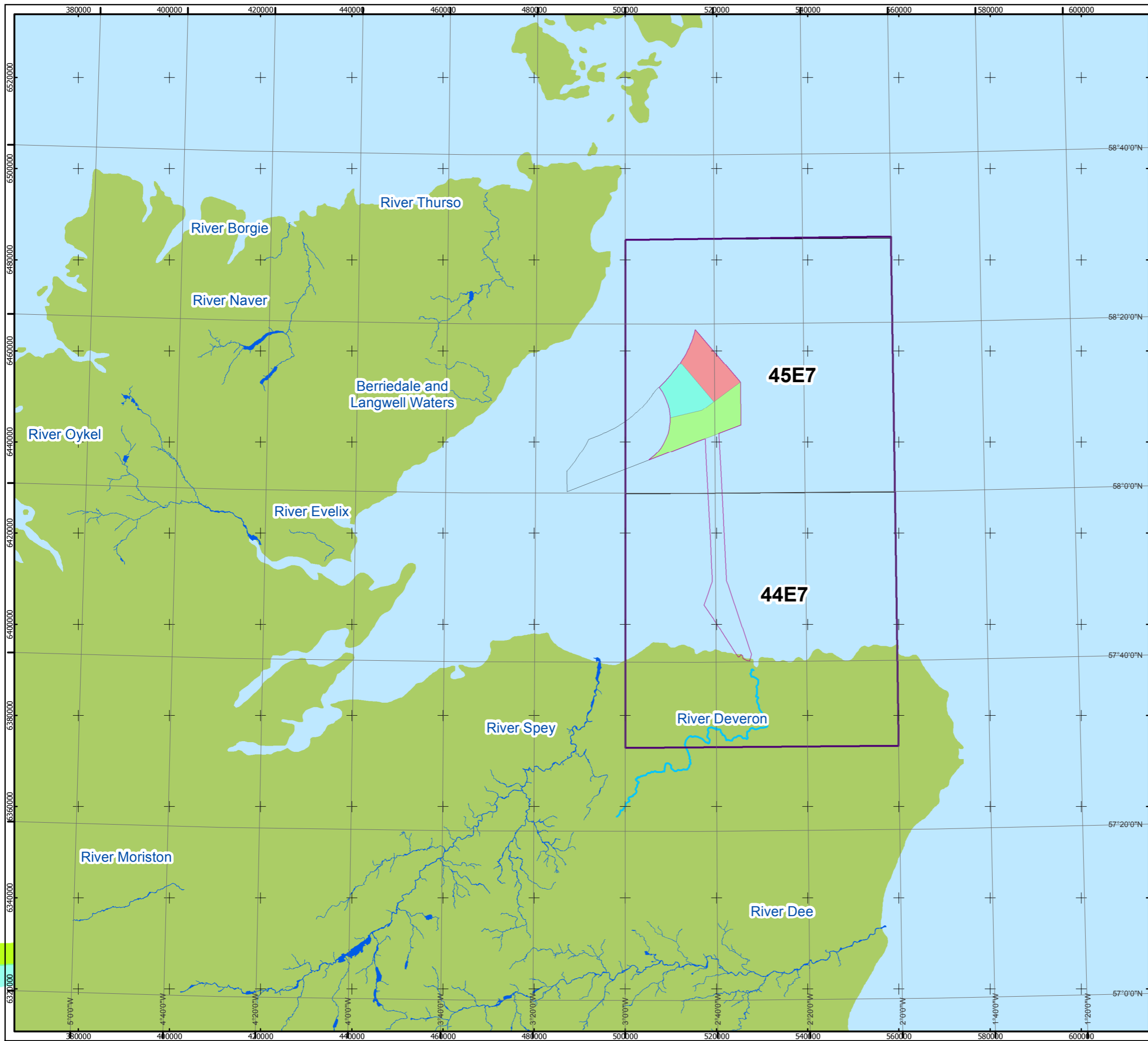










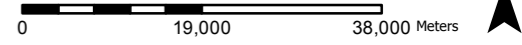
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### Moray Offshore Renewables Ltd

#### KEY

-  Modified Offshore Transmission Infrastructure
-  MacColl
-  Stevenson
-  Telford
-  Western Development Area
-  River Deveron
-  SAC Rivers
-  Study Area

Horizontal Scale: 1:800,000      A3 Chart      N  
 0      19,000      38,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

