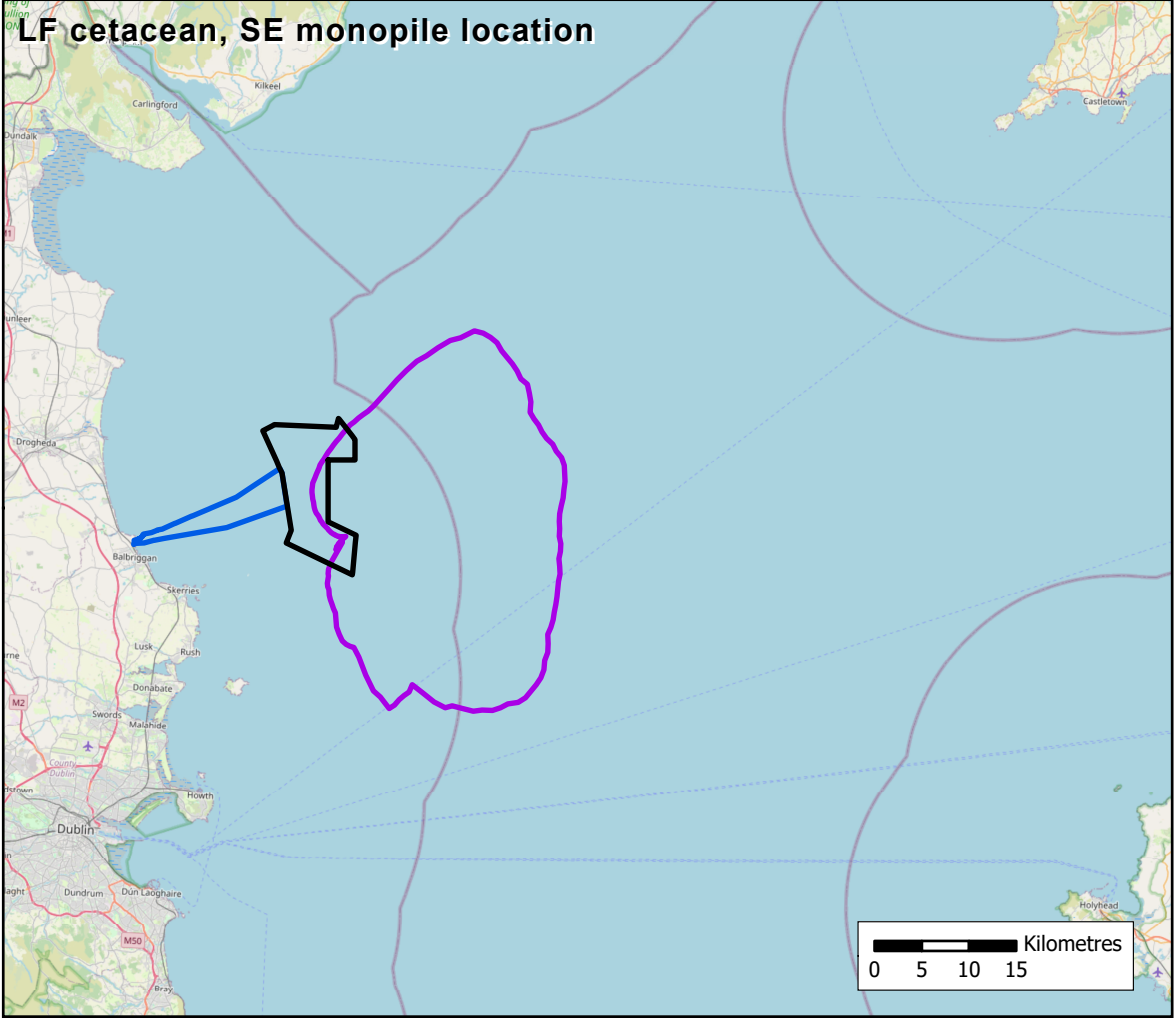
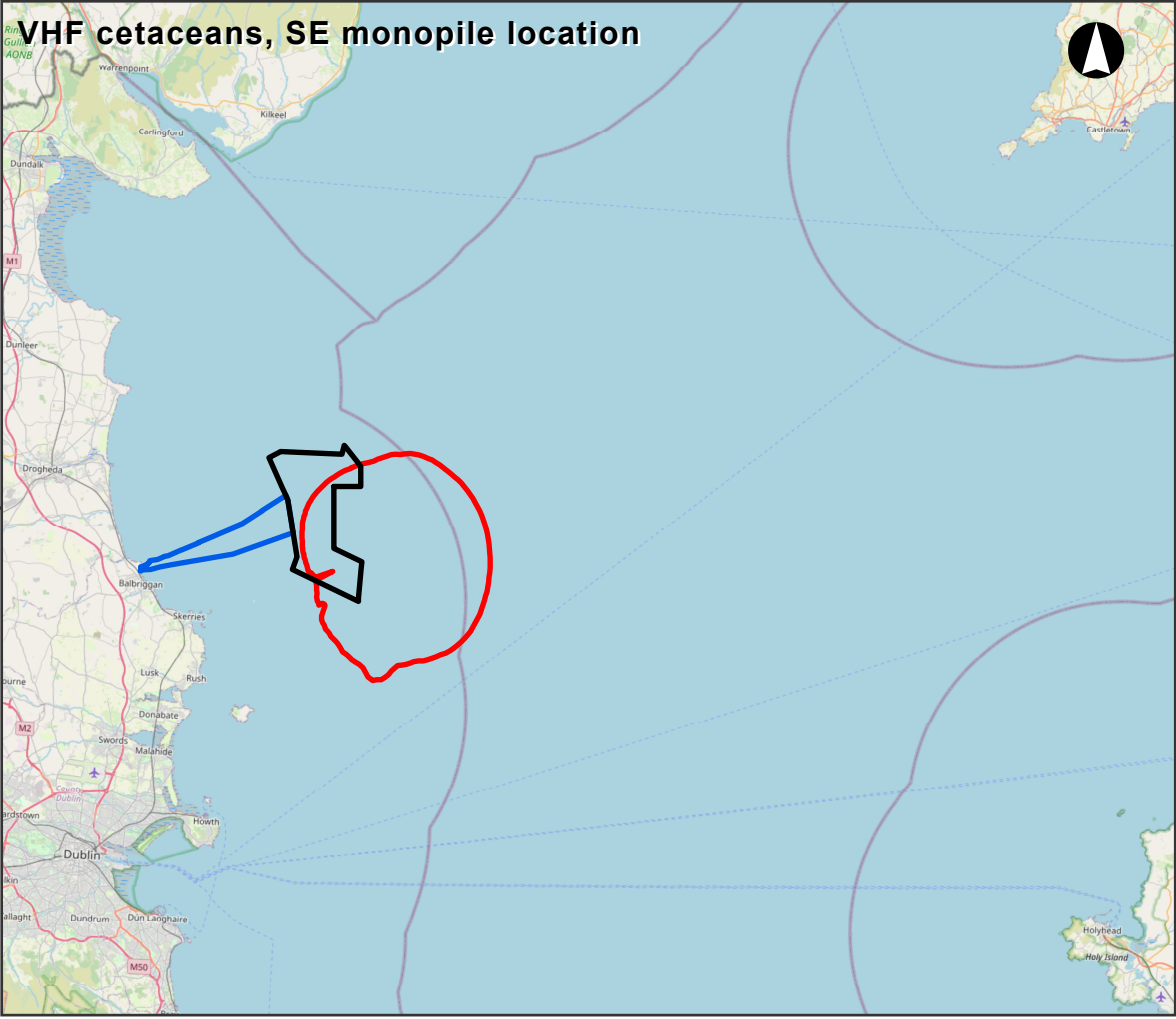
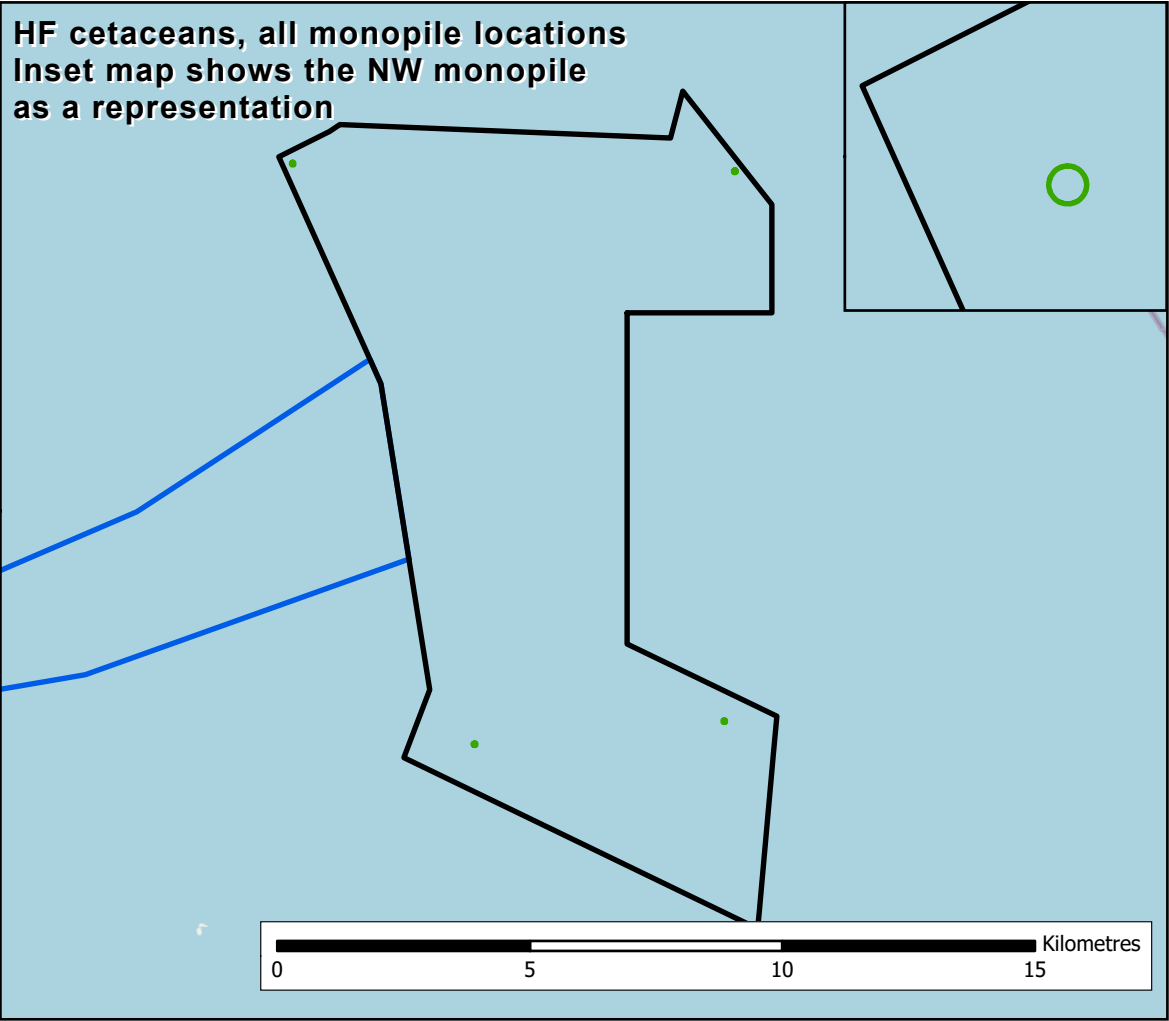
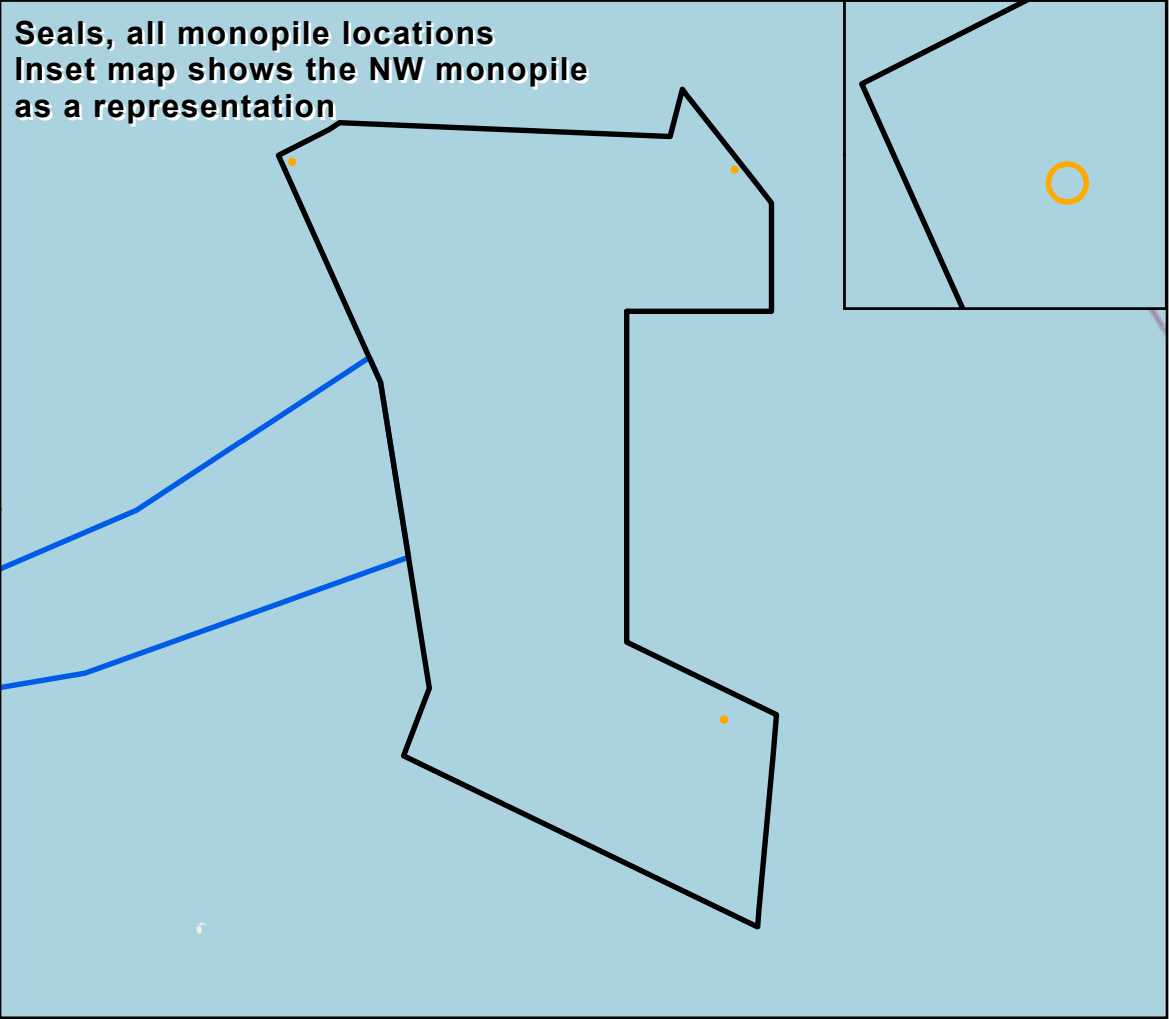
Date: May 2024

