

Outer Dowsing Offshore Wind

Environmental Statement

Chapter 7 Marine Physical Processes

Volume 2 Figures Part 2 of 2

Date: March 2024

Document Reference: 6.2.7

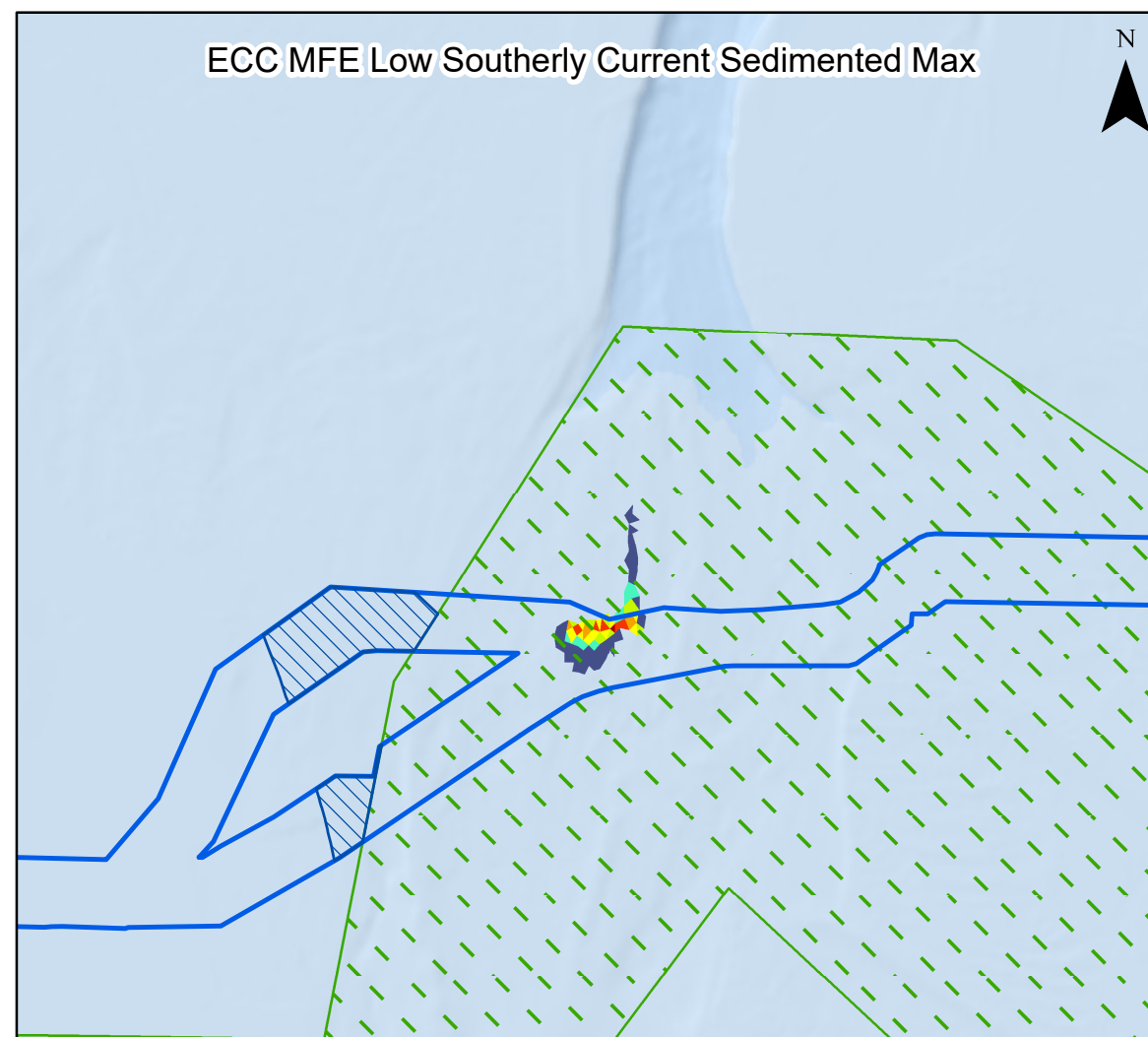
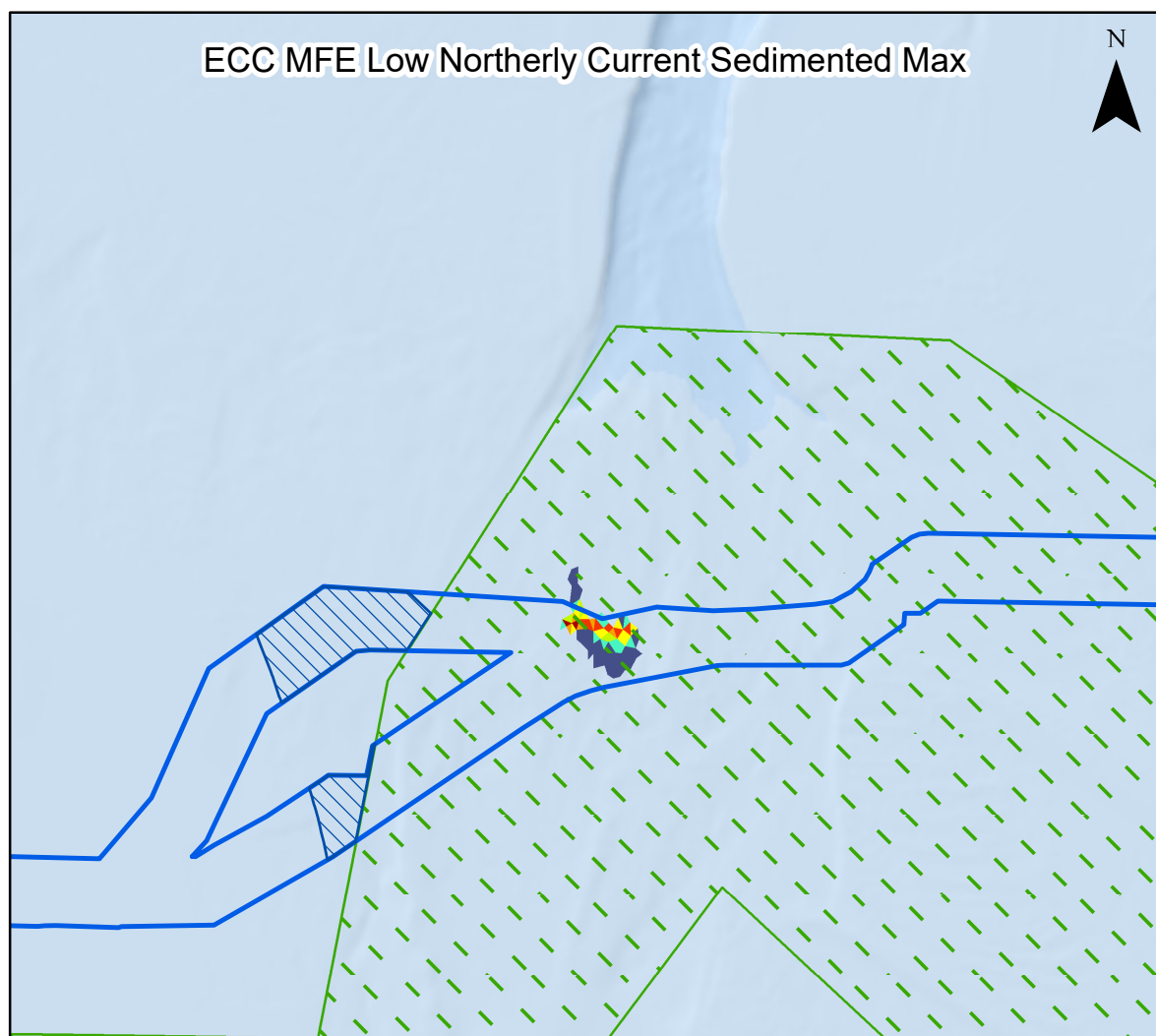
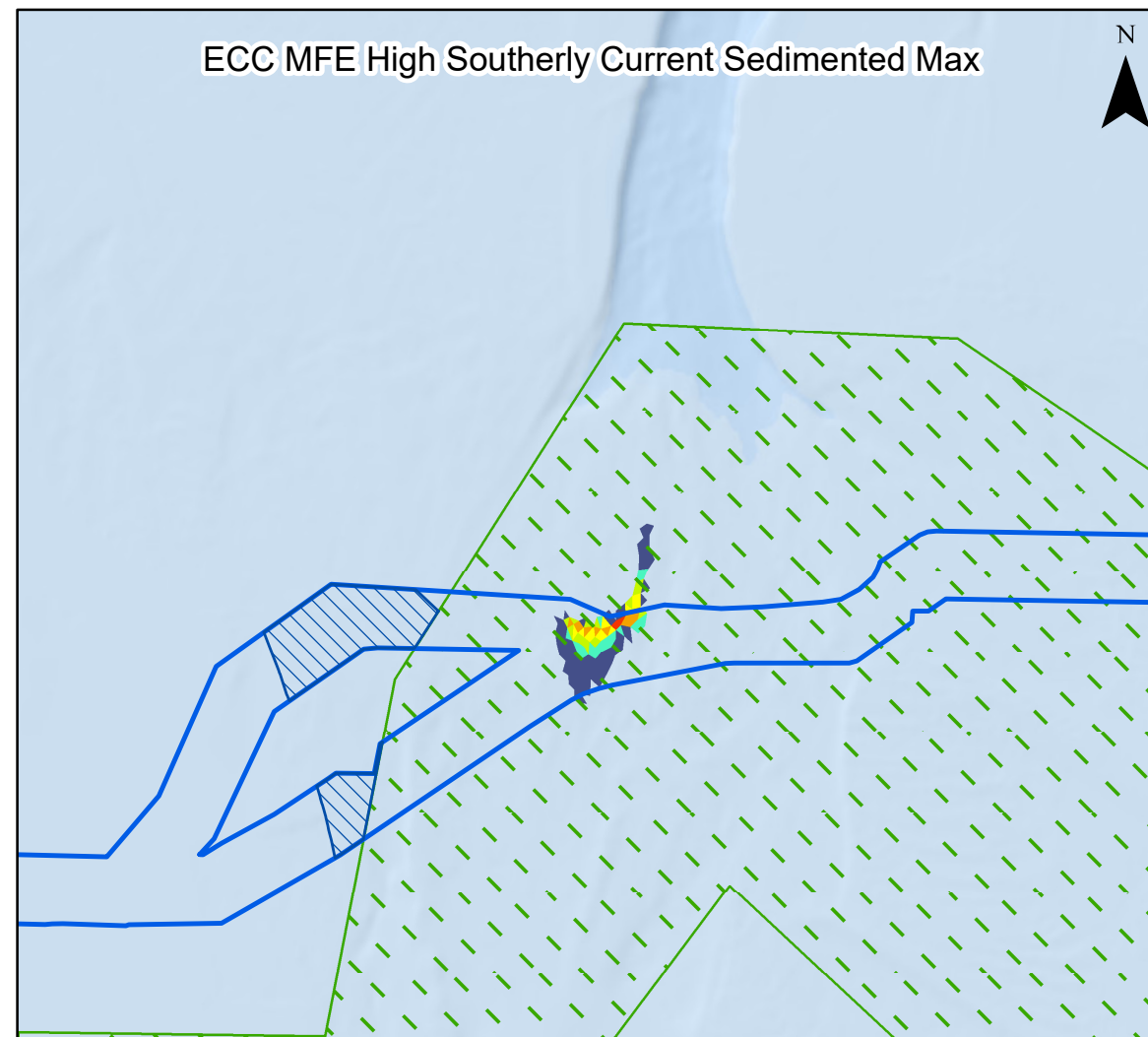
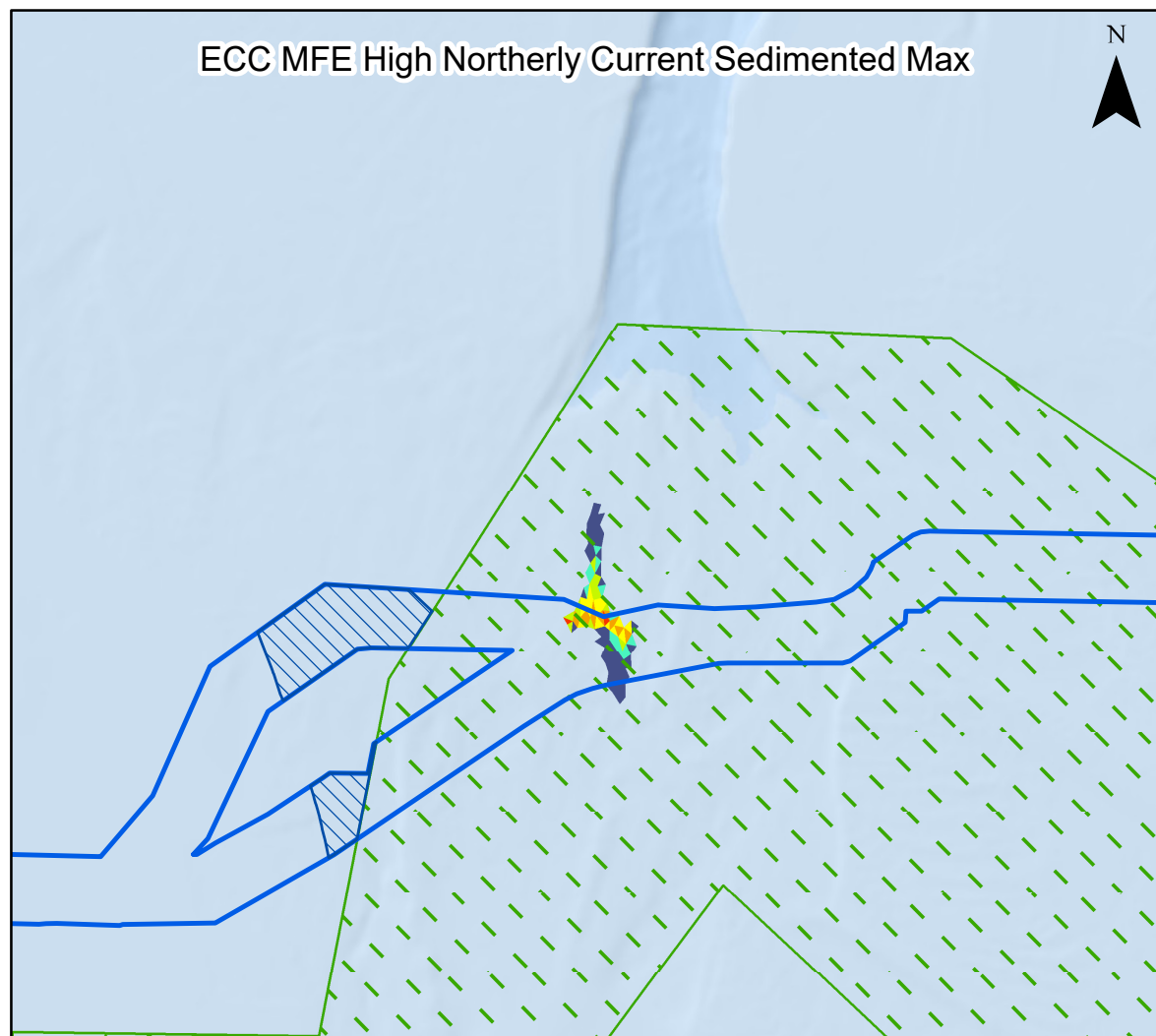
Pursuant to APFP Regulation: 5(2)(a)

Rev: 1.0

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Table of Figures

- Figure 6.2.7.14 - ECC MFE Current Sedimented
- Figure 6.2.7.15 - Seabed Prep High Southerly Current Suspended
- Figure 6.2.7.16 - Seabed Prep Current Sedimented
- Figure 6.2.7.17 - Inter Array SW Clearance Current Suspended
- Figure 6.2.7.18 - Inter Array SW Clearance Current Sedimented
- Figure 6.2.7.19 - ECC SW Clearance High Southerly Current Suspended
- Figure 6.2.7.20 - ECC SW Clearance Low Southerly Current Suspended
- Figure 6.2.7.21 - ECC SW Clearance Current Sedimented
- Figure 6.2.7.22 - Drilling Clearance Current Sedimented
- Figure 6.2.7.23 - Bentonite Clearance Current Sedimented
- Figure 6.2.7.24 - Hydrodynamic Blockage Effects
- Figure 6.2.7.25 - Wave Blockage Effects N Waves
- Figure 6.2.7.26 - Wave Blockage Effects NE Waves
- Figure 6.2.7.27 - Cumulative Projects
- Figure 6.2.7.27 - Seabed Mobility Study Terrain Units

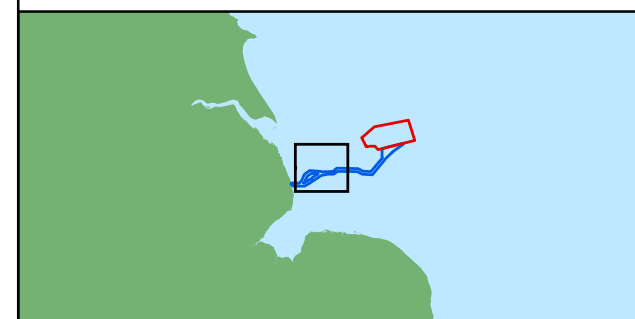


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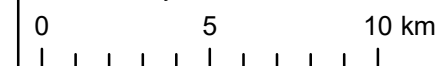
- Array Area
- Offshore Export Cable Corridor
- ORCP Area
- Special Areas of Conservation

Deposited Sediment (mm)

- 1 - 4.99
- 5 - 9.99
- 10 - 19.99
- 20 - 49.99
- 50 - 99.99
- 100 - 149.99
- >150



Coordinate System: WGS 1984 UTM Zone 31N



Scale: 1:225,000

A3 Page Size

Environmental Statement

Maximum sediment deposition 20 hours after the start of Mass Flow Excavator activities along the offshore ECC, for a range of tidal conditions

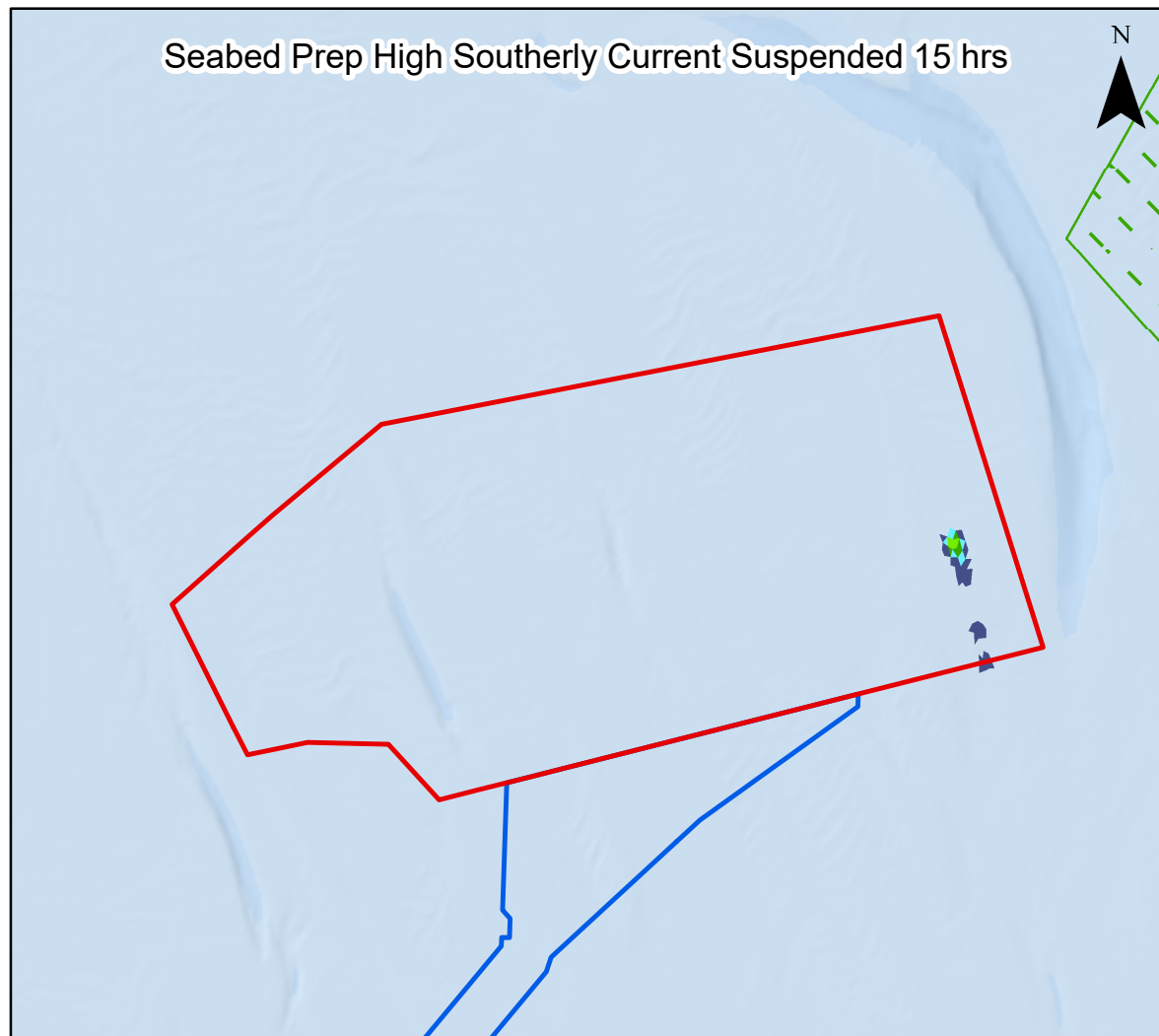
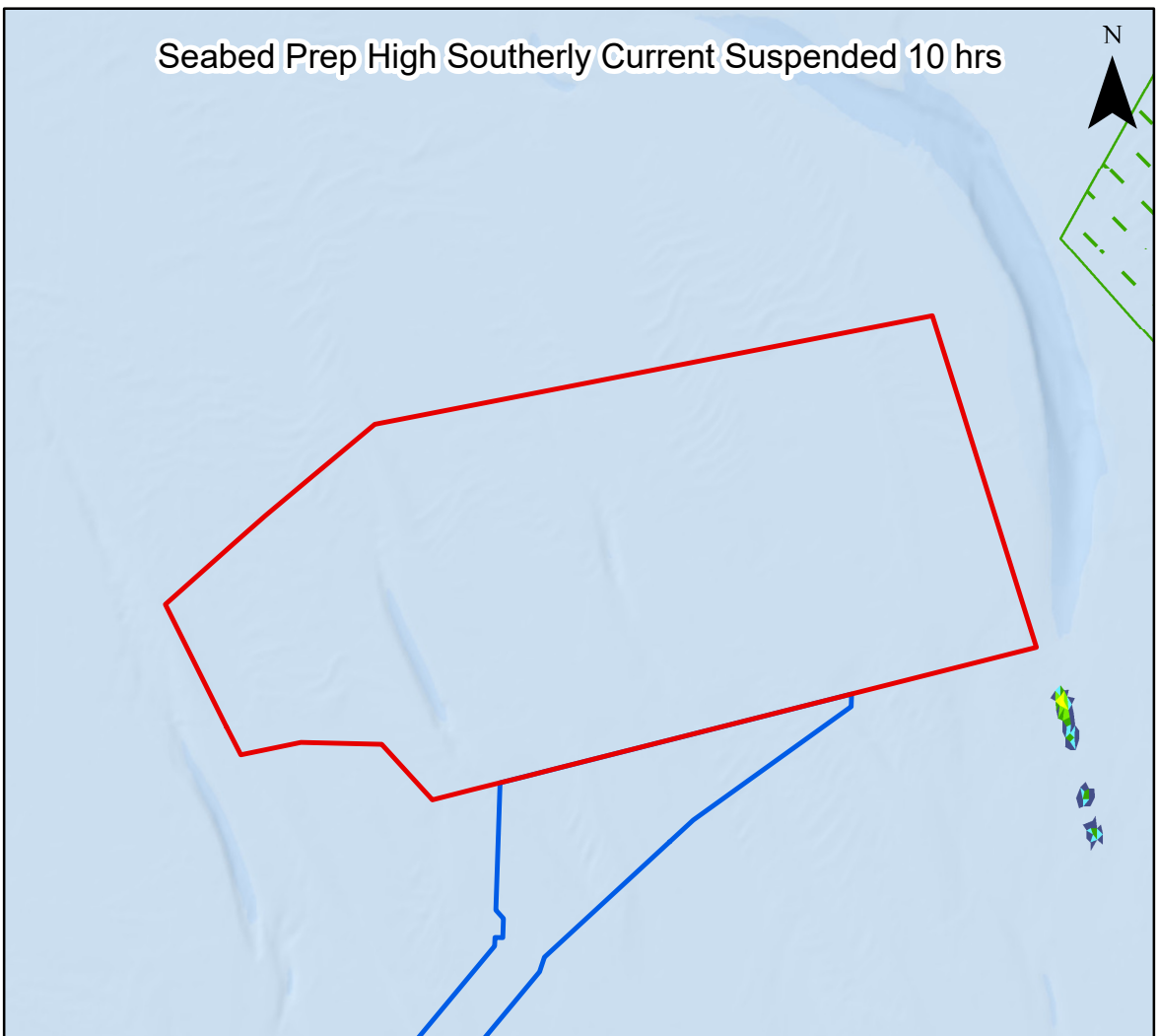
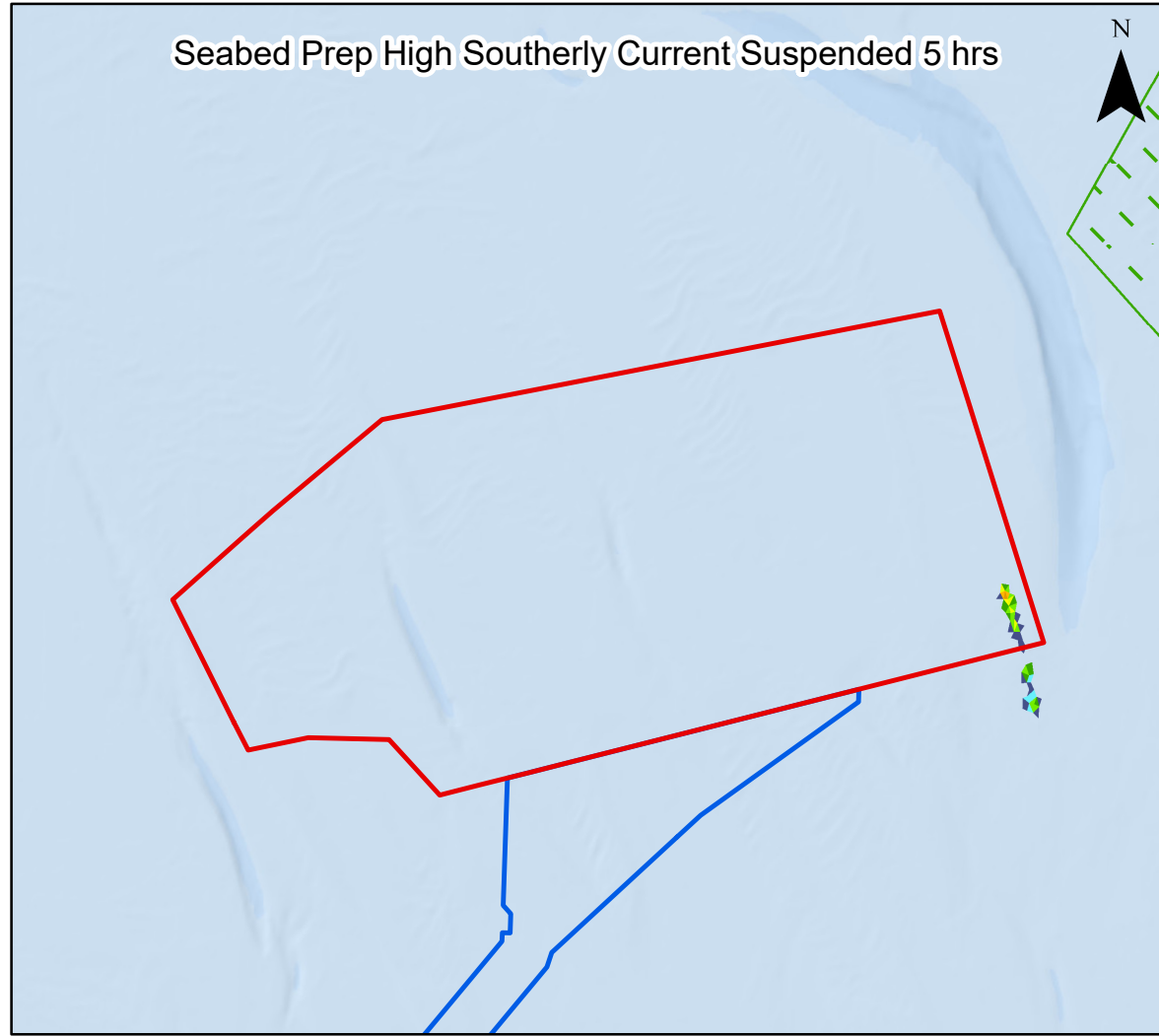
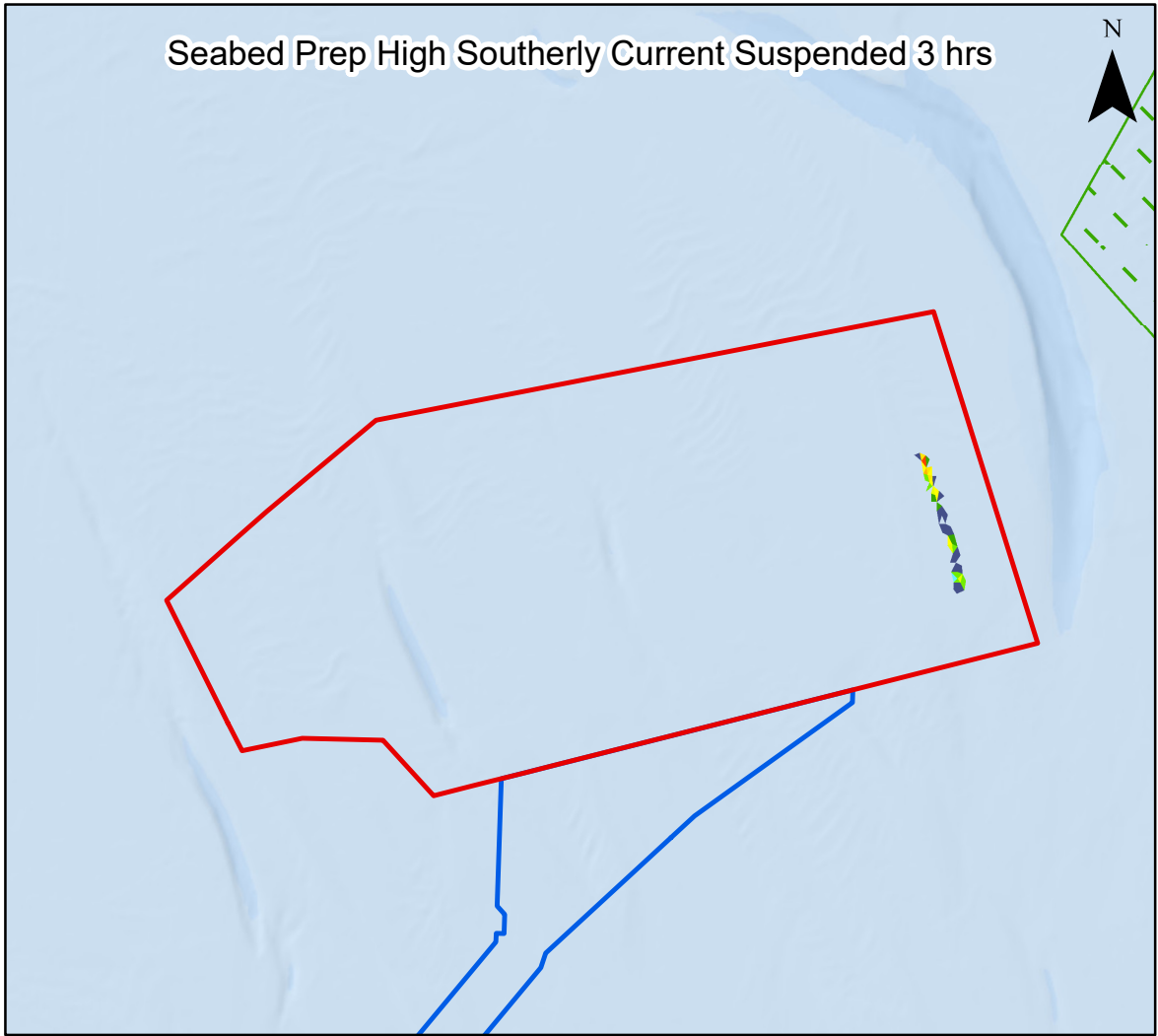
Figure 7.14



