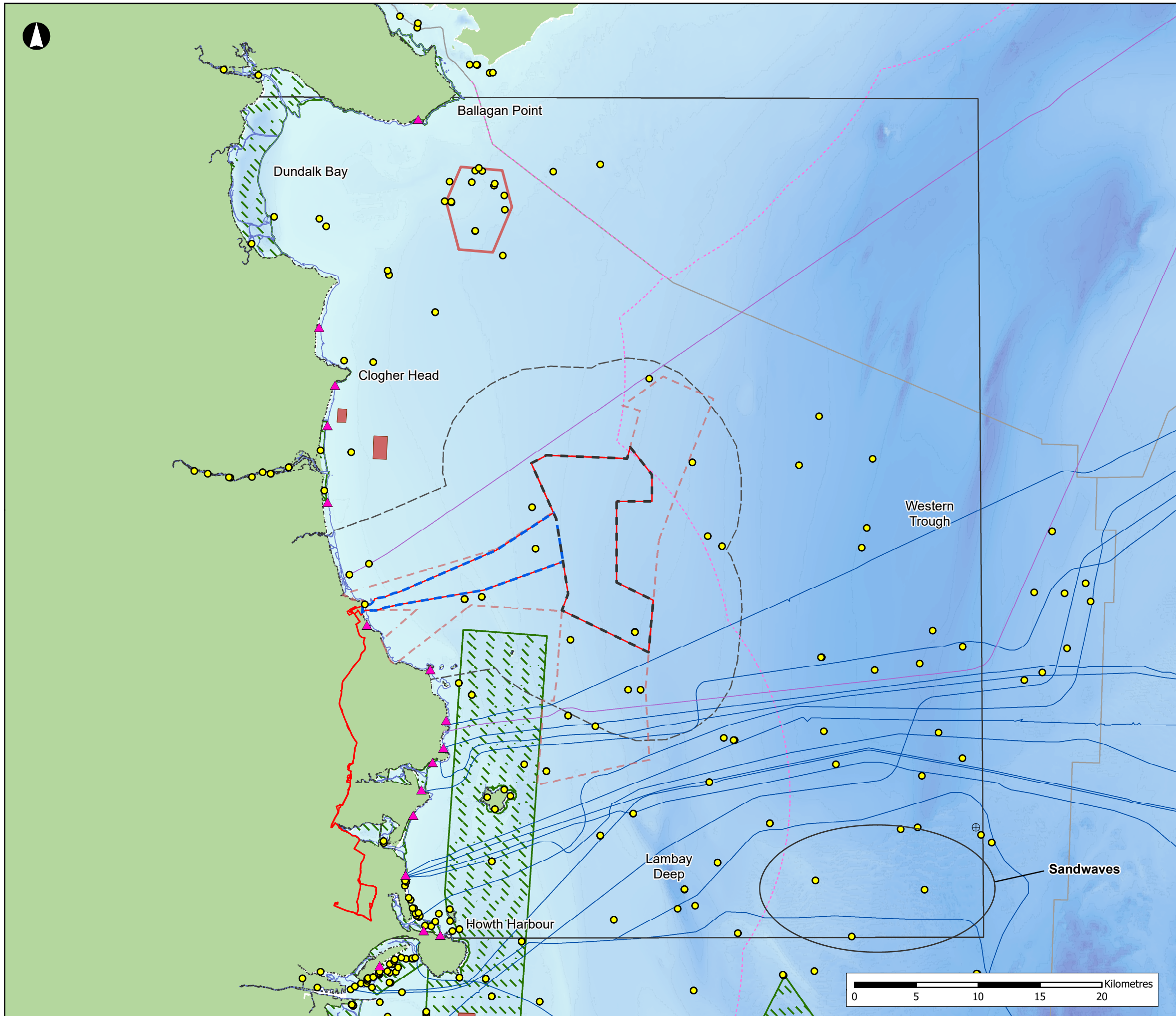


Volume 7A - Figures

Chapter 10
**Marine Geology,
Oceanography and
Physical Processes**



- Proposed Development Boundary
- Array Area
- Offshore Export Cable Corridor
- MAC Boundary
- Study Area
- Tidal Excursion Buffer
- Low Water Mark
- High Water Mark
- EEZ Boundary
- National EEZ (12nm)
- Dumping At Sea Sites (Active)
- Proposed Oriel OWF
- ▲ Bathing Water Locations
- ⊕ M2 Buoy Location
- Shipwrecks (INFOMAR / NMS)
- Special Areas of Conservation
- Pipelines
- Cables

Bathymetry (m)

0
200

NISA

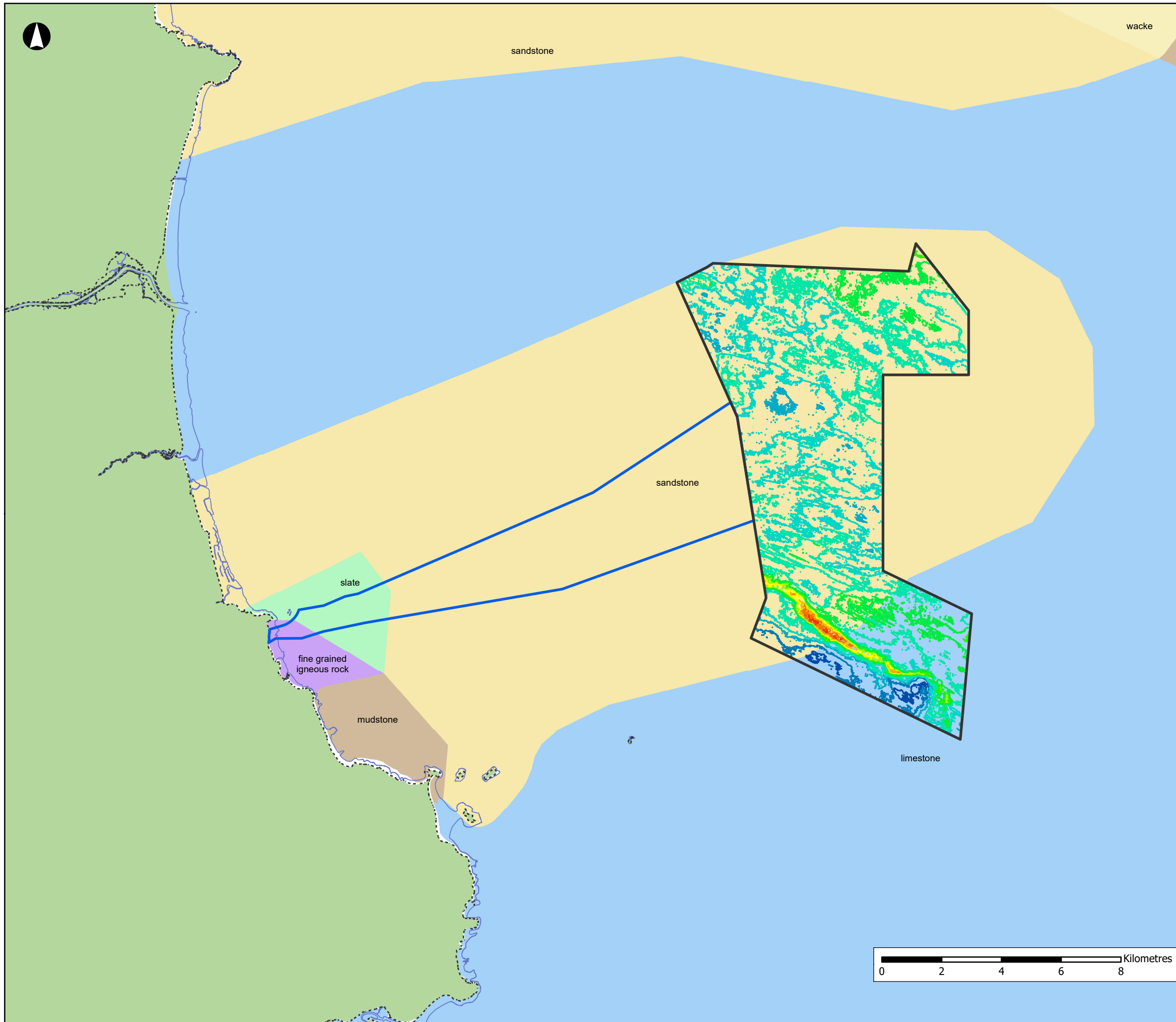
North Irish Sea Array

ARUP GoBe

Project
**North Irish Sea Array
 Offshore Wind Farm**

Figure Title
**Study Area and Key Receptors
 for Marine Processes**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.1
Status: Issue	



Array Area
 Offshore Export Cable Corridor
 Low Water Mark
 High Water Mark

Unit 8, Depth to Rockhead BSF (m)
(Venterra, 2025)

- 5
- 10
- 15
- 20
- 25
- 30
- 35
- 40
- 45
- 50
- 55
- 60

Pre-Quaternary Lithology (EMODnet)

- Fine Grained Igneous Rock
- Limestone
- Mudstone
- Sandstone
- Slate
- Wacke

NISA

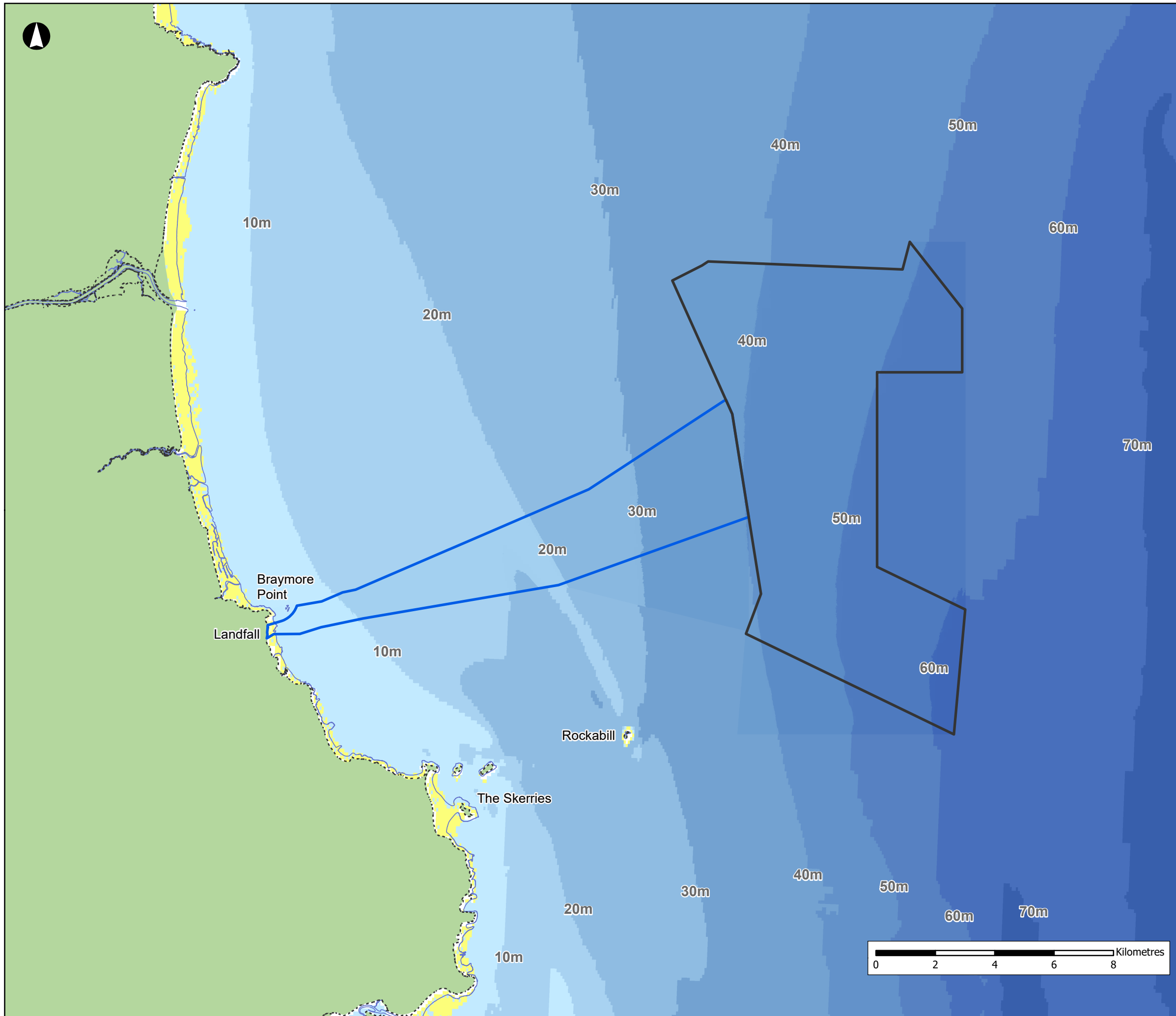
North Irish Sea Array



Project
 North Irish Sea Array
 Offshore Wind Farm

Figure Title
 Depth to Rockhead across the
 Array Area

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:125,000 @A3	A10.2
Status: Issue	