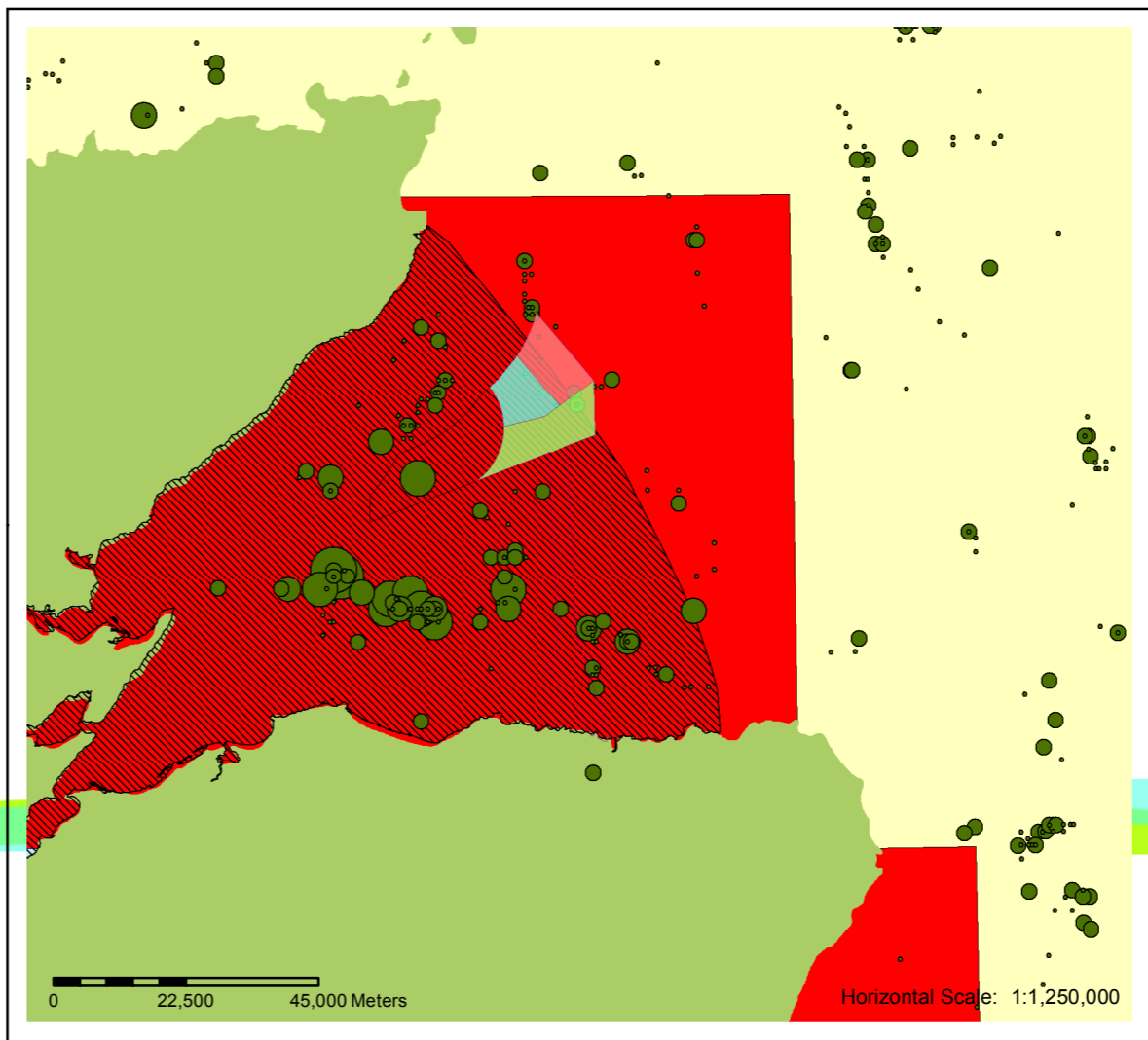
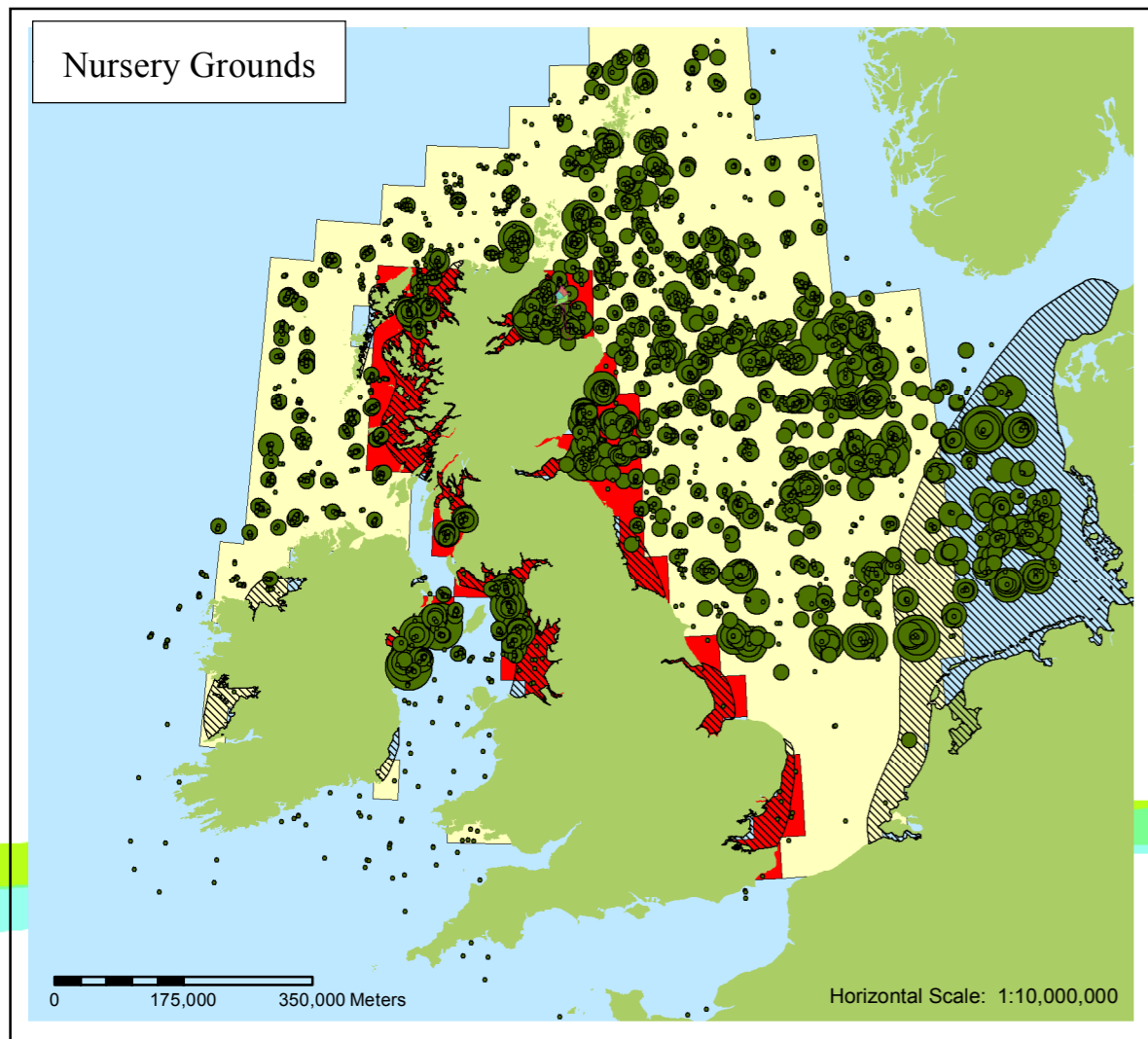
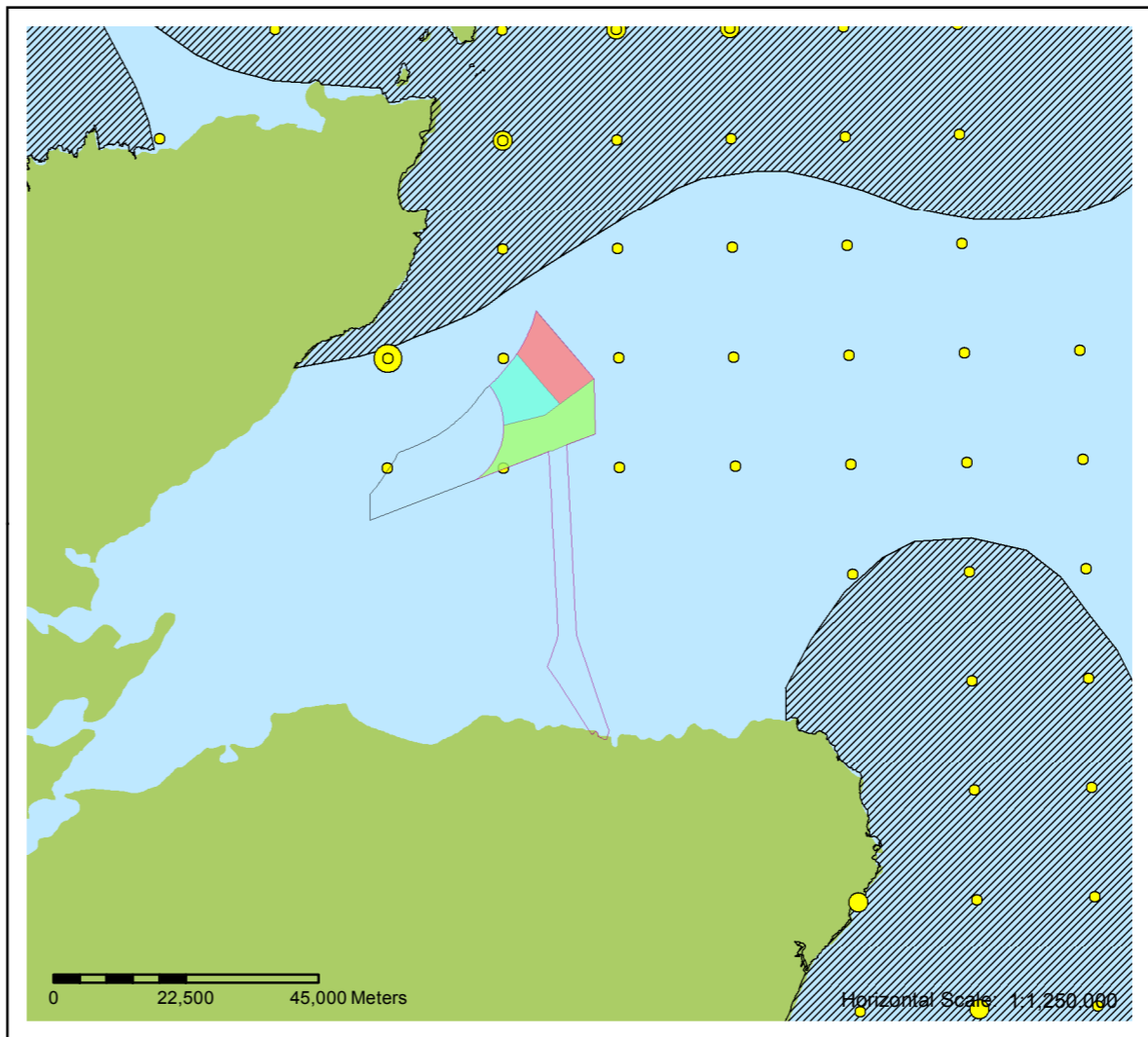
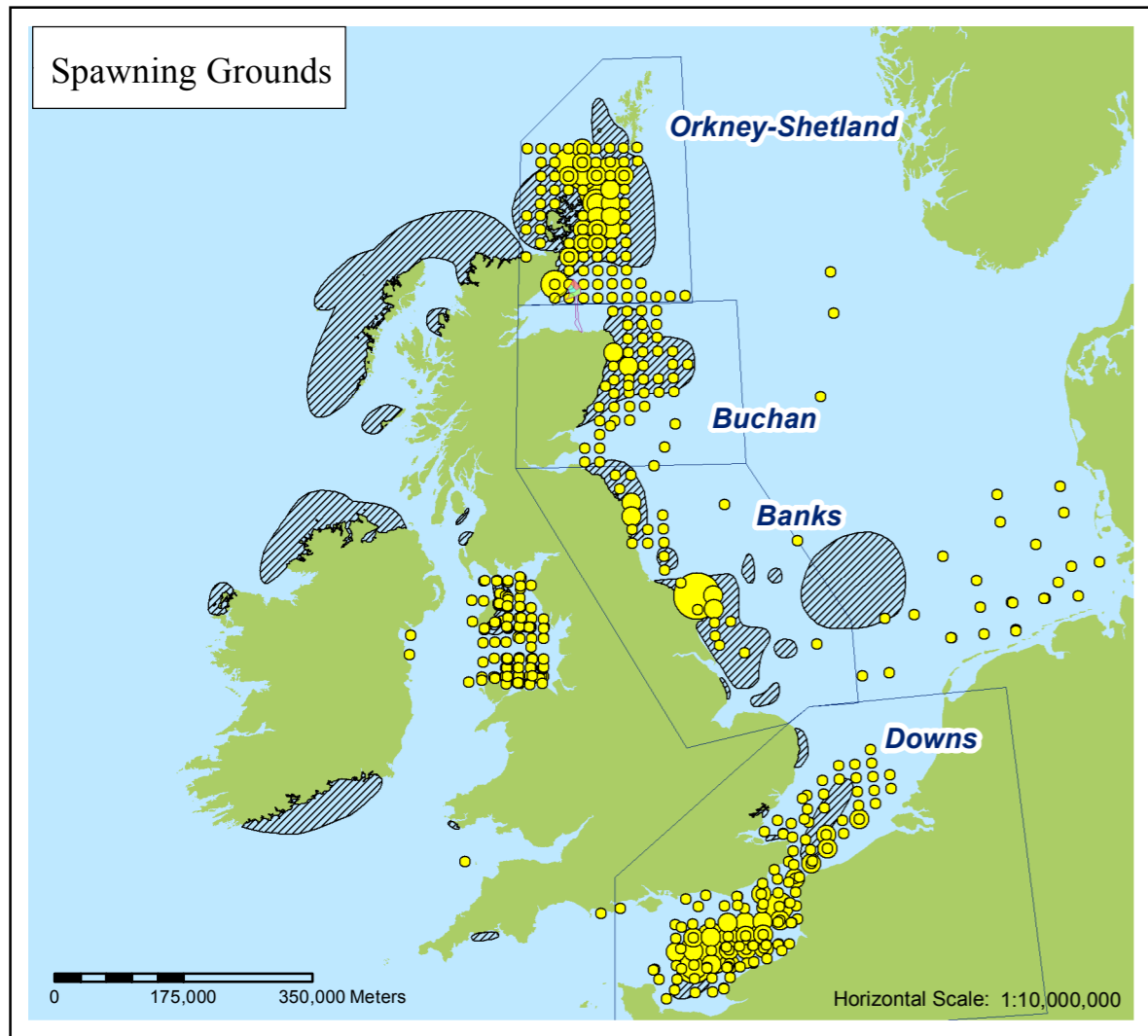
Produced: PJM  
Reviewed: ES  
Approved: PM

