



## **Rampion Offshore Wind Farm**



### **ES Section 8 – Fish & Shellfish Ecology Figures**

**RSK Environmental Ltd**

**Document 6.2.8**

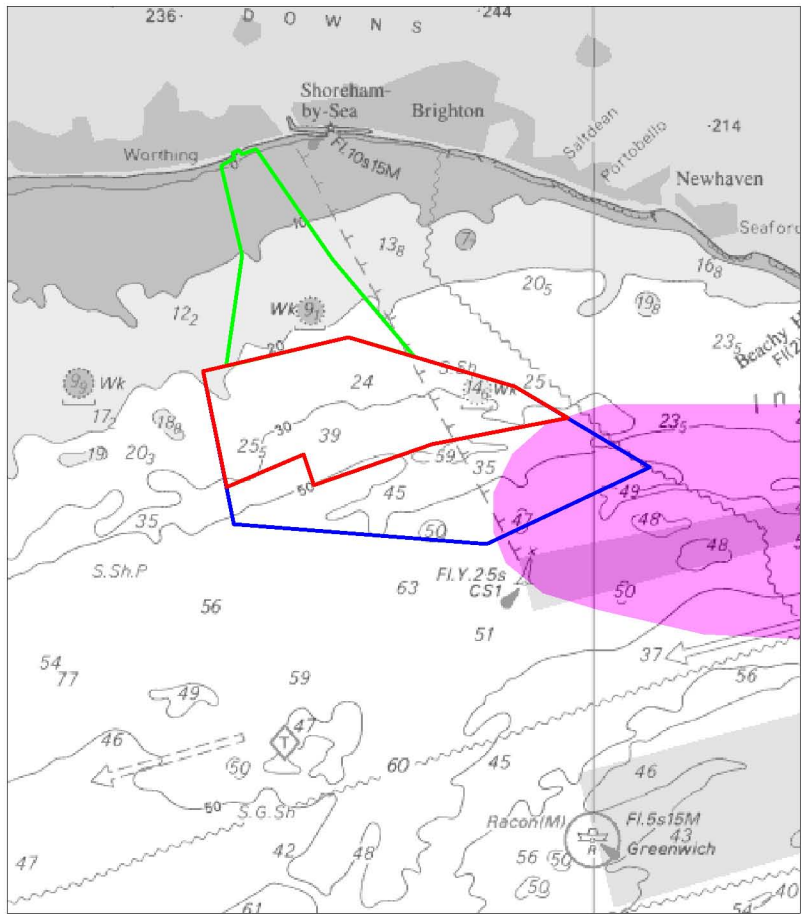
**December 2012**

**APFP Regulation 5(2)(a)**

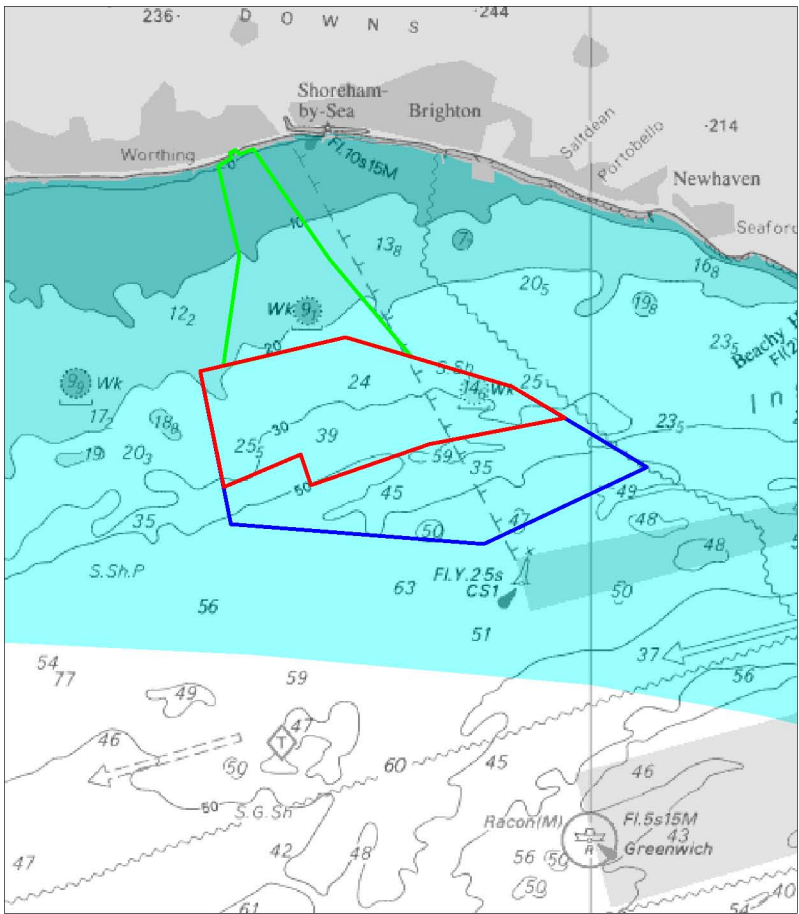
**Revision A**

**E.ON Climate & Renewables UK Rampion Offshore Wind Limited**

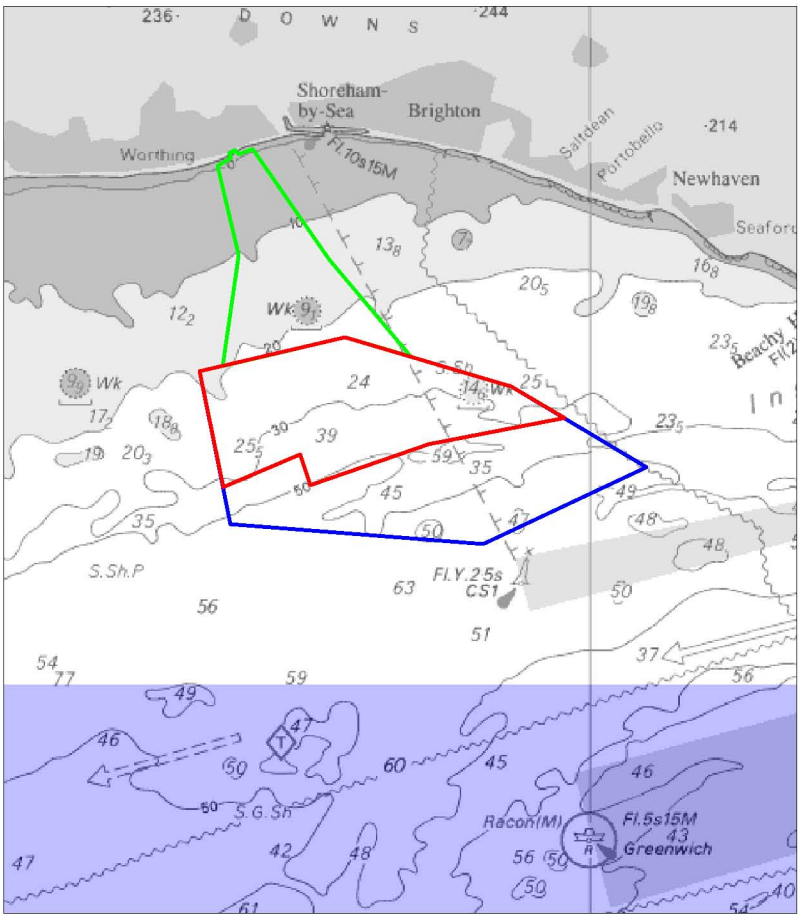




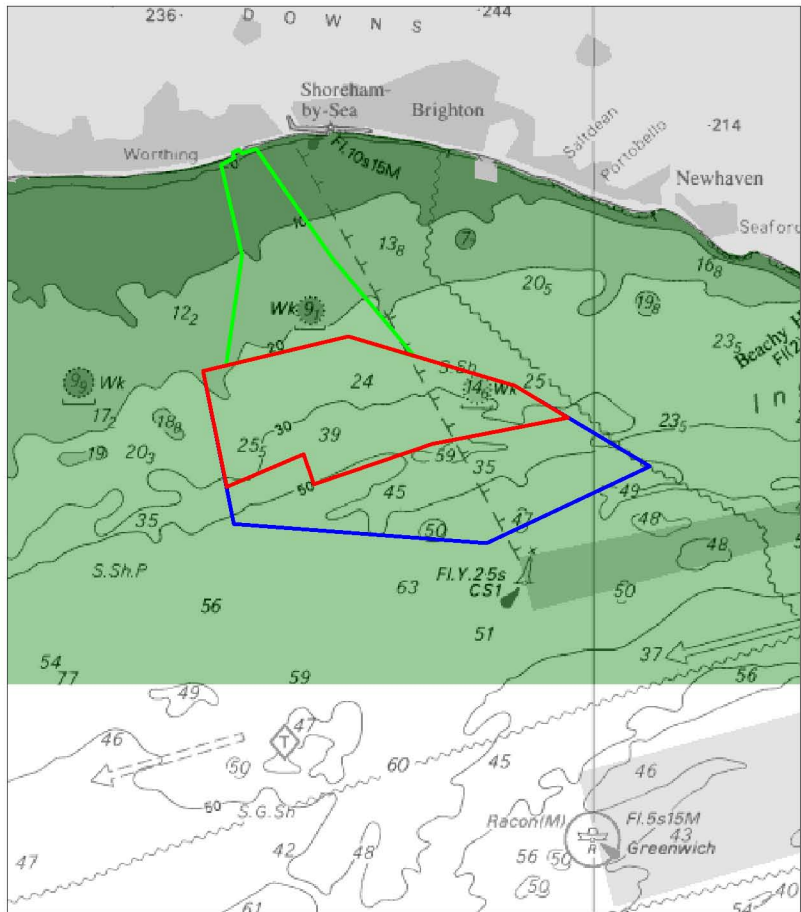
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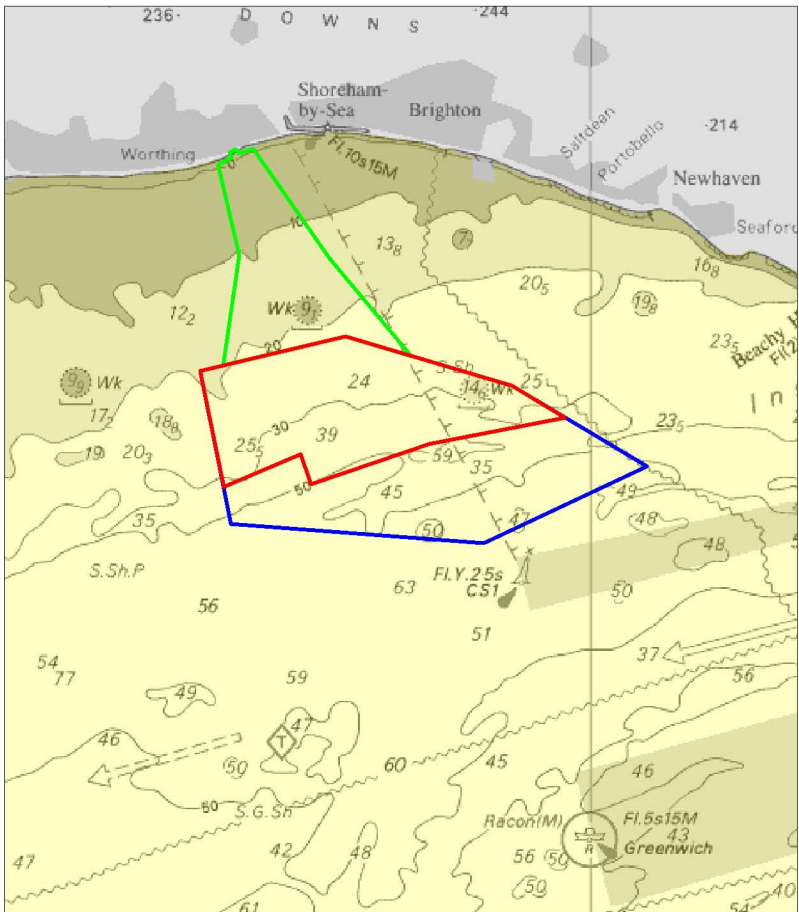
Lemon sole



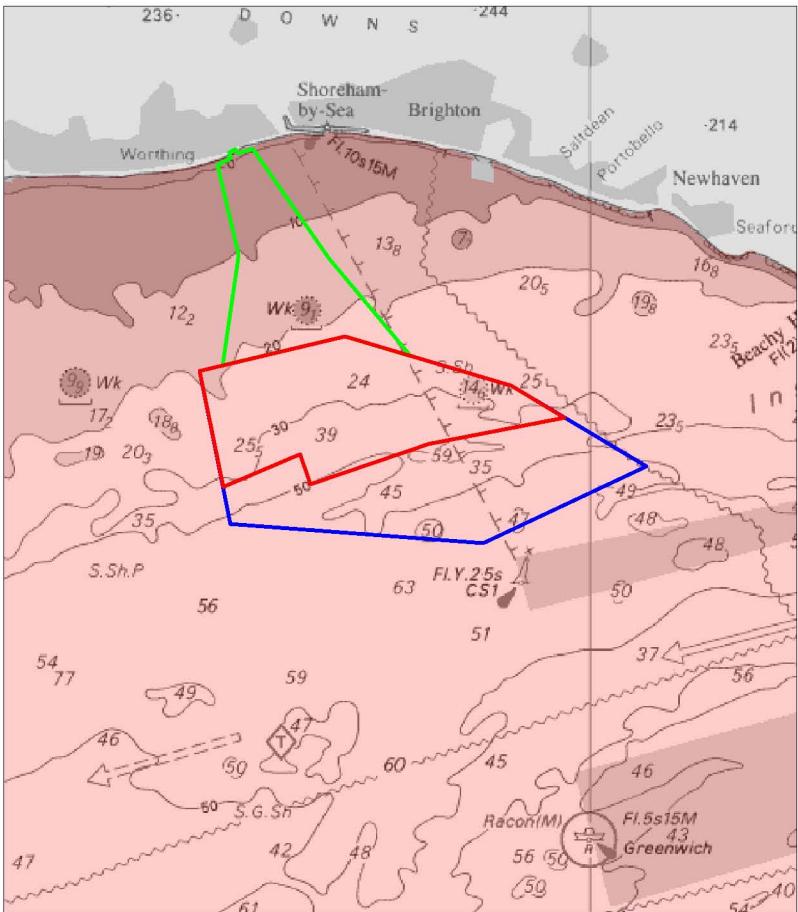
Sole



Plaice



Sandeel



Cod

**Legend**

- Crown Estate Zone 6
- Rampion Offshore Wind Farm Site
- Export Cable Corridor



| Rev | Date     | Description | Drn | Chk | App |
|-----|----------|-------------|-----|-----|-----|
| 01  | 15-10-12 | First Draft | LH  | AM  | DW  |
| 00  | 04.05.12 | First Draft | LH  | CF  | DW  |

