

# Outer Dowsing Offshore Wind

## Environmental Statement

### Chapter 7 Marine Physical Processes

### Volume 2 Figures (Part 2 of 2)

Date: February 2025

Document Reference: 6.2.7

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

Rev: 2.0



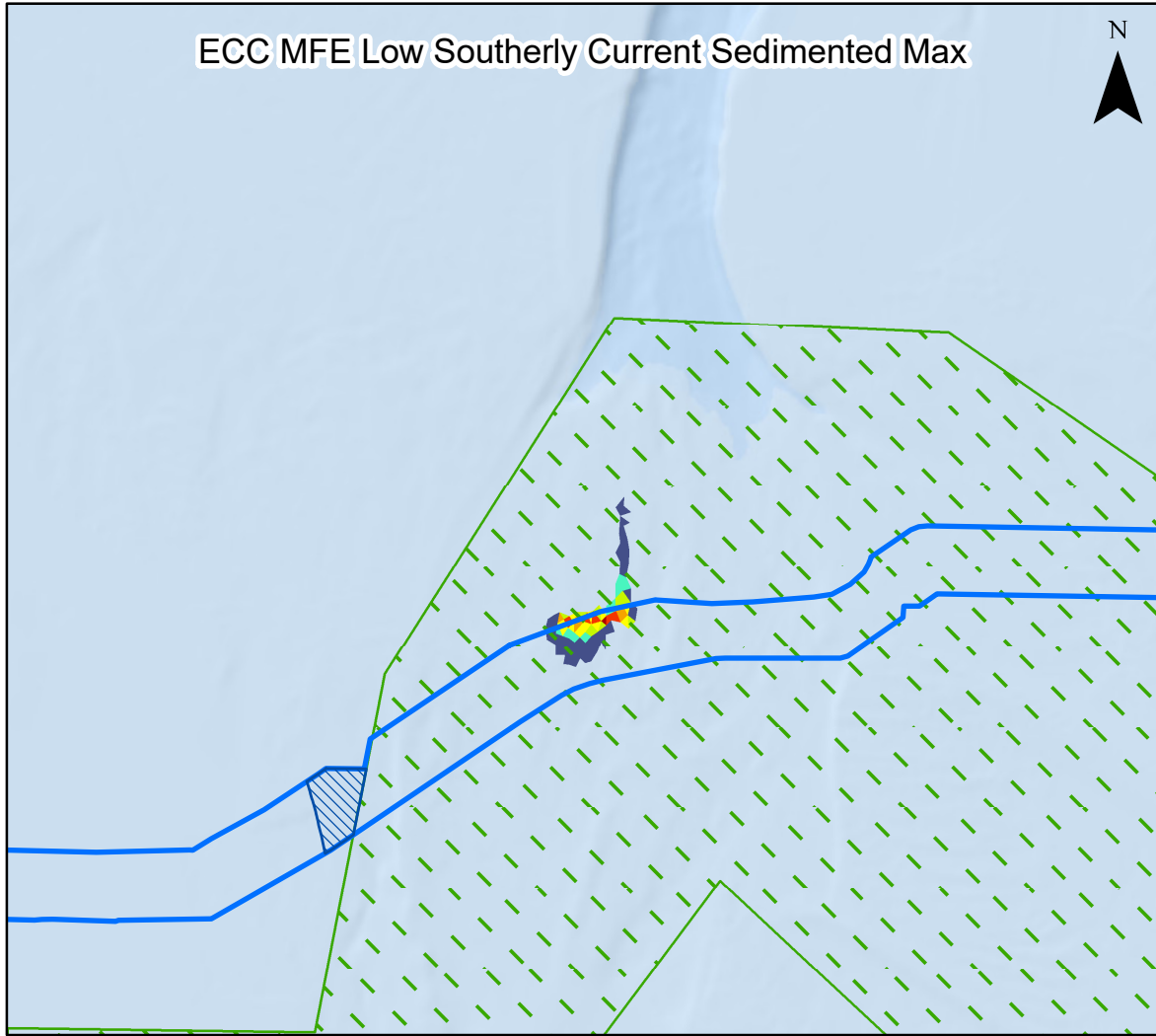
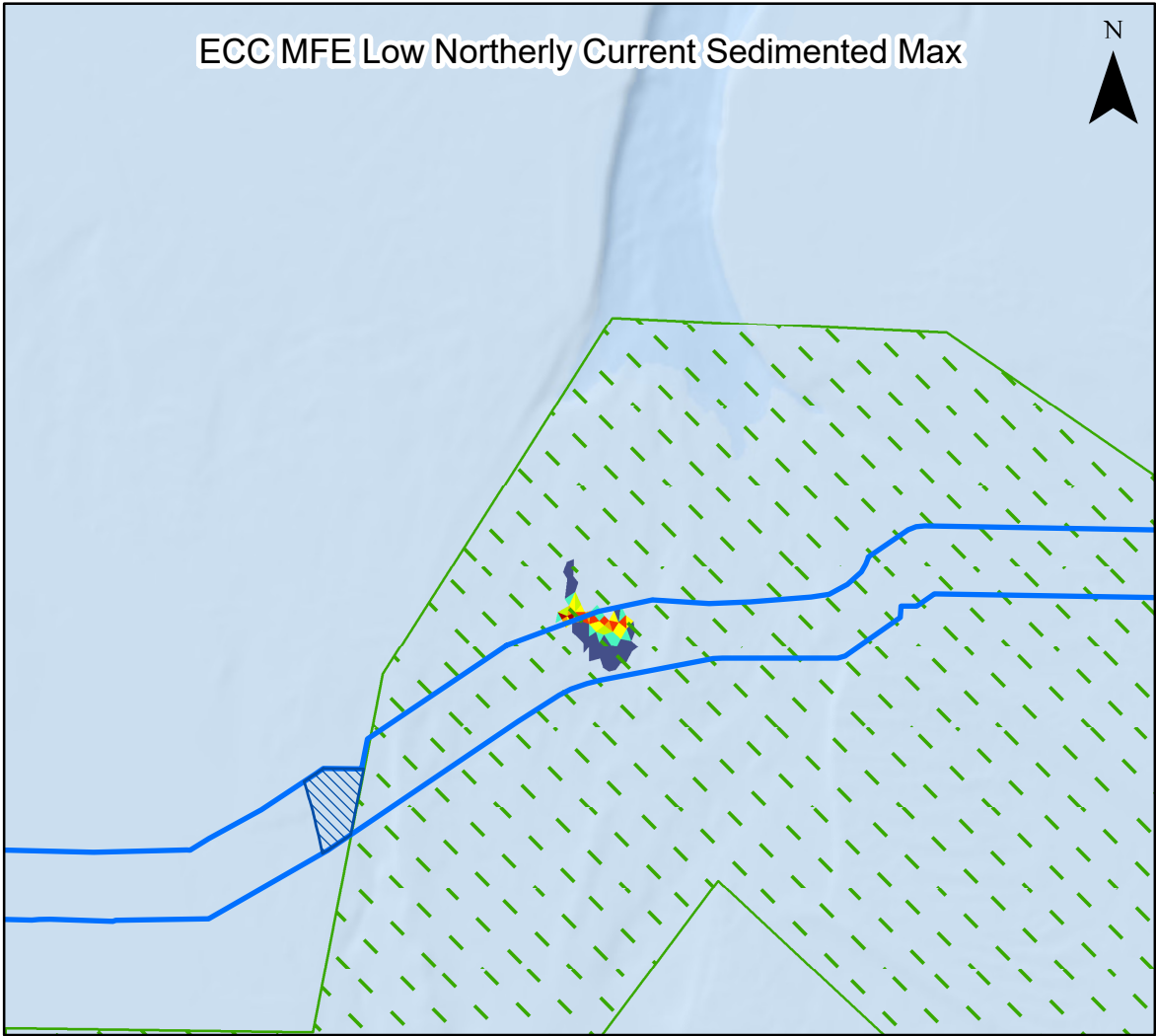
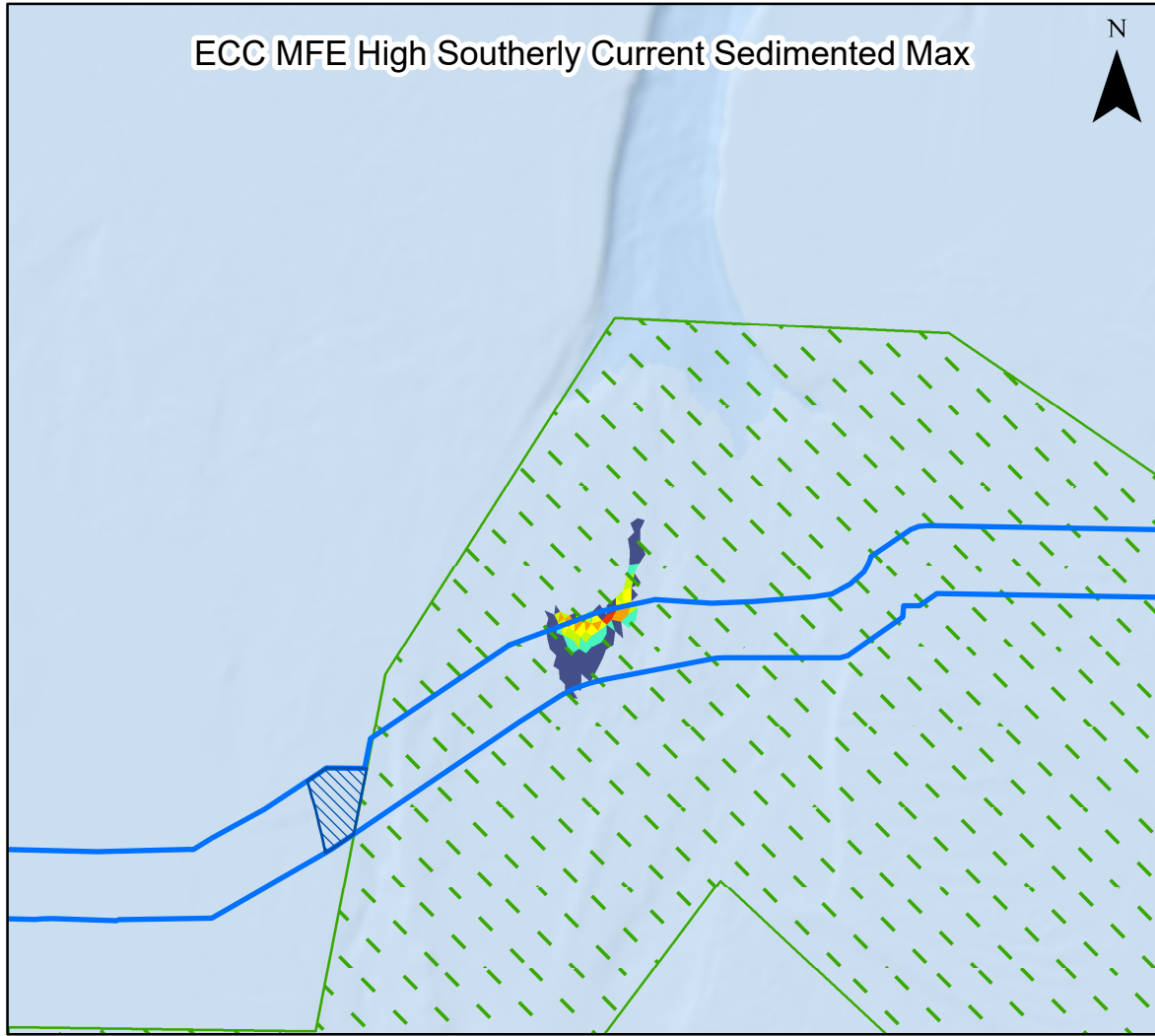
Company:		Outer Dowsing Offshore Wind		Asset:		Whole Asset	
Project:		Whole Wind Farm		Sub Project/Package:		Whole Asset	
Document Title or Description:		Chapter 7 Marine Physical Processes					
Internal Document Number:		PP1-ODOW-DEV-CS-REP-0115_02		3 <sup>rd</sup> Party Doc No (If applicable):		N/A	
Rev No.	Date	Status / Reason for Issue	Author	Checked by	Reviewed by	Approved by	
01	March 2024	DCO Application	GoBe	GoBe	Shepherd & Wedderburn	Outer Dowsing	
02	February 2025	Examination ES Update	GoBe	GoBe	Shepherd & Wedderburn	Outer Dowsing	

## Change Log

- Examination ES Update: Updates to reflect, where relevant: clarifications to date in Examination; correcting errata; additional commitments made through Examination; changes to status of or addition of cumulative projects; Introduction of the Offshore Restricted Build Area (ORBA) and Removal of Northern Export Cable Corridor (ECC)

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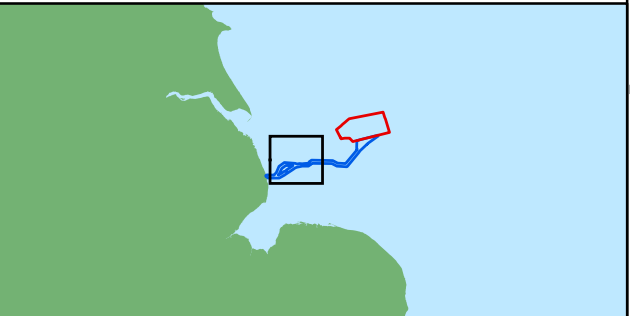


**Legend**

- 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

0 5 10 km

Scale: 1:225,000

A3 Page Size

Environmental Statement Version 2 Deadline 4a

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

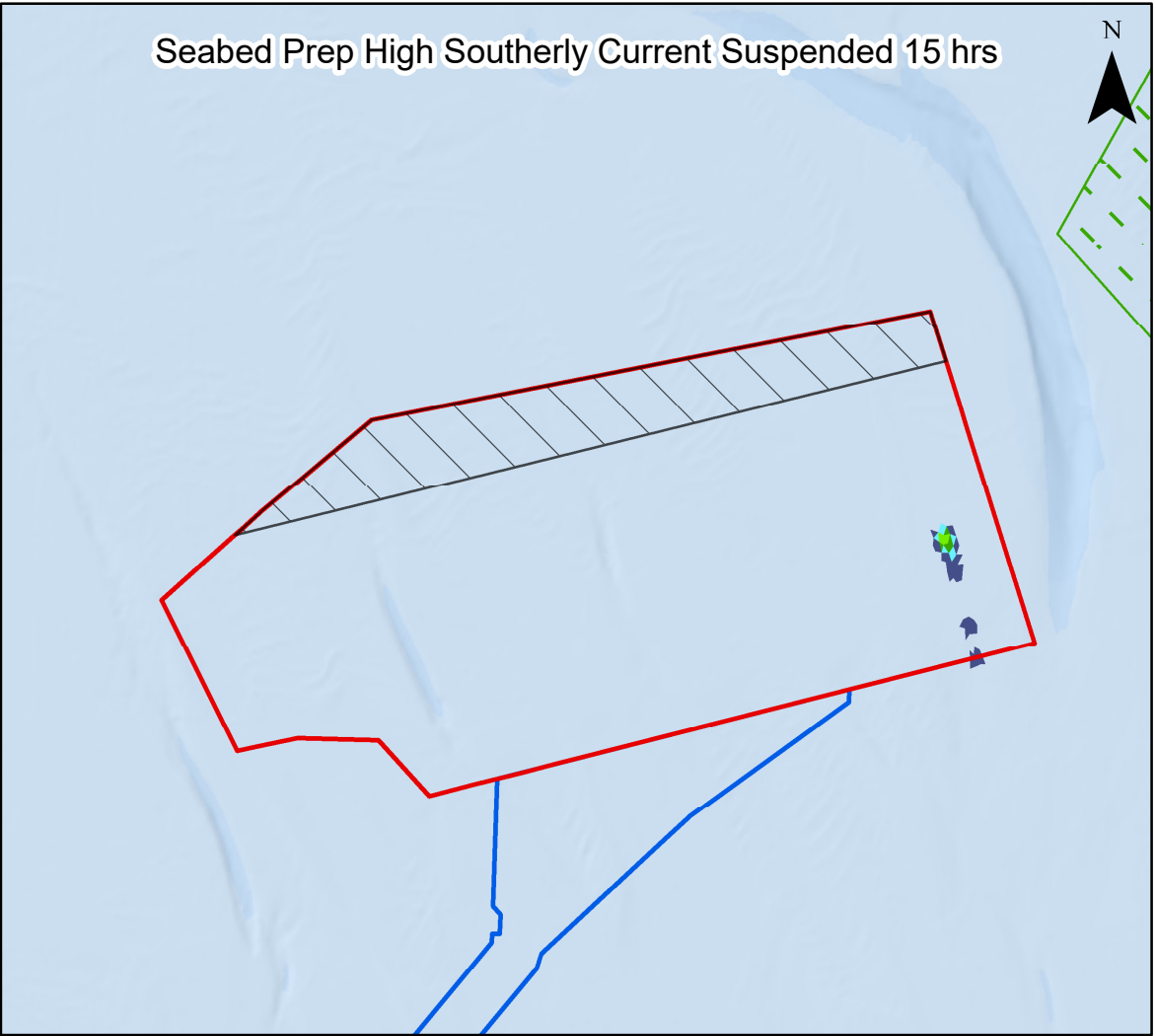
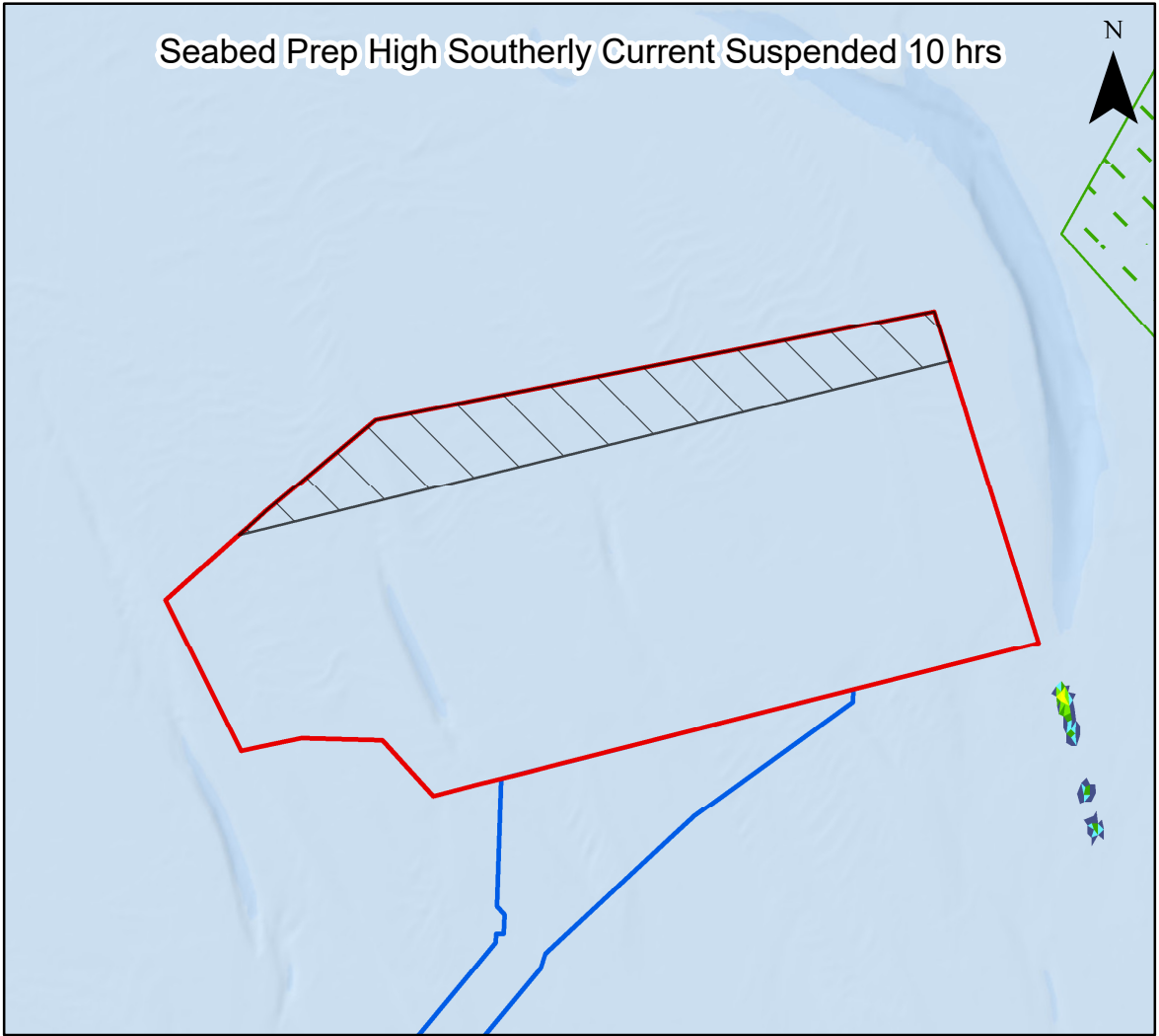
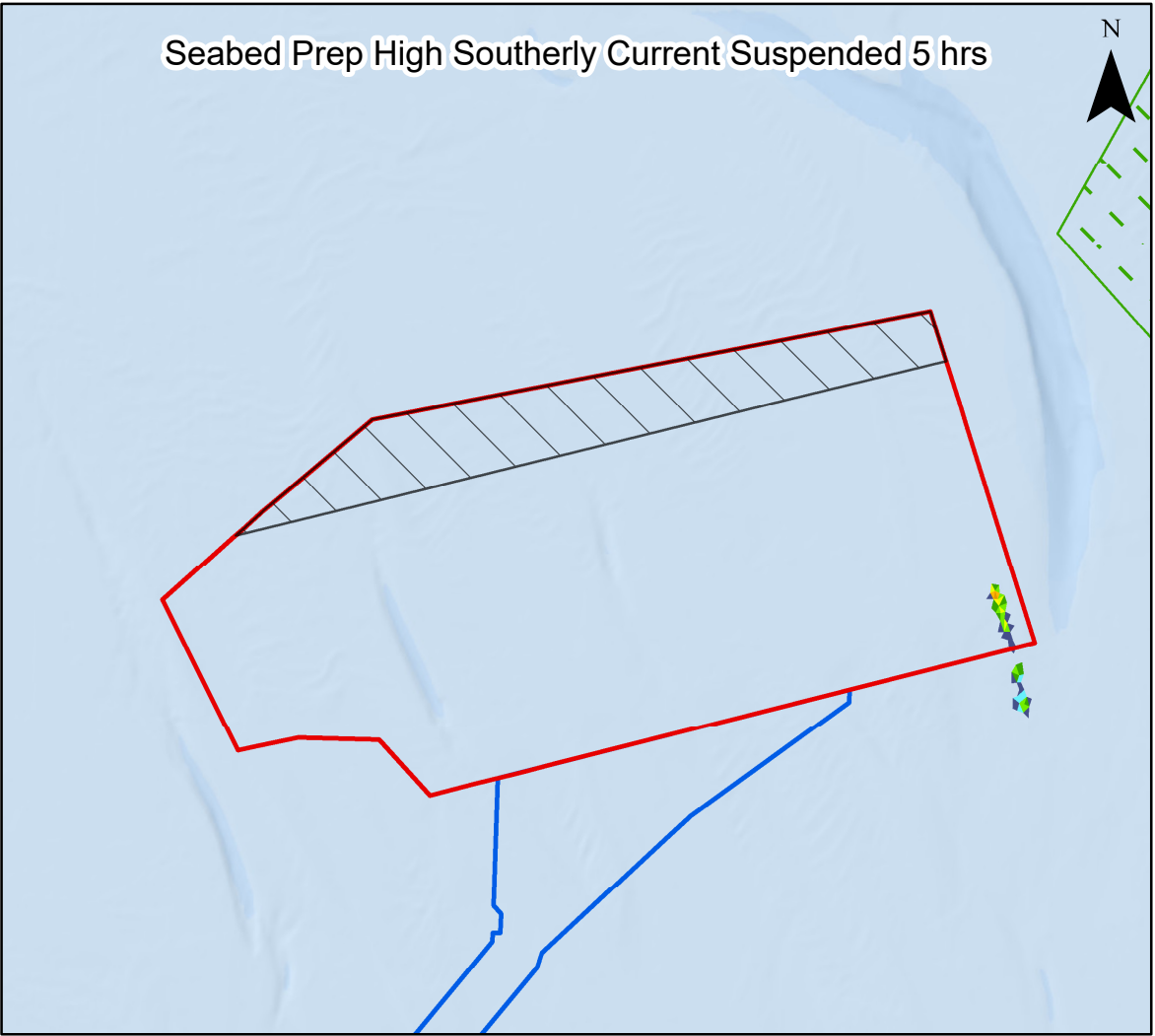
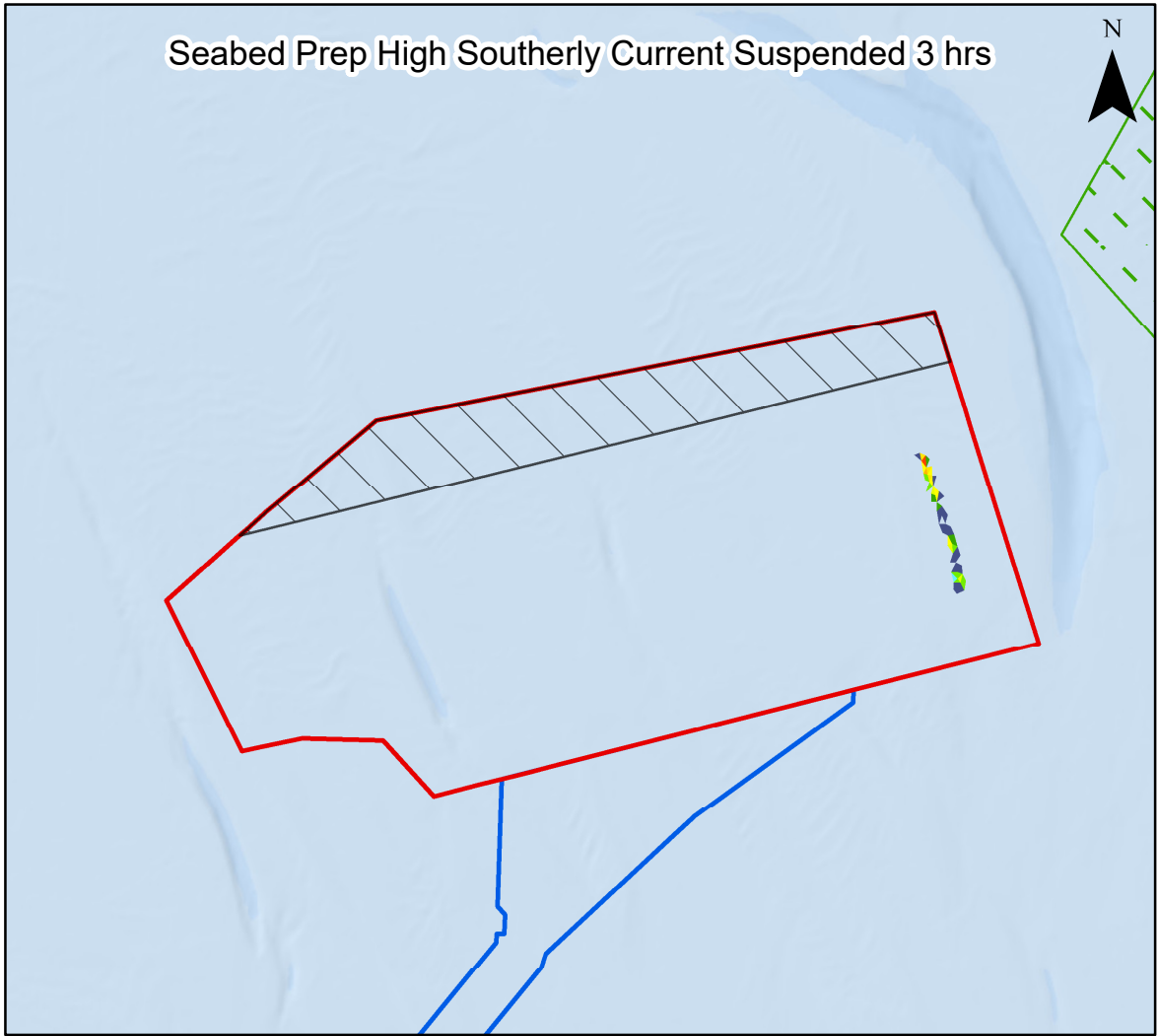
Figure 7.14