Figure No:

Scale: 1:2,000,000 @A3

14.1

Status: Issue



- Array Area
- Offshore Export Cable Corridor
- EEZ
- Cumulative SEL PTS-onset (185 dB) for HF cetaceans (dolphins)
- Cumulative SEL PTS-onset (185 dB) for seals
- Cumulative SEL PTS-onset (155 dB) for VHF cetaceans (harbour porpoise)
- Cumulative SEL PTS-onset (183 dB) for LF cetaceans (minke whale)

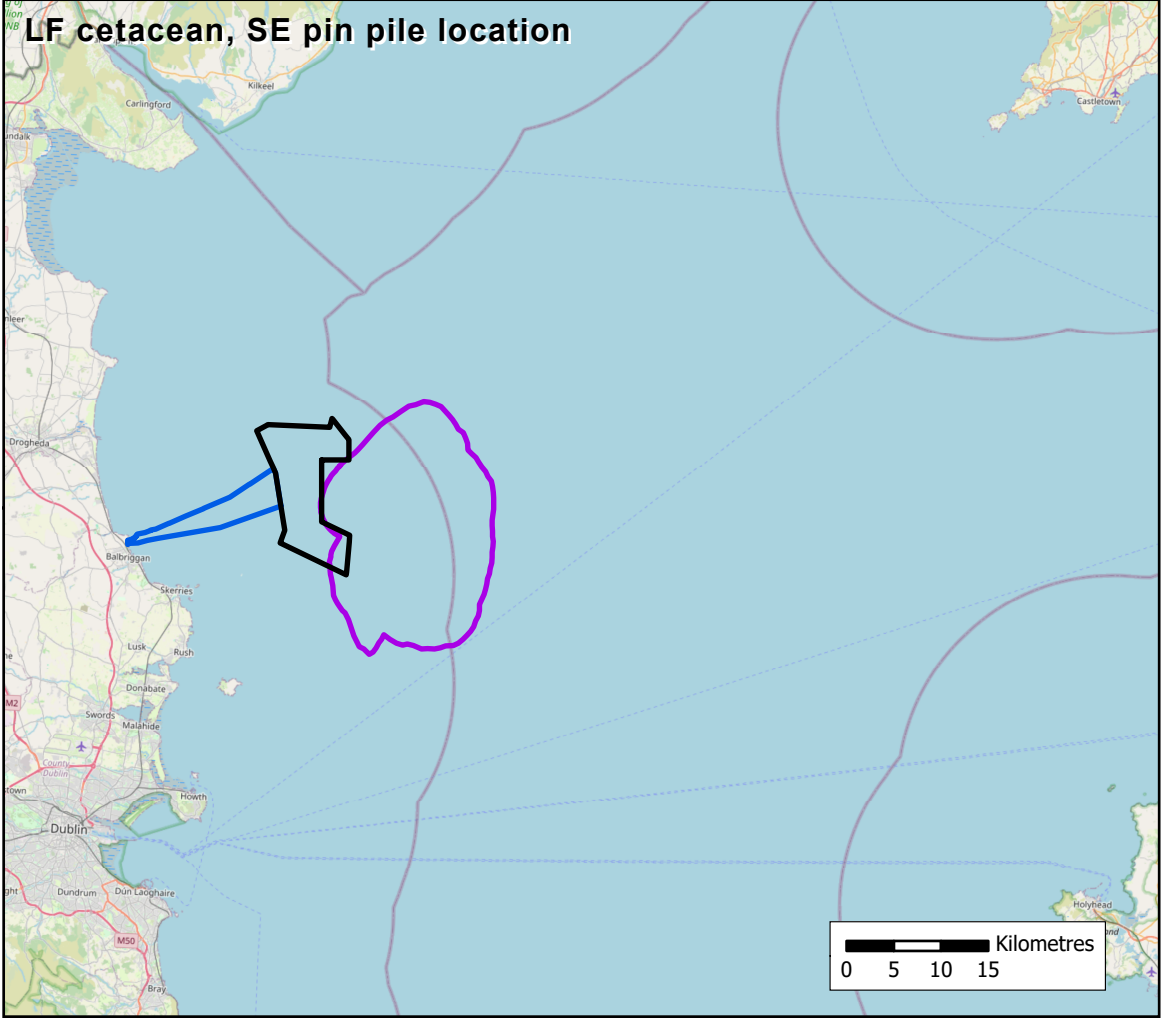
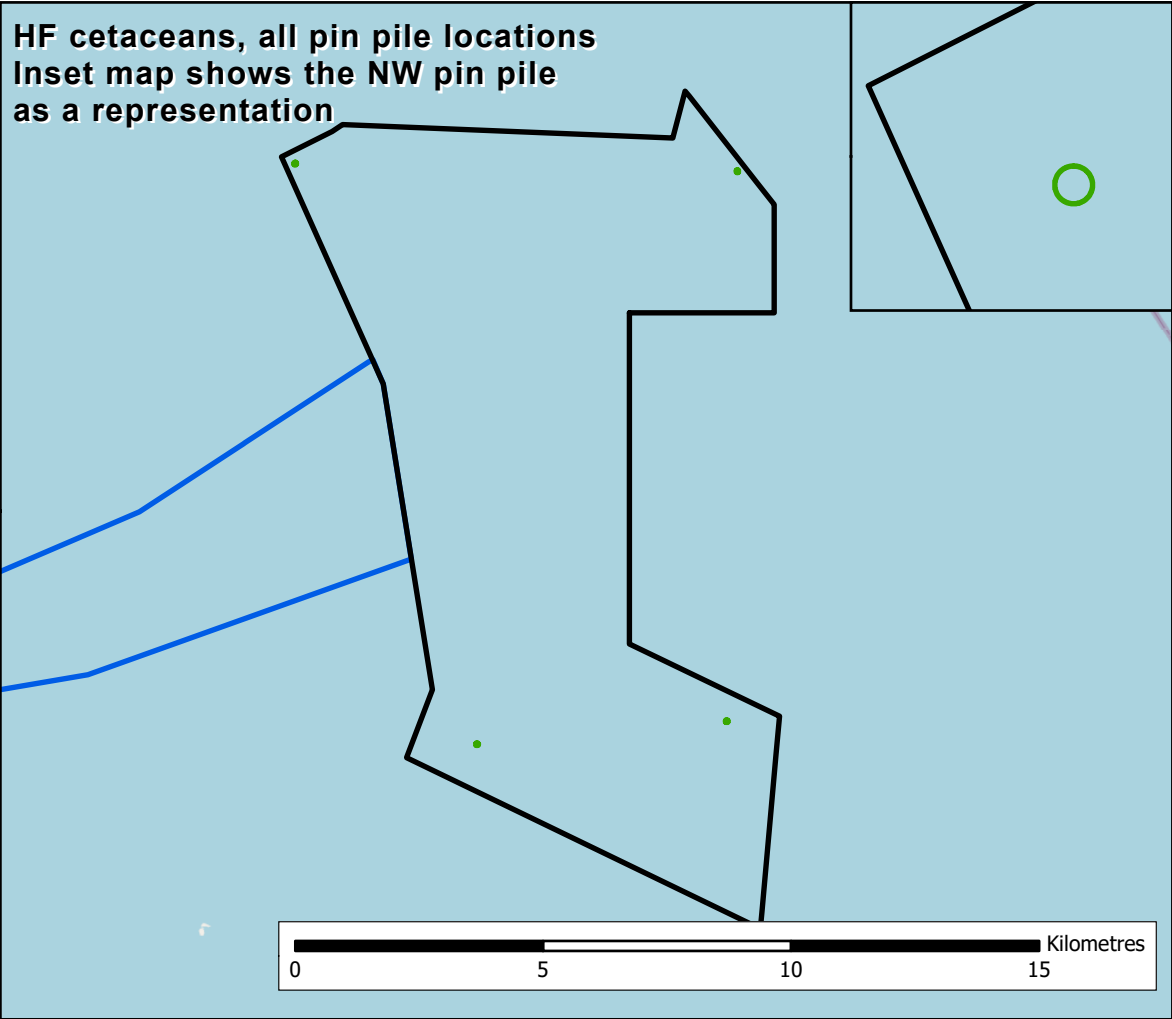
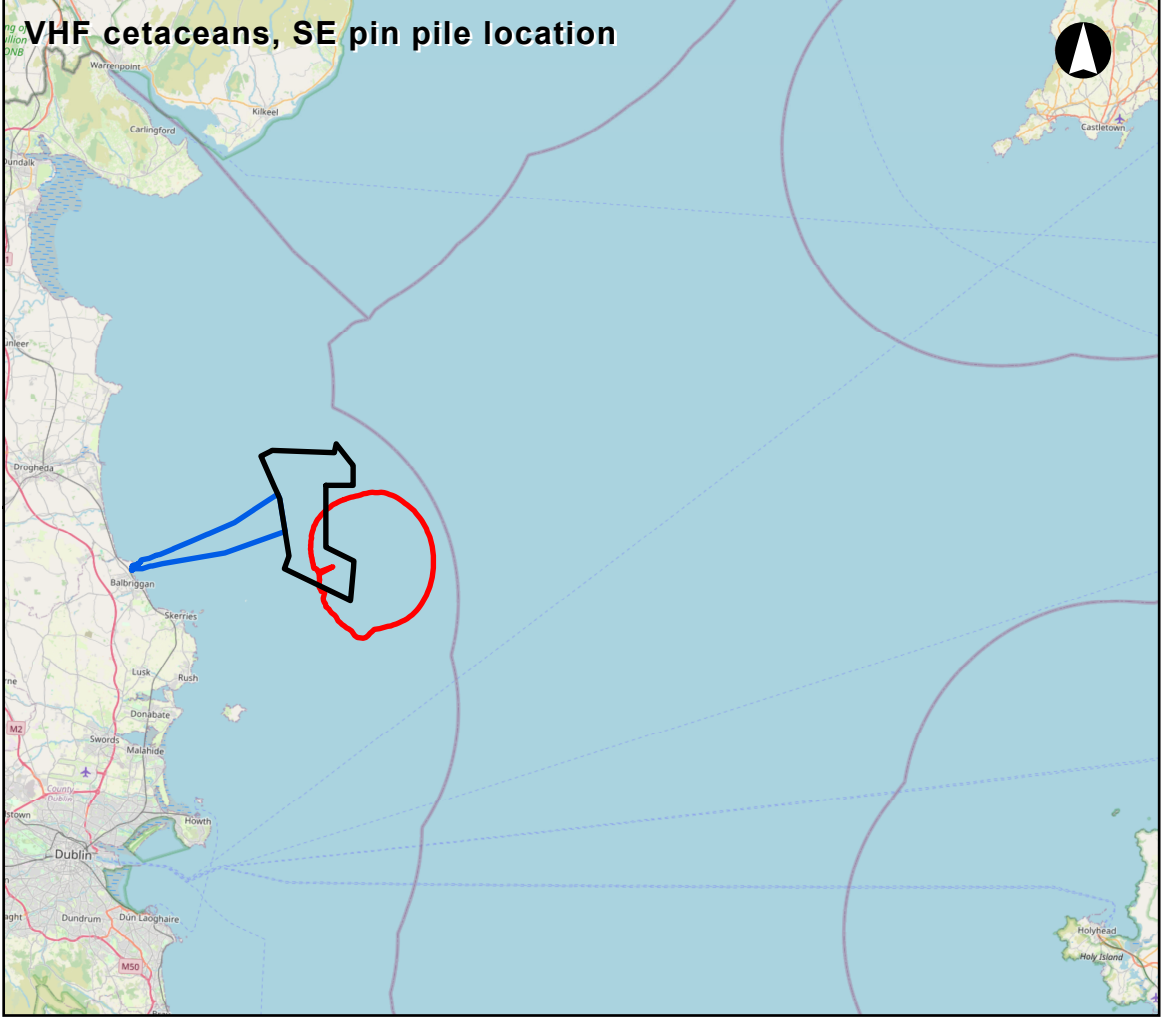
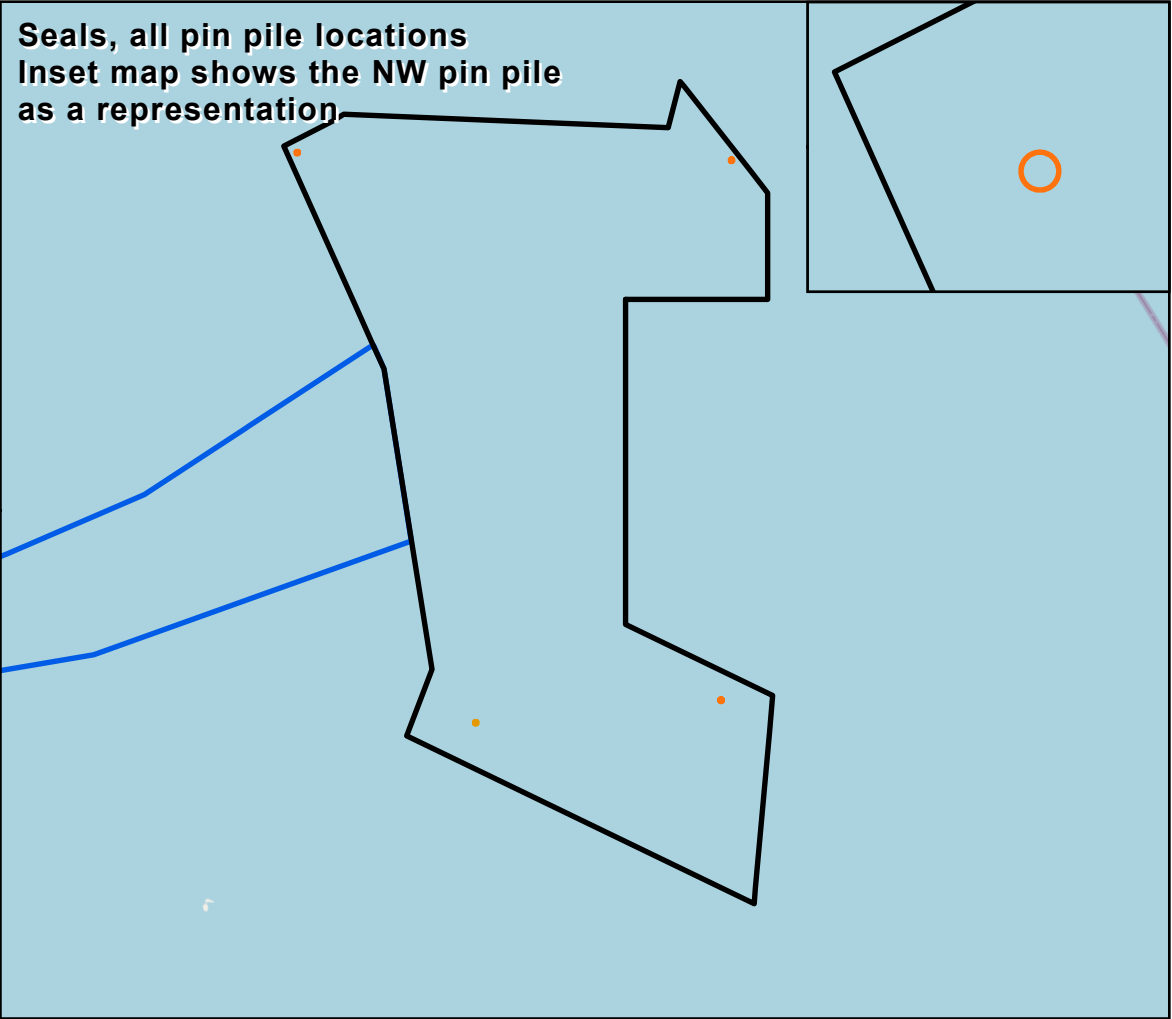
NISA
North Irish Sea Array