**Rampion Offshore Wind Farm**

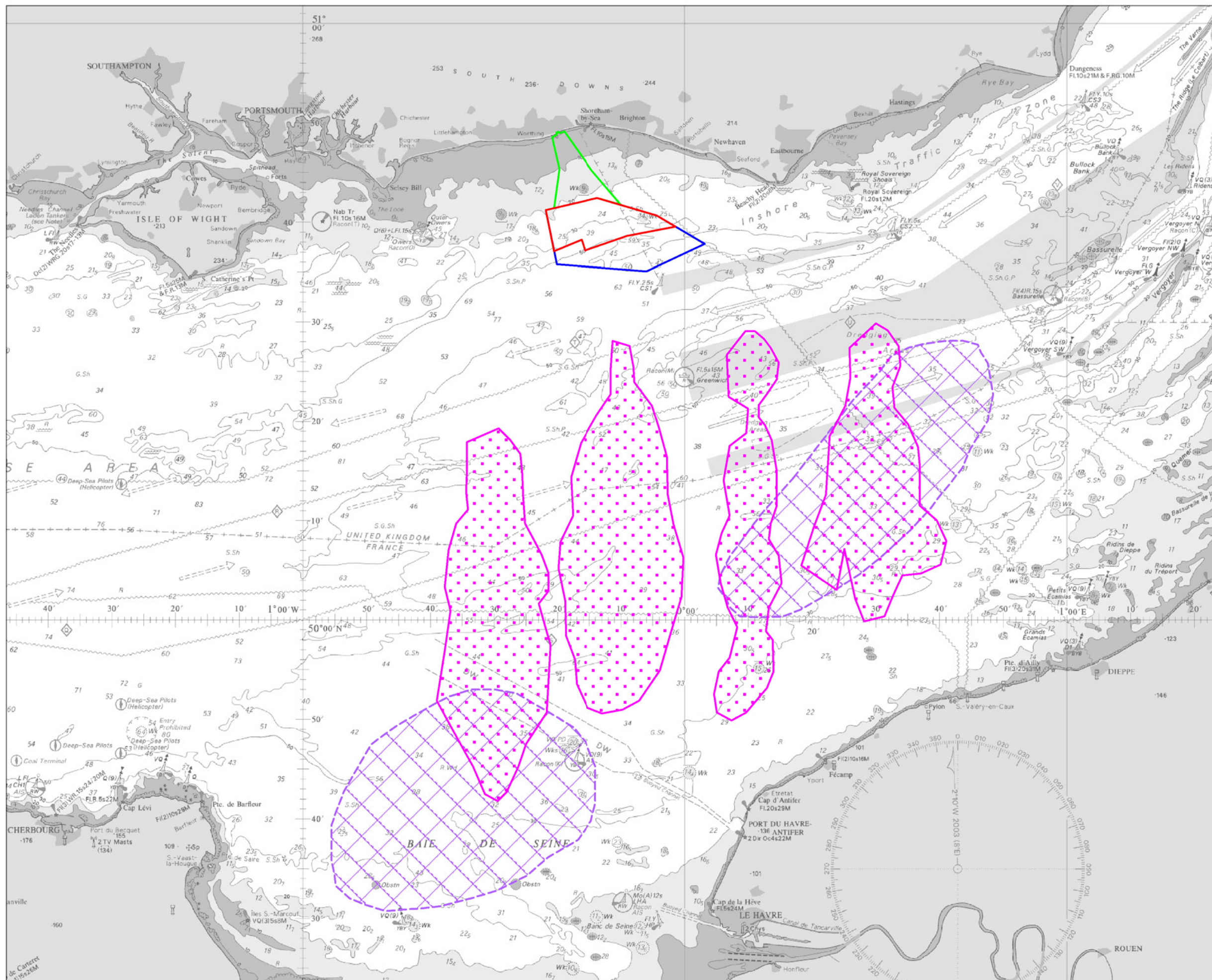


**Title:**  
Figure 8.1b: Distribution of low intensity (or not stated) spawning areas of commercially important fish in relation to the Rampion OWF zone

0 8 16  
**kilometres**  
Scale = 1:500,000 @ A3

N  
W E  
S

REV 02



**Legend**

- Crown Estate Zone 6
- Rampion Offshore Wind Farm Site
- Export Cable Corridor
- High larval density (Ellis et al., 2012)
- Herring Spawning Areas (Coull et al., 1998)

|     |          |                            |     |     |     |
|-----|----------|----------------------------|-----|-----|-----|
| 02  | 02-11-12 | Spawning potential removed | AJ  | AM  | DW  |
| 01  | 15-10-12 | New Boundary               | LH  | AM  | DW  |
| 00  | 04.05.12 | First Draft                | LH  | CF  | DW  |
| Rev | Date     | Description                | Drn | Chk | App |

**Rampion Offshore Wind Farm**

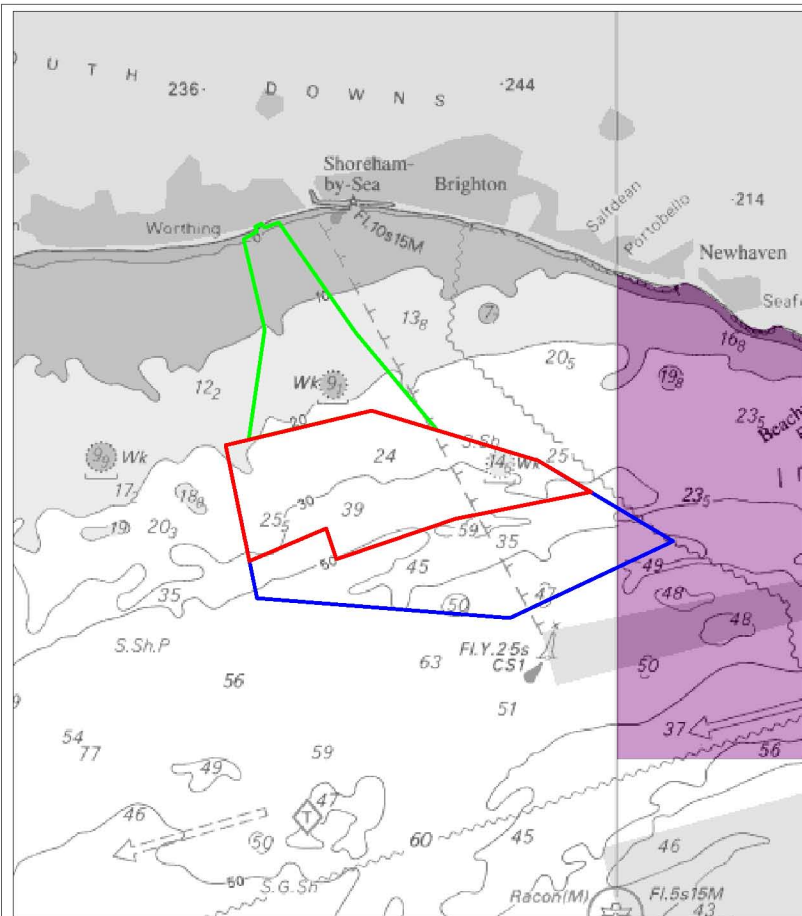
**RSK e-on**

**Title:**  
Figure 8.2: Herring Spawning Areas

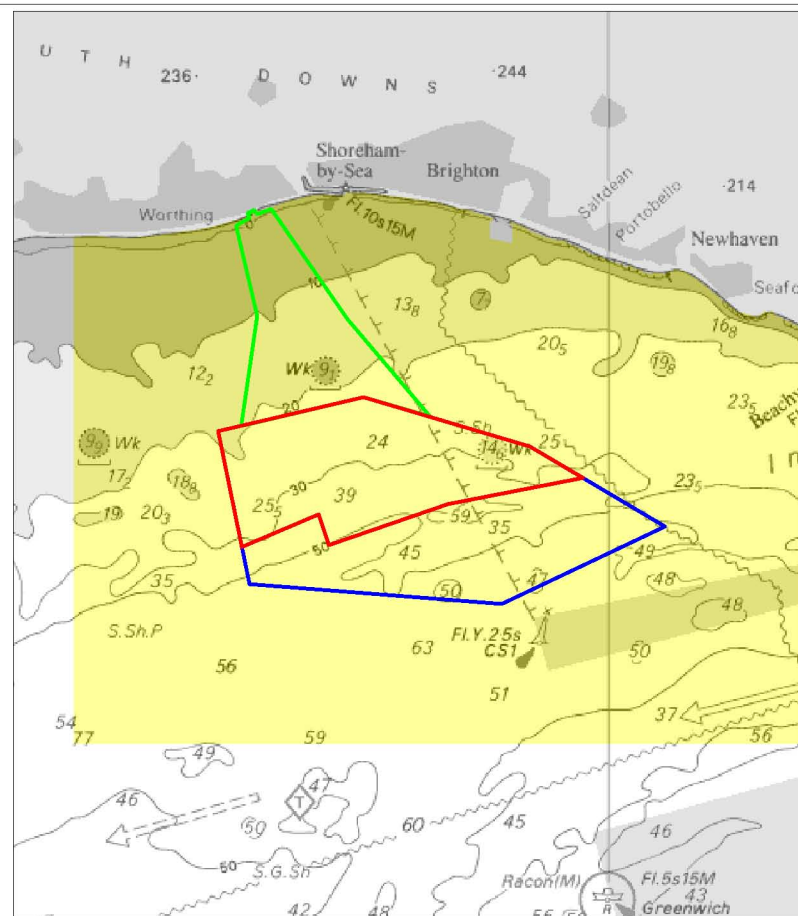
0 10 20  
kilometres  
Scale = 1:700,000 @ A3

