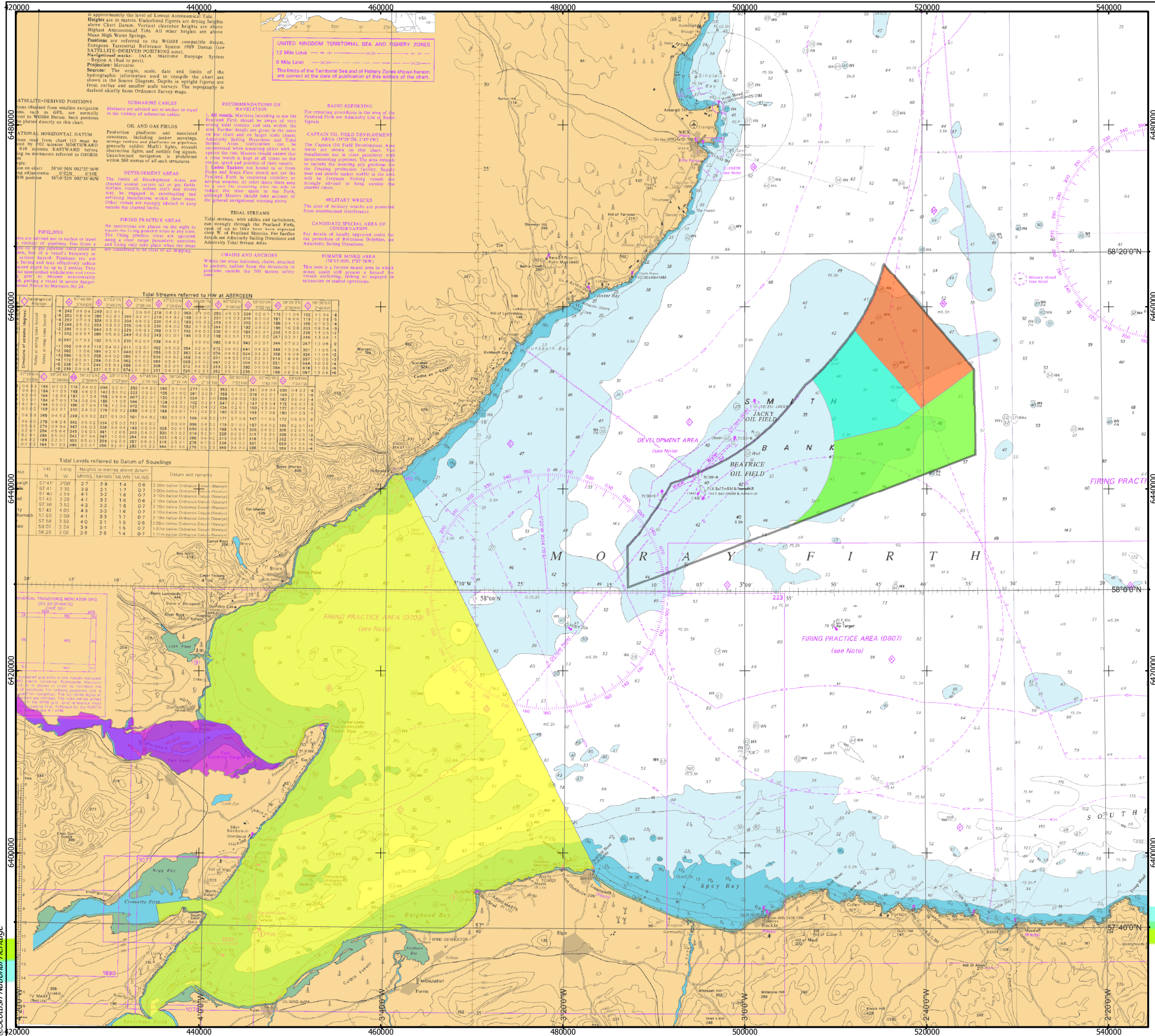




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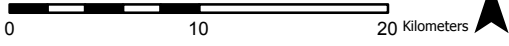
KEY

- Telford OWF
- Stevenson OWF
- MacColl OWF
- Dornoch Firth and Morrich More
- Moray Firth


Special Areas of Conservation (SACs)

- Dornoch Firth and Morrich More
- Moray Firth

Horizontal Scale: 1:400,000



A3 Chart



Geodetic Parameters: WGS84 UTM Zone 30N

Produced: LG
Reviewed: SC
Approved: CJP

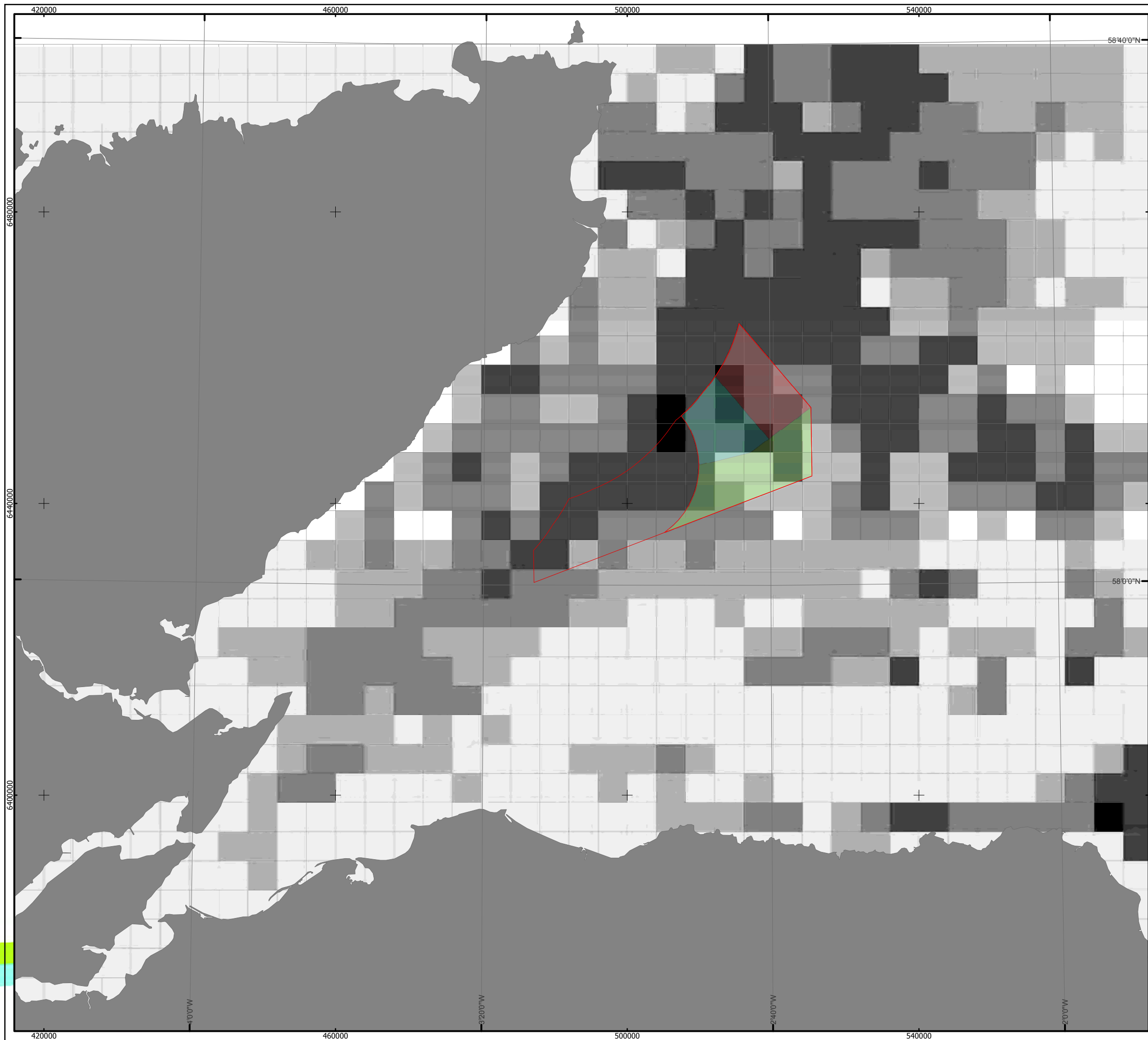
Date: 16/11/2011 Revision: A

REF: 8460001-PPW0201-NPW-MAP-018

Fig 4.4-1 Designated Sites (SACs)