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Legend

- Array Area
- Offshore Export Cable Corridor
- Special Areas of Conservation

Suspended Sediment Concentrations (mg/l)

- 1 - 4.99
- 5 - 9.99
- 10 - 19.99
- 20 - 49.99
- 50 - 99.99
- 100 - 149.99
- 150 - 249.99
- 250 - 499.99
- 500 - 999.99
- 1000 - 2499.99
- 2500 - 4999.99
- >5000



Coordinate System: WGS 1984 UTM Zone 31N

0 5 10 km

Scale: 1:300,000 A3 Page Size

Environmental Statement

Suspended sediment concentrations 3, 5, 10 and 15 hours after the start of Seabed Levelling activities within the Project array area during a high spring flood tide

Figure 7.15



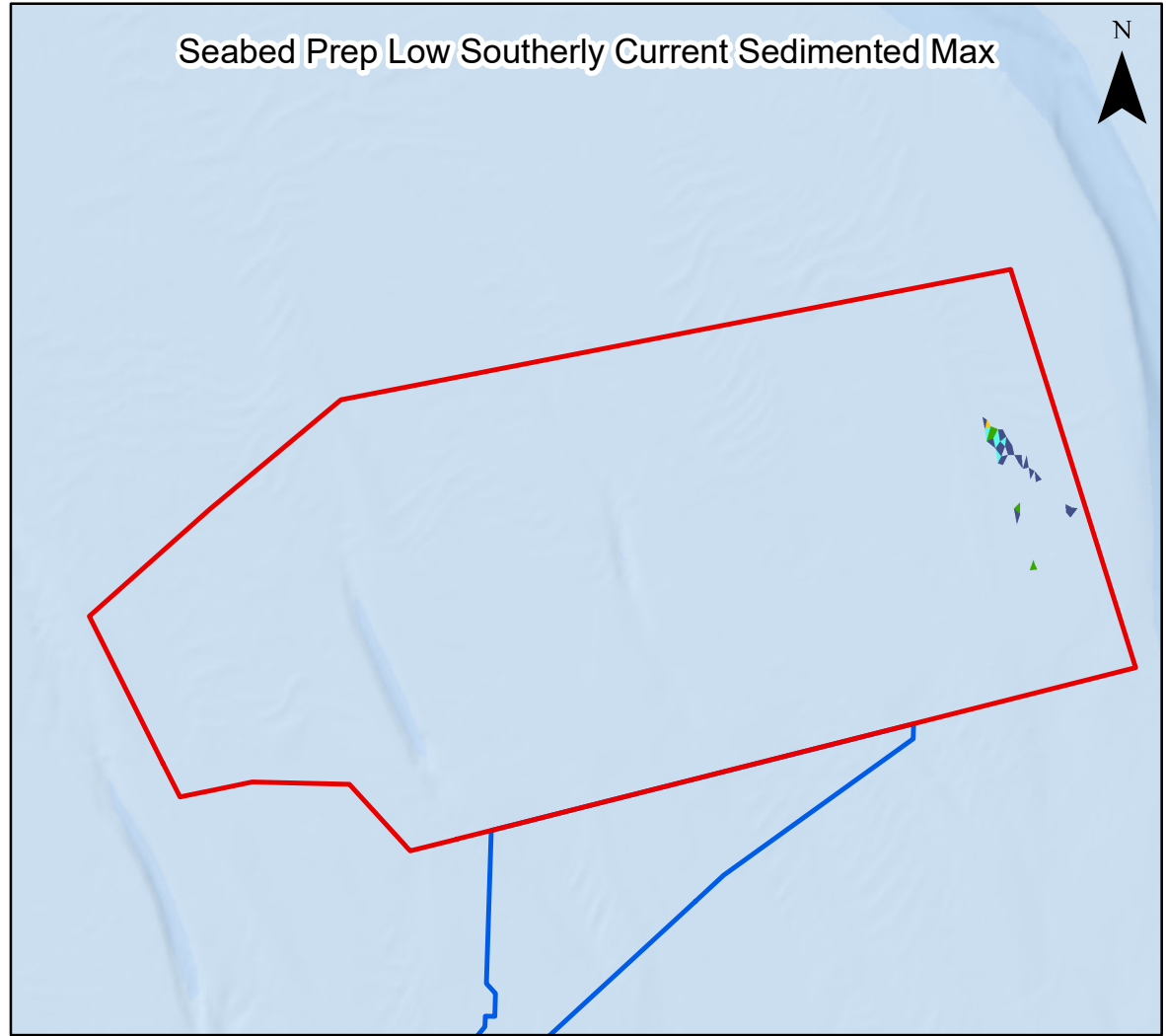
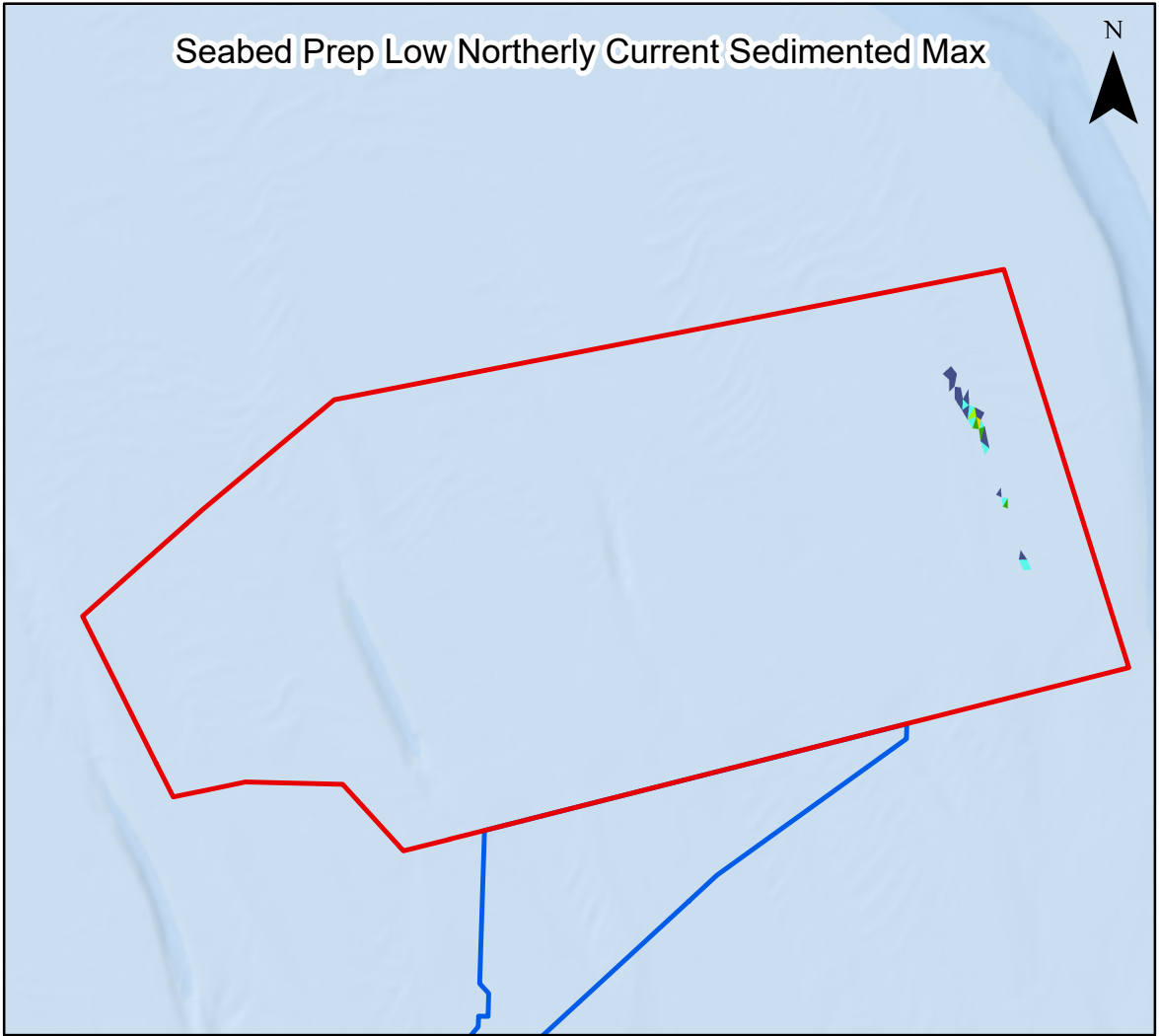
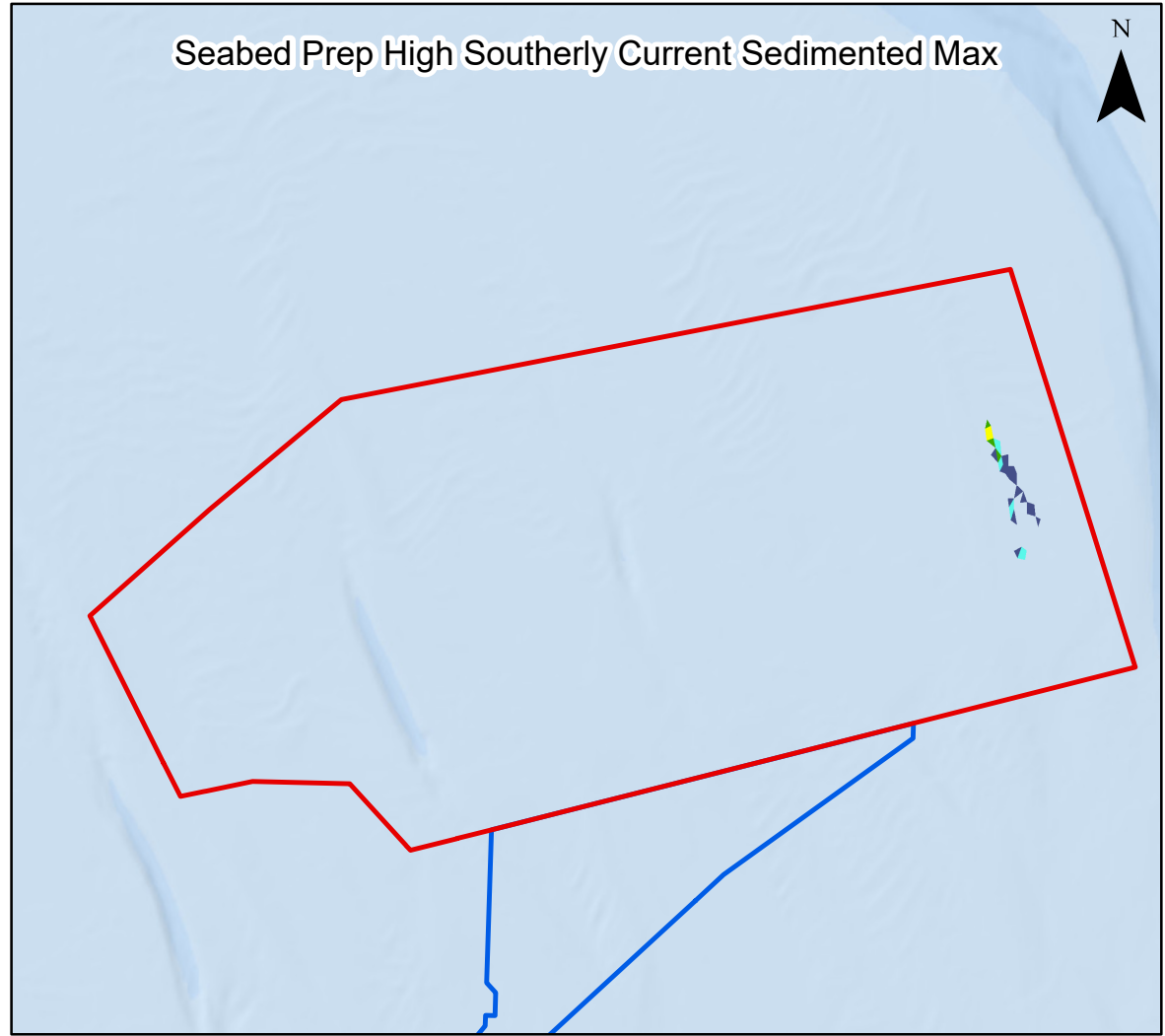
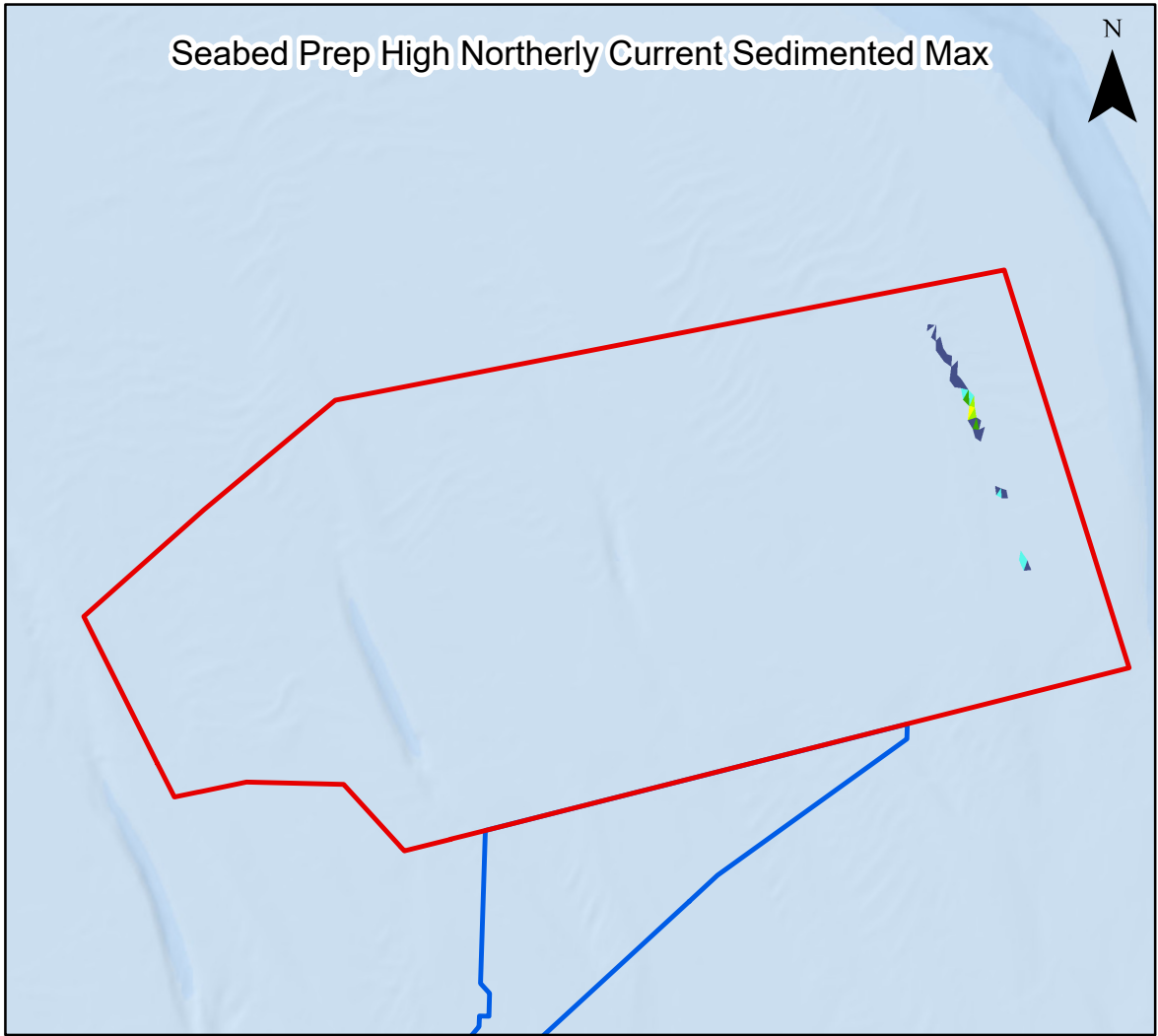
OUTER DOWSING
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Legend

- Array Area
- Offshore Export Cable Corridor

Deposited Sediment (mm)

- 1 - 4.99
- 5 - 9.99
- 10 - 19.99
- 20 - 49.99
- 50 - 99.99
- 100 - 149.99
- 150 - 249.99
- 250 - 499.99
- 500 - 749.99
- 750 - 999.99
- >1000

Coordinate System: WGS 1984 UTM Zone 31N

0 5 10 km

Scale: 1:250,000 A3 Page Size

Environmental Statement

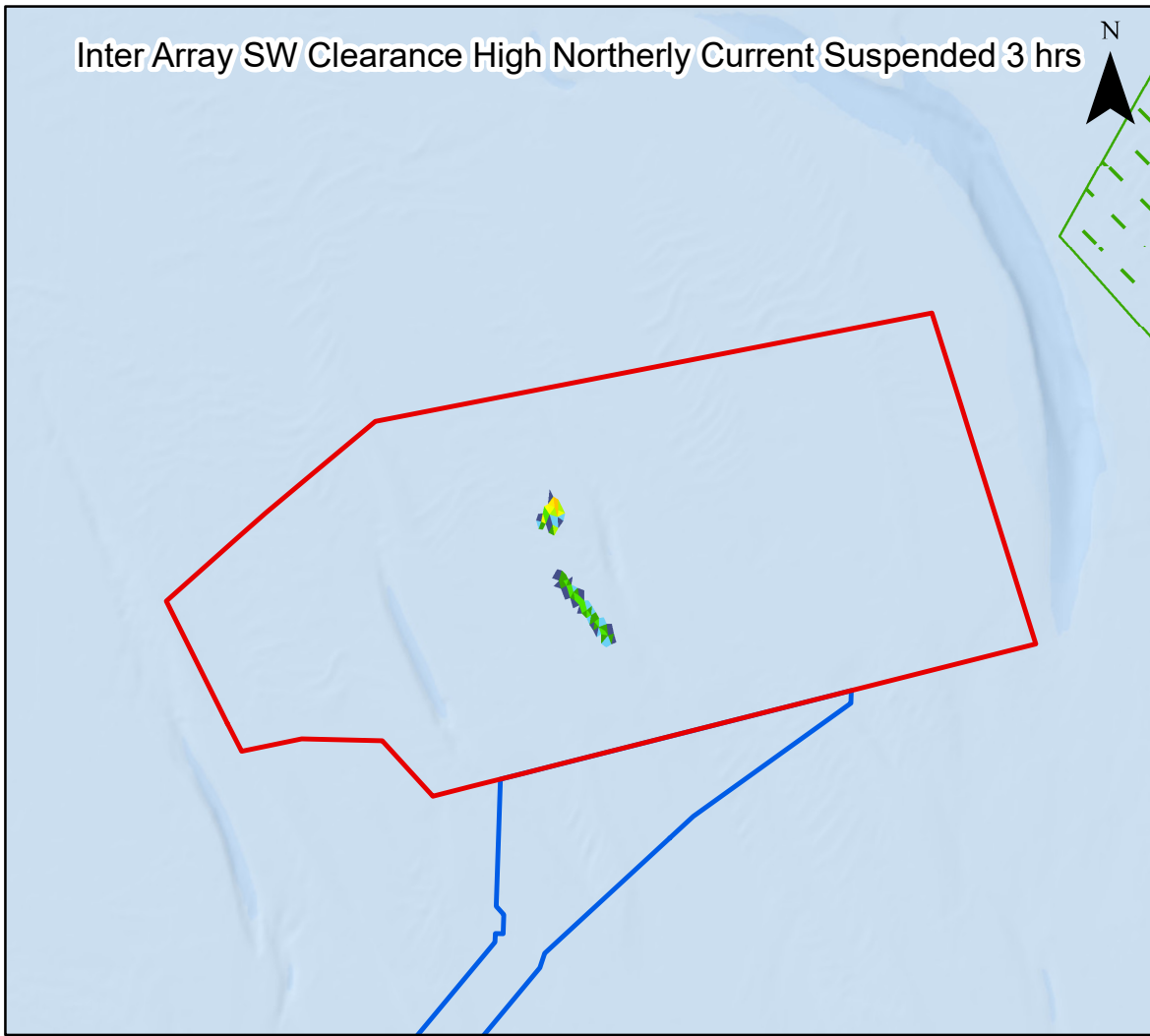
Maximum sediment deposition 20 hours after the start of Seabed Levelling activities within the Project array area, for a range of tidal conditions