N  
W E  
S

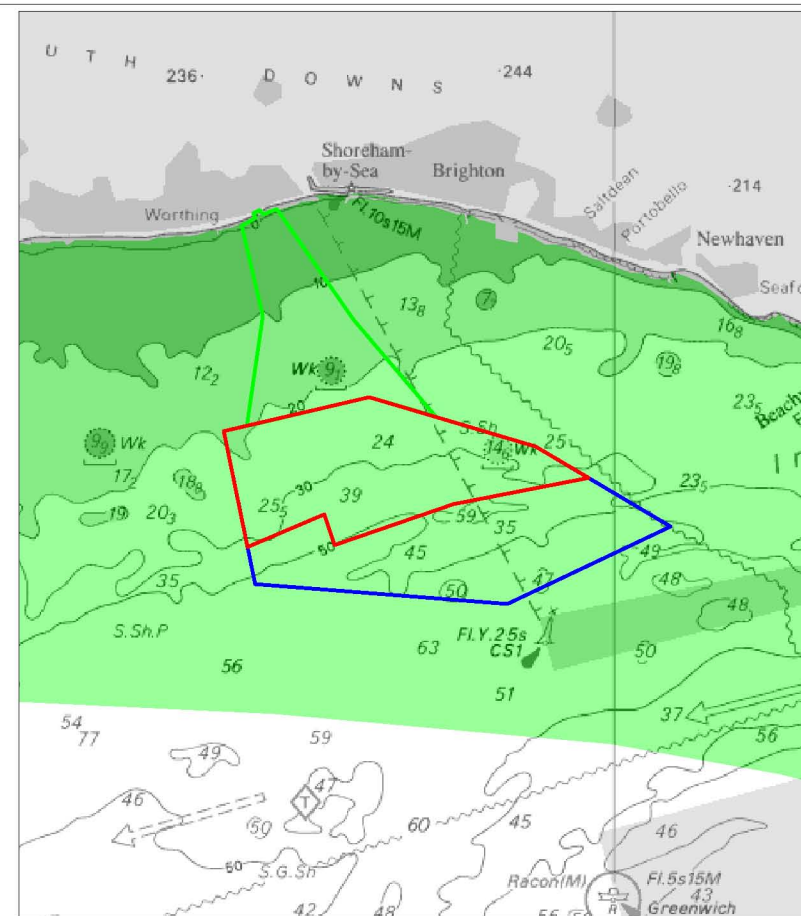
REV 02



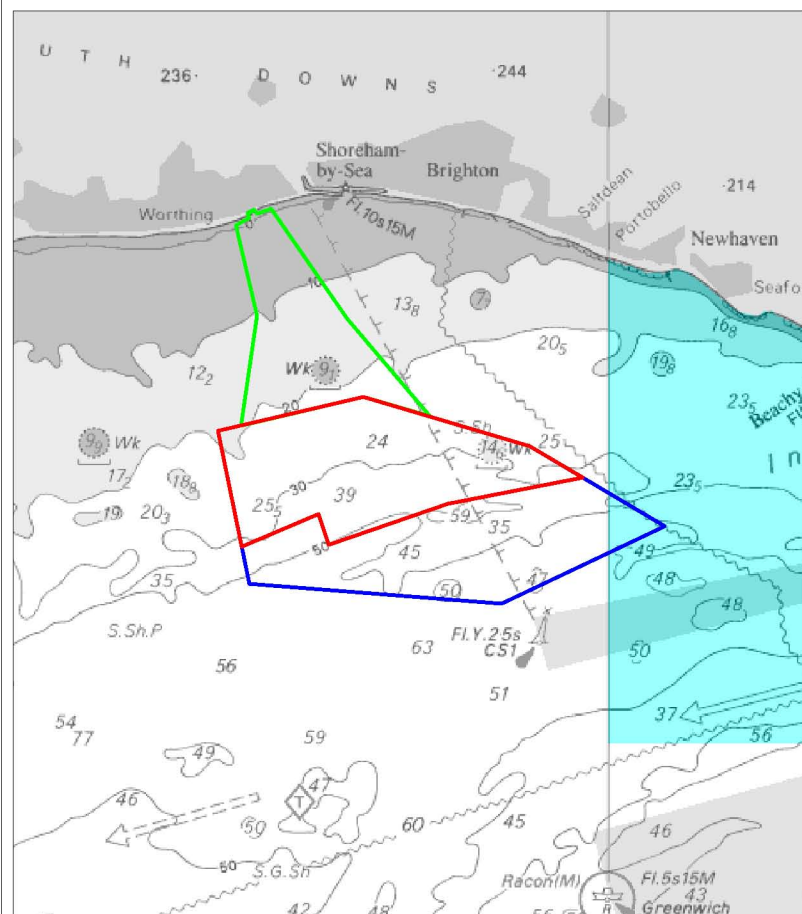
Plaice



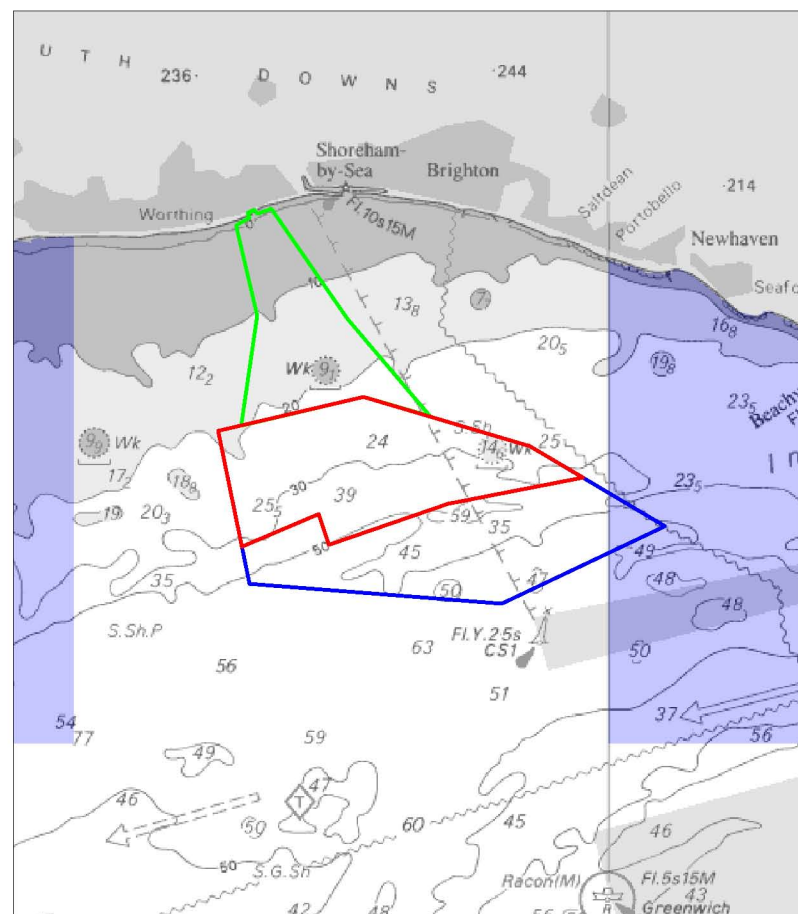
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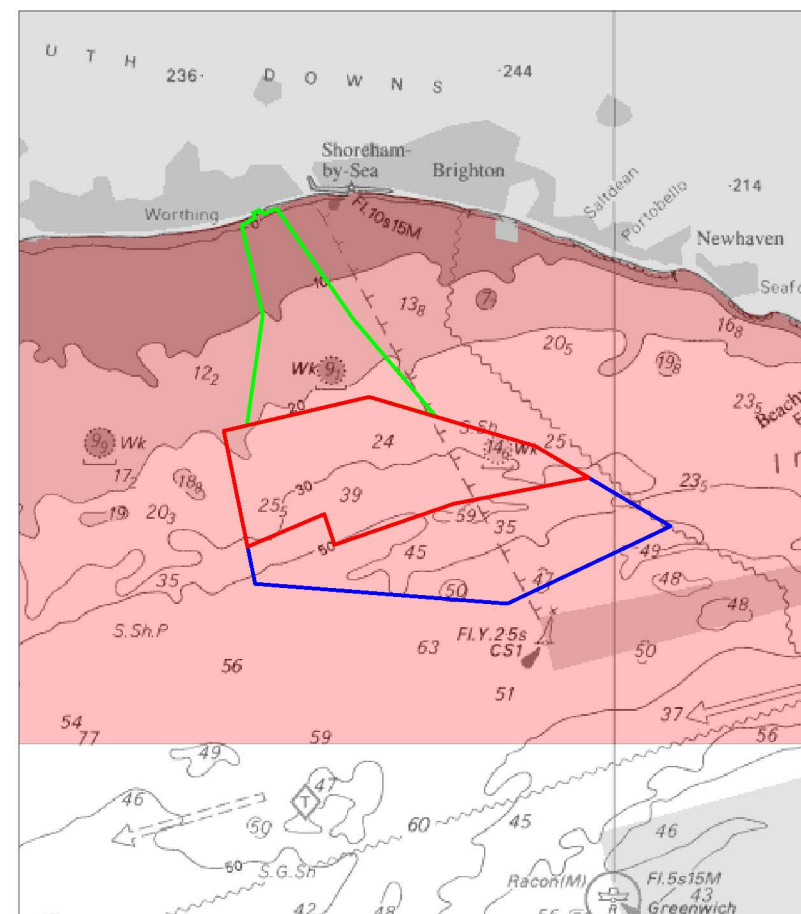
Lemon sole



Sandeel



Sole



Thornback and undulate rays



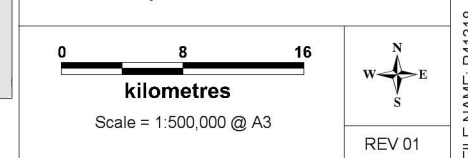
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|-----|----------|----------------|-----|-----|-----|
| 01  | 15.10.12 | New Boundaries | LH  | AM  | DW  |
| 00  | 03.05.12 | First Draft    | LH  | AM  | DW  |