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North Irish Sea Array
Offshore Wind Farm

Figure Title
Maximum SELcum PTS Contours
for each Marine Mammal
Hearing Group for Piling of a
Single Monopile

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: May 2024	Figure No:
Scale: 1:800,000 @A3	14.2
Status: Issue	



Array Area

Offshore Export Cable Corridor

EEZ

Cumulative SEL PTS-onset (185 dB) for seals

Cumulative SEL PTS-onset (155 dB) for VHF cetaceans (harbour porpoise)

Cumulative SEL PTS-onset (183 dB) for LF cetaceans (minke whale)

Cumulative SEL PTS-onset (185 dB) for HF cetaceans (dolphins)

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GoBe

Project

North Irish Sea Array Offshore Wind Farm

Figure Title

Maximum SELcum PTS Contours for each Marine Mammal Hearing Group for Piling of 2 Sequential Pin Piles

Job No: 281240

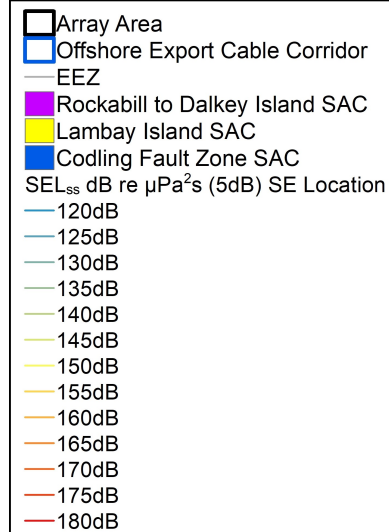
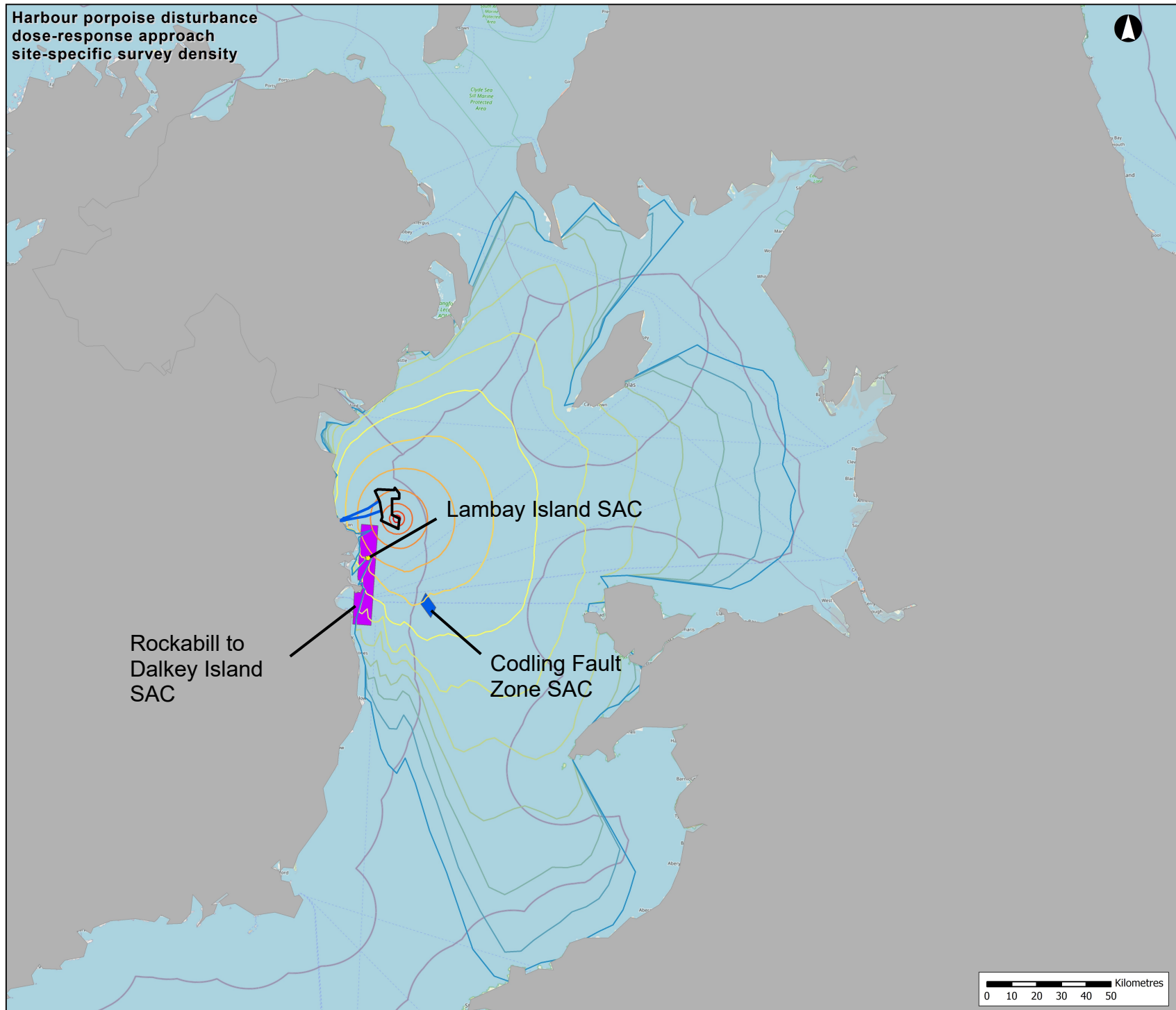
Date: May 2024