Date: 18/06/2014      Revision: B  
REF: 8460001-PSO0162-BMM-MAP-063

Figure 4.2 - 1  
Study Area

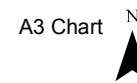
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**Moray Offshore Renewables Ltd**

- KEY**
- Modified Offshore Transmission Infrastructure
  - MacColl
  - Stevenson
  - Telford
  - Western Development Area
  - Herring Spawning Grounds**
  - (Coull et al., 1998)
  - Herring larvae**
  - > 0 - 254
  - 255 - 1,140
  - 1,141 - 3,458
  - 3,459 - 8,351
  - 8,352 - 26,913
  - Ellis et al., 2010 Nursery Grounds**
  - High intensity
  - Low Intensity
  - Herring Nursery Grounds**
  - (Coull et al., 1998)
  - Maximum Juvenile Catch Rate**
  - >0 - 17,916
  - 17,917 - 66,105
  - 66,106 - 176,310
  - 176,311 - 418,093
  - 418,094 - 986,520



Geodetic Parameters: WGS84 UTM Zone 30N

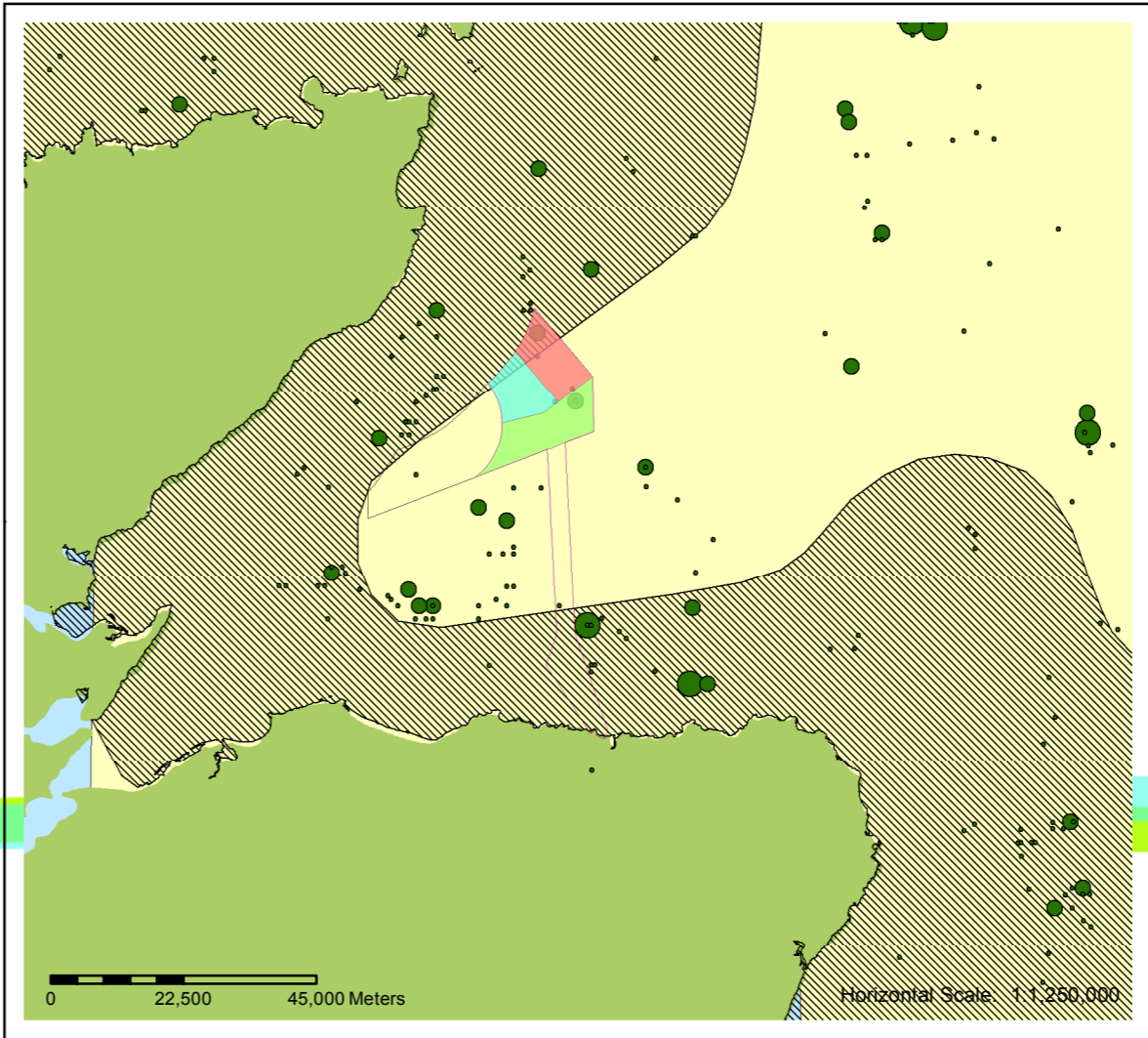
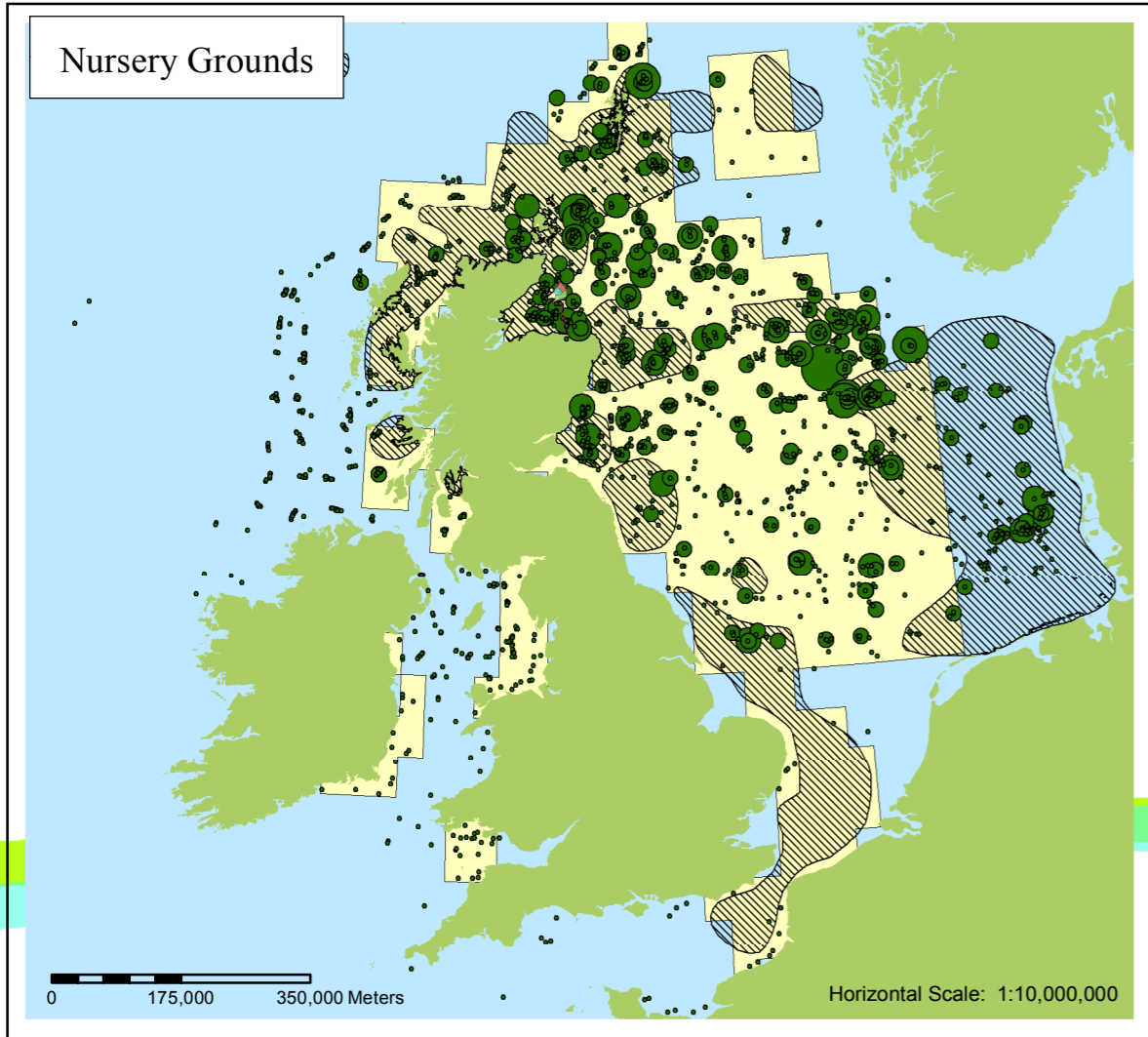
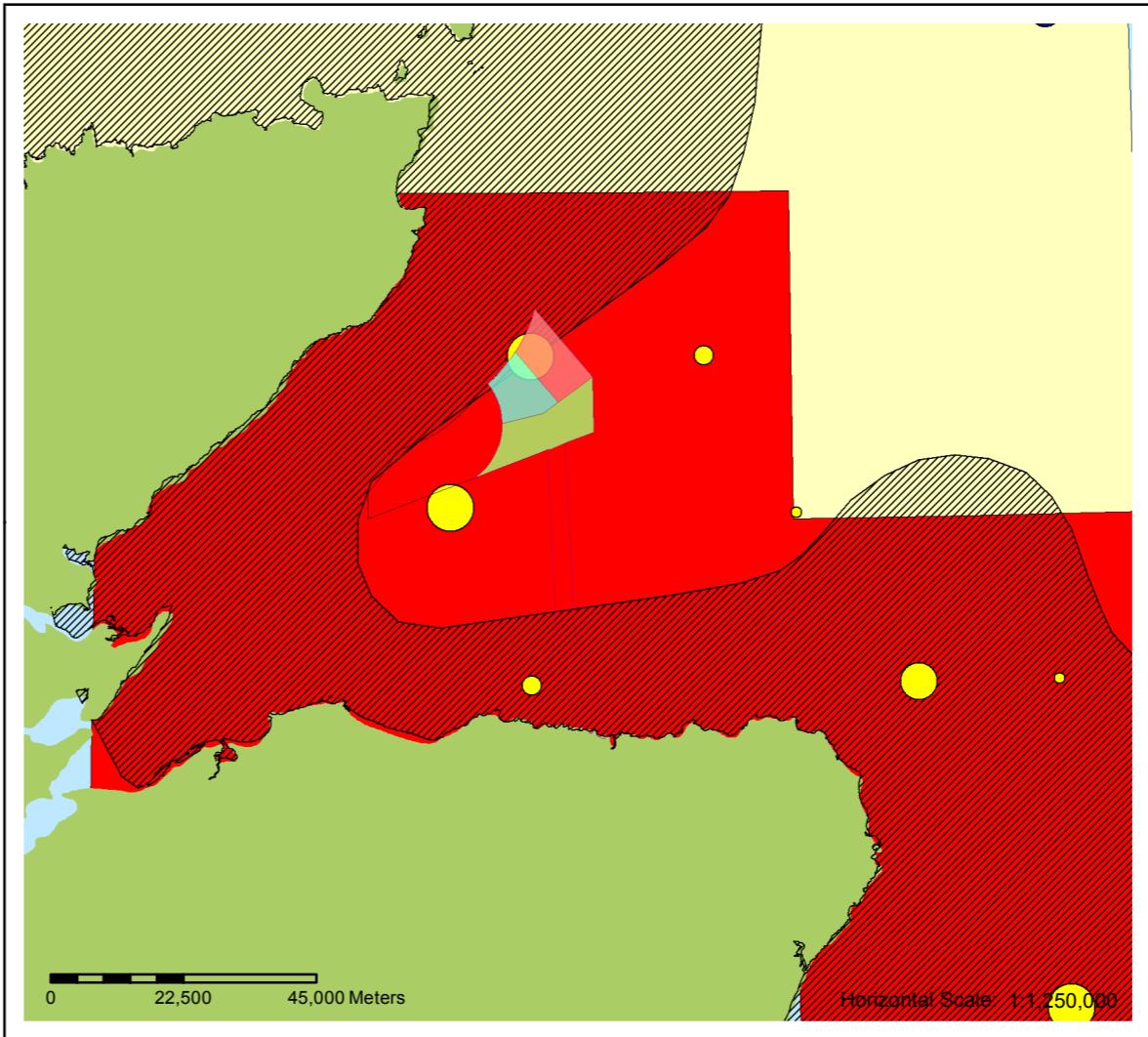
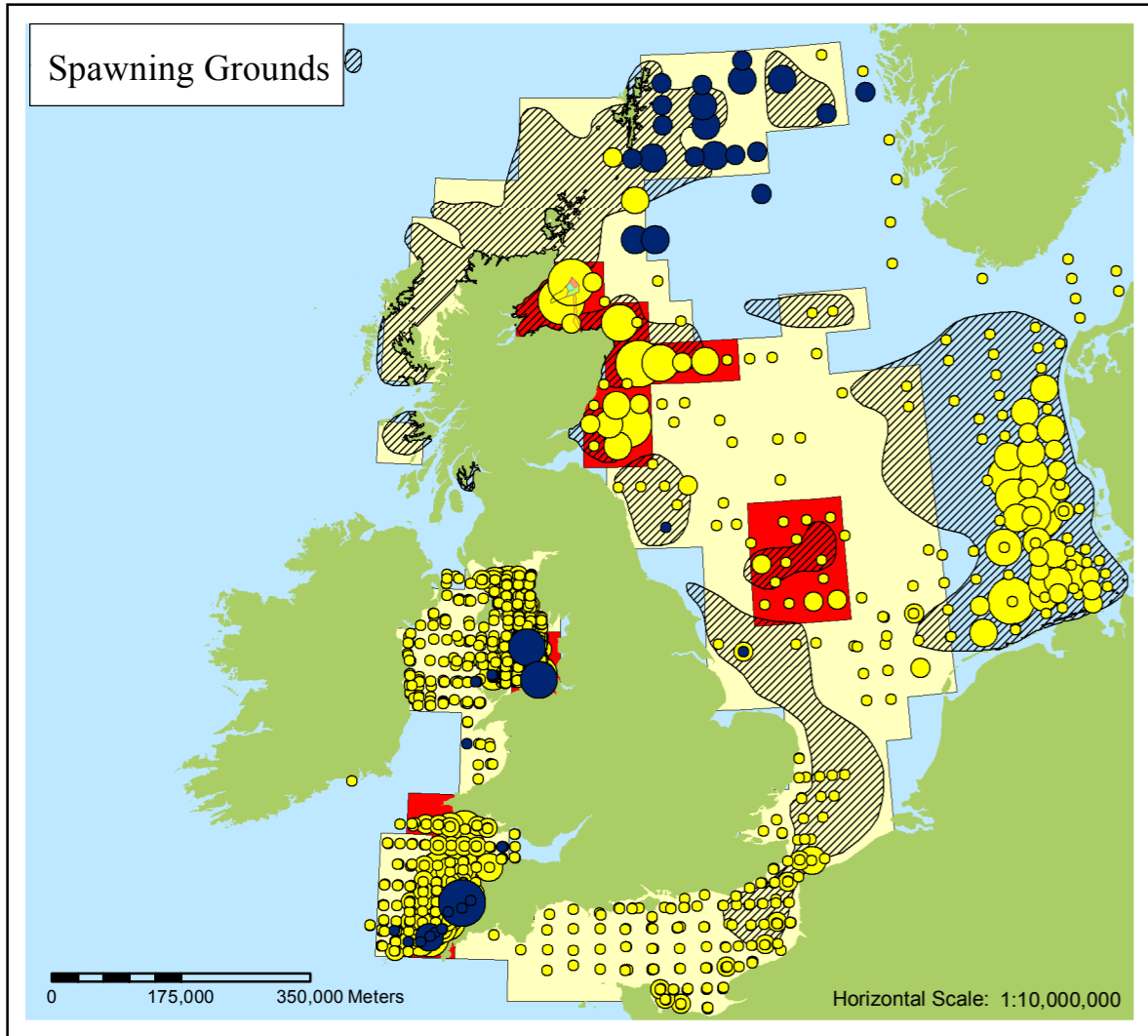
Produced: PJM  
Reviewed: ES  
Approved: PM