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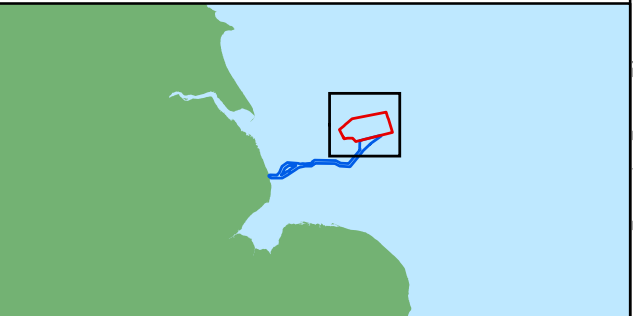
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**Legend**

- Array Area
  - Offshore Restricted Build 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



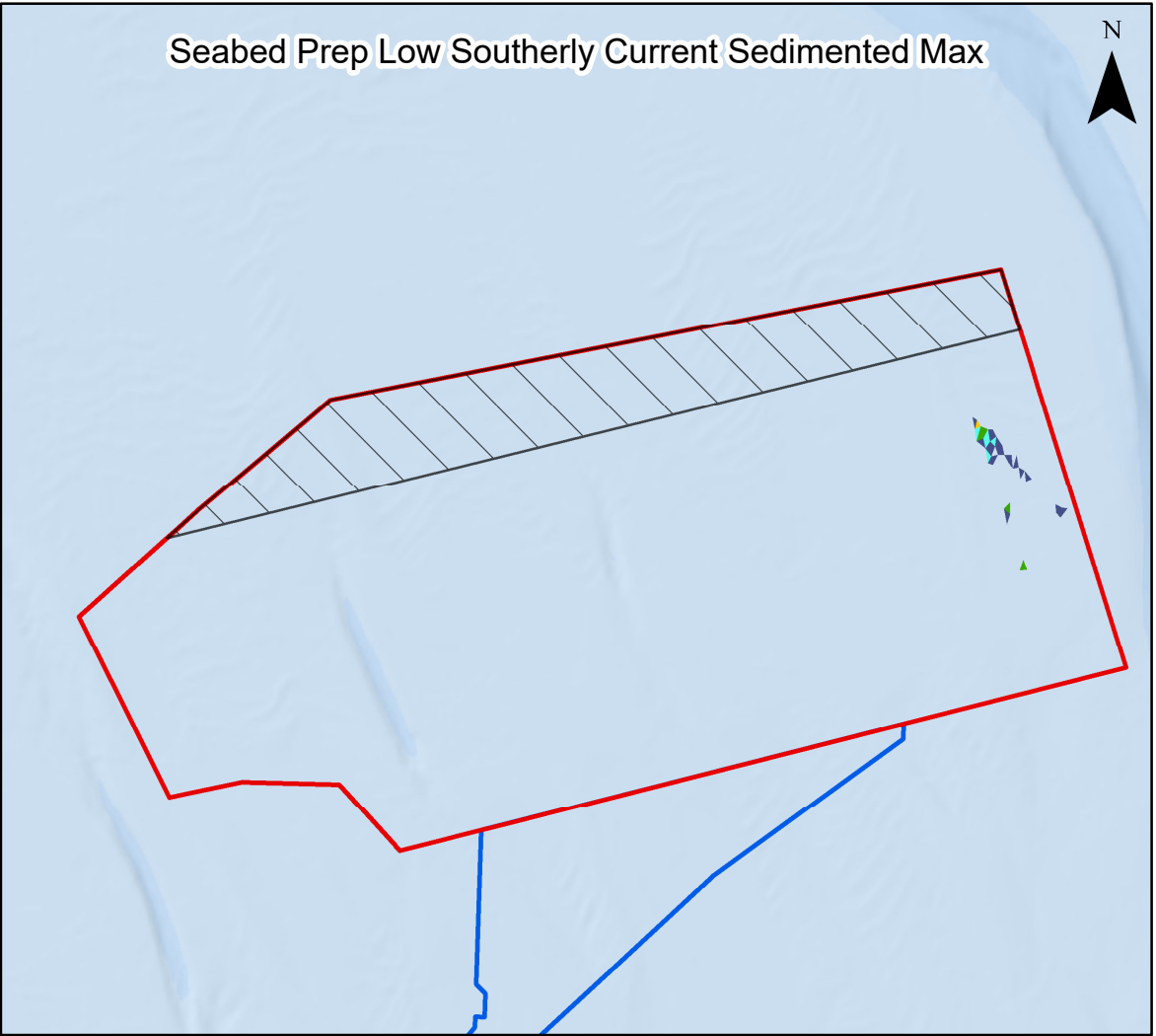
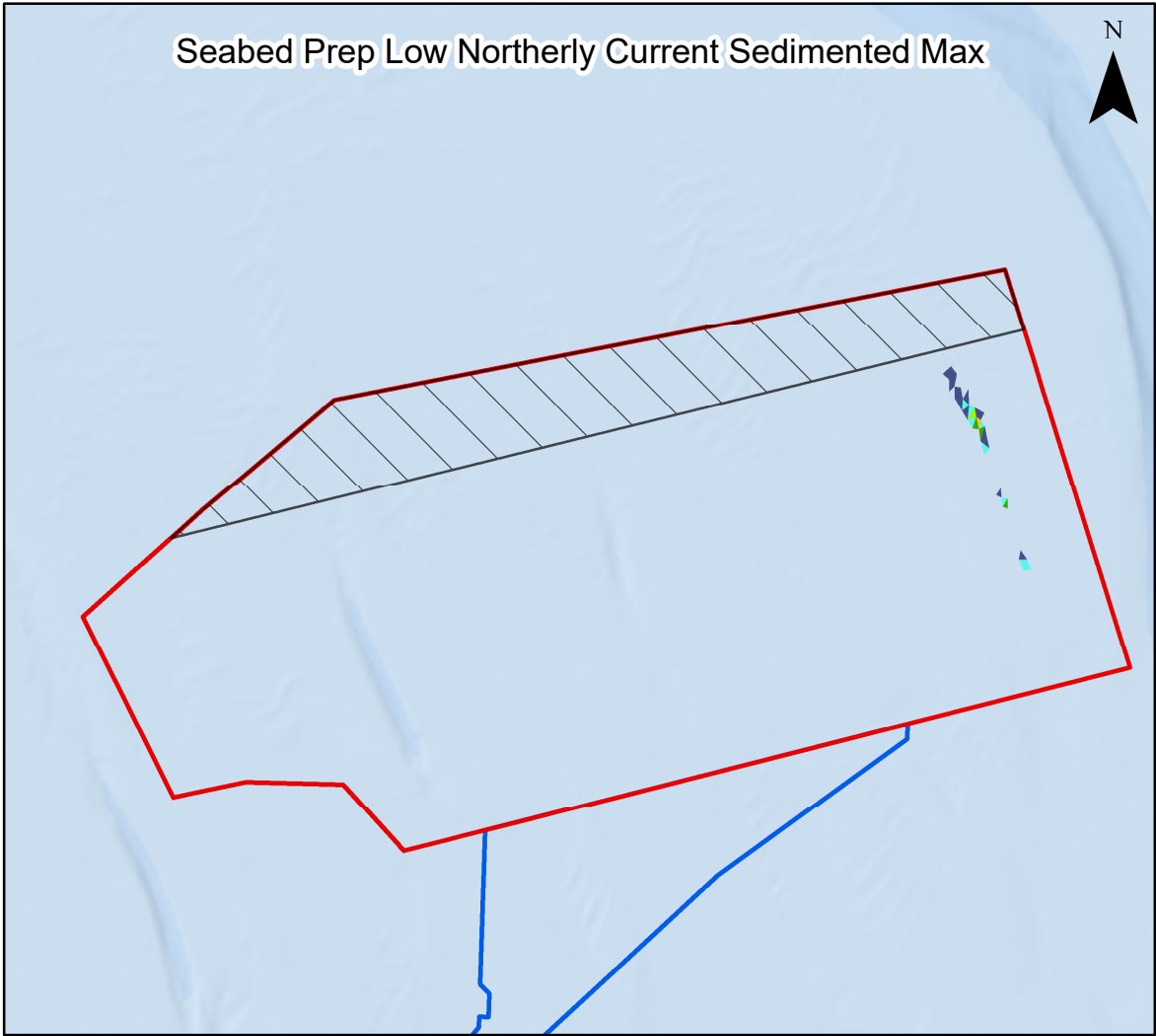
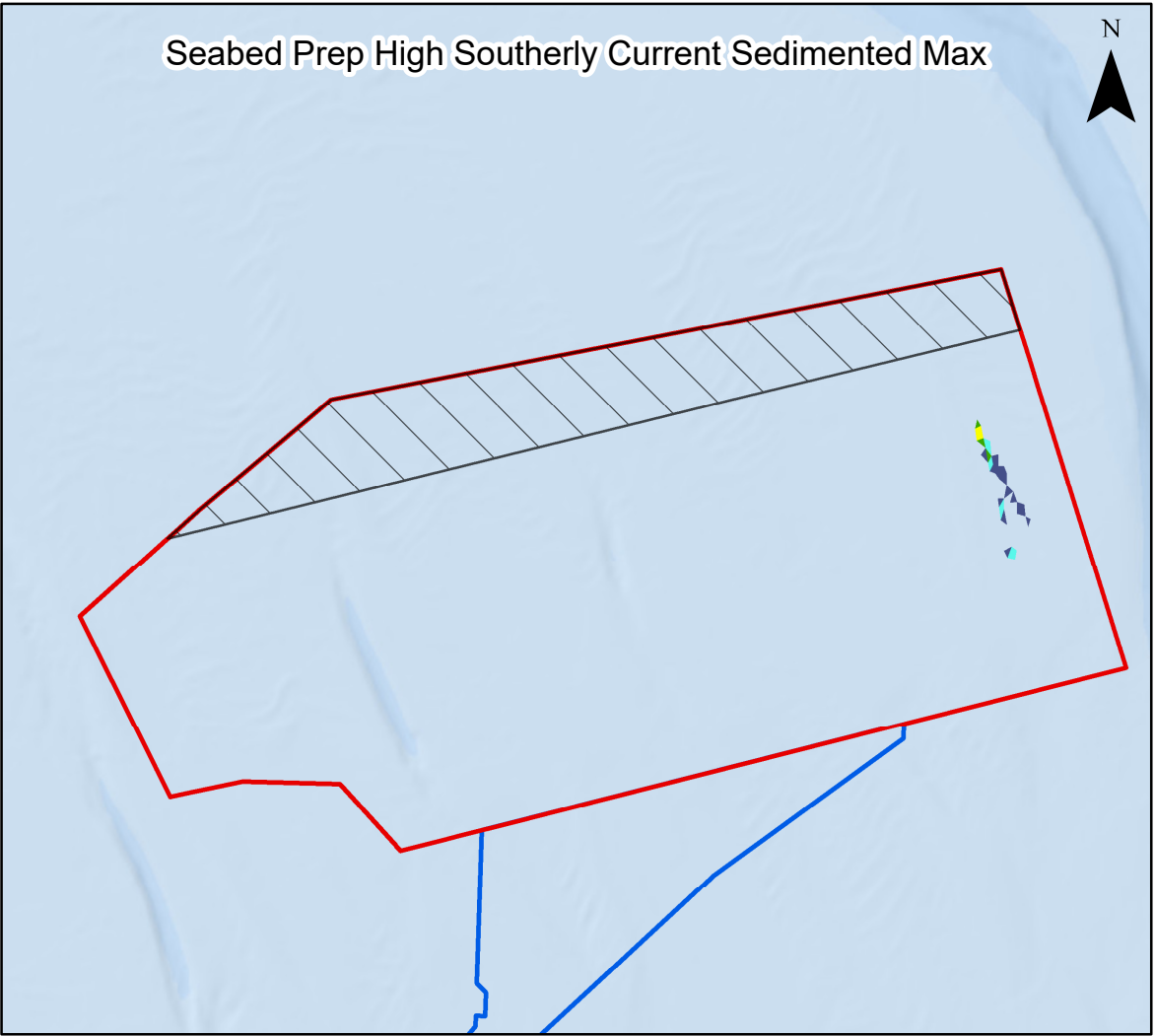
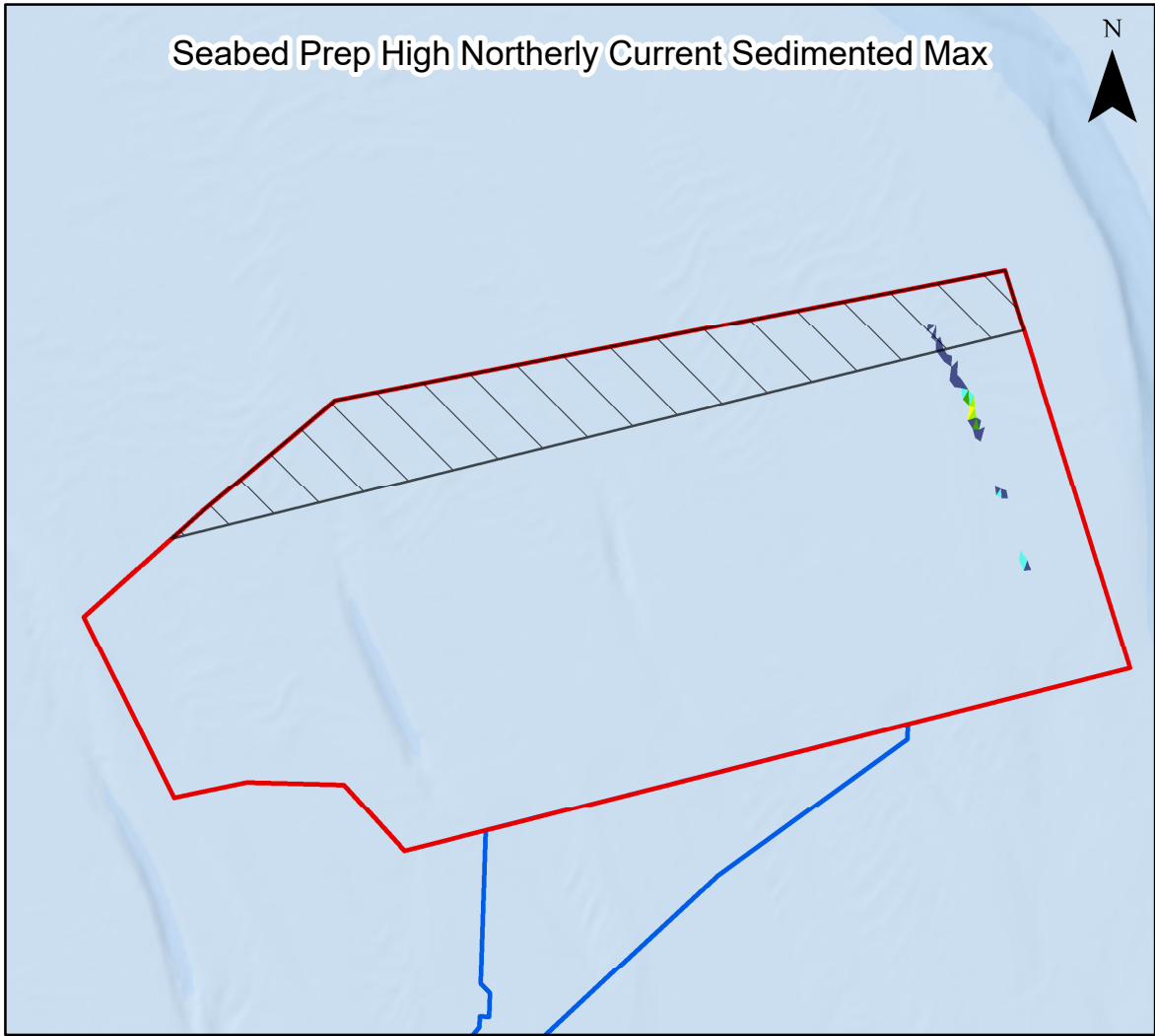
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Environmental Statement Version 2 Deadline 4a

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







### Legend

- Array Area
- Offshore Restricted Build 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

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Environmental Statement Version 2 Deadline 4a