Scale: 1:152,381 @A3

Status: Issue

Datum: WGS84 Projection: UTM30N

Figure No: 14.3



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North Irish Sea Array

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**North Irish Sea Array
Offshore Wind Farm**

Figure Title

**Harbour Porpoise Disturbance
Contours for Piling of Monopiles
at the Southeast Modelling
Location**

Job No: 281240

Datum: WGS84 Projection: UTM30N

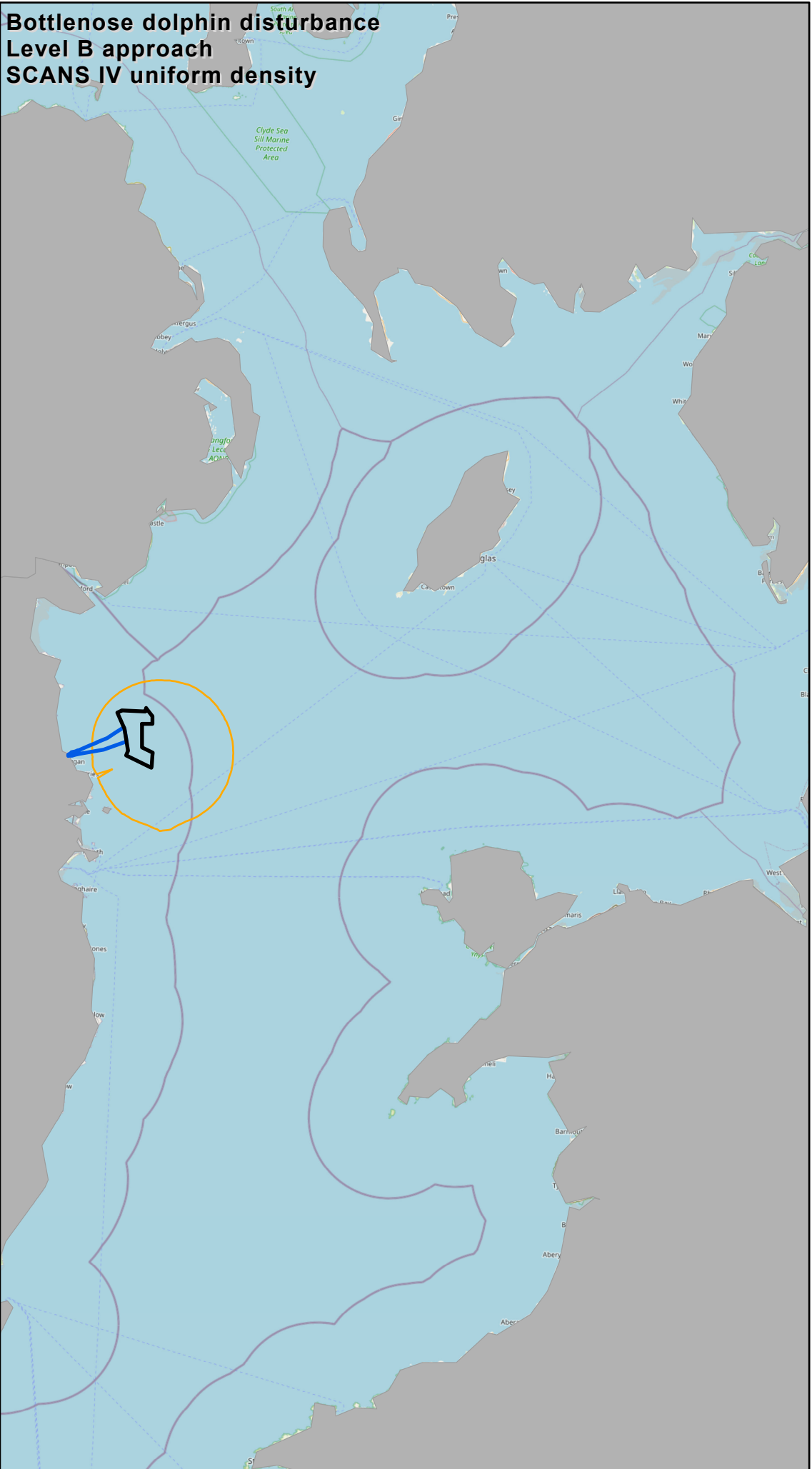
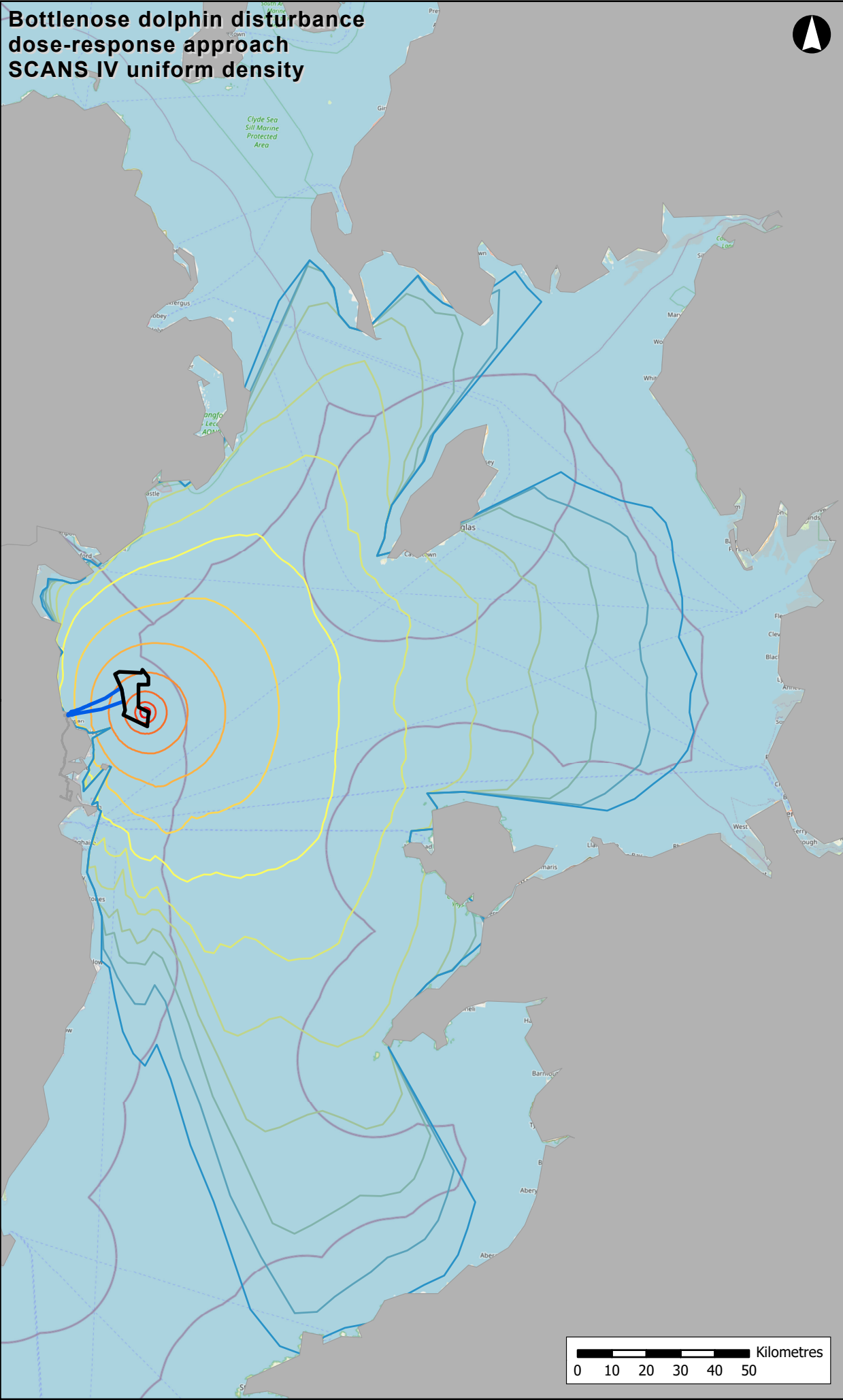
Date: May 2024

Figure No:

Scale: 1:1,500,000 @A3

14.4

Status: Issue



Array Area

Offshore Export Cable Corridor

EEZ

SEL_{ss} dB re $\mu\text{Pa}^2\text{s}$ (5dB) SE Location

120dB

125dB

130dB

135dB

140dB

145dB

150dB

155dB

160dB

165dB

170dB

175dB

180dB

Level B Threshold 160dB re 1 μPa (SPL_{RMS})