Date: 18/06/2014      Revision: B  
REF: 8460001-PSO0162-BMM-MAP-064

**Figure 4.2 - 2**  
**Spawning and Nursery**  
**Grounds of Herring**

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**Moray Offshore Renewables Ltd**

**KEY**

- Modified Offshore Transmission Infrastructure
- MacColl
- Stevenson
- Telford
- Western Development Area

<p><b>Sandeel Eggs</b></p> <ul style="list-style-type: none"> <li><span style="color: blue; font-size: 10px;">•</span> &gt;0 - 1</li> <li><span style="color: blue; font-size: 12px;">•</span> 2</li> <li><span style="color: blue; font-size: 14px;">•</span> 3 - 7</li> <li><span style="color: blue; font-size: 16px;">•</span> 8 - 15</li> <li><span style="color: blue; font-size: 18px;">•</span> 16 - 60</li> </ul>	<p><b>Sandeel Larvae</b></p> <ul style="list-style-type: none"> <li><span style="color: yellow; font-size: 10px;">•</span> 0 - 21</li> <li><span style="color: yellow; font-size: 12px;">•</span> 22 - 70</li> <li><span style="color: yellow; font-size: 14px;">•</span> 71 - 167</li> <li><span style="color: yellow; font-size: 16px;">•</span> 168 - 418</li> <li><span style="color: yellow; font-size: 18px;">•</span> 419 - 1,912</li> </ul>
--	---

**Spawning Grounds (Coull et al, 1998)**

- Sandeel Spawning Grounds

**Spawning grounds (Ellis et al., 2010)**

- Sandeel High intensity
- Sandeel Low intensity

**Maximum juvenile catch rate**


- >0 - 230
- 231 - 937
- 938 - 3,160
- 3,161 - 10,621
- 10,622 - 20,224

**Nursery Grounds (Coull et al 1998)**

- Sandeel Nursery Grounds

**Nursery grounds (Ellis et al., 2010)**

- Sandeel Low Intensity

A3 Chart 

Geodetic Parameters: WGS84 UTM Zone 30N

Produced: PJM  
Reviewed: ES  
Approved: PM

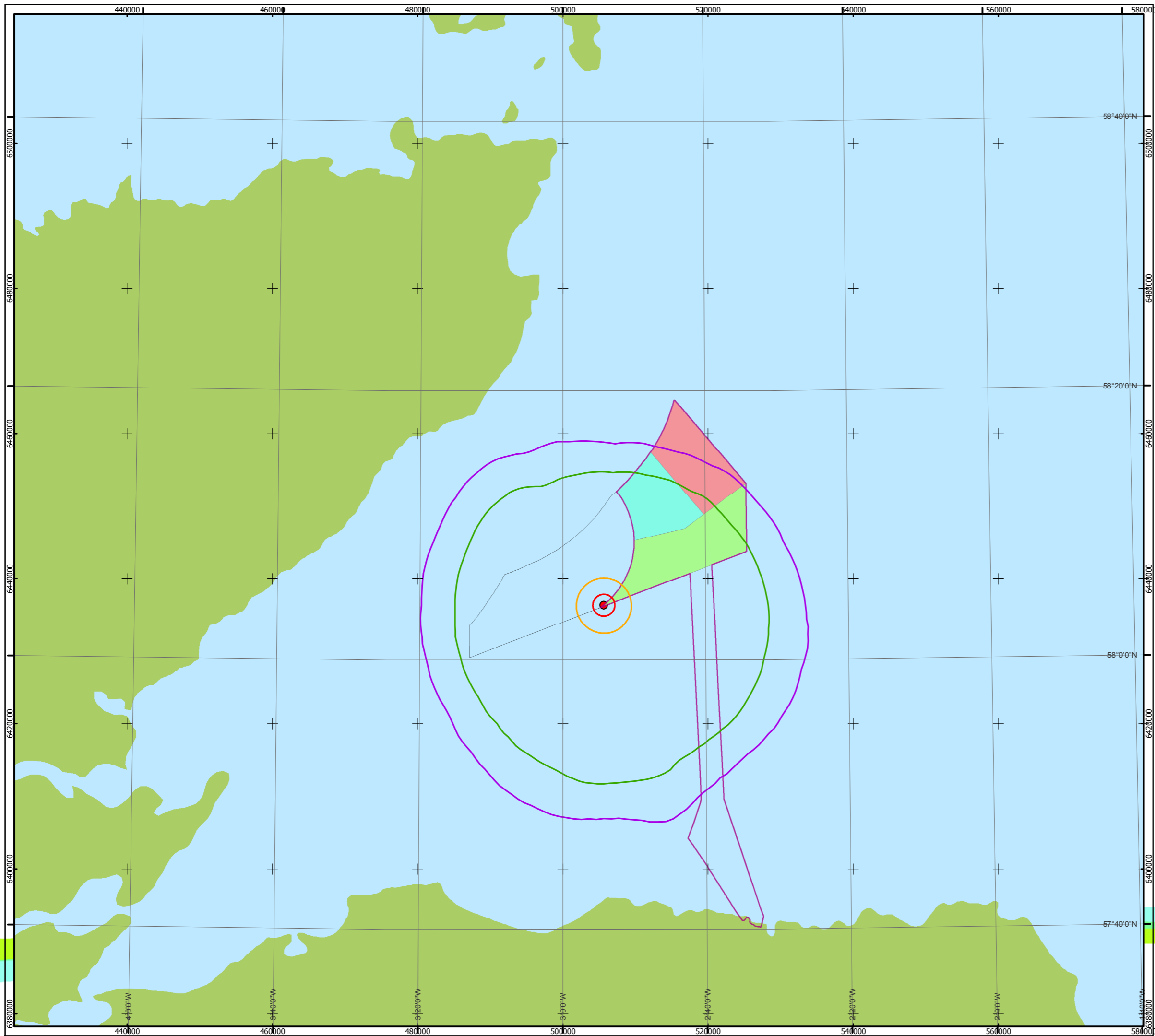
Date: 18/06/2014      Revision: B

REF: 8460001-PSO0162-BMM-MAP-065

**Figure 4.2 - 3**  
**Spawning and Nursery**  
**Grounds of Sandeel**

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### Moray Offshore Renewables Ltd