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

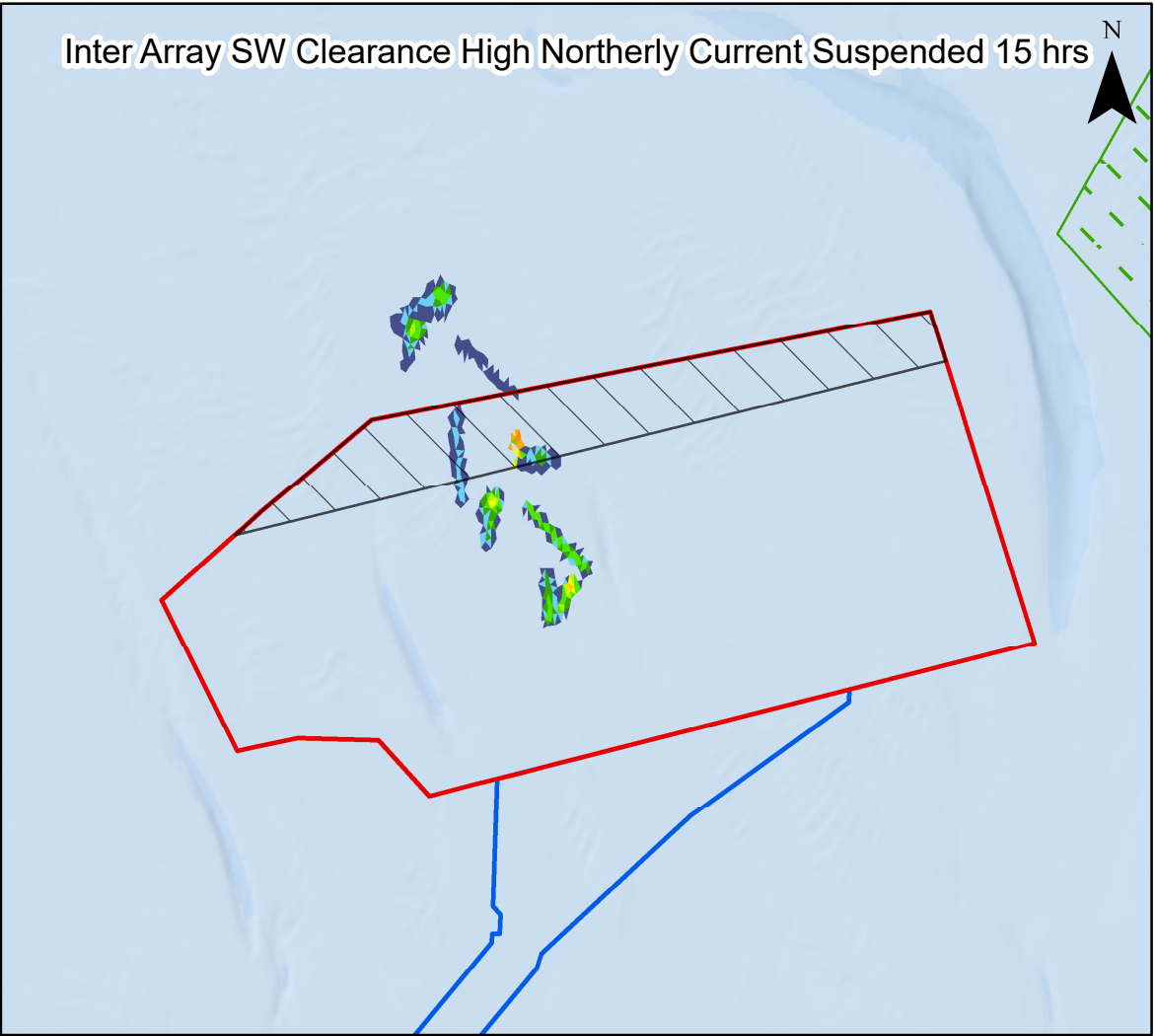
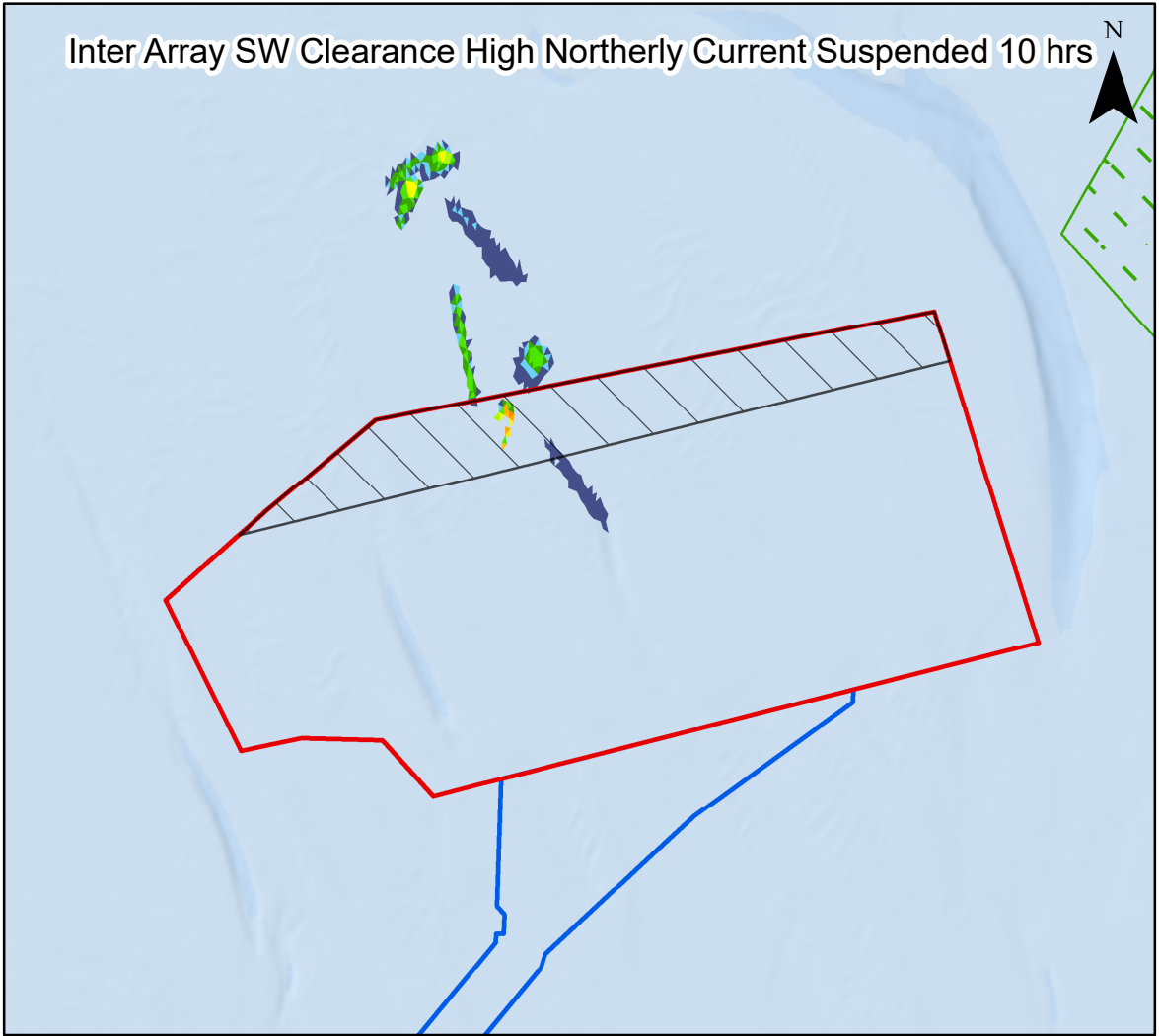
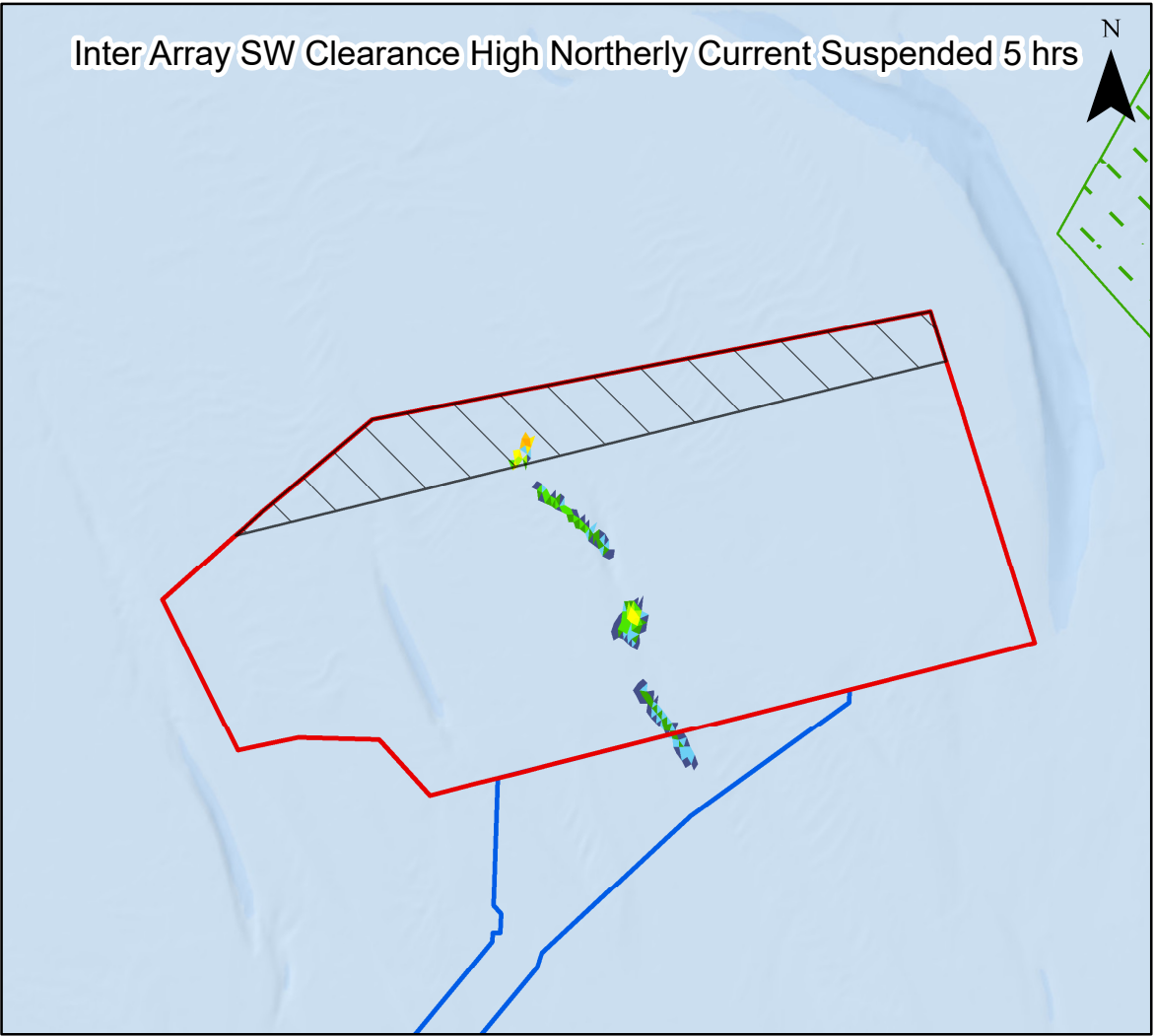
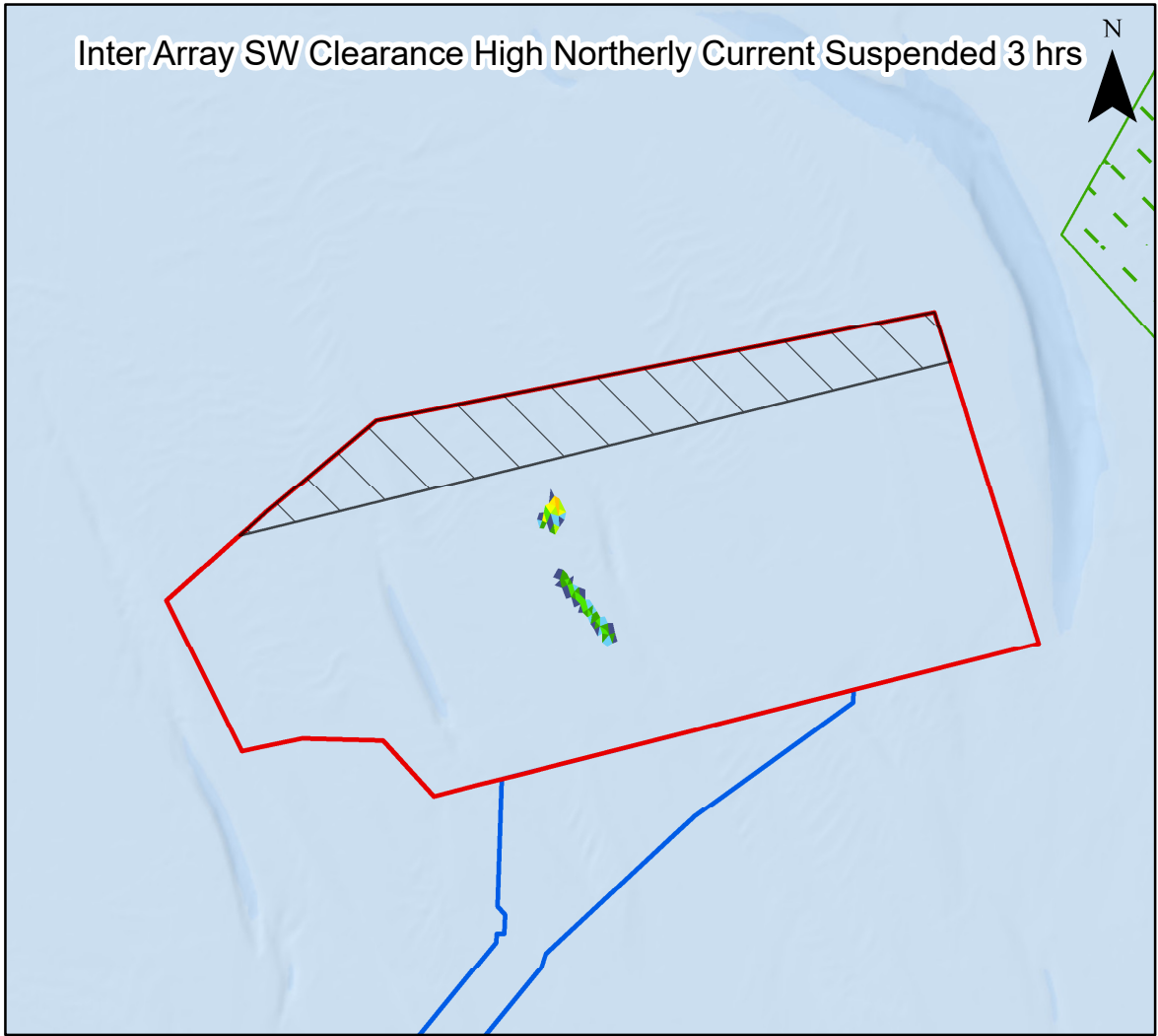
Figure 7.16



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**Legend**

- Array Area
  - Offshore Restricted Build 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



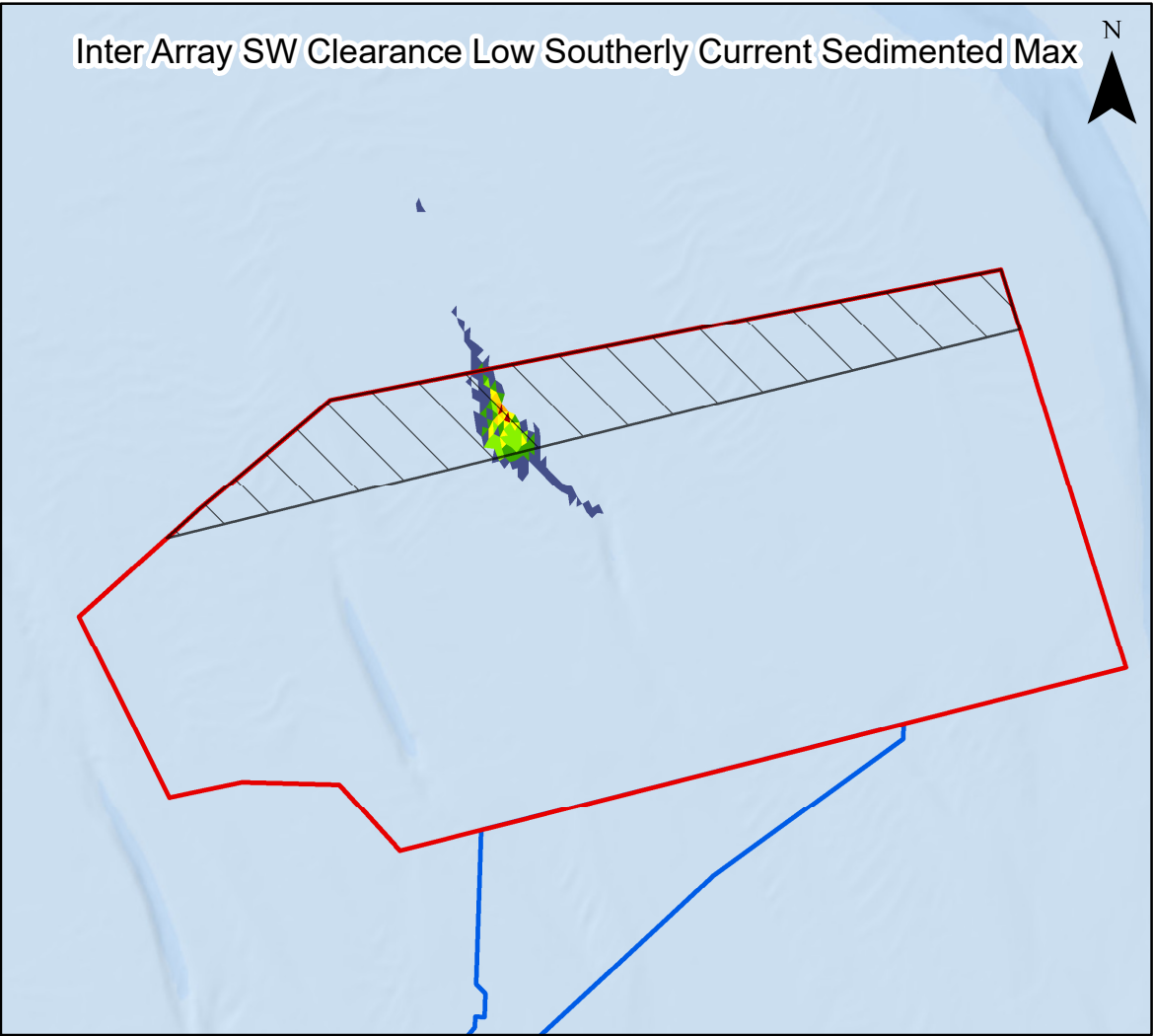
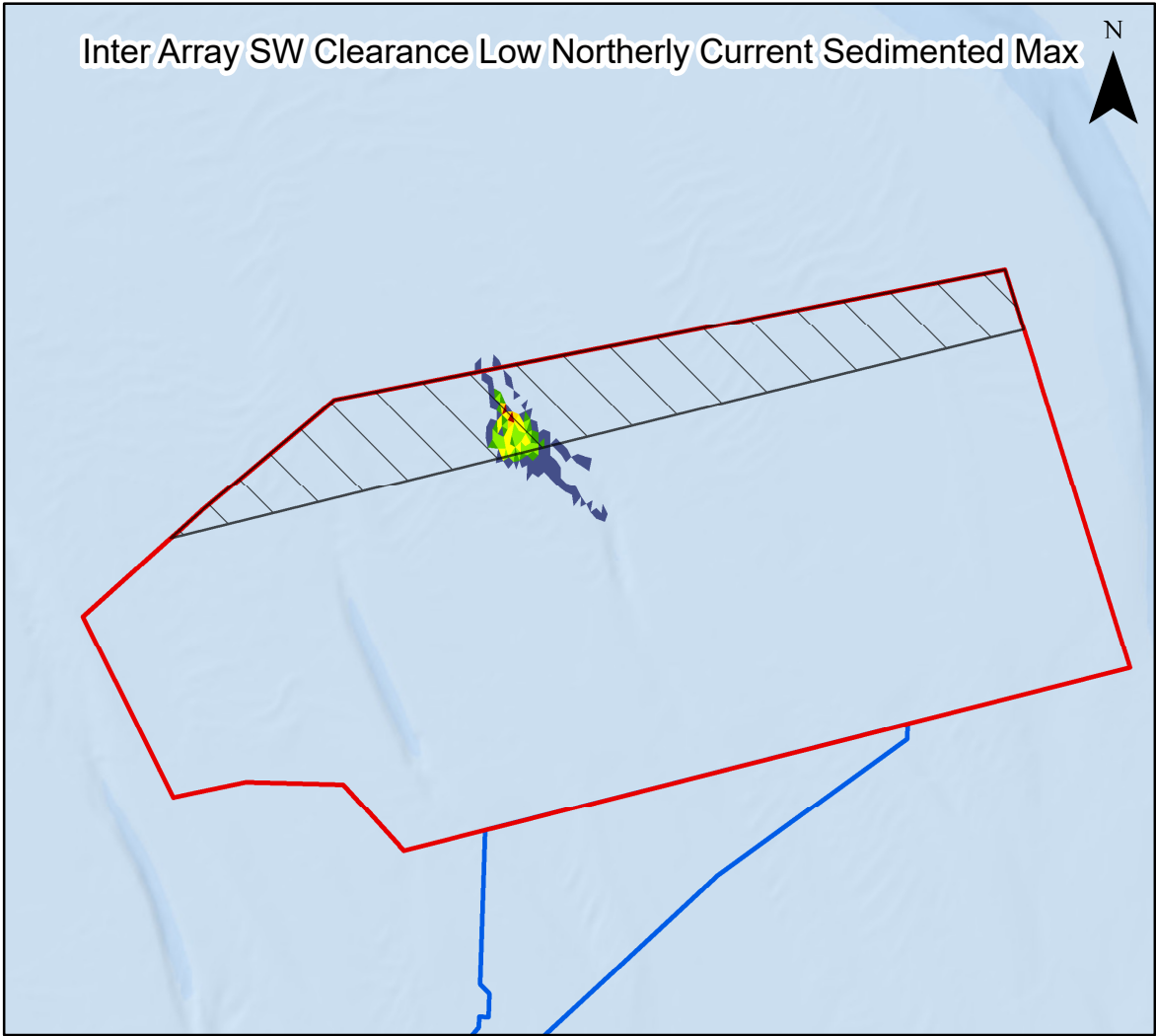
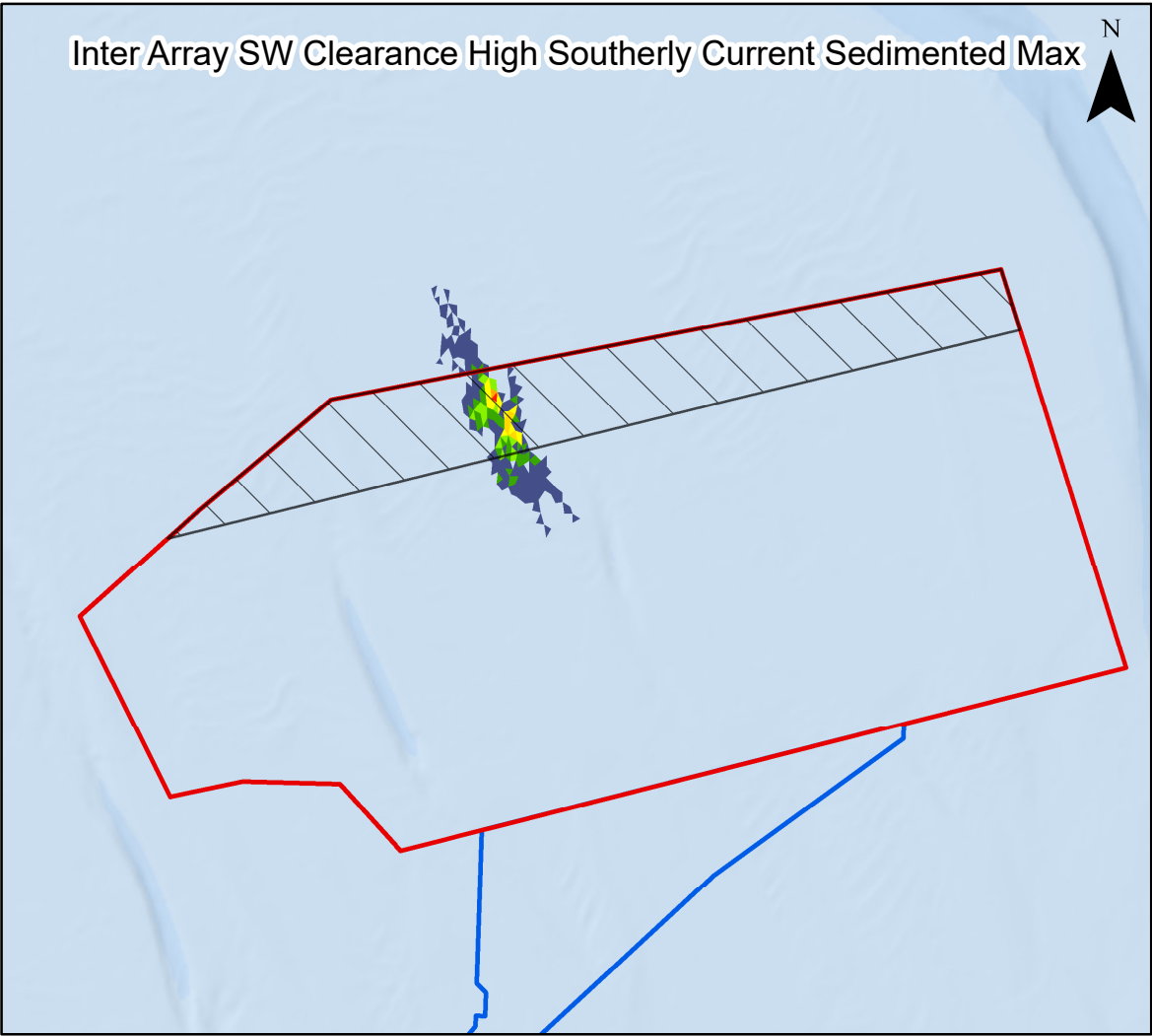
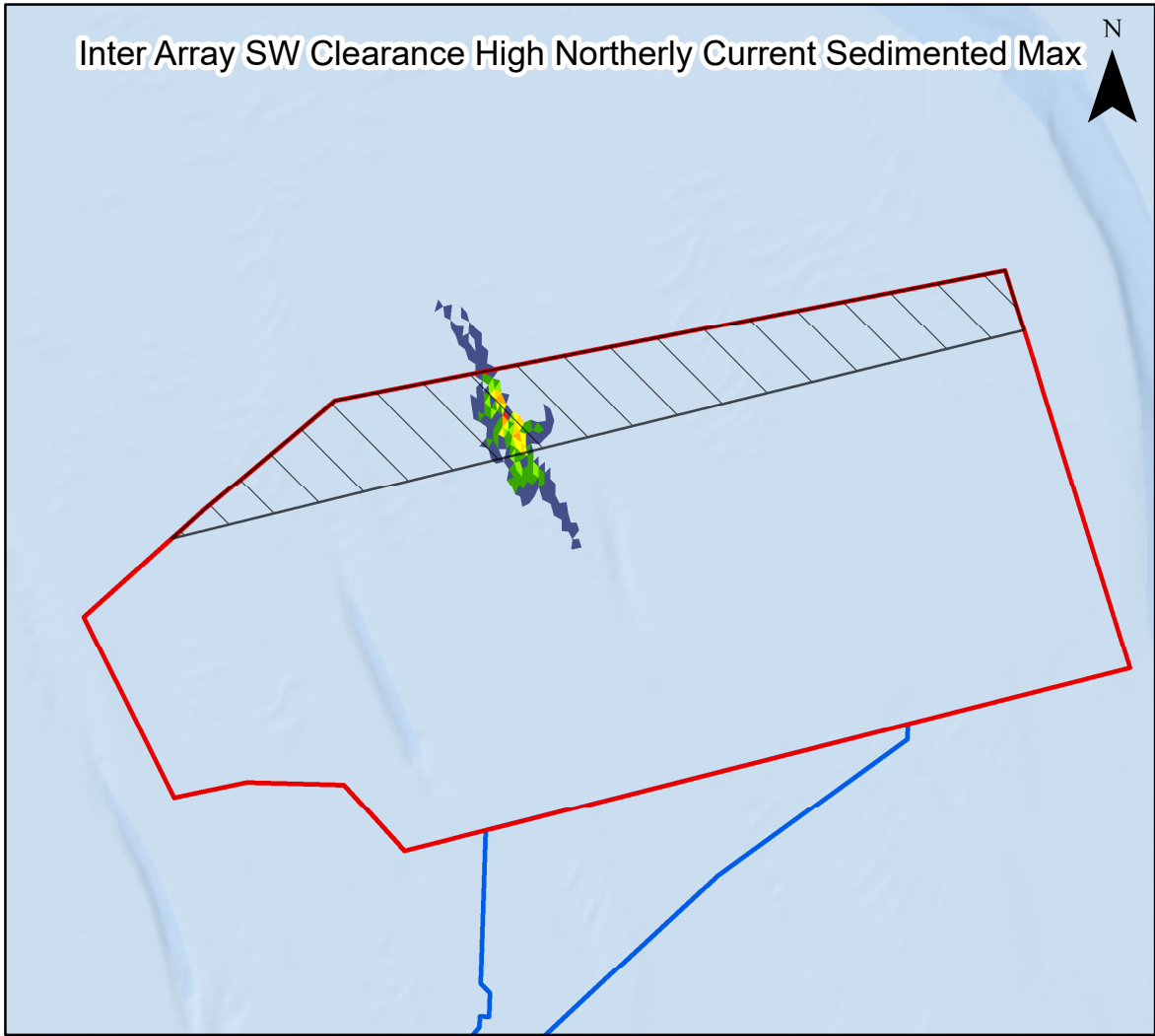
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Environmental Statement Version 2 Deadline 4a