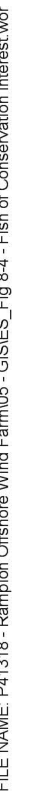
Rampion Offshore Wind Farm

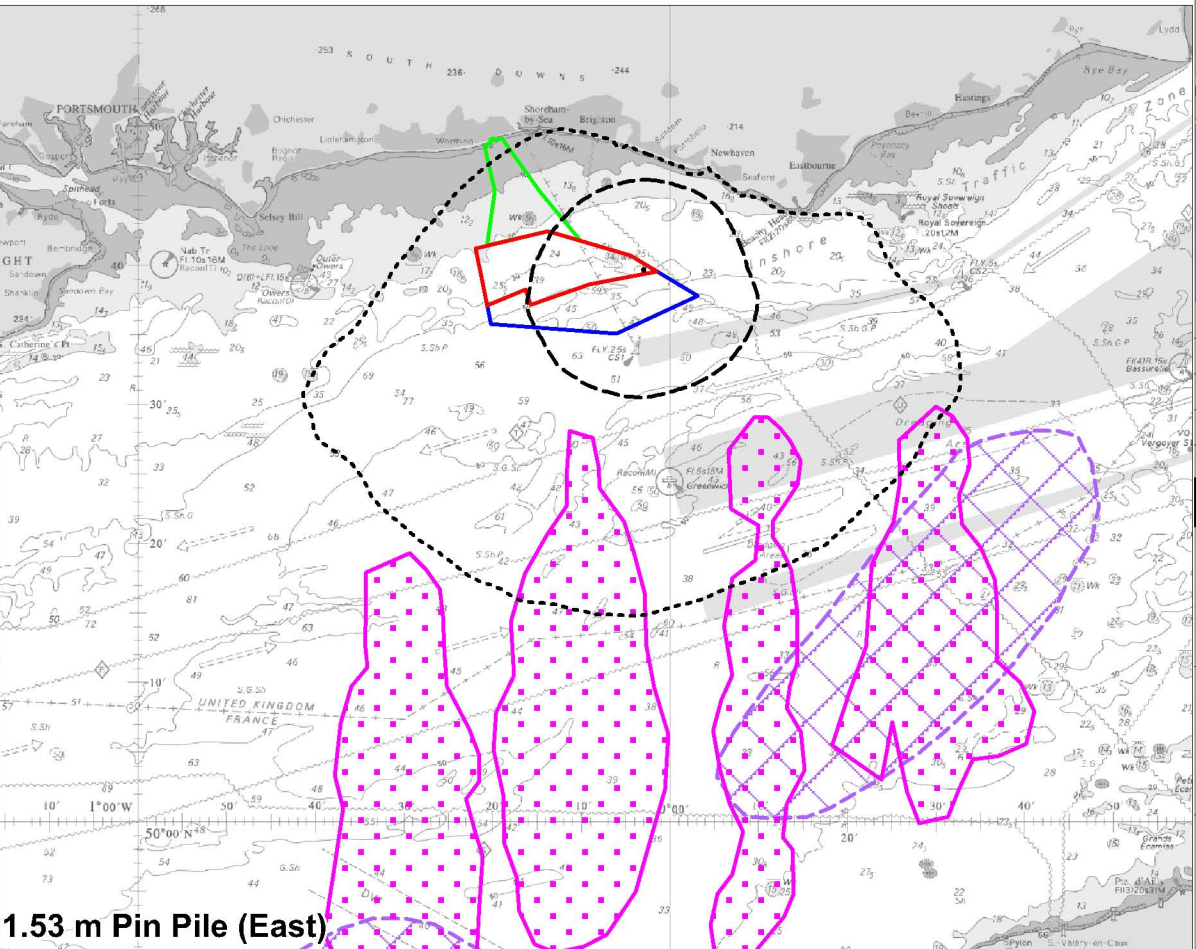
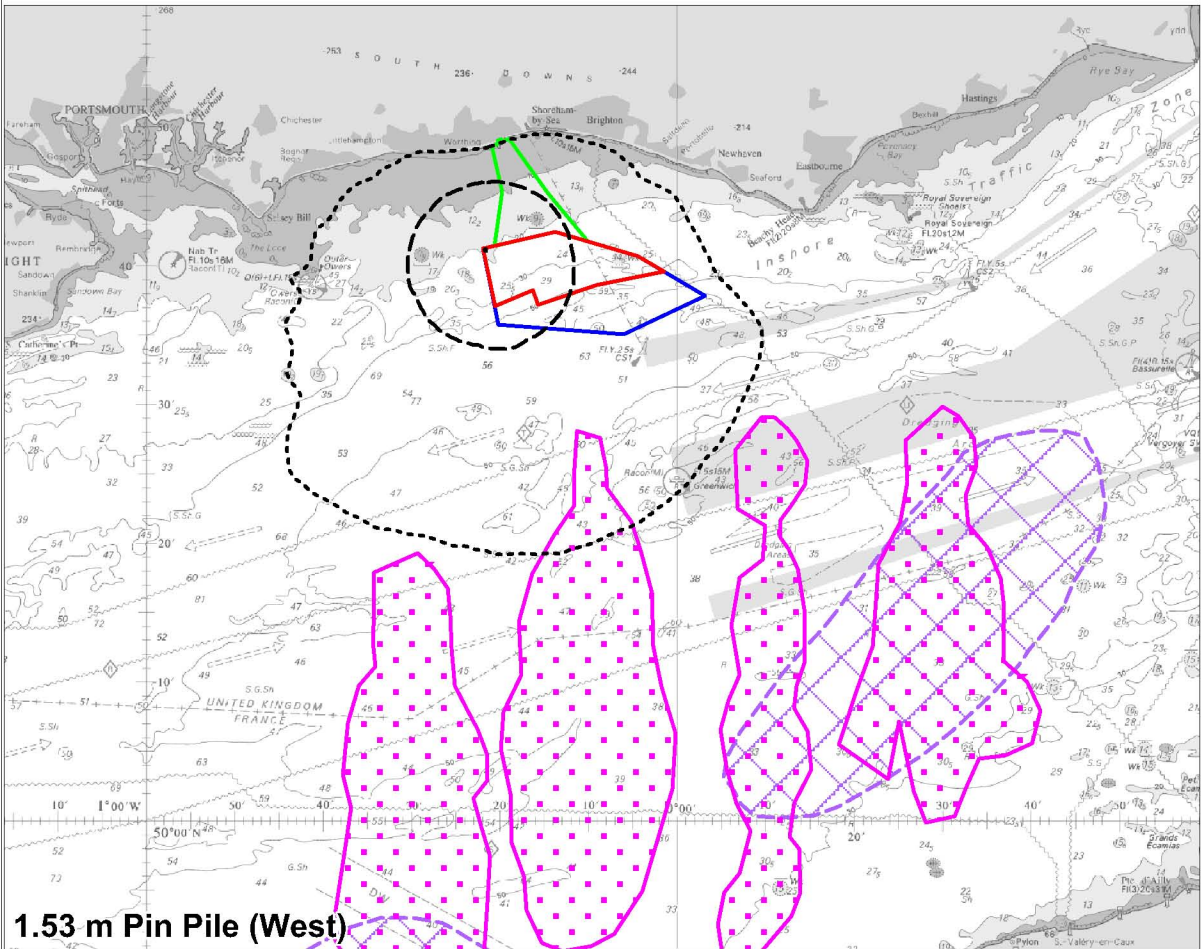
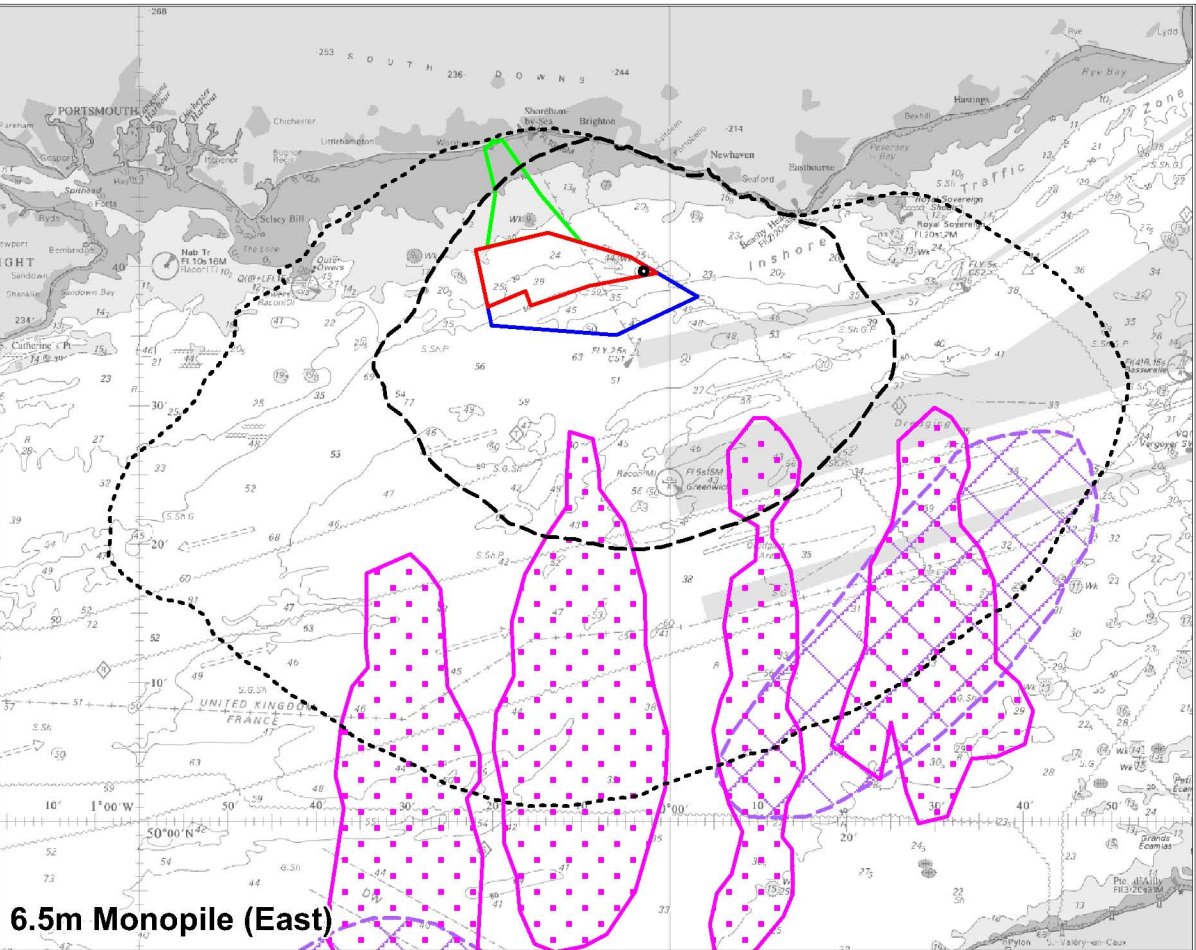
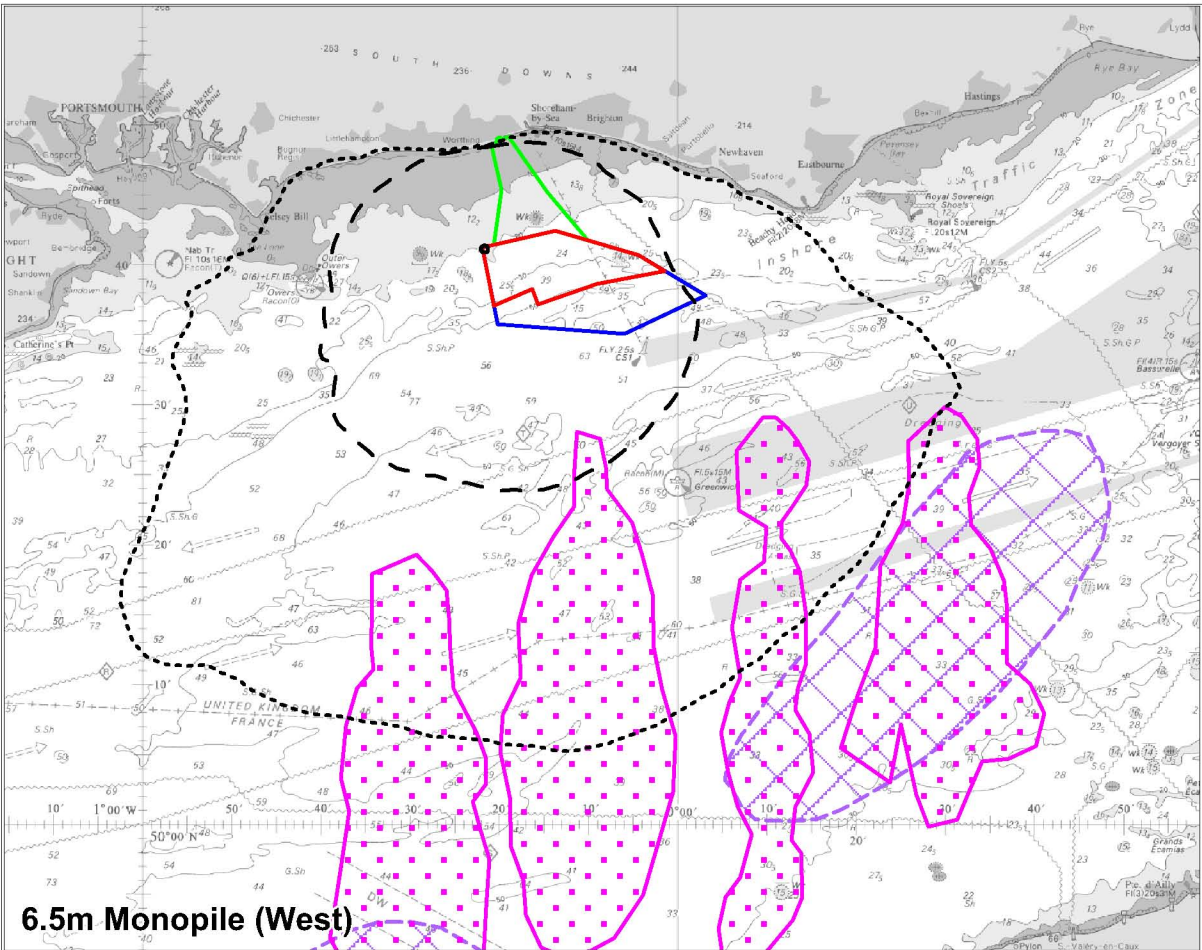


Title:

Figure 8.3: Distribution of nursery areas of commercially important fish in relation to the Project site







- Legend**
- Crown Estate Zone 6
  - Rampion Offshore Wind Farm Site
  - Export Cable Corridor
  - High larval density (Ellis et al., 2012)
  - Herring Spawning Areas (Coull et al., 1998)

- Noise Contours**
- 130 dBht (auditory damage)
  - 90dBht (strong avoidance)
  - 75dBht (significant avoidance)

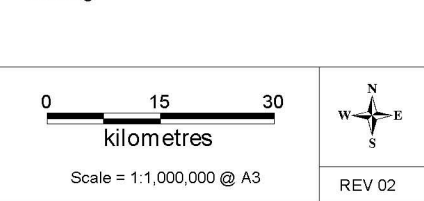


| Rev | Date     | Description                | Drn | Chk | App |
|-----|----------|----------------------------|-----|-----|-----|
| 02  | 02-11-12 | Spawning potential removed | AJ  | AM  | DW  |
| 01  | 15-10-12 | New Boundary               | LH  | AM  | DW  |
| 00  | 04.05.12 | First Draft                | LH  | CF  | DW  |

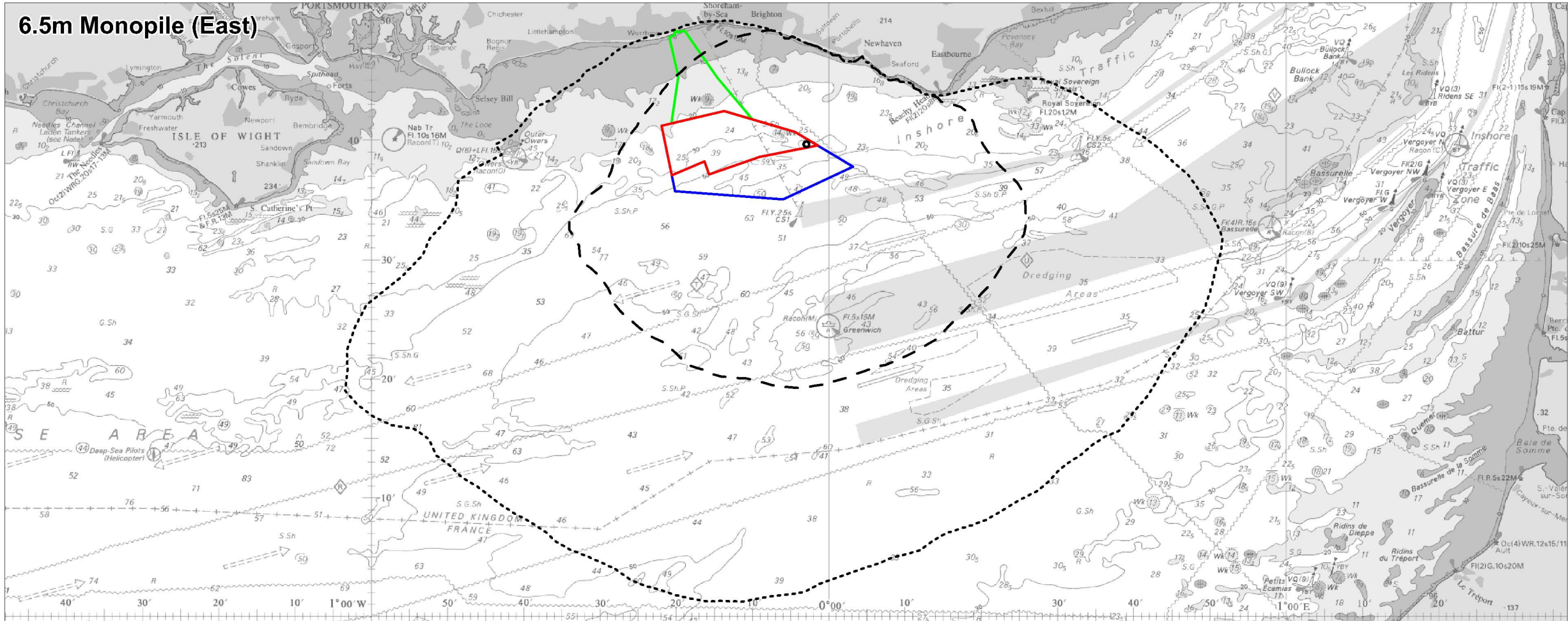
Rampion Offshore Wind Farm



**Title:**  
Figure 8.5: Piling Noise Impact on Herring



6.5m Monopile (East)