NISA

North Irish Sea Array

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North Irish Sea Array
Offshore Wind Farm

Figure Title

Bottlenose Dolphin Disturbance
Contours for Piling of Monopiles
at the Southeast Modelling
Location

Job No: 281240

Date: May 2024

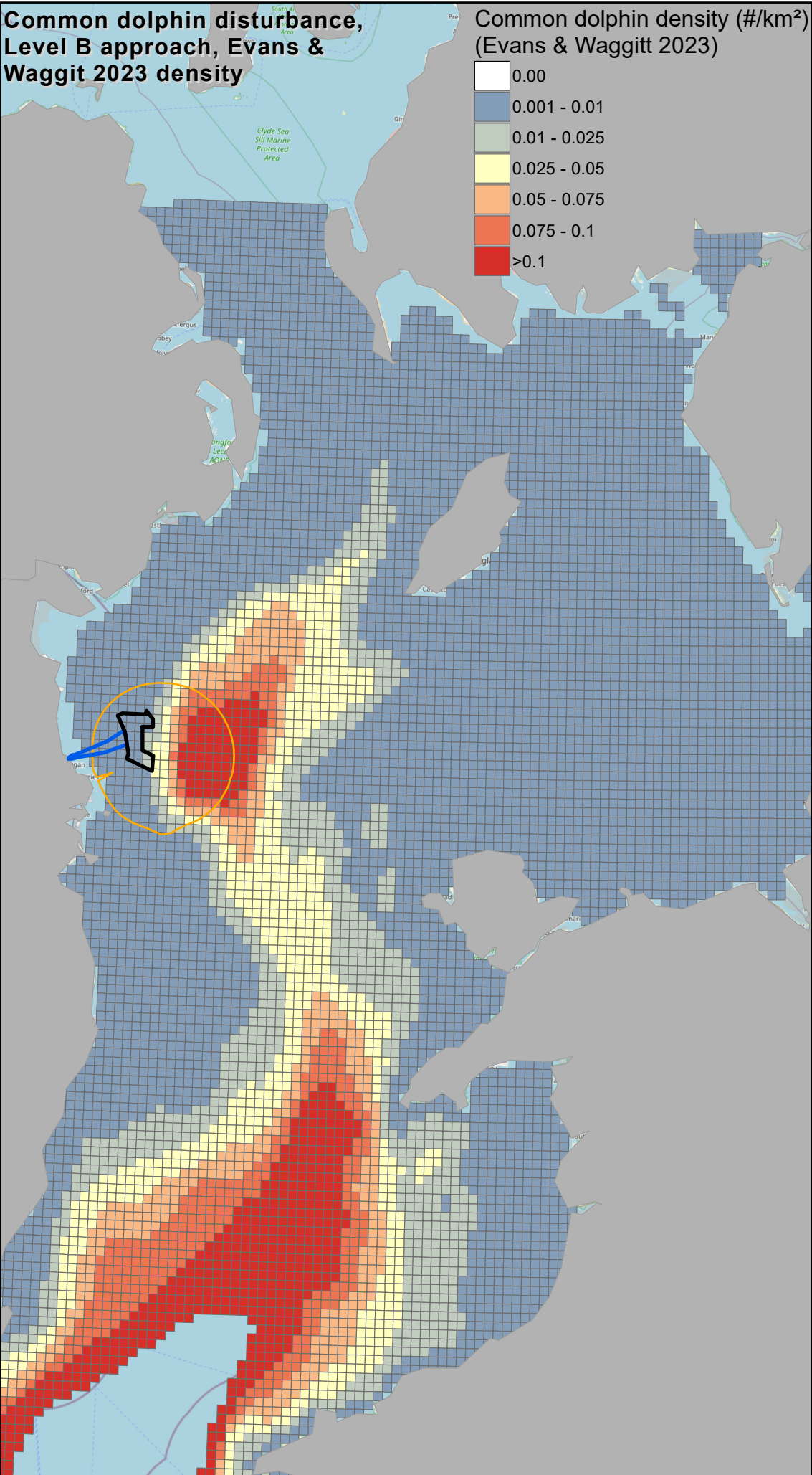
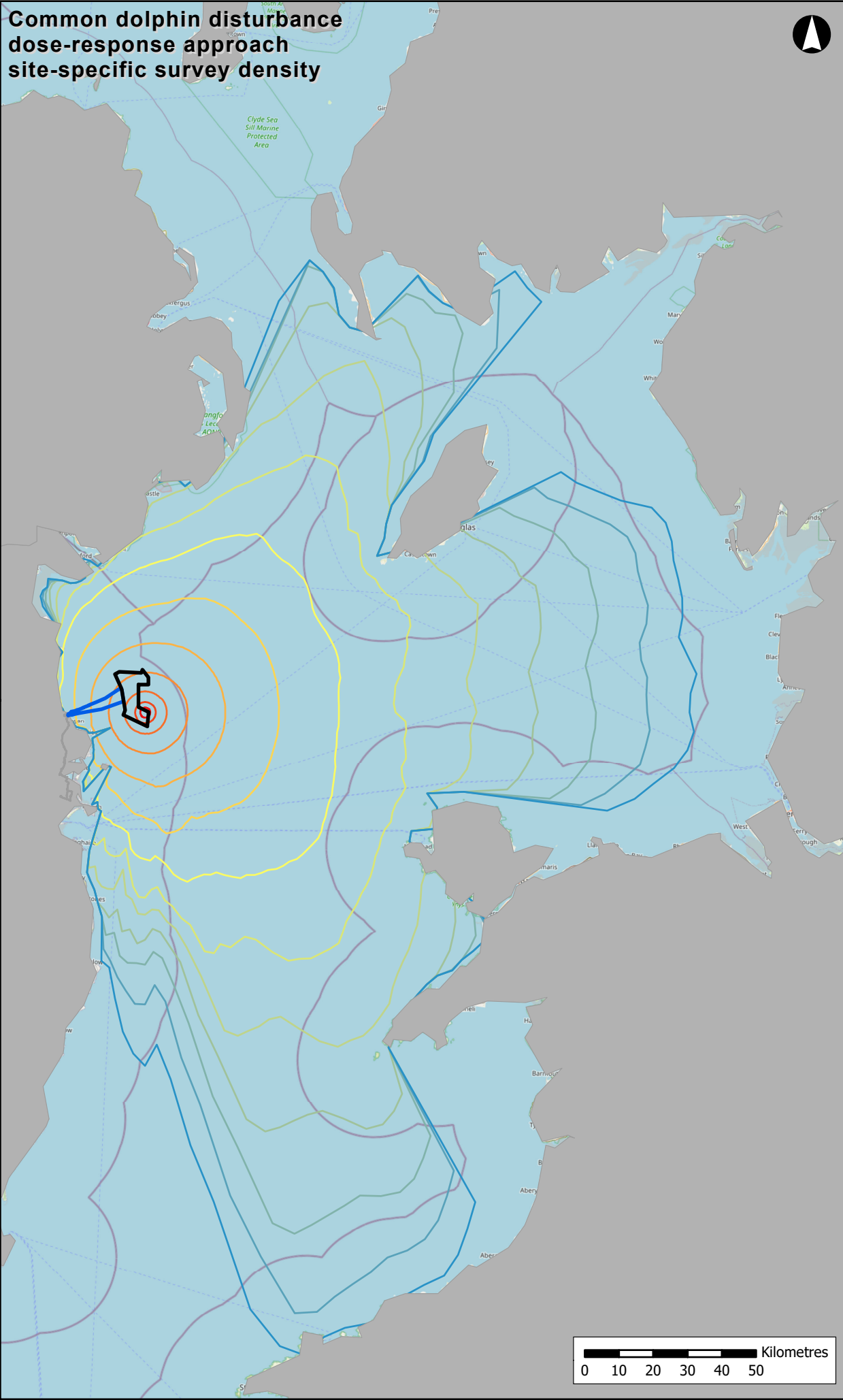
Scale: 1:1,500,000 @A3

Status: Issue

Datum: WGS84 Projection: UTM30N

Figure No:

14.5



Array Area

Offshore Export Cable Corridor

EEZ

SEL_{ss} dB re $\mu\text{Pa}^2\text{s}$ (5dB) SE

- 120dB
- 125dB
- 130dB
- 135dB
- 140dB
- 145dB
- 150dB
- 155dB
- 160dB
- 165dB
- 170dB
- 175dB
- 180dB

Level B Threshold 160dB re 1 μPa (SPL_{RMS})