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







**Legend**

- Array Area
  - Offshore Restricted Build 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

0 5 10 km

Scale: 1:250,000 A3 Page Size

Environmental Statement Version 2 Deadline 4a

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

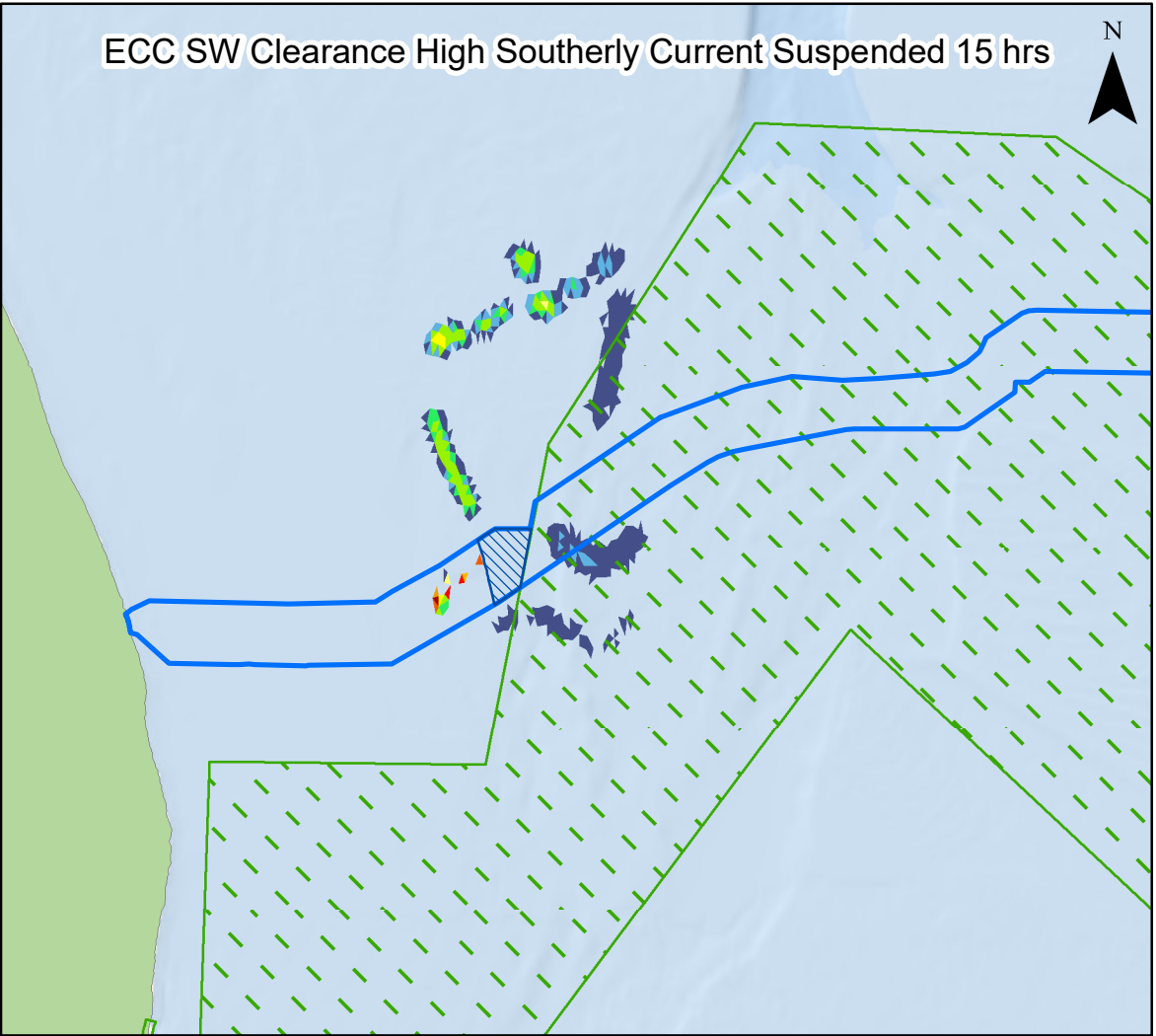
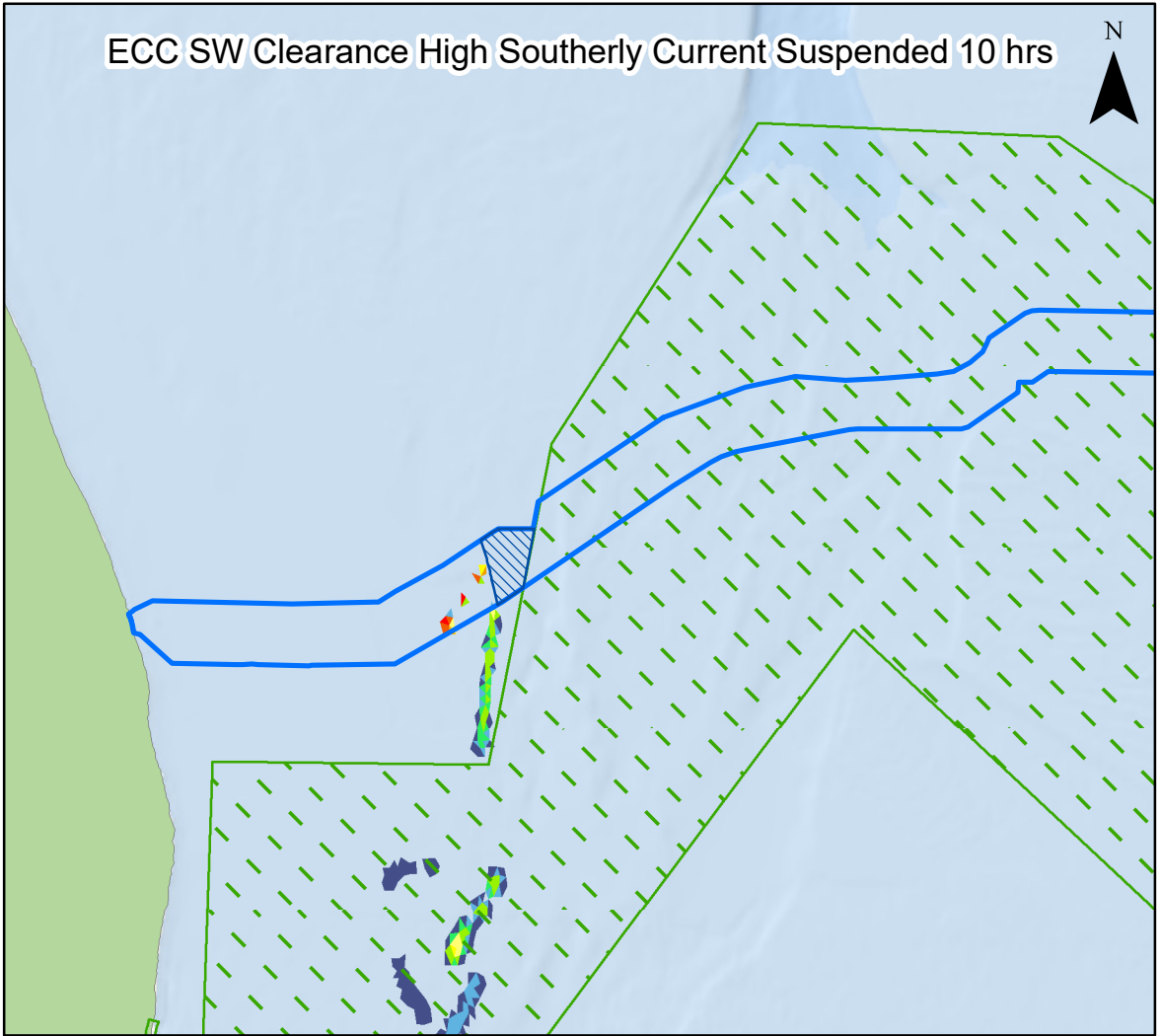
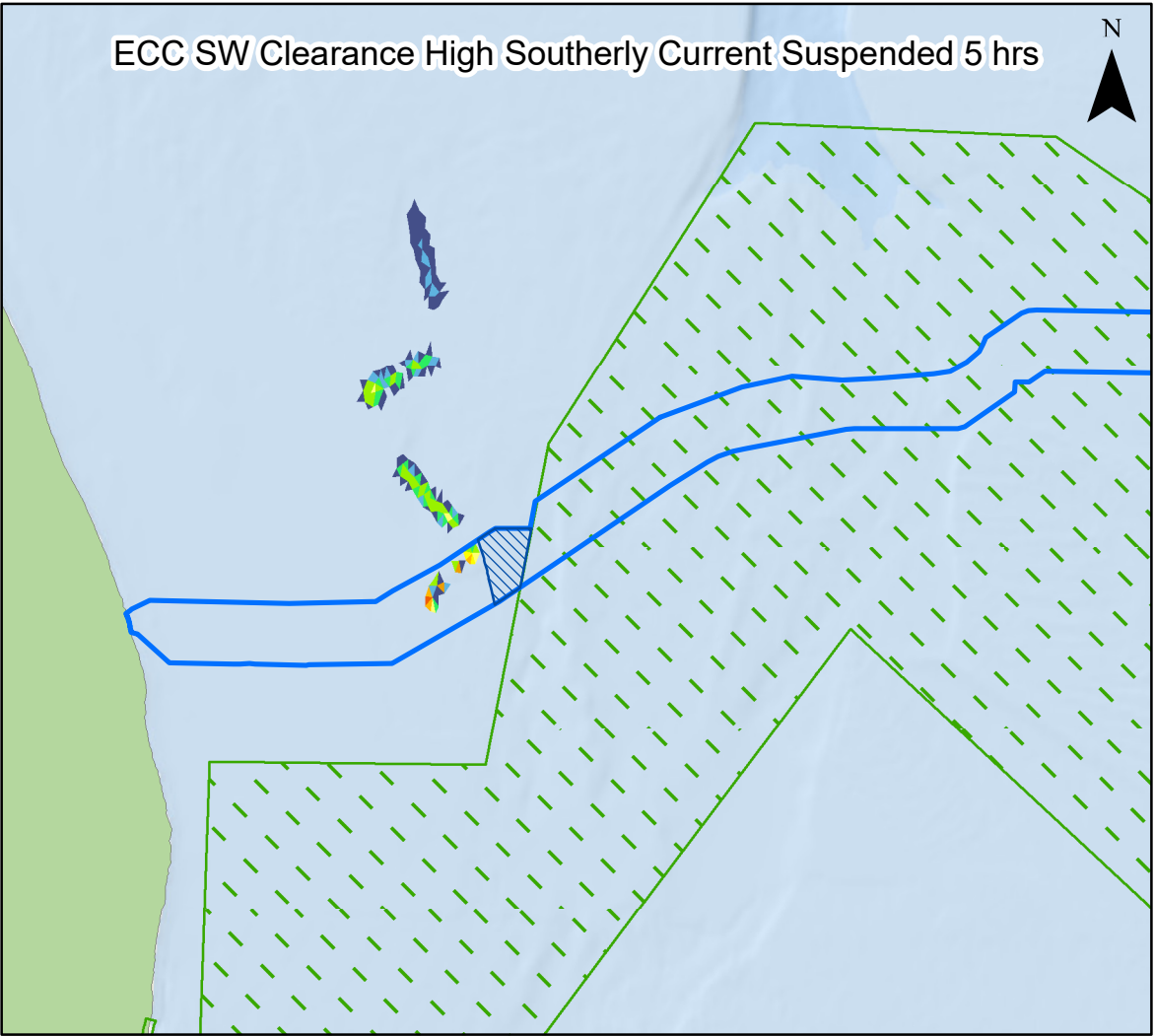
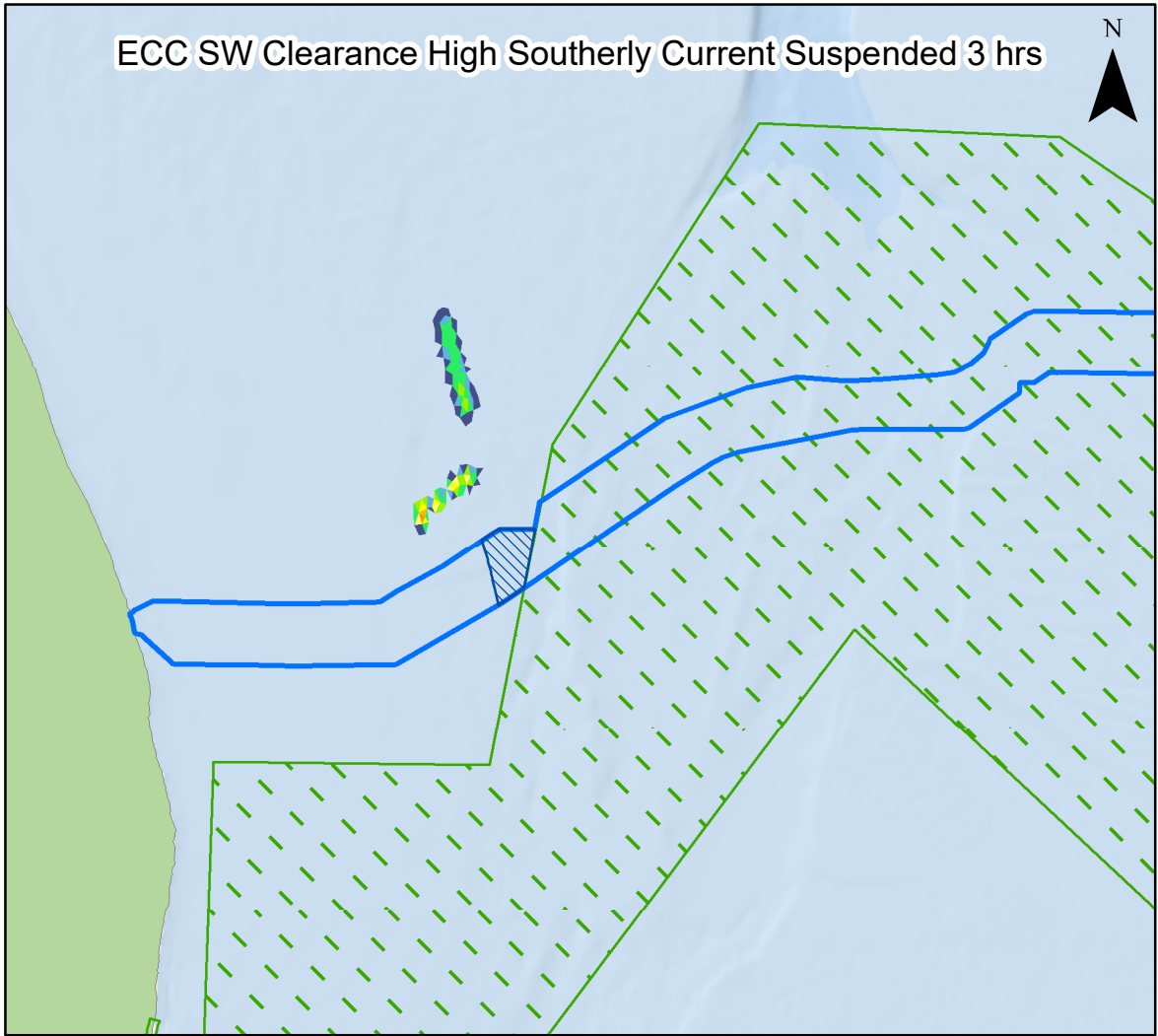
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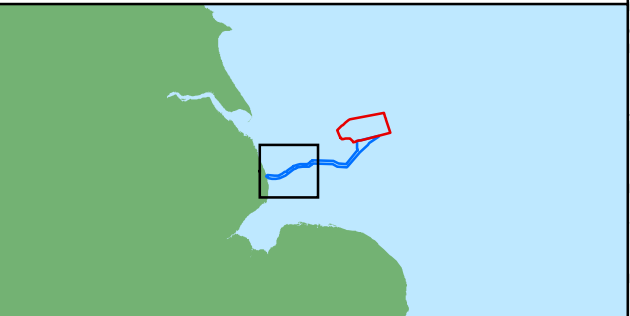
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**Legend**

- 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

Scale: 1:250,000

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Environmental Statement Version 2 Deadline 4a