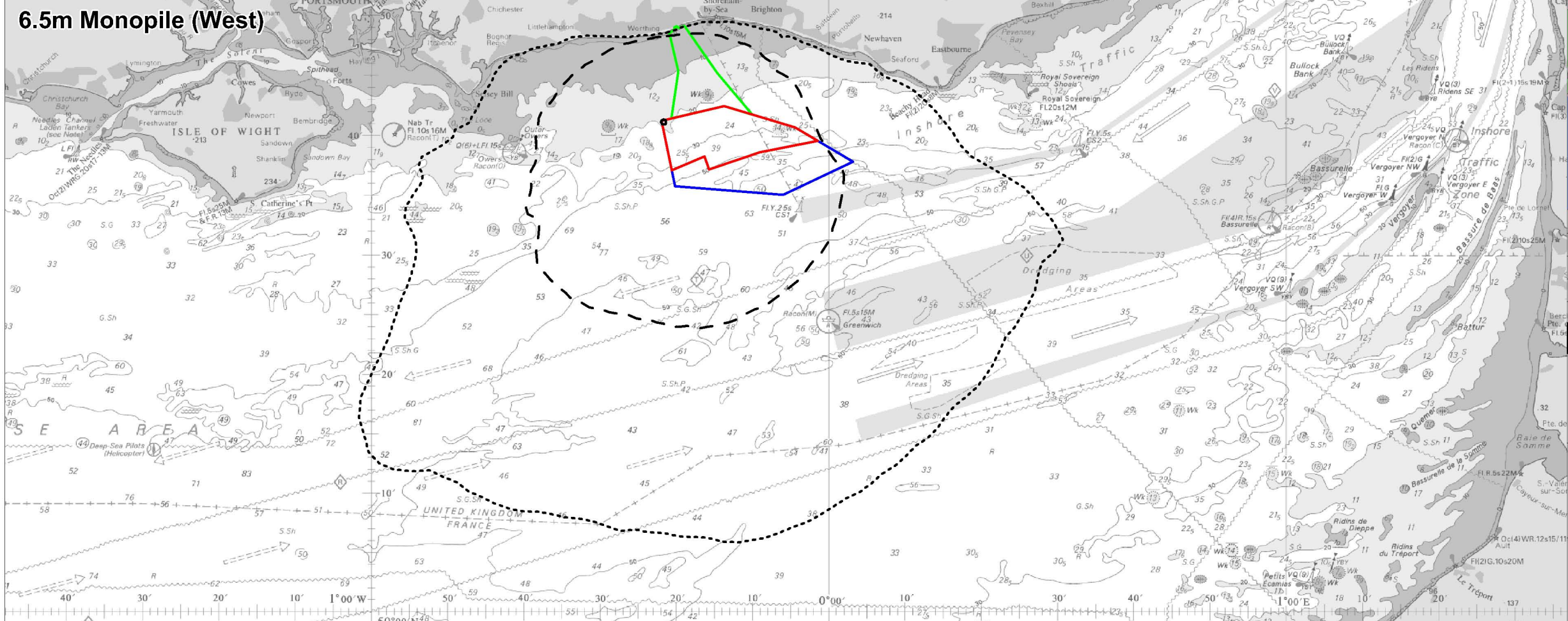
Legend

- Crown Estate Zone 6
- Rampion Offshore Wind Farm Site
- Export Cable Corridor

Noise Contours

- 130 dBht (auditory damage)
- 90 dBht (strong avoidance)
- 75 dBht (significant avoidance)

6.5m Monopile (West)

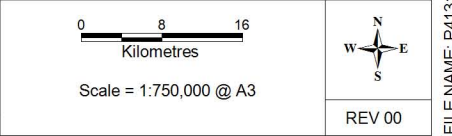


| Rev | Date     | Description | Dwn | Chk | App |
|-----|----------|-------------|-----|-----|-----|
| 00  | 26.10.12 | First Draft | AJ  | AM  | DW  |

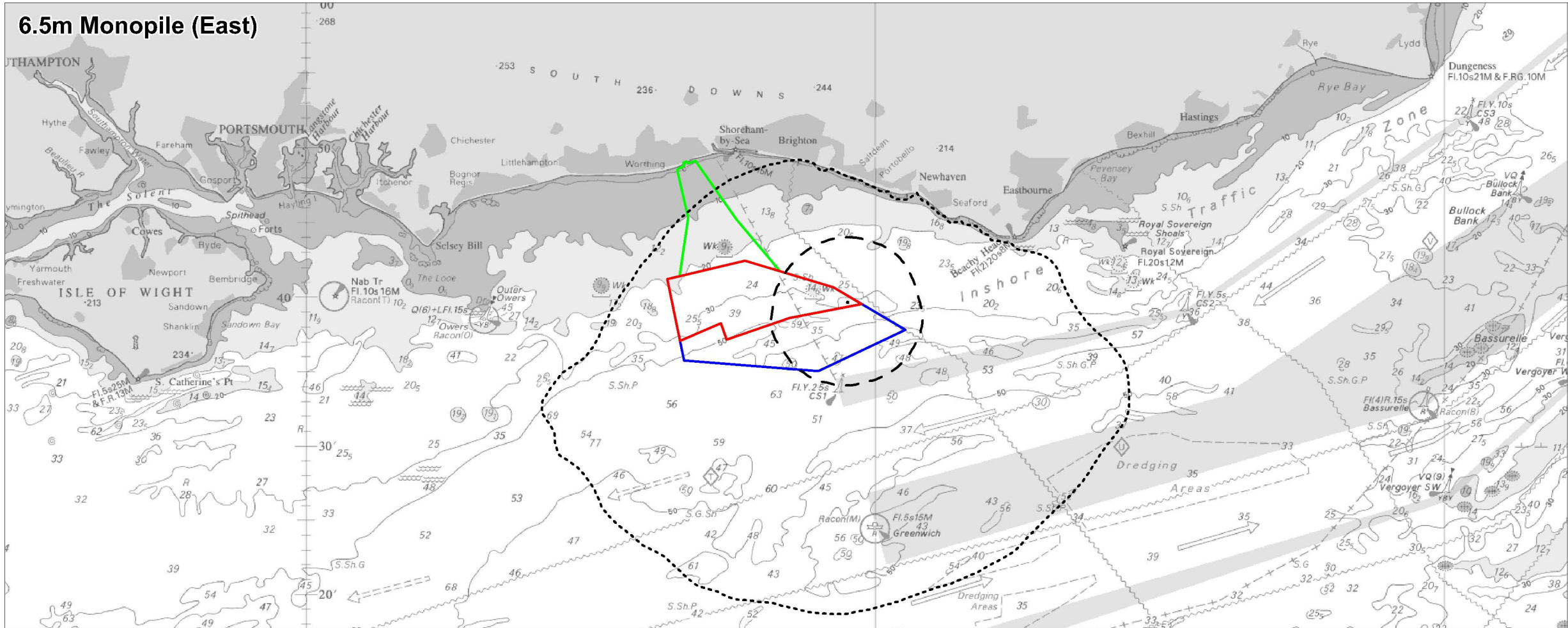
Rampion Offshore Wind Farm



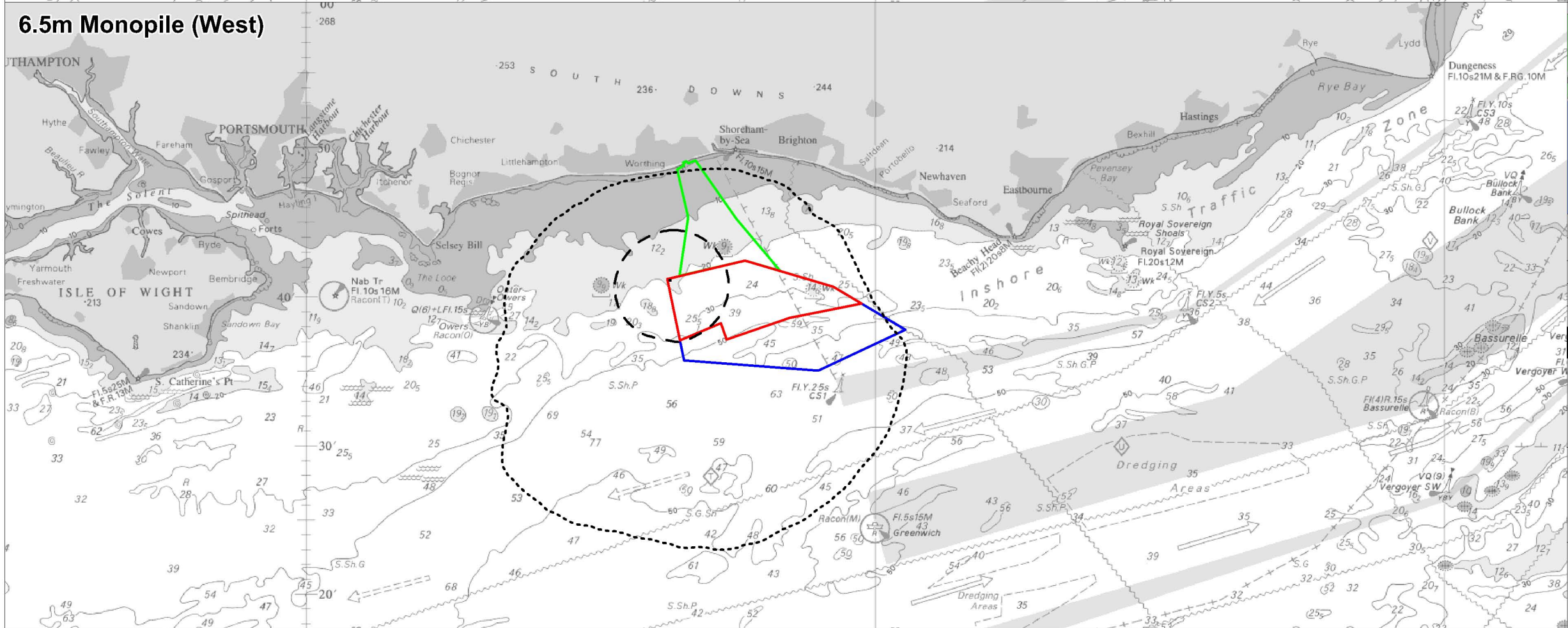
Title:  
Figure 8.6: Piling Noise Impact on  
Cod (6.5m monopile)



6.5m Monopile (East)



6.5m Monopile (West)



**Legend**

- Crown Estate Zone 6
- Rampion Offshore Wind Farm Site
- Export Cable Corridor

**Noise Contours**

- 130 dBht (auditory damage)
- 90 dBht (strong avoidance)
- 75 dBht (significant avoidance)



| Rev | Date     | Description | Drn | Chk | App |
|-----|----------|-------------|-----|-----|-----|
| 00  | 26.10.12 | First Draft | AJ  | AM  | DW  |

Rampion Offshore Wind Farm



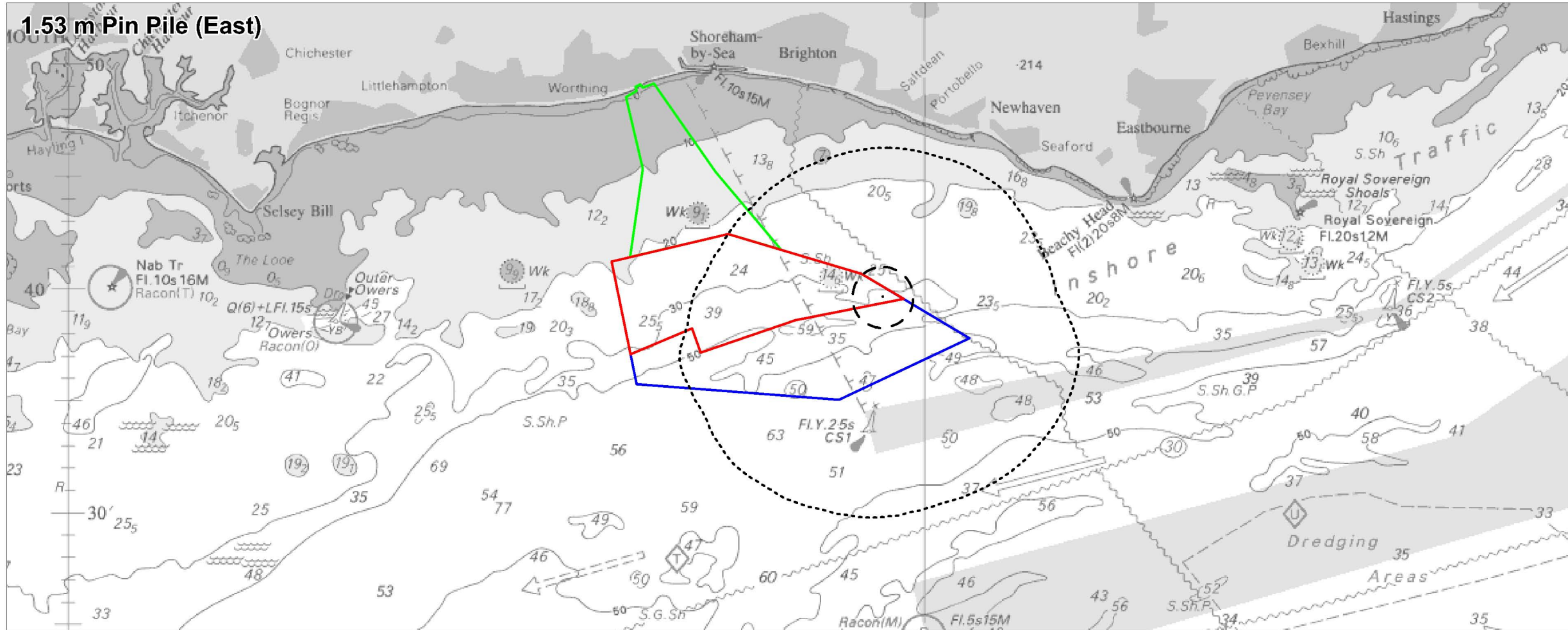
**Title:**  
Figure 8.7a: Piling Noise Impact on Seahorse (6.5m monopile)

0 8 16  
Kilometres  
Scale = 1:600,000 @ A3

N  
W E  
S

REV 00

1.53 m Pin Pile (East)