#### KEY

- Modified Offshore Transmission Infrastructure
- MacColl
- Stevenson
- Telford
- Western Development Area
- Modelled 2.5m pile (location 1)
- 90 dBht (dab) contour
- 90 dBht (cod) contour
- 90 dBht (herring) contour
- 90 dBht (salmon) contour

Horizontal Scale: 1:500,000 A3 Chart  
0 12,000 24,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

Produced: CF  
Reviewed: ES  
Approved: PM

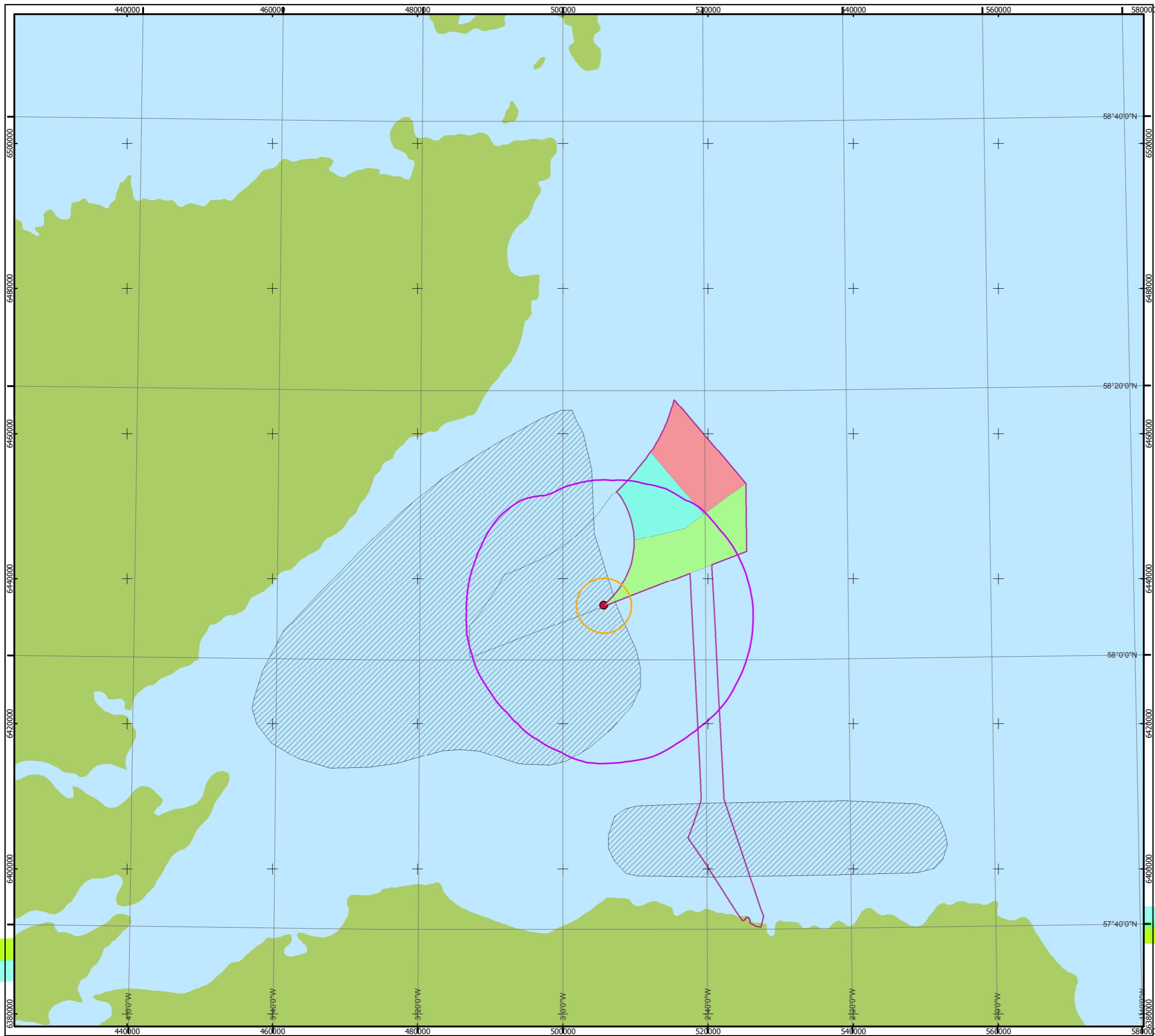
Date: 18/06/2014 Revision: B

REF: 8460001-PSO0162-BMM-MAP-066

**Figure 4.2 - 4**  
90 dBht (Species) impact ranges for cod, dab, herring and salmon











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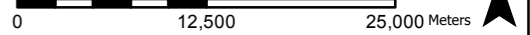
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**Moray Offshore Renewables Ltd**

**KEY**

-  Modified Offshore Transmission Infrastructure
-  MacColl
-  Stevenson
-  Telford
-  Western Development Area
-  75 dBht (dab) contour
-  90 dBht (dab) contour
-  Modelled 2.5m pile (location 1)
-  Spawning Grounds (Coull et al., 1998)
-  Plaiice Spawning Grounds

Horizontal Scale: 1:500,000      A3 Chart      N  
 0      12,500      25,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

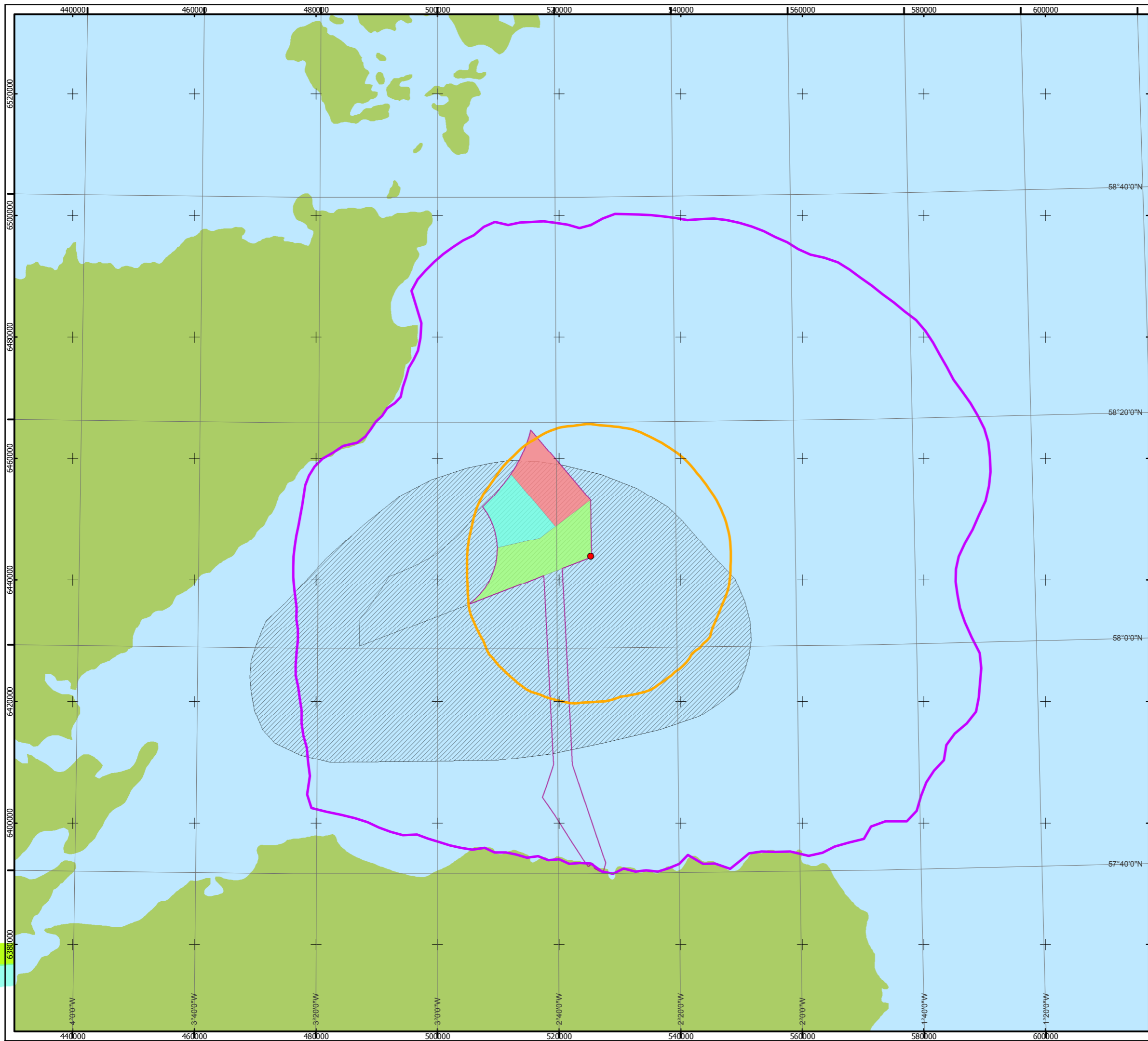
Produced: CF  
Reviewed: ES  
Approved: PM