Figure 7.16

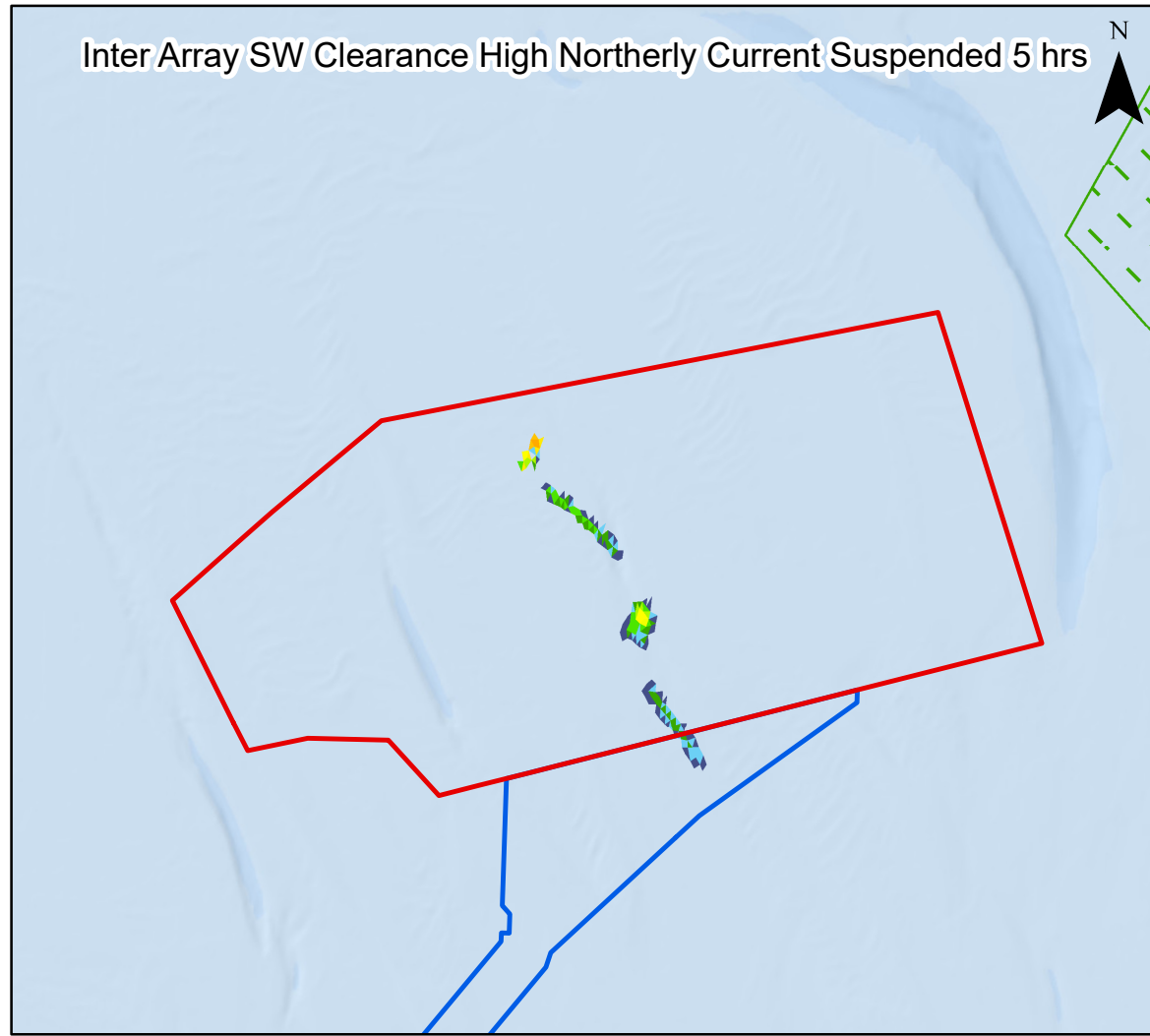
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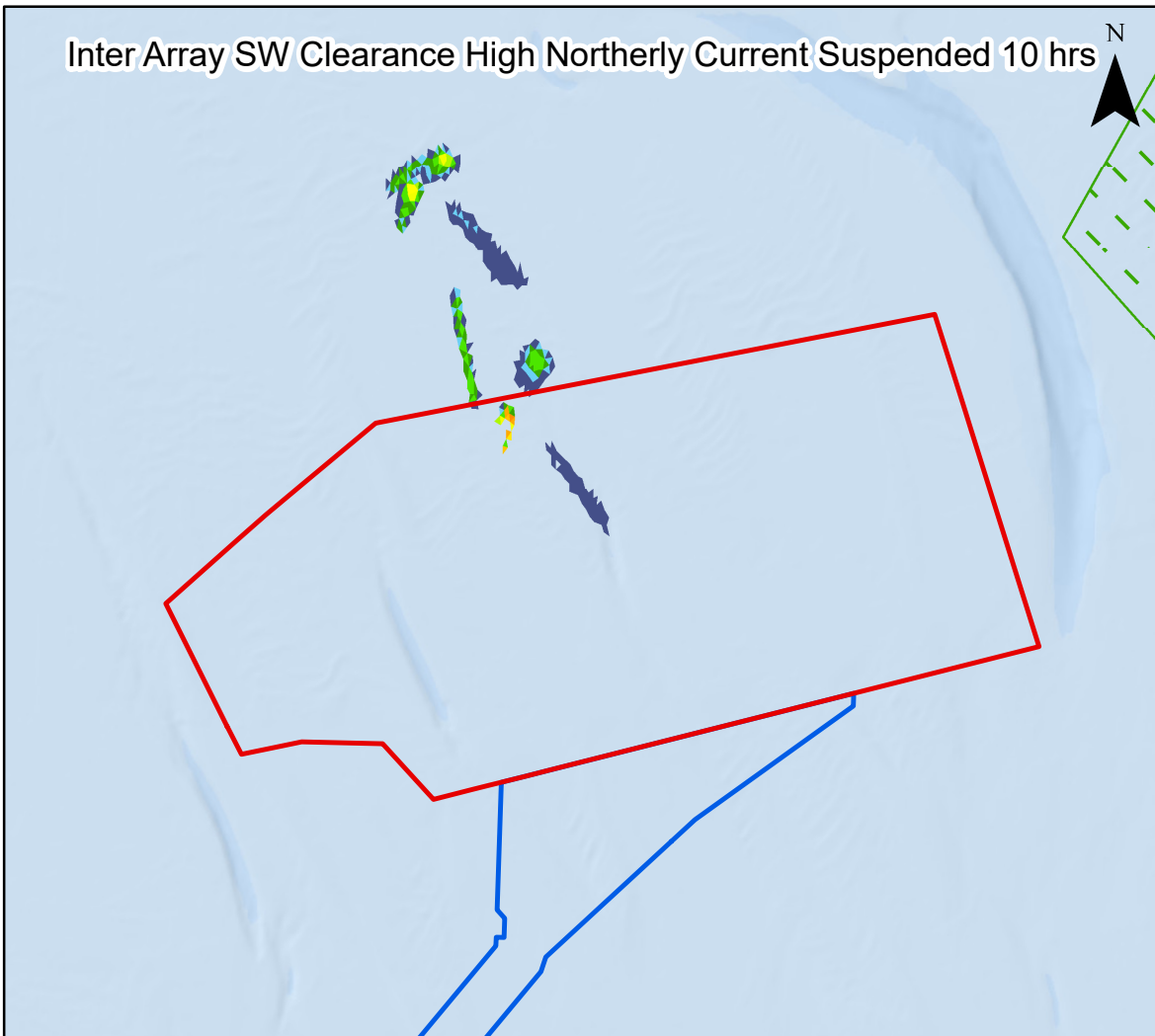
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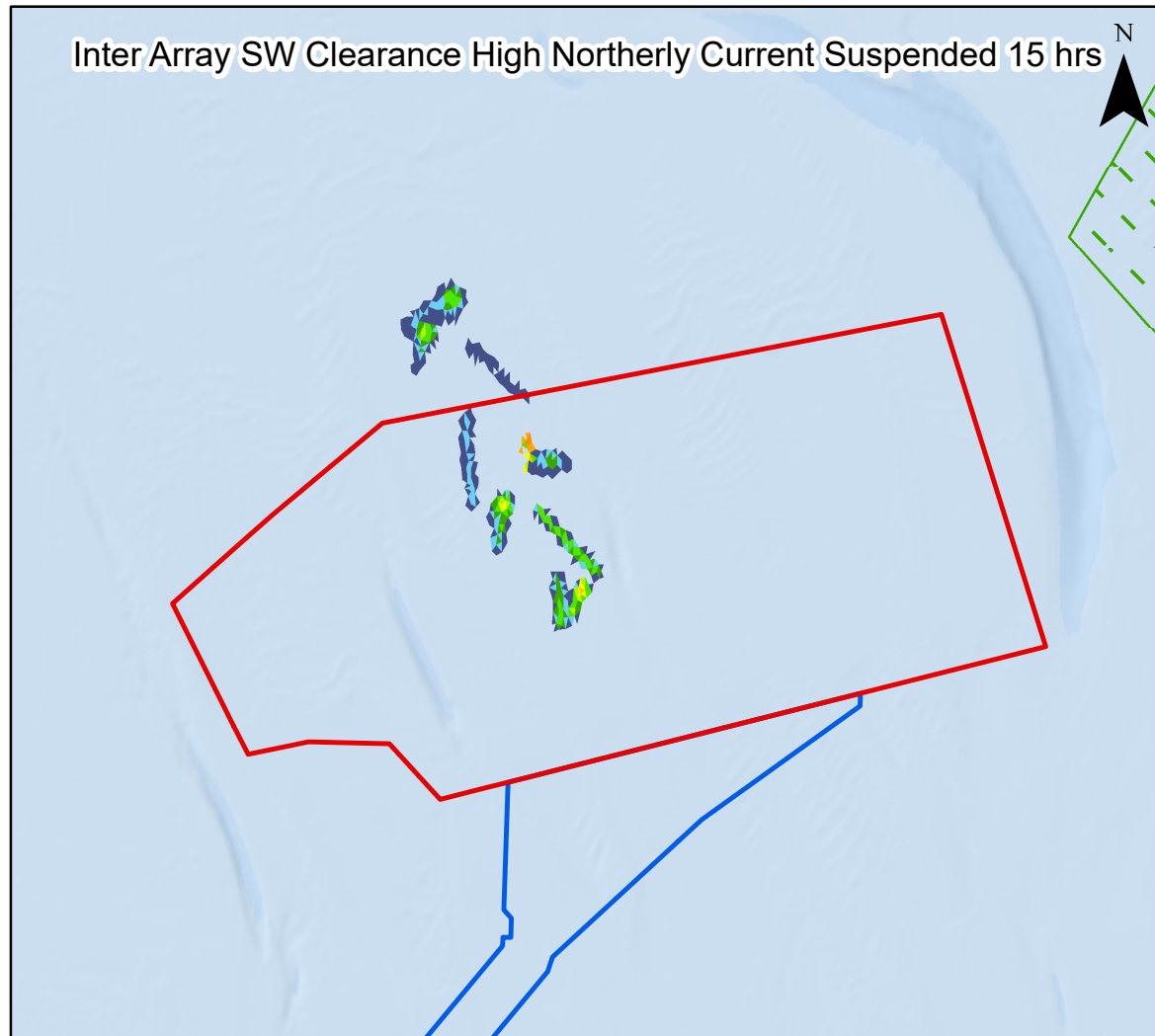
Inter Array SW Clearance High Northerly Current Suspended 5 hrs



Inter Array SW Clearance High Northerly Current Suspended 10 hrs



Inter Array SW Clearance High Northerly Current Suspended 15 hrs



Legend

- Array Area
 - Offshore Export Cable Corridor
 - Special Areas of Conservation
- Suspended Sediment Concentrations (mg/l)**
- 1 - 4.99
 - 5 - 9.99
 - 10 - 19.99
 - 20 - 49.99
 - 50 - 99.99
 - 100 - 149.99
 - 150 - 249.99
 - 250 - 499.99
 - 500 - 999.99
 - 1000 - 2449.99
 - 2450 - 4999.99
 - 5000 - 7499.99
 - 7500 - 9999.99
 - >10000



Coordinate System: WGS 1984 UTM Zone 31N

0 5 10 km

Scale: 1:300,000

A3 Page Size

Environmental Statement

Suspended sediment concentrations 3, 5, 10 and 15 hours after the start of Sandwave Clearance activities within the Project array area during a high spring ebb tide

Figure 7.17

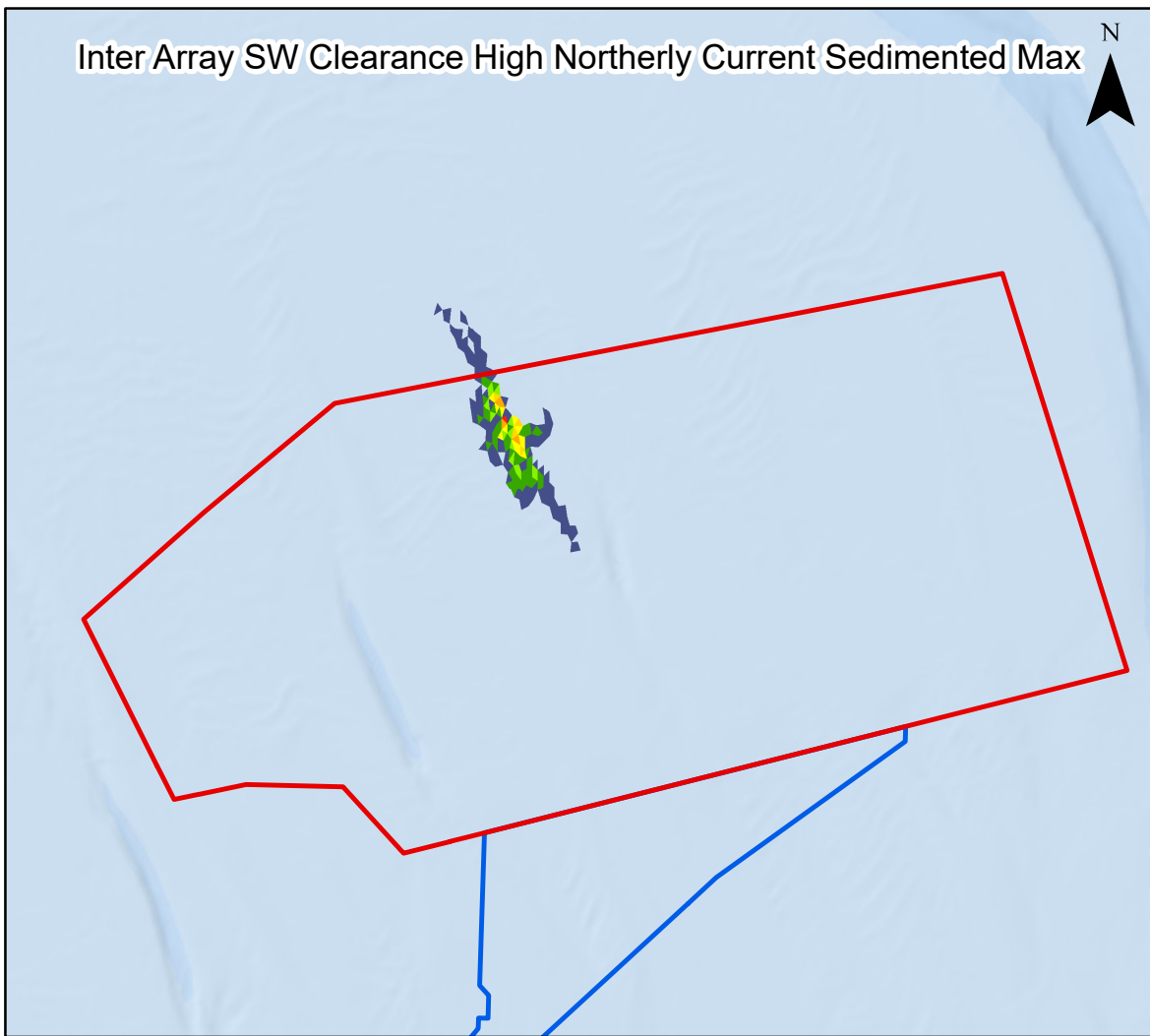


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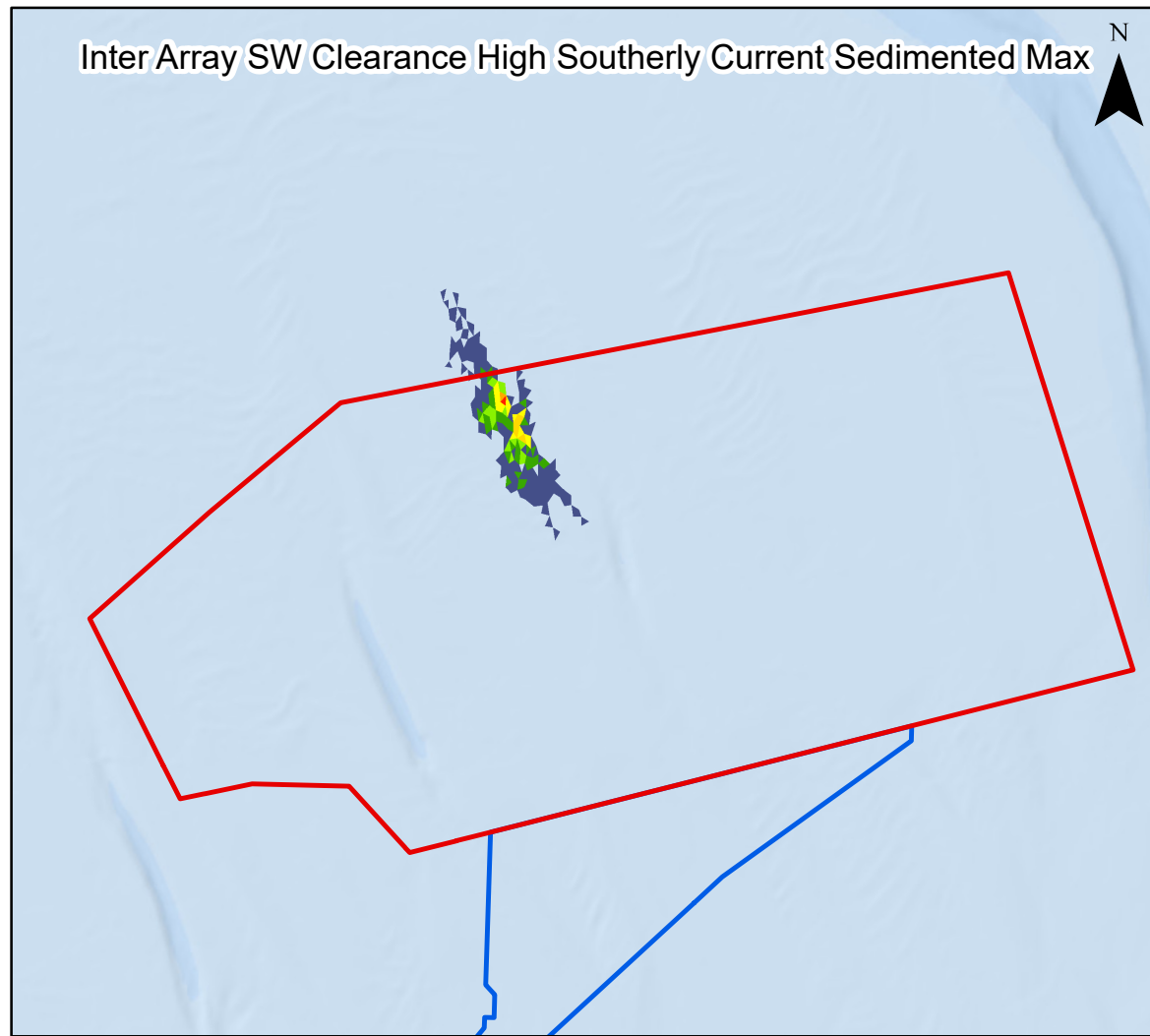


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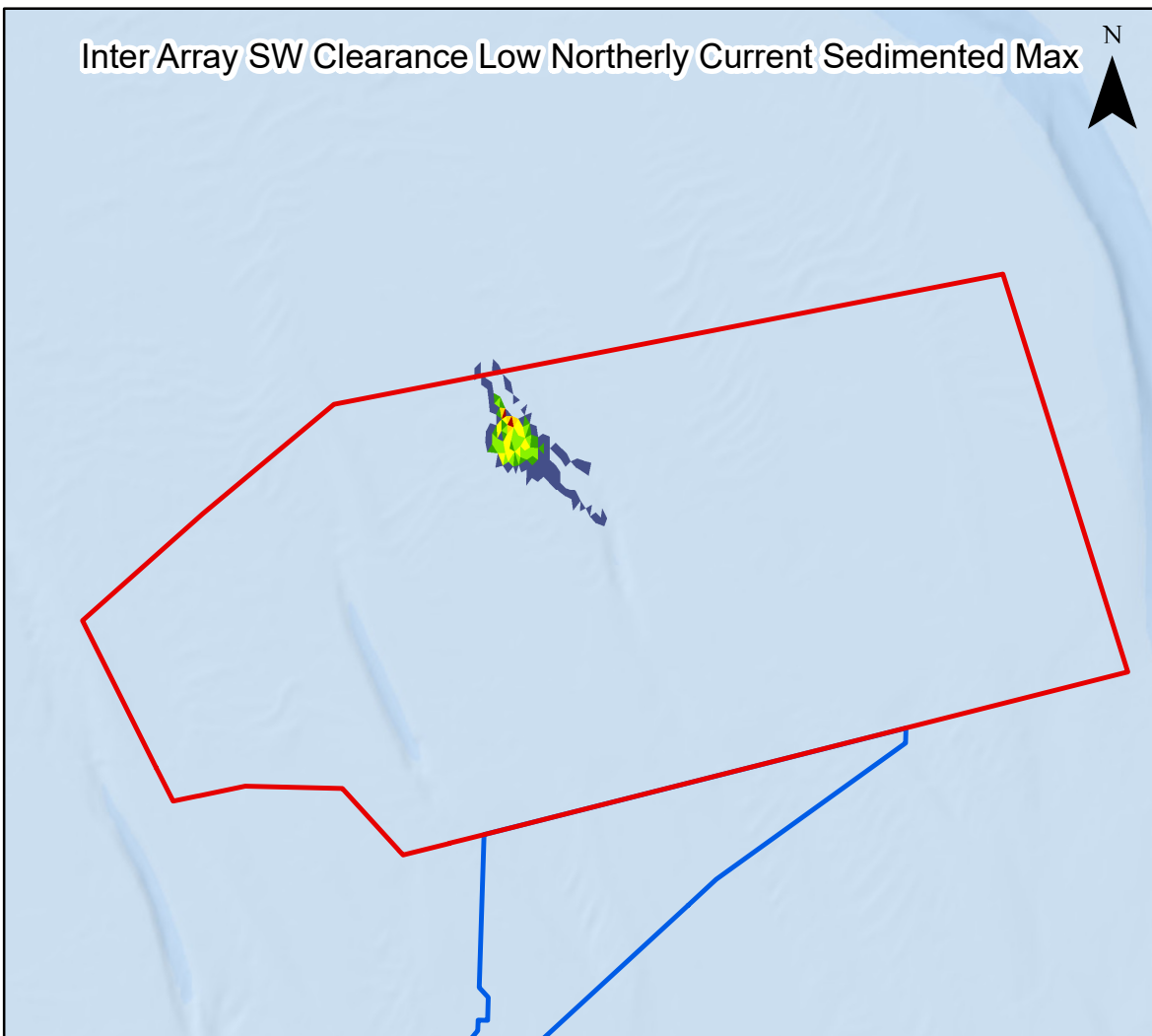
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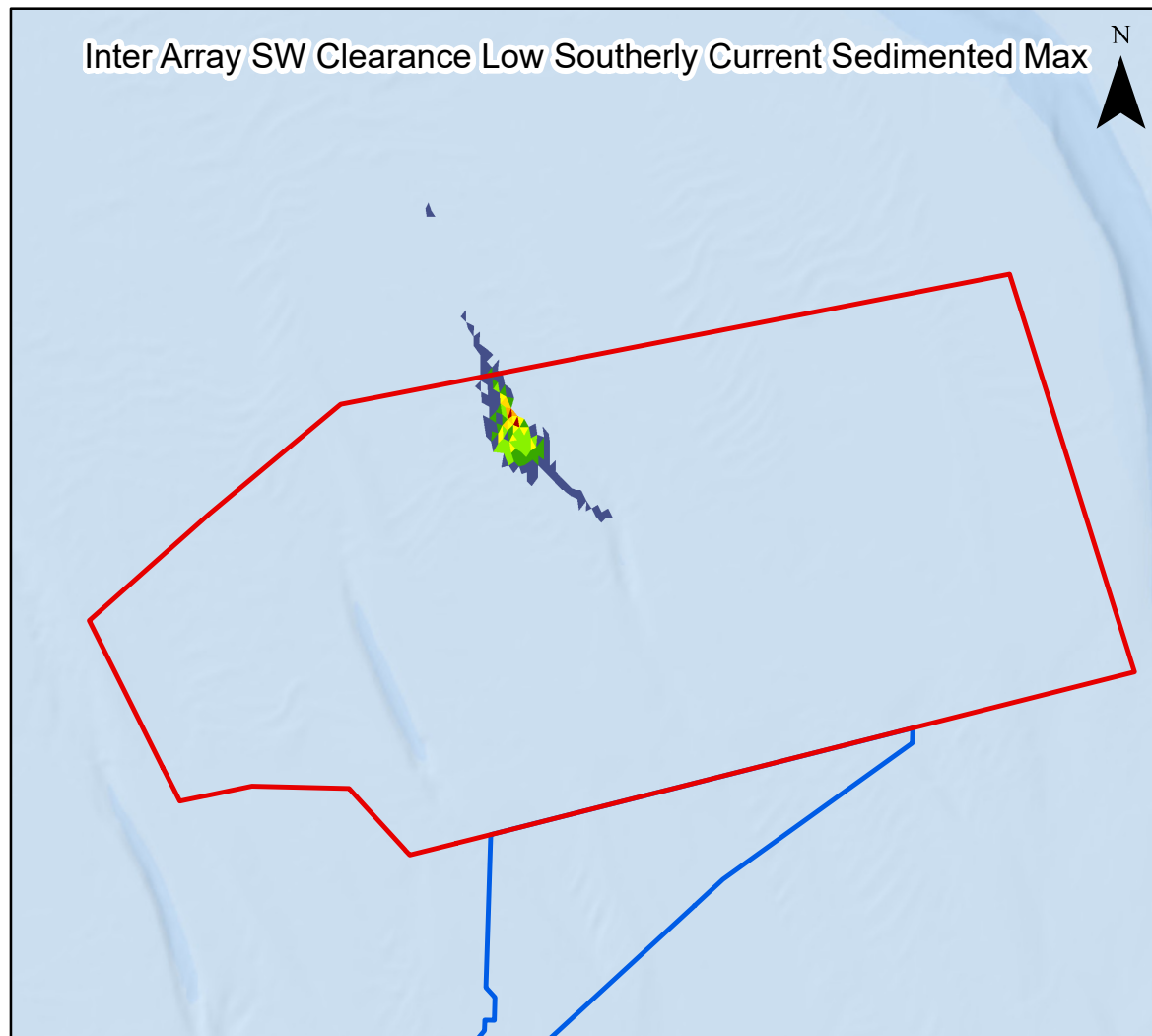
Inter Array SW Clearance High Southerly Current Sedimented Max