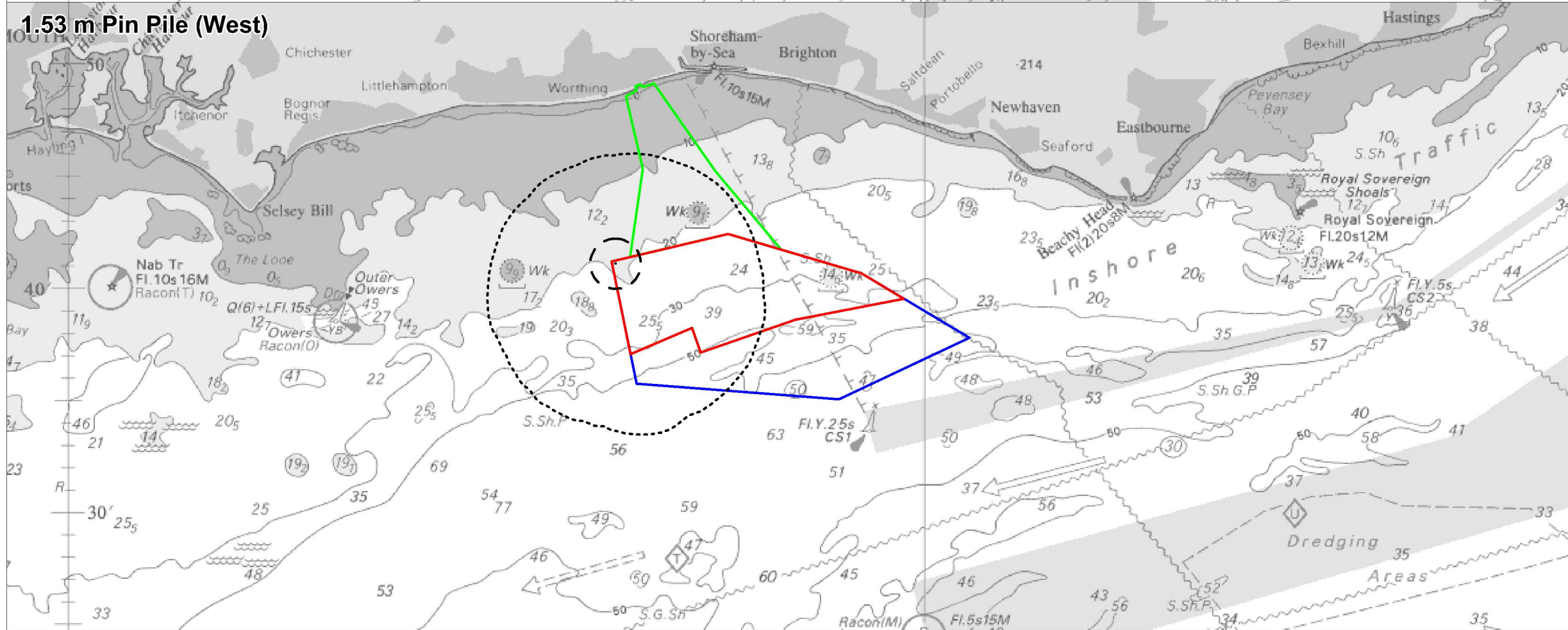
**Legend**

- Crown Estate Zone 6
- Rampion Offshore Wind Farm Site
- Export Cable Corridor

**Noise Contours**

- 130 dBht (auditory damage)
- 90 dBht (strong avoidance)
- 75 dBht (significant avoidance)

1.53 m Pin Pile (West)



|     |          |             |     |     |     |
|-----|----------|-------------|-----|-----|-----|
| 00  | 26.10.12 | First Draft | AJ  | AM  | DW  |
| Rev | Date     | Description | Drn | Chk | App |

Rampion Offshore Wind Farm



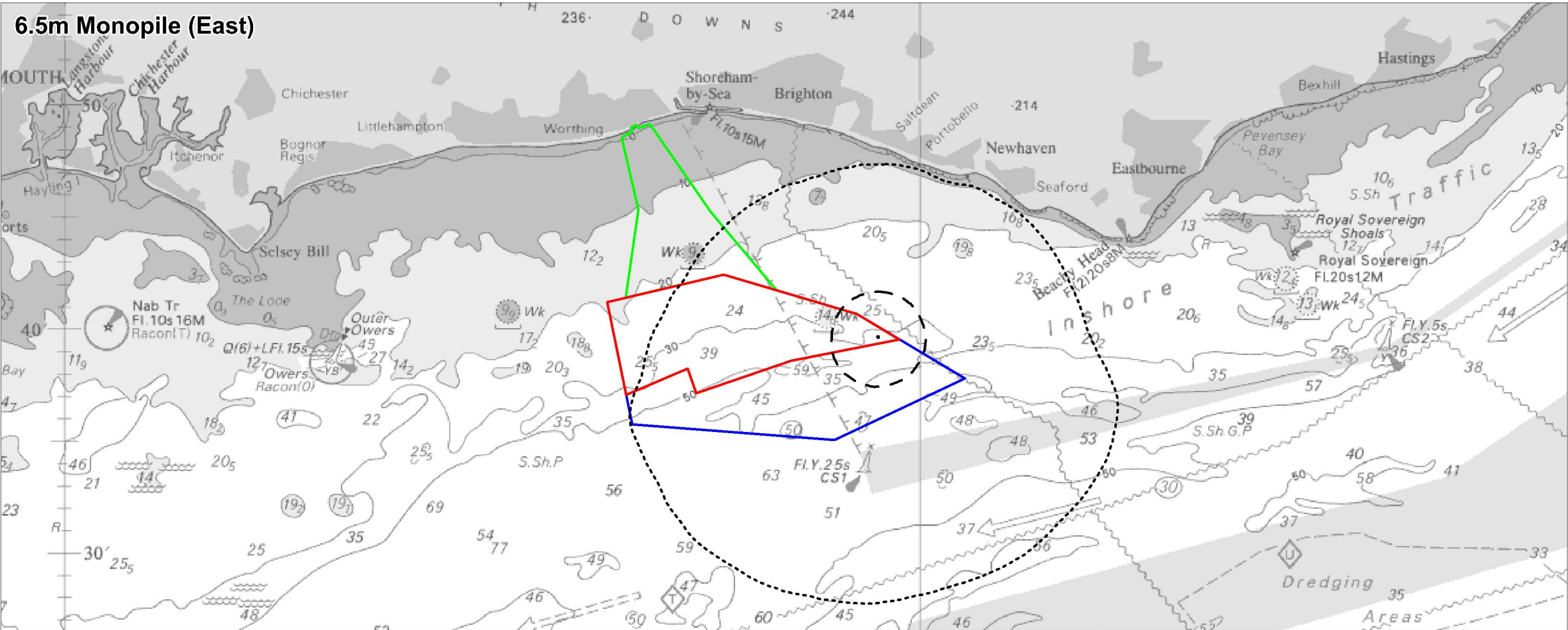
**Title:**  
Figure 8.7b: Piling Noise Impact on Seahorse (1.53 m pin pile)

0 5 10  
kilometres  
Scale = 1:400,000 @ A3

N  
W E  
S

REV 00

6.5m Monopile (East)



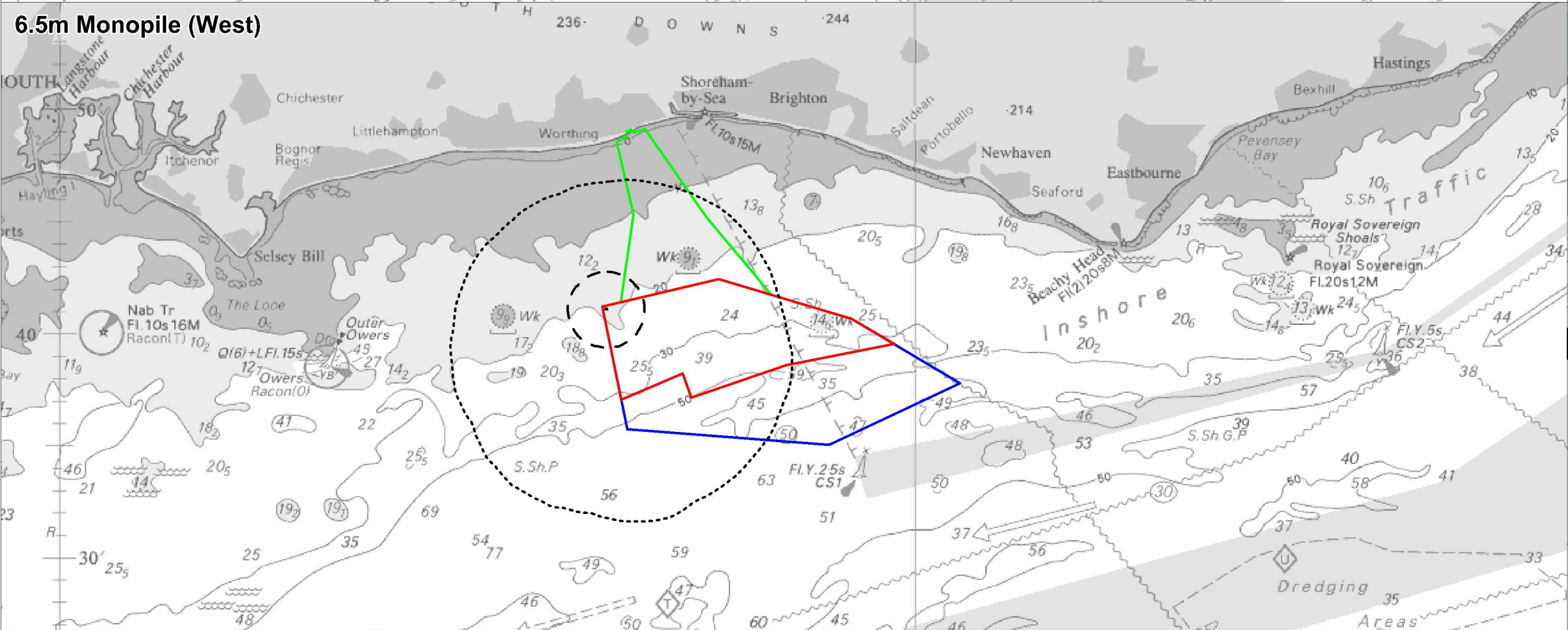
Legend

- Crown Estate Zone 6
- Rampion Offshore Wind Farm Site
- Export Cable Corridor

Noise Contours

- 130 dBht (auditory damage)
- 90 dBht (strong avoidance)
- 75 dBht (significant avoidance)

6.5m Monopile (West)



| Rev | Date     | Description | Drn | Chk | App |
|-----|----------|-------------|-----|-----|-----|
| 00  | 29.10.12 | First Draft | AJ  | AM  | DW  |

Rampion Offshore Wind Farm

**RSK e-on**

Title:

Figure 8.8: Piling Noise Impact on Bass (6.5m monopile)

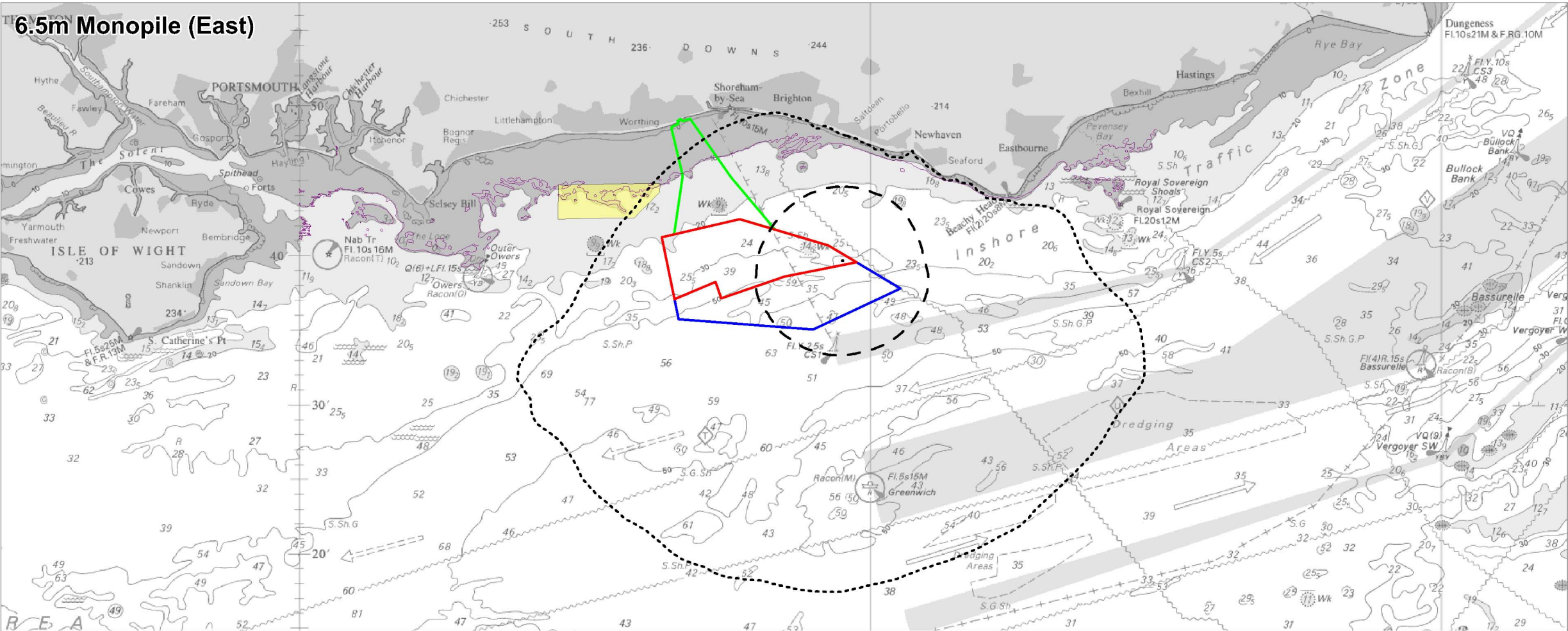
0 5 10  
Kilometres

Scale = 1:400,000 @ A3



REV 00

6.5m Monopile (East)