Array Area
 Offshore Export Cable Corridor
 Low Water Mark
 High Water Mark

Bathymetry (m below LAT)

- 70 - 80
- 60 - 70
- 50 - 60
- 40 - 50
- 30 - 40
- 20 - 30
- 10 - 20
- 0 - 10
- +10 - 0

Geophysical survey data for the array area (Fugro, 2022), with EMODnet 2024 bathymetry

NISA

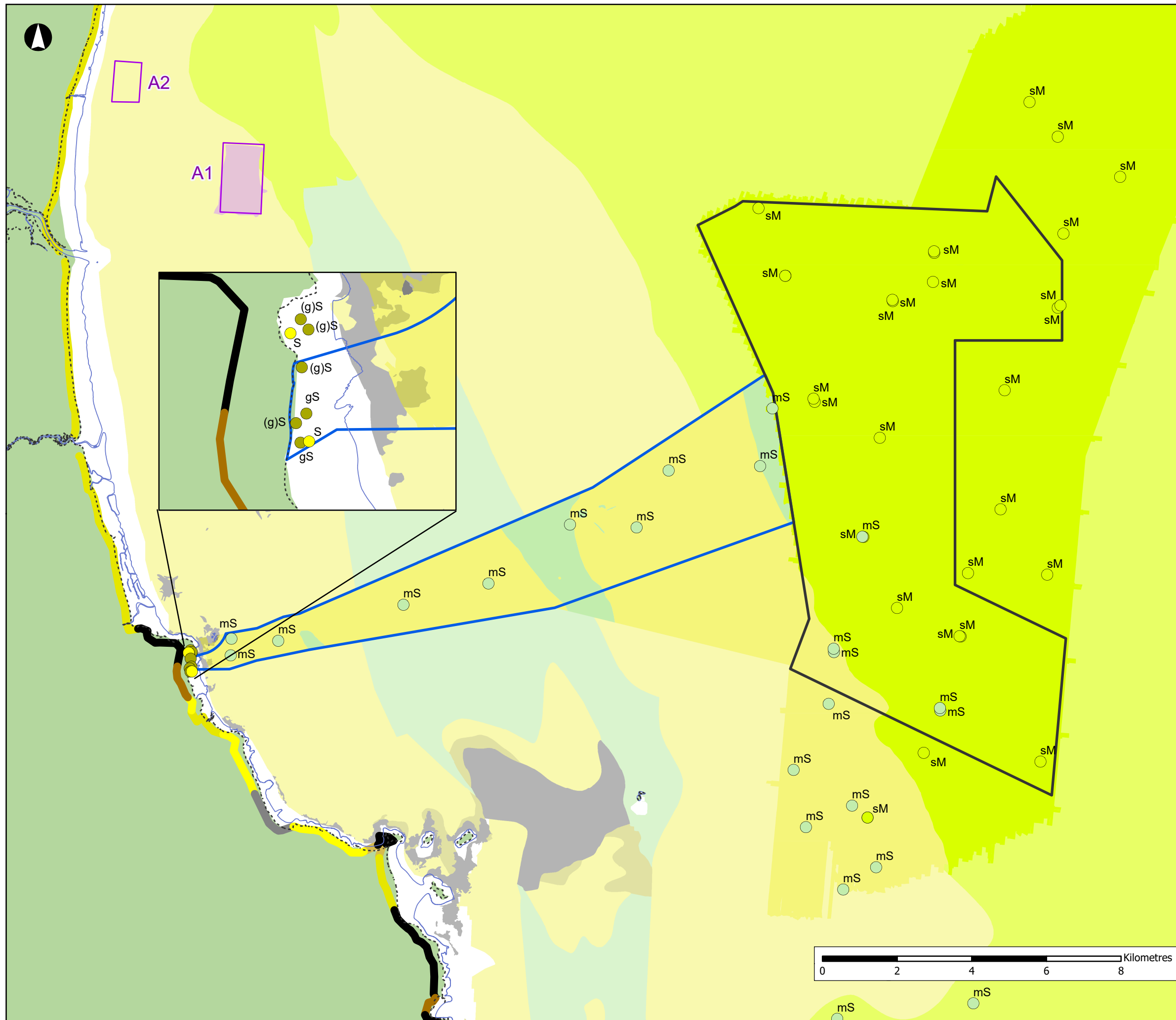
North Irish Sea Array

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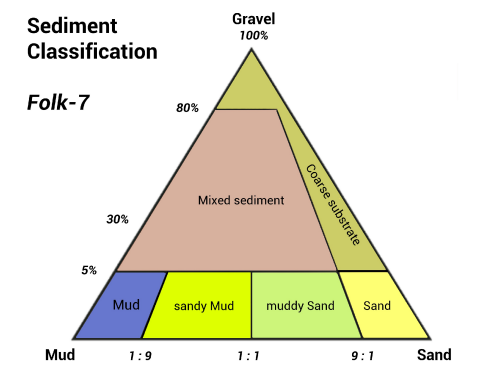
Project
**North Irish Sea Array
 Offshore Wind Farm**

Figure Title
**Bathymetry across the Array
 Area and along the ECC**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: May 2026	Figure No:
Scale: 1:125,000 @A3	A10.3
Status: Issue	



- Array Area
- Offshore Export Cable Corridor
- Low Water Mark
- High Water Mark
- Dumping At Sea Sites (Active)
- Coastal Types (EMODnet):**
- Beach that is part of extensive non-cohesive sedimentary systems (barrier, spit, tombolo)
- Erosion-resistant rock and/or cliff, without loose eroded material in the fronting sea
- Gravel beach fronting upland (> 1 km long)
- Pocket beaches (< 200 m long)
- Sand beach fronting upland (> 1 Km long)
- Small beaches
- Benthic Samples**
- Muddy Sand
- Sandy Mud
- Sandy Gravel
- Sand



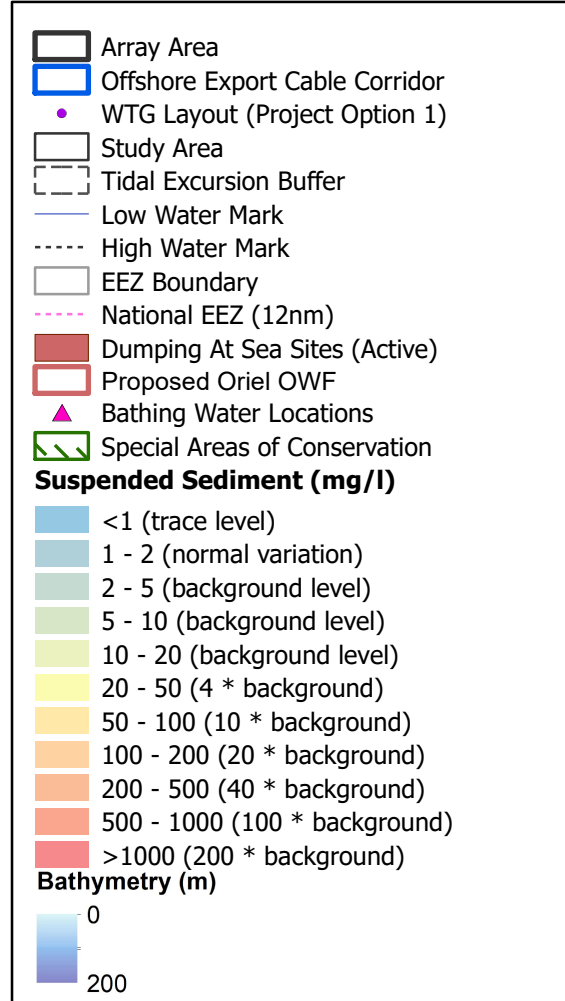
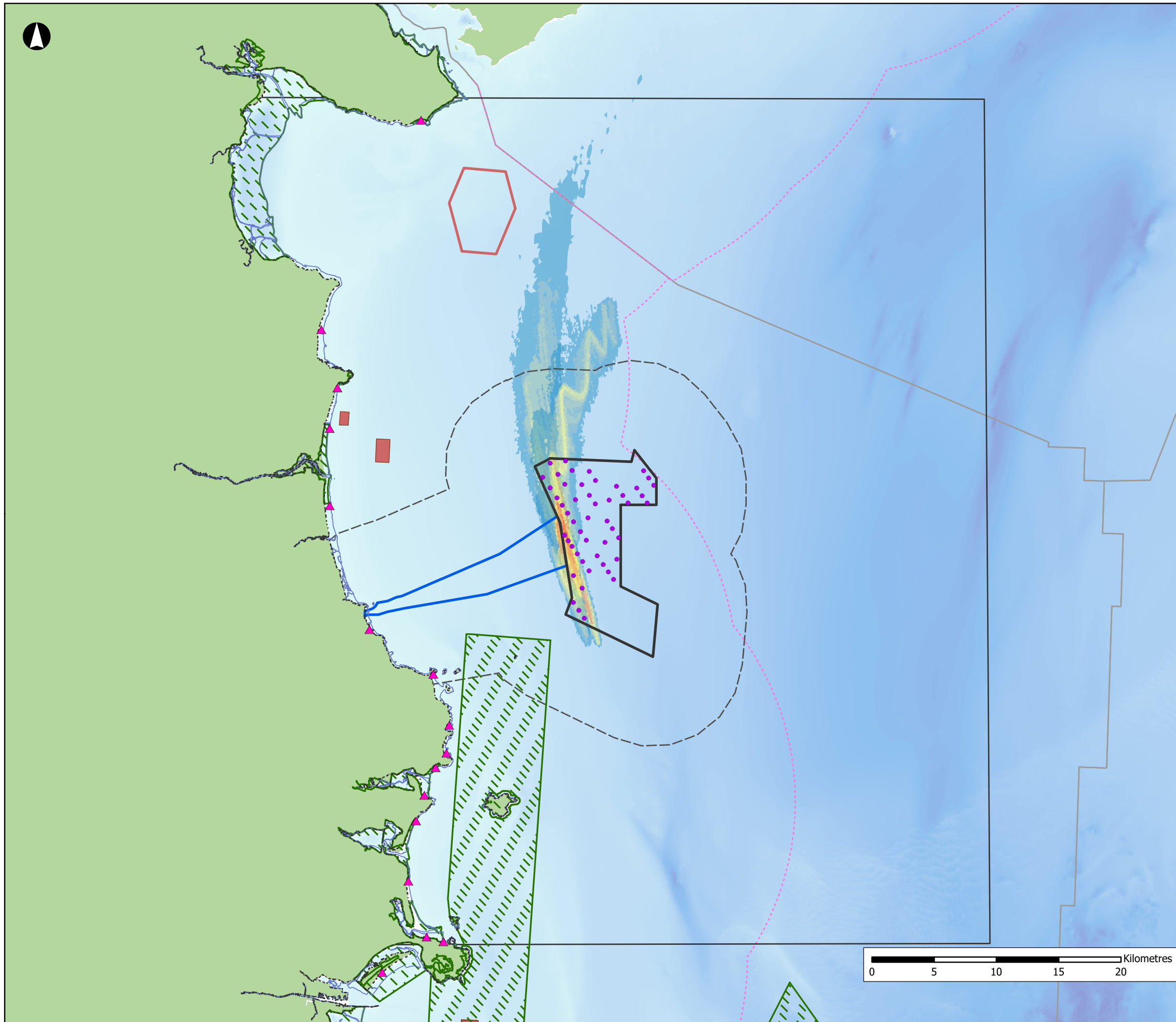
NISA
North Irish Sea Array