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

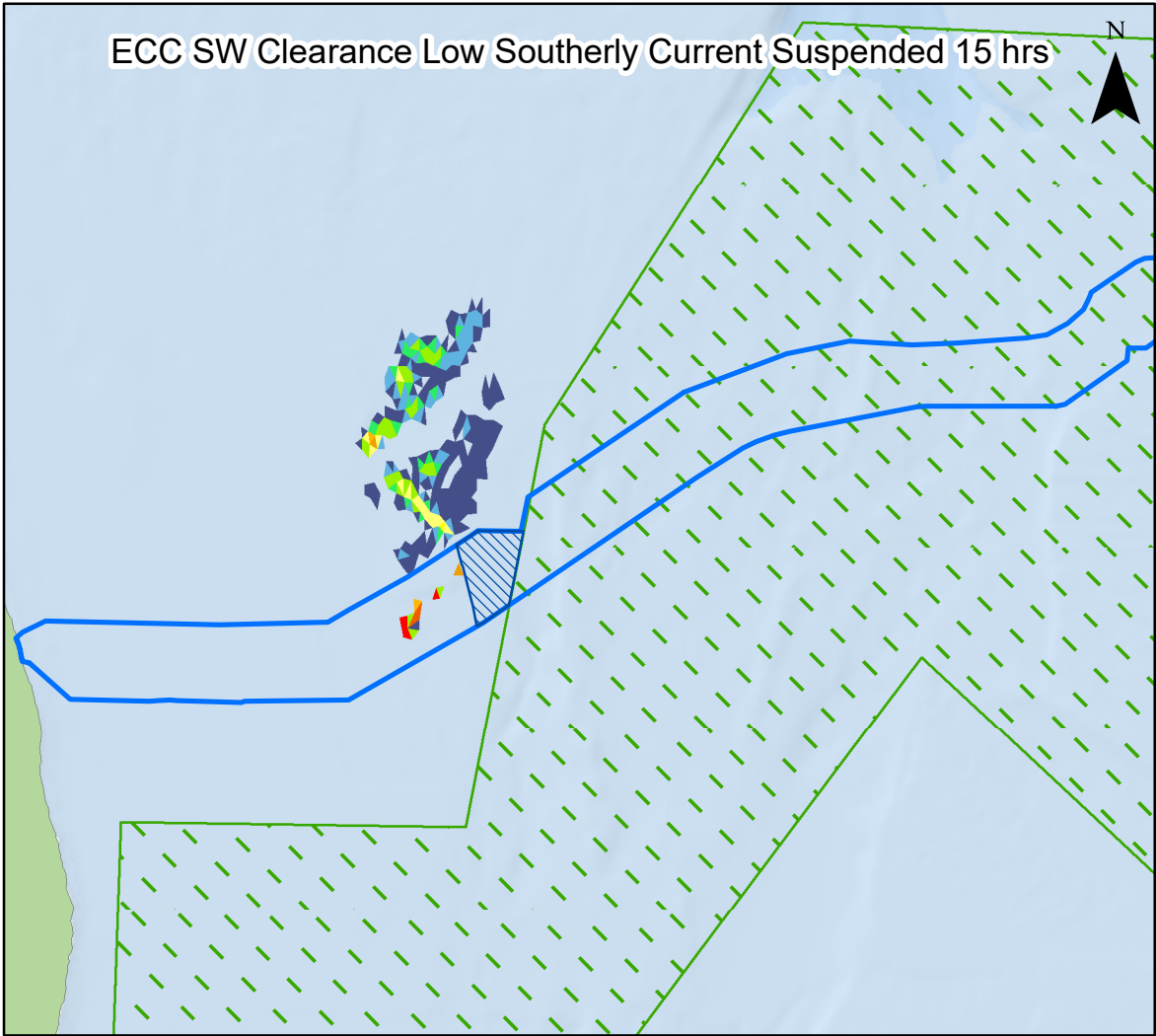
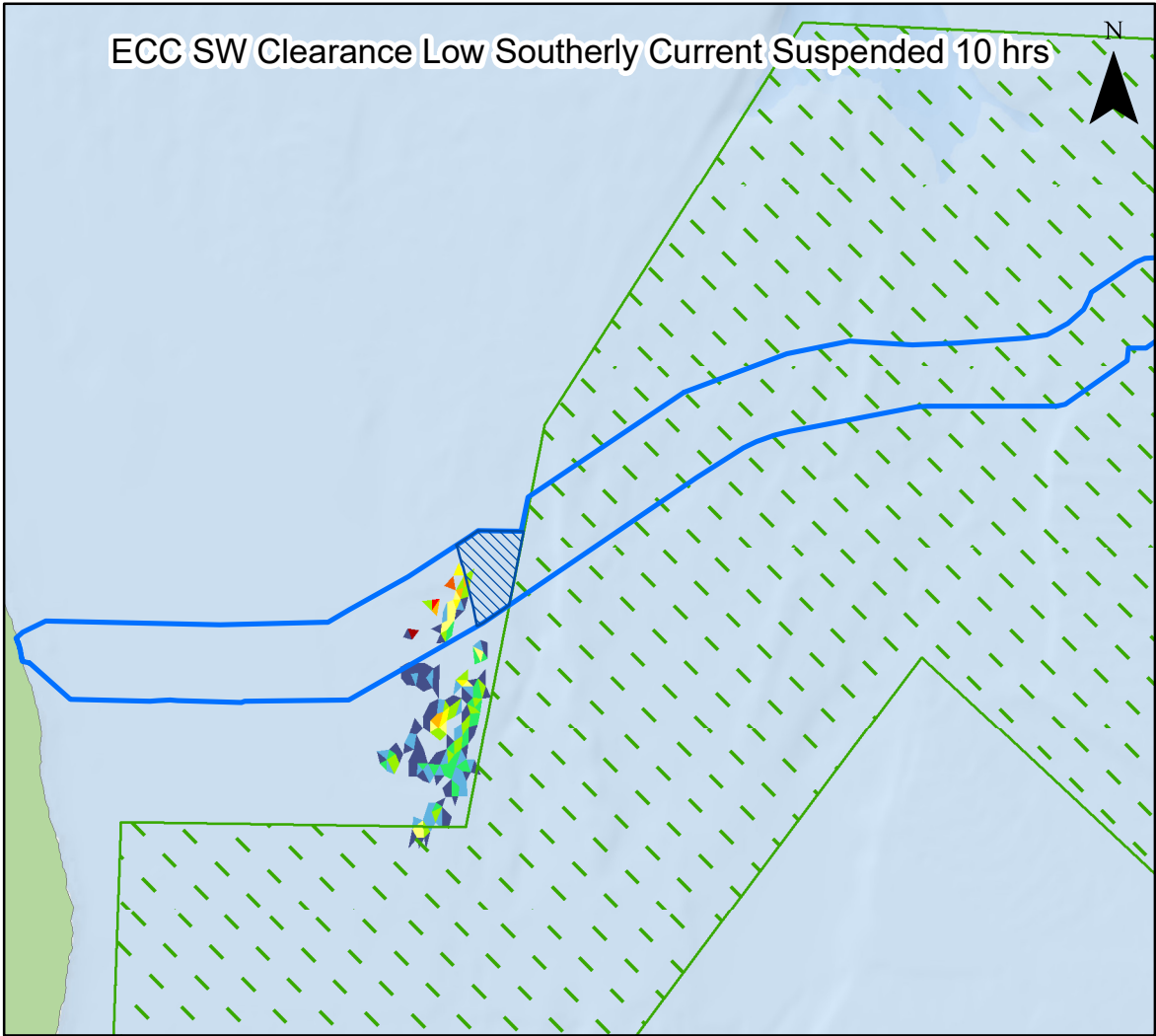
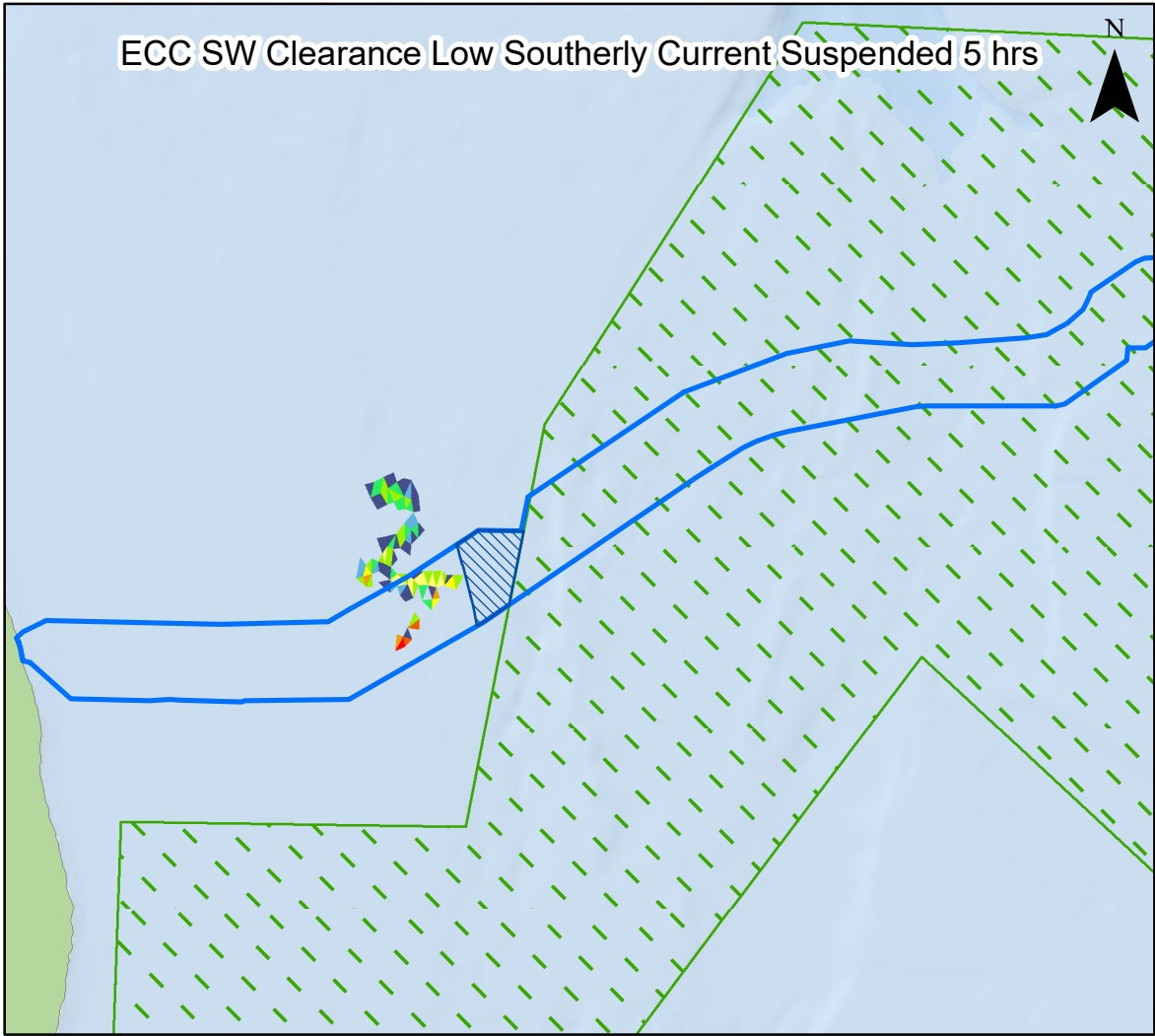
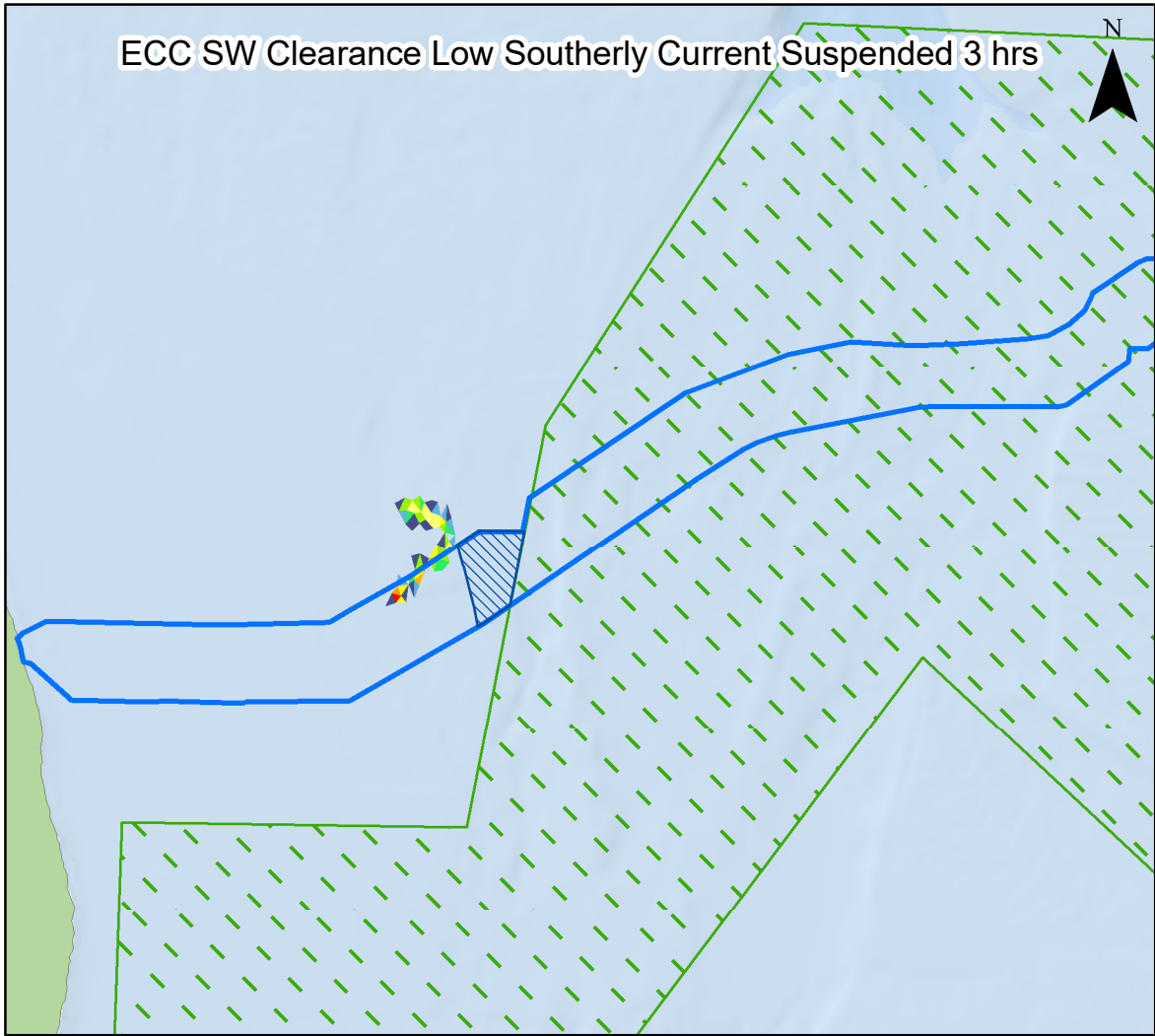


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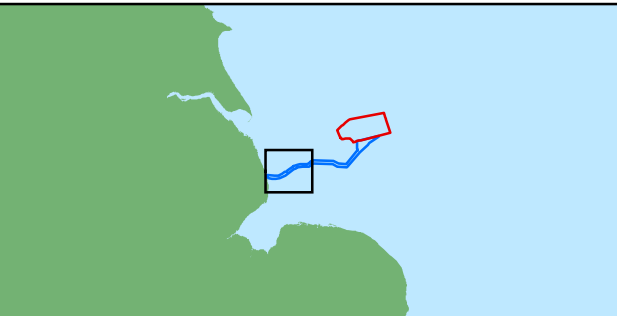
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**Legend**

- 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



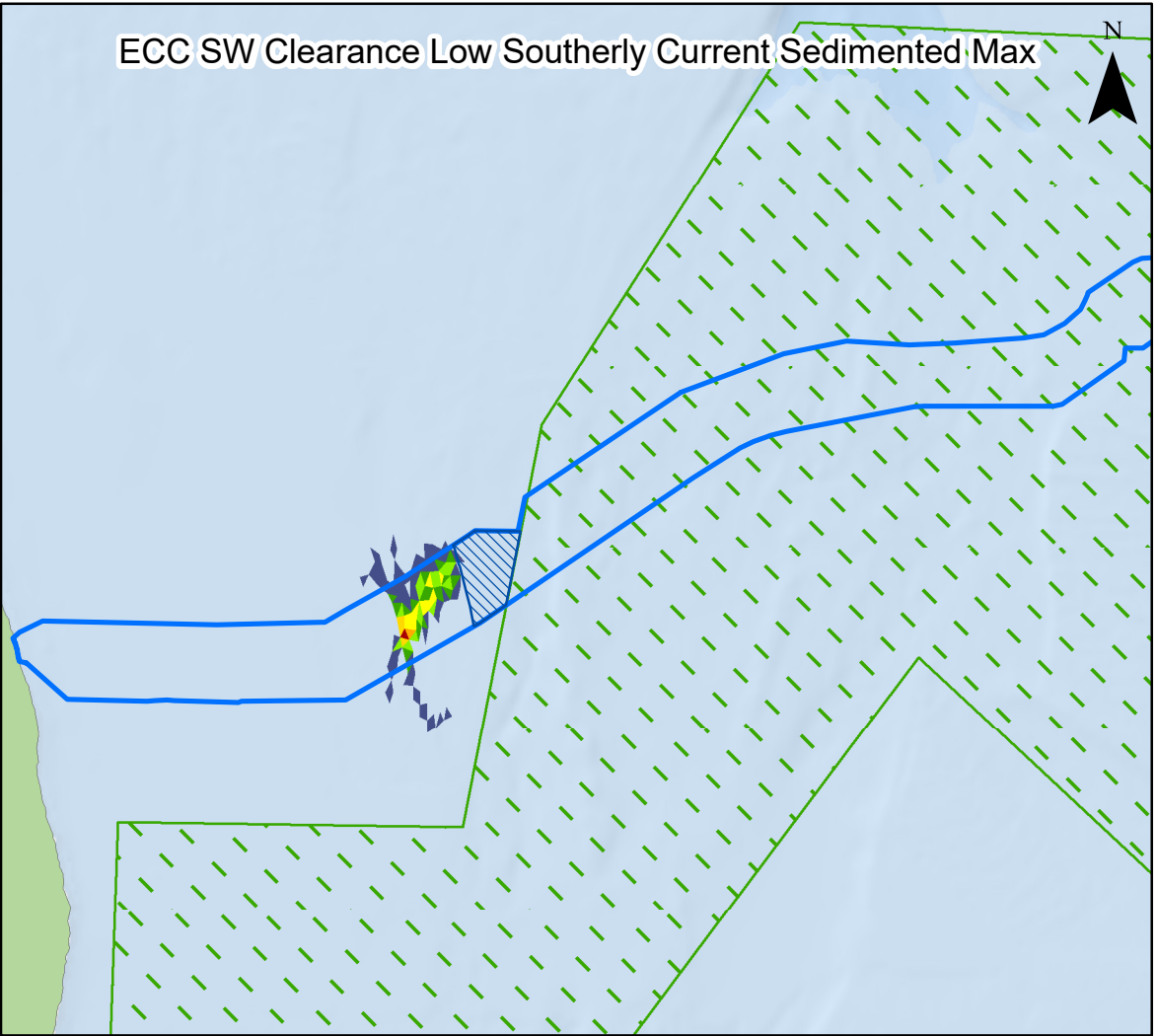
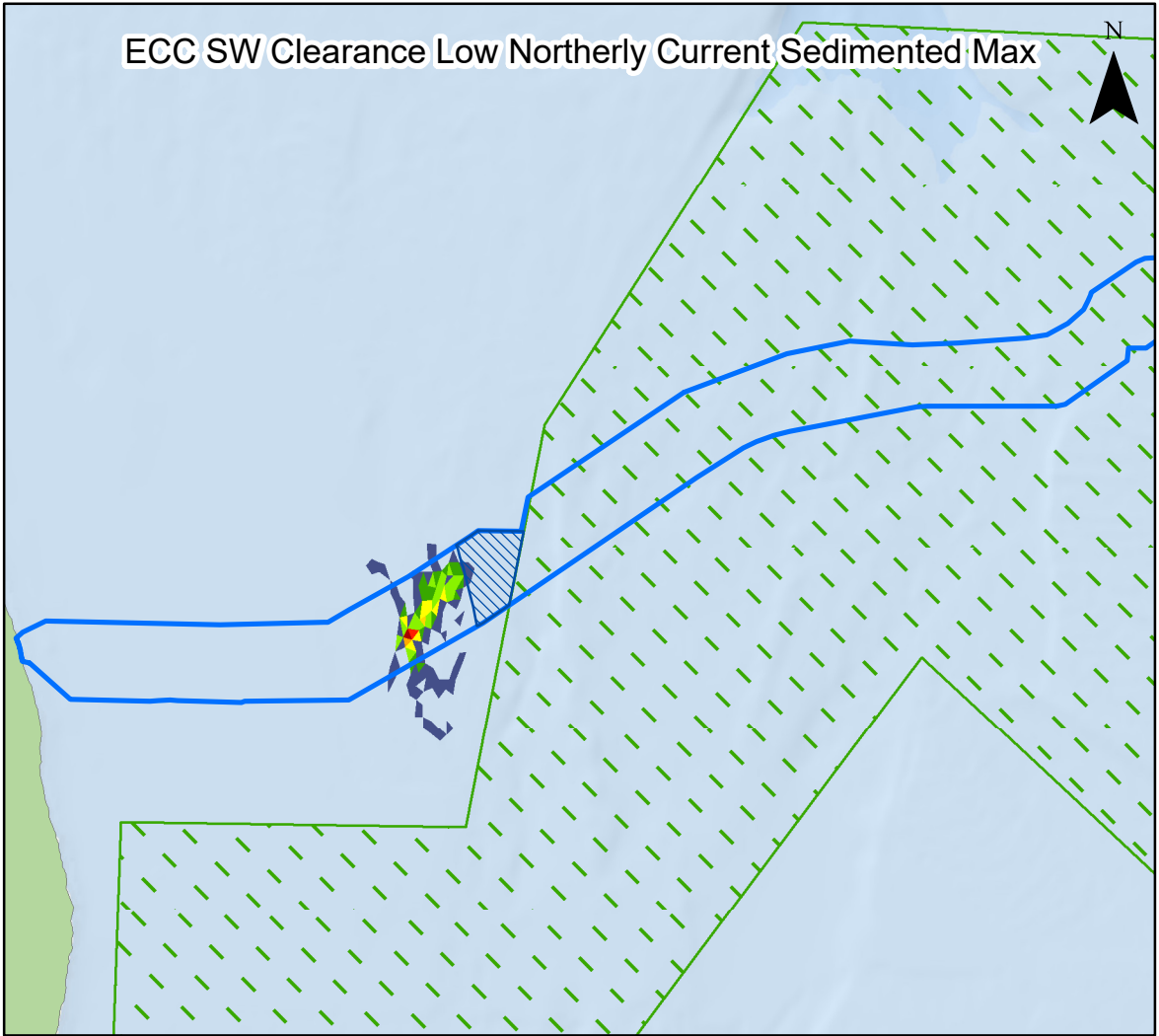
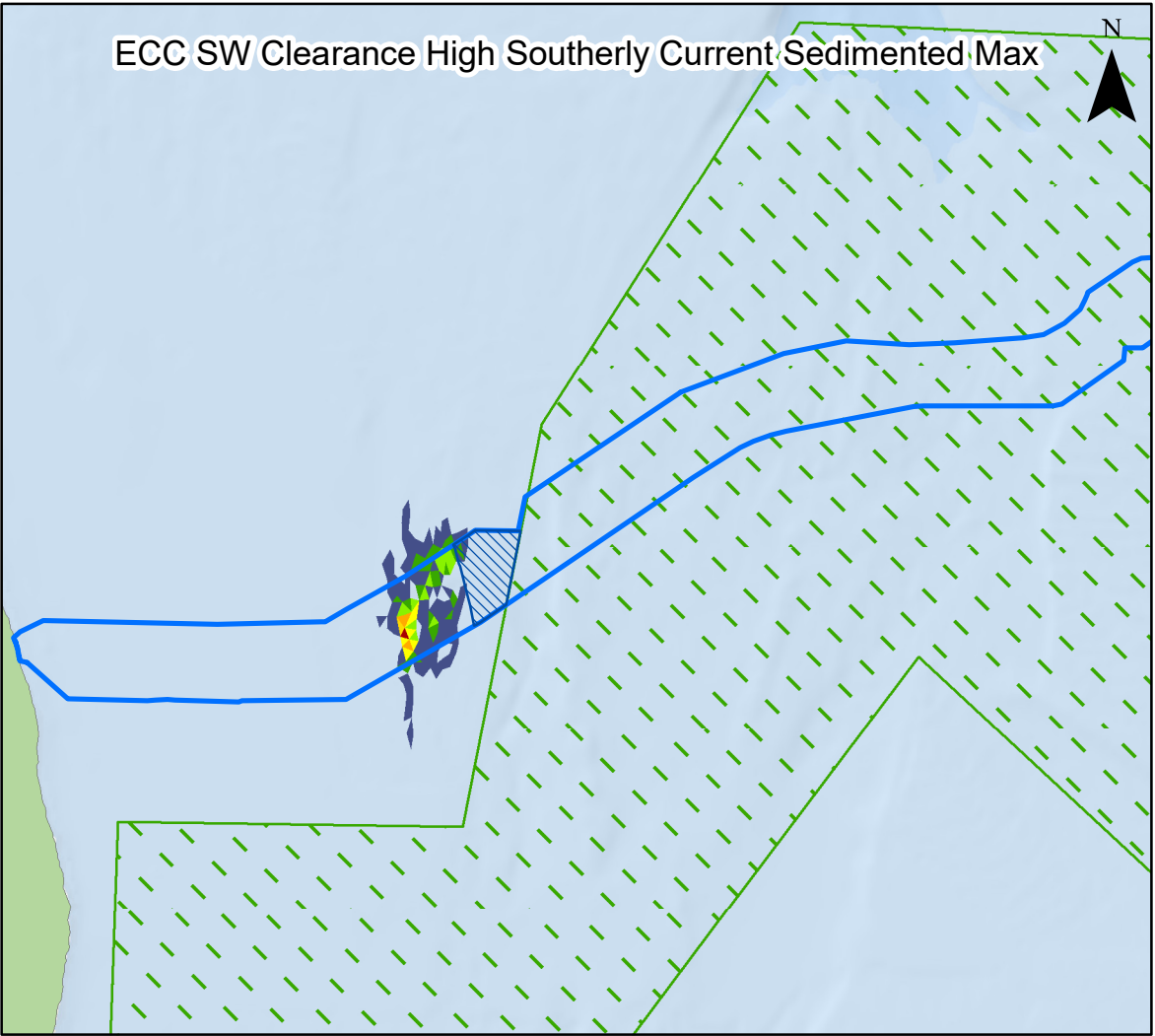
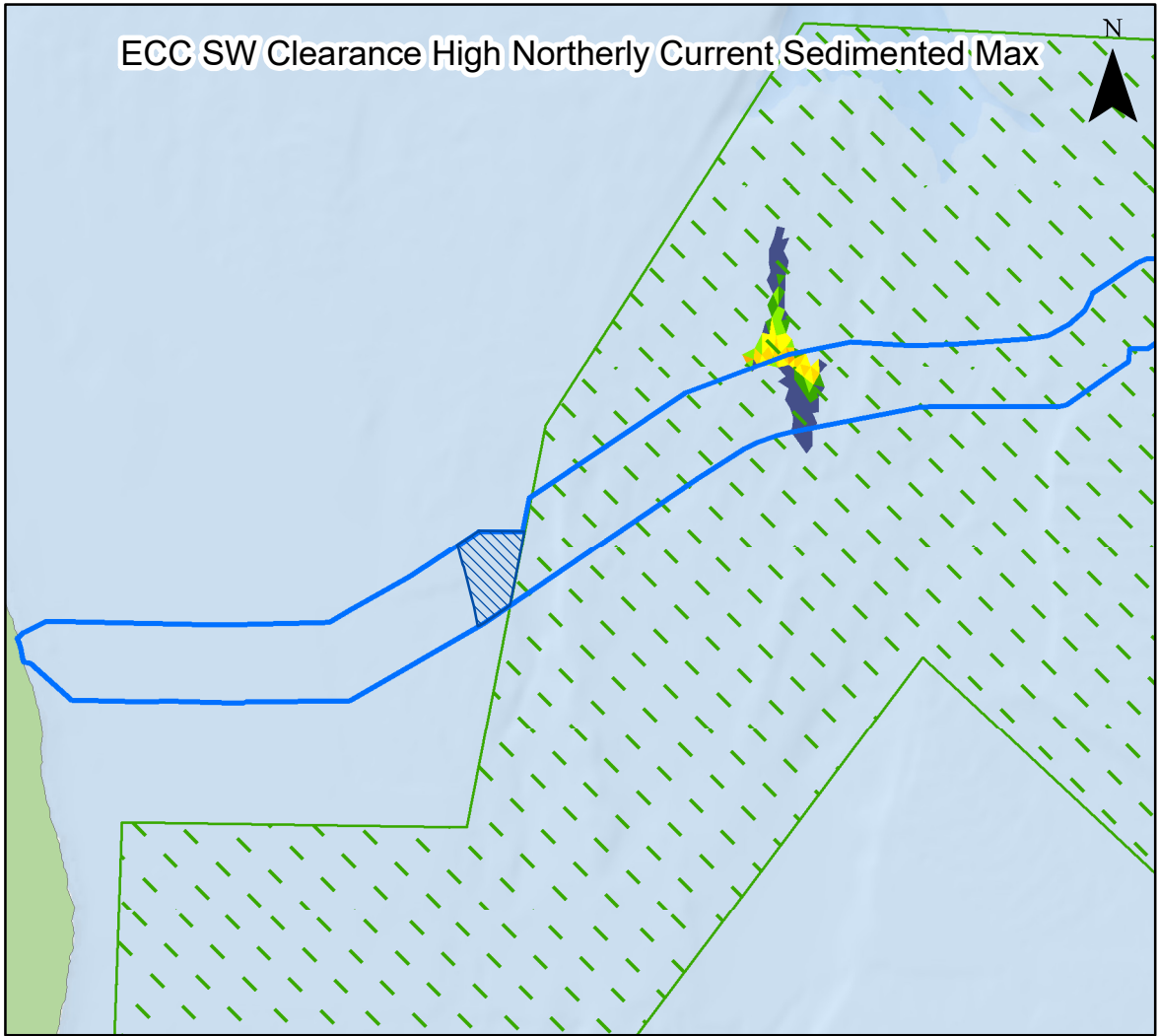
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Environmental Statement Version 2 Deadline 4a

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

Figure 7.20



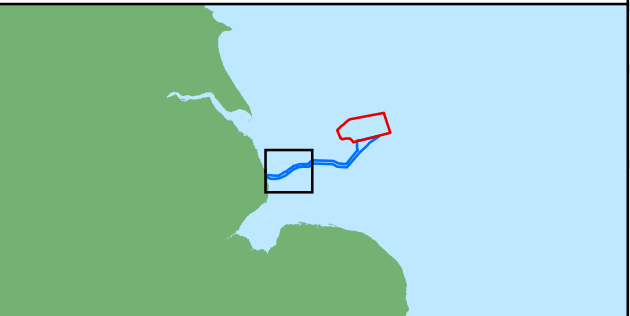


**Legend**

- 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  
0 5 10 km  
Scale: 1:200,000 A3 Page Size