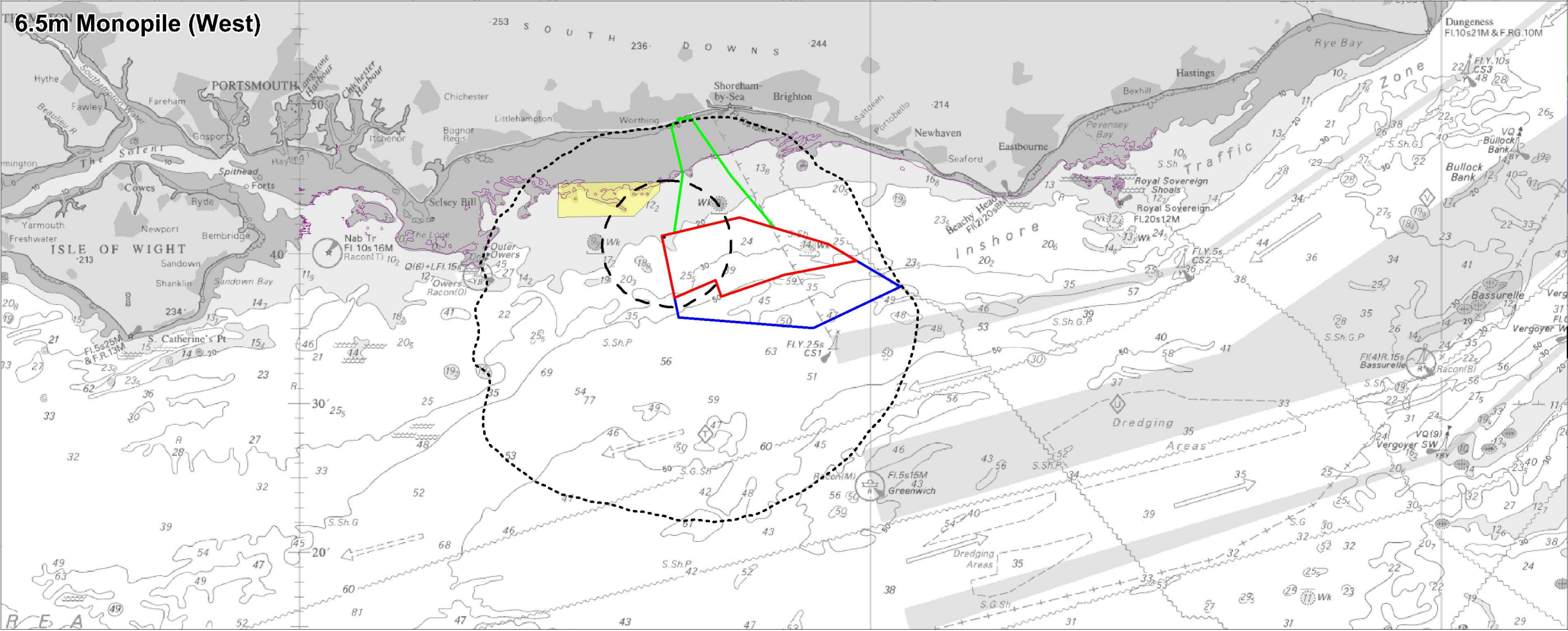
Legend

- Crown Estate Zone 6
- Rampion Offshore Wind Farm Site
- Export Cable Corridor
- rMCZ
- 10m Depth Contour

Noise Contours

- 130 dBht (auditory damage)
- 90 dBht (strong avoidance)
- 75 dBht (significant avoidance)

6.5m Monopile (West)



| Rev | Date     | Description | Drn | Chk | App |
|-----|----------|-------------|-----|-----|-----|
| 00  | 29.10.12 | First Draft | AJ  | AM  | DW  |

Rampion Offshore Wind Farm

**RSK e-on**

Title:

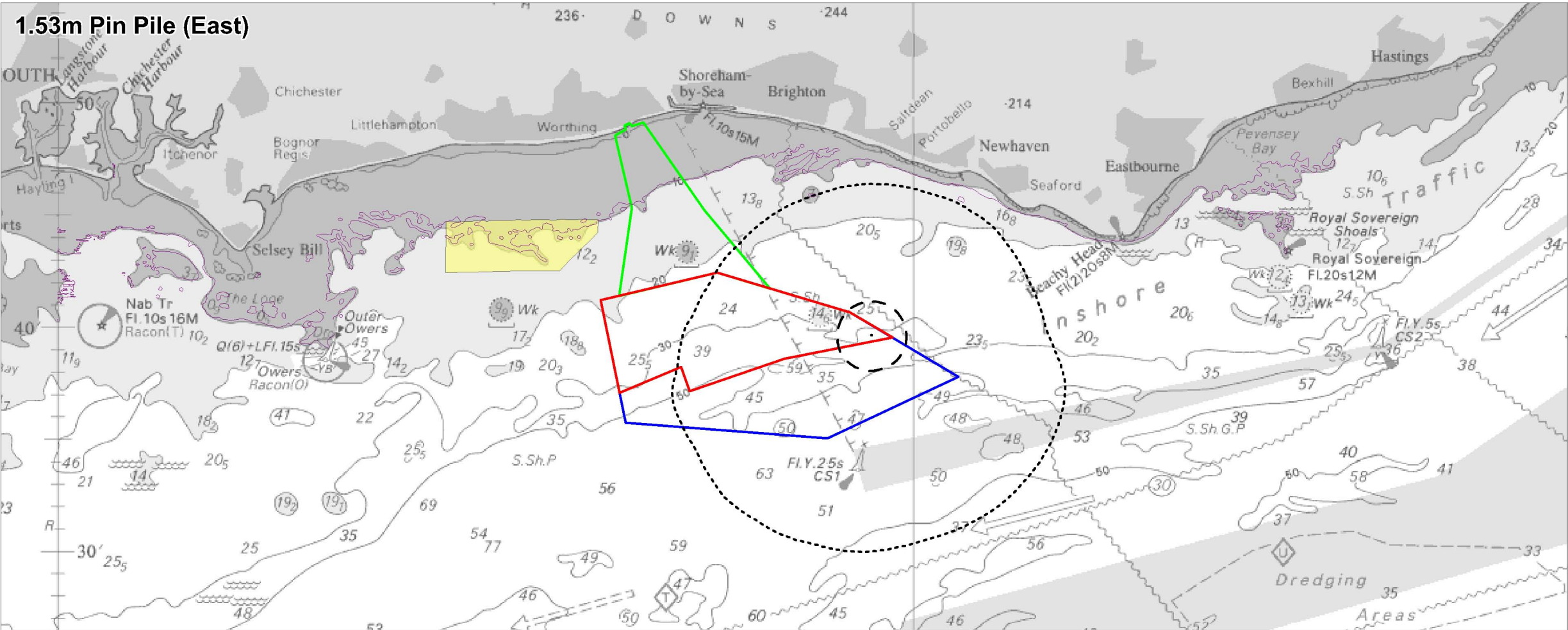
Figure 8.9a: Piling Noise Impact on Black Bream (6.5m monopile)

0 8 16  
kilometres  
Scale = 1:600,000 @ A3



REV 00

1.53m Pin Pile (East)



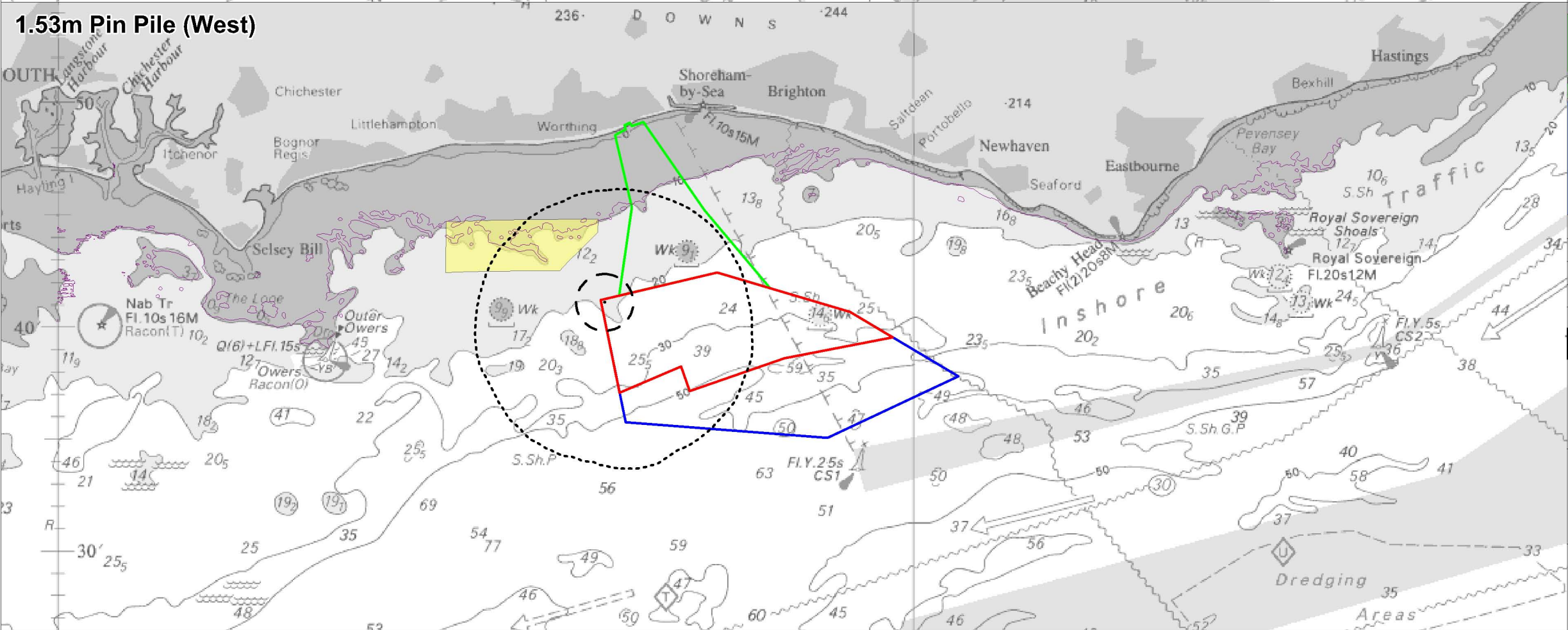
**Legend**

- Crown Estate Zone 6
- Rampion Offshore Wind Farm Site
- Export Cable Corridor
- rMCZ
- 10m Depth Contour

**Noise Contours**

- 130 dBht (auditory damage)
- 90 dBht (strong avoidance)
- 75 dBht (significant avoidance)

1.53m Pin Pile (West)

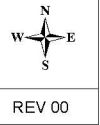
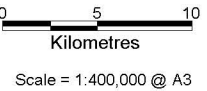