Inter Array SW Clearance Low Northerly Current Sedimented Max



Inter Array SW Clearance Low Southerly Current Sedimented Max

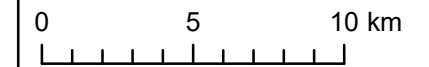


Legend

- Array Area
 - Offshore Export Cable Corridor
- Deposited Sediment (mm)**
- 1 - 4.99
 - 5 - 9.99
 - 10 - 19.99
 - 20 - 49.99
 - 50 - 99.99
 - 100 - 149.99
 - 150 - 249.99
 - >250



Coordinate System: WGS 1984 UTM Zone 31N



Scale: 1:250,000

A3 Page Size

Environmental Statement

Maximum sediment deposition 20 hours after the start of Sandwave Clearance activities within the Project array area, for a range of tidal conditions

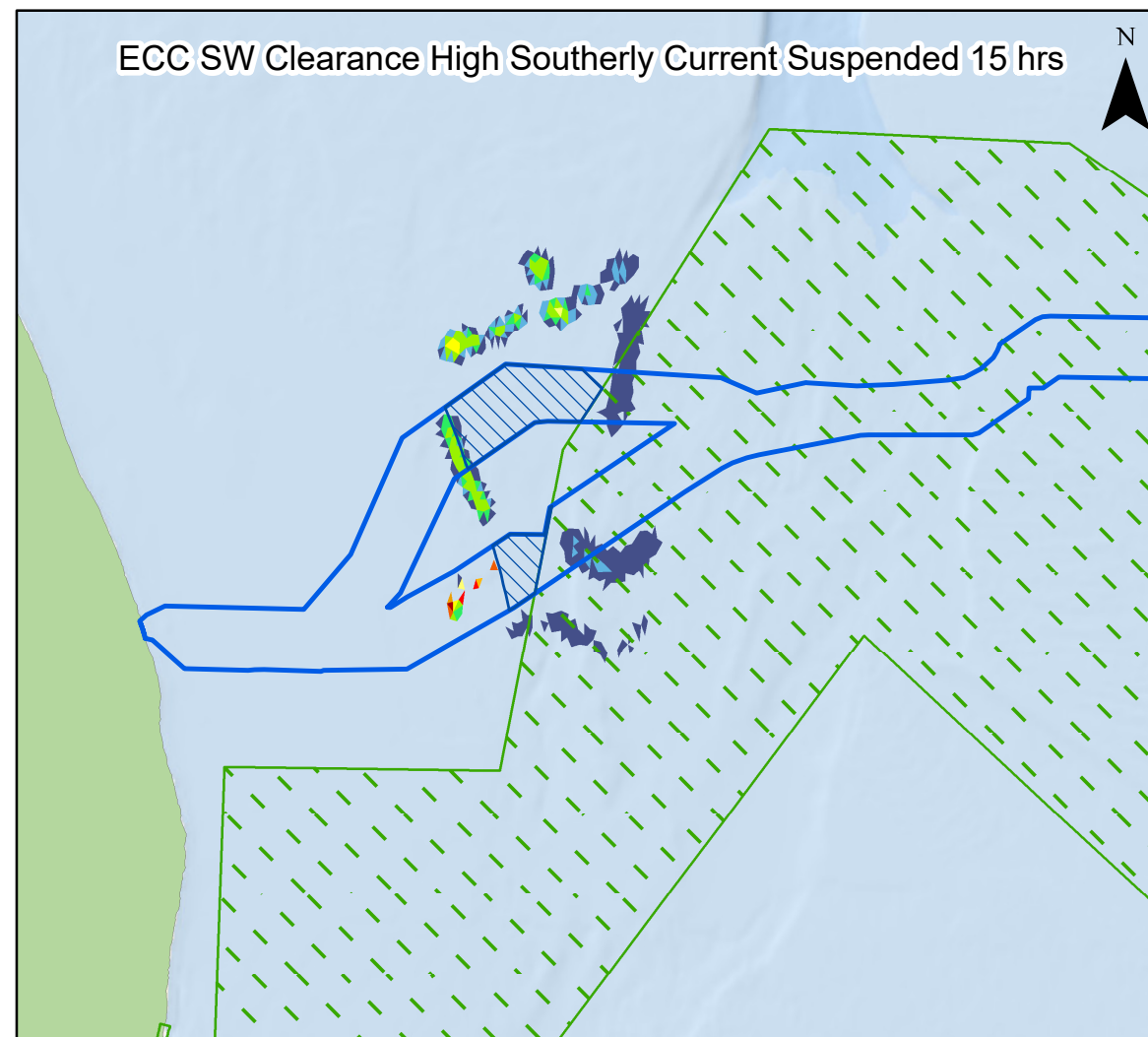
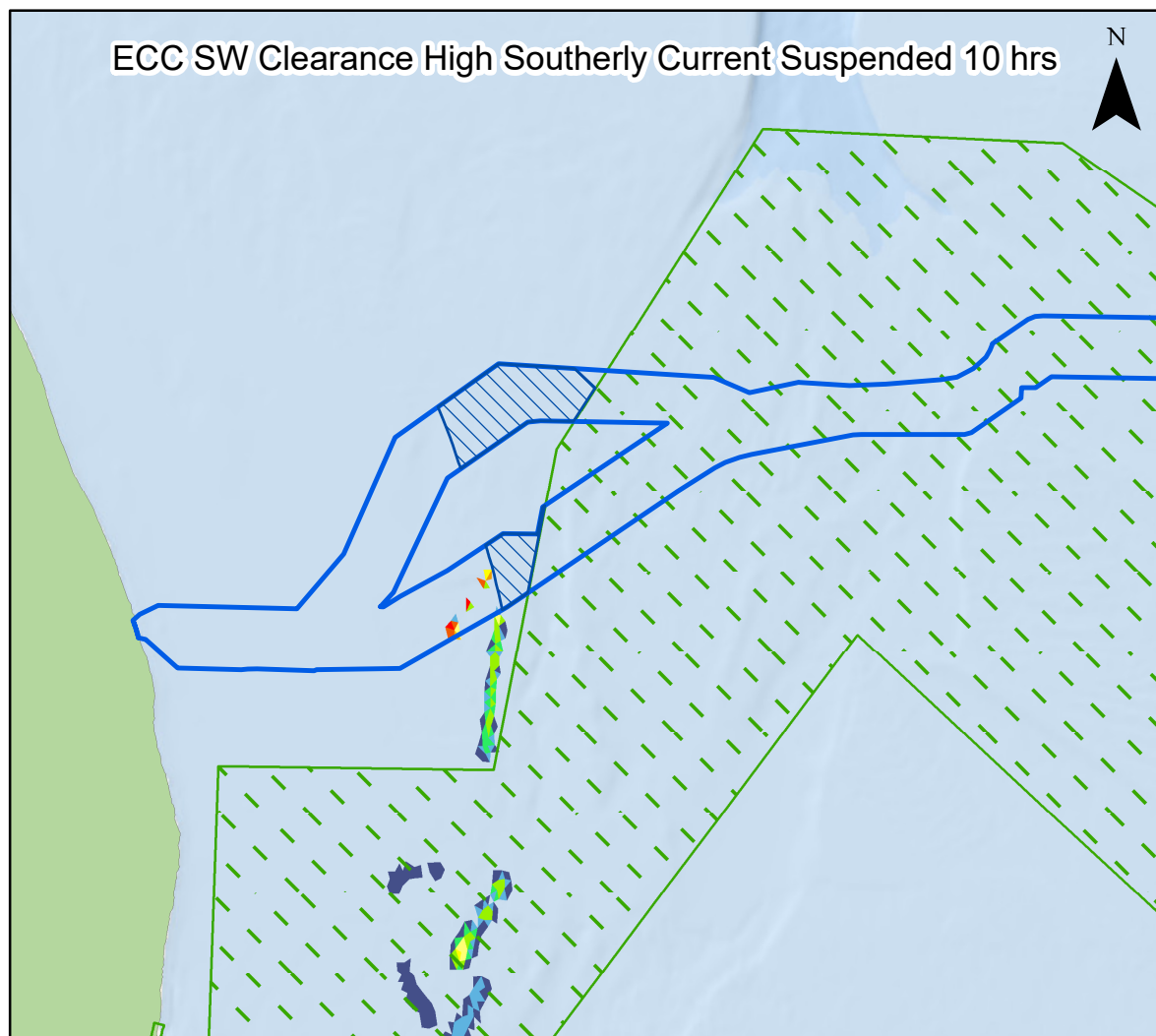
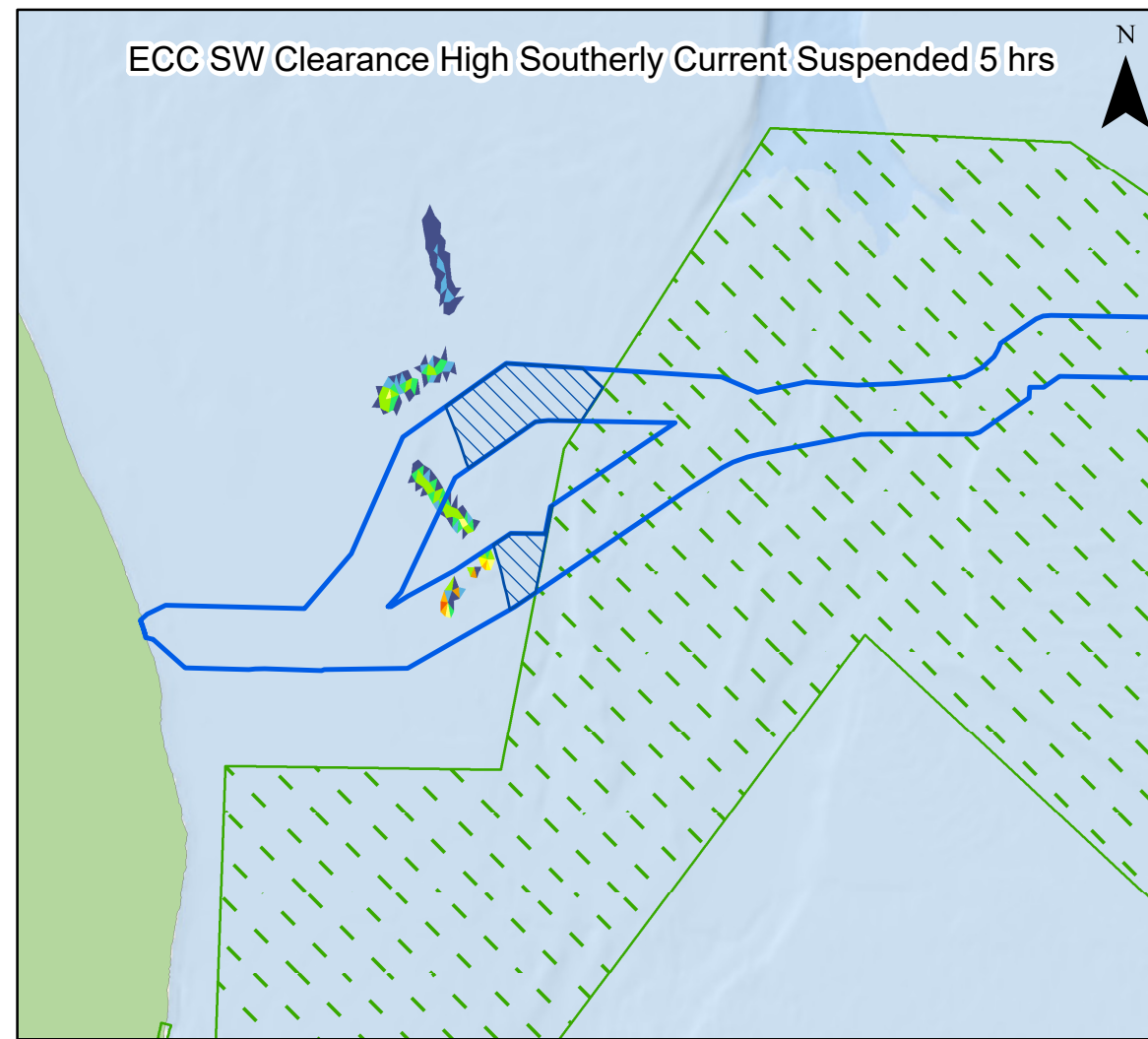
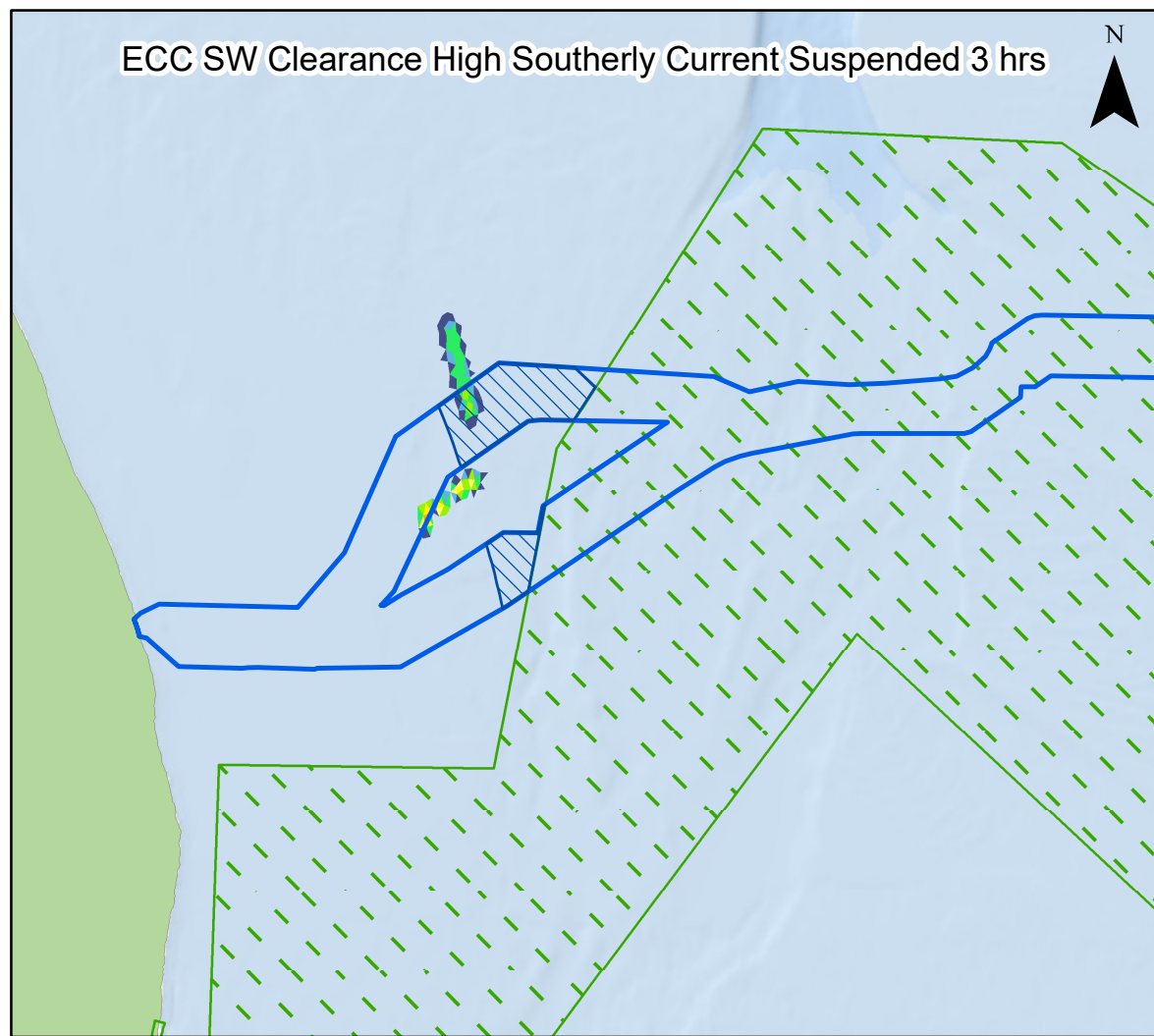
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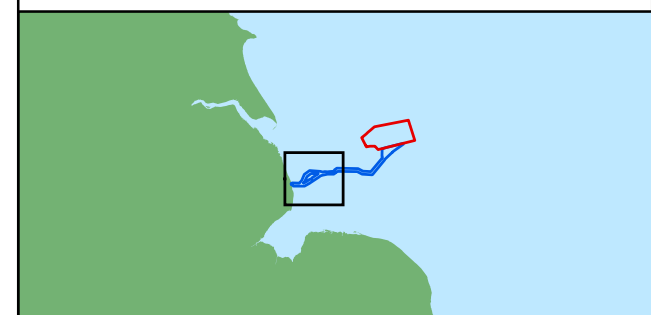


Legend

- Array Area
- Offshore Export Cable Corridor
- ORCP Area
- Special Areas of Conservation

Suspended Sediment Concentrations (mg/l)

- 1 - 4.99
- 5 - 9.99
- 10 - 19.99
- 20 - 49.99
- 50 - 99.99
- 100 - 149.99
- 150 - 249.99
- 250 - 499.99
- 500 - 999.99
- 1000 - 2449.99
- >2450



Coordinate System: WGS 1984 UTM Zone 31N
 0 5 10 km
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Environmental Statement
 Suspended sediment concentrations 3, 5, 10 and 15 hours after the start of Sandwave Clearance activities along the offshore ECC during a high spring flood tide
 Figure 7.19