NISA

North Irish Sea Array

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North Irish Sea Array

Offshore Wind Farm

Figure Title

Common Dolphin Disturbance

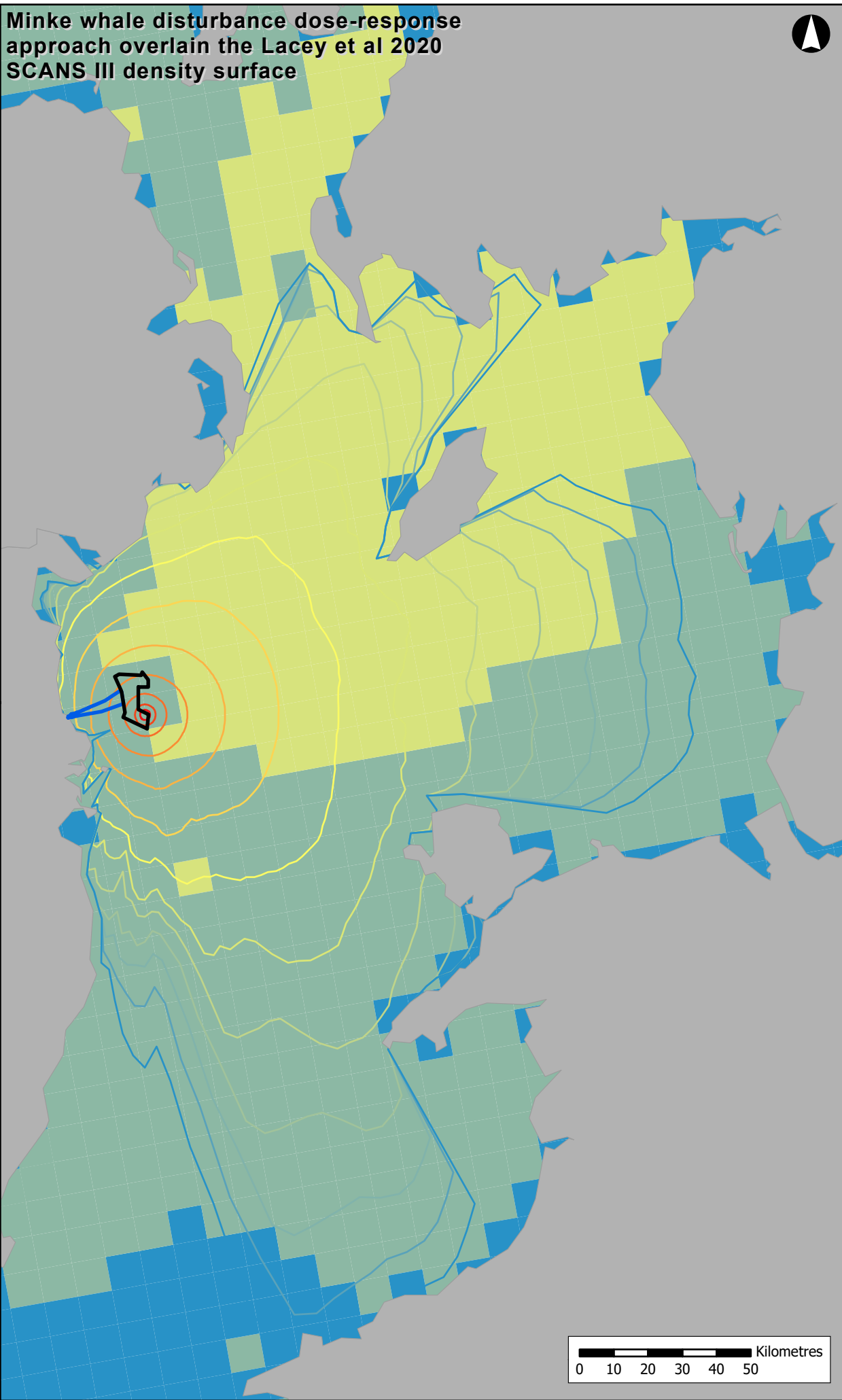
Contours for Piling of a

Monopile at the Southeast

Modelling Location

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: May 2024	Figure No:
Scale: 1:1,500,000 @A3	14.6
Status: Issue	

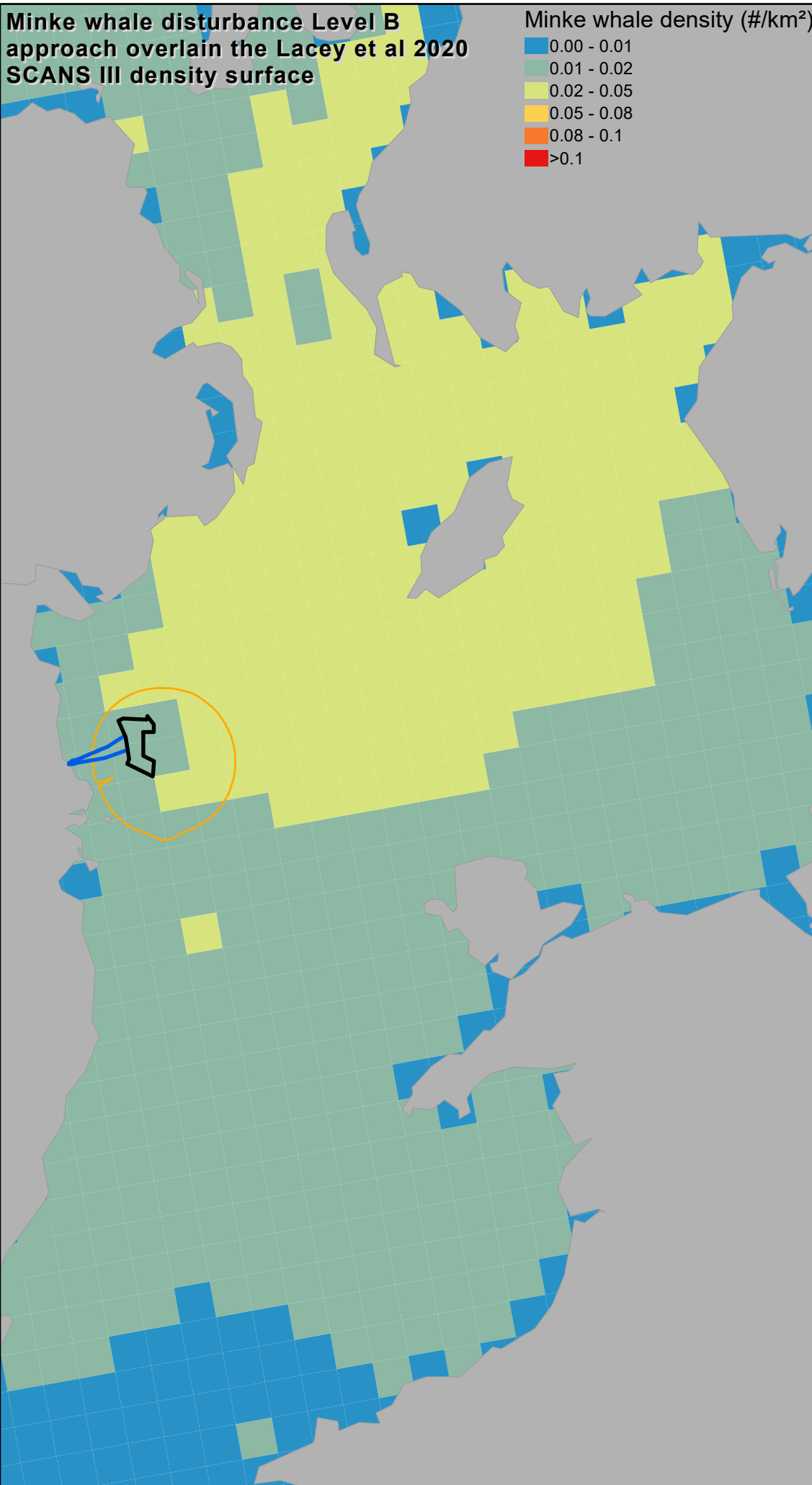
Minke whale disturbance dose-response approach overlain the Lacey et al 2020 SCANS III density surface



Minke whale disturbance Level B approach overlain the Lacey et al 2020 SCANS III density surface

Minke whale density (#/km²)

- 0.00 - 0.01
- 0.01 - 0.02
- 0.02 - 0.05
- 0.05 - 0.08
- 0.08 - 0.1
- >0.1



- Array Area
- Offshore Export Cable Corridor
- SEL_{ss} dB re $\mu\text{Pa}^2\text{s}$ (5dB) SE Location
 - 120dB
 - 125dB
 - 130dB
 - 135dB
 - 140dB
 - 145dB
 - 150dB
 - 155dB
 - 160dB
 - 165dB
 - 170dB
 - 175dB
 - 180dB
- Level B Threshold 160dB re 1 μPa (SPL_{RMS})