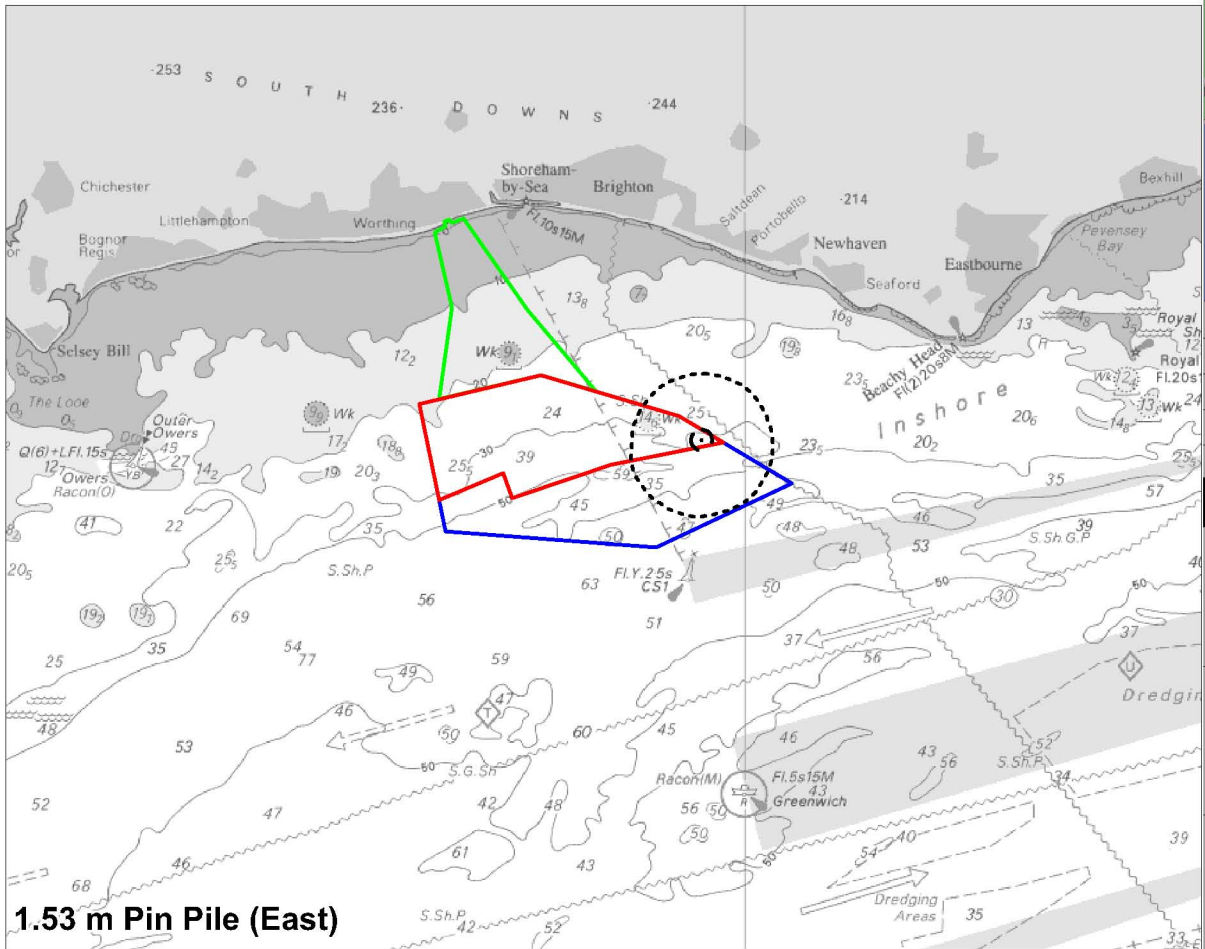
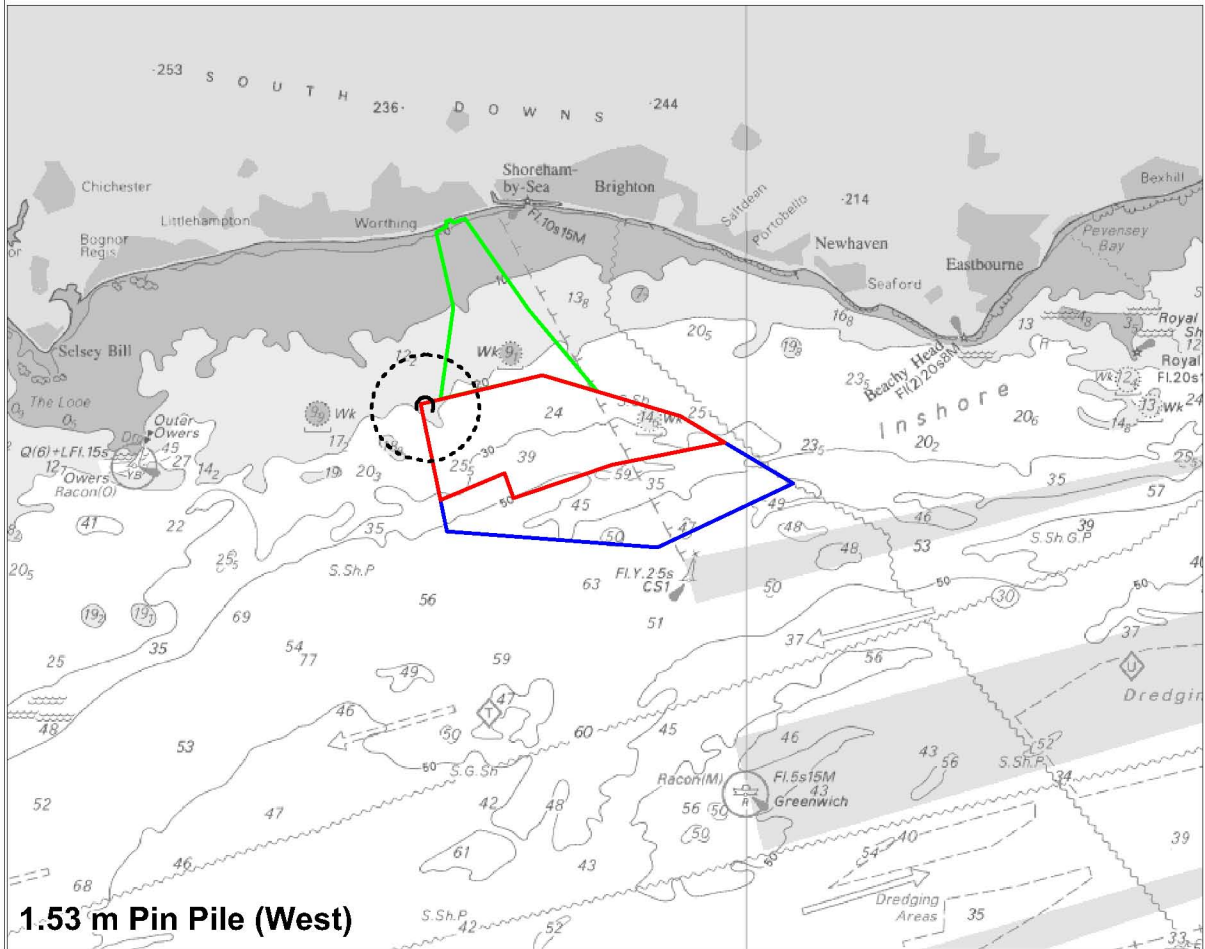
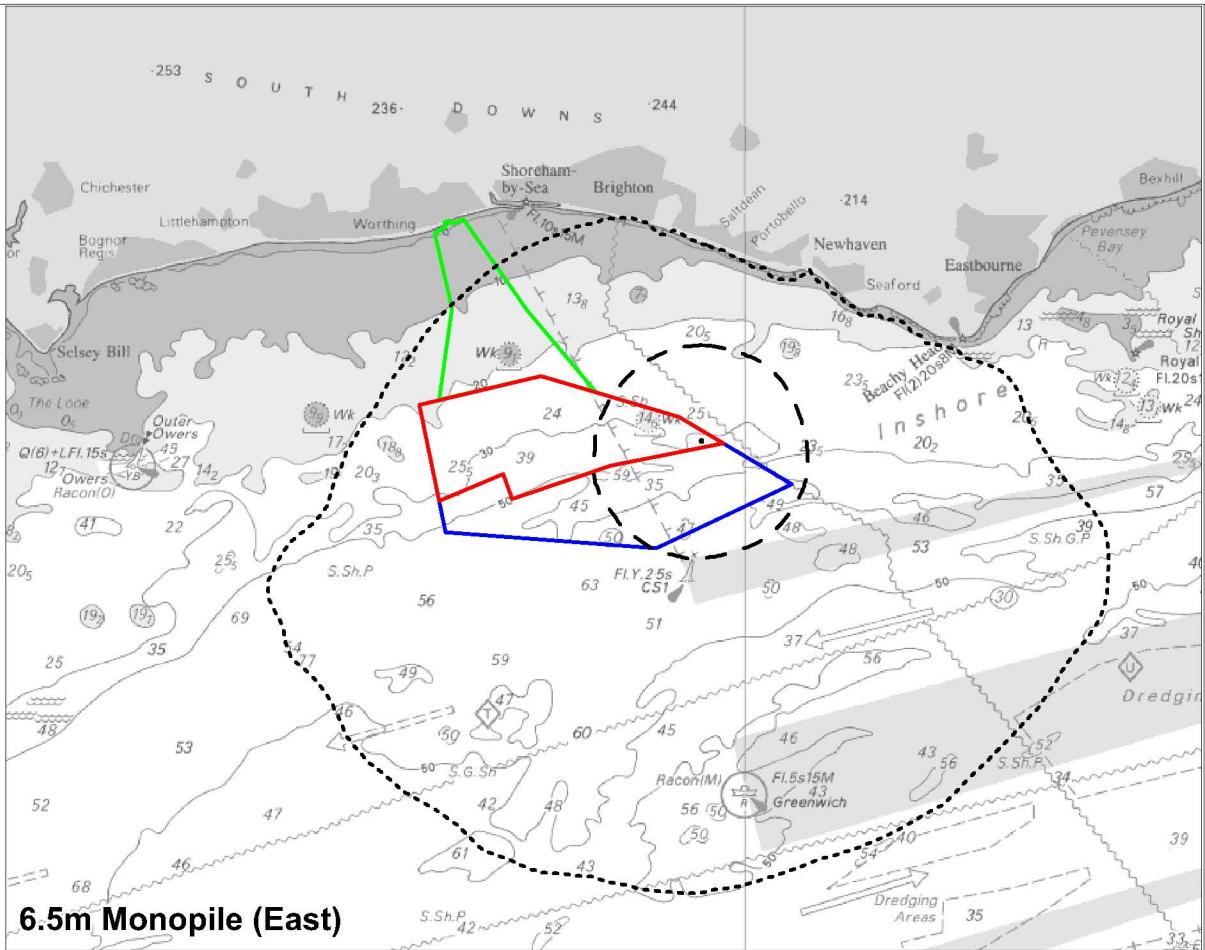
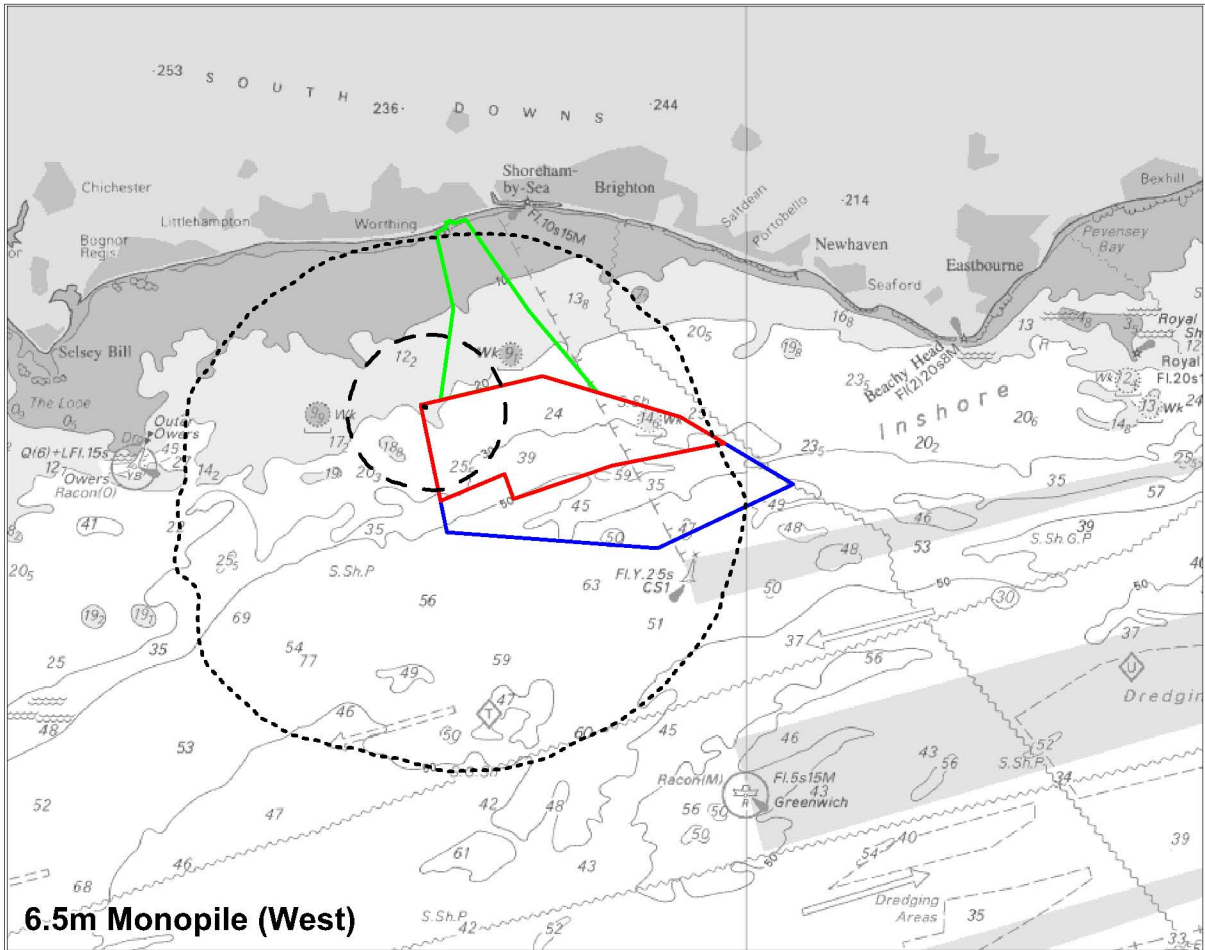
| Rev | Date     | Description | Drn | Chk | App |
|-----|----------|-------------|-----|-----|-----|
| 00  | 29.10.12 | First Draft | AJ  | AM  | DW  |

Rampion Offshore Wind Farm



**Title:**  
Figure 8.9b: Piling Noise Impact on Black Bream (1.53m pin pile)





**Legend**

- Crown Estate Zone 6
- Rampion Offshore Wind Farm Site
- Export Cable Corridor

**Noise Contours**

- 130 dBht (auditory damage)
- 90 dBht (strong avoidance)
- 75 dBht (significant avoidance)



| Rev | Date     | Description          | Drn | Chk | App |
|-----|----------|----------------------|-----|-----|-----|
| 01  | 13.11.12 | 1.53m pin pile added | AJ  | AM  | DW  |
| 00  | 29.10.12 | First Draft          | AJ  | AM  | DW  |

Rampion Offshore Wind Farm



**Title:**  
Figure 8.10: Piling Noise Impact on Dab

0 8 16  
kilometres  
Scale = 1:600,000 @ A3

REV 01