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KEY

GEE predicted harbour seal habitat preference

- 0.00 - 0.20
- 0.20 - 0.40
- 0.40 - 0.60
- 0.60 - 0.80
- 0.80 - 1.00

MORL Zone Boundary

MacColl Windfarm

Stevenson Windfarm

Telford Windfarm

Horizontal Scale: 1:500,000 A3 Chart

Geodetic Parameters: WGS84 UTM Zone 30N

Produced: KLB
Reviewed: PH
Approved: CR/SP

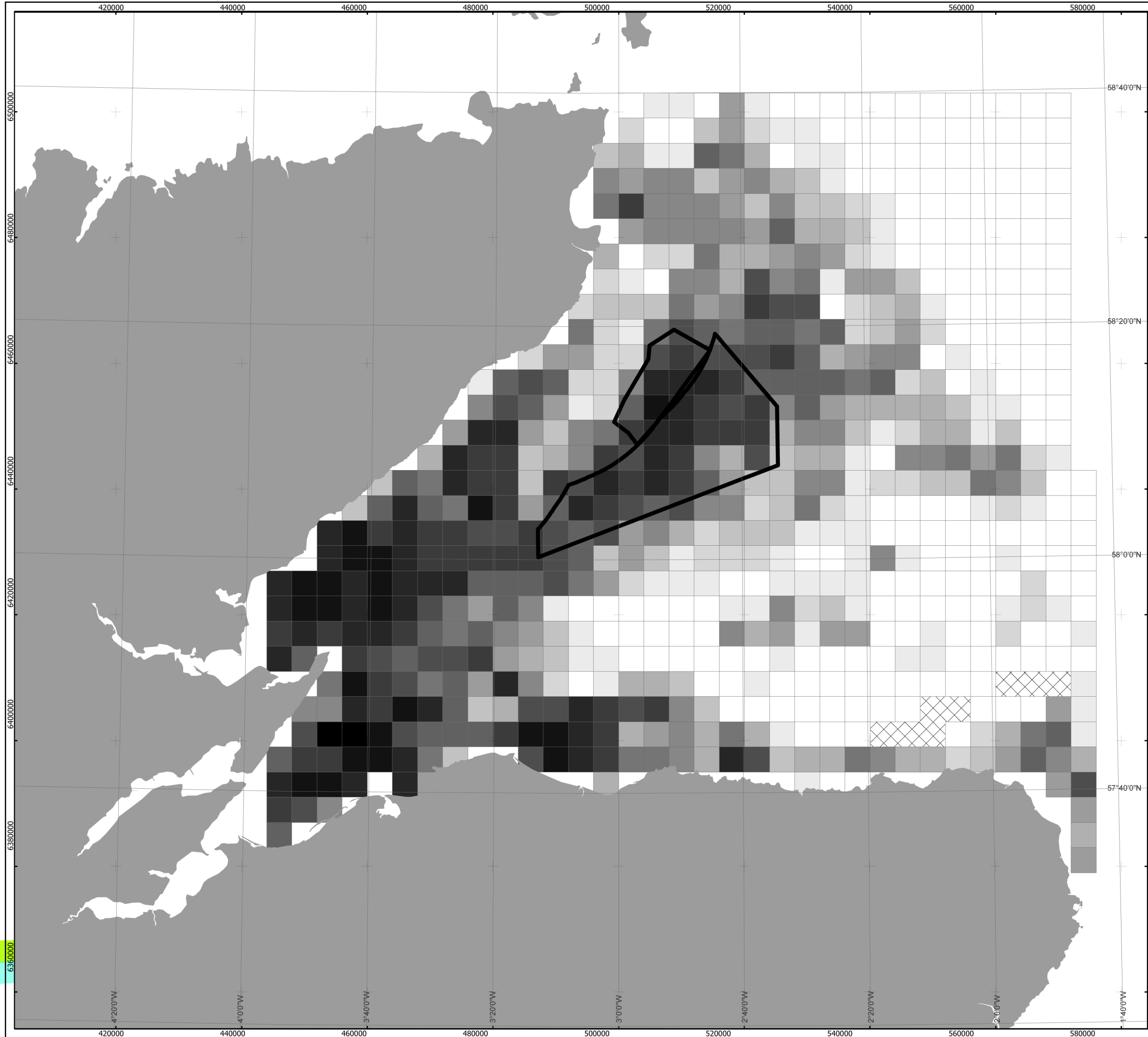
Date: 19/04/2012 Revision: B

REF: 8460001-PPW0201-UAB-MAP-001

Fig 4.4-2 - Predicted Seal Habitat Distribution

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KEY
Predicted harbour seals

	0.00 - 0.50
	0.51 - 1.00
	1.01 - 1.50
	1.51 - 2.00
	2.01 - 2.50
	2.51 - 3.00
	3.01 - 3.50
	3.51 - 4.00
	4.01 - 4.50
	4.51 - 5.00
	5.01 - 5.50
	5.51 - 6.00
	6.01 - 6.50
	6.51 - 7.00

Horizontal Scale: 1:600,000 A3 Chart
0 15,000 30,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

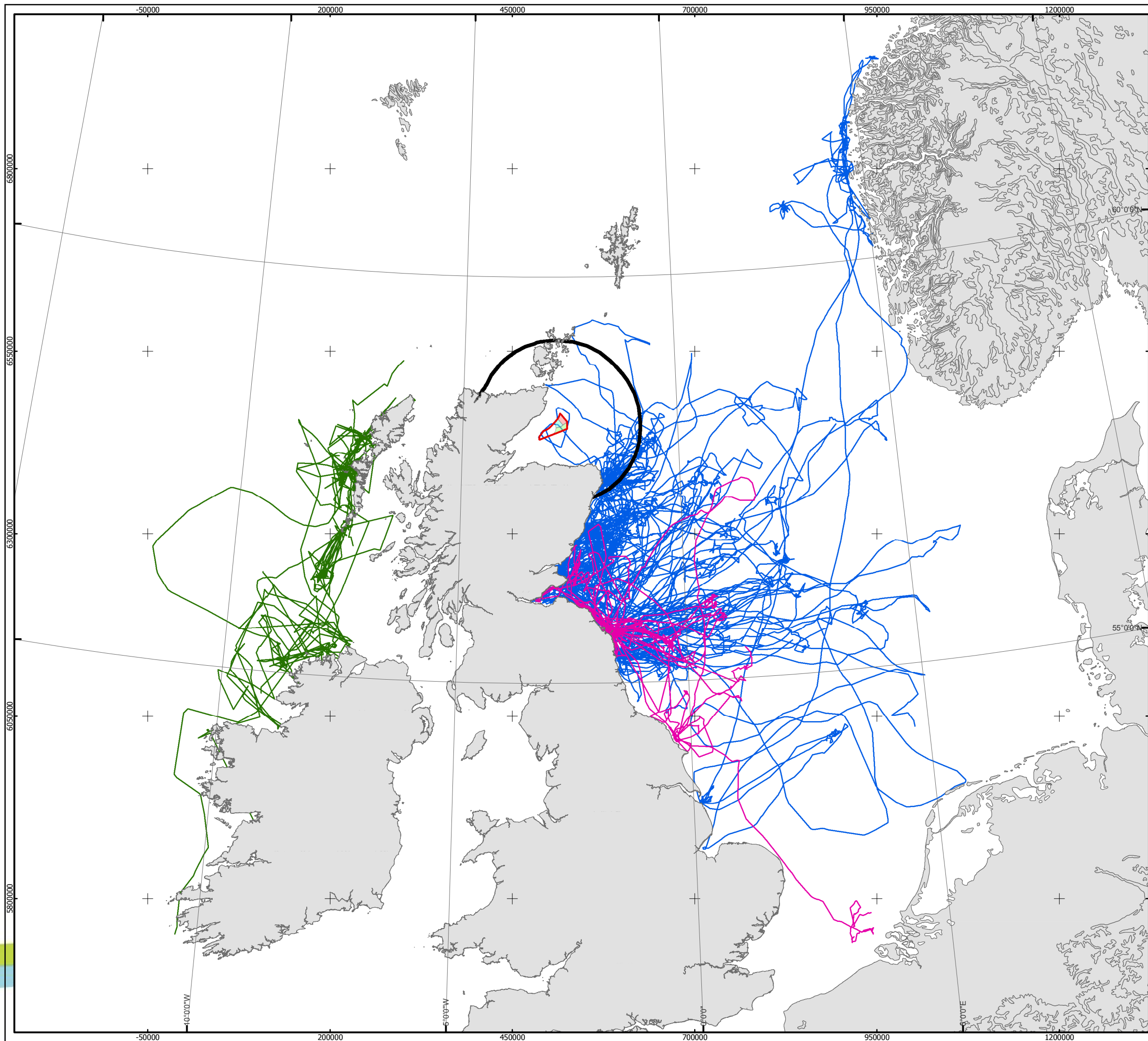
Produced: KLB
Reviewed: PMT
Approved: PH

Date: 19/05/2012 Revision: A
REF: 8460001-PPW0201-UAB-MAP-001

Fig 4.4-3 Predicted Harbour Seal Occurrence

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Moray Offshore Renewables Ltd

KEY

- MORL Zone Boundary
- MacColl Windfarm
- Stevenson Windfarm
- Telford Windfarm
- MORL 100KM Buffer Zone

Tagging Locations

- Farne Islands, NE England (n=9)
- Isle of May, East Scotland (n=21)
- Monach Isles, Outer Hebrides (n=9)