Date: 22/05/2014      Revision: A  
REF: 8460001-PSO0162-BMM-MAP-067

**Figure 4.2 - 5**  
75 & 90 dBht impact ranges for dab with  
plaiice spawning grounds (Coull et al., 1998)

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### Moray Offshore Renewables Ltd

#### KEY

- Modified Offshore Transmission Infrastructure
- MacColl
- Stevenson
- Telford
- Western Development Area
- Spawning Grounds (Coull et al., 1998)
  - Cod Spawning Grounds
  - Modelled 2.5m pile (location 2)
- 75 dBht (cod) contour
- 90 dBht (cod) contour

Horizontal Scale: 1:600,000 A3 Chart  
0 14,000 28,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

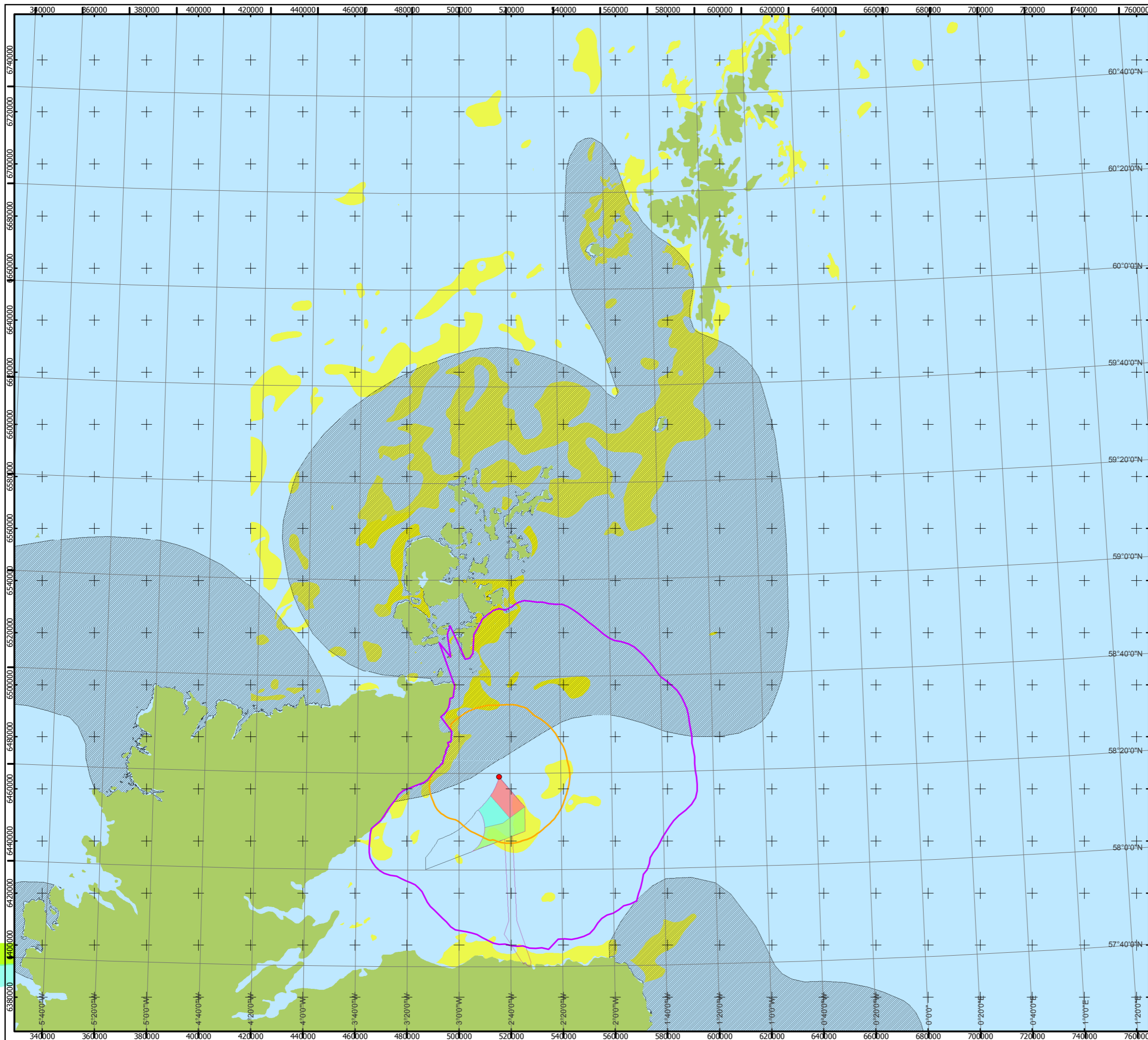
Produced: CF  
Reviewed: ES  
Approved: PM

Date: 18/06/2014 Revision: B  
REF: 8460001-PSO0162-BMM-MAP-068

Figure 4.2 - 6  
75 & 90 dBht impact ranges for cod with  
cod spawning grounds (Coull et al., 1998)

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**Moray Offshore Renewables Ltd**

- KEY**
- Modified Offshore Transmission Infrastructure
  - MacColl
  - Stevenson
  - Telford
  - Western Development Area
  - Spawning Grounds (Coull et al., 1998)
  - Herring Spawning grounds
  - Modelled 2.5m pile (location 5)
  - 75 dbh (Herring) contour
  - 90 dbh (Herring) contour
  - Gravel & Sandy Gravel (BGS Data)

Horizontal Scale: 1:1,400,000      A3 Chart      N  
 0      35,000      70,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