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Project
**North Irish Sea Array
Offshore Wind Farm**

Figure Title
**Local Description of Surficial
Sediment**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: May 2026	Figure No:
Scale: 1:100,000 @A3	A10.4
Status: Issue	



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North Irish Sea Array

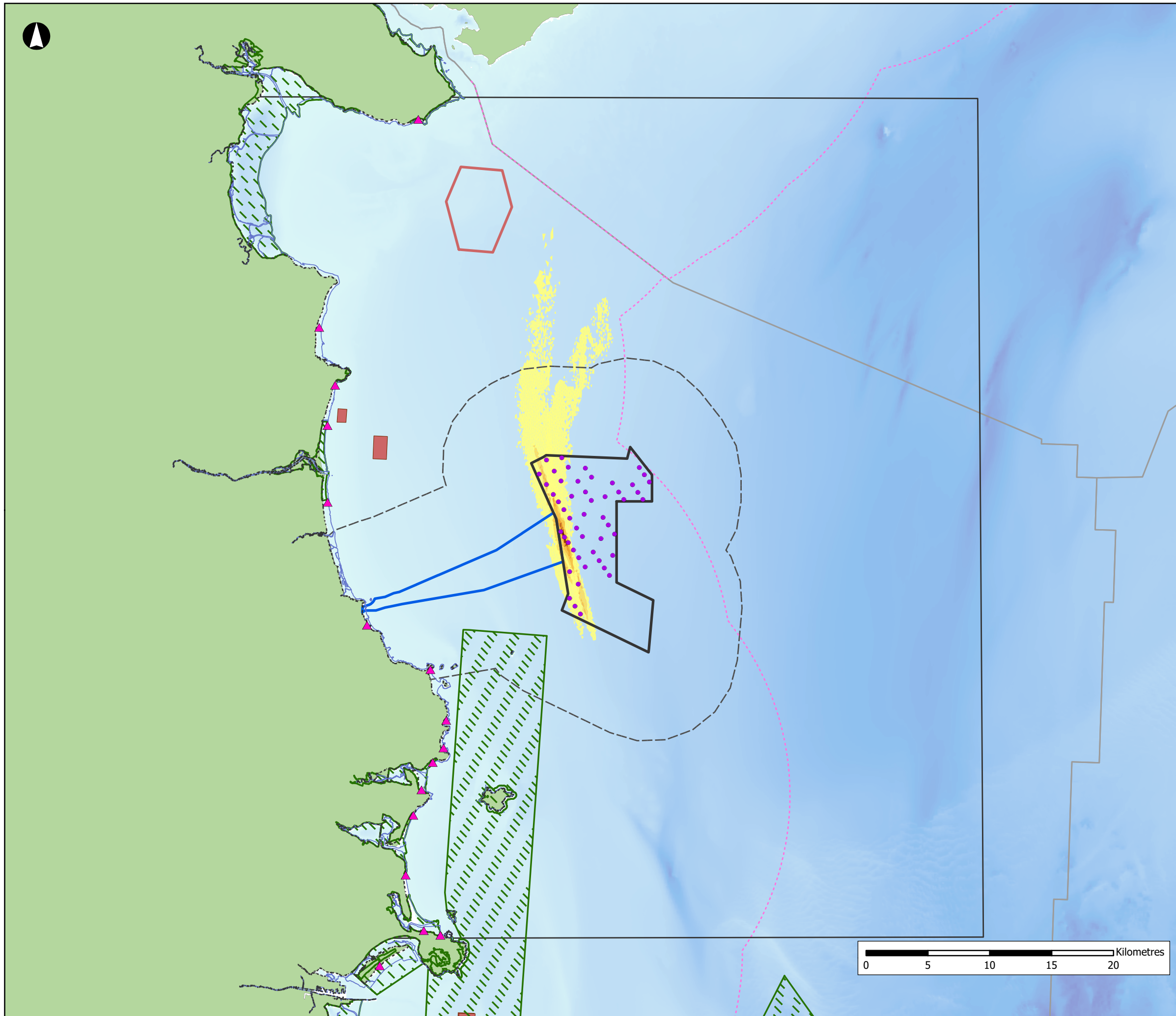
ARUP GoBe

Project
**North Irish Sea Array
Offshore Wind Farm**

Figure Title
**OSP Pin Pile Foundation Drilling
Sediment Plumes**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.5
Status: Issue	





- Array Area
- Offshore Export Cable Corridor
- WTG Layout (Project Option 1)
- Study Area
- Tidal Excursion Buffer
- Low Water Mark
- High Water Mark
- EEZ Boundary
- National EEZ (12nm)
- Dumping At Sea Sites (Active)
- Proposed Oriel OWF
- ▲ Bathing Water Locations
- Special Areas of Conservation

Deposition (mm)

- <1 (trace)
- 1 - 2
- 2 - 5
- 5 - 10
- 10 - 20
- 20 - 50
- >50

Bathymetry (m)

- 0
- 200

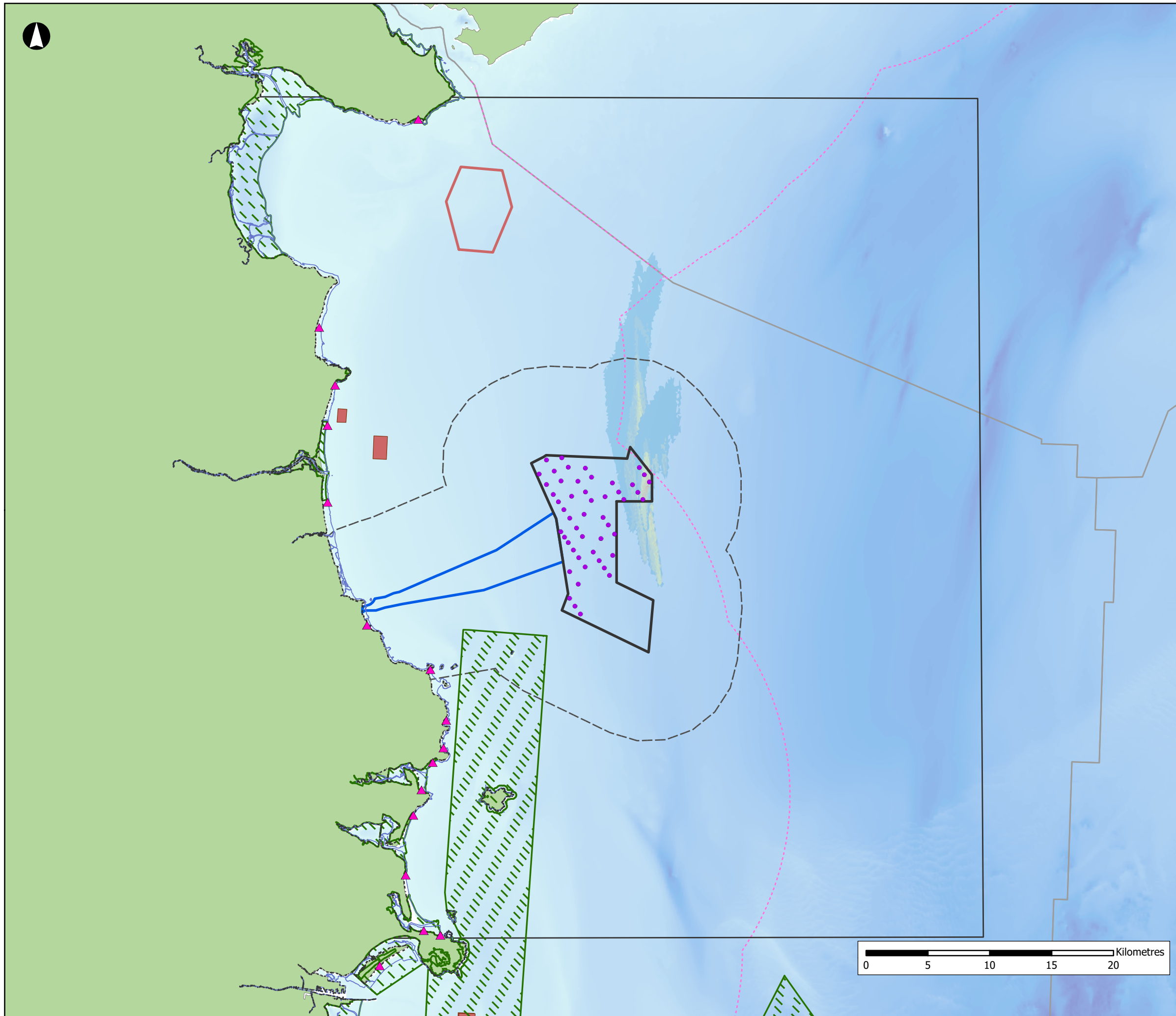
NISA
North Irish Sea Array

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Project
North Irish Sea Array
Offshore Wind Farm

Figure Title
OSP Pin Pile Foundation Drilling
Sediment Deposition

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.6
Status: Issue	



- Array Area
- Offshore Export Cable Corridor
- WTG Layout (Project Option 1)
- Study Area
- Tidal Excursion Buffer
- Low Water Mark
- High Water Mark
- EEZ Boundary
- National EEZ (12nm)
- Dumping At Sea Sites (Active)
- Proposed Oriel OWF
- Bathing Water Locations
- Special Areas of Conservation

Suspended Sediment (mg/l)

- <1 (trace level)
- 1 - 2 (normal variation)
- 2 - 5 (background level)
- 5 - 10 (background level)
- 10 - 20 (background level)
- 20 - 50 (4 * background)
- 50 - 100 (10 * background)
- 100 - 200 (20 * background)
- 200 - 500 (40 * background)
- 500 - 1000 (100 * background)
- >1000 (200 * background)

Bathymetry (m)