Horizontal Scale: 1:5,000,000 A3 Chart
 0 130,000 260,000 Meter

Geodetic Parameters: WGS84 UTM Zone 30N

Produced: EC
 Reviewed: GH
 Approved: PH

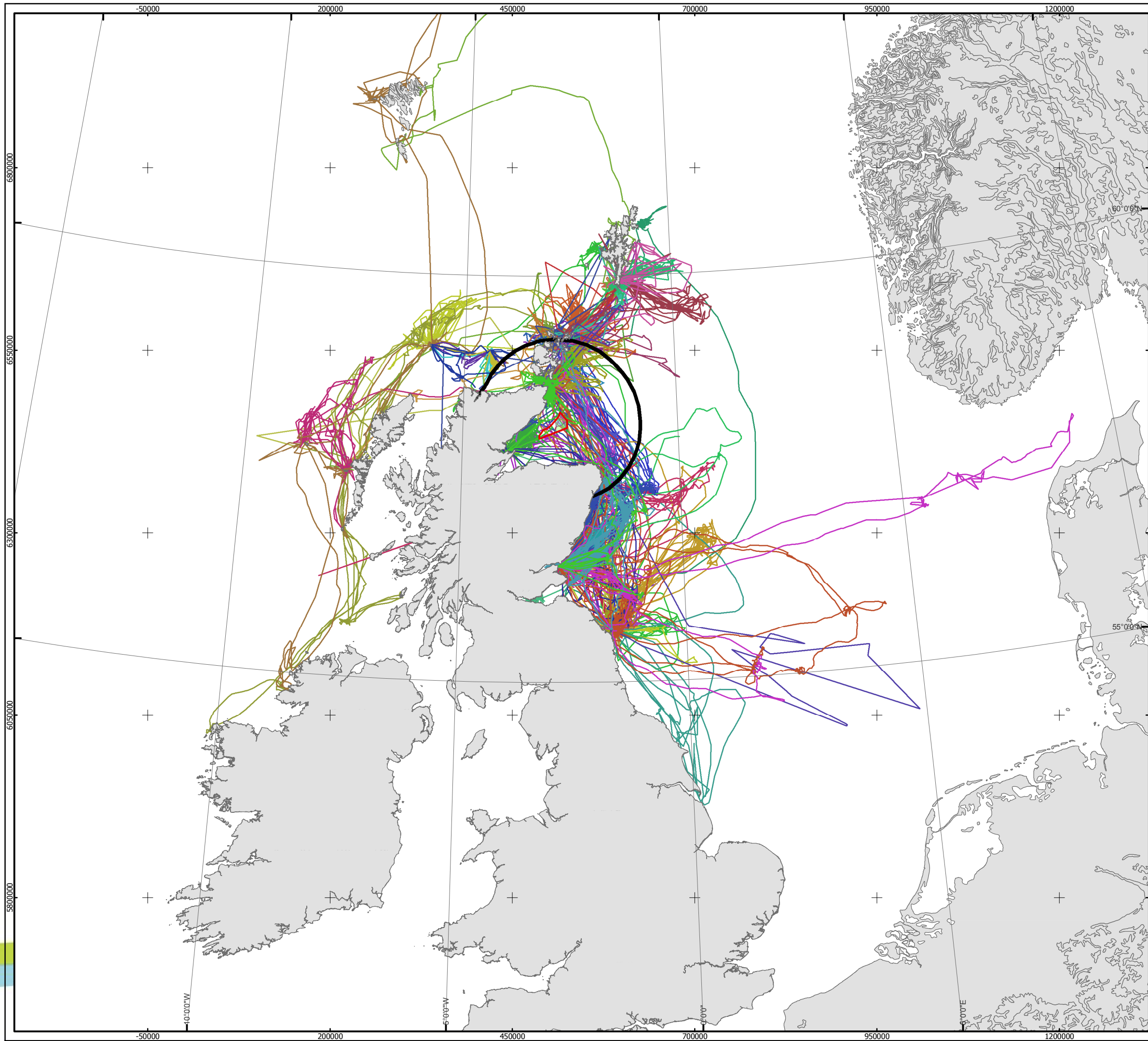
Date: 06/06/2012 Revision: A

REF: 8460001-PPW0201-SMR-MAP-001

Figure 4.4-4 The extent of grey seal pup movements from the breeding sites where they were tagged

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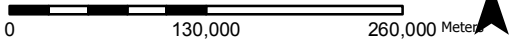
Moray Offshore Renewables Ltd

KEY

- MORL Zone Boundary
- MacColl Windfarm
- Stevenson Windfarm
- Telford Windfarm
- MORL 100KM Buffer Zone

Adult Grey Seal Tracks

- Individual Track
(colours represent different individuals)

Horizontal Scale: 1:5,000,000 A3 Chart


Geodetic Parameters: WGS84 UTM Zone 30N

Produced: EC
Reviewed: GH
Approved: PH

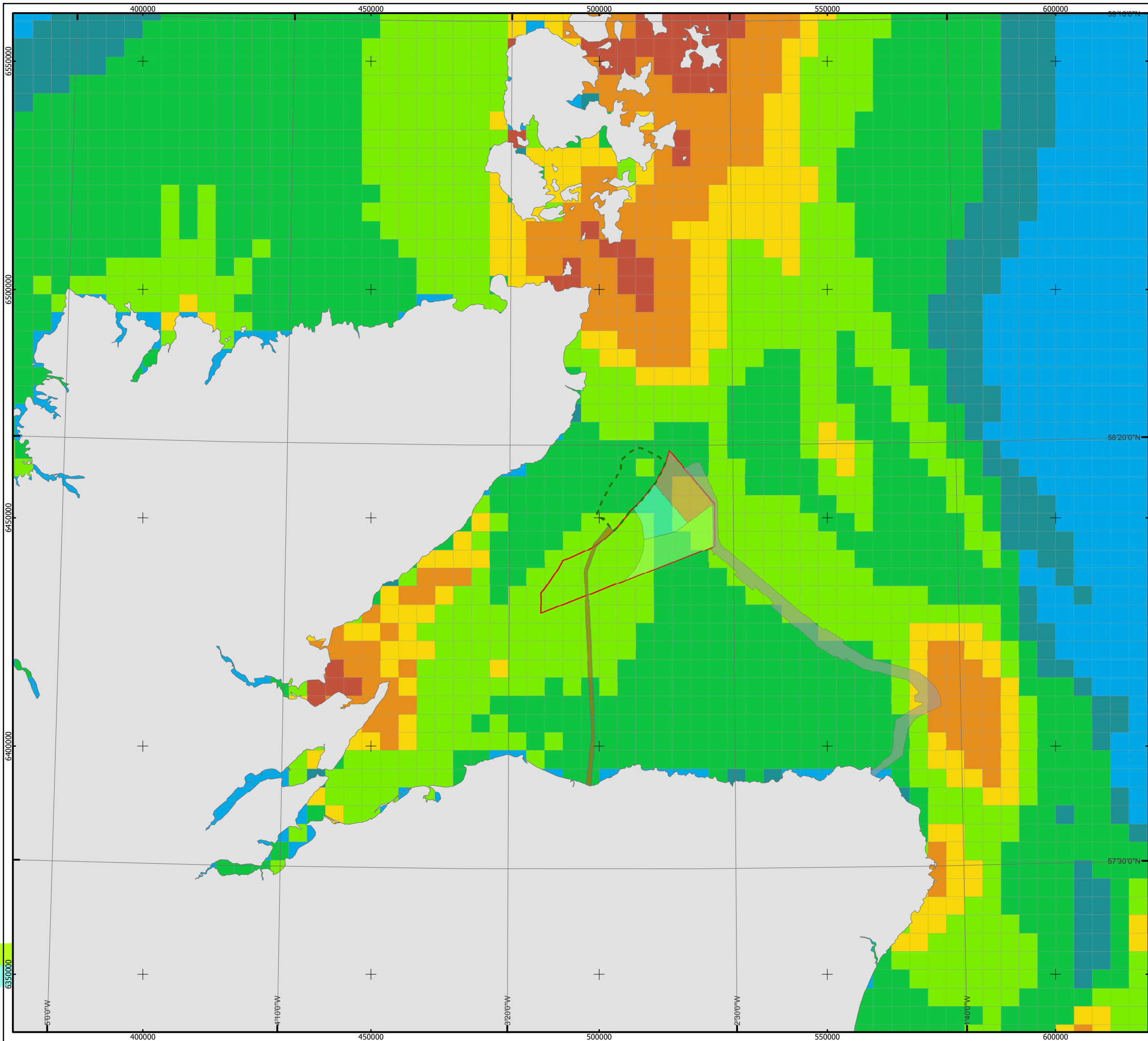
Date: 06/06/2012 Revision: A

REF: 8460001-PPW0201-SMR-MAP-001

Figure 4.4-5 Tracks of grey seals (aged one year and above) which, at least once while they were tagged, entered a 100 km buffer zone around the proposed MORL wind farm site.




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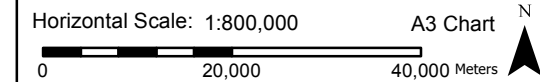
KEY

-  Moray Offshore Transmission Infrastructure
-  Beatrice Offshore Transmission Infrastructure
-  BOWL Zone Boundary
-  MacColl Windfarm
-  Stevenson Windfarm
-  Telford Windfarm
-  MORL Zone Boundary

Spatial Usage of grey seals

No of seals per 4km2 grid cell

-  0 - 0.5
-  0.5 - 1
-  1 - 2.5
-  2.5 - 5
-  5 - 10
-  10 - 50
-  >50



Geodetic Parameters: WGS84 UTM Zone 30N

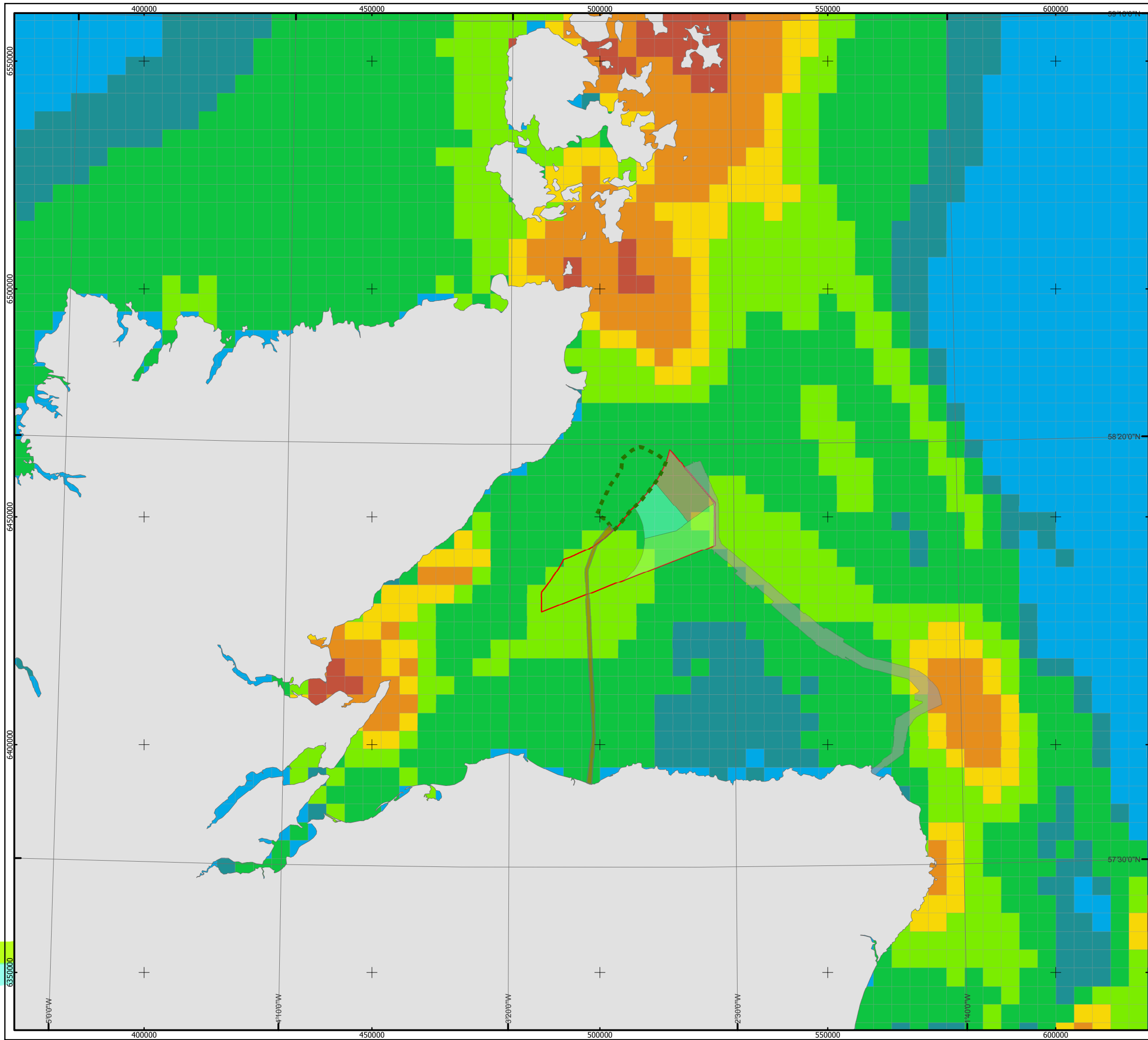
Produced: KG
Reviewed: PH
Approved: CR

Date: 15/05/2012 Revision: B
REF: 8460001-PPW0201-SMR-MAP-003

Fig 4.4-6 Spatial Usage of Grey Seals around MORL and BOWL






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Moray Offshore Renewables Ltd