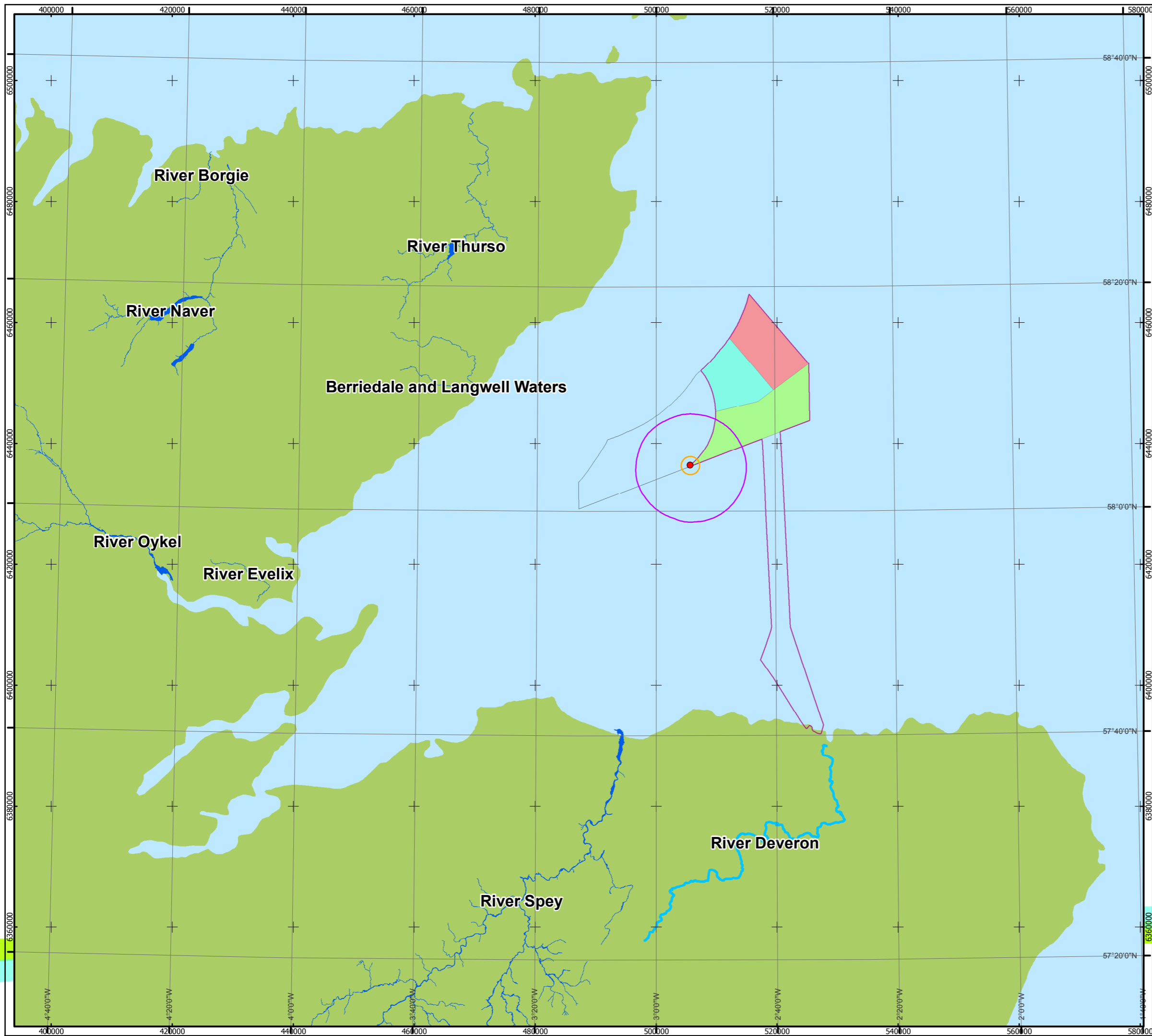
Produced: CF  
 Reviewed: ES  
 Approved: PM

Date: 18/06/2014      Revision: A  
 REF: 8460001-PSO0162-BMM-MAP-069

**Figure 4.2 - 7**  
 75 & 90 dBht (Species) impact ranges  
 for herring with gravel and sandy-gravel and  
 herring spawning grounds (Coull et al., 1998)











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**Moray Offshore Renewables Ltd**

**KEY**

-  Modified Offshore Transmission Infrastructure
-  MacColl
-  Stevenson
-  Telford
-  Western Development Area
-  Modelled 2.5m pile (location 1)
-  75 dBht (salmon) contour
-  90 dBht (salmon) contour
-  SAC Rivers
-  River Deveron

Horizontal Scale: 1:600,000      A3 Chart      N  


Geodetic Parameters: WGS84 UTM Zone 30N

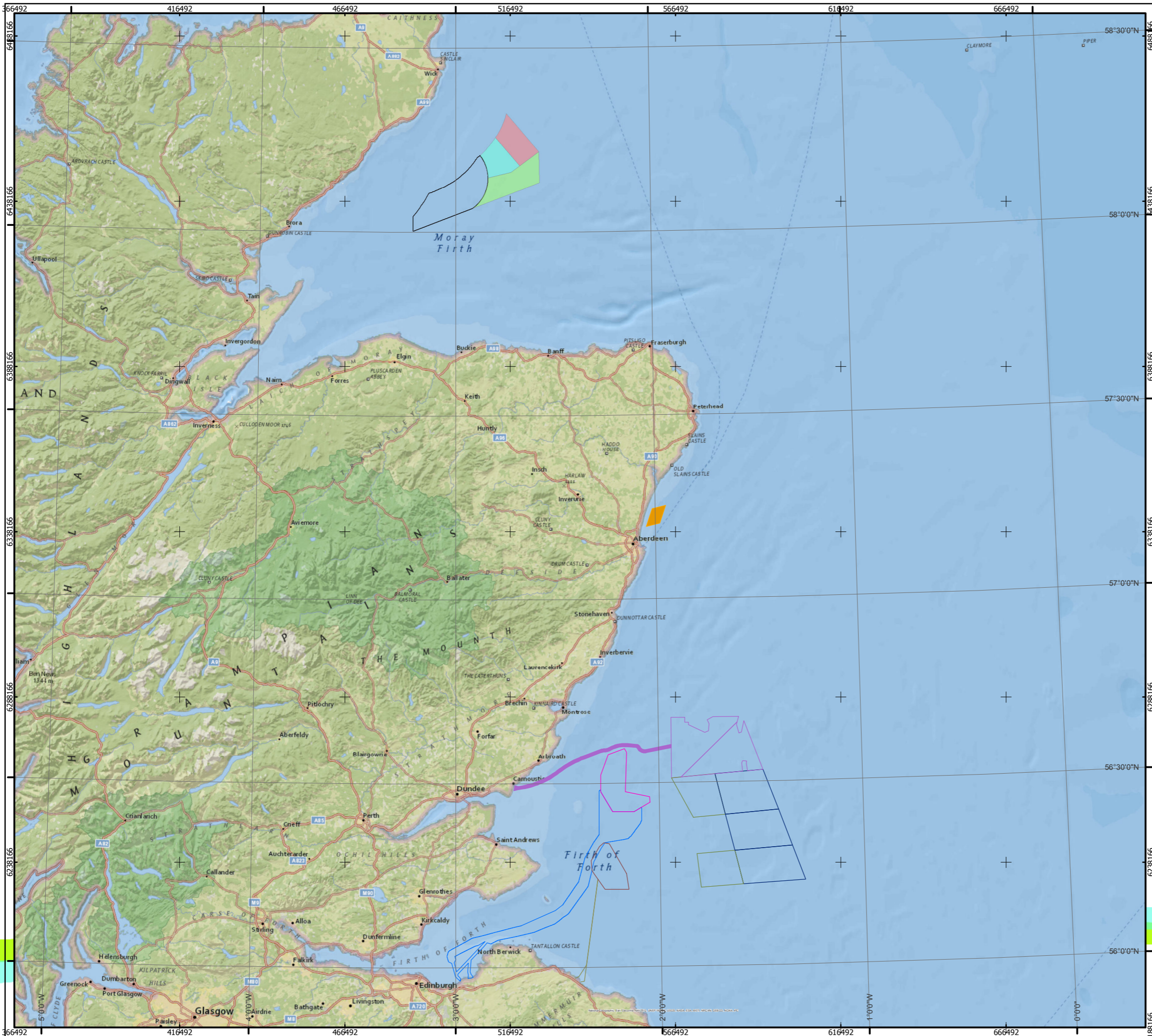
Produced: CF  
 Reviewed: ES  
 Approved: PM

Date: 18/06/2014      Revision: B  
 REF: 8460001-PSO0162-BMM-MAP-070

**Figure 4.2 - 8**  
 75 & 90 dBht impact ranges for salmon with Scottish salmon SACs



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### Moray Offshore Renewables Ltd

#### KEY

- MacColl
- Stevenson
- Telford
- Western Development Area
- Firth of Forth**
- Phase 1
- Phase 2
- Phase 3
- Firth of Forth Phase 1 ECR
- European Offshore Wind Development Centre
- Inch Cape
- Neart na Gaoithe
- Inch Cape ECR
- Neart na Gaoithe ECR

Horizontal Scale: 1:1,100,000 A3 Chart

Geodetic Parameters: WGS84 UTM Zone 30N

Produced: CF  
 Reviewed: ES  
 Approved: PM

Date: 18/06/2014 Revision: B  
 REF: 8460001-PSO0162-BMM-MAP-072

**Figure 4.2 - 10**  
 Developments Considered for  
 Cumulative Impact Assessment

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