- 0
- 200

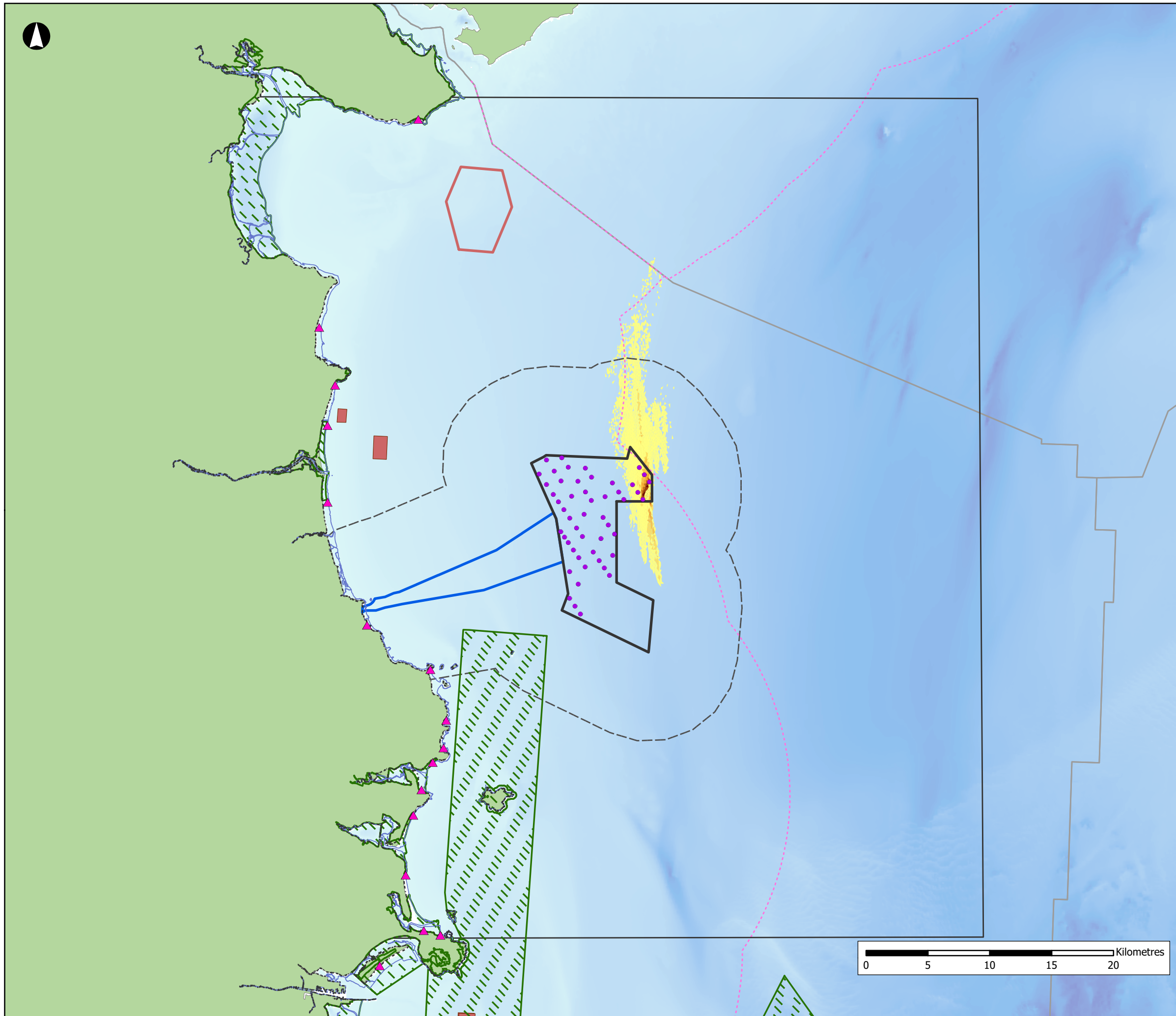
NISA
North Irish Sea Array

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Project
**North Irish Sea Array
Offshore Wind Farm**

Figure Title
Array Cabling Sediment Plumes

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.7
Status: Issue	



- Array Area
- Offshore Export Cable Corridor
- WTG Layout (Project Option 1)
- Study Area
- Tidal Excursion Buffer
- Low Water Mark
- High Water Mark
- EEZ Boundary
- National EEZ (12nm)
- Dumping At Sea Sites (Active)
- Proposed Oriel OWF
- Bathing Water Locations
- Special Areas of Conservation

Deposition (mm)

- <1 (trace)
- 1 - 2
- 2 - 5
- 5 - 10
- 10 - 20
- 20 - 50
- >50

Bathymetry (m)

- 0
- 200

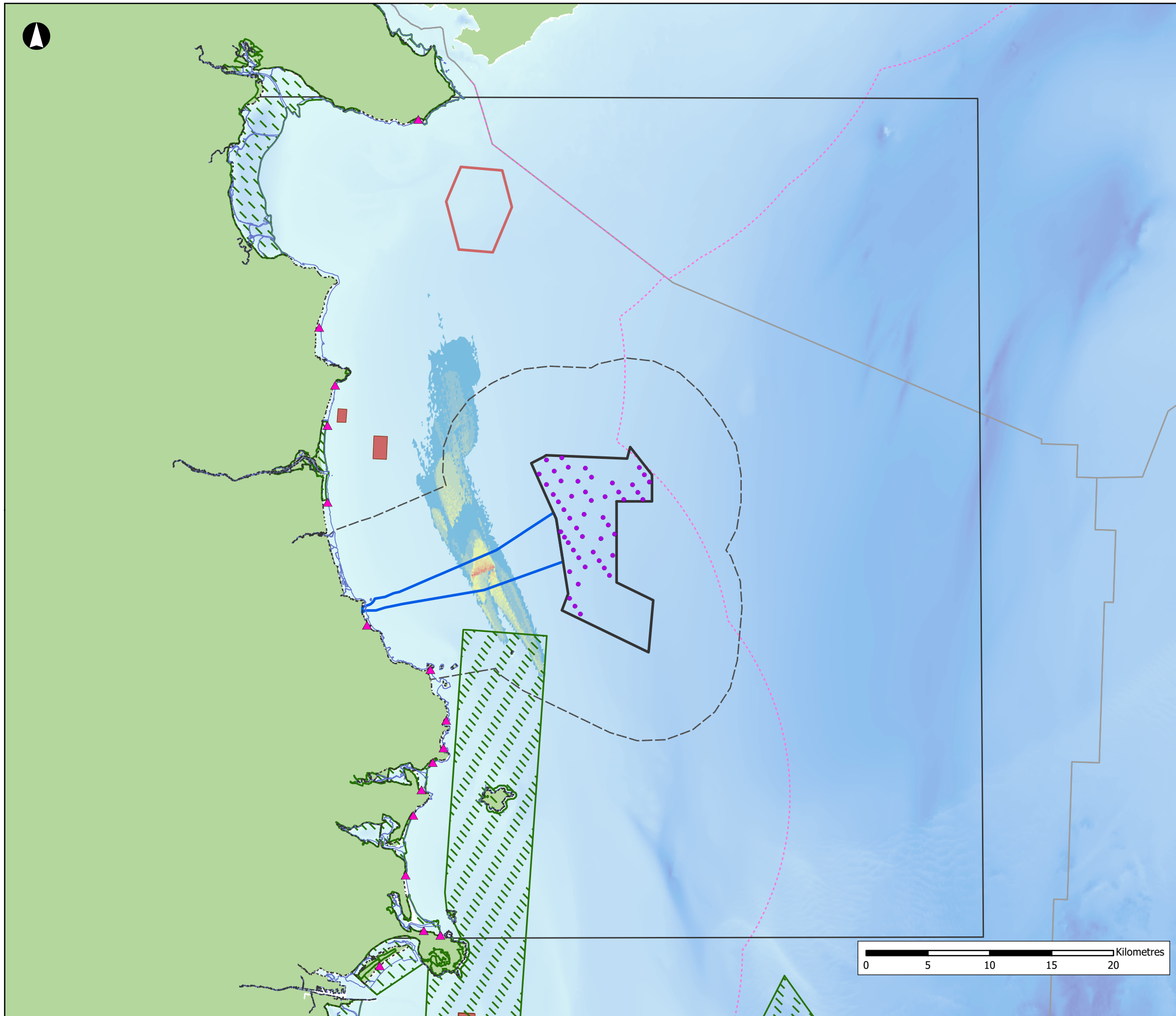
NISA
North Irish Sea Array

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Project
**North Irish Sea Array
Offshore Wind Farm**

Figure Title
**Array Cabling Sediment
Deposition**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.8
Status: Issue	



	Array Area
	Offshore Export Cable Corridor
	WTG Layout
	Study Area
	Tidal Excursion Buffer
	Low Water Mark
	High Water Mark
	EEZ Boundary
	National EEZ (12nm)
	Dumping At Sea Sites (Active)
	Proposed Oriel OWF
	Bathing Water Locations
	Special Areas of Conservation
Suspended Sediment (mg/l)	
	<1 (trace level)
	1 - 2 (normal variation)
	2 - 5 (background level)
	5 - 10 (background level)
	10 - 20 (background level)
	20 - 50 (4 * background)
	50 - 100 (10 * background)
	100 - 200 (20 * background)
	200 - 500 (40 * background)
	500 - 1000 (100 * background)
	>1000 (200 * background)
Bathymetry (m)	
	0
	200

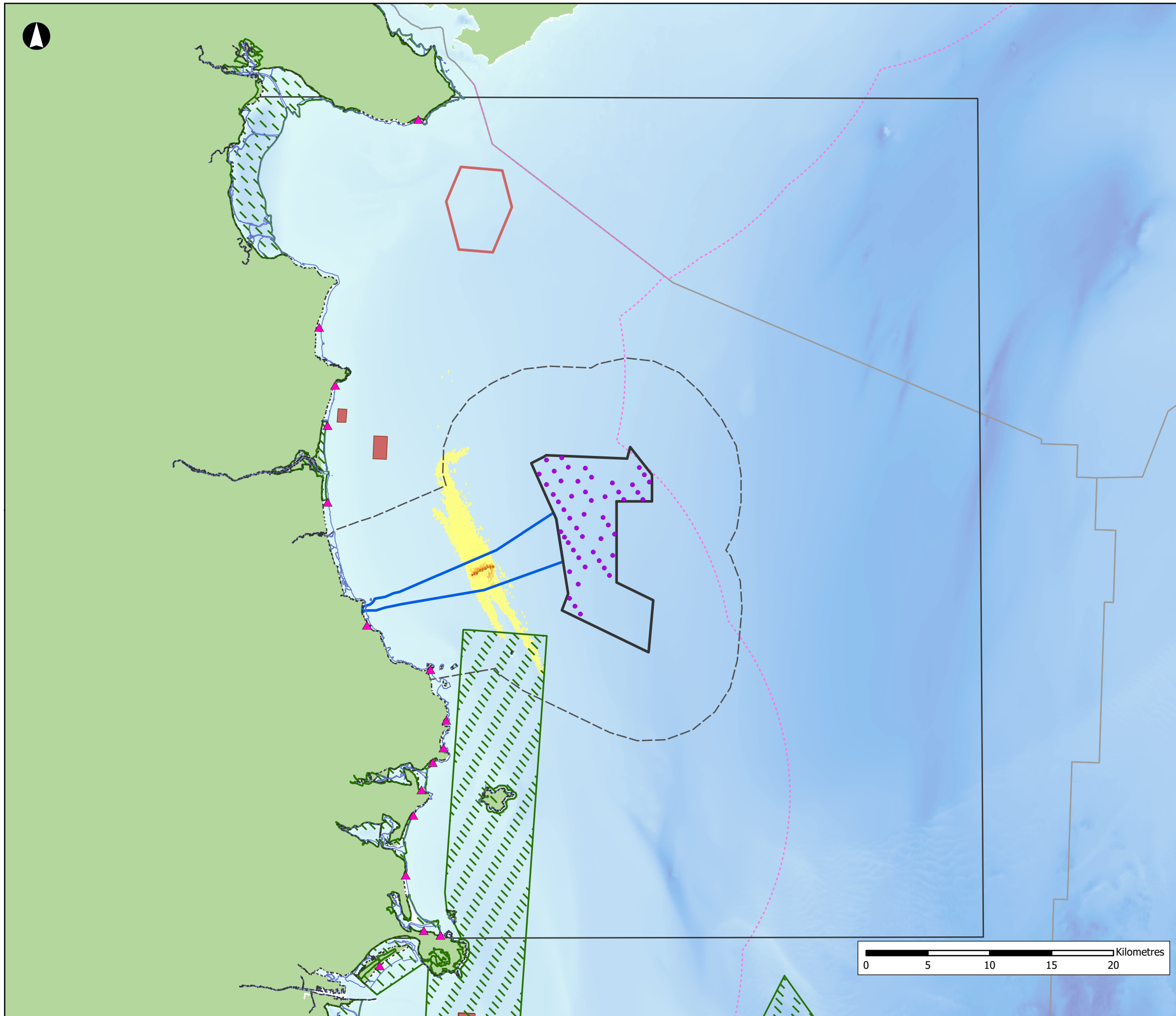
NISA
North Irish Sea Array

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Project
North Irish Sea Array
Offshore Wind Farm