KEY

-  Moray Offshore Transmission Infrastructure
-  Beatrice Offshore Transmission Infrastructure
-  BOWL Zone Boundary
-  MacColl Windfarm
-  Stevenson Windfarm
-  Telford Windfarm
-  MORL Zone Boundary

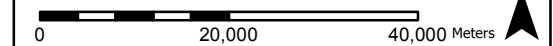
At-sea Usage of grey seals

No of seals per 4km2 grid cell

-  0 - 0.5
-  0.5 - 1
-  1 - 2.5
-  2.5 - 5
-  5 - 10
-  10 - 50
-  >50

Horizontal Scale: 1:800,000

A3 Chart



Geodetic Parameters: WGS84 UTM Zone 30N

Produced: KG
Reviewed: PH
Approved: CR

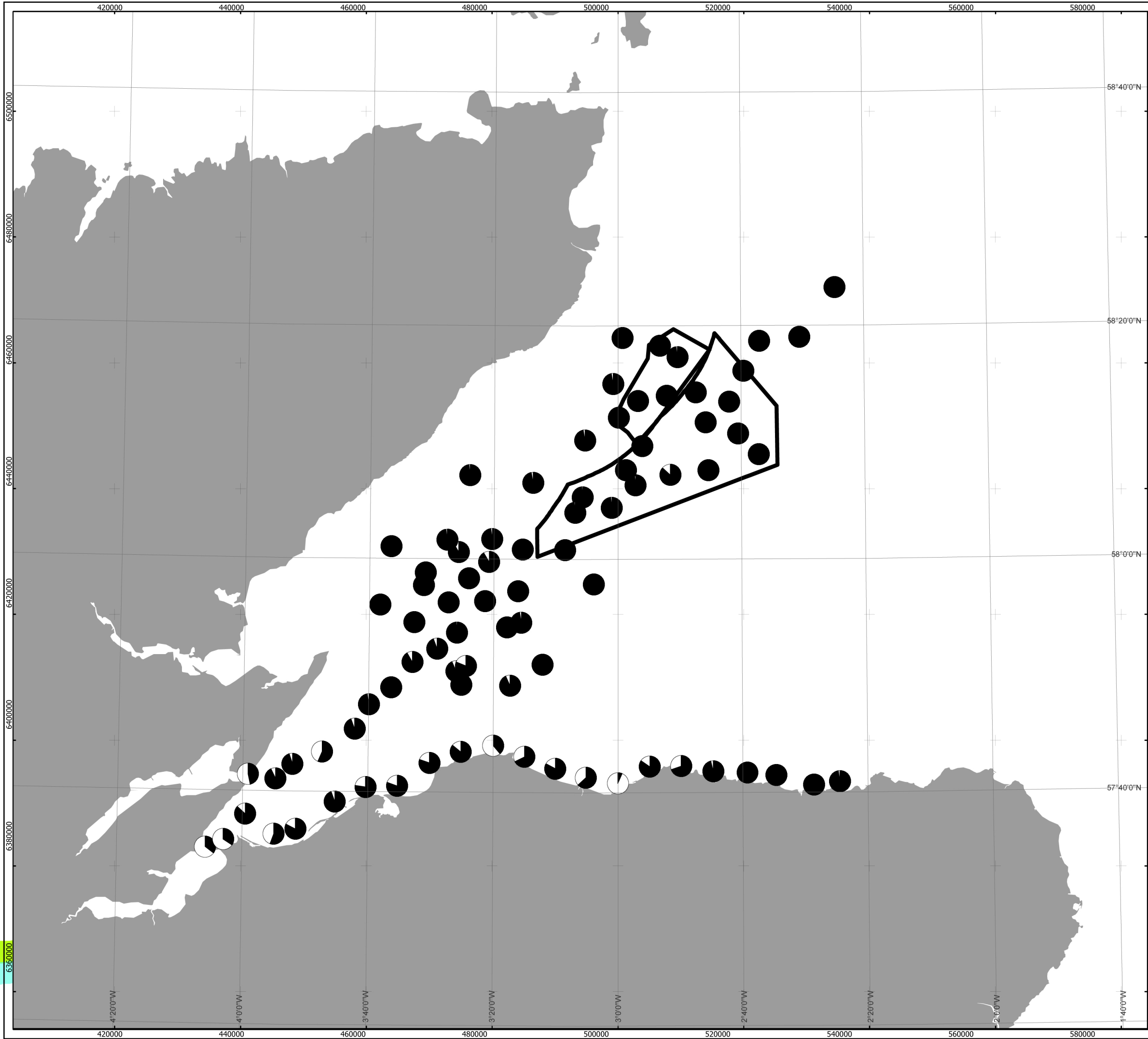
Date: 15/05/2012 Revision: B

REF: 8460001-PPW0201-SMR-MAP-004

**Fig 4.4-7 At-Sea Usage
of Grey Seals around
MORL and BOWL**



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KEY
Proportion of detection positive days for harbour porpoise 2009 and 2010

-  Present
-  Absent

Horizontal Scale: 1:600,000 A3 Chart
 0 15,000 30,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

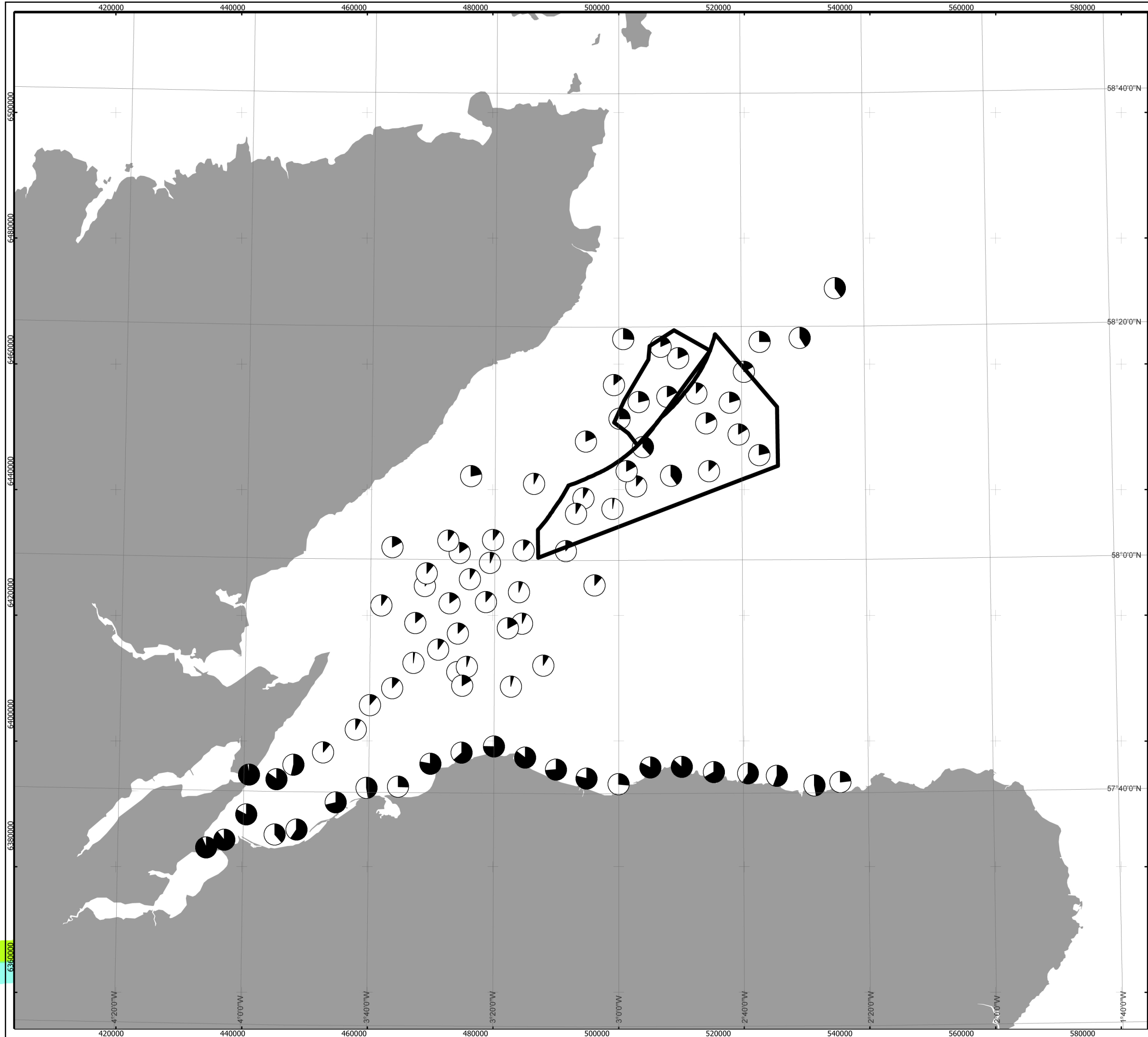
Produced: KLB
 Reviewed: PMT
 Approved: PH

Date: 19/05/2012 Revision: A
 REF: 8460001-PPW0201-UAB-MAP-002

Fig 4.4-8 Detection Days for Harbour Porpoise


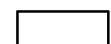
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KEY
Proportion of detection positive days for dolphins 2009 and 2010