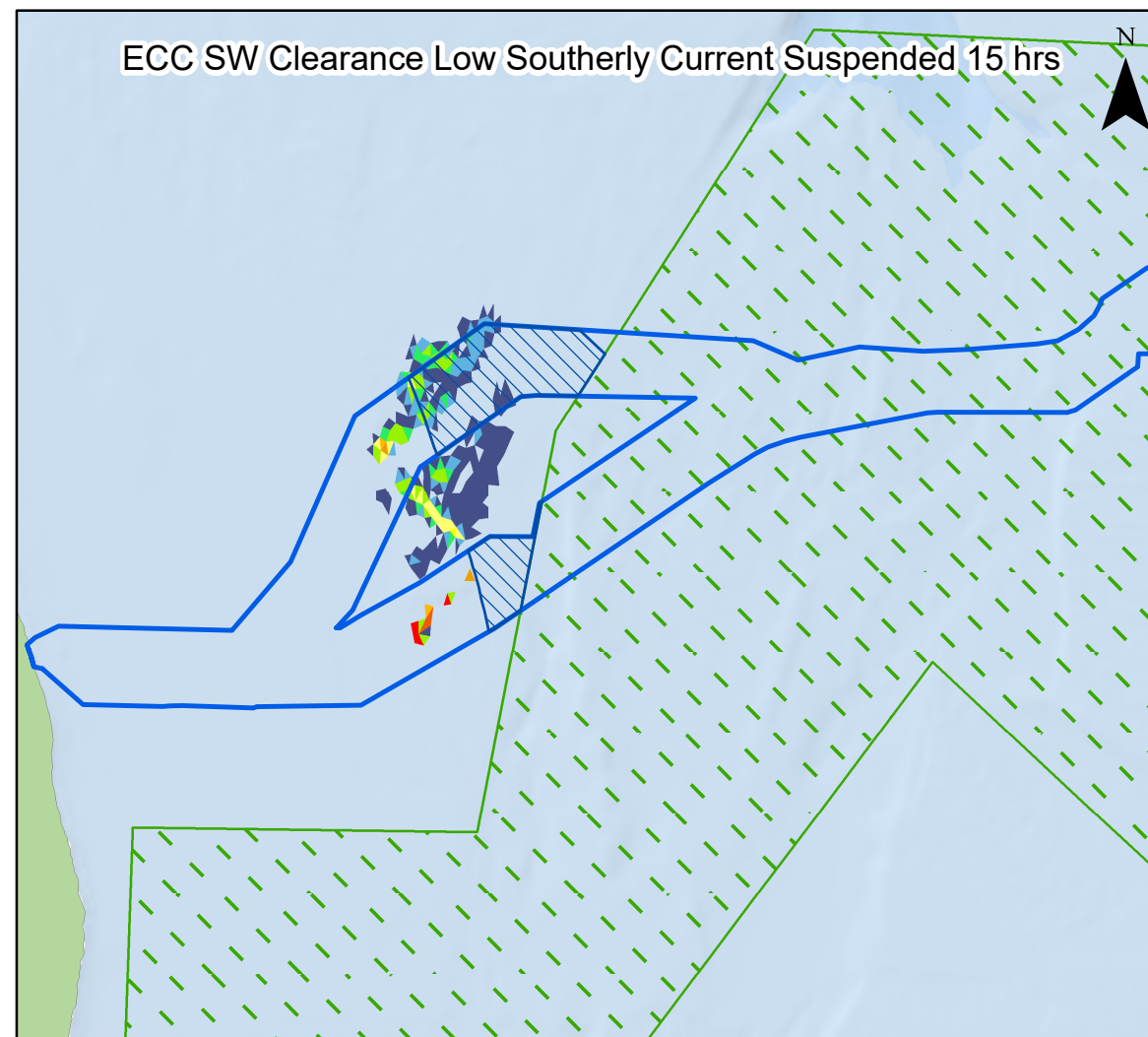
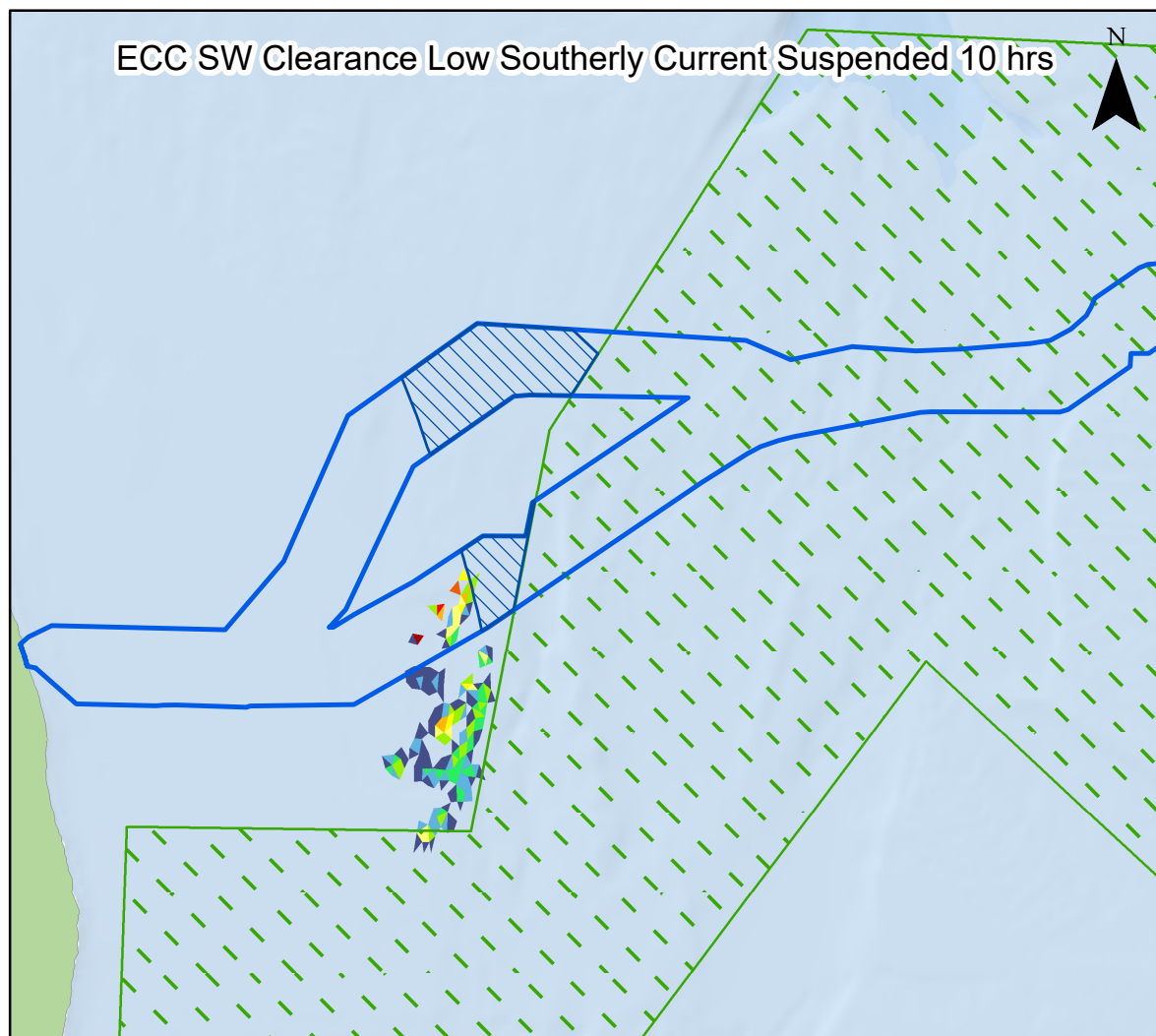
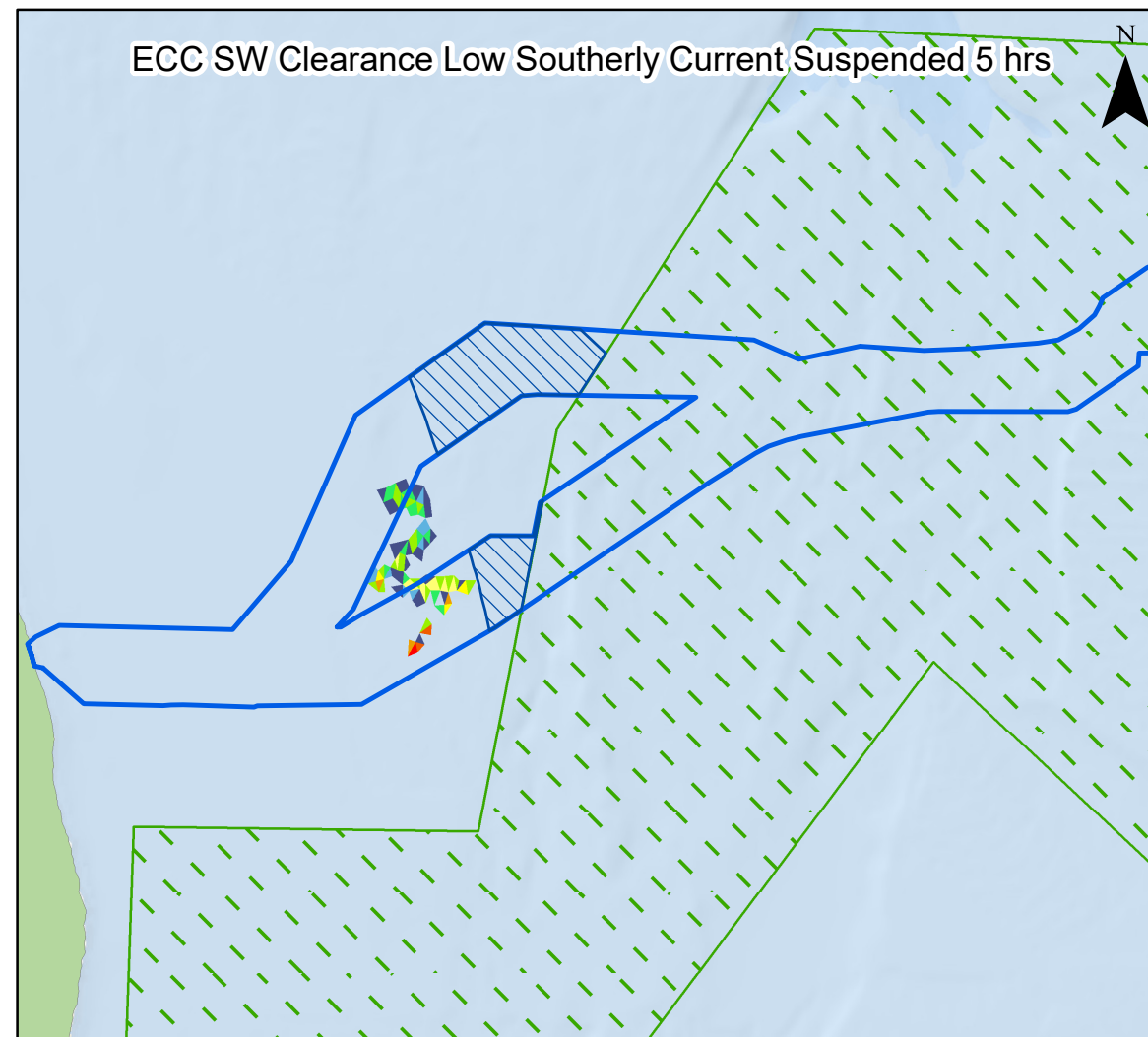
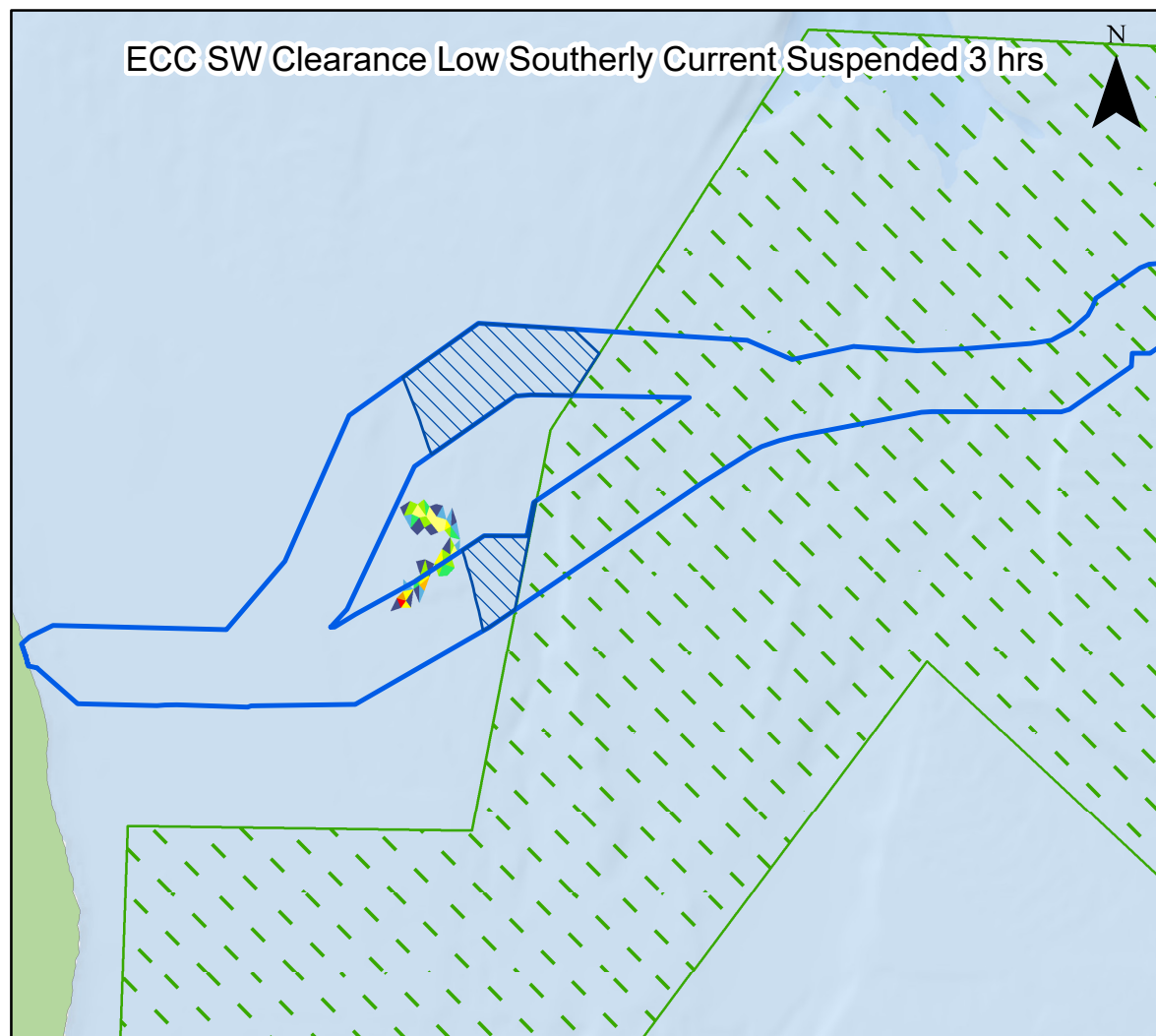
OUTER DOWSING
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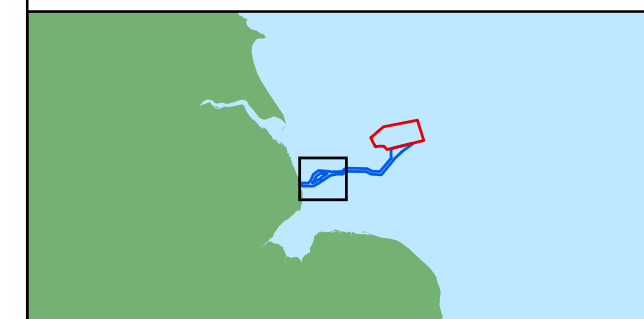


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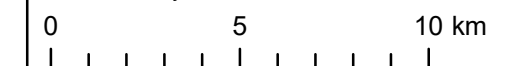
- Array Area
- Offshore Export Cable Corridor
- ORCP Area
- Special Areas of Conservation

Suspended Sediment Concentrations (mg/l)

- 1 - 4.99
- 5 - 9.99
- 10 - 19.99
- 20 - 49.99
- 50 - 99.99
- 100 - 149.99
- 150 - 249.99
- 250 - 499.99
- 500 - 999.99
- 1000 - 2449.99
- >2450



Coordinate System: WGS 1984 UTM Zone 31N



Scale: 1:200,000

A3 Page Size

Environmental Statement

Suspended sediment concentrations 3, 5, 10 and 15 hours after the start of Sandwave Clearance activities along the offshore ECC during a low neap flood tide

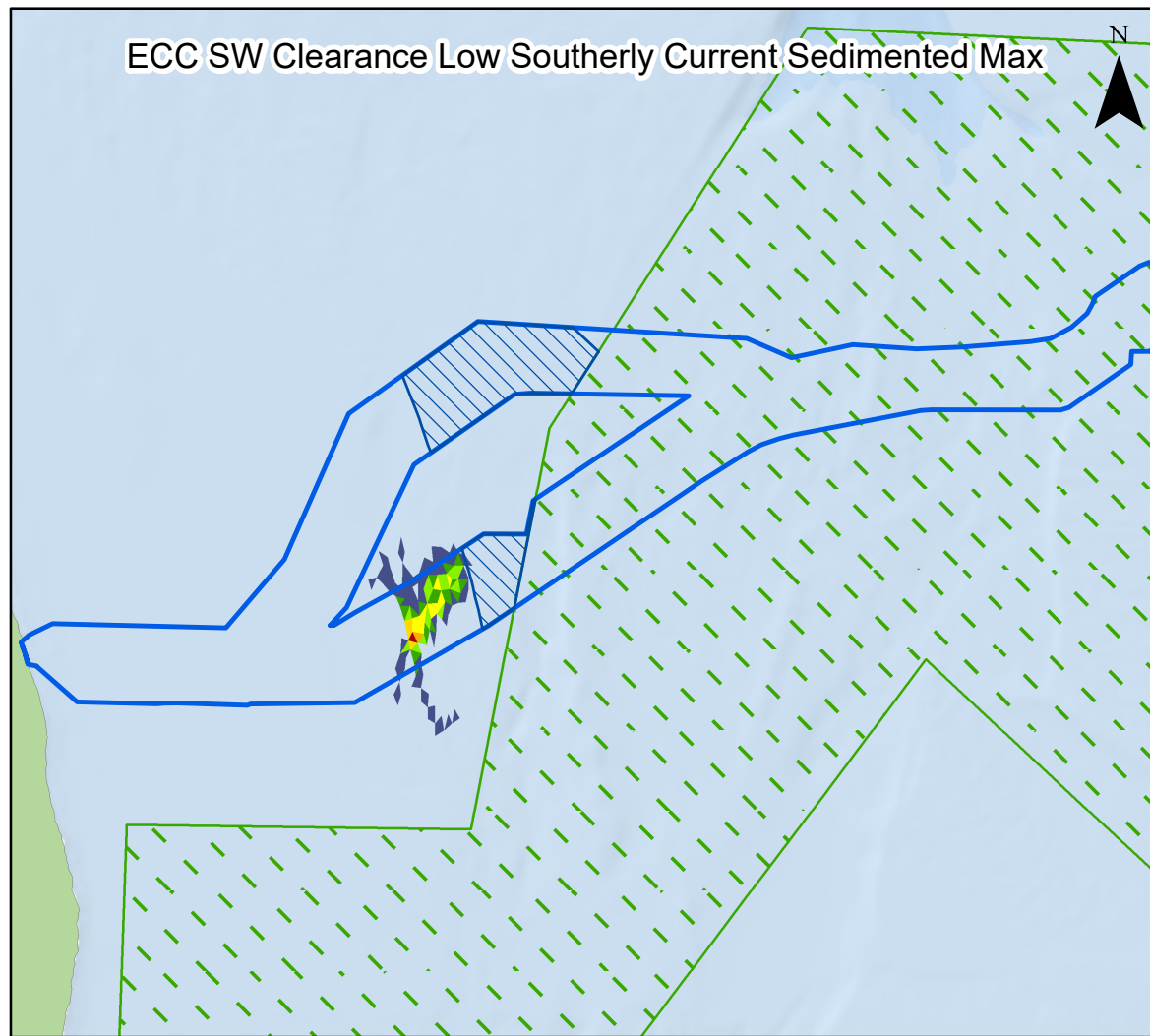
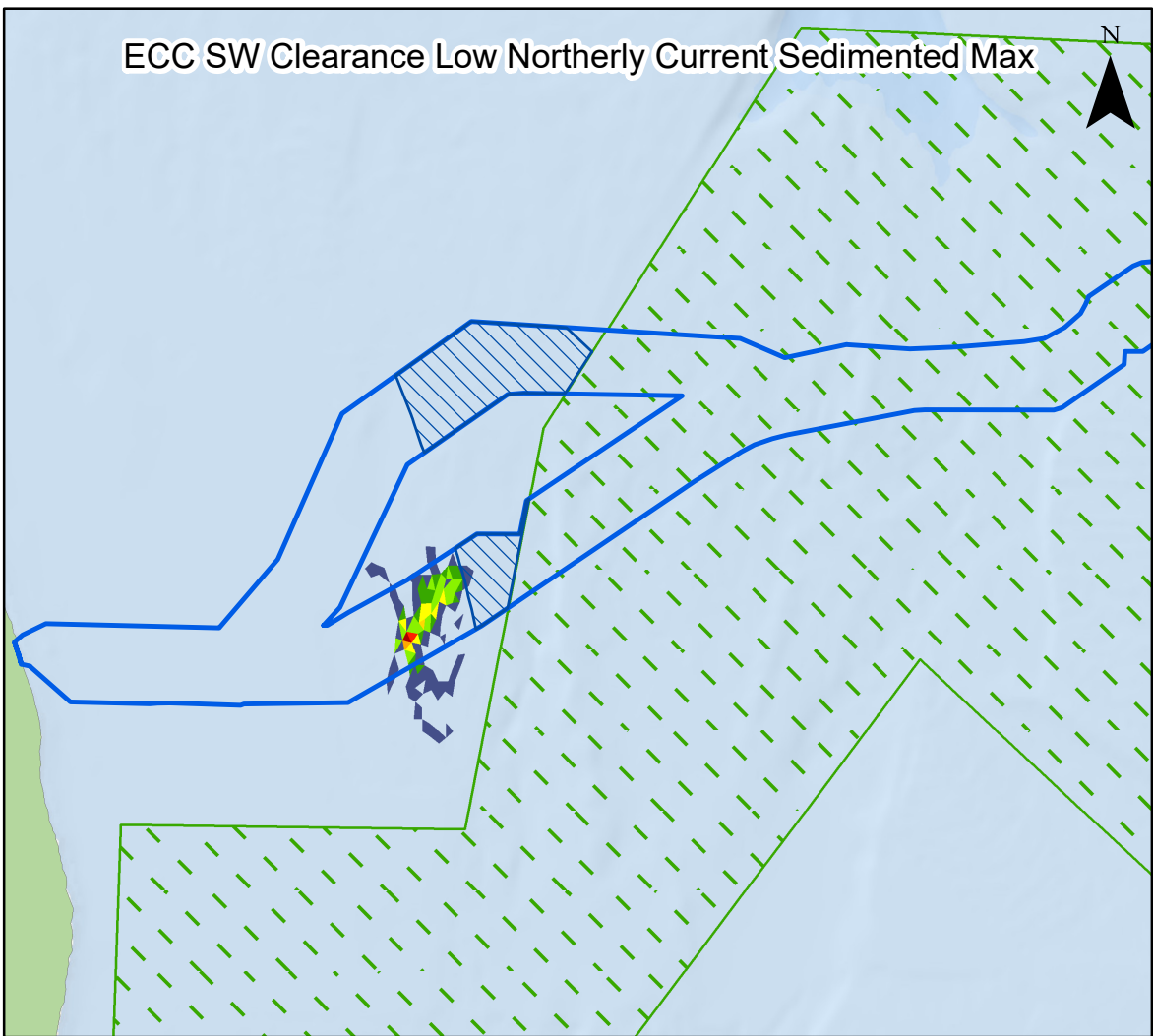
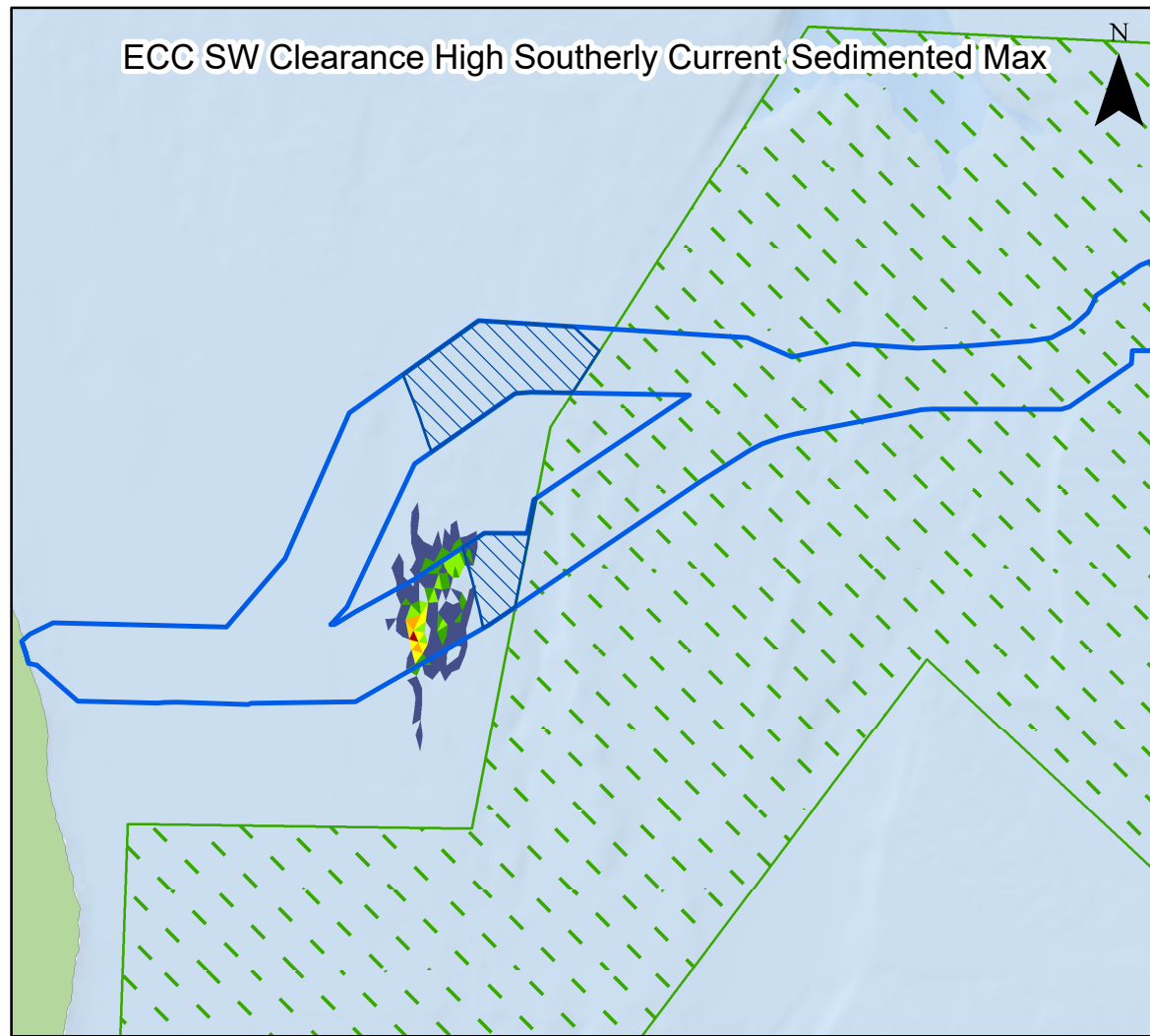
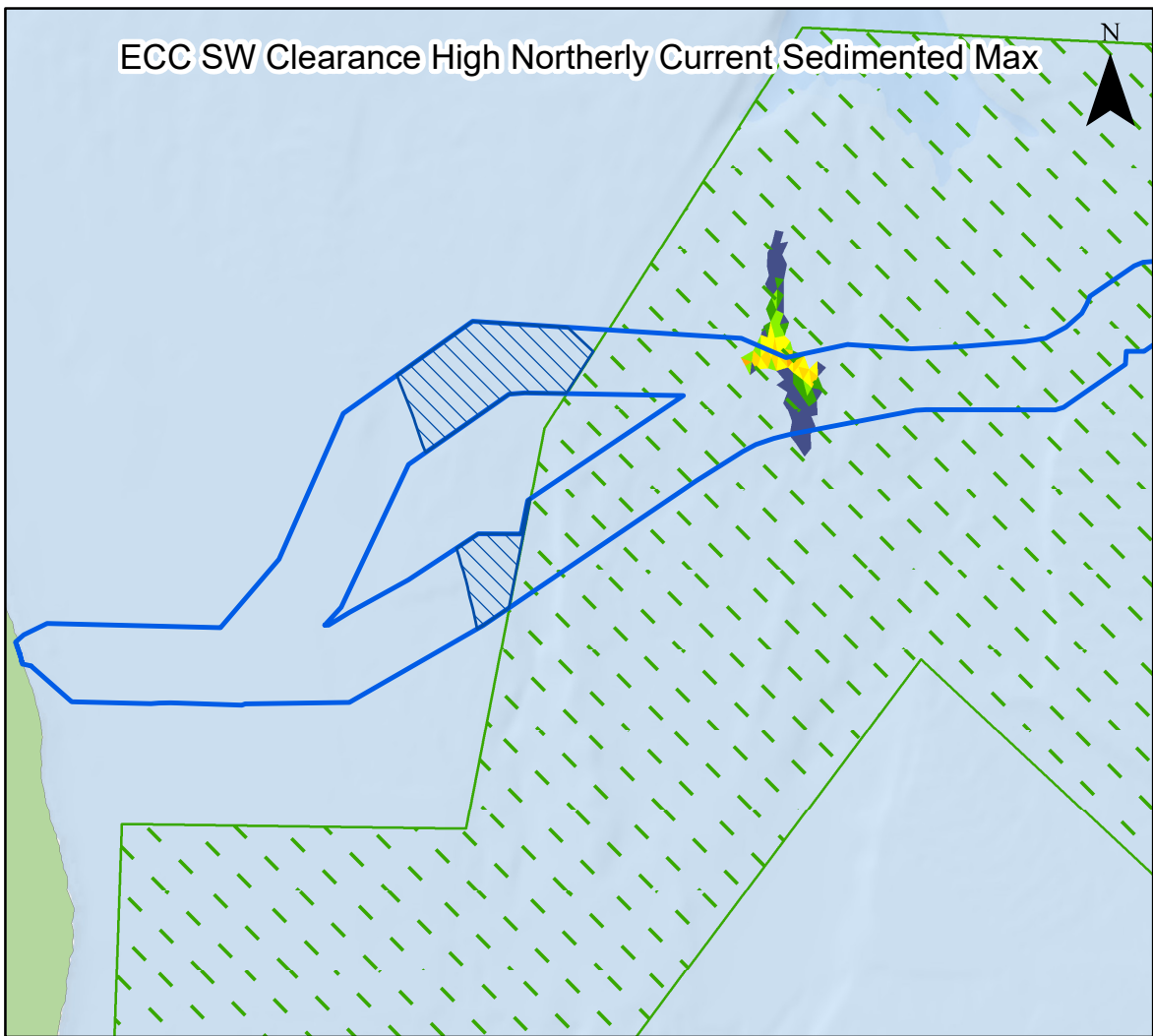
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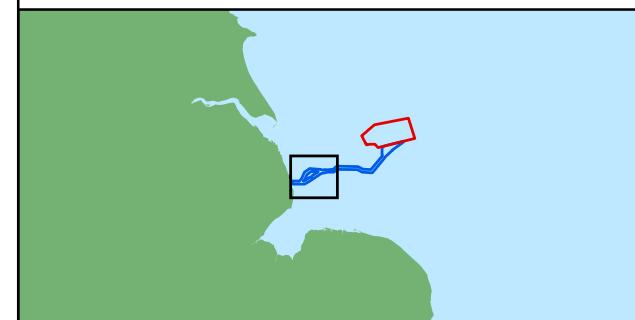


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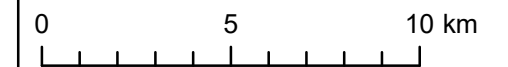
- Array Area
- Offshore Export Cable Corridor
- ORCP Area
- Special Areas of Conservation

Deposited Sediment (mm)

- 1 - 4.99
- 5 - 9.99
- 10 - 19.99
- 20 - 49.99
- 50 - 99.99
- 100 - 149.99
- 150 - 249.99
- >250



Coordinate System: WGS 1984 UTM Zone 31N



Scale: 1:200,000

A3 Page Size

Environmental Statement

Maximum sediment deposition 20 hours after the start of Sandwave Clearance activities along the offshore ECC, for a range of tidal conditions

