



Technip UK Limited

Report



Aberdeen Offshore Wind Farm Environmental Statement - Addendum

Appendix B: Bird Distribution Figures

June 12



deeper understanding

Appendix B: Bird Distribution Figures

Project/Job Title: **Aberdeen Offshore Wind Farm**
Genesis Job Number: **J-90008/A**

Prepared for:
Technip UK Limited

Prepared by Genesis:
6 Albyn Place, Aberdeen, AB10 1YH, UK
Tel: +44 (0)1224 615100 Fax: +44 (0)1224 615111
www.genesisoilandgas.com

Rev	Date	Description	Issued by	Checked by	Approved by	Client Approval
B1	25/06/2012	Final Draft	PDB	IS	PDB	
G1	26/06/2012	Final Issue	PDB	IS	PDB	

Document No./File Name: J90008A-Y-RT-24000 G1-Appendix B Bird Distribution.docm

PREFACE

On 1st August 2011 Aberdeen Offshore Wind Farm Limited (AOWFL) applied to the Scottish Ministers under Section 36 of the Electricity Act 1989 (as amended), and applied for a Marine Licence under the Marine (Scotland) Act 2010 to construct, operate and decommission an offshore wind farm and deployment centre off the coast of Aberdeen, Aberdeen Offshore Wind Farm, also known as the European Offshore Wind Deployment Centre (EOWDC).

The application comprised an Environmental Statement (ES), prepared in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (as amended) and Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) and followed current best practice.

The August 2011 submission comprises the following volumes:

- Volume 1 – Non-Technical Summary
- Volume 2 – Environmental Statement
- Volume 3 – Figures
- Volume 4 – Technical Appendices
 - Project Description / Rochdale Envelope
 - When the ES was submitted to Marine Scotland in August 2011, it had been agreed that further information would be required in support of the application. This further information was referred to as an 'Addendum' to the ES.
 - An application for an Offshore Wind Farm requires some flexibility to enable subsequent detailed design. This is particularly important in the context of the scheme to be developed as a demonstrator site. In order to carry out an environmental assessment of the project, parameters require to be defined and sufficient information provided to enable the identification of the significant effects. These parameters form the Rochdale Envelope.

At the time of defining the Rochdale Envelope (as submitted August 2011) the project engineers undertook consultation with the supply chain to understand their ambitions and likely details of their future wind turbines which were at an early stage of development. The results of this initial consultation were inevitably a reflection of the supply chain at the time, and the stated ambitions of manufacturers at the time.

In keeping with the concept of a demonstrator site, over recent months, AOWFL has engaged with global turbine suppliers who wish to demonstrate their next generation turbine technology at the AOWF site. AOWFL has commenced a formal commercial process to identify and refine the turbine supply options for the site. This process is at an early and confidential stage, however revised turbine specifications have been made available to the project by the manufacturers.

The overarching objective of the EU grant associated with AOWF, is to deploy new equipment, systems, processes and initiate R&D to improve the competitiveness of offshore wind energy production, whilst generating environmentally sound marketable electricity and to increase the supply chain capabilities in Scotland, the wider UK and Europe.

The commercial evaluation of prospective turbine suppliers who can meet the EU requirements has revealed that a number of manufacturer's turbines marginally exceed the Rochdale Envelope parameters (as submitted). These turbines would require an adjustment to the tip height of up to 198.5 m, and rotor radius of up to 86 m as summarised in the table below.

Please note that the maximum dimensions are likely only to be applicable to specific wind turbine locations and are unlikely to be relevant to all 11 turbine locations. Please also note

that a minimum clearance of 22 m above Mean High Water Springs (MHWS) will be maintained for marine navigation.

Table 1: As submitted Rochdale Envelope and proposed adjusted Rochdale Envelope

Parameter	Rochdale Envelope as submitted	Rochdale envelope (as requested)	Differential
Tip Ht (aLAT)	Up to 195 m	Up to 198.5 m	3.5 m
Hub Ht (aLAT)	Up to 120 m	Up to 120 m	Nil (likely reduction)
Rotor radius (diameter)	Up to 75 m (150 m)	Up to 86 m (172 m)	11 m (22 m)

- Environmental Statement Addendum (June 2012)
- Addenda are commonly submitted as a project evolves through time to clarify issues, or to provide additional baseline data and updated environmental assessment information. This report (Appendix B Bird Distribution) forms part of the ES Addendum.
- The June 2012 Addendum contains the following information:
 - Additional bird and marine mammal baseline data.
 - An additional visualisation from Girdleness lighthouse.
 - Results of a geo-locational study into golf courses and Round 1 offshore wind farms.
 - Requested minor adjustments to turbine dimensions which form a part of the project description information, known as the 'Rochdale Envelope'.
 - Supporting statement and representative viewpoints of landscape and visual effects taking account of the adjustments to the Rochdale Envelope and preliminary design principles.
 - Updated ornithological collision risk modelling resulting from the updated Rochdale Envelope, updated ornithological impact assessment, and updated Habitats Regulations Assessment.

Where to View the Consent Application

The ES addendum submission may be viewed at the following locations during normal office hours:

Vattenfall Wind Power Ltd 3 rd Floor The Tun Holyrood Edinburgh EH8 8AE	Balmedie Library Eigie Rd Balmedie AB23 8YF
Aberdeen Central Library Rosemount Viaduct Aberdeen AB25 1GW	Peterhead Library 51 St Peter Street Peterhead AB42 1QD
Ellon Library Station Road Ellon AB41 9AE	Bridge Of Don Library Scotstown Road Bridge Of Don Aberdeen AB22 8HH

The ES addendum can also be viewed at the Scottish Government Library at Victoria Quay, Edinburgh, EH6 6QQ.

OBTAINING YOUR OWN COPY OF THE PLANNING APPLICATION ADDENDUM

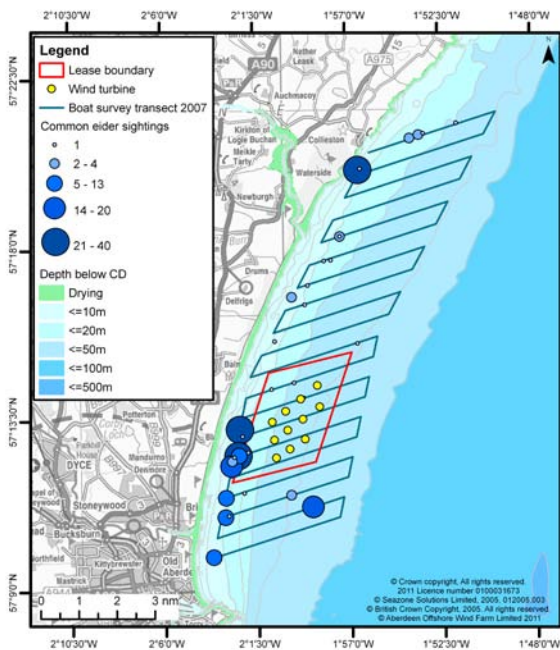
The ES addendum is available on the Vattenfall website:

<http://www.vattenfall.co.uk/en/aberdeen-bay.htm>

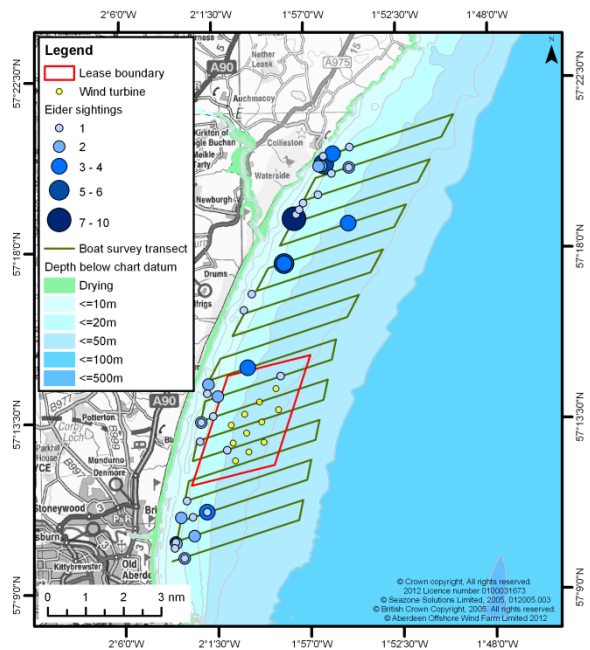
Contents

1.0 Common Eider Distribution	7
2.0 Long-Tailed Duck Distribution	9
3.0 Common Scoter Distribution	10
4.0 Red-Throated Diver Distribution	12
5.0 Fulmar Distribution	14
6.0 Gannet distribution	16
7.0 Manx Shearwater Distribution	18
8.0 Cormorant Distribution	19
9.0 European Shag Distribution	20
10.0 Arctic Skua Distribution	22
11.0 Great Skua Distribution	23
12.0 Kittiwake Distribution	24
13.0 Common Gull Distribution	26
14.0 Lesser black-backed gull Distribution	28
15.0 Herring Gull Distribution	29
16.0 Great Black-Backed Gull Distribution	31
17.0 Sandwich Tern Distribution	33
18.0 Arctic/Common/'commic' Tern Distribution.....	34
19.0 Guillemot Distribution	35
20.0 Razorbill Distribution	37
21.0 Guillemot/Razorbill Distribution	39
22.0 Auk Sp./Guillemot/Razorbill Distribution.....	40
23.0 Little Auk Distribution	41
24.0 Puffin Distribution	42

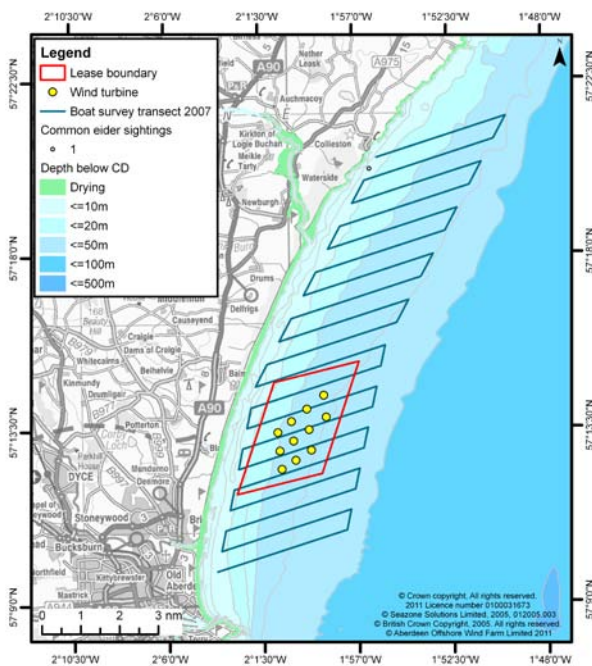
1.0 COMMON EIDER DISTRIBUTION



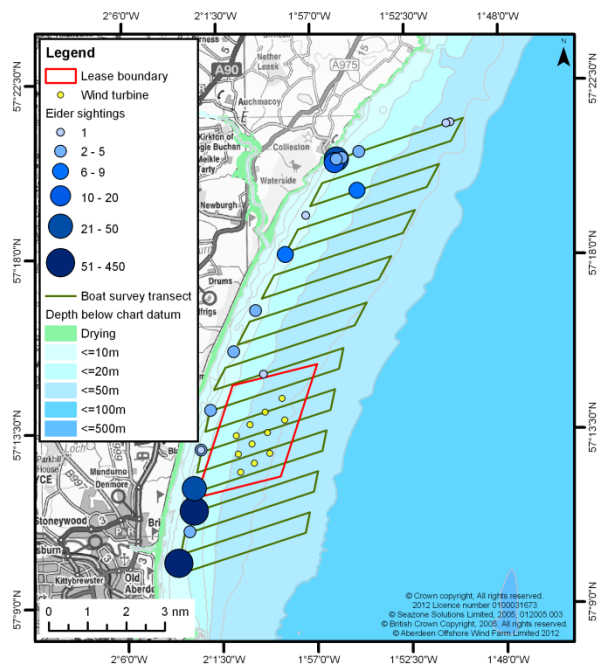
Common Eider – November to March.
Year 1



Common Eider – April to May.
Year 1

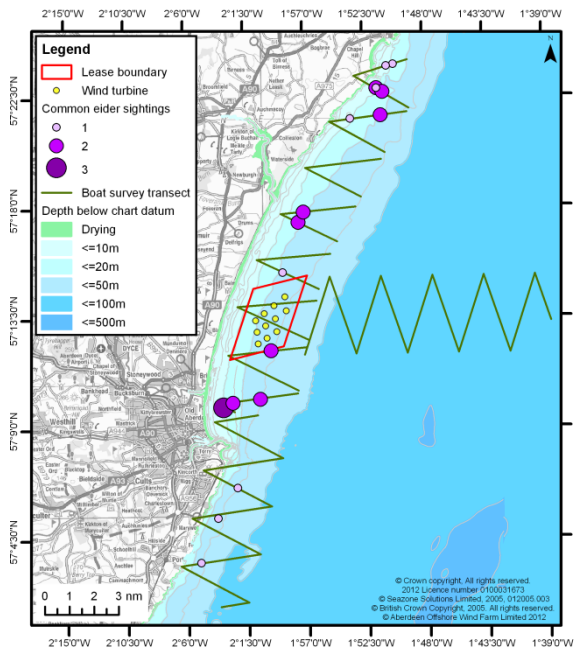


Common Eider – June to August.
Year 1

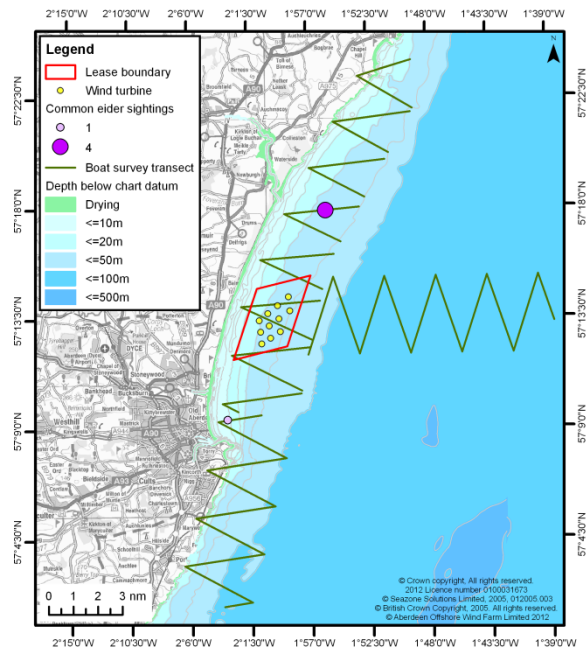


Common Eider – September to October.
Year 1

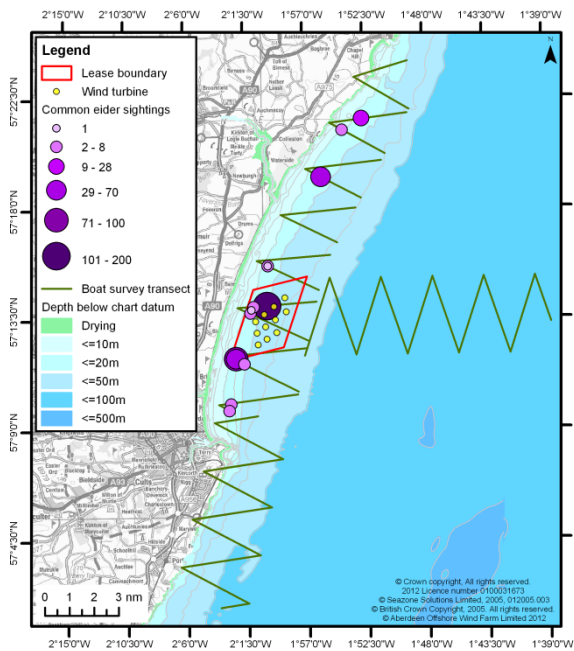
COMMON EIDER DISTRIBUTION



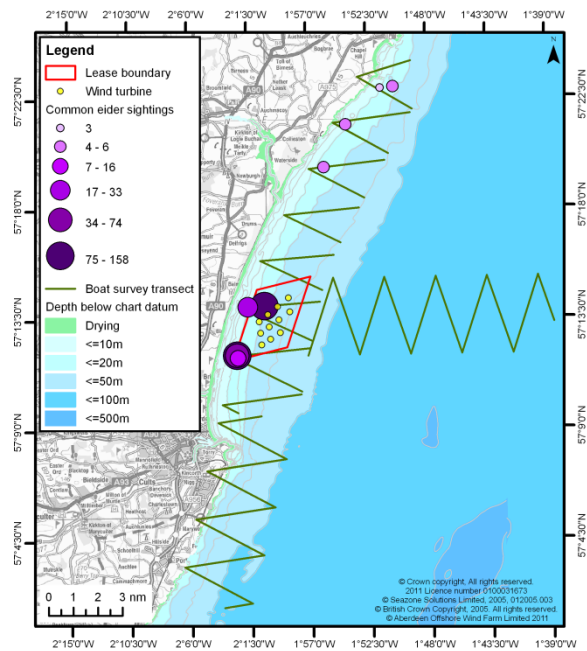
Common Eider – November to March.
Year 2



Common Eider – April to May.
Year 2

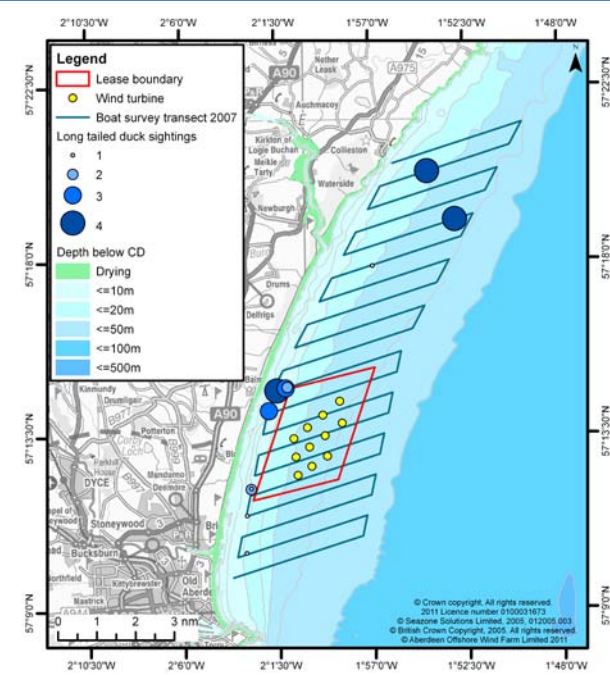


Common Eider – June to August.
Year 2

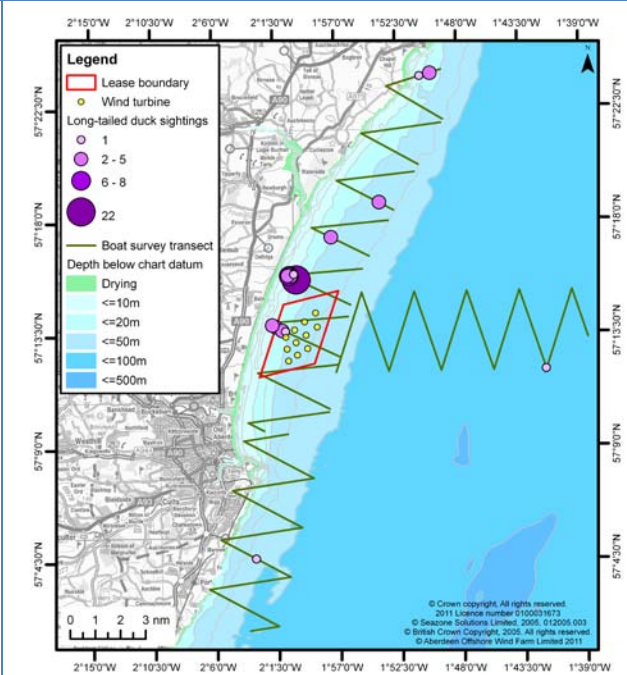


Common Eider – September to October.
Year 2

2.0 LONG-TAILED DUCK DISTRIBUTION

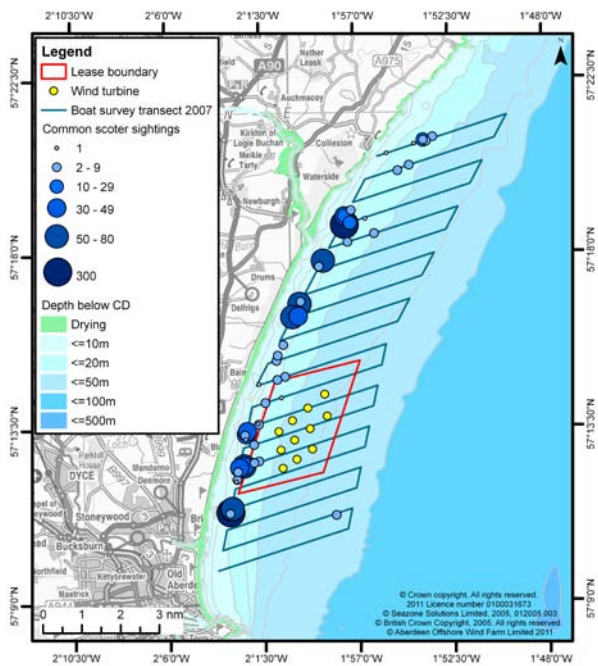


Long-Tailed Duck – January to December.
Year 1

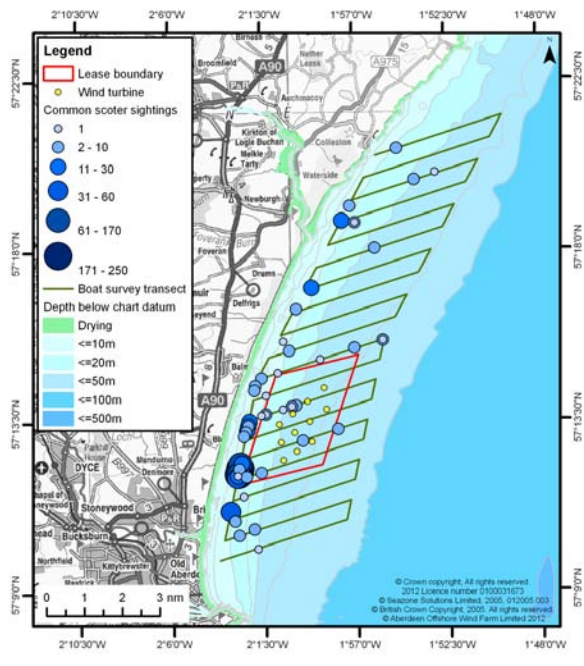


Long-Tailed Duck – January to December.
Year 2

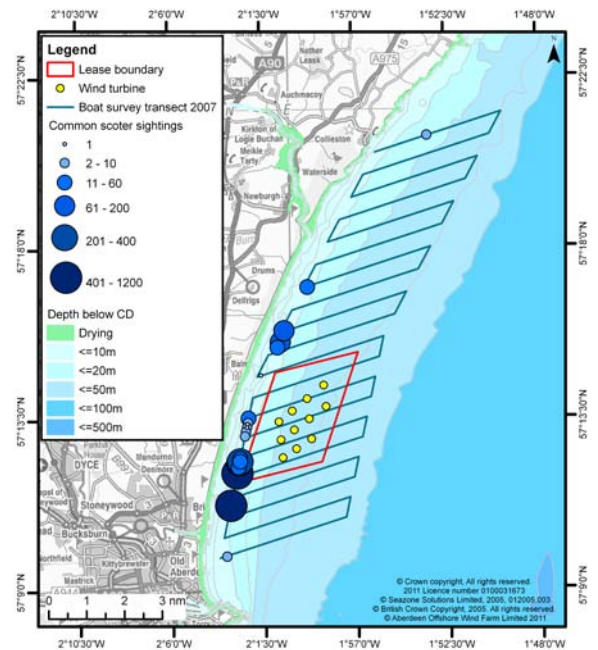
3.0 COMMON SCOTER DISTRIBUTION



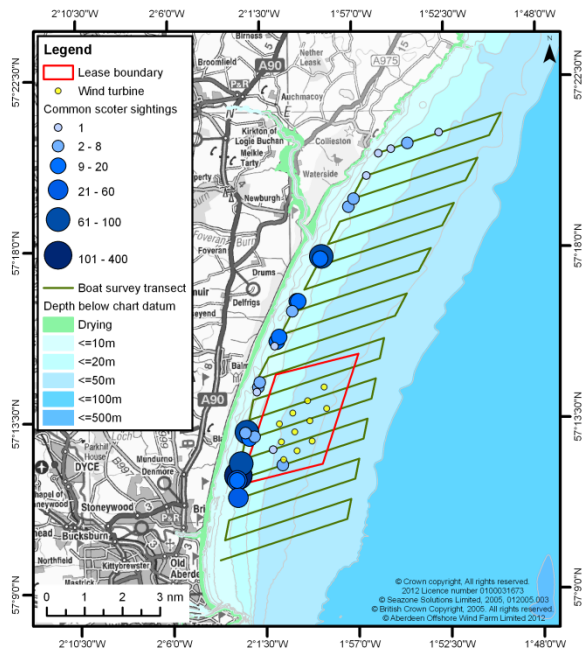
Common Scoter – November to March.
Year 1



Common Scoter – April to May.
Year 1

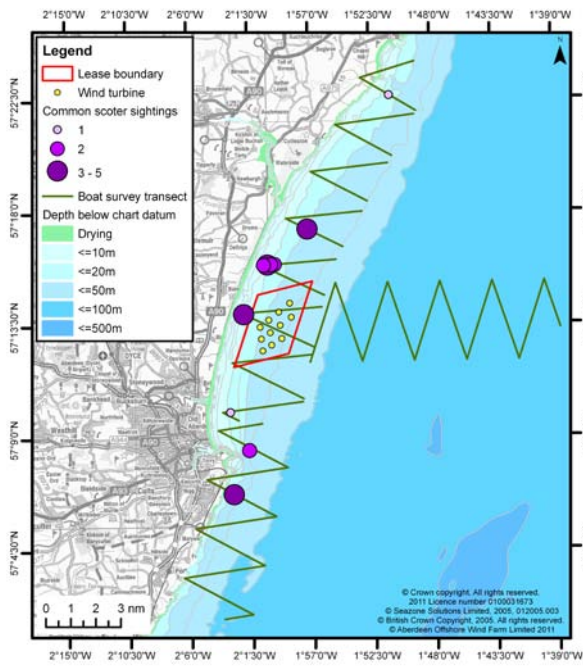


Common Scoter – June to August.
Year 1

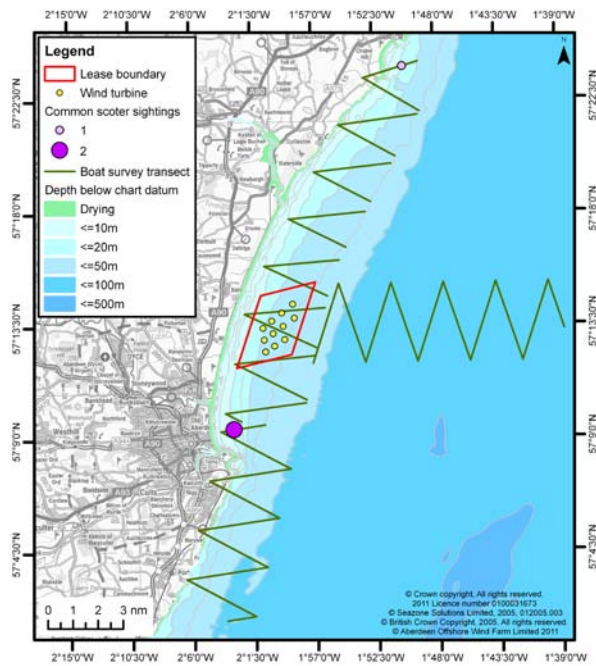


Common Scoter – September to October.
Year 1

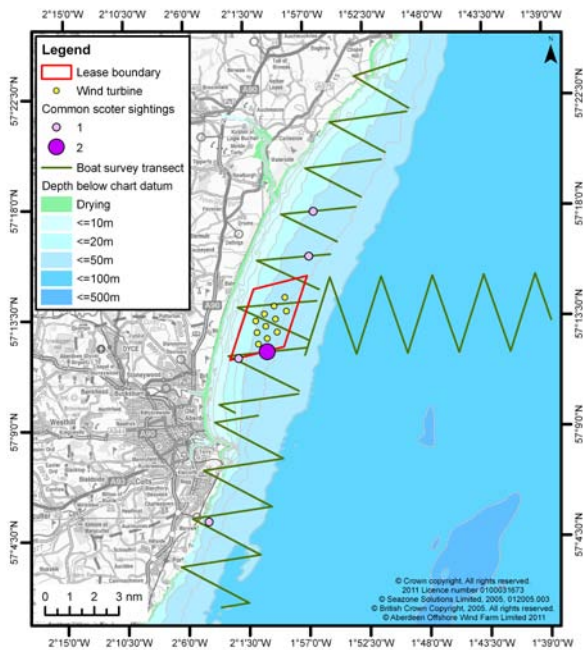
COMMON SCOTER DISTRIBUTION



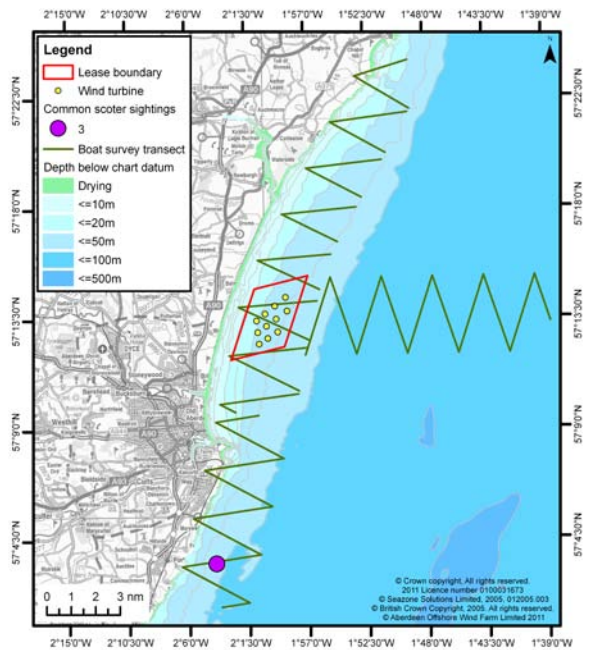
Common Scoter – November to March.
Year 2



Common Scoter – April to May.
Year 2

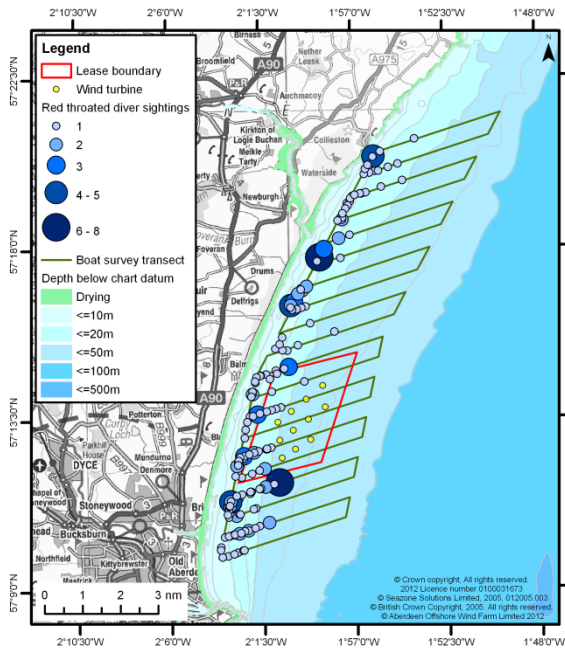


Common Scoter – June to August.
Year 2

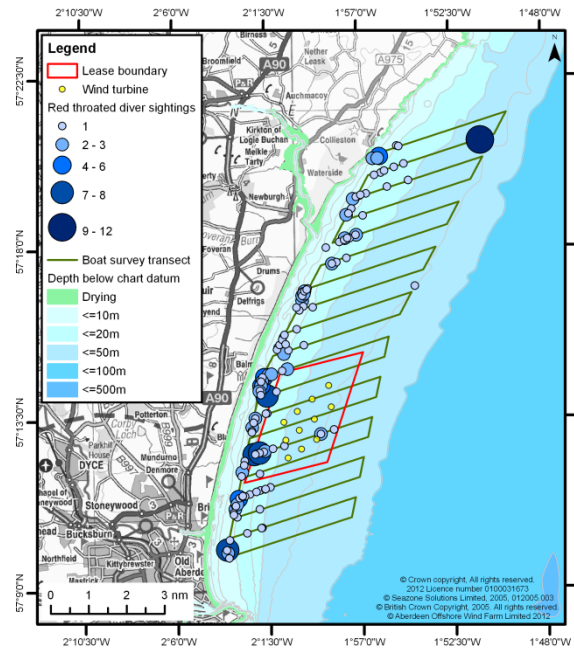


Common Scoter – September to October.
Year 2

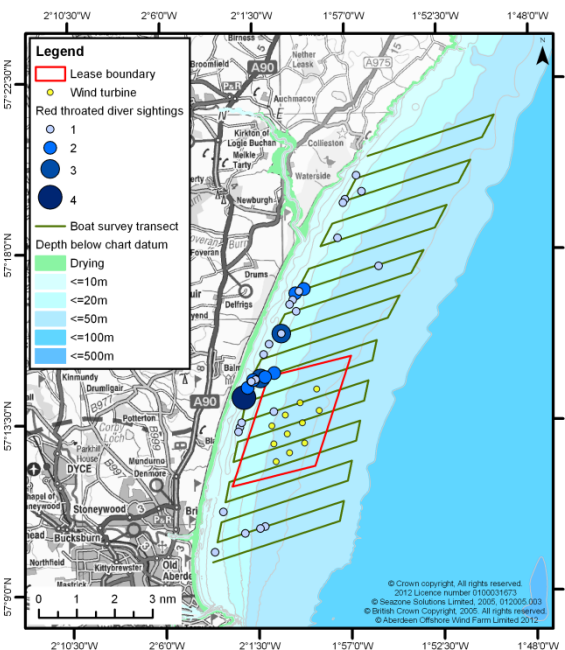
4.0 RED-THROATED DIVER DISTRIBUTION



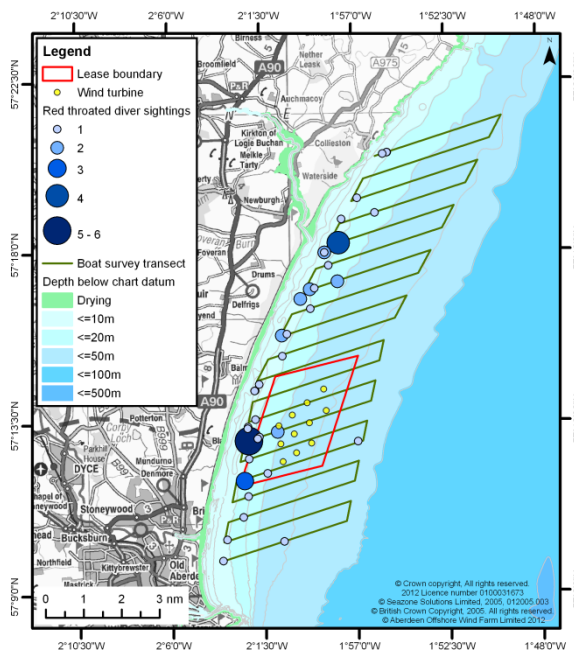
Red-Throated Diver – November to February, Year 1



Red-Throated Diver – March to May, Year 1

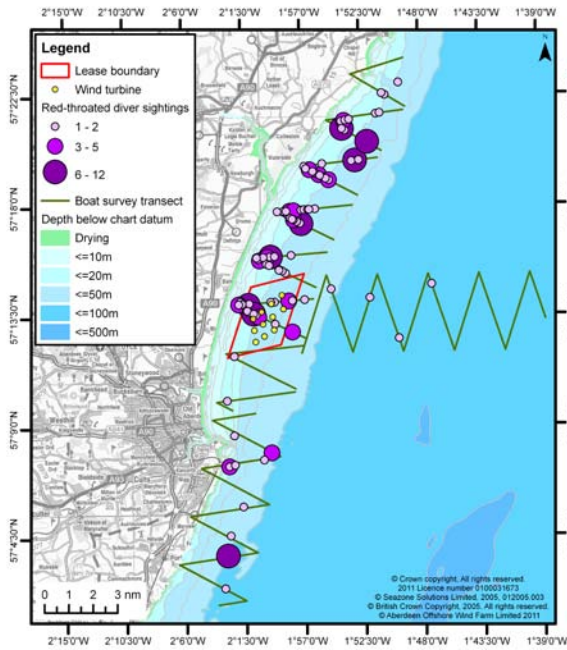


Red-Throated Diver – June to July, Year 1

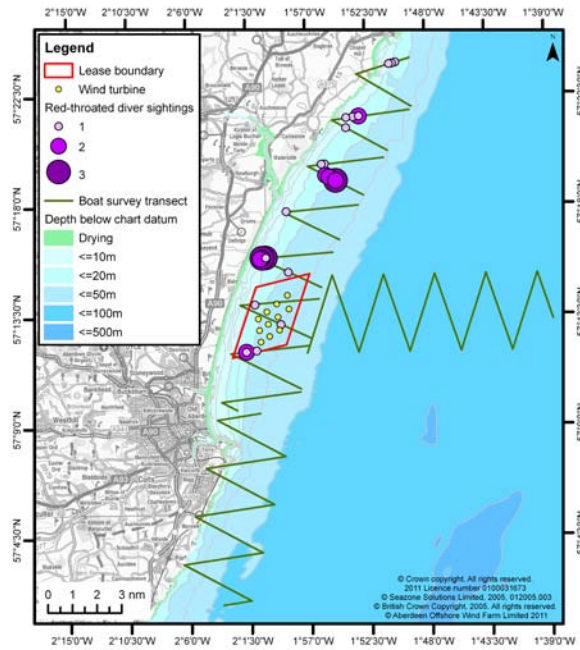


Red-Throated Diver – August to October, Year 1

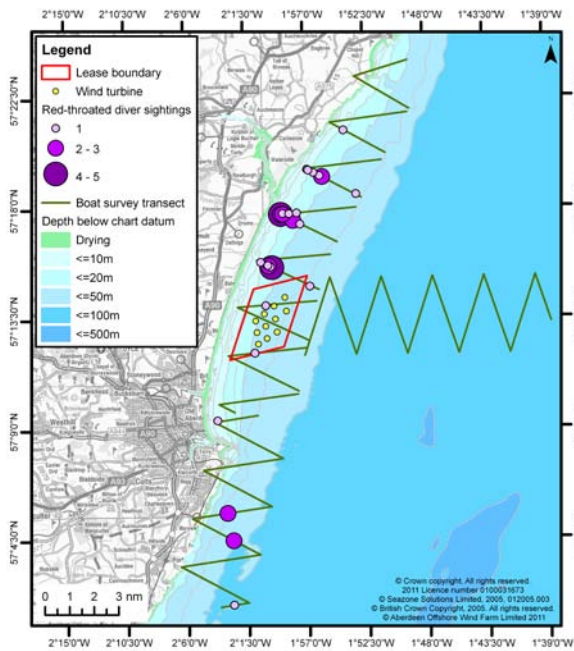
RED-THROATED DIVER DISTRIBUTION



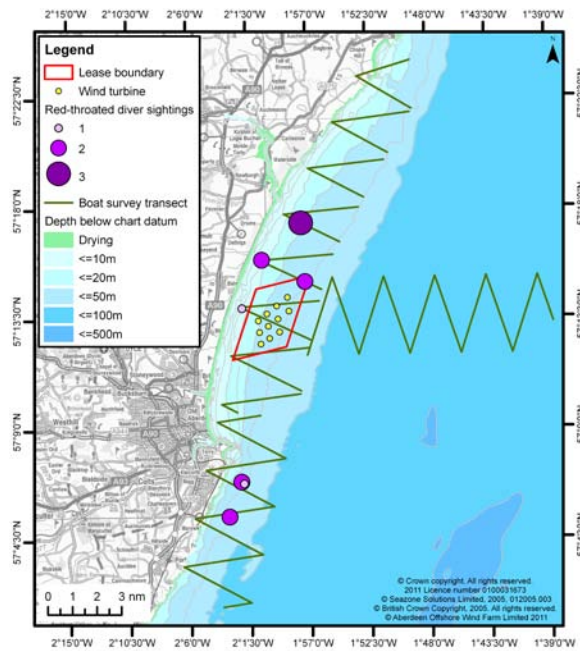
Red-Throated Diver – November to February.
Year 2



Red-Throated Diver – March to May.
Year 2

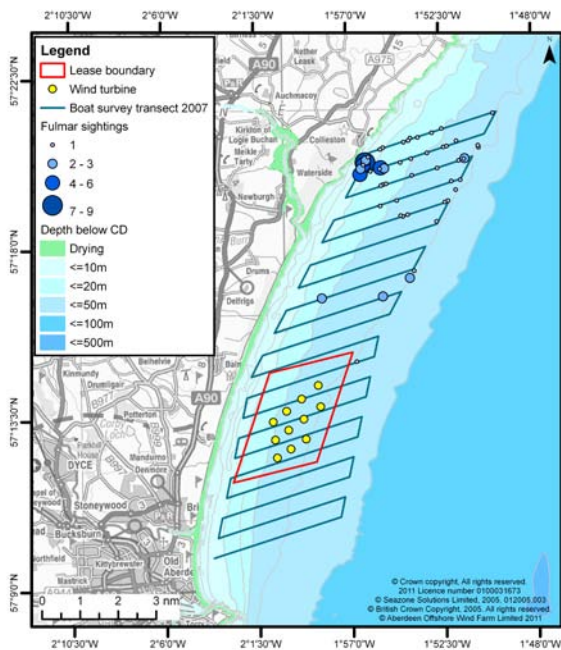


Red-Throated Diver – June to July.
Year 2

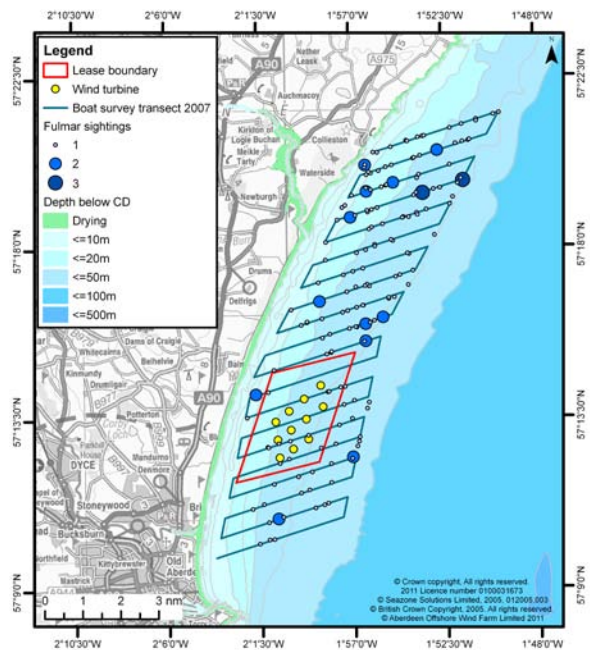


Red-Throated Diver – August to October.
Year 2

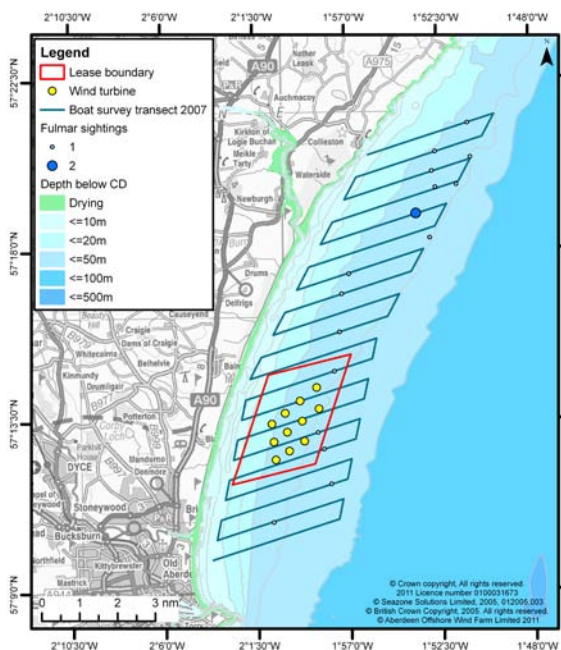
5.0 FULMAR DISTRIBUTION



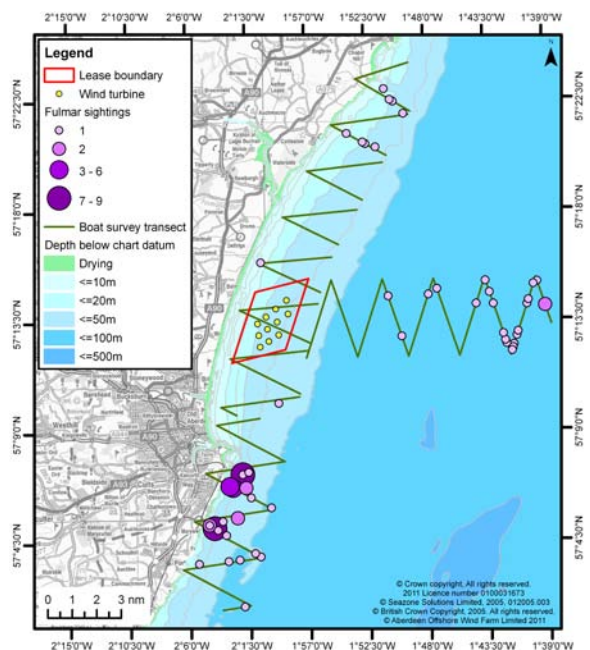
Fulmar – November to February.
Year 1



Fulmar – March to August.
Year 1

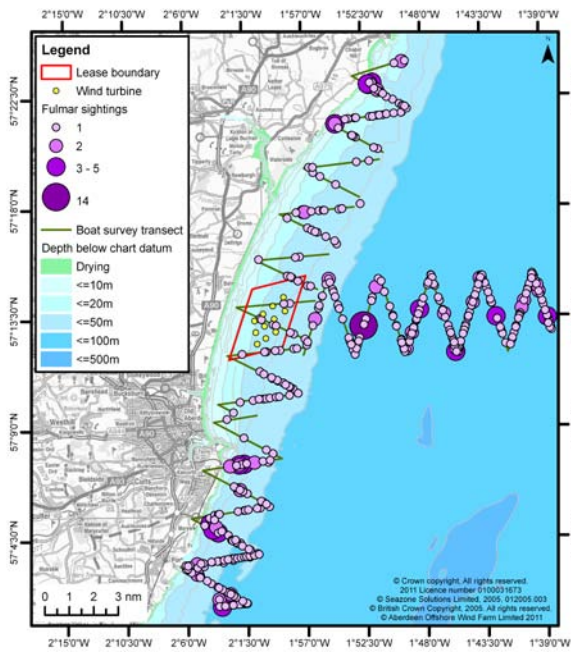


Fulmar – September to October.
Year 1

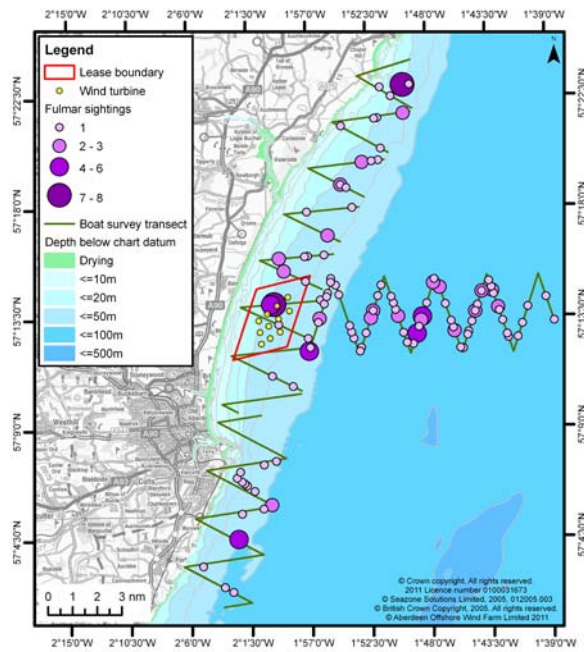


Fulmar – November to February.
Year 2

FULMAR DISTRIBUTION

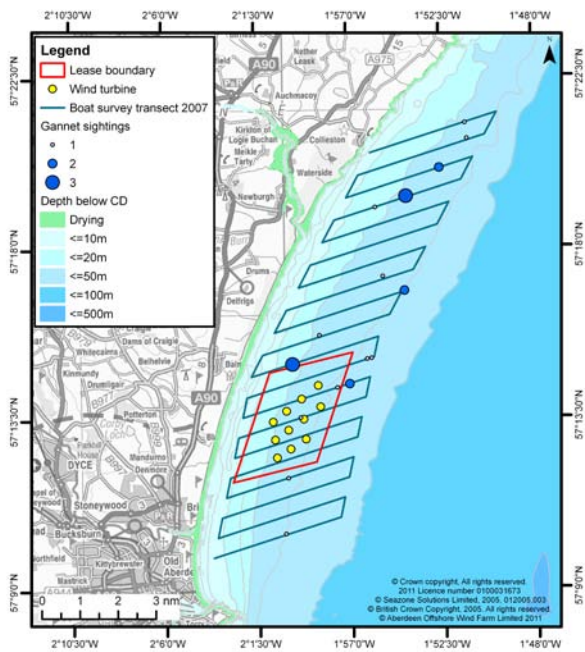


Fulmar – March to August.
Year 2

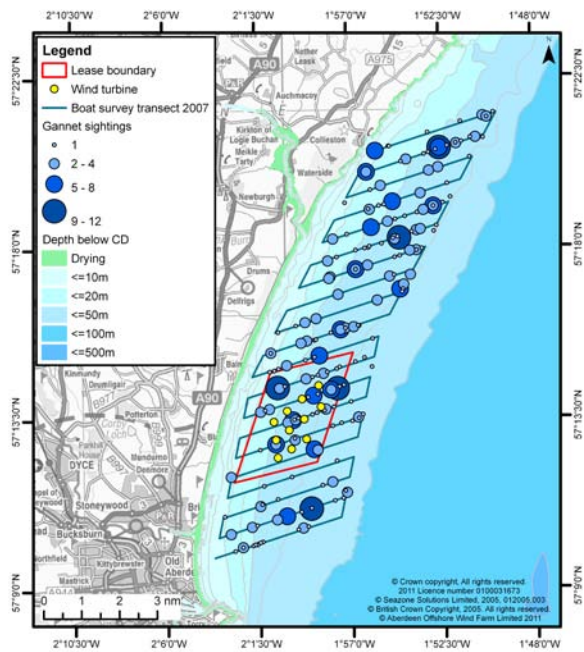


Fulmar – September to October.
Year 2

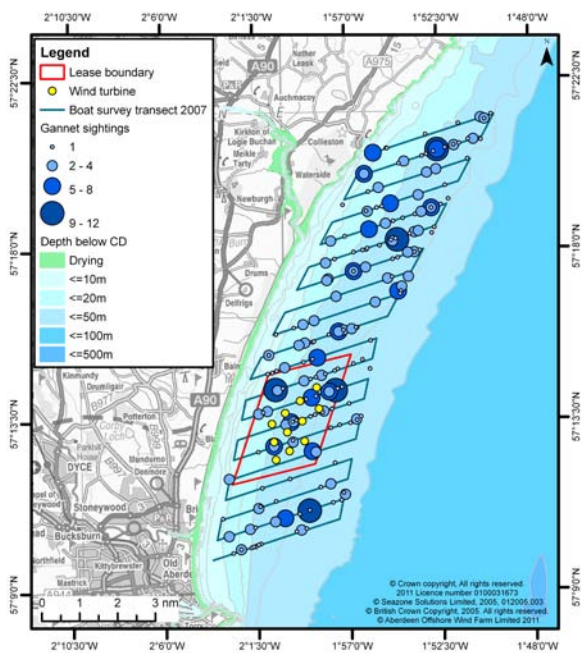
6.0 GANNET DISTRIBUTION



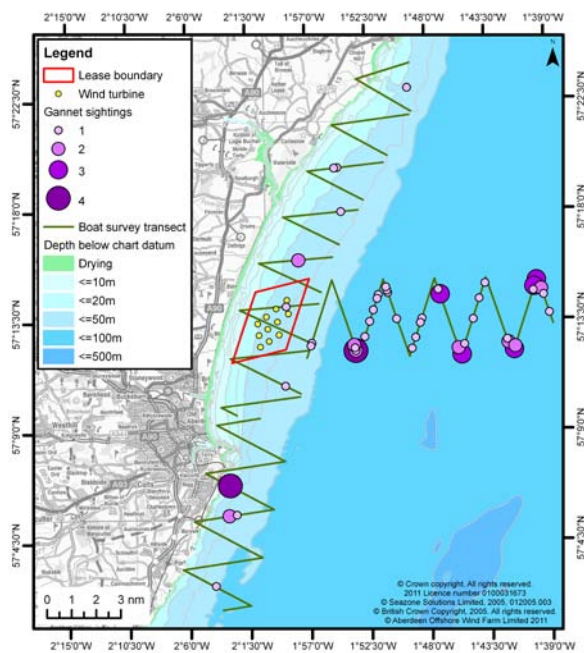
Gannet – November to March.
Year 1



Gannet – April to August.
Year 1

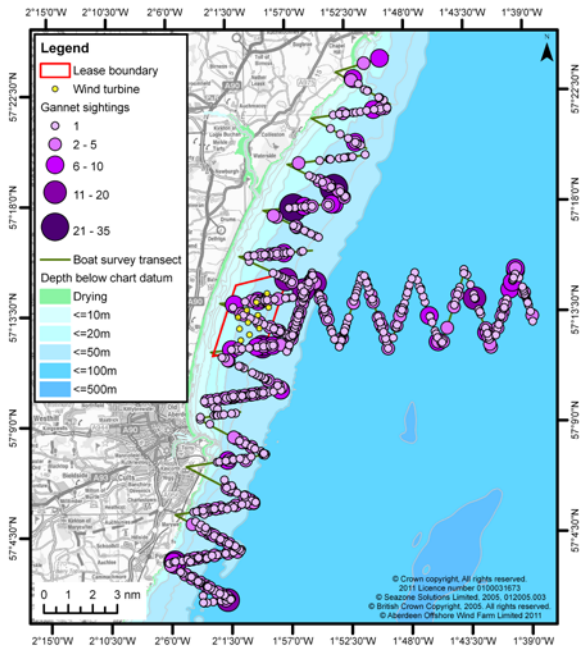


Gannet – September to October.
Year 1

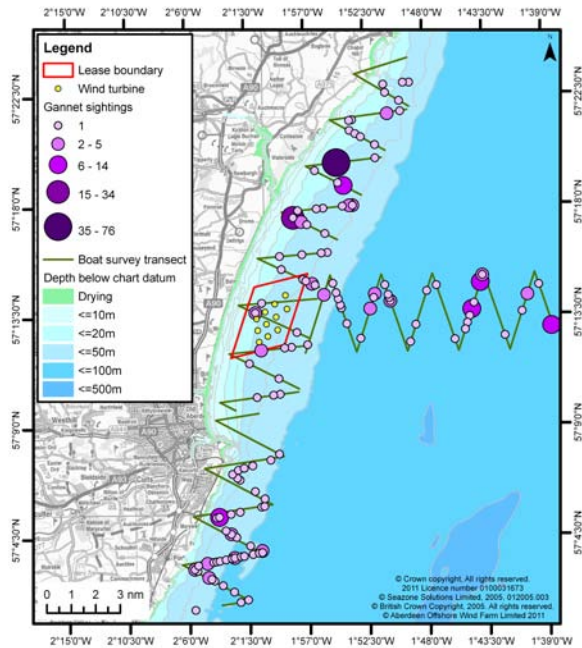


Gannet – November to March.
Year 2

GANNET DISTRIBUTION

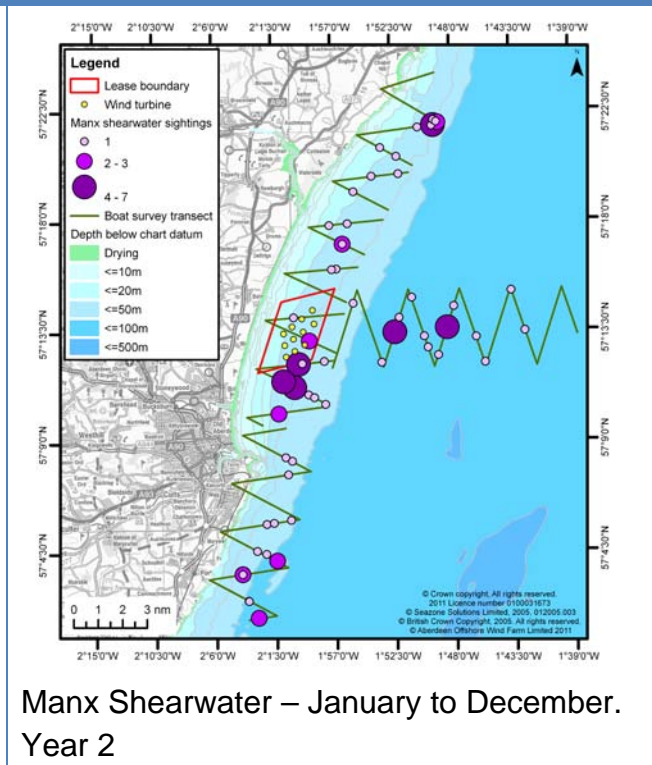