-  Present
-  Absent

Horizontal Scale: 1:600,000 A3 Chart
0 15,000 30,000 Meters

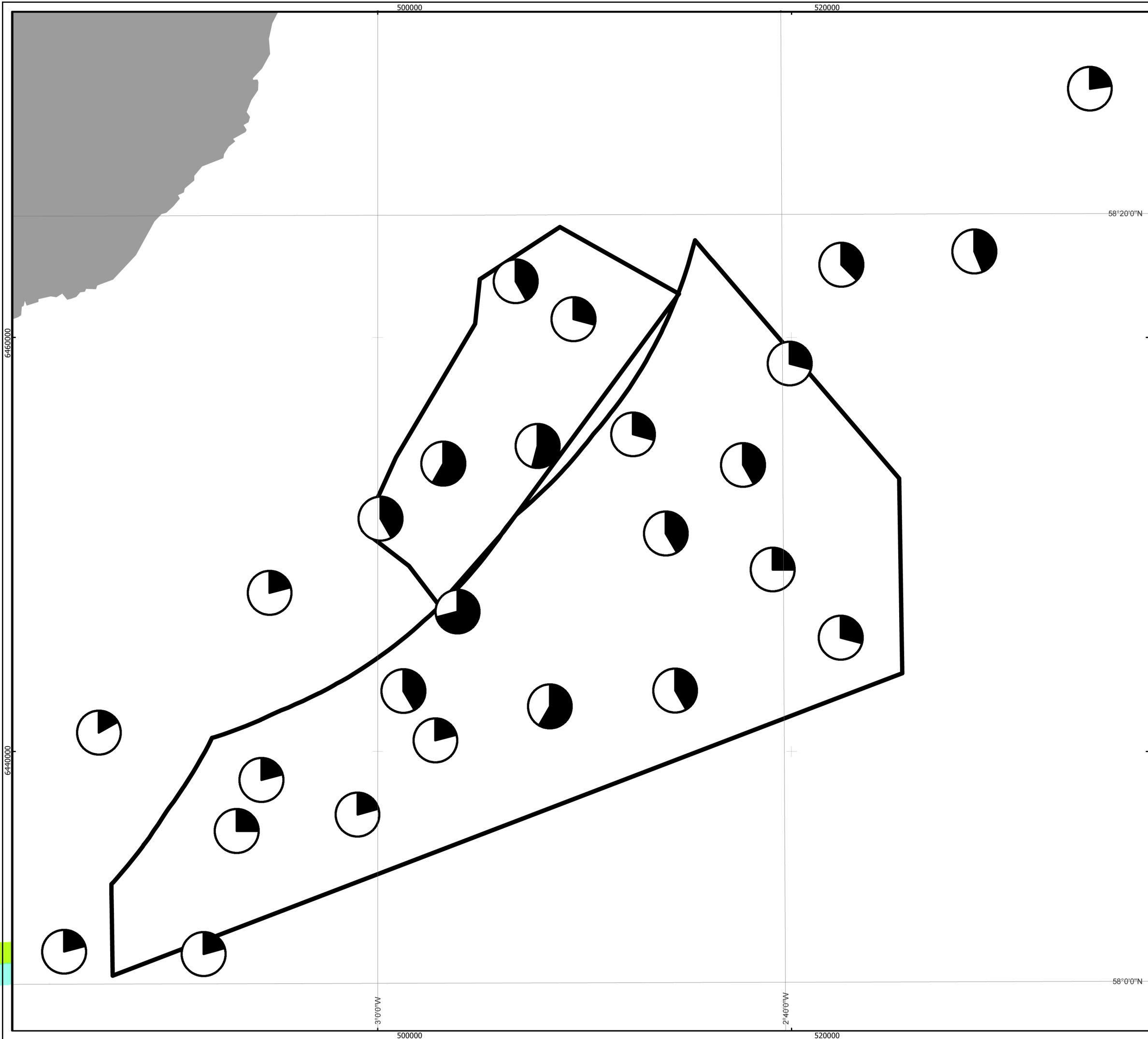
Geodetic Parameters: WGS84 UTM Zone 30N

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Reviewed: PMT
Approved: PH

Date: 19/05/2012 Revision: A
REF: 8460001-PPW0201-UAB-MAP-003


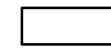
Fig 4.4-9 Detection Days for Dolphins

Moray Offshore Renewables Ltd



Moray Offshore Renewables Ltd

KEY
Median detection positive hours for harbour porpoise 2009 and 2010

-  Present
-  Absent

Horizontal Scale: 1:175,000 A3 Chart
 0 4,000 8,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

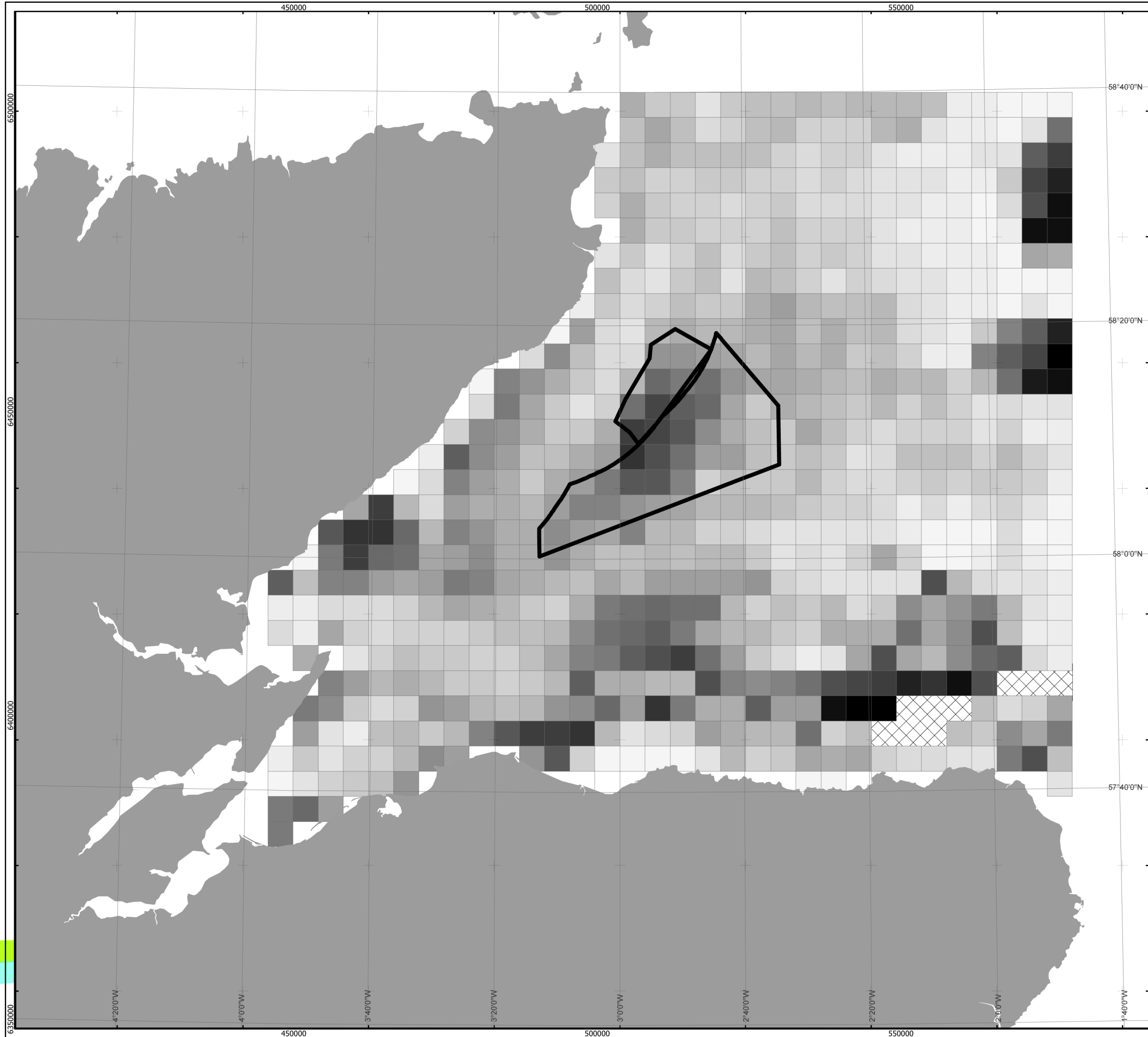
Produced: KLB
 Reviewed: PMT
 Approved: PH

Date: 19/05/2012 Revision: A
 REF: 8460001-PPW0201-UAB-MAP-004

Fig 4.4-10 Detection Days for Harbour Porpoise (Windfarm)

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KEY
Predicted harbour porpoise