Figure Title
ECC Cabling Sediment Plumes

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.9
Status: Issue	



- Array Area
- Offshore Export Cable Corridor
- WTG Layout (Project Option 1)
- Study Area
- Tidal Excursion Buffer
- Low Water Mark
- High Water Mark
- EEZ Boundary
- National EEZ (12nm)
- Dumping At Sea Sites (Active)
- Proposed Oriel OWF
- Bathing Water Locations
- Special Areas of Conservation

Deposition (mm)

- <1 (trace)
- 1 - 2
- 2 - 5
- 5 - 10
- 10 - 20
- 20 - 50
- >50

Bathymetry (m)

- 0
- 200

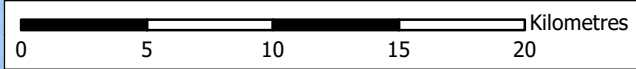
NISA
North Irish Sea Array

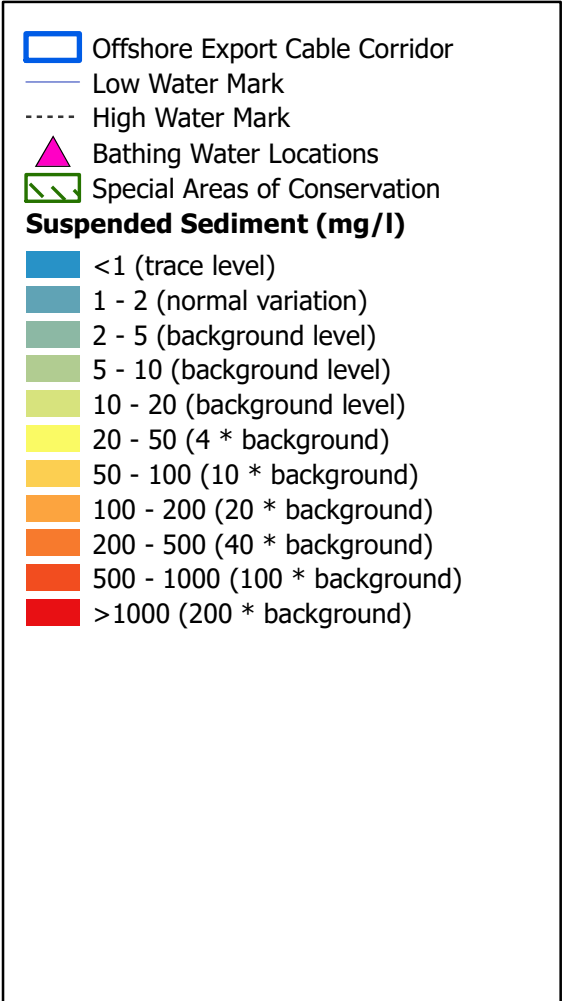
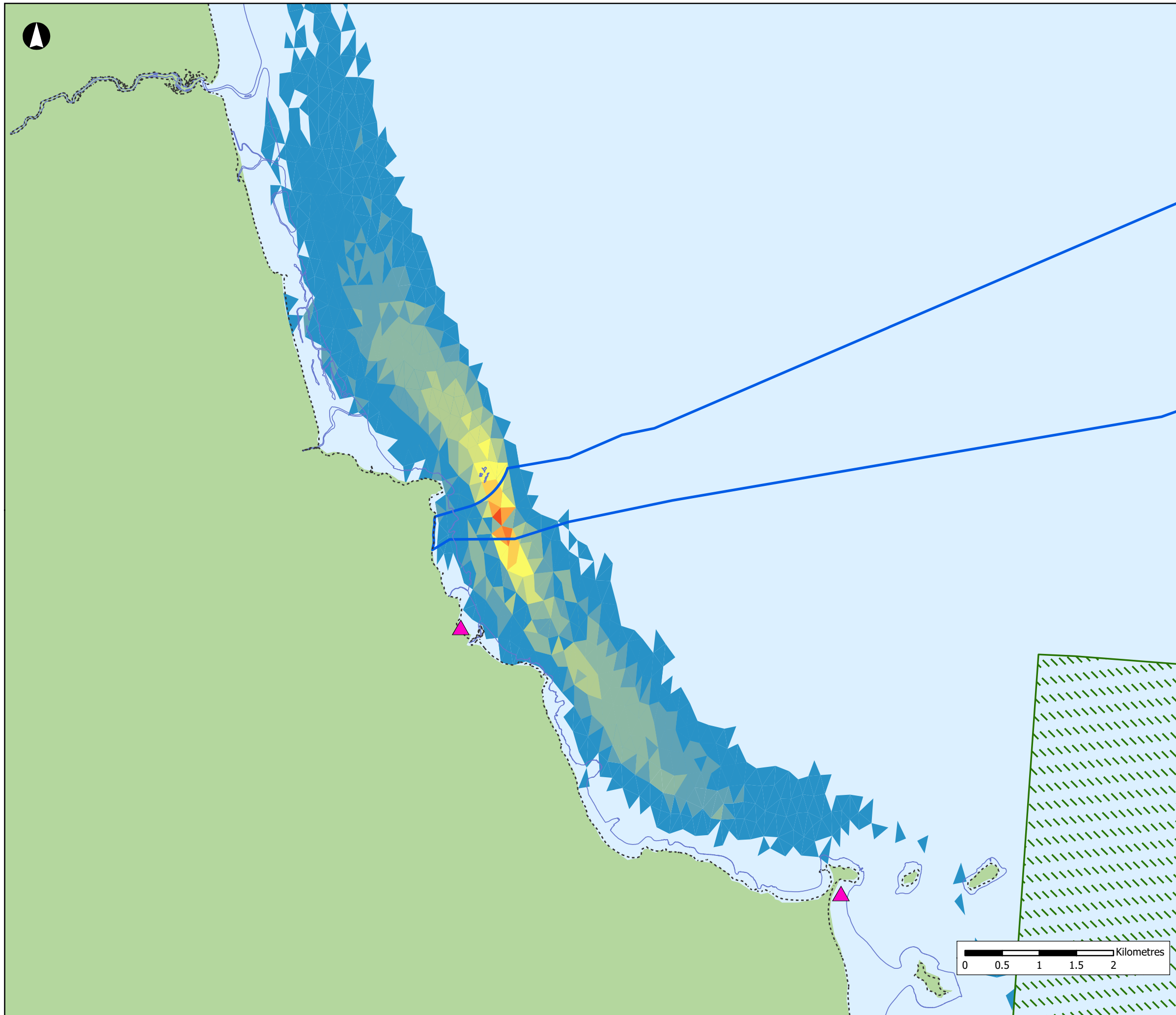
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Project
North Irish Sea Array
Offshore Wind Farm

Figure Title
ECC Cabling Sediment
Deposition

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.10
Status: Issue	





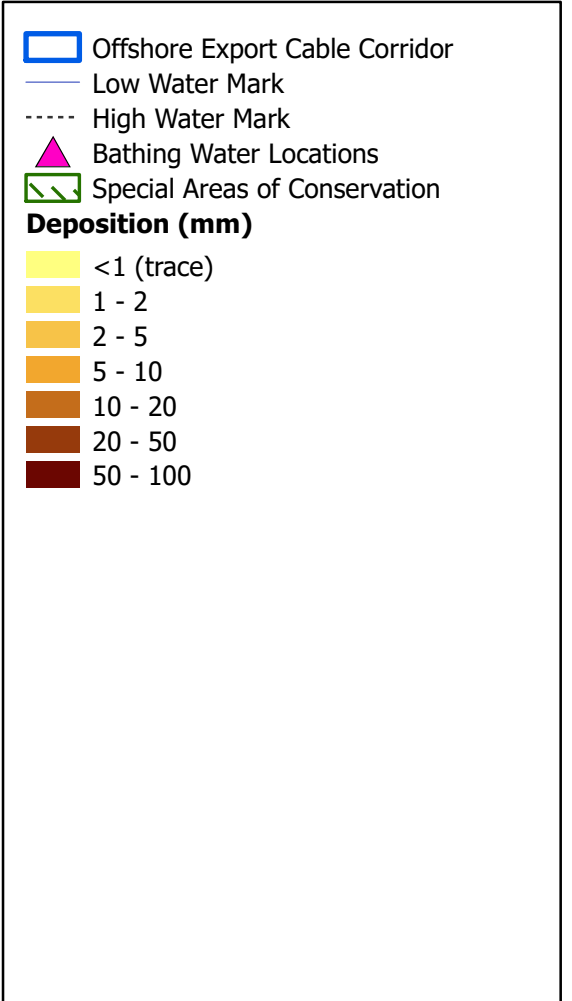
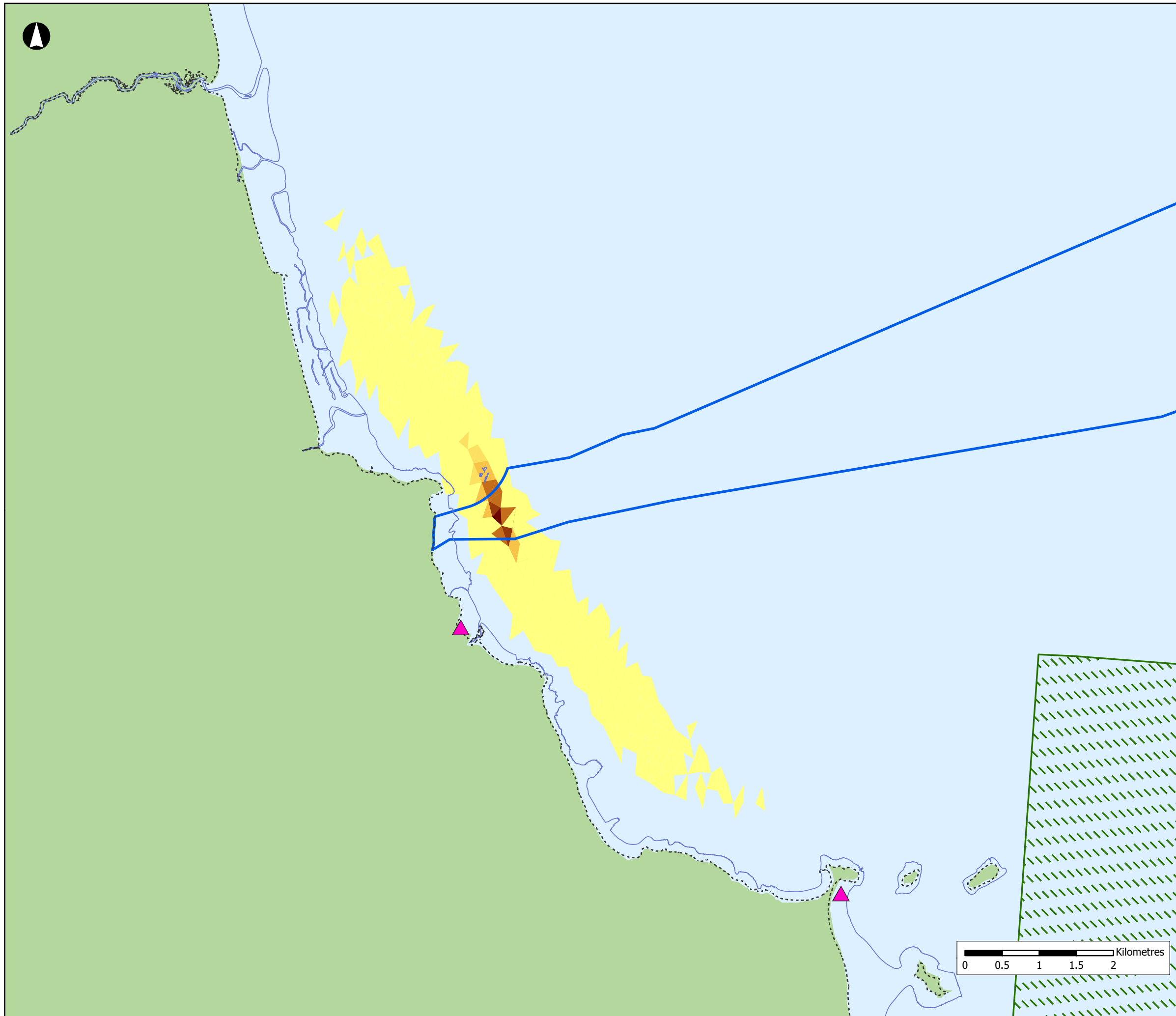
NISA
North Irish Sea Array