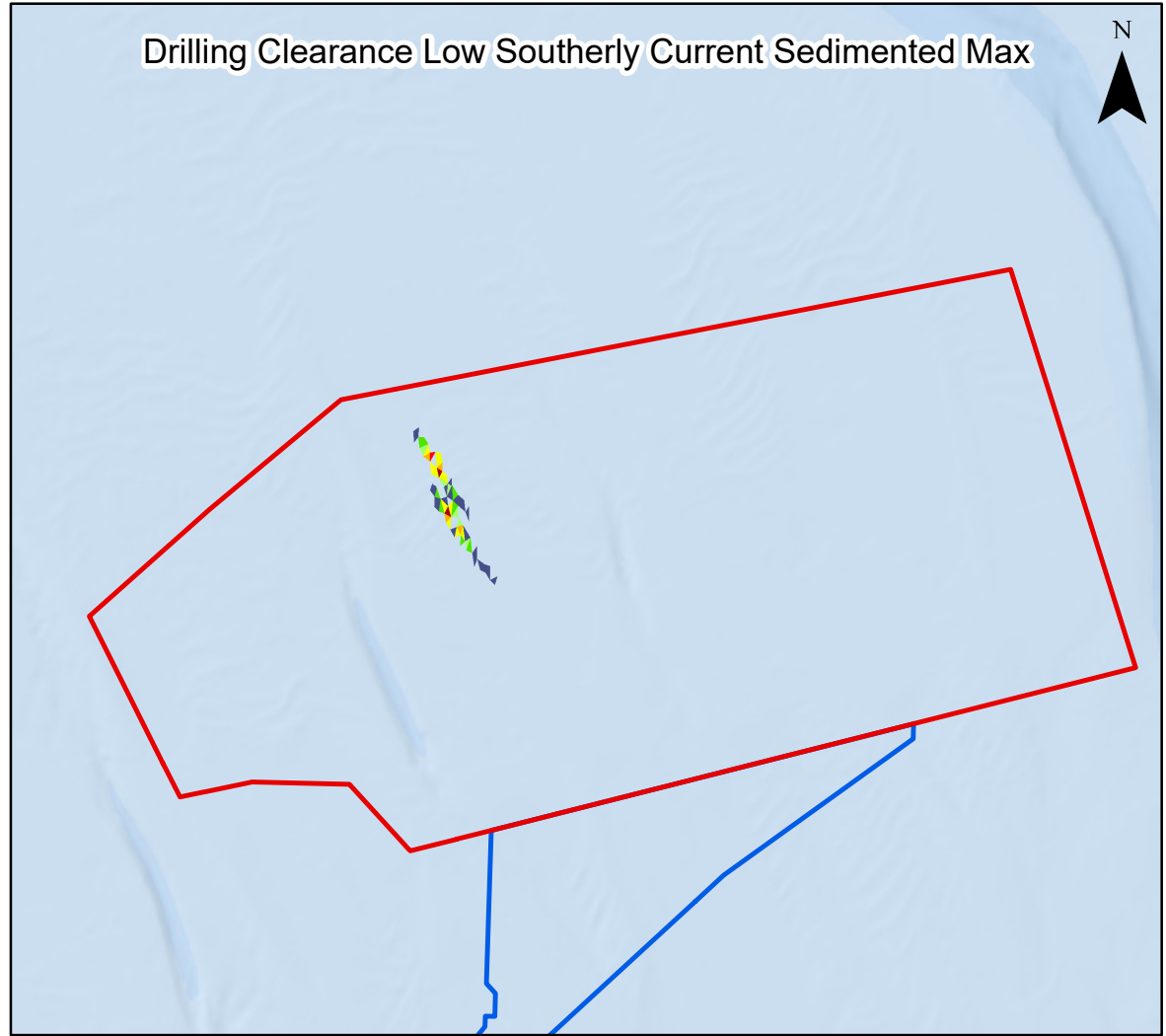
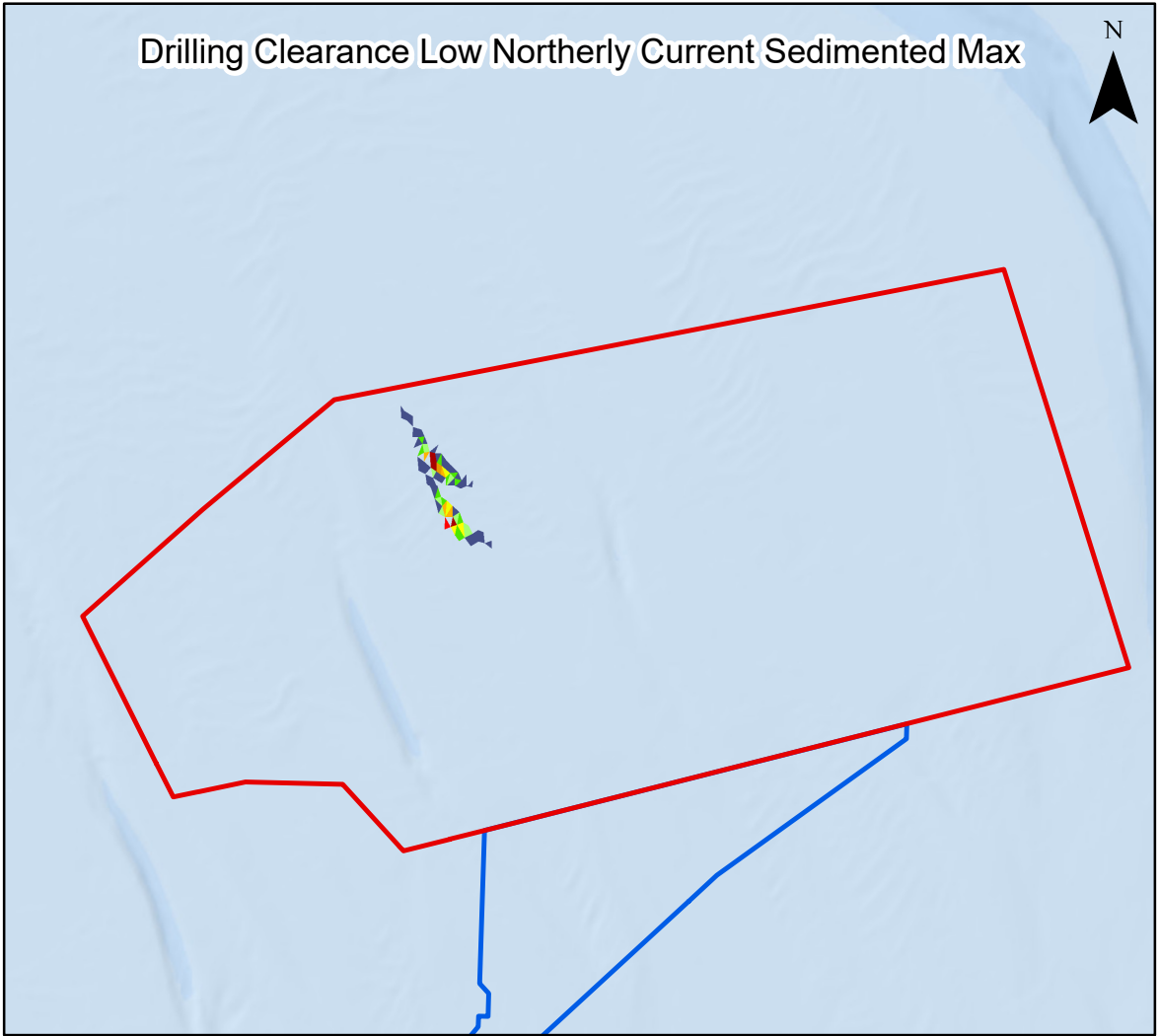
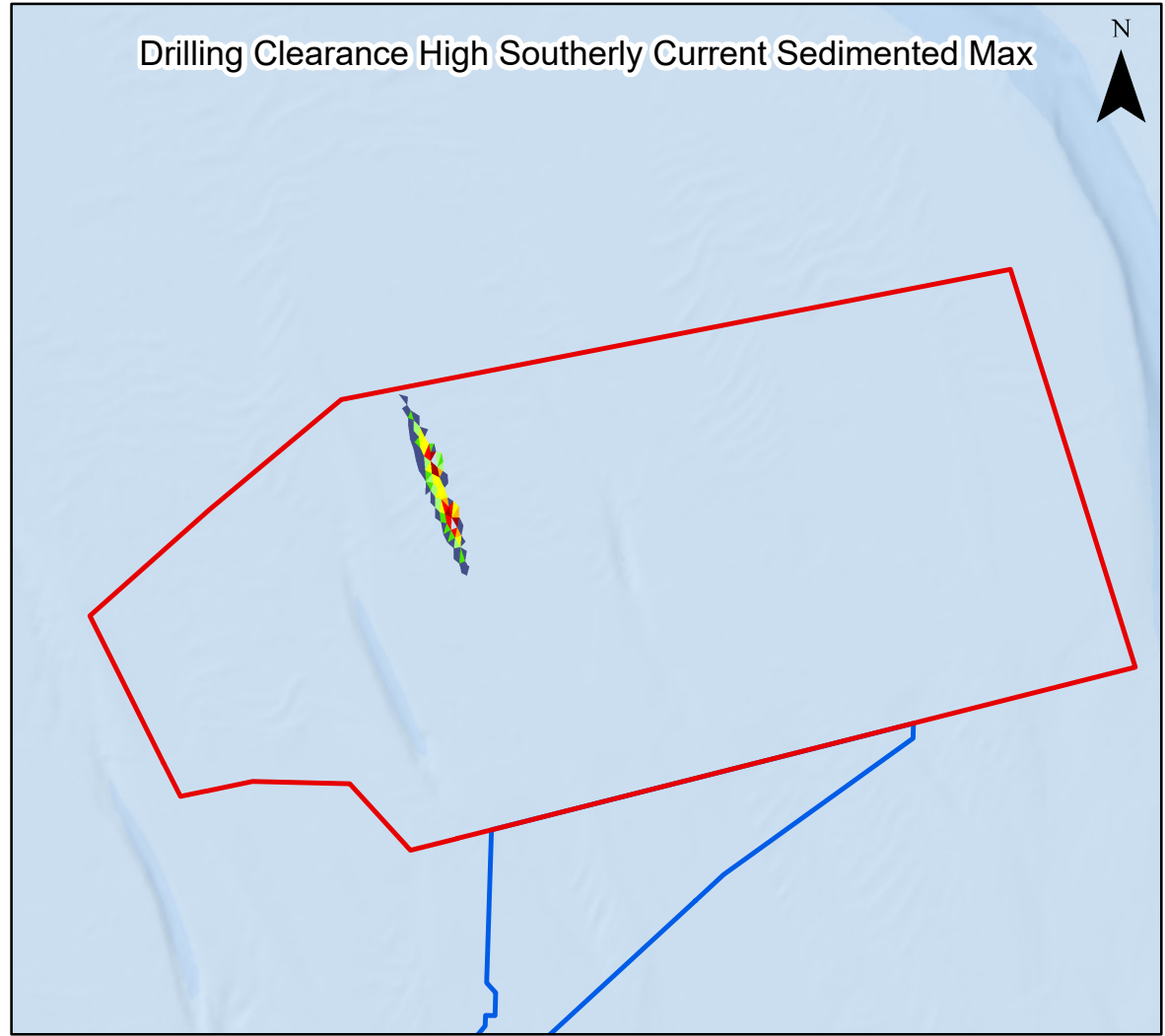
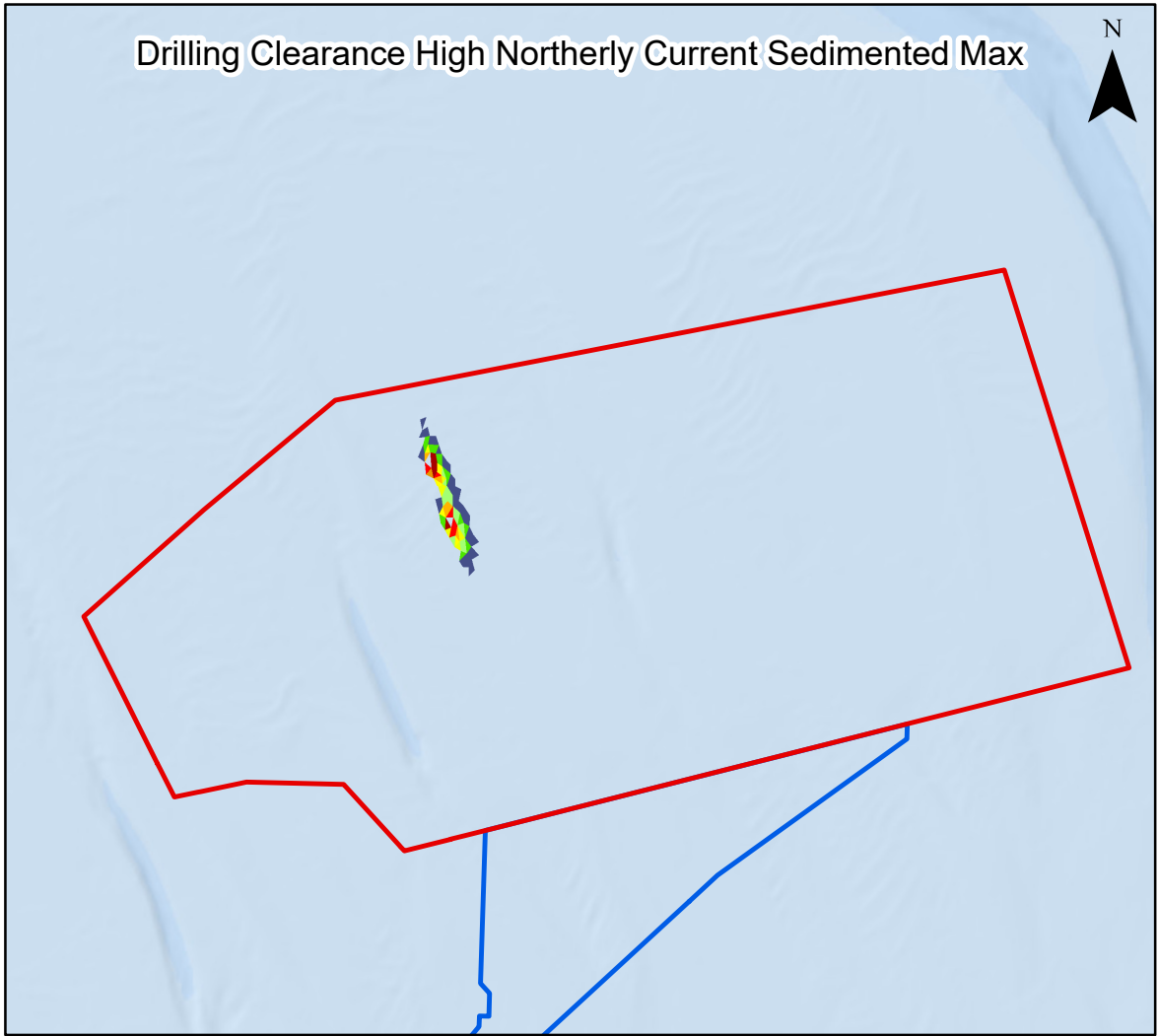
Figure 7.21



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Legend

- Array Area
- Offshore Export Cable Corridor

Deposited Sediment (mm)

- 1 - 1.99
- 2 - 2.99
- 3 - 4.99
- 5 - 7.49
- 7.5 - 9.99
- 10 - 14.99
- 15 - 19.99
- 20 - 29.99
- >30



Coordinate System: WGS 1984 UTM Zone 31N
 0 5 10 km
 Scale: 1:250,000 A3 Page Size

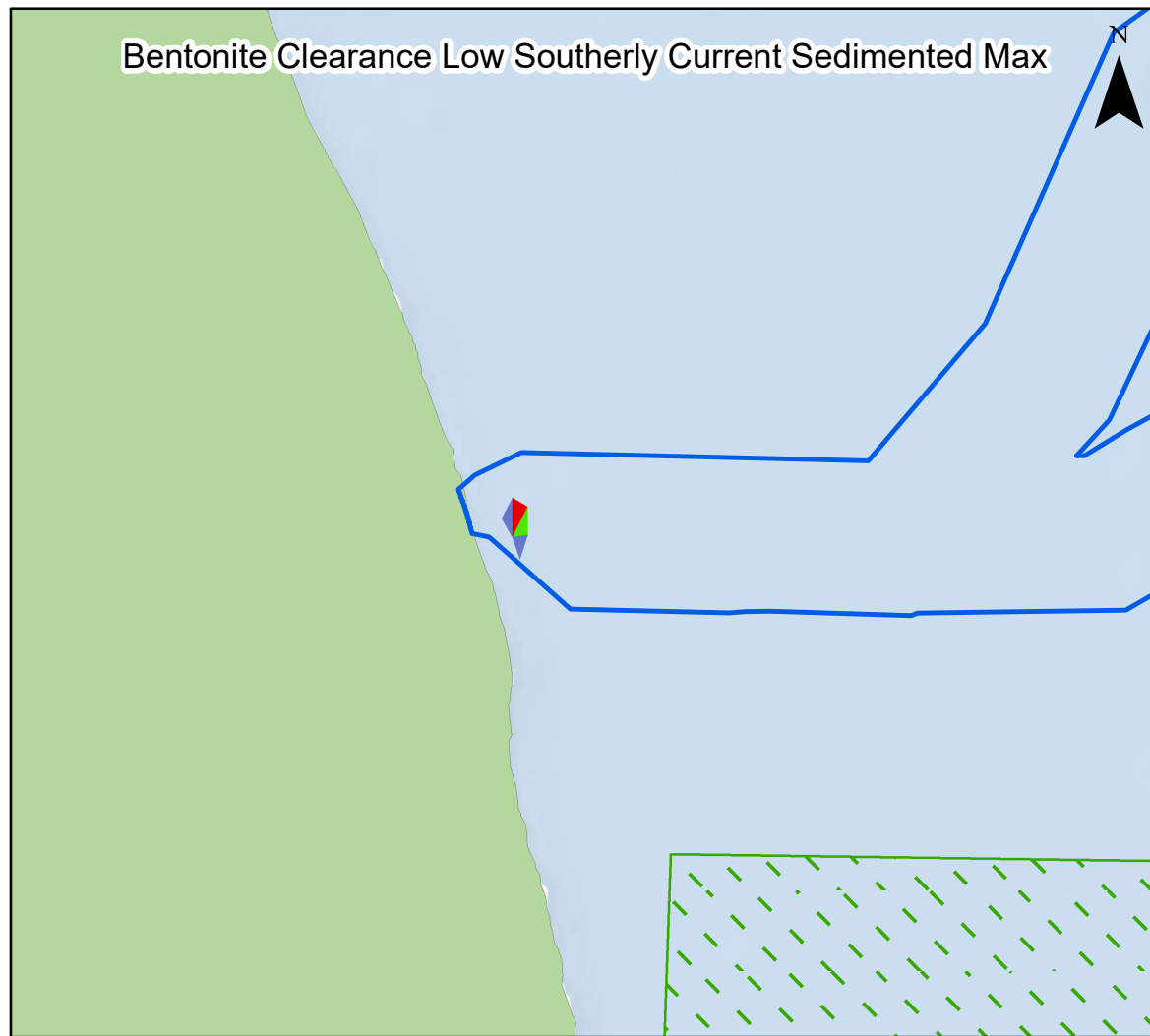
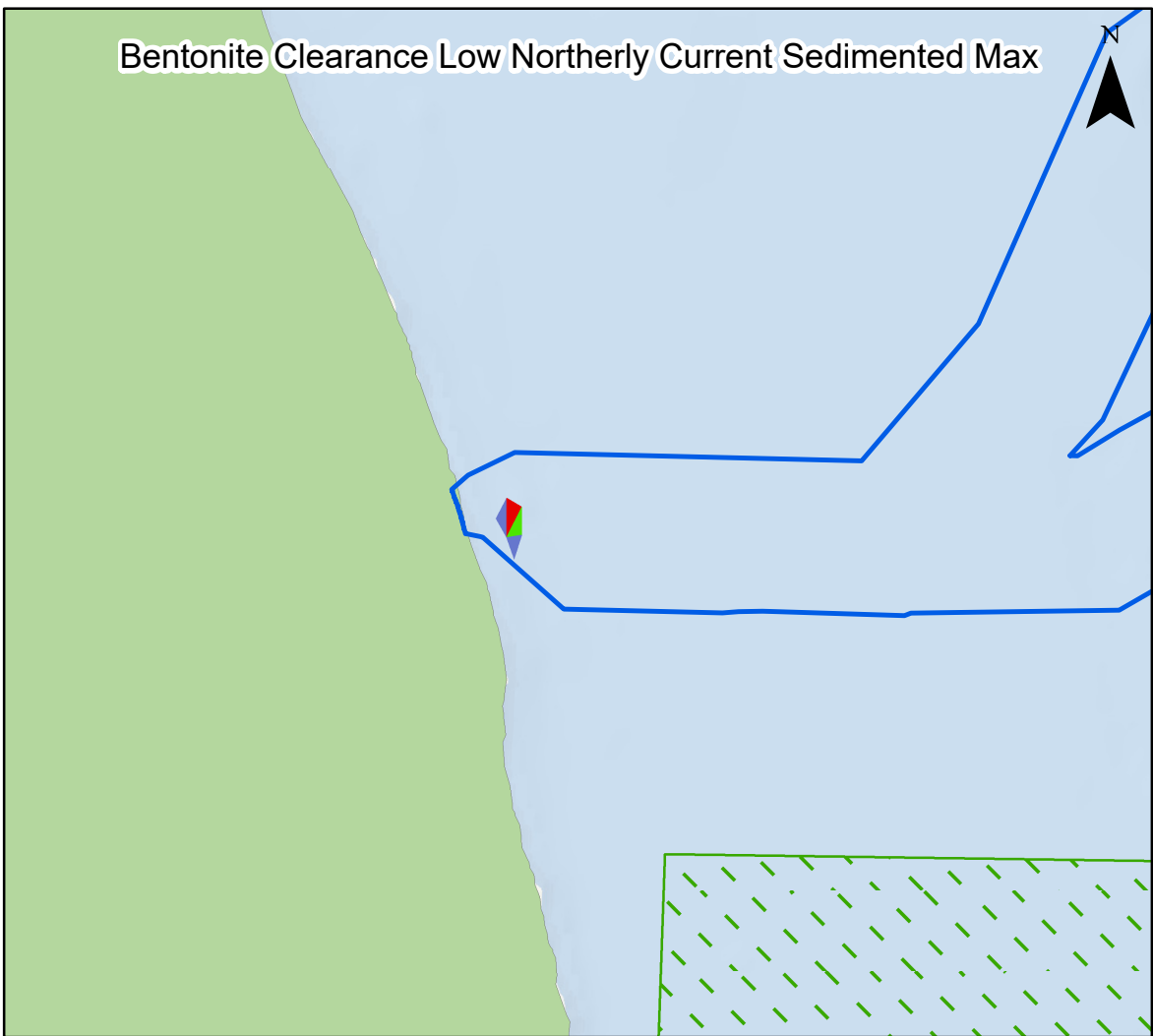
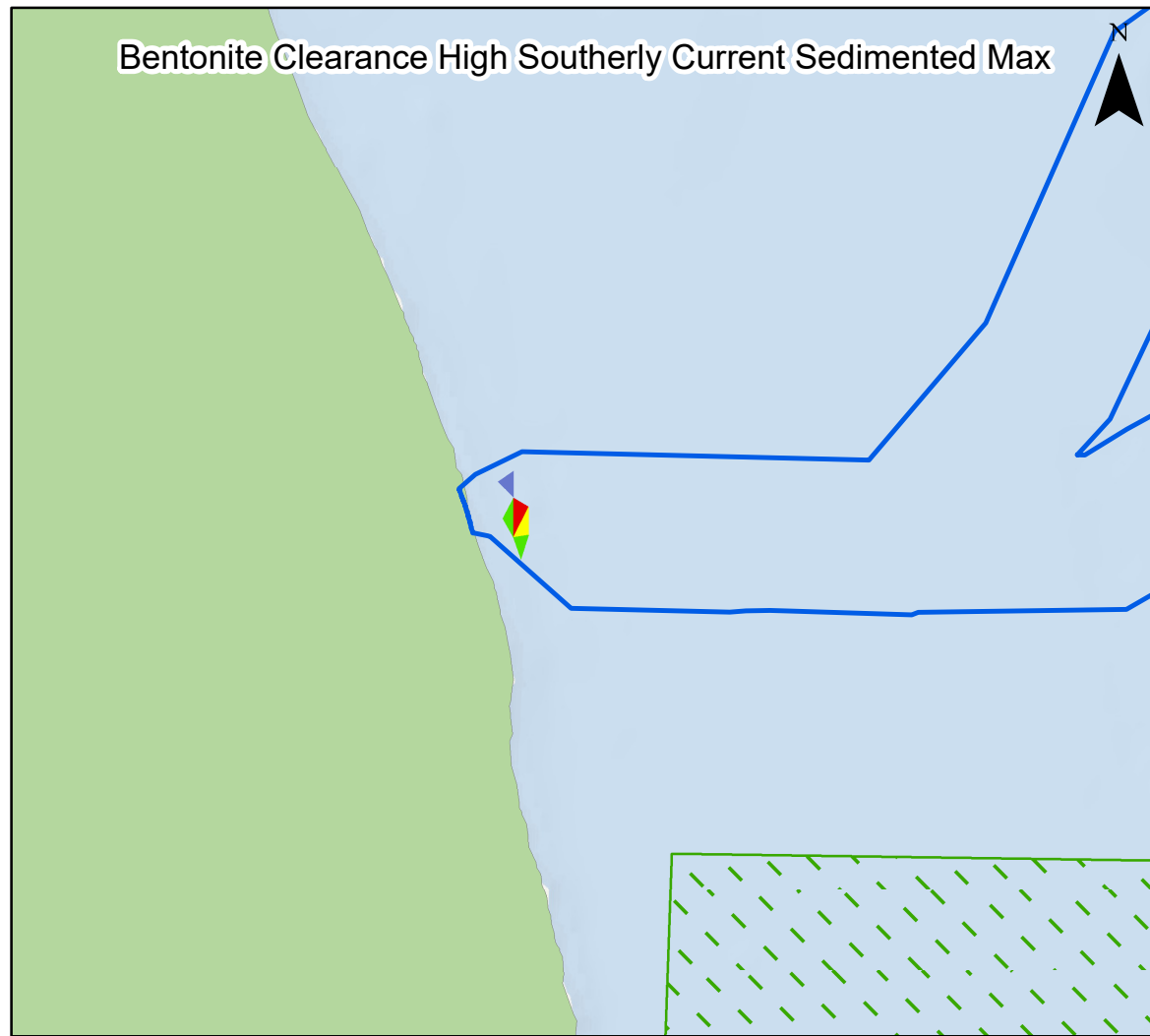
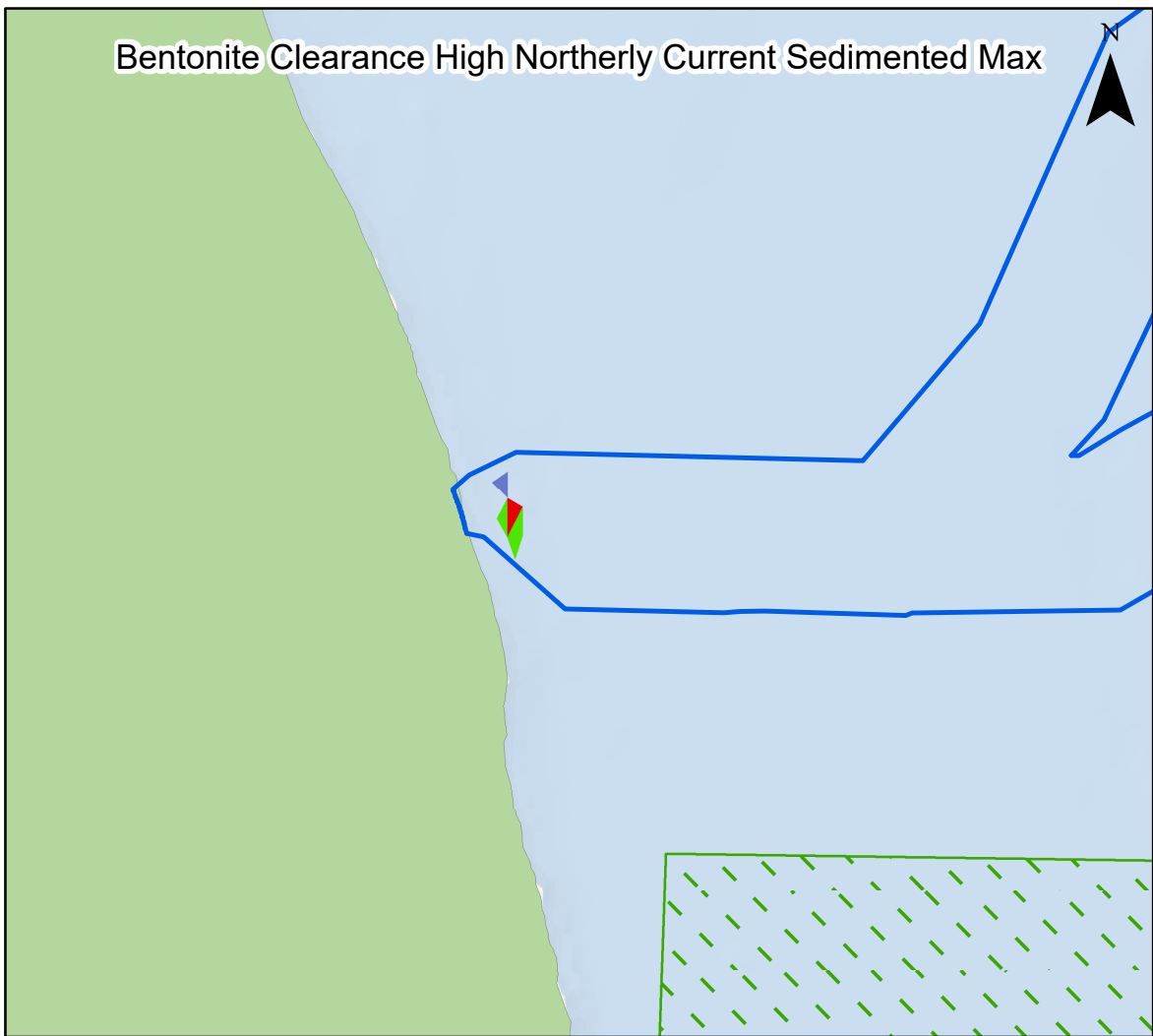
Environmental Statement