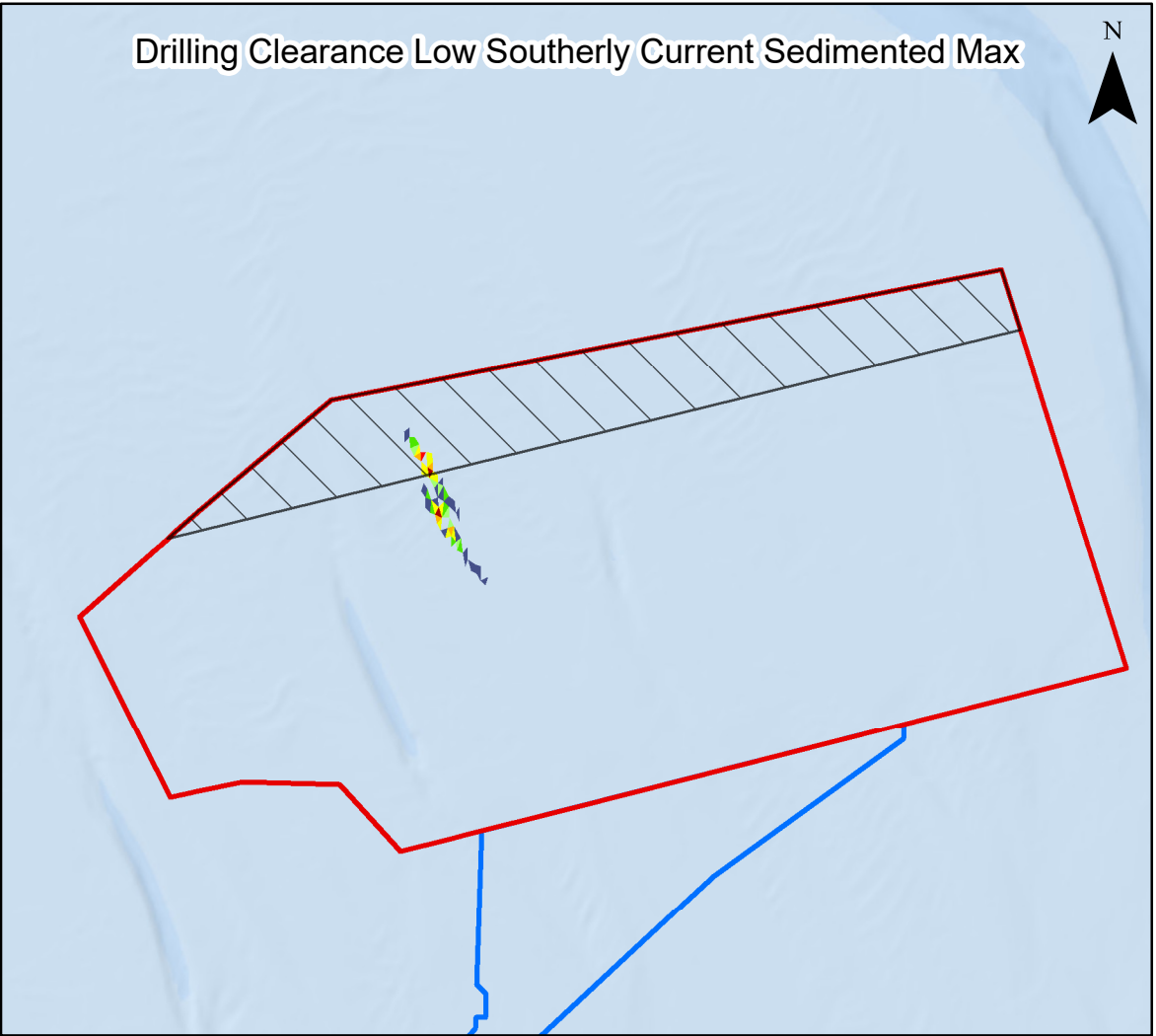
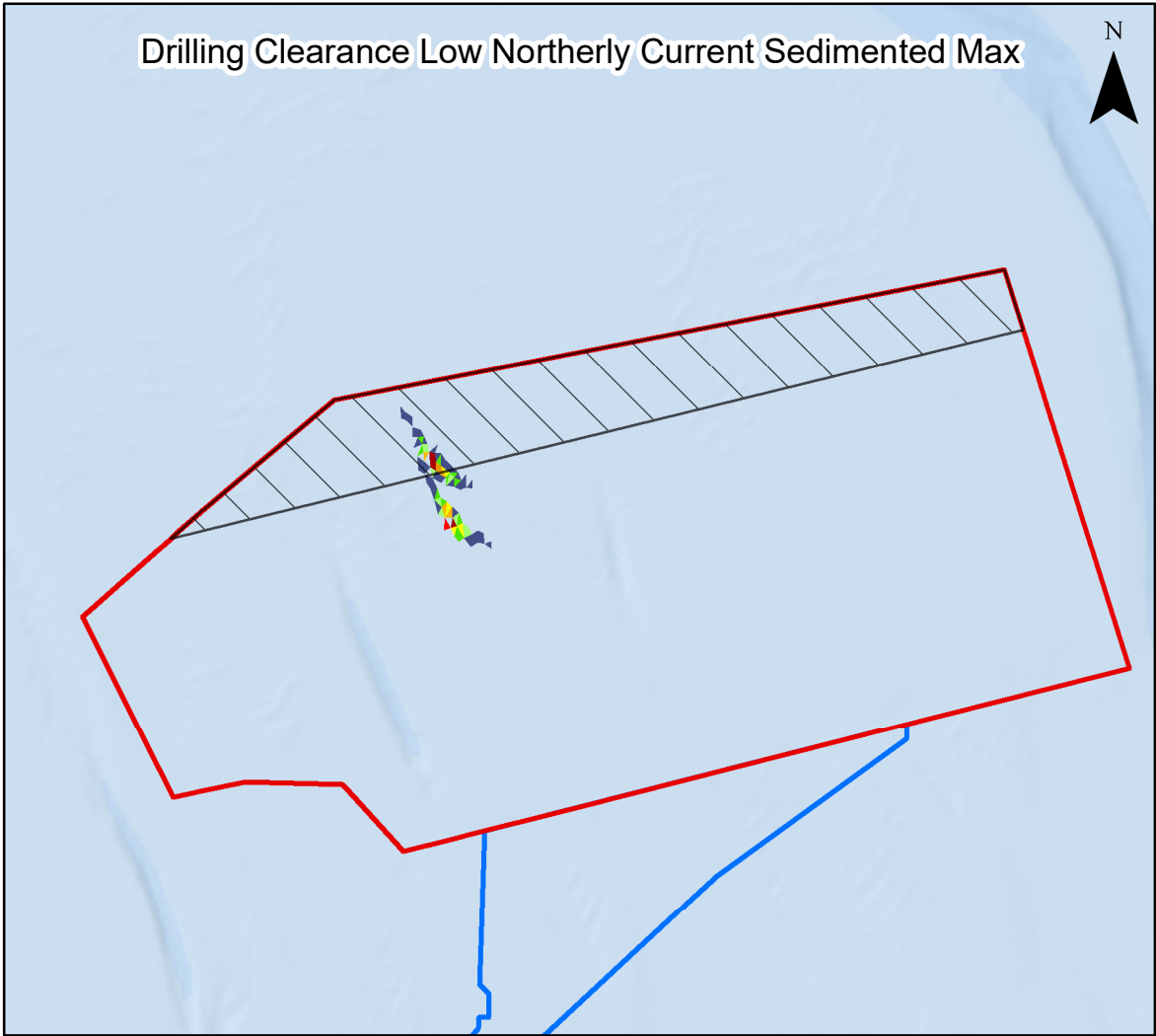
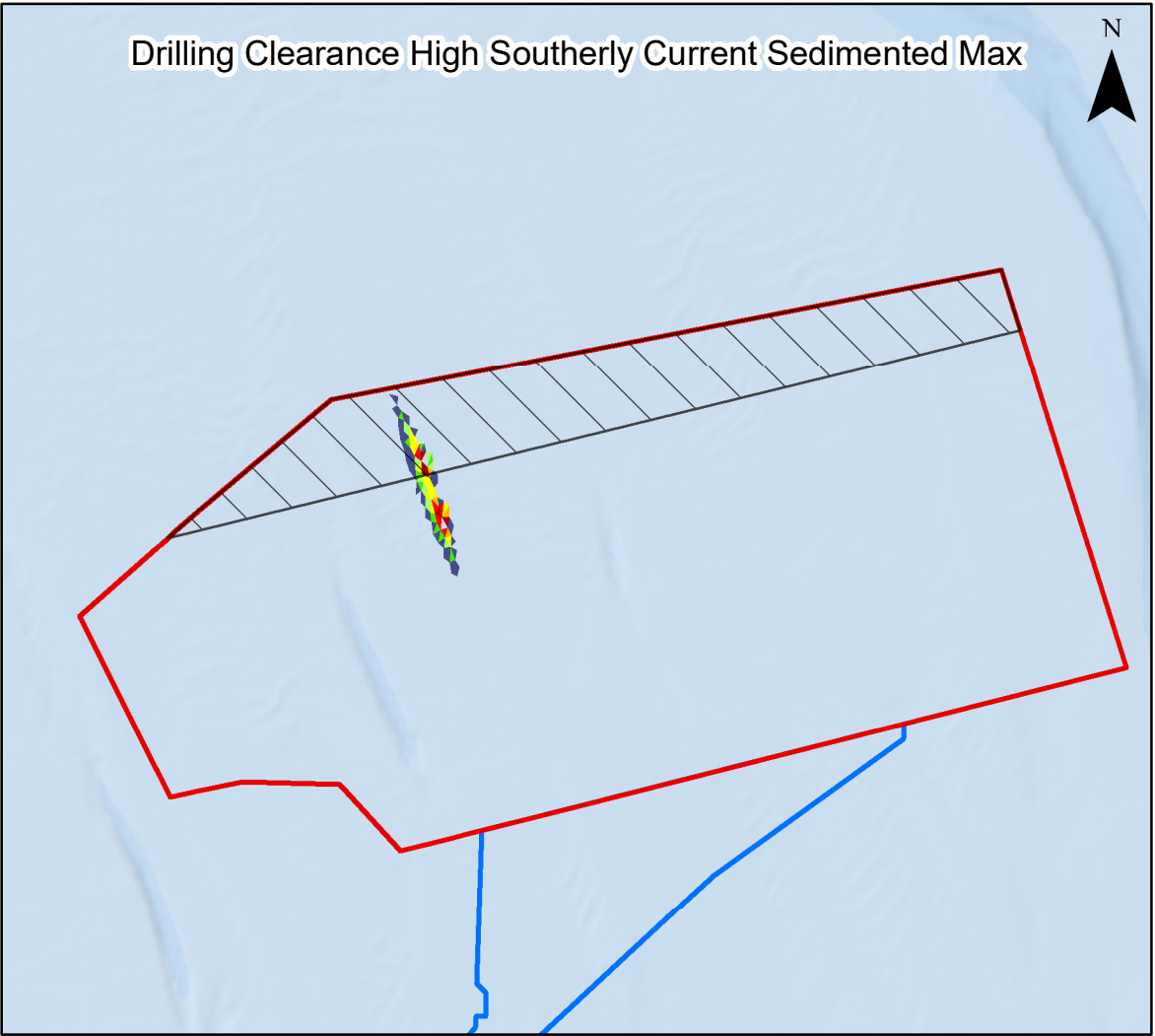
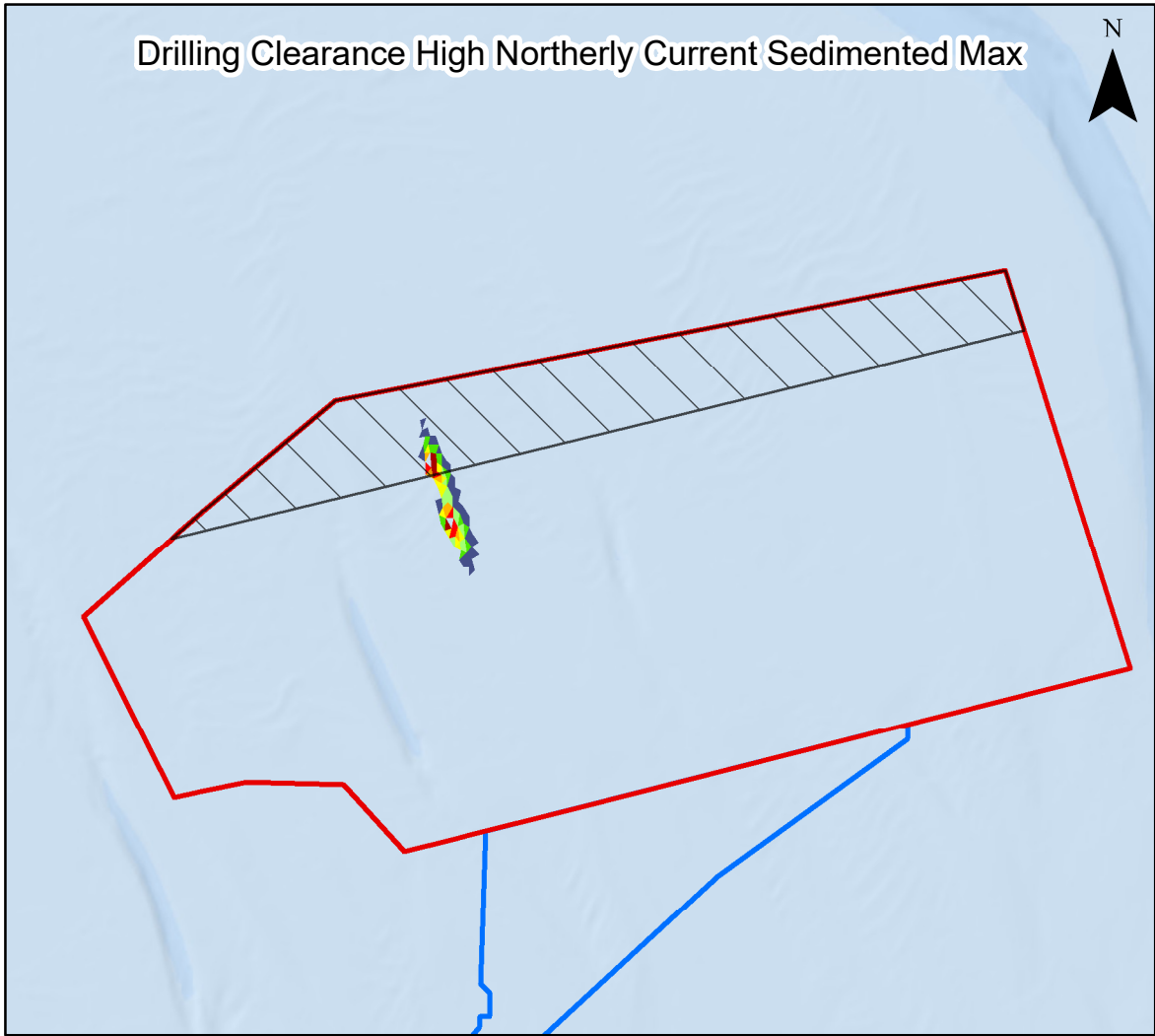
Environmental Statement Version 2 Deadline 4a

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



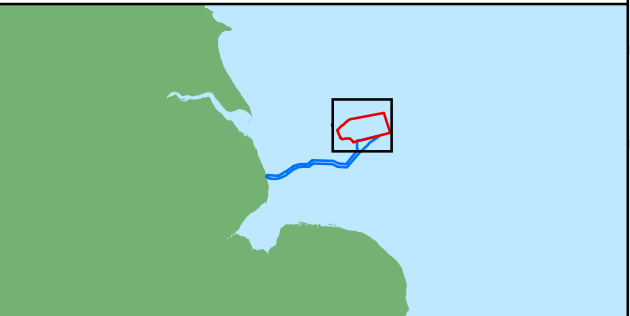
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**Legend**

- Array Area
  - Offshore Restricted Build 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 Version 2 Deadline 4a

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

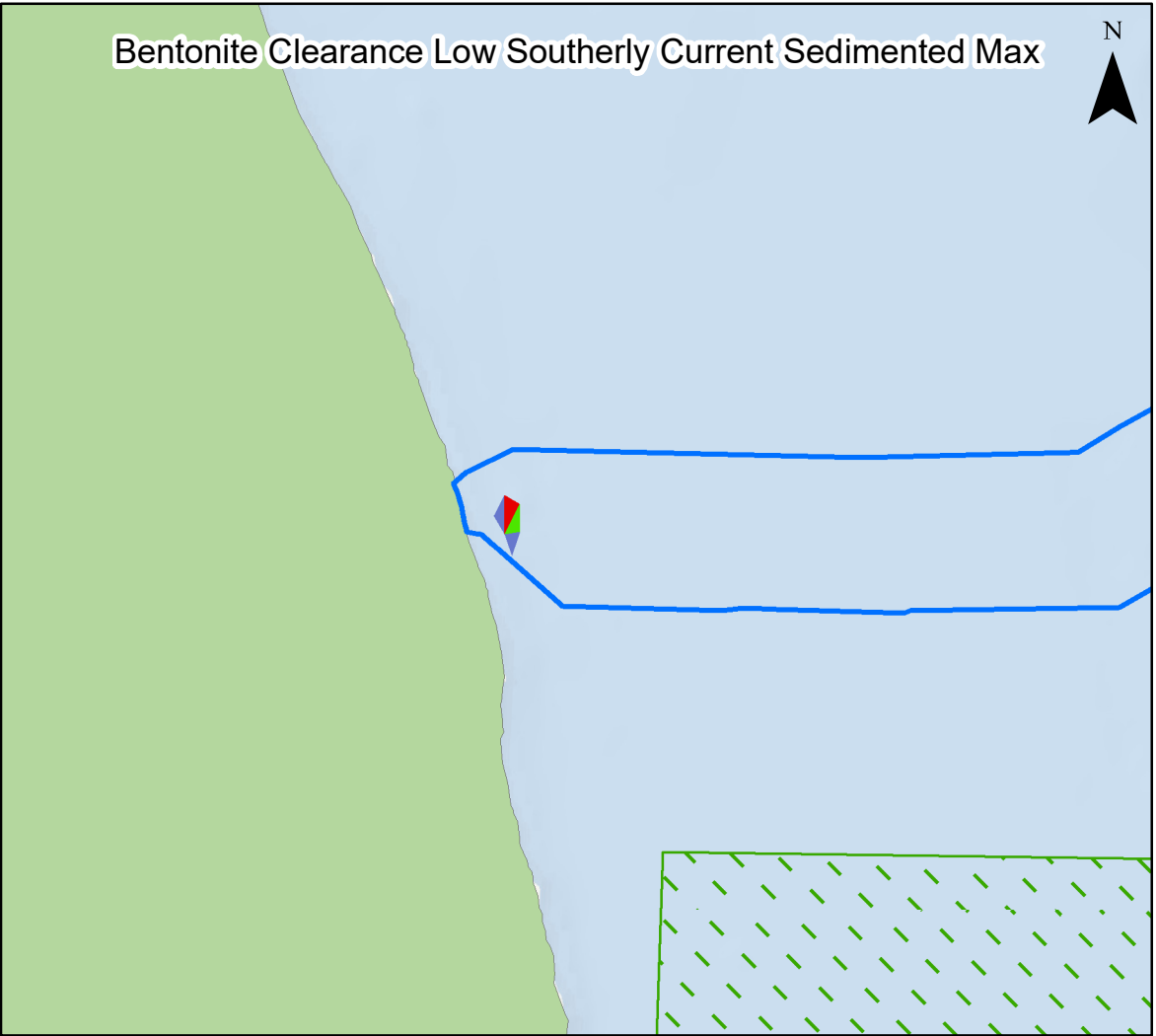
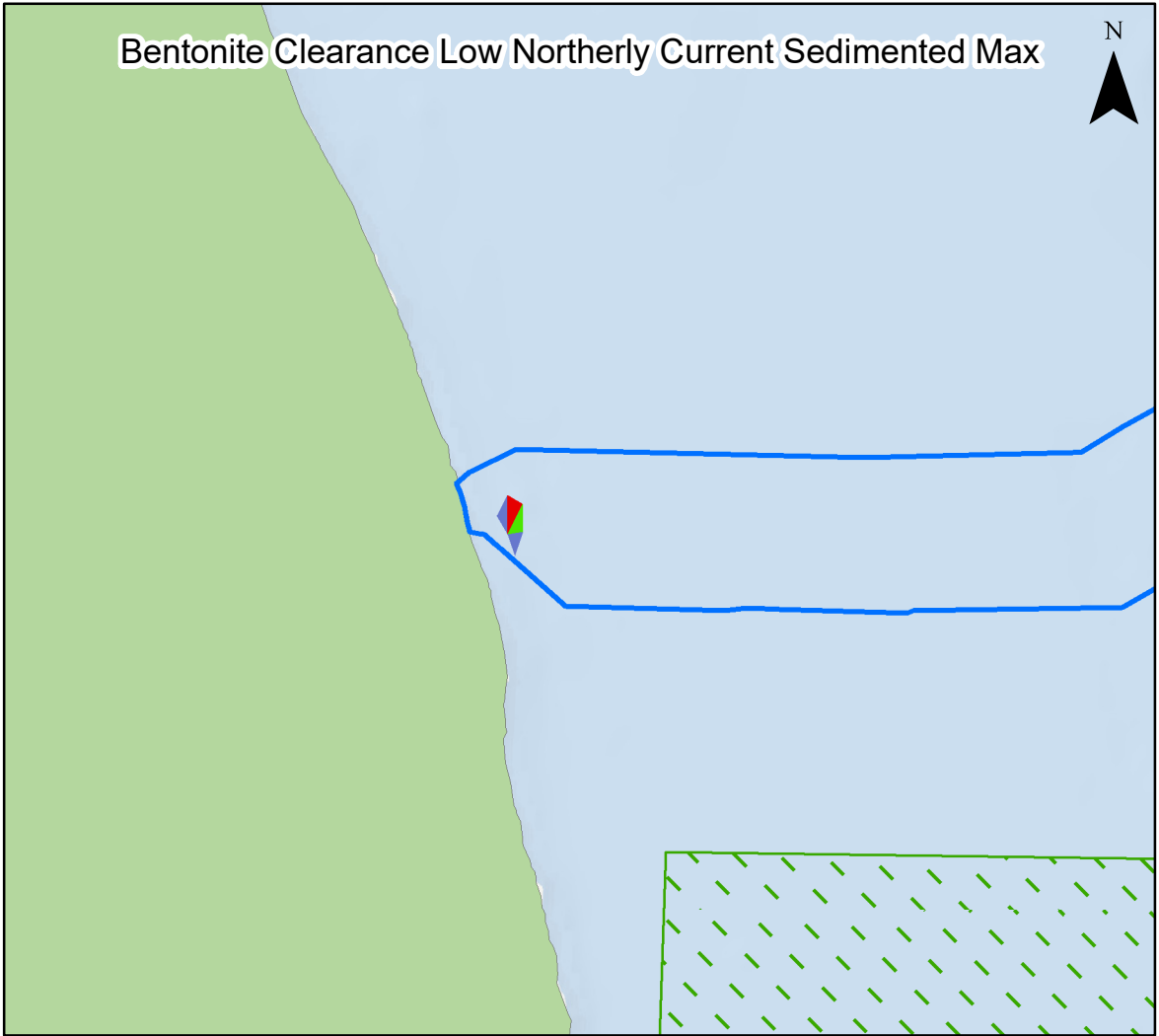
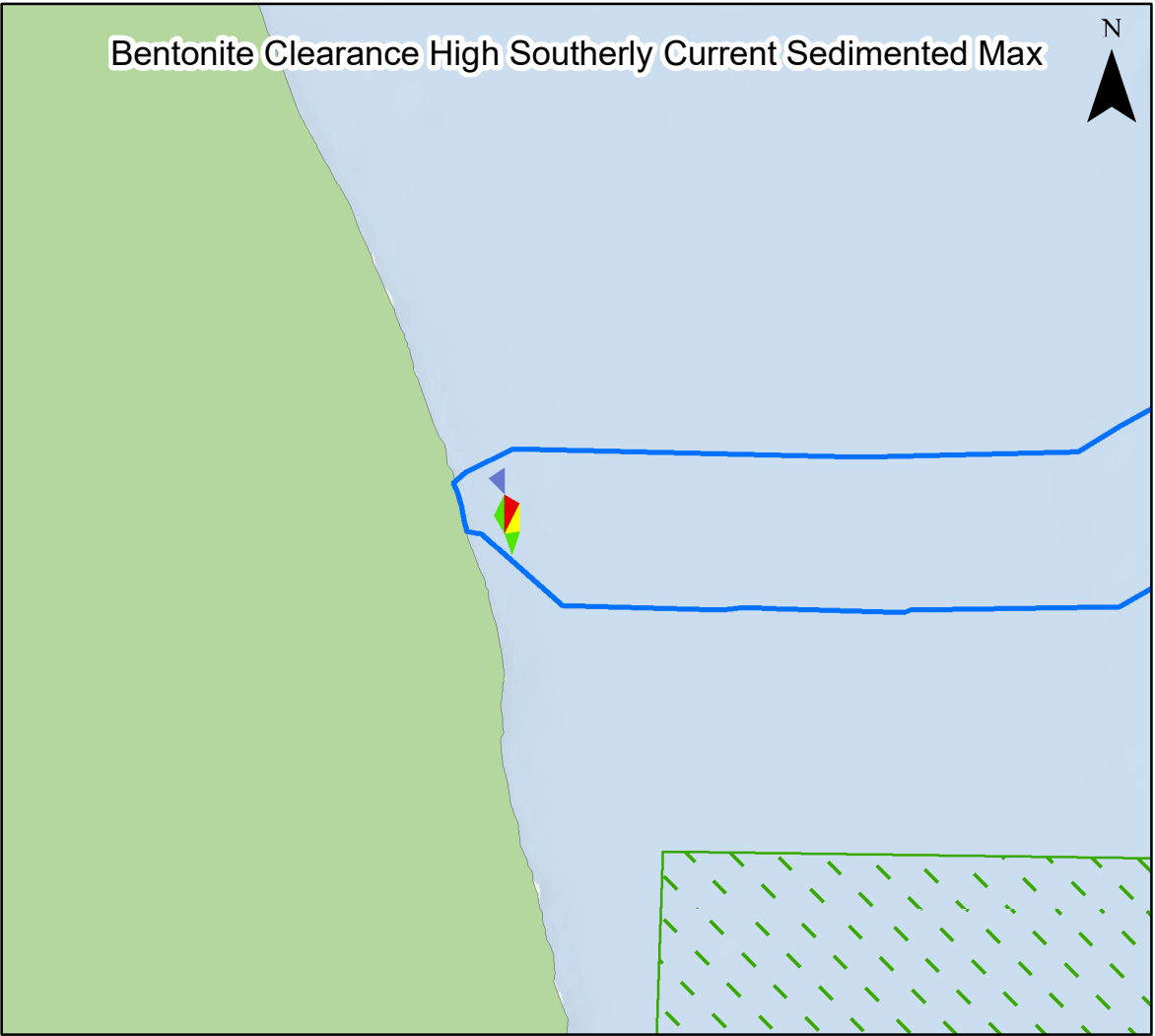
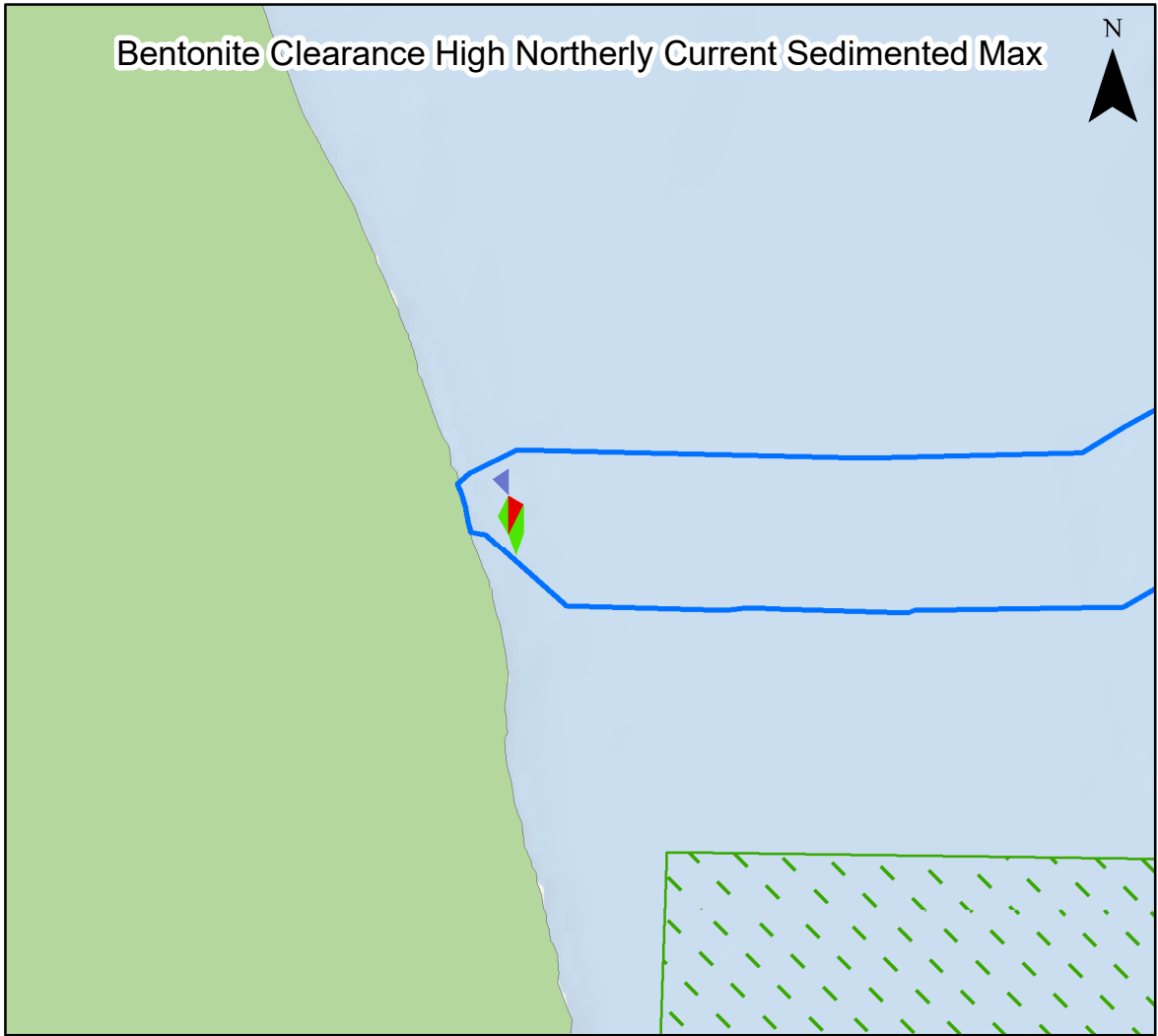
Figure 7.22