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**North Irish Sea Array
 Offshore Wind Farm**

Figure Title
HDD Exit Pits Sediment Plumes

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
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Status: Issue	



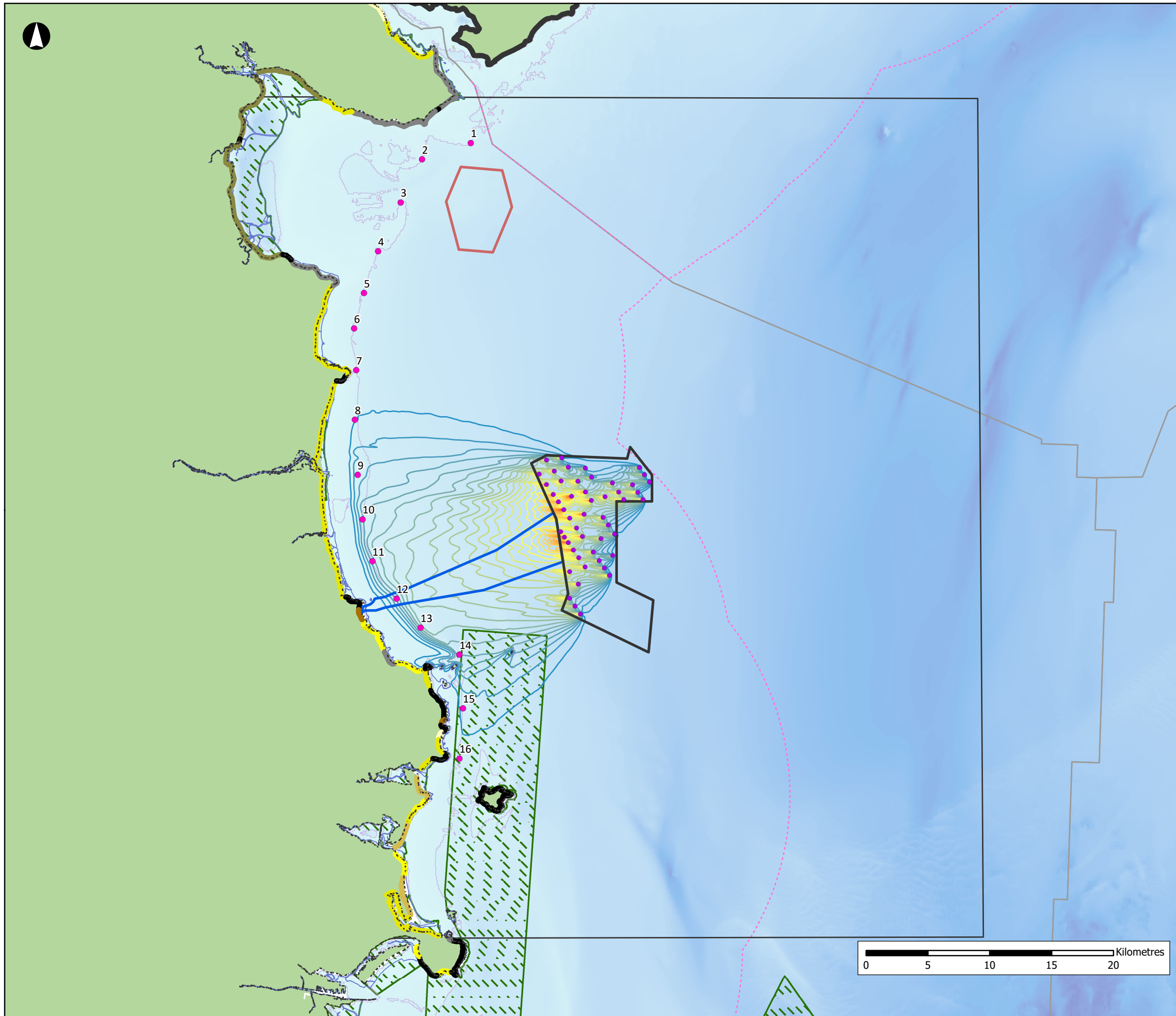
NISA
North Irish Sea Array

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Project
**North Irish Sea Array
 Offshore Wind Farm**

Figure Title
**HDD Exit Pits Sediment
 Deposition**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:50,000 @A3	A10.12
Status: Issue	



Array Area
Offshore Export Cable Corridor
WTG Layout (Project Option 1)
Study Area
 Low Water Mark
 High Water Mark
 EEZ Boundary
 National EEZ (12nm)
 Proposed Oriel OWF
 Special Areas of Conservation
 Nearshore Sites
 10m Contour

Bathymetry (m)
 0
 200

Coastal Types (EMODnet):
 Beach that is part of extensive non-cohesive sedimentary systems (barrier, spit, tombolo)
 Beach with rocky platform
 Erodible rock and/or cliff, with rock waste and sediments (sand or pebbles) at its base
 Erosion-resistant rock and/or cliff, without loose eroded material in the fronting sea
 Gravel beach fronting upland (> 1 km long)
 Muddy coastline, including tidal flat, salt marsh
 Pocket beaches (< 200 m long)
 Sand beach fronting upland (> 1 km long)
 Small beaches

Reduction in Wave Height (m)

-1.6 - -1.55	-0.85 - -0.80
-1.55 - -1.50	-0.8 - -0.75
-1.5 - -1.45	-0.75 - -0.70
-1.45 - -1.40	-0.7 - -0.65
-1.4 - -1.35	-0.65 - -0.60
-1.35 - -1.30	-0.6 - -0.55
-1.3 - -1.25	-0.55 - -0.50
-1.25 - -1.20	-0.5 - -0.45
-1.2 - -1.15	-0.45 - -0.40
-1.15 - -1.10	-0.4 - -0.35
-1.1 - -1.05	-0.35 - -0.30
-1.05 - -1.0	-0.3 - -0.25
-1 - -0.95	-0.25 - -0.20
-0.95 - -0.90	-0.2 - -0.15
-0.9 - -0.85	-0.15 - -0.10
	-0.1 - -0.05
	-0.05 - 0

NISA

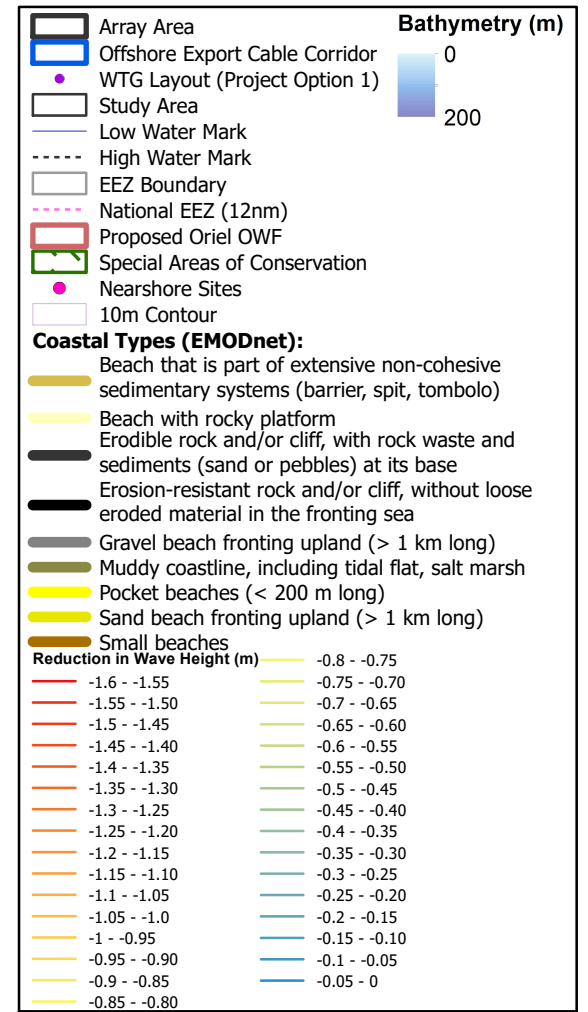
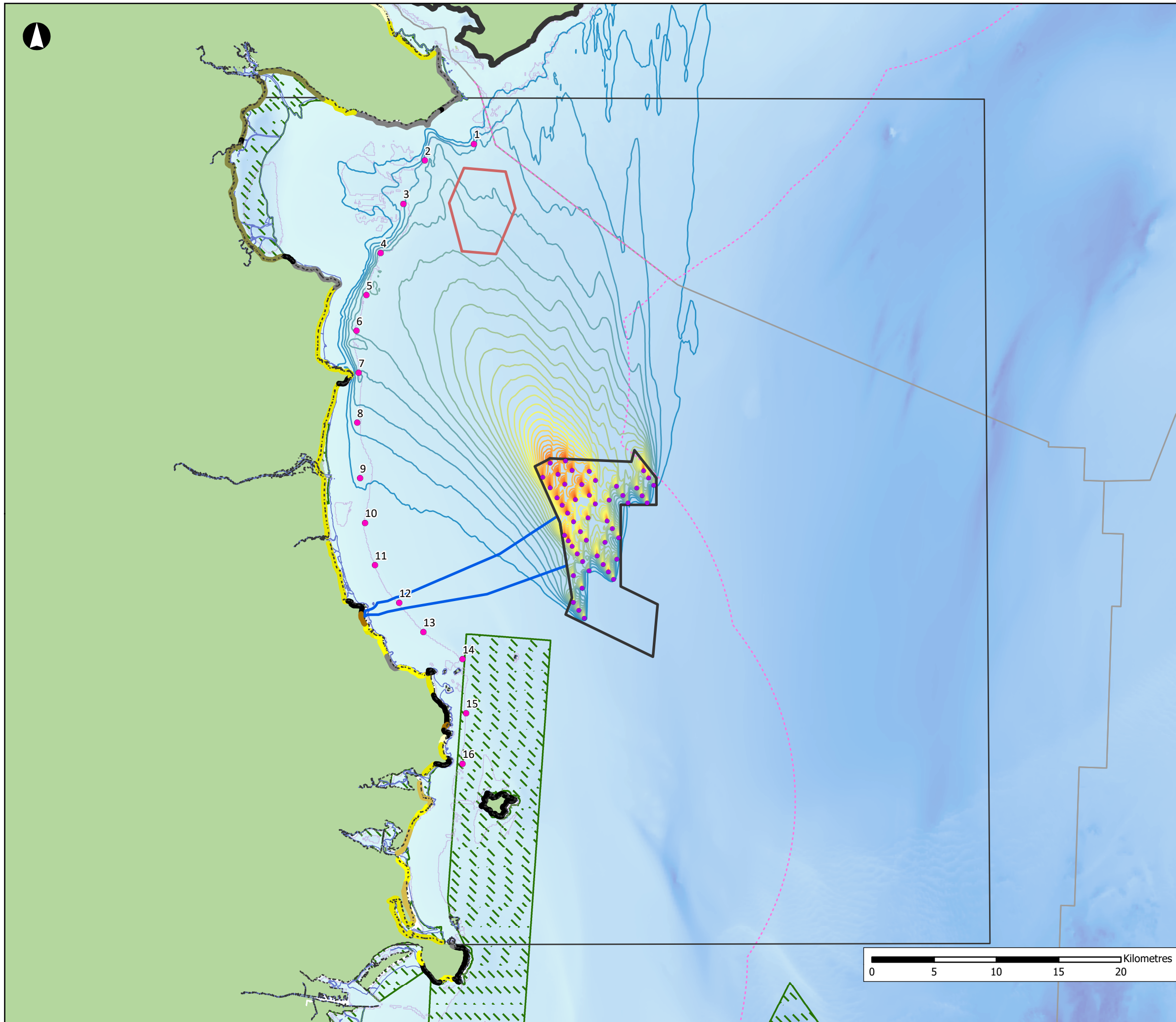
North Irish Sea Array