Maximum sediment deposition 20 hours after the start of foundation drilling activities within the Project array area, for a range of tidal conditions

Figure 7.22

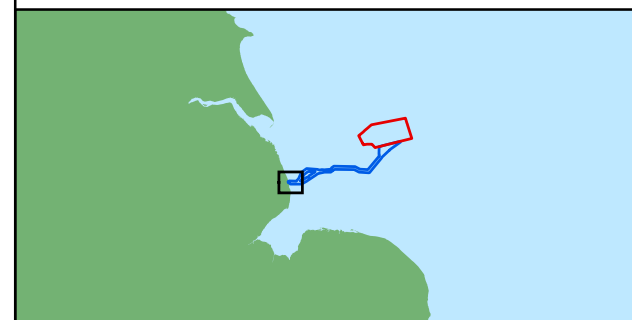
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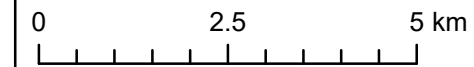


Legend

- Array Area
 - Offshore Export Cable Corridor
 - Special Areas of Conservation
- Deposited Sediment (mm)**
- 1 - 1.99
 - 2 - 2.99
 - 3 - 3.99
 - 4 - 4.99
 - 5 - 9.99
 - >10



Coordinate System: WGS 1984 UTM Zone 31N



Scale: 1:100,000

A3 Page Size

Environmental Statement

Maximum sediment deposition 20 hours after the start of HDD punch-out activities (and associated bentonite release), for a range of tidal conditions

Figure 7.23



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350000

400000

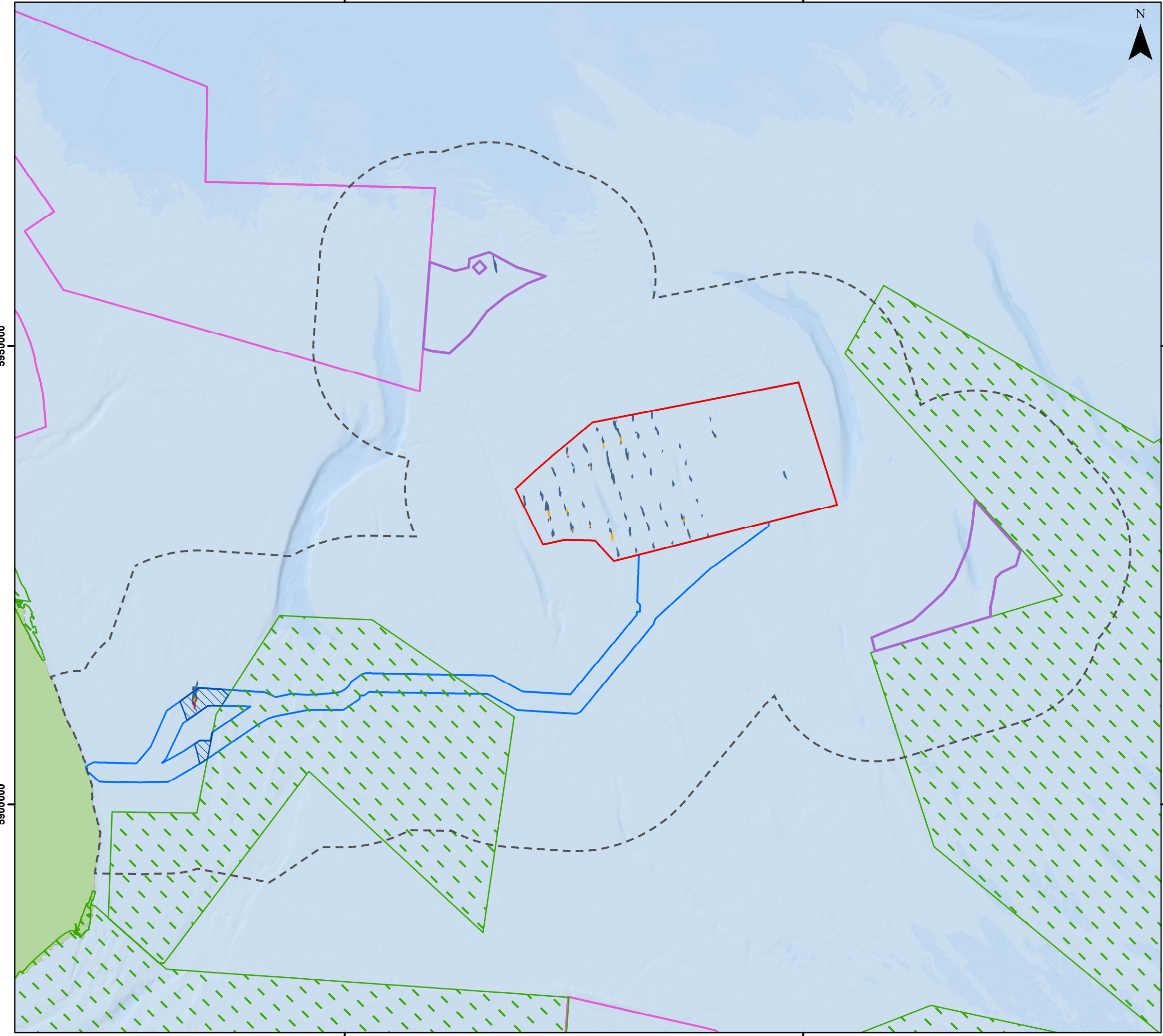


Legend

- Array Area
- Offshore Export Cable Corridor
- ORCP Area
- Artificial Nesting Structure Area
- Physical Processes Zone of Influence
- Special Areas of Conservation
- Marine Conservation Zones

High Northerly Current Current Speed

- Current Speed (m/s)**
- < -0.1
 - 0.05 - -0.1
 - 0.02 - -0.05



5950000

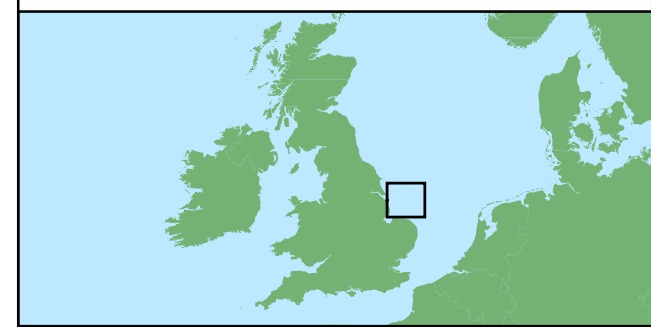
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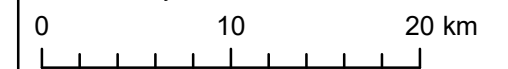
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Environmental Statement

Hydrodynamic blockage effects during a high spring ebb tide

Figure 7.24

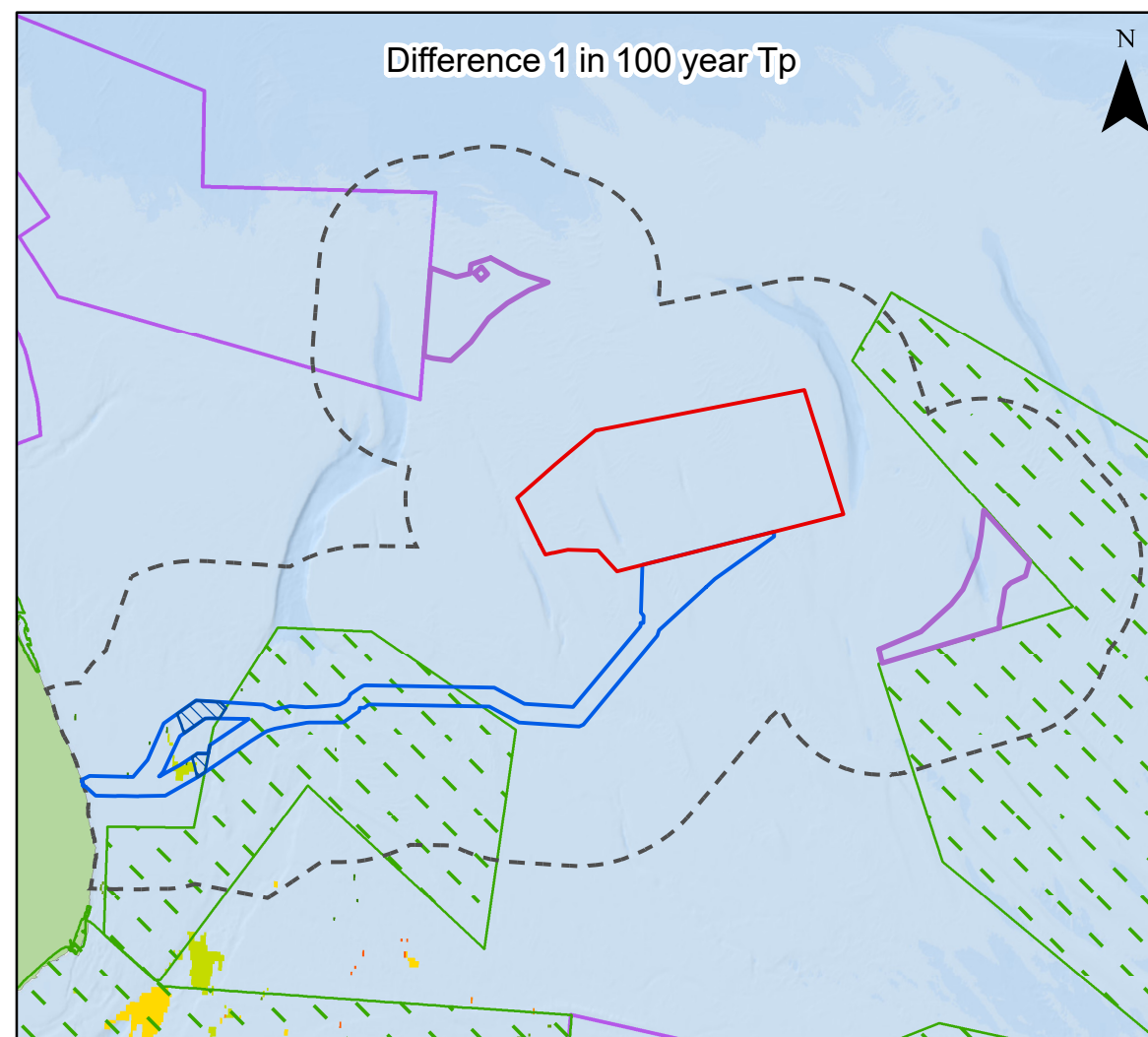
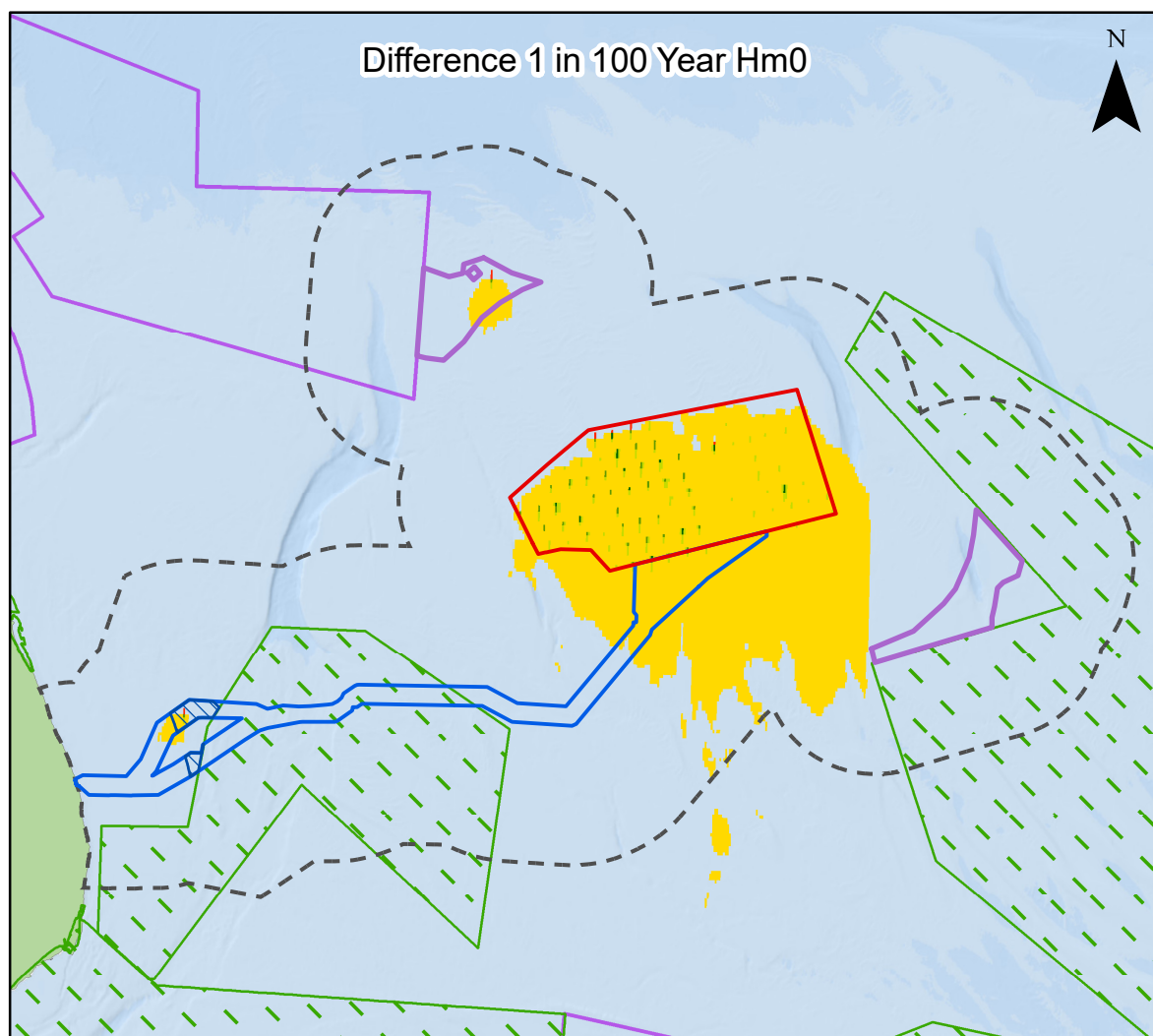
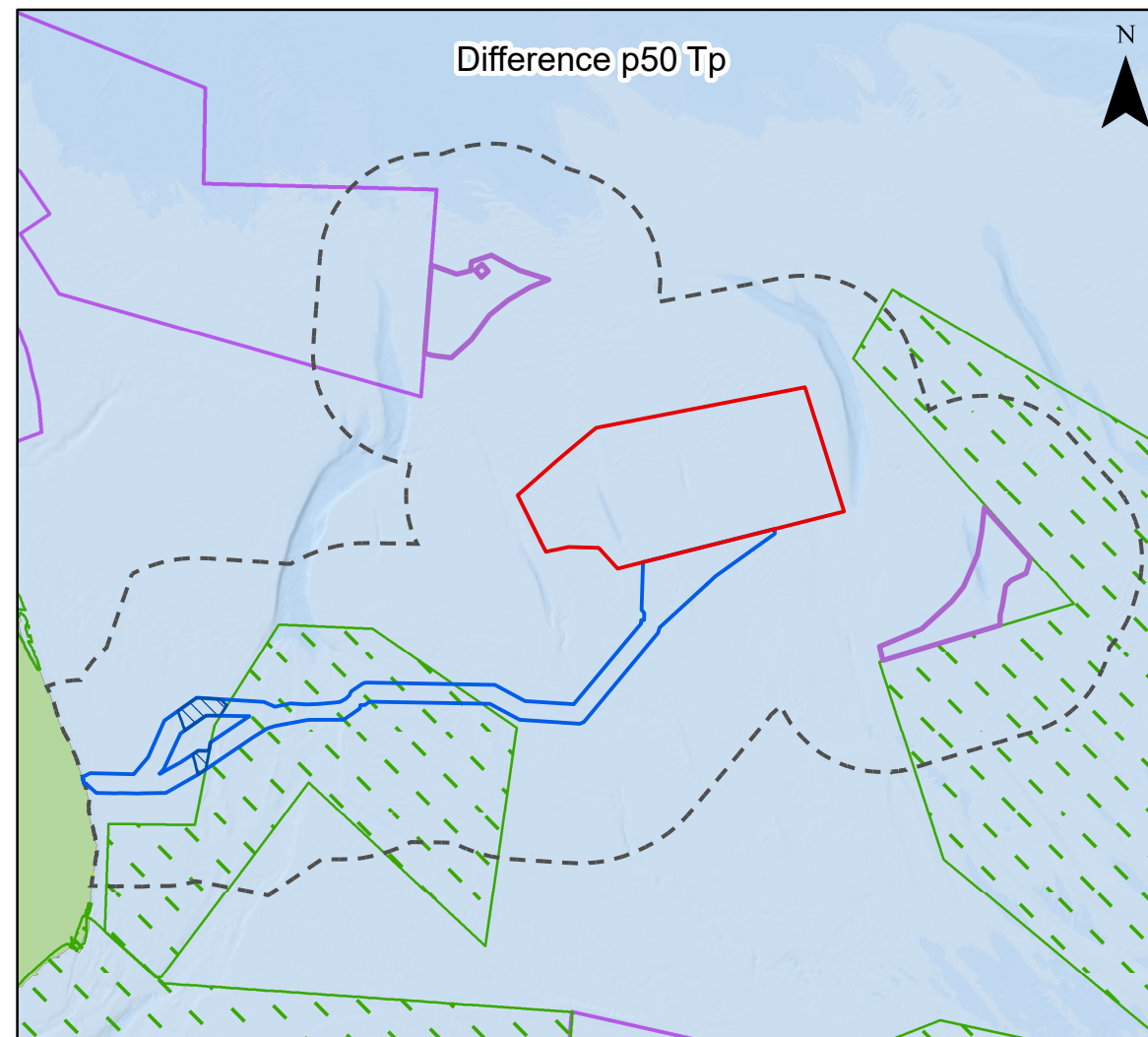
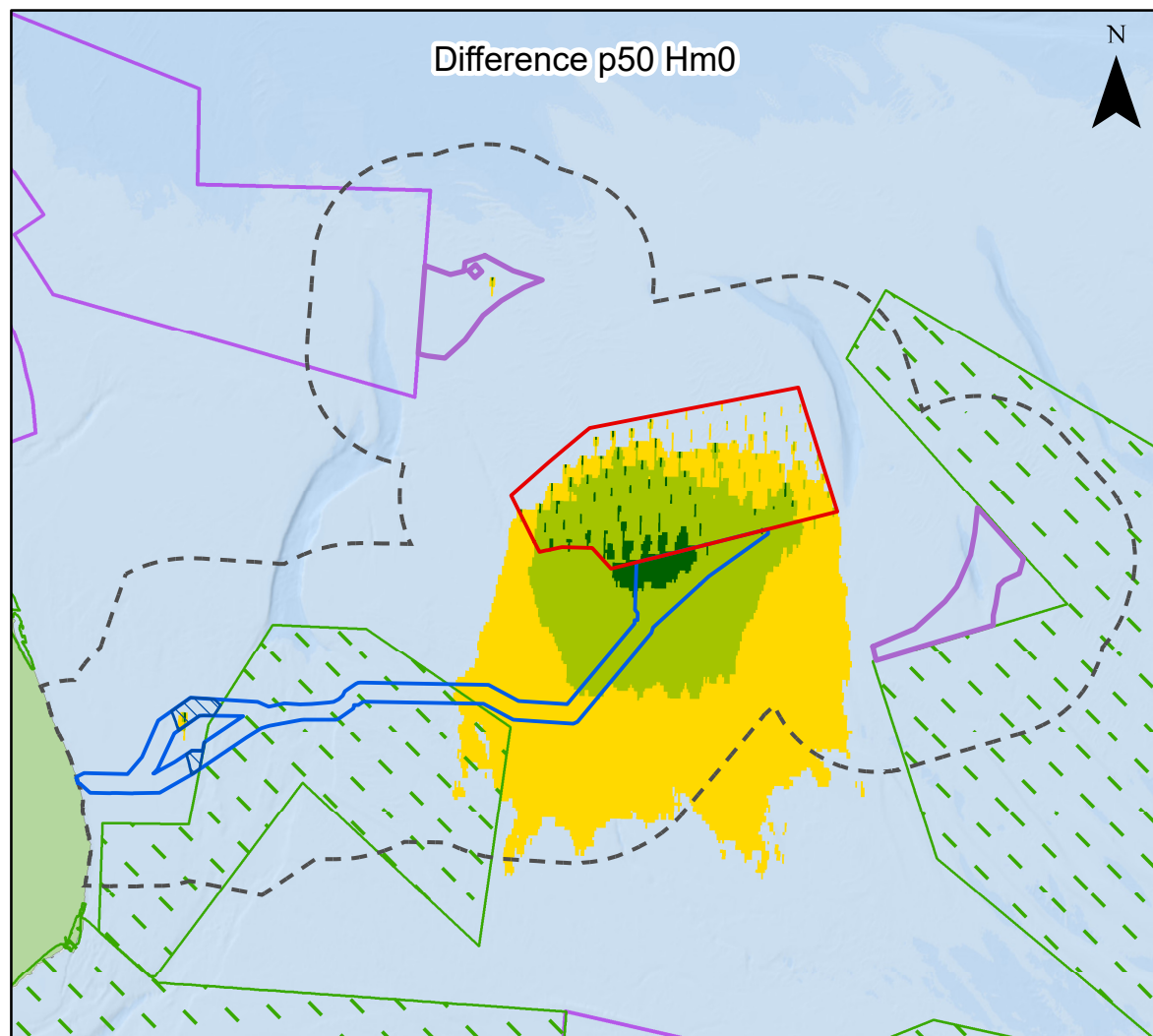


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Legend

- Array Area
- Offshore Export Cable Corridor
- ORCP Area
- Artificial Nesting Structure Area
- Special Areas of Conservation
- Marine Conservation Zones

Difference p50 Hm0 (m)

- 1 -- -0.1
- 0.1 -- -0.05
- 0.05 -- -0.025
- 0.025 -- 0.025

Difference 1 in 100 Year Hm0 (m)

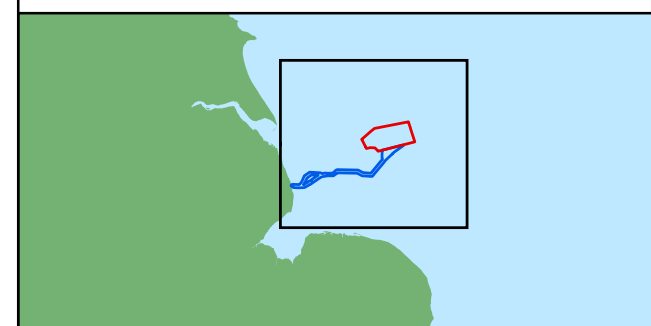
- 1 -- -0.1
- 0.1 -- -0.05
- 0.05 -- -0.025
- 0.025 -- 0.025

Difference p50 Tp (s)

- < -5
- 5 -- -2.5
- 2.5 -- -1
- 1 -- -0.1
- 0.1 -- -0.025
- 0.025 -- 0.025
- 0.025 -- 0.1
- 0.1 -- 1
- 1 -- 2.5
- 2.5 -- 5
- > 5

Difference 1 in 100 Year Tp (s)

- < -5
- 5 -- -2.5
- 2.5 -- -1
- 1 -- -0.1
- 0.1 -- -0.025
- 0.025 -- 0.025
- 0.025 -- 0.1
- 0.1 -- 1
- 1 -- 2.5
- 2.5 -- 5
- > 5