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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

0 2.5 5 km

Scale: 1:100,000 A3 Page Size

Environmental Statement Version 2 Deadline 4a

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

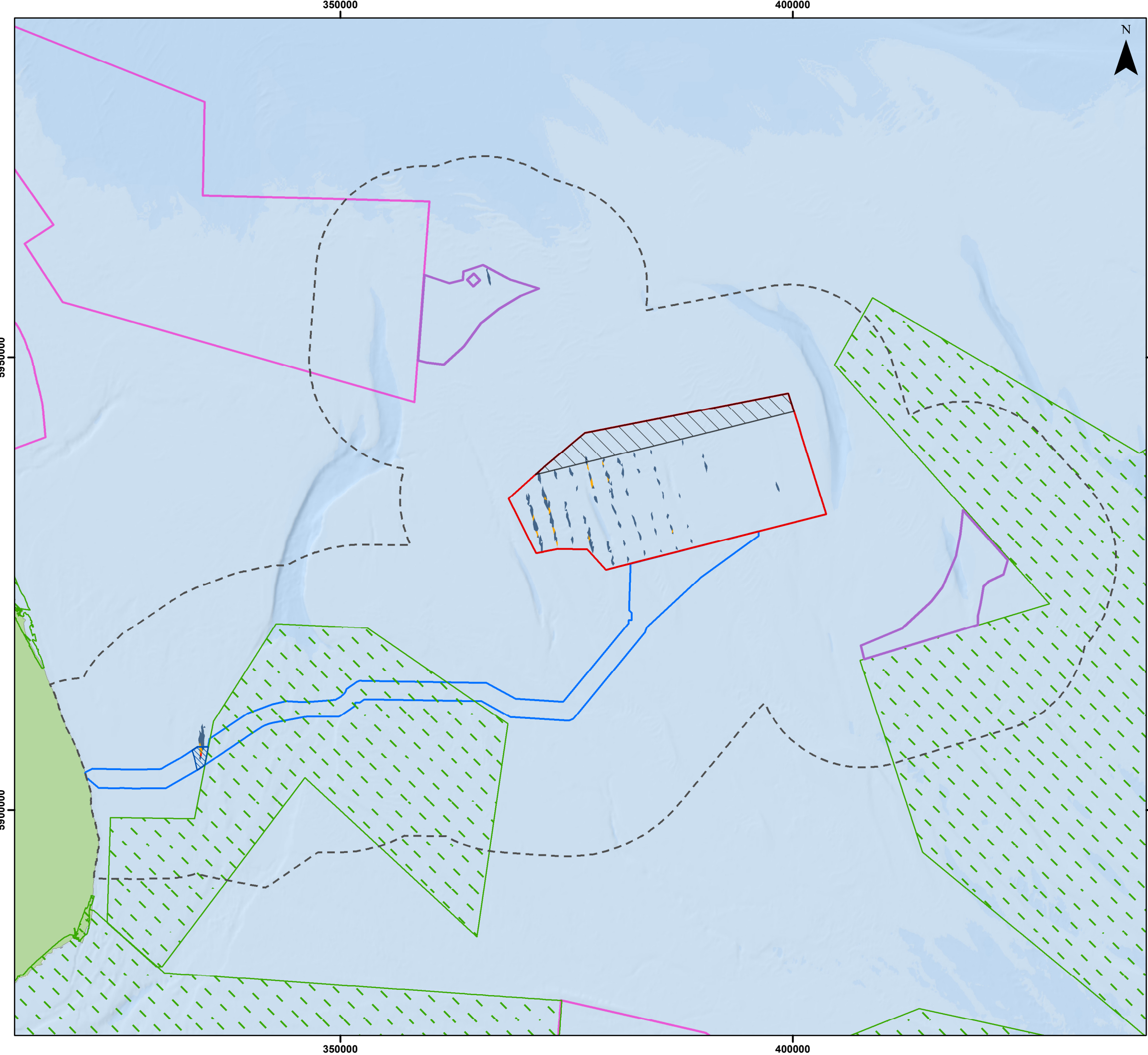


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**Legend**

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

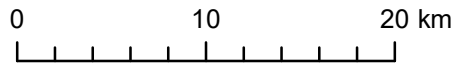
**High Northerly Current Current Speed**

**Current Speed (m/s)**

- < -0.1
- 0.05 - -0.1
- 0.02 - -0.05



Coordinate System: WGS 1984 UTM Zone 31N



Scale: 1:400,000

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Environmental Statement Version 2 Deadline 4a

Hydrodynamic blockage effects during a high spring ebb tide

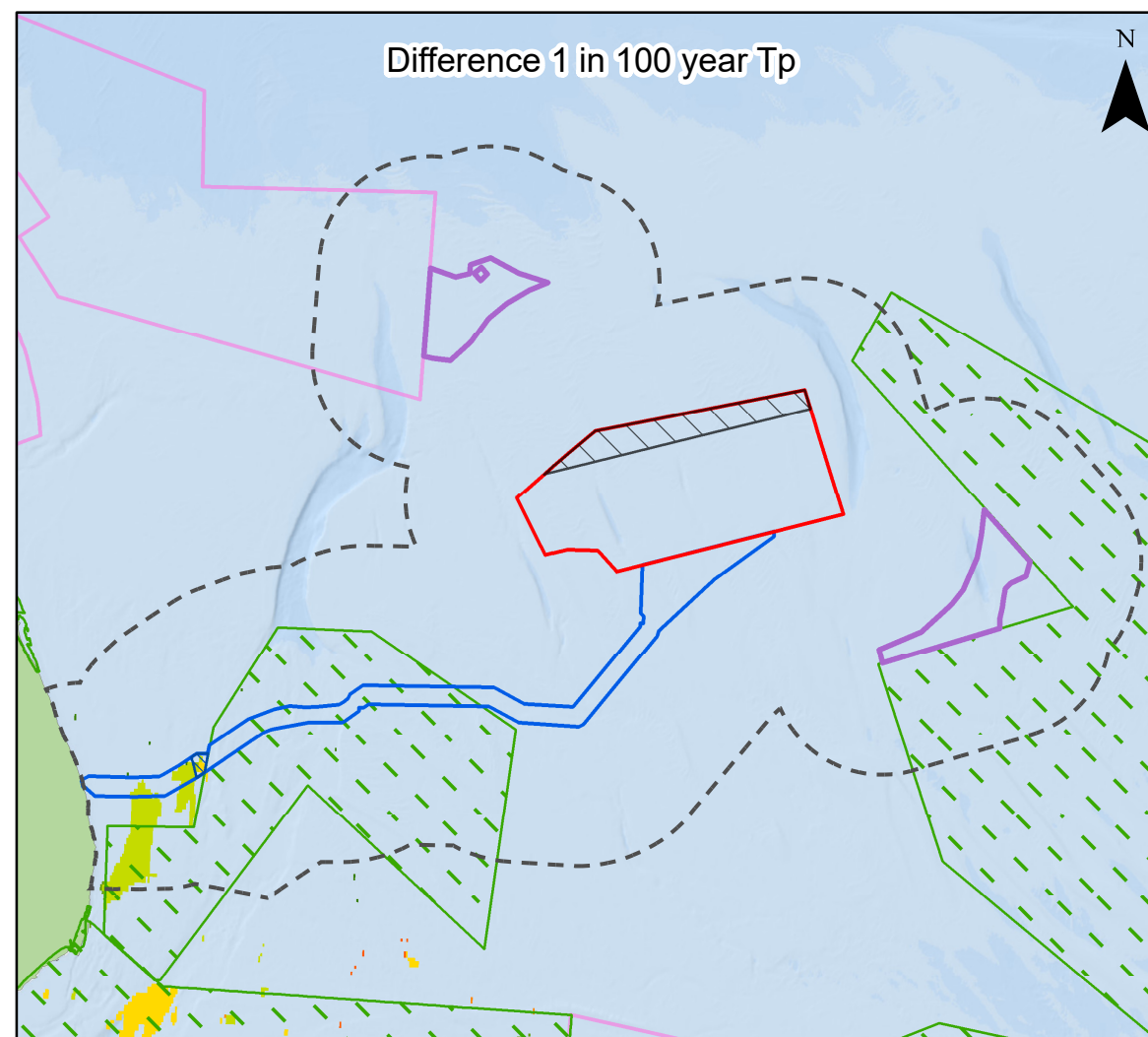
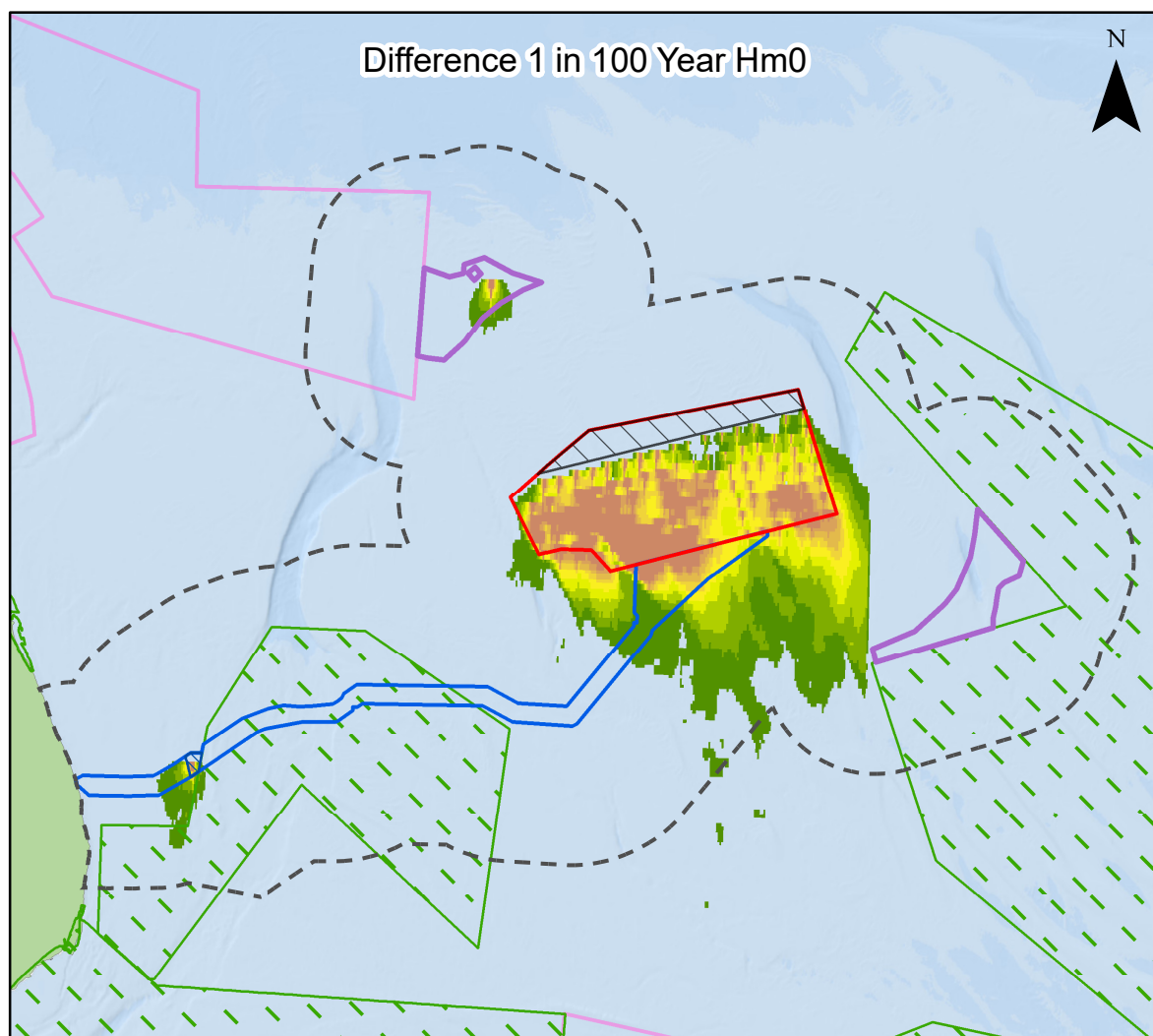
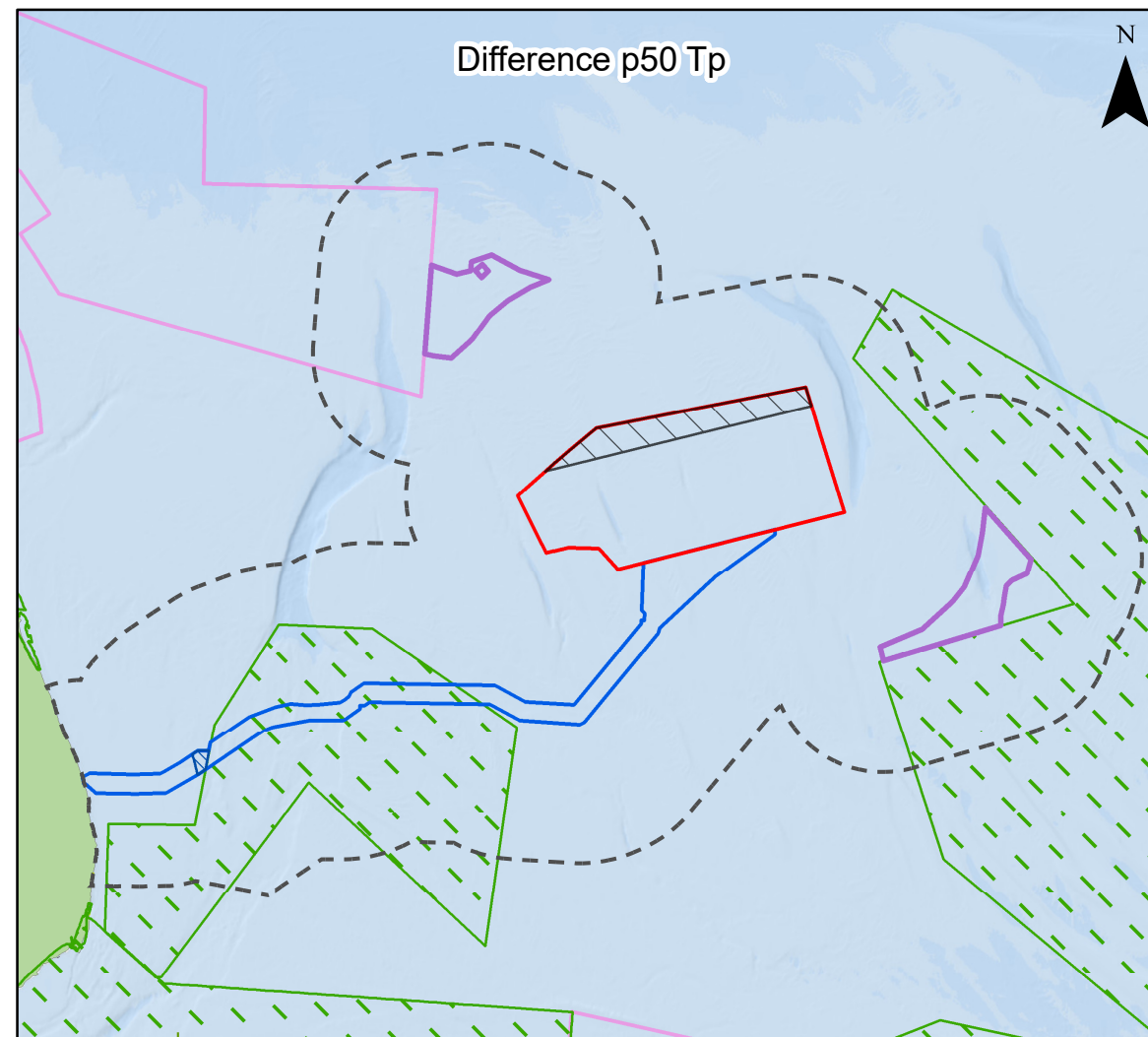
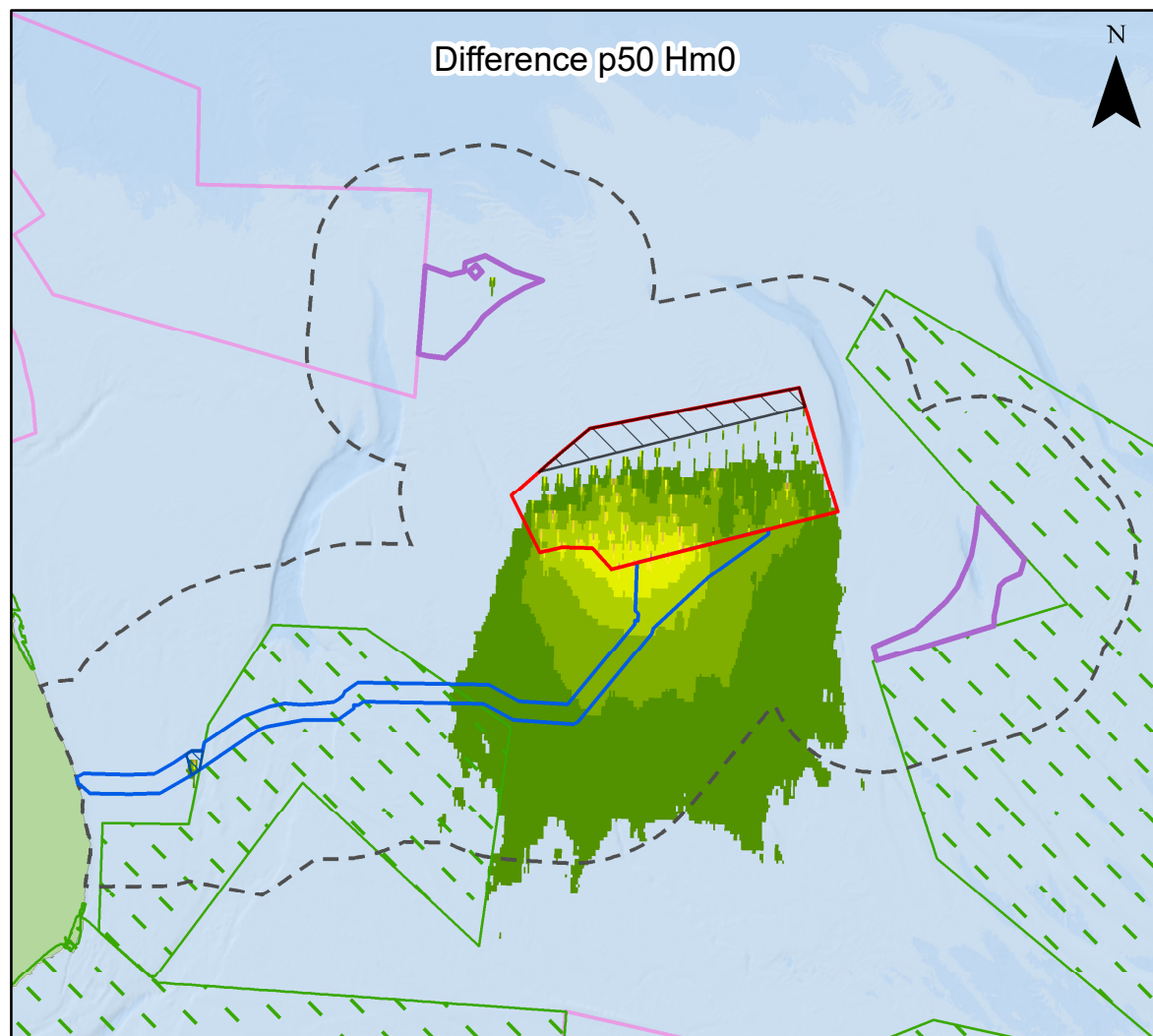
Figure 7.24