1	16
2	17
3	18
4	19
5	20
6	21
7	22
8	23
9	24
10	25
11	26
12	27
13	28
14	29
15	30

Horizontal Scale: 1:600,000 A3 Chart
 0 13,000 26,000 Meters

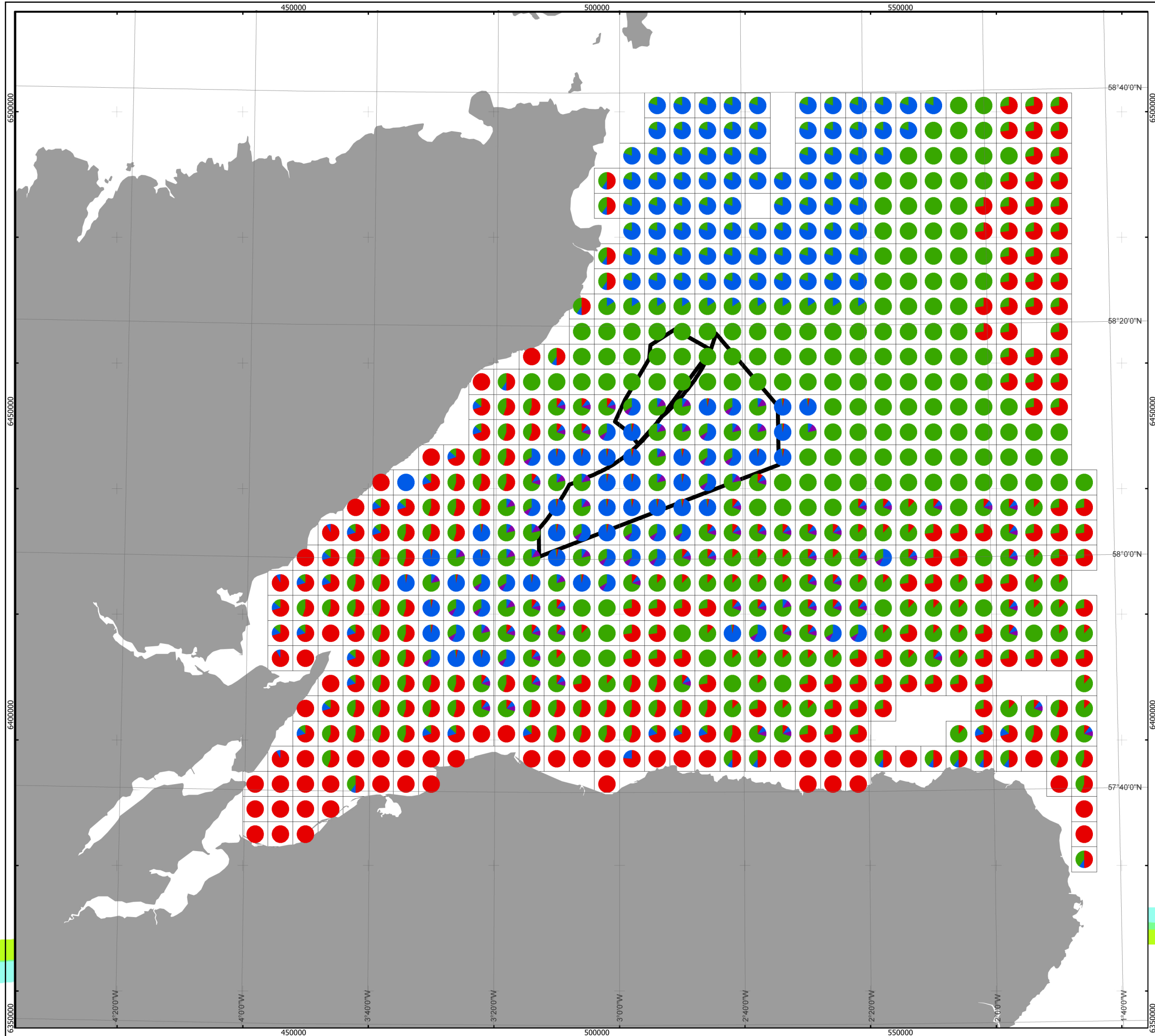
Geodetic Parameters: WGS84 UTM Zone 30N

Produced: KLB
 Reviewed: PMT
 Approved: PH

Date: 19/05/2012 Revision: A
 REF: 8460001-PPW0201-UAB-MAP-006

Fig 4.4-11 Predicted Harbour Porpoise Grid

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KEY
Dolphin species

- Bottlenose dolphin
- Common dolphin
- Risso's dolphin
- White beaked dolphin

Horizontal Scale: 1:600,000 A3 Chart
0 13,000 26,000 Meters

Geodetic Parameters: WGS84 UTM Zone 30N

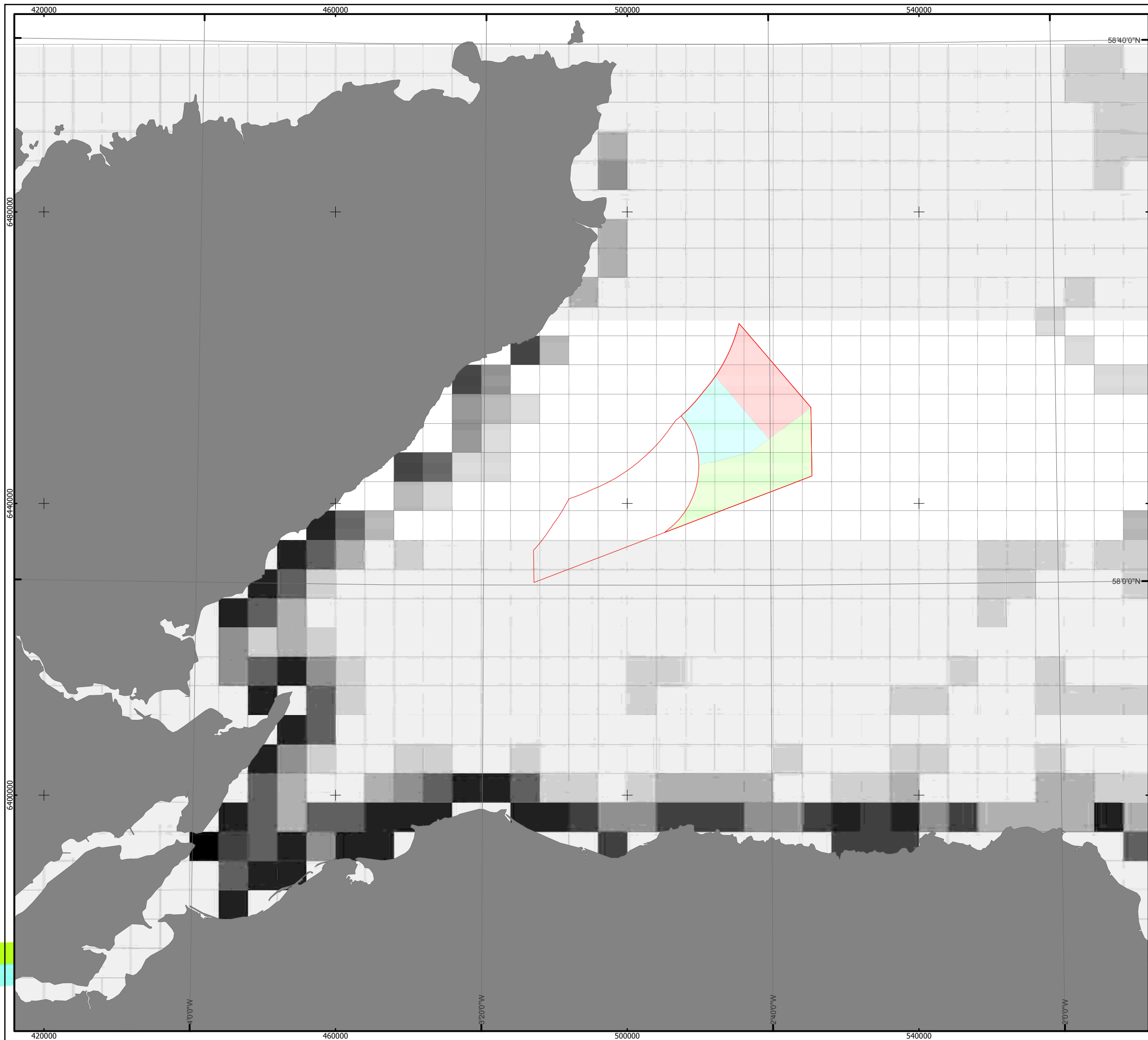
Produced: KLB
Reviewed: PMT
Approved: PH

Date: 19/05/2012 Revision: A
REF: 8460001-PPW0201-UAB-MAP-007

Fig 4.4-12 Dolphin Species Grid

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Moray Offshore Renewables Ltd

KEY

- MORL Development Boundary
- MacColl Windfarm
- Stevenson Windfarm
- Telford Windfarm

**4km Bottlenose Dolphin Distribution Grid
Predicted Probability of Occurrence**

- 0.00 - 0.100
- 0.101 - 0.200
- 0.201 - 0.300
- 0.301 - 0.400
- 0.4001 - 0.500
- 0.5001 - 0.600
- 0.6001 - 0.700
- 0.7001 - 0.800

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

Geodetic Parameters: WGS84 UTM Zone 30N

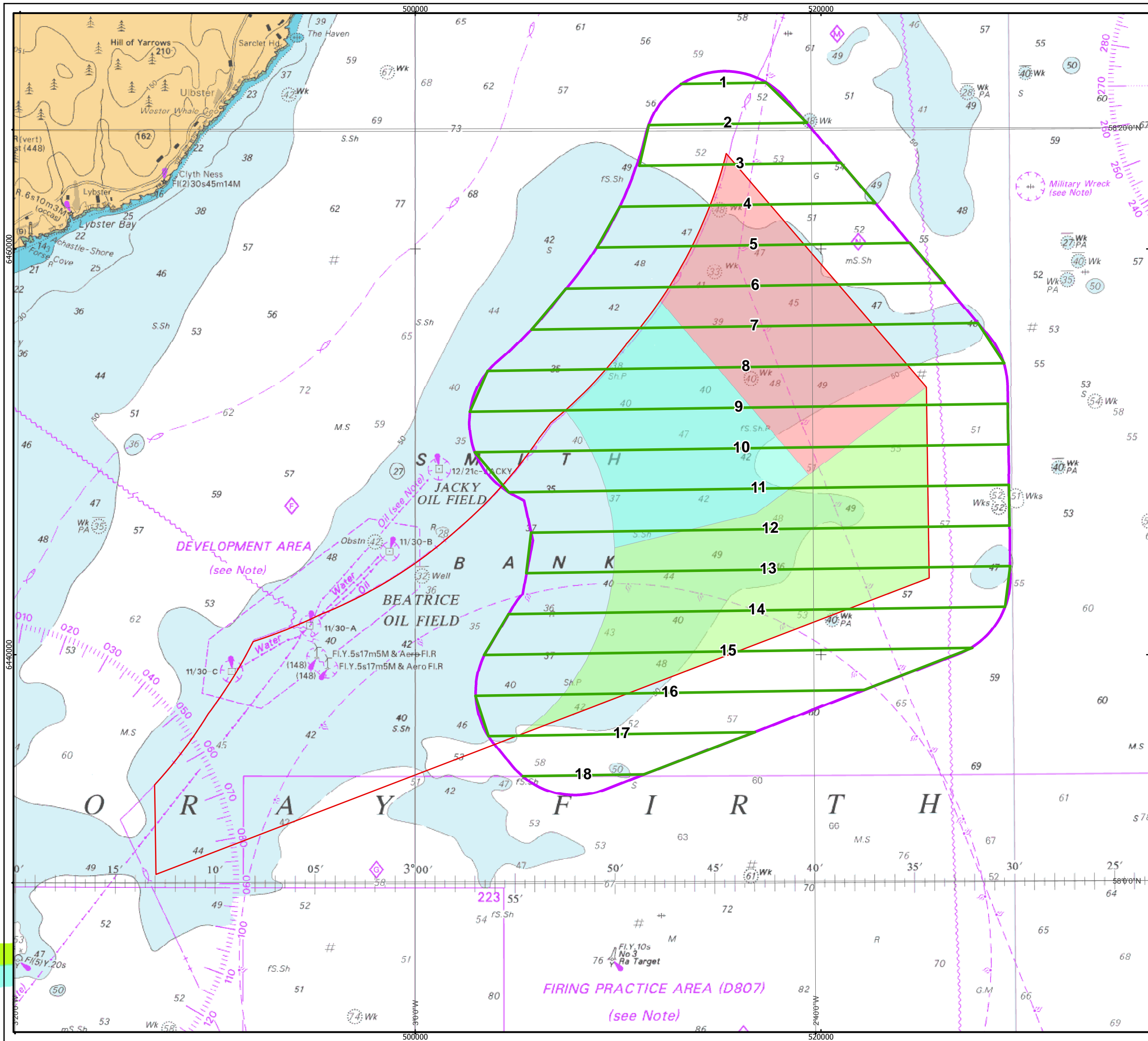
Produced: KLB
Reviewed: PH
Approved: CR/SP