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Project
**North Irish Sea Array
 Offshore Wind Farm**

Figure Title
**Wave Height Reduction from
 East-North-East**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.13
Status: Issue	



NISA

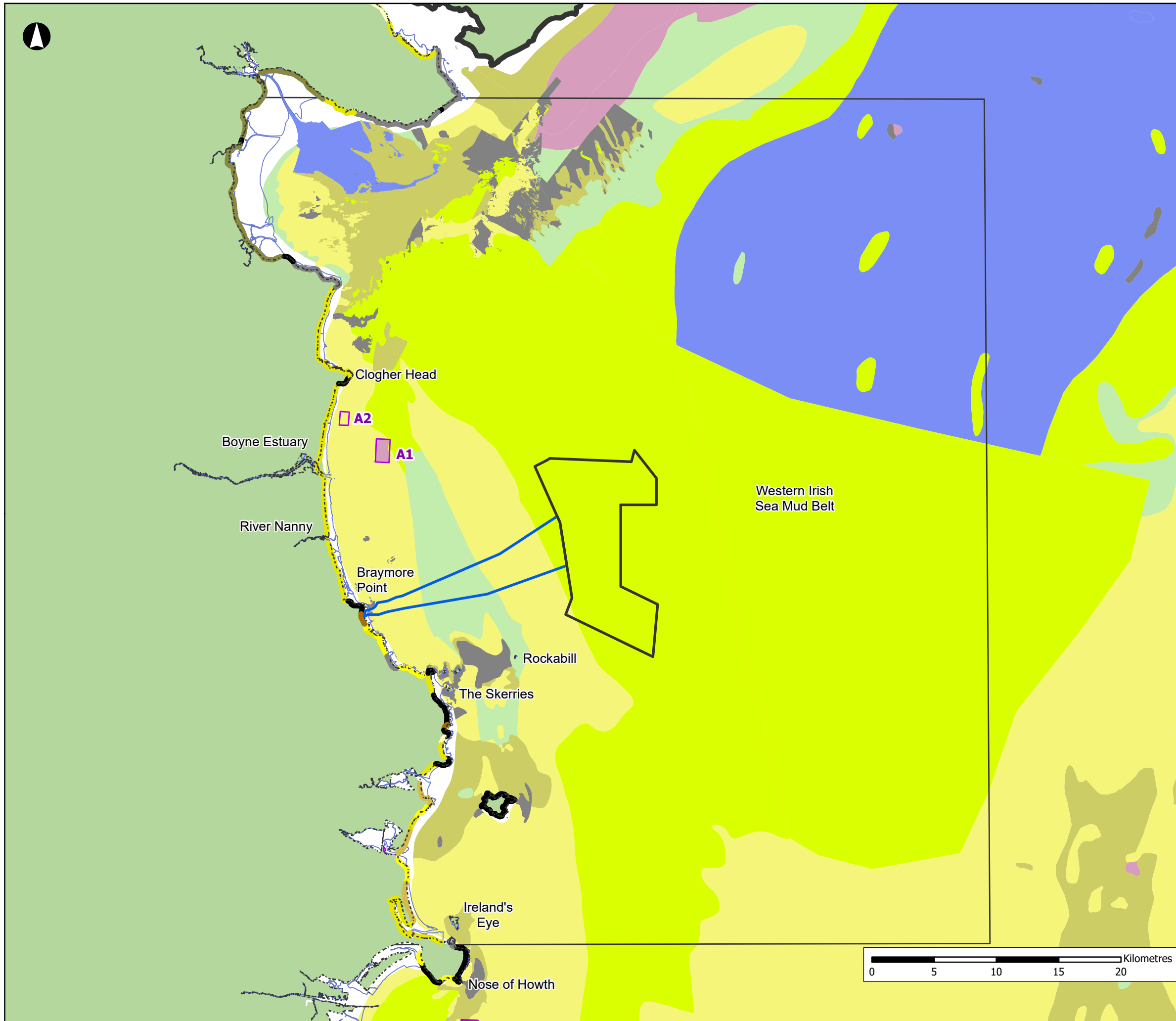
North Irish Sea Array

ARUP GoBe

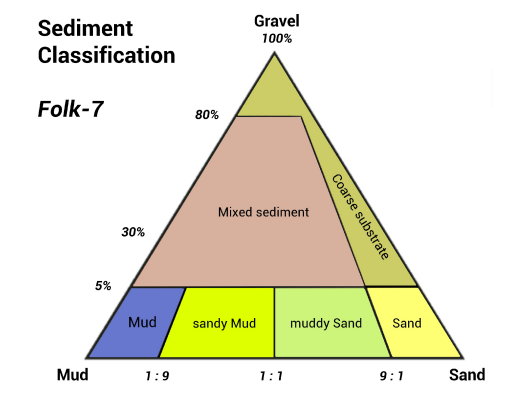
Project
North Irish Sea Array
Offshore Wind Farm

Figure Title
Wave Height Reduction from
South-South-East

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.14
Status: Issue	



- Array Area
- Offshore Export Cable Corridor
- Study Area
- Low Water Mark
- High Water Mark
- Dumping At Sea Sites (Active)
- Coastal Types (EMODnet):**
- Beach that is part of extensive non-cohesive sedimentary systems (barrier, spit, tombolo)
- Beach with rocky platform
- Erodeable rock and/or cliff, with rock waste and sediments (sand or pebbles) at its base
- Erosion-resistant rock and/or cliff, without loose eroded material in the fronting sea
- Gravel beach fronting upland (> 1 km long)
- Muddy coastline, including tidal flat, salt marsh
- Pocket beaches (< 200 m long)
- Sand beach fronting upland (> 1 km long)
- Small beaches



NISA

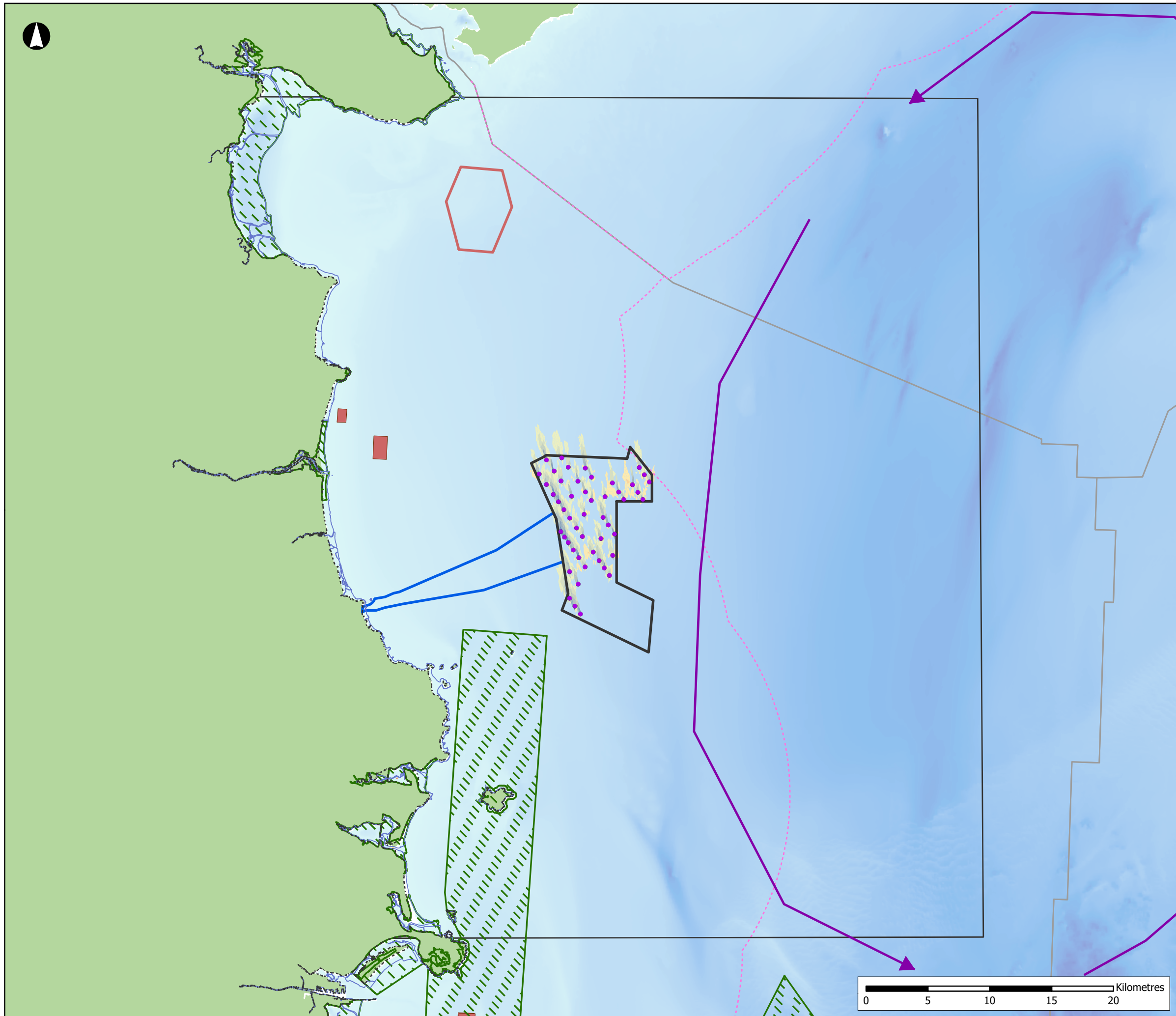
North Irish Sea Array

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Project
North Irish Sea Array
Offshore Wind Farm

Figure Title
Regional Description of Surficial Sediment

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.15
Status: Issue	



- Array Area
- Offshore Export Cable Corridor
- WTG Layout (Project Option 1)
- Study Area
- Low Water Mark
- High Water Mark
- EEZ Boundary
- National EEZ (12nm)
- Western Irish Sea Gyre
- Dumping At Sea Sites (Active)
- Proposed Oriel OWF
- Special Areas of Conservation

Change in Flow Speed (m/s)