Coordinate System: WGS 1984 UTM Zone 31N

0 25 50 km

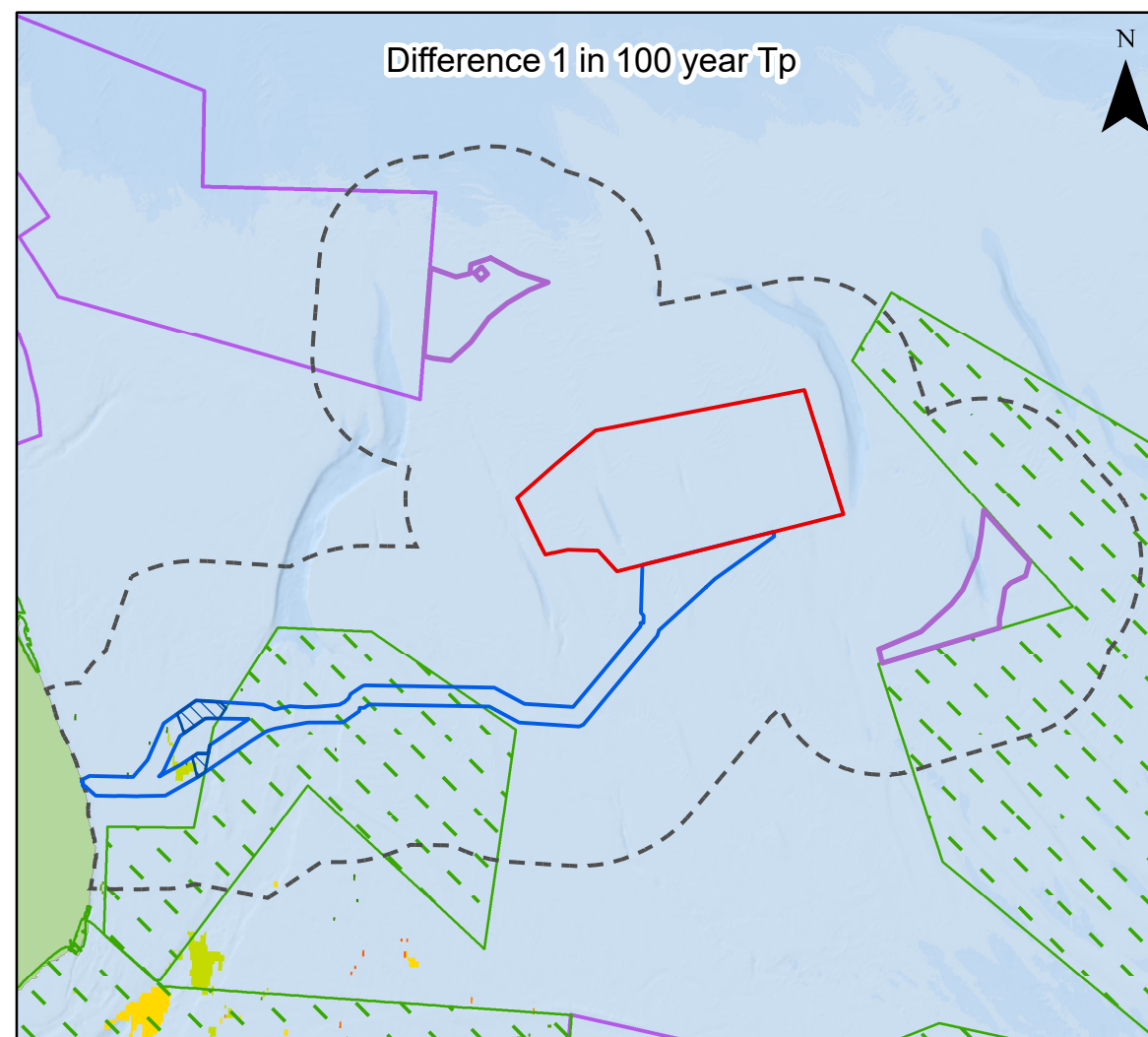
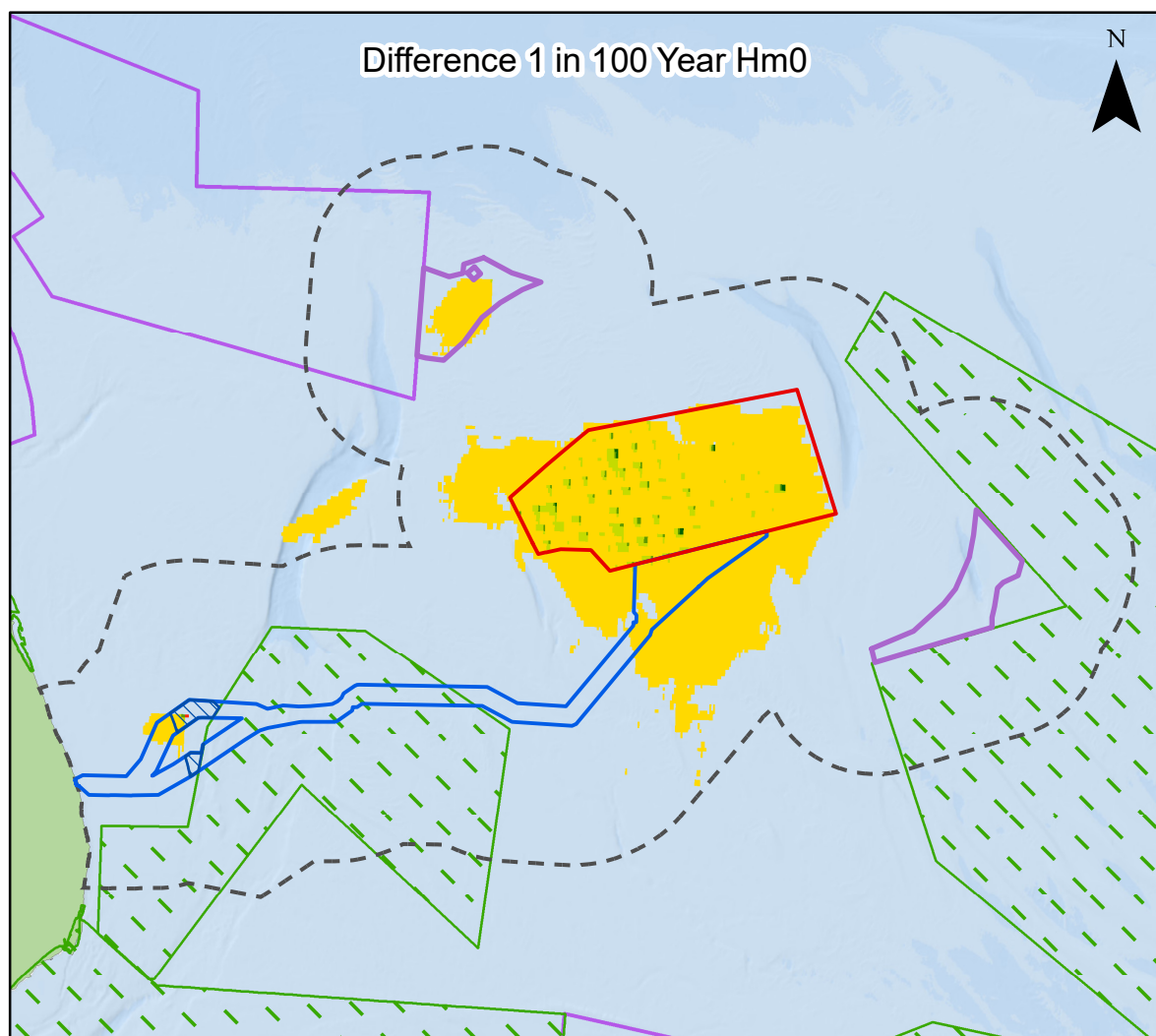
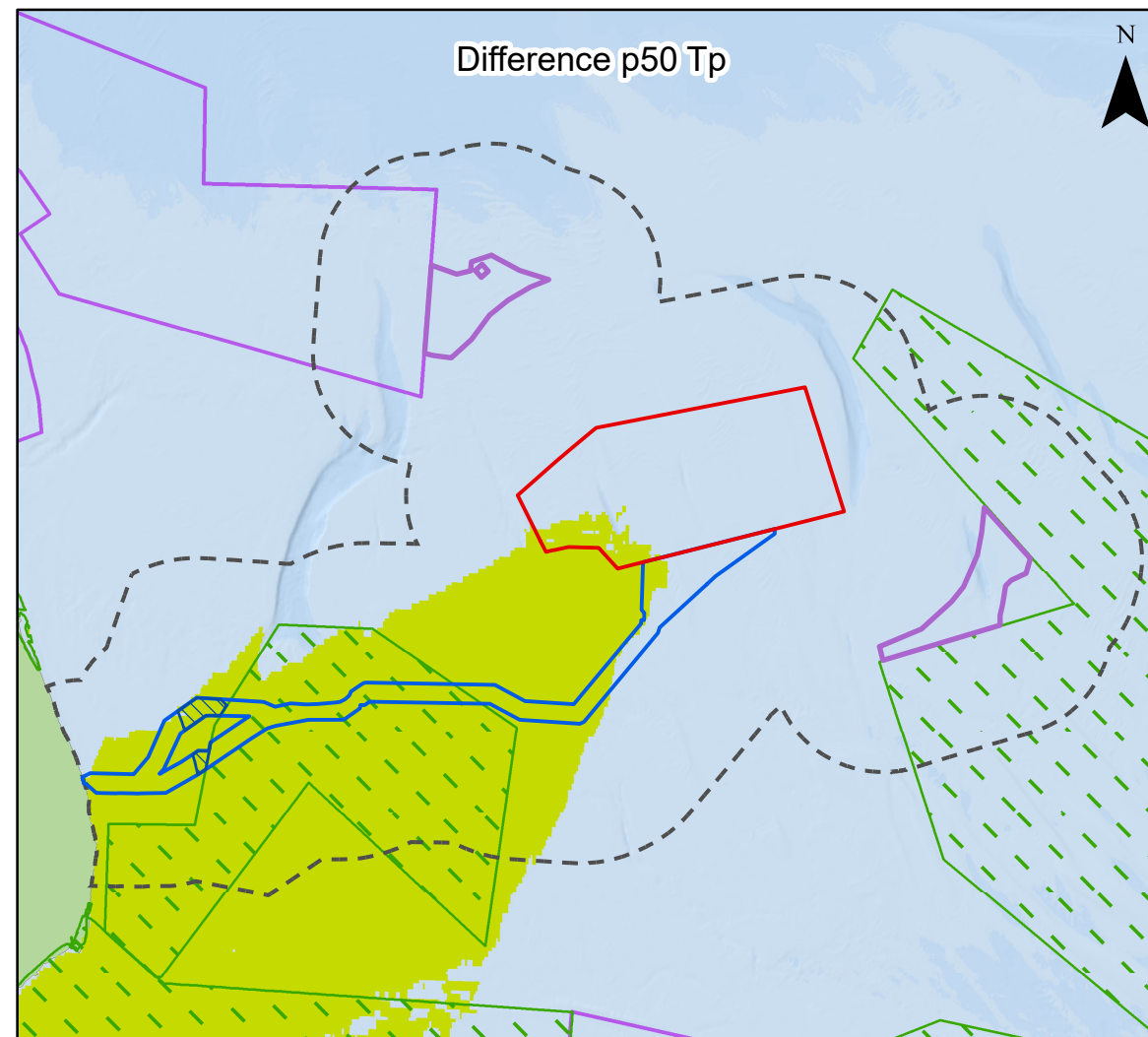
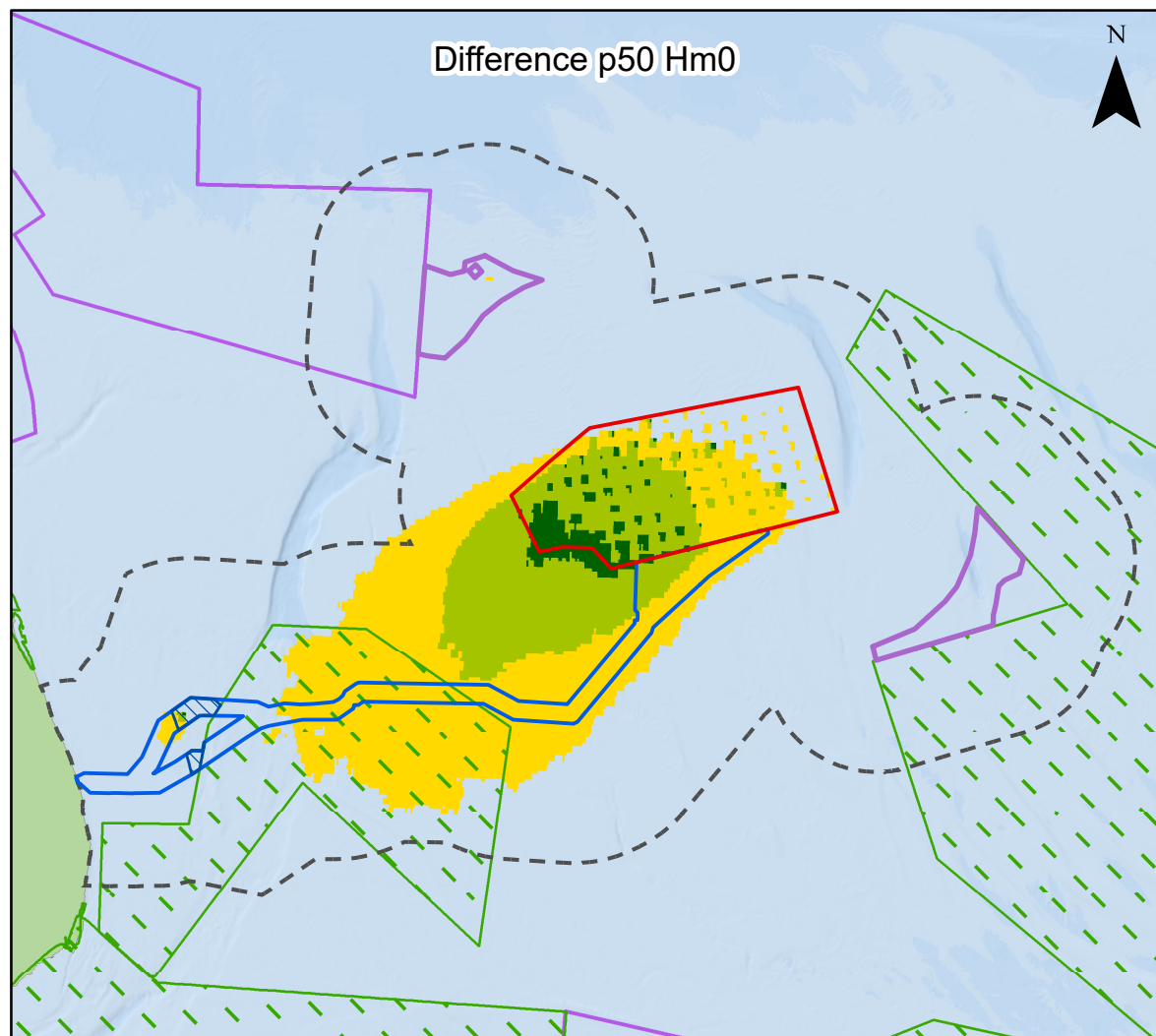
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Environmental Statement

Wave blockage effects on northerly waves (on significant wave height and wave period) during median and extreme conditions

Figure 7.25

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Legend

- Array Area
- Offshore Export Cable Corridor
- ORCP Area
- Artificial Nesting Structure Area
- Special Areas of Conservation
- Marine Conservation Zones

Difference p50 Hm0 (m)

- 1 -- -0.1
- 0.1 -- -0.05
- 0.05 -- -0.025
- 0.025 -- 0.025

Difference 1 in 100 Year Hm0 (m)

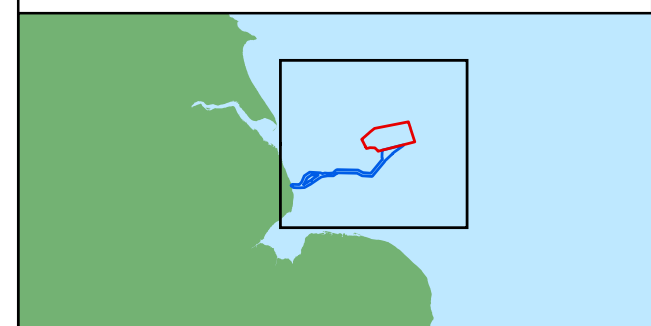
- 1 -- -0.1
- 0.1 -- -0.05
- 0.05 -- -0.025
- 0.025 -- 0.025

Difference p50 Tp (s)

- < -5
- 5 -- -2.5
- 2.5 -- -1
- 1 -- -0.1
- 0.1 -- -0.025
- 0.025 -- 0.025
- 0.025 -- 0.1
- 0.1 -- 1
- 1 -- 2.5
- 2.5 -- 5
- > 5

Difference 1 in 100 Year Tp (s)

- < -5
- 5 -- -2.5
- 2.5 -- -1
- 1 -- -0.1
- 0.1 -- -0.025
- 0.025 -- 0.025
- 0.025 -- 0.1
- 0.1 -- 1
- 1 -- 2.5
- 2.5 -- 5
- > 5



Coordinate System: WGS 1984 UTM Zone 31N

0 25 50 km

Scale: 1:800,000 A3 Page Size

Environmental Statement

Wave blockage effects on northeasterly waves (on significant wave height and wave period) during median and extreme conditions

Figure 7.26

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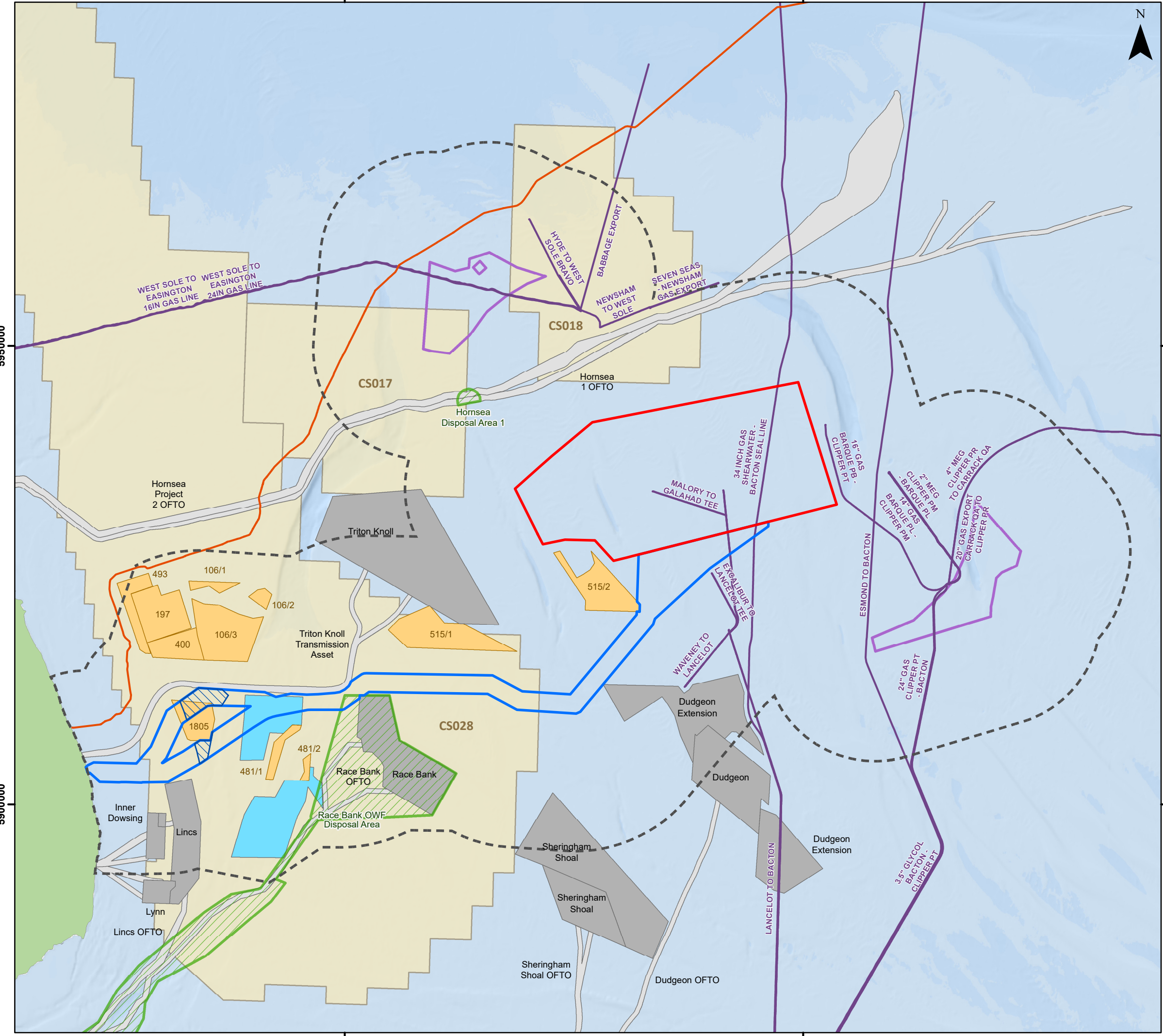
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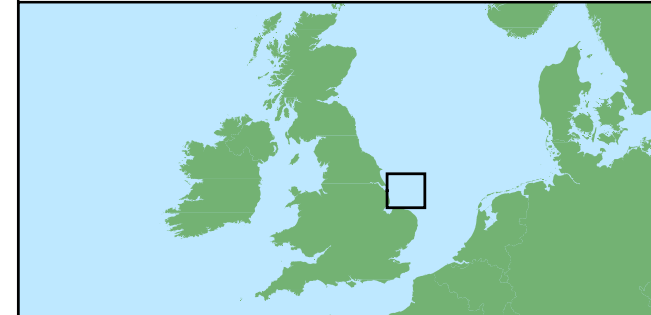
Legend

- Array Area
- Offshore Export Cable Corridor
- ORCP Area
- Artificial Nesting Structure Area
- Physical Processes Zone of Influence
- Offshore Wind Farm Sites
- Offshore Wind Farm Cable Agreements
- Aggregate Area
- Provisional Aggregates Area (2103)
- CCUS Licence Areas
- Open Disposal Area
- Viking Link Interconnector
- Subsea Pipeline

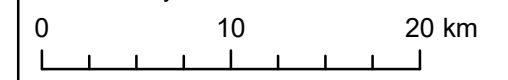


5950000

5900000



Coordinate System: WGS 1984 UTM Zone 31N



Scale: 1:400,000

A3 Page Size

Environmental Statement

Location of Cumulative Projects relative to the Physical Processes Study Area

Figure 7.27



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350000

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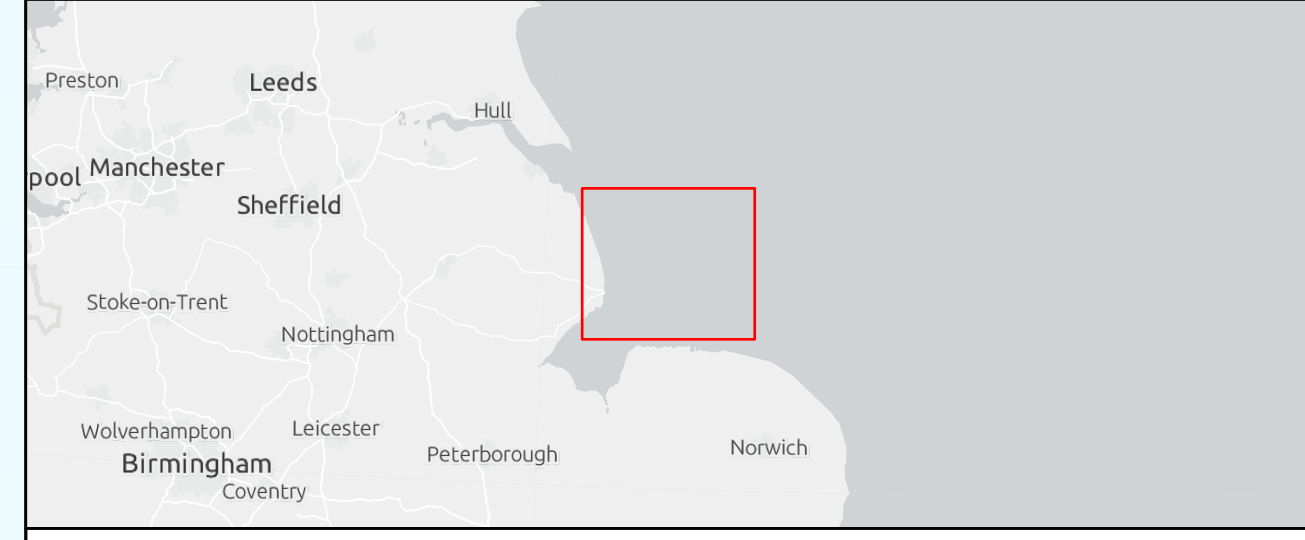
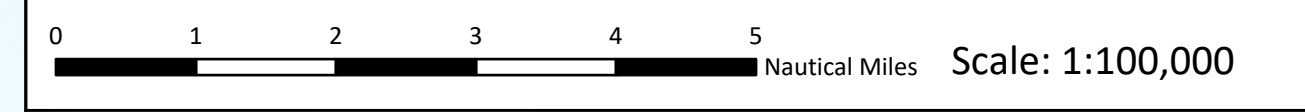


- Legend**
- Special Areas of Conservation
 - Sandbanks
- Terrain Type**
- Tunnel valley bed
 - Tunnel valley sidewall
 - Sandbank
 - Area of major sandwaves
 - Area of sandwaves / major megaripples
 - Area of ripples
 - Sandwave marginal areas with visible Holocene
 - Bedrock outcrop
 - Bolders Bank
 - Area of relict / subdued sandwaves
 - Bolders Bank (with locally rugged seabed)
 - Gently sloping seabed

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Notes:	Status:

Offshore Coordinate System
 Datum: WGS 1984
 Spheroid: WGS 1984
 Projection: UTM Zone 31N
 Central Meridian: 3 E
 Vertical Reference: LAT (Lowest Astronomical Tide)



**Outer Dowsing Offshore Wind
 Environmental Statement
 Seabed Mobility Study Terrain Units and SACs
 Figure 7.28**

Drawing:			Page Size: A1		
Rev No:	Date	Description	Drawn	Checked	Approved
1.0	11.03.2024	First Issue	TD	ODOW	ODOW



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