Date: 27/04/2012 Revision: B
REF: 8460001-PPW0201-UAB-MAP-008

Fig 4.4-13 - Predicted number of bottlenose dolphins

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KEY

- Boat-based survey transects
- Boat-based survey area
- MORL Zone Boundary
- Telford Windfarm
- Stevenson Windfarm
- MacColl Windfarm

Horizontal Scale: 1:180,000 A3 Chart
N

Geodetic Parameters: WGS84 UTM Zone 30N

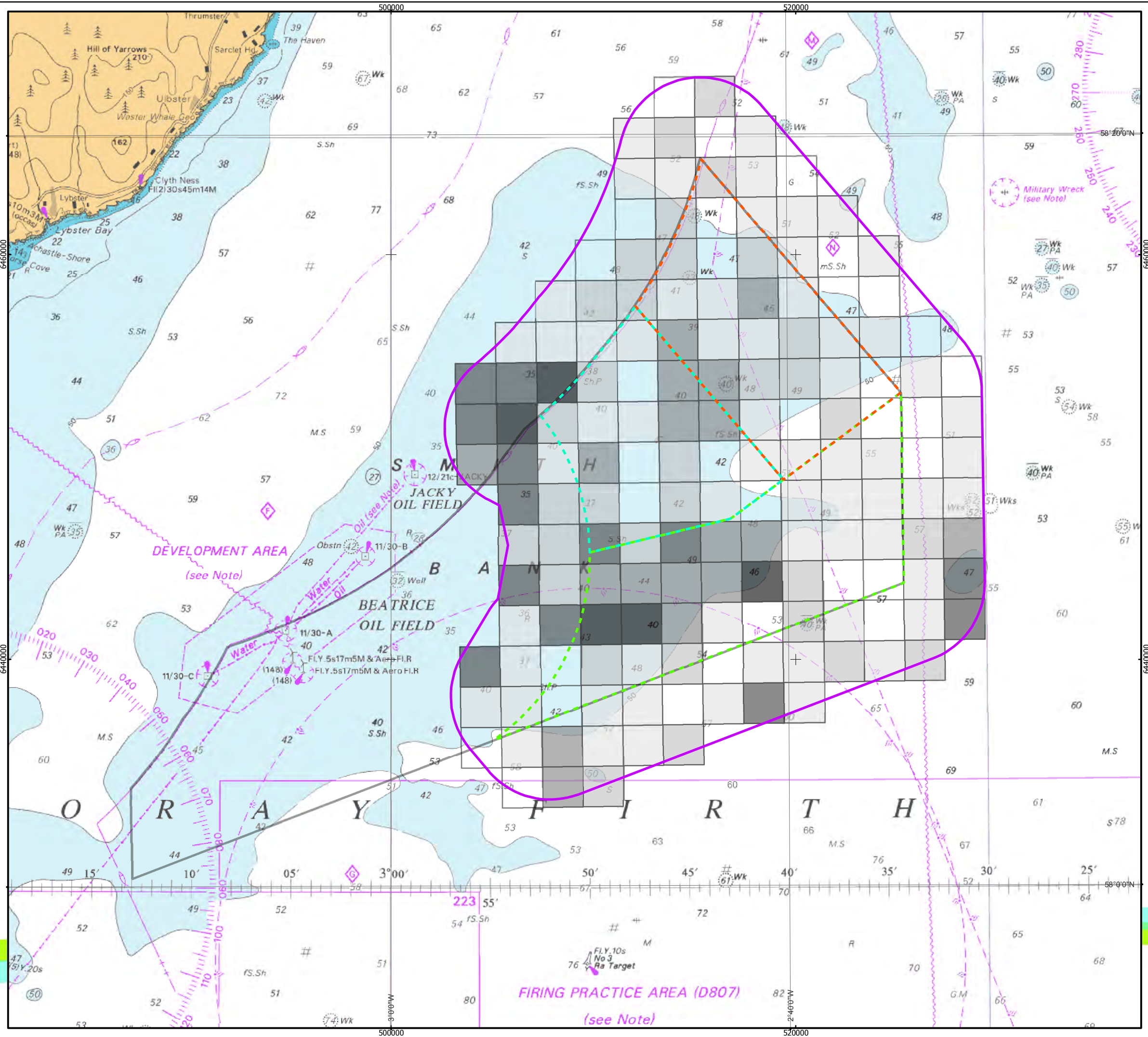
Produced: LG
 Reviewed: SC
 Approved: CJP

Date: 16/11/2011 Revision: A
 REF: 8460001-PPW0201-NPW-MAP-019

Figure 4.4-14: Boat-based Survey Area (2010 - 2012)

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Moray Offshore Renewables Ltd

KEY

- Telford OWF
- Stevenson OWF
- MacColl OWF
- Boat-based survey area

Mean number of harbour porpoise observed per survey per grid square

- 0 - 0.15
- >0.15 - 0.3
- >0.3 - 0.5
- >0.5 - 0.8
- >0.8 - 1.3

Mean number calculated across 19 surveys

Horizontal Scale: 1:180,000 A3 Chart

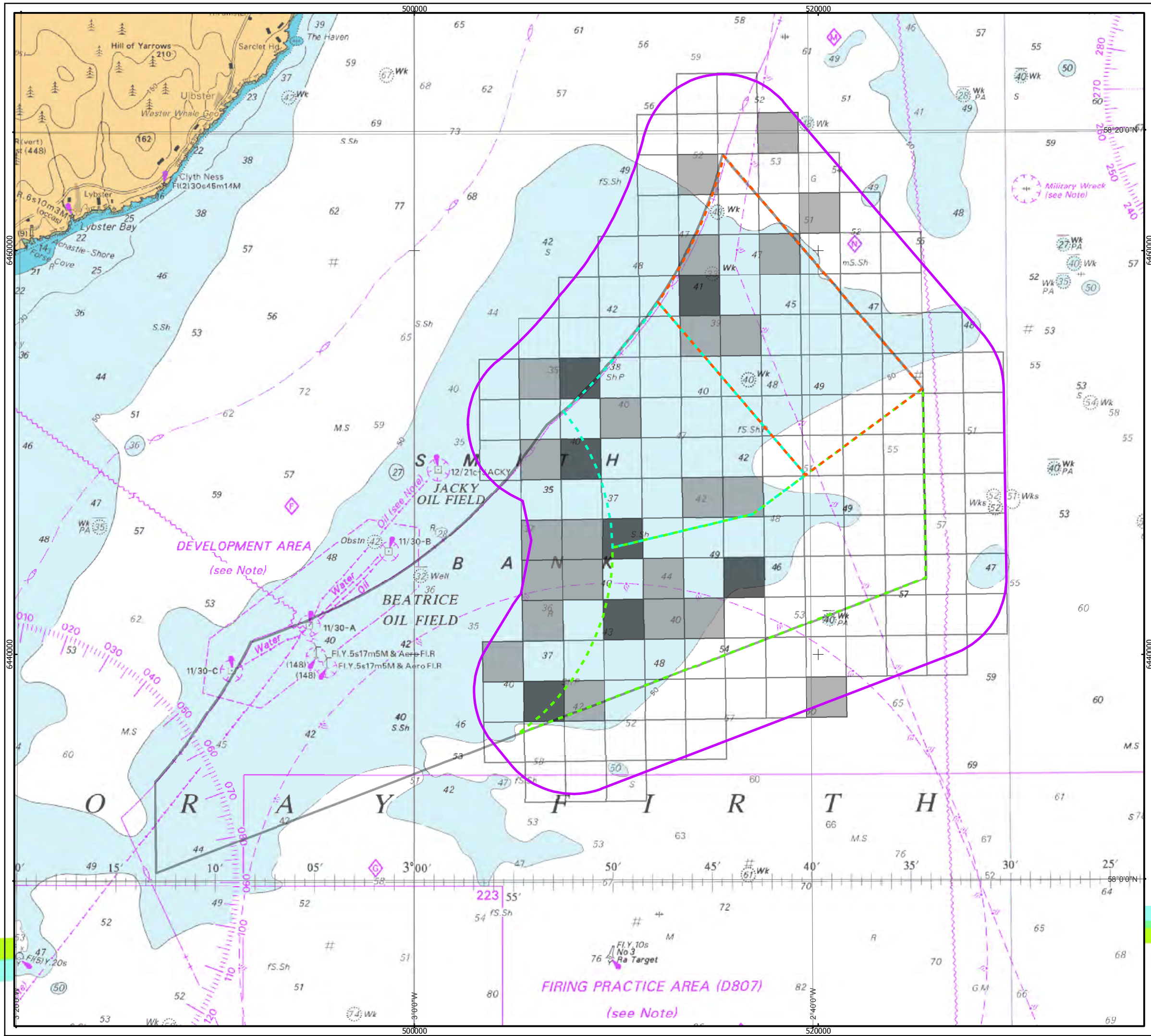
Geodetic Parameters: WGS84 UTM Zone 30N

Produced: LG
Reviewed: SC
Approved: CJP

Date: 16/11/2011 Revision: A
REF: 8460001-PPW0201-NPW-MAP-020

Fig 4.4-15a: Harbour Porpoise Density (April 2010 - July 2011)