- < -0.02
- 0.02 - -0.018
- 0.018 - -0.016
- 0.016 - -0.014
- 0.014 - -0.012
- 0.012 - -0.01
- 0.01 - -0.008
- 0.008 - -0.006
- 0.006 - -0.004
- 0.004 - -0.002
- nil
- 0.002 - 0.004
- 0.004 - 0.006
- 0.006 - 0.008
- 0.008 - 0.01
- 0.01 - 0.012
- 0.012 - 0.014
- 0.014 - 0.016
- 0.016 - 0.018
- 0.018 - 0.02
- > 0.02

Bathymetry (m)

0 to 200

NISA

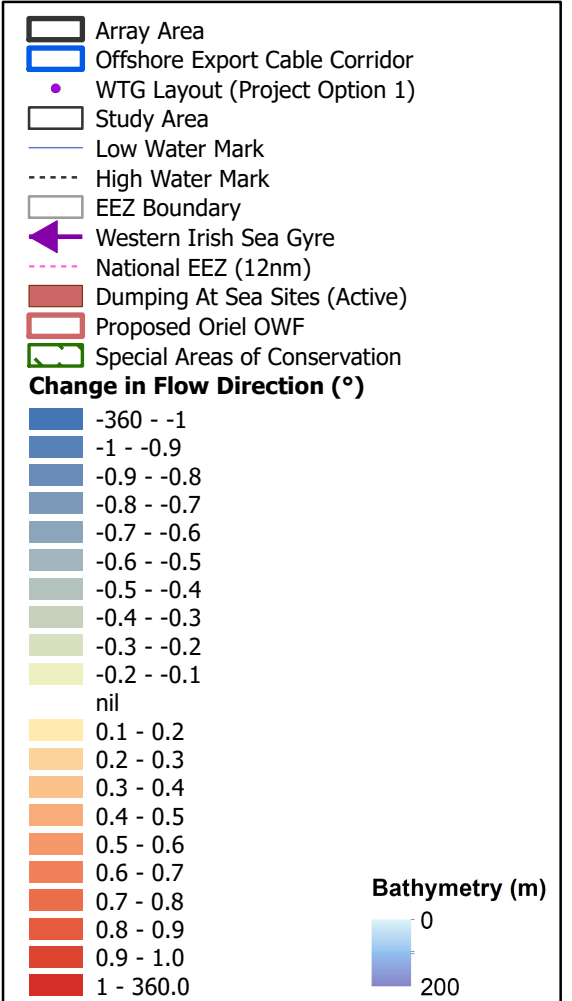
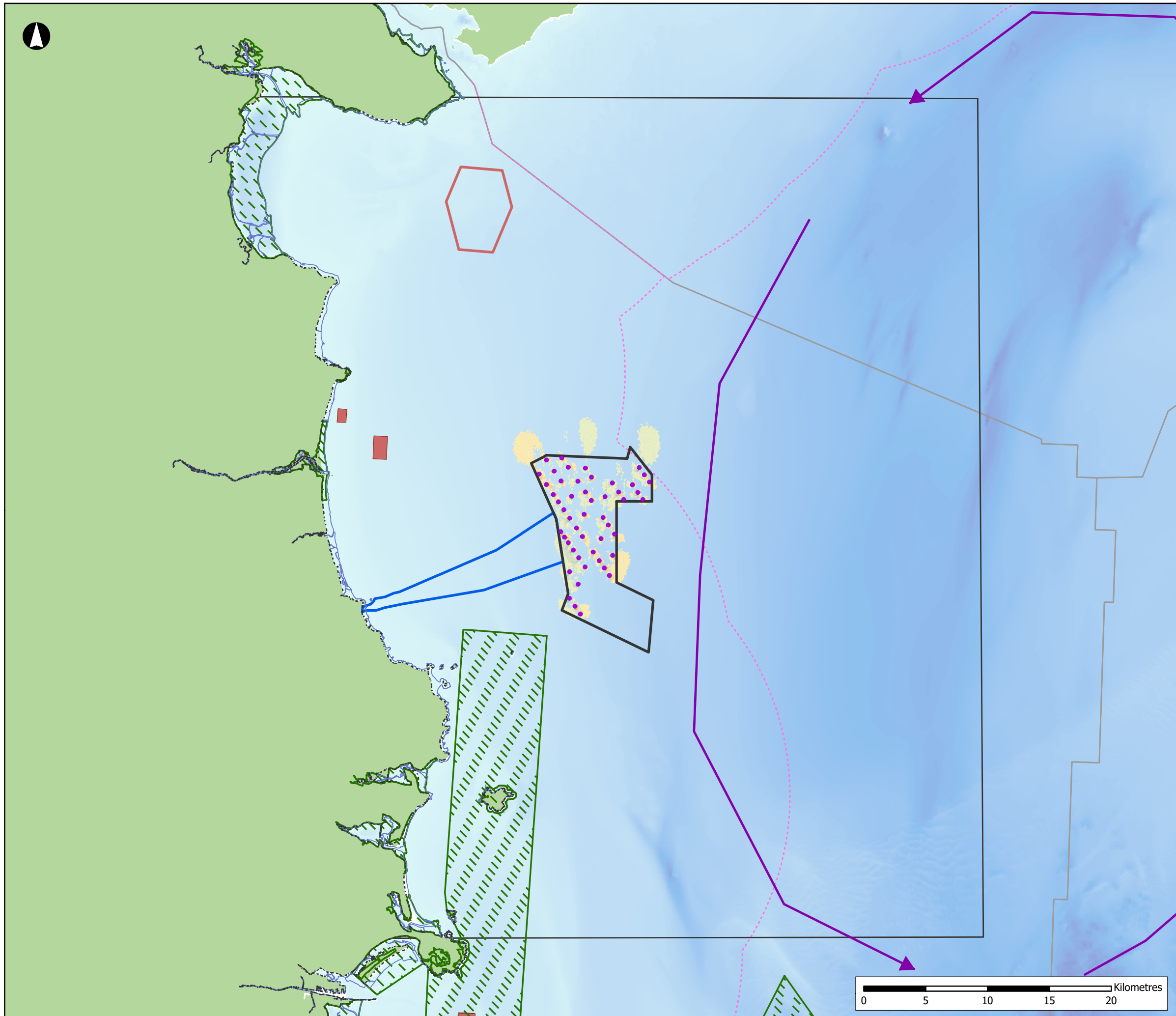
North Irish Sea Array

ARUP **GoBe**

Project
North Irish Sea Array
Offshore Wind Farm

Figure Title
Tidal Modifications - Change in
Peak Flood Flow Speed on
Spring Tide

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.16
Status: Issue	



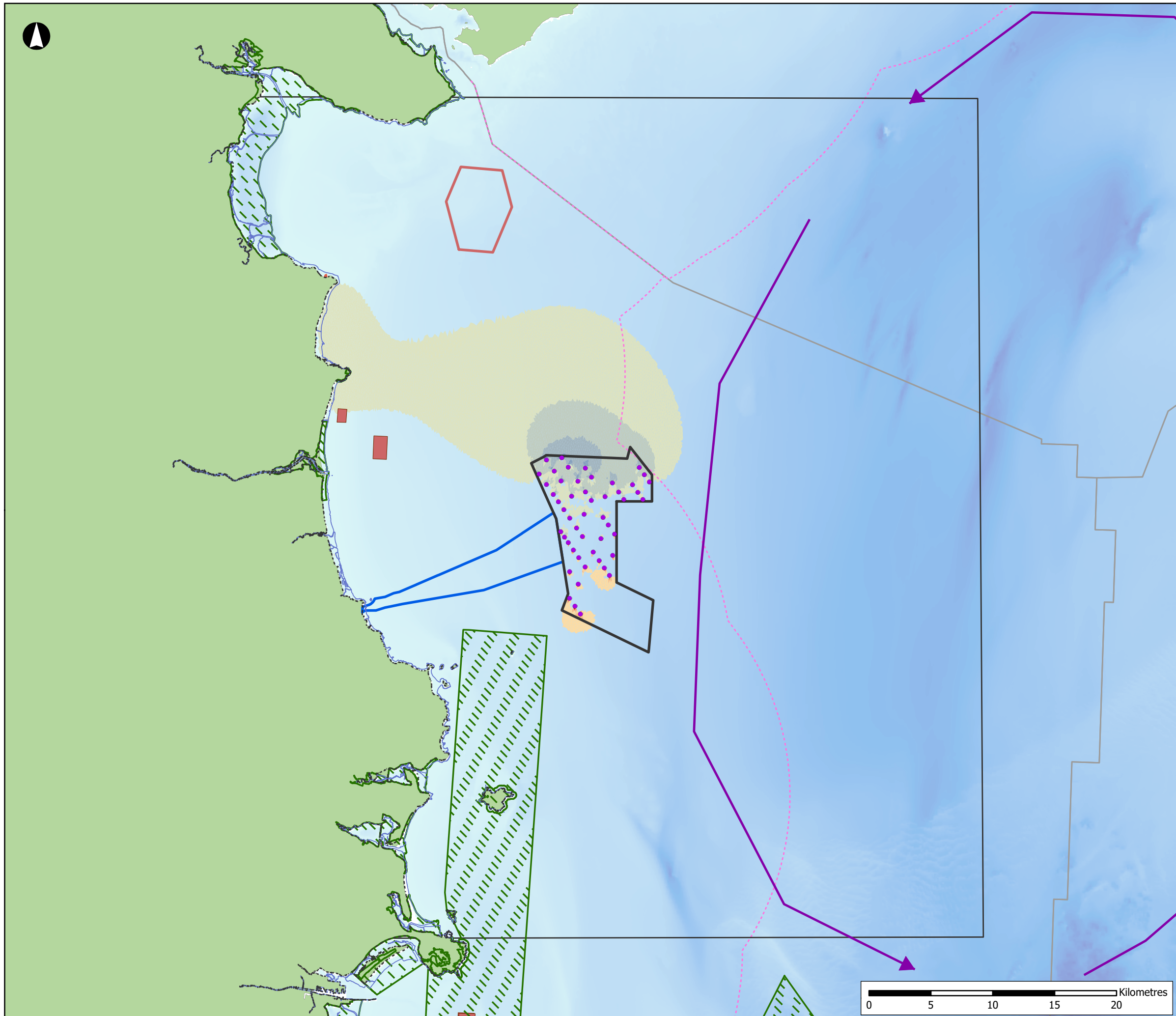
NISA
North Irish Sea Array

ARUP GoBe

Project
**North Irish Sea Array
Offshore Wind Farm**

Figure Title
**Tidal Modifications - Change in
Peak Flood Flow Direction on
Spring Tide**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.17
Status: Issue	



- Array Area
- Offshore Export Cable Corridor
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- Western Irish Sea Gyre
- Dumping At Sea Sites (Active)
- Proposed Oriel OWF
- Special Areas of Conservation

Change in Water Levels (m)

- < -0.0007
- 0.0007 - -0.0006
- 0.0006 - -0.0005
- 0.0005 - -0.0004
- 0.0004 - -0.0003
- 0.0003 - -0.0002
- nil
- 0.0002 - 0.0003
- 0.0003 - 0.0004
- 0.0004 - 0.0005
- 0.0005 - 0.0006
- 0.0006 - 0.0007
- > 0.0007

Bathymetry (m)

0
 200

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North Irish Sea Array

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**North Irish Sea Array
Offshore Wind Farm**

Figure Title
**Tidal Modifications - Change in
Surface Elevation at Peak Flood
on Spring Tide**

Job No: 281240	Datum: WGS84 Projection: UTM30N
Date: April 2026	Figure No:
Scale: 1:300,000 @A3	A10.18
Status: Issue	