NISA
North Irish Sea Array

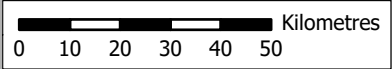
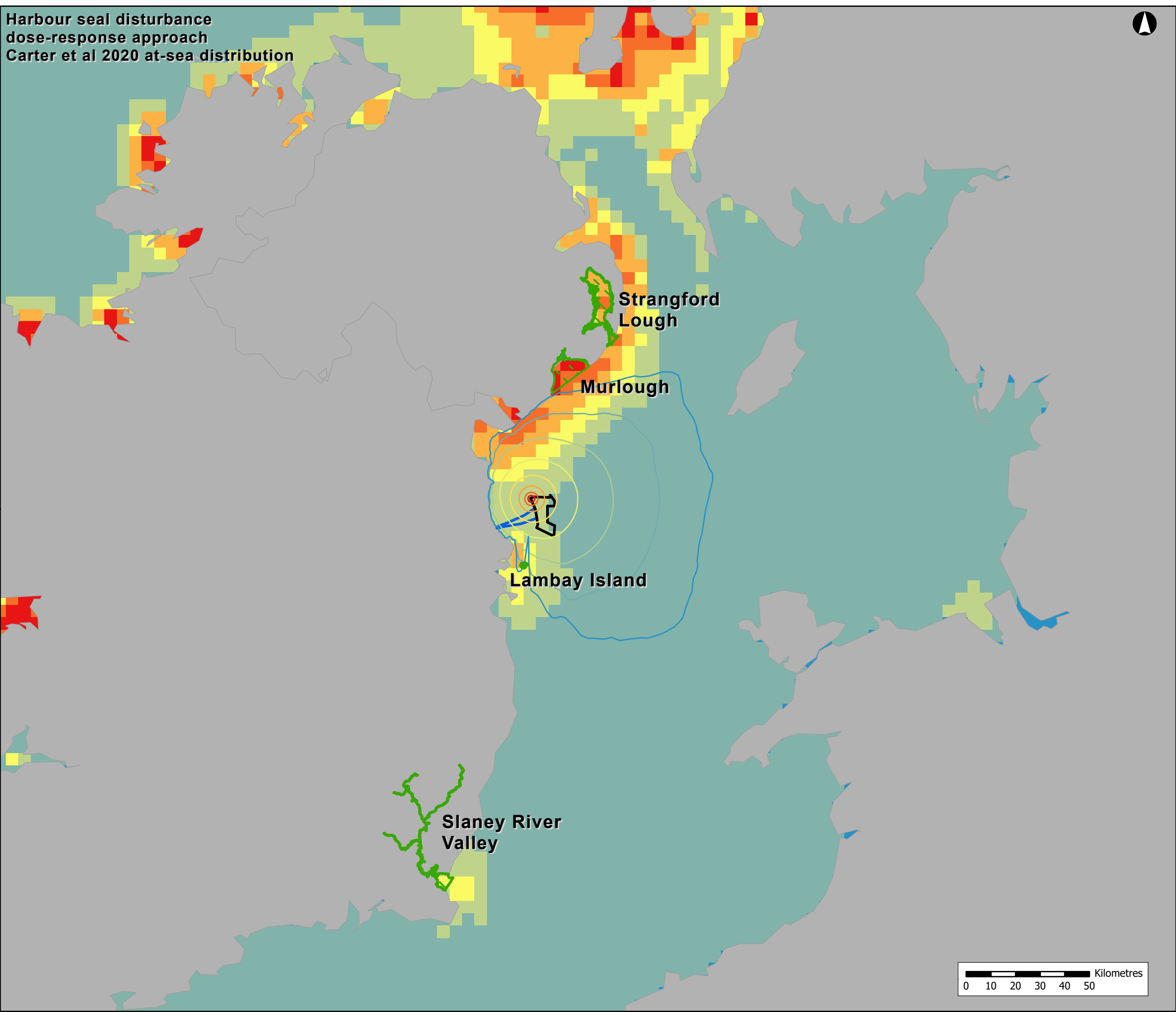
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**North Irish Sea Array
Offshore Wind Farm**

Figure Title
**Minke Whale Disturbance
Contours for Piling of Monopiles
at the Southeast Modelling
Location**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: May 2024	Figure No:
Scale: 1:1,500,000 @A3	14.7
Status: Issue	

Harbour seal disturbance
dose-response approach
Carter et al 2020 at-sea distribution



Array Area

Offshore Export Cable Corridor

Harbour Seal SACs

SEL_{ss} dB re $\mu\text{Pa}^2\text{s}$ (5dB) NW Location

145 dB

150 dB

155 dB

160 dB

165 dB

170 dB

175 dB

180 dB

% British Isles At-Sea Population per cell

0.000.00 - 0.0010.001 - 0.0050.005 - 0.010.01 - 0.0250.025 - 0.05>0.05

NISA
North Irish Sea Array

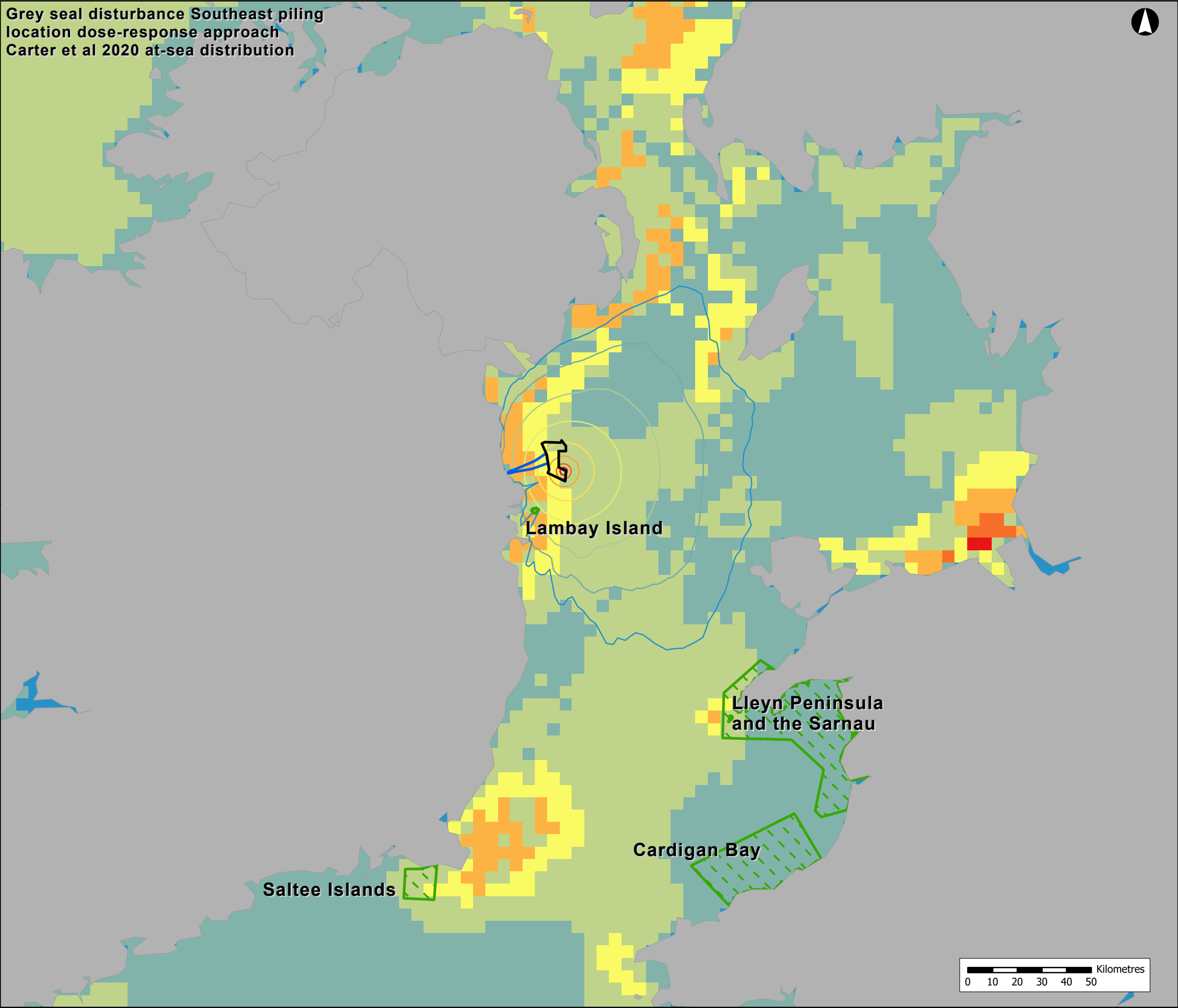
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Offshore Wind Farm**

Figure Title
**Harbour Seal Disturbance
Contours for Piling of Monopiles
at the Northwest Modelling
Location**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: May 2024	Figure No: 14.8
Scale: 1:1,500,000 @A3	
Status: Issue	

Grey seal disturbance Southeast piling location dose-response approach
Carter et al 2020 at-sea distribution



Array Area

Offshore Export Cable Corridor

Grey Seal SACs

SEL_{ss} dB re µPa²s (5dB) SE Location

145 dB

150 dB

155 dB

160 dB

165 dB

170 dB

175 dB

180 dB

% British Isles At-Sea Population per cell

0.000.00 - 0.0010.001 - 0.0050.005 - 0.010.01 - 0.0250.025 - 0.05>0.05

NISA
North Irish Sea Array

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Offshore Wind Farm**

Figure Title
**Grey Seal Disturbance Contours
for Piling of Monopiles at the
Southeast Modelling Location**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: May 2024	Figure No:
Scale: 1:1,500,000 @A3	14.9
Status: Issue	