Moray Offshore Renewables Ltd



Moray Offshore Renewables Ltd

KEY

- Telford OWF
- Stevenson OWF
- MacColl OWF
- Boat-based survey area

Mean number of minke whale observed per survey per grid square

- 0 - 0.05
- >0.05 - 0.1
- >0.1 - 0.16

Mean number calculated across 19 surveys

Horizontal Scale: 1:180,000 A3 Chart
N

Geodetic Parameters: WGS84 UTM Zone 30N

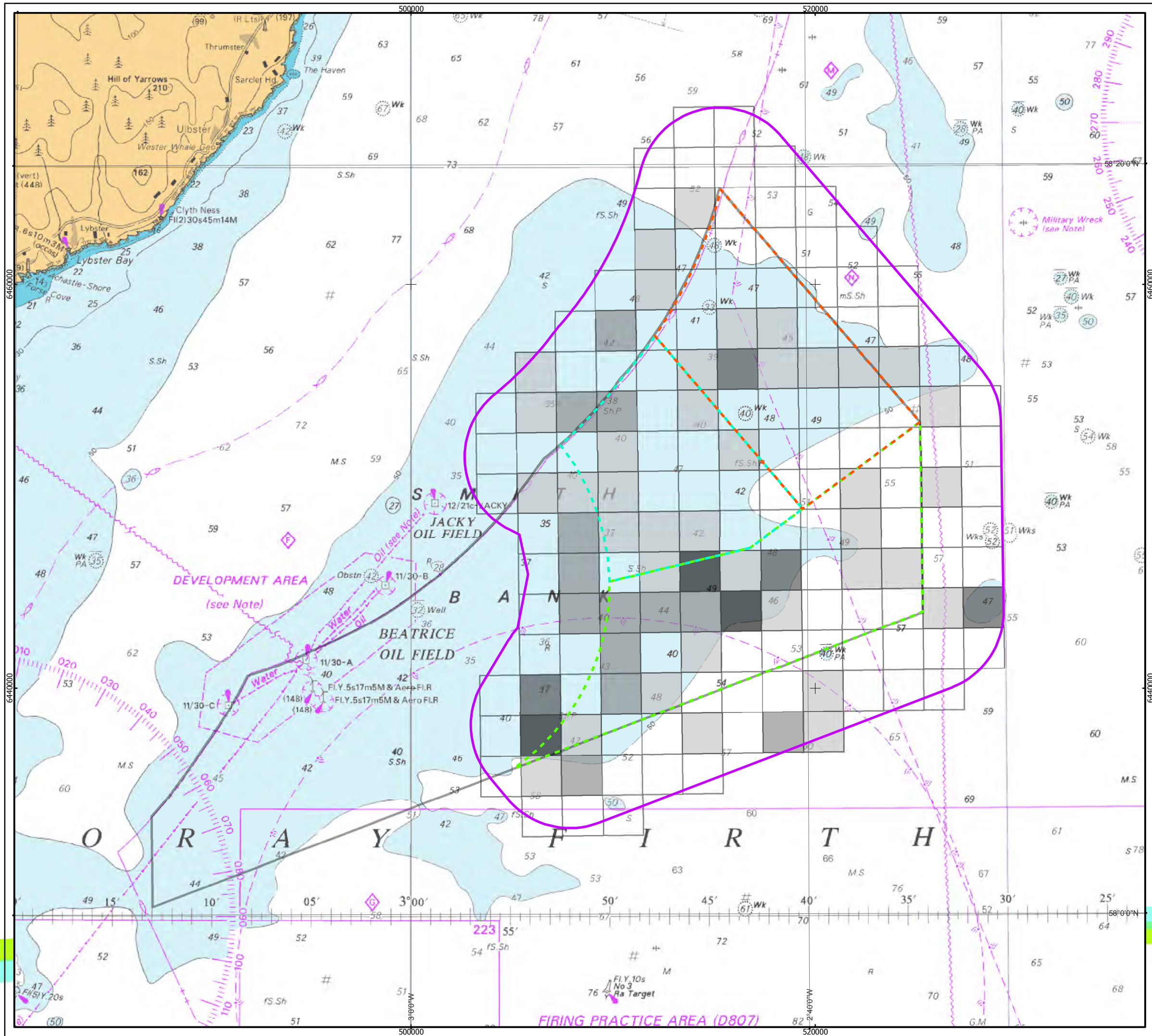
Produced: LG
 Reviewed: SC
 Approved: CJP

Date: 17/11/2011 Revision: A
 REF: 8460001-PPW0200-NPW-MAP-021

Fig 4.4-15b: Minke Whale Density (April 2010 - July 2011)

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Moray Offshore Renewables Ltd

KEY

- Telford OWF
- Stevenson OWF
- MacColl OWF
- Boat-based survey area

Mean number of grey seal observed per survey per grid square

- 0 - 0.05
- >0.05 - 0.1
- >0.1 - 0.15
- >0.15 - 0.2
- >0.2 - 0.27

Mean number calculated across 19 surveys

Horizontal Scale: 1:180,000 A3 Chart

Geodetic Parameters: WGS84 UTM Zone 30N

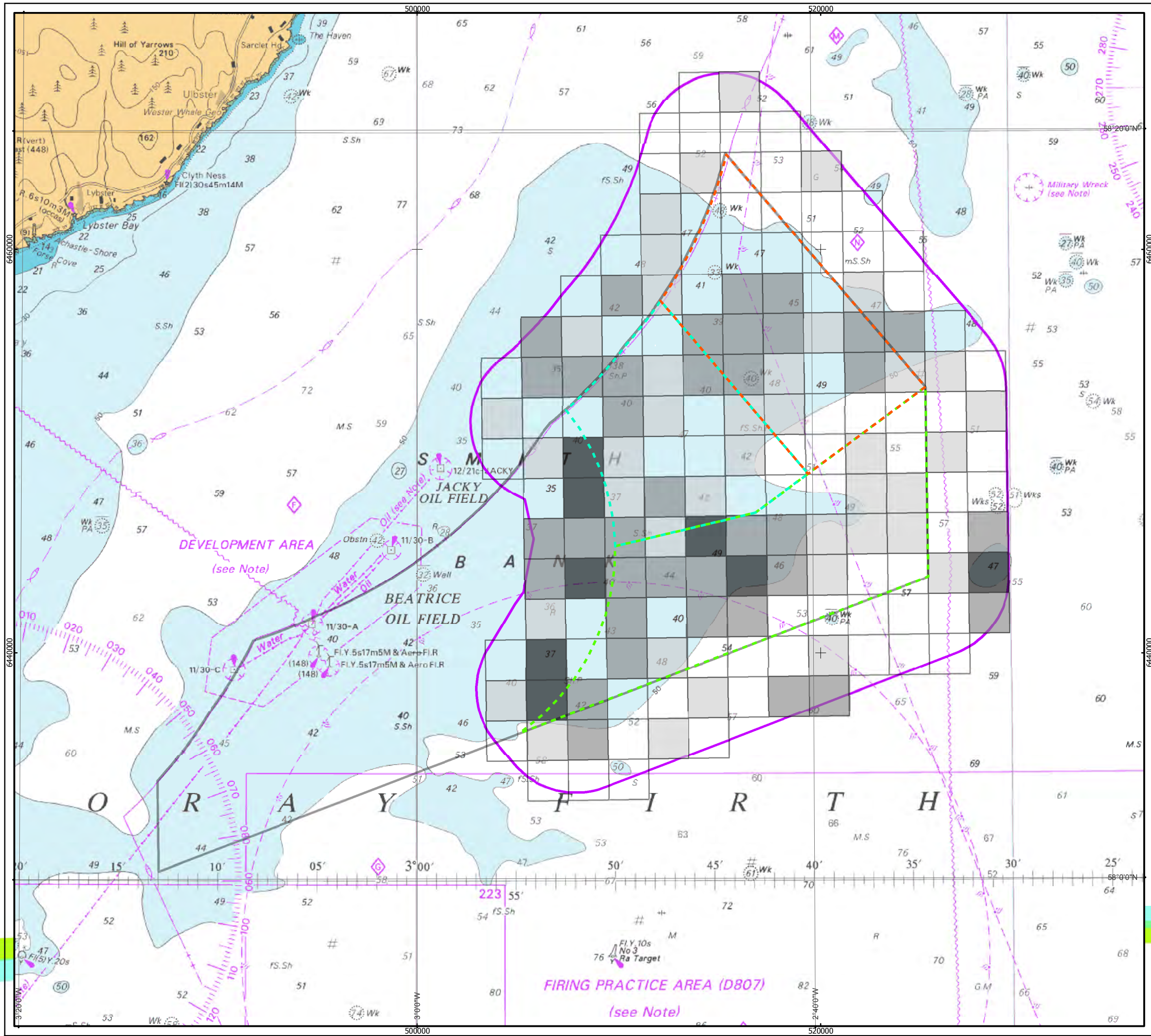
Produced: LG
 Reviewed: SC
 Approved: CJP

Date: 17/11/2011 Revision: A
 REF: 8460001-PPW0200-NPW-MAP-022

Fig 4.4-15c: Grey Seal Density (April 2010 - July 2011)

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Moray Offshore Renewables Ltd

KEY

- Telford OWF
- Stevenson OWF
- MacColl OWF
- Survey area

Mean number of seals observed per survey per grid square

- >0 - 0.1
- >0.1 - 0.25
- >0.25 - 0.48

Mean number calculated across 19 surveys

Horizontal Scale: 1:180,000 A3 Chart

Geodetic Parameters: WGS84 UTM Zone 30N

Produced: LG
 Reviewed: SC
 Approved: CJP

Date: 17/11/2011 Revision: A
 REF: 8460001-PPW0200-NPW-MAP-023

Fig 4.4-15d: Combined Seal Density (April 2010 - July 2011)

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