Date: 19/02/2025  
Produced By: BPHB  
Revision: 2.0



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NGDC, and other contributors



### Legend

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

**Difference p50 Hm0 (m)**

-0.25 - -0.225	-0.125 - -0.1
-0.225 - -0.2	-0.1 - -0.075
-0.2 - -0.175	-0.075 - -0.05
-0.175 - -0.15	-0.05 - -0.025
-0.15 - -0.125	-0.025 - 0.025

**Difference 1 in 100 Year Hm0 (m)**

-0.25 - -0.225	-0.125 - -0.1
-0.225 - -0.2	-0.1 - -0.075
-0.2 - -0.175	-0.075 - -0.05
-0.175 - -0.15	-0.05 - -0.025
-0.15 - -0.125	-0.025 - 0.025

**Difference p50 Tp (s)**

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

**Difference 1 in 100 Year Tp (s)**

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

Coordinate System: WGS 1984 UTM Zone 31N

0 25 50 km

Scale: 1:800,000

A3 Page Size

Environmental Statement Version 2 Deadline 4a

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

Figure 7.25

OUTER DOWSING OFFSHORE WIND

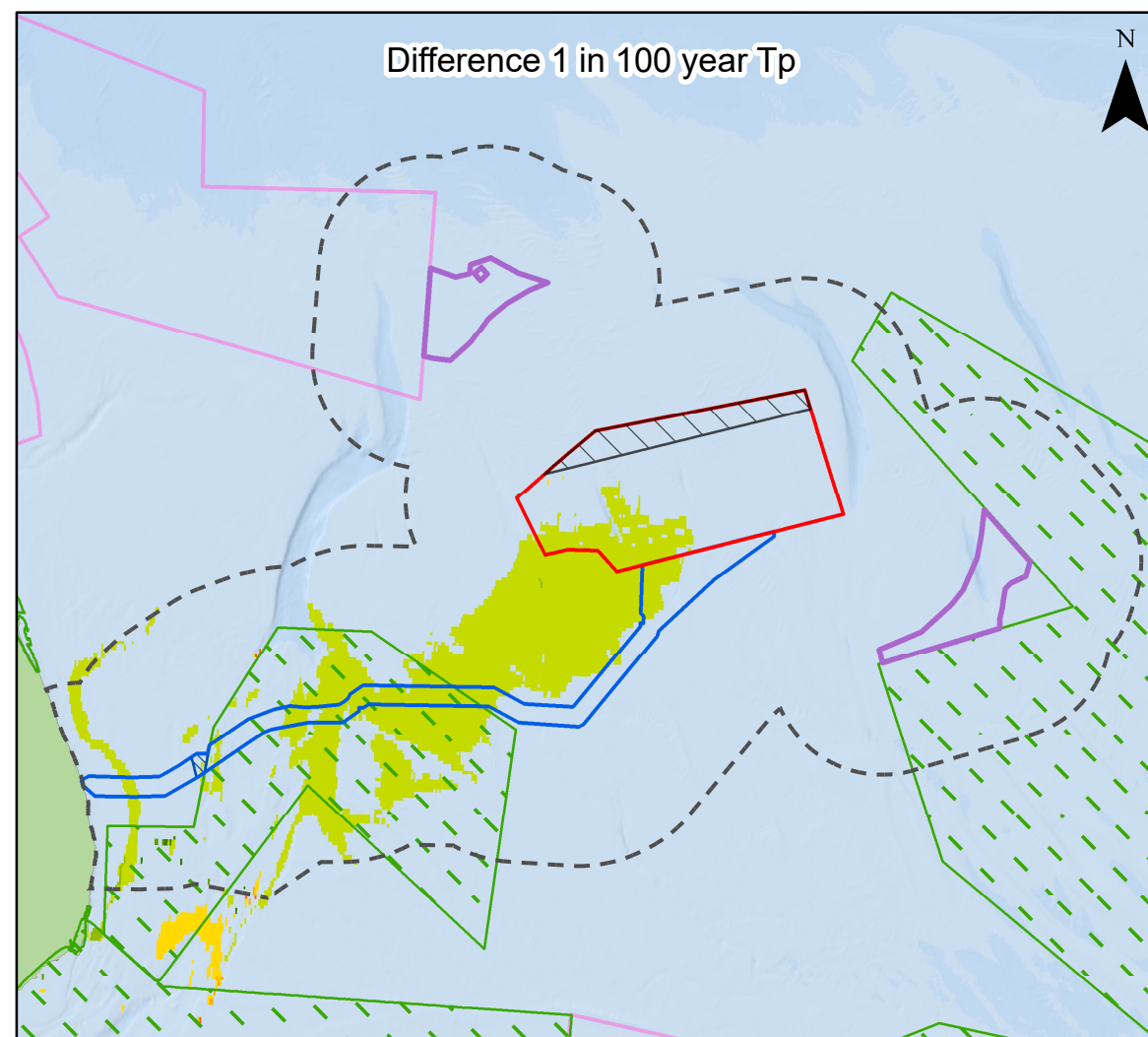
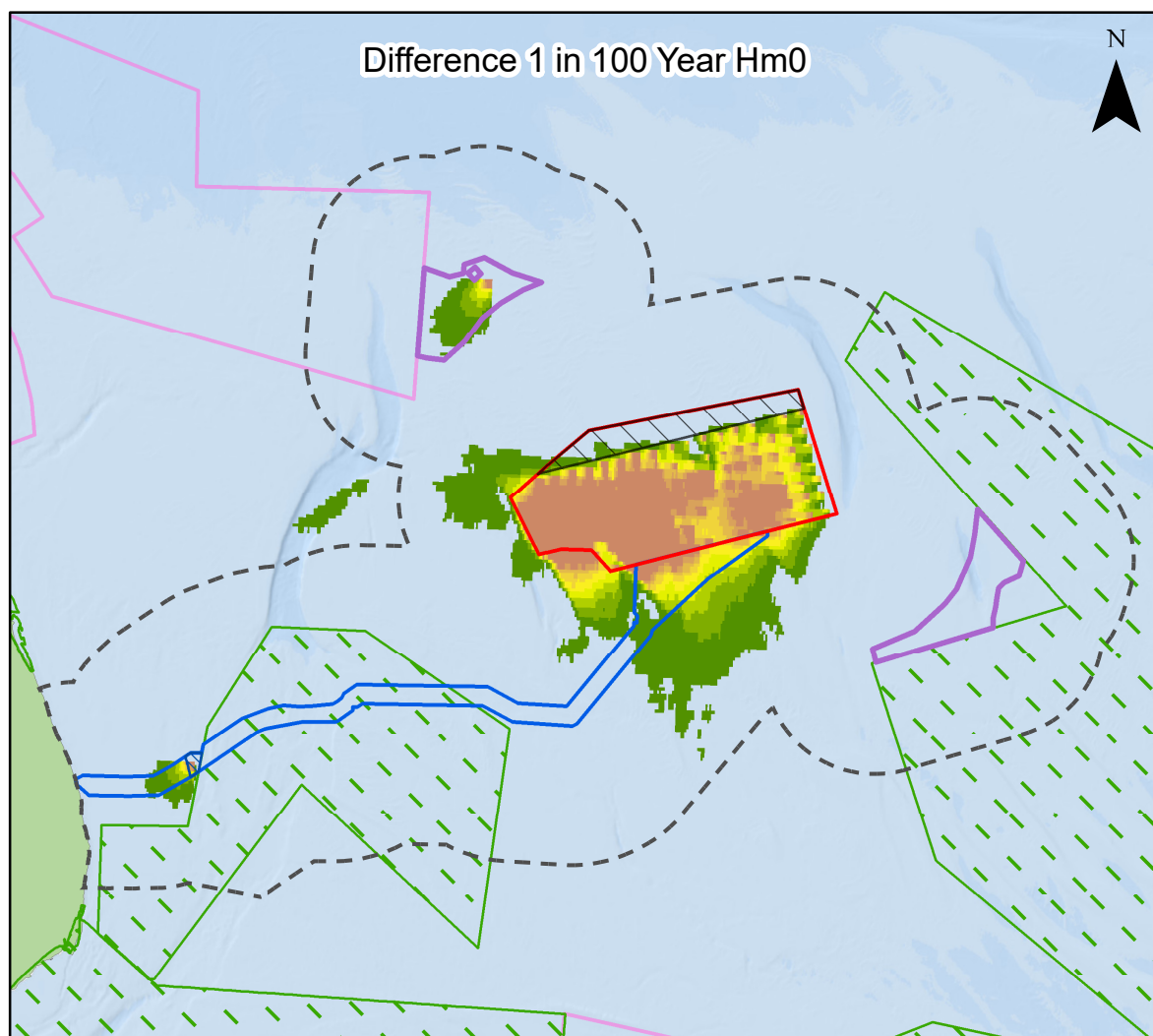
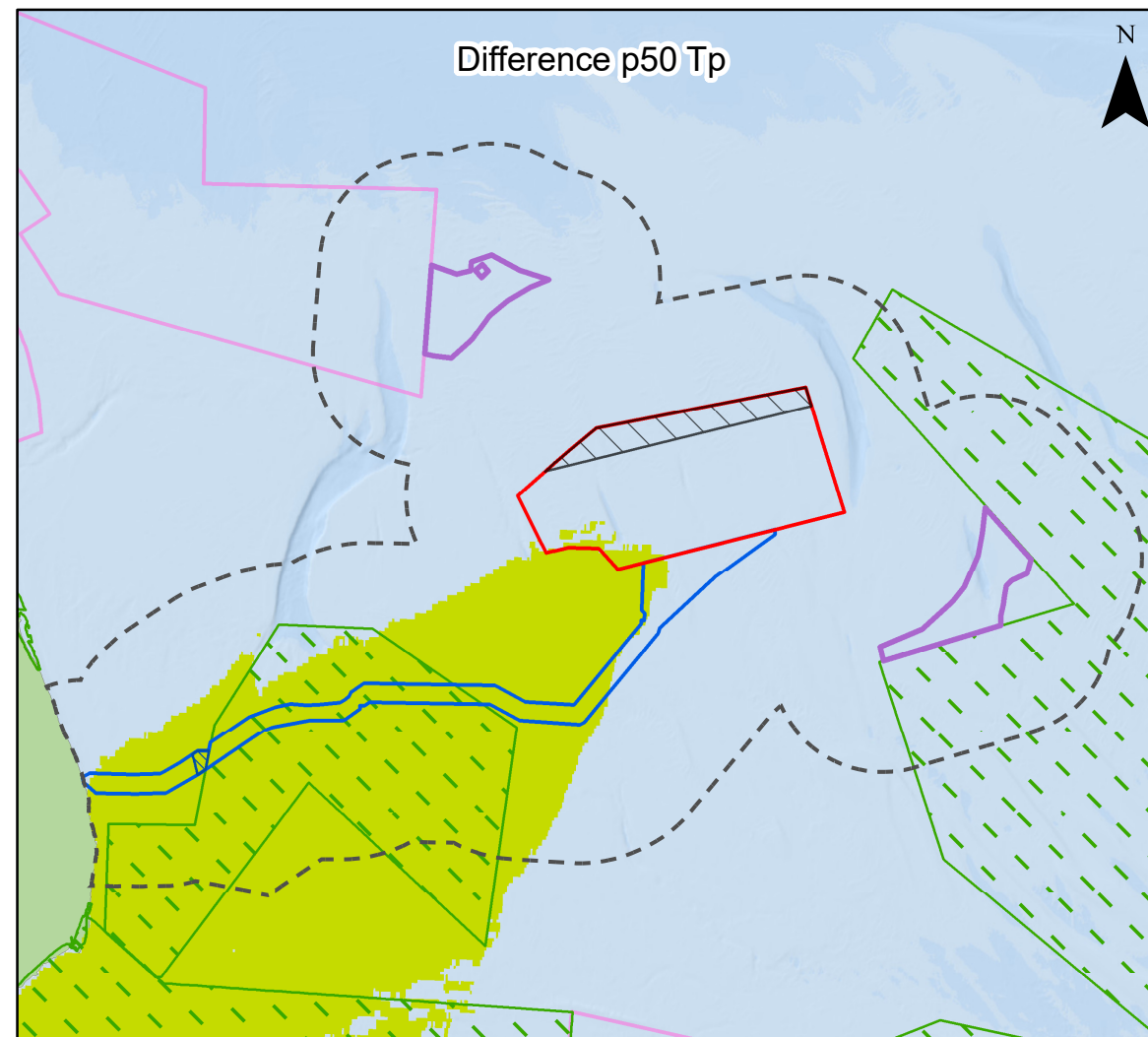
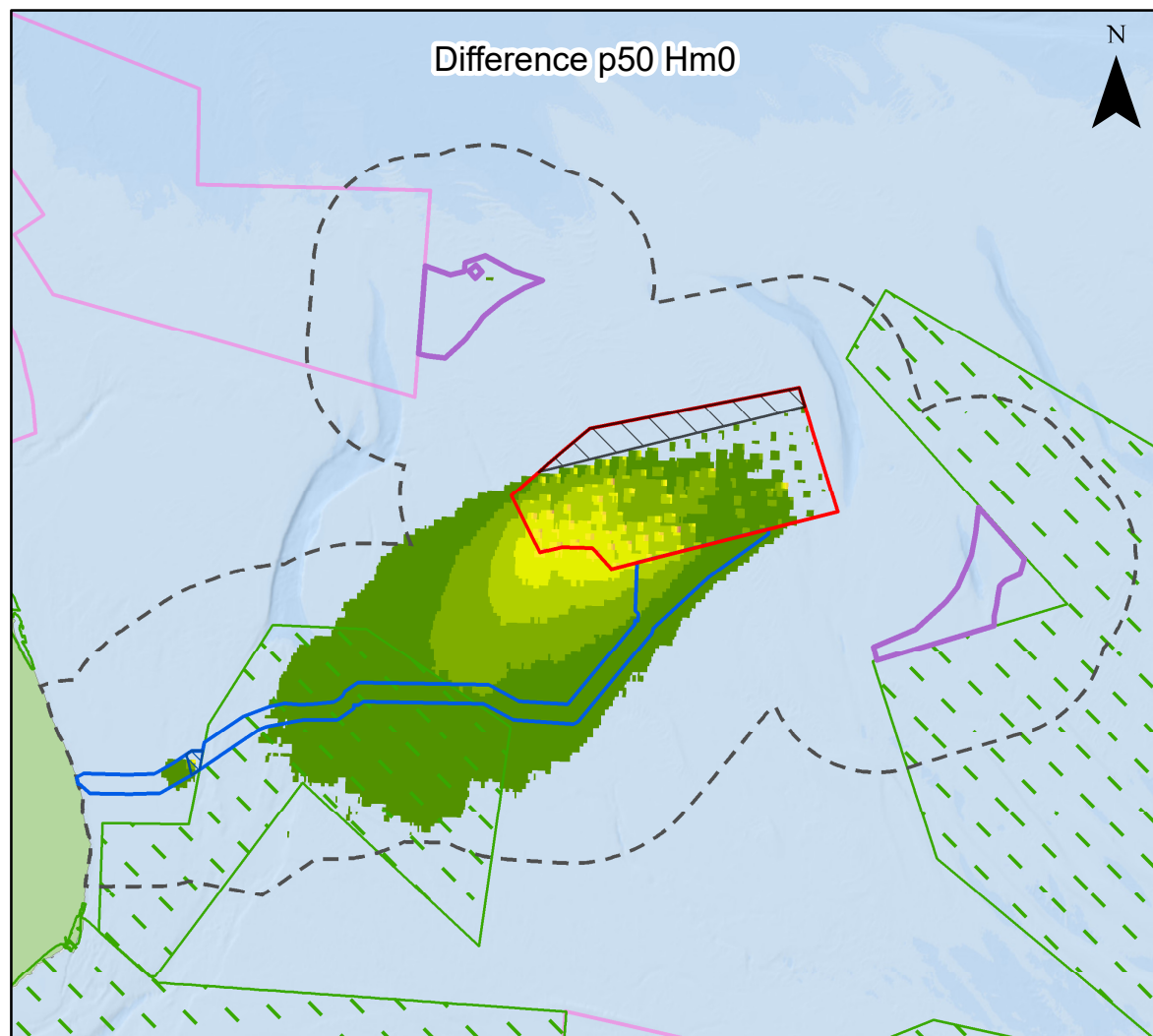
Date: 20/02/2025  
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## Legend

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

### Difference p50 Hm0 (m)

	-0.25 - -0.225		-0.125 - -0.1
	-0.225 - -0.2		-0.1 - -0.075
	-0.2 - -0.175		-0.075 - -0.05
	-0.175 - -0.15		-0.05 - -0.025
	-0.15 - -0.125		-0.025 - 0.025

### Difference 1 in 100 Year Hm0 (m)

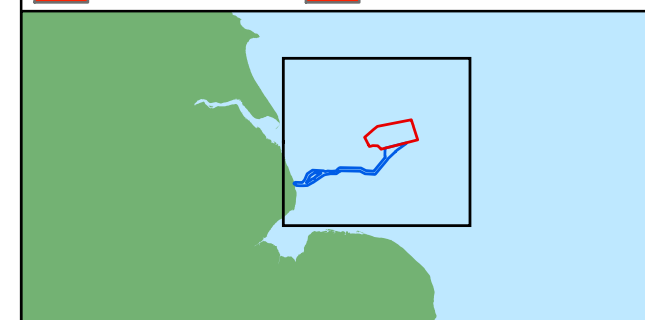
	-0.25 - -0.225		-0.125 - -0.1
	-0.225 - -0.2		-0.1 - -0.075
	-0.2 - -0.175		-0.075 - -0.05
	-0.175 - -0.15		-0.05 - -0.025
	-0.15 - -0.125		-0.025 - 0.025

### Difference p50 Tp (s)

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

### Difference 1 in 100 Year Tp (s)

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



Coordinate System: WGS 1984 UTM Zone 31N

0 25 50 km

Scale: 1:800,000

A3 Page Size

Environmental Statement Version 2 Deadline 4a

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

Figure 7.26

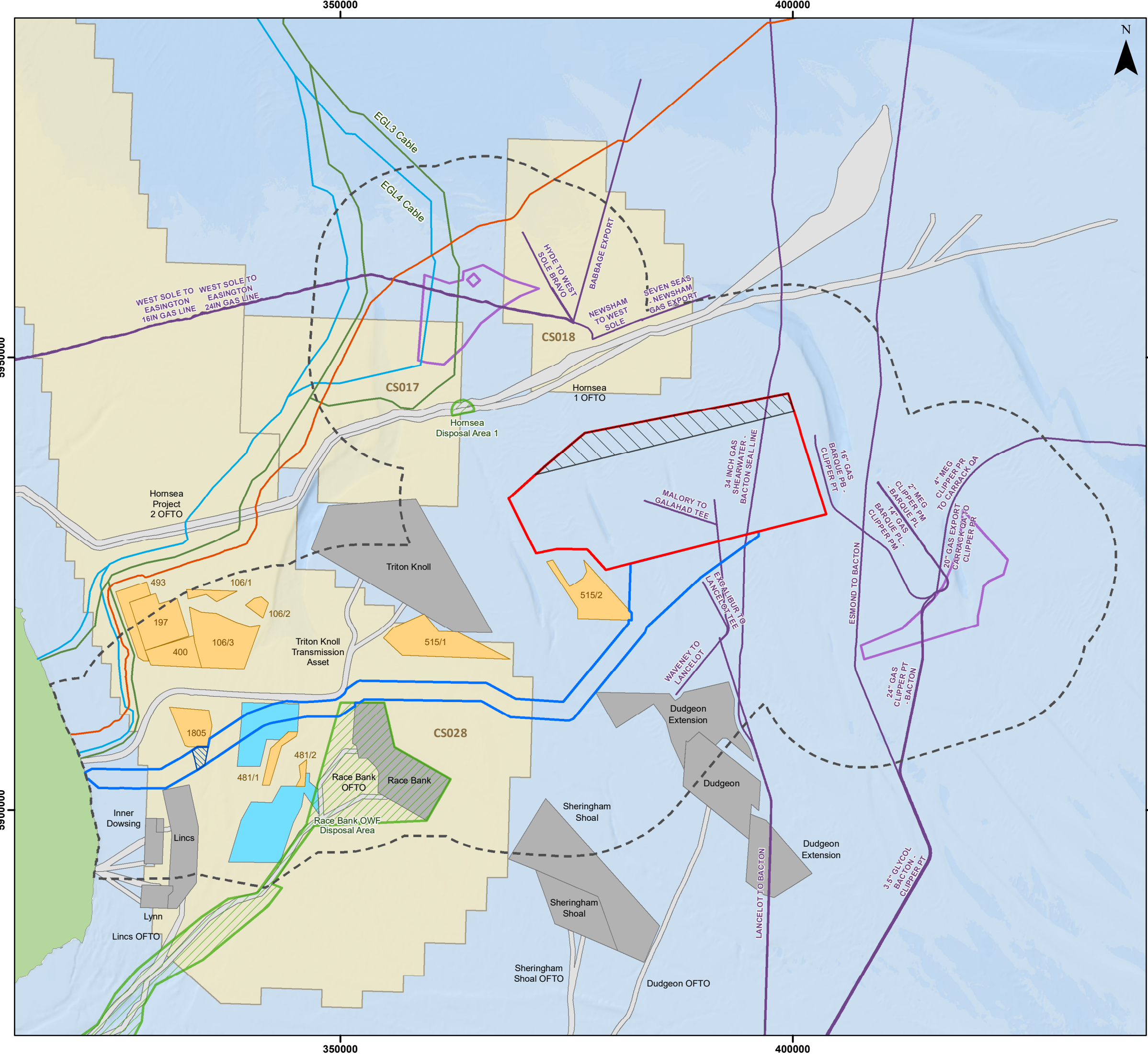


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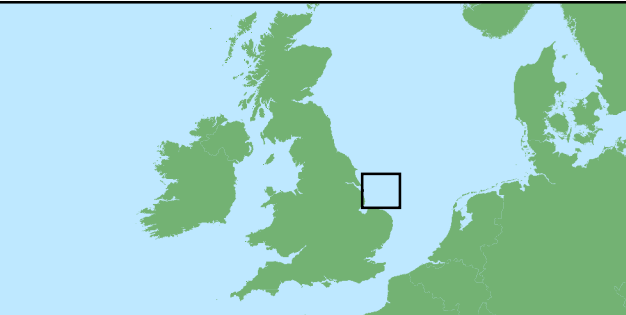
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**Legend**

- Array Area
- Offshore Restricted Build 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
- Eastern Green Link 3 Indicative Cable Route
- Eastern Green Link 4 Indicative Cable Route



Coordinate System: WGS 1984 UTM Zone 31N

0 10 20 km

Scale: 1:400,000 A3 Page Size

Environmental Statement Version 2 Deadline 4a

Location of Cumulative Projects relative to the Physical Processes Study Area

Figure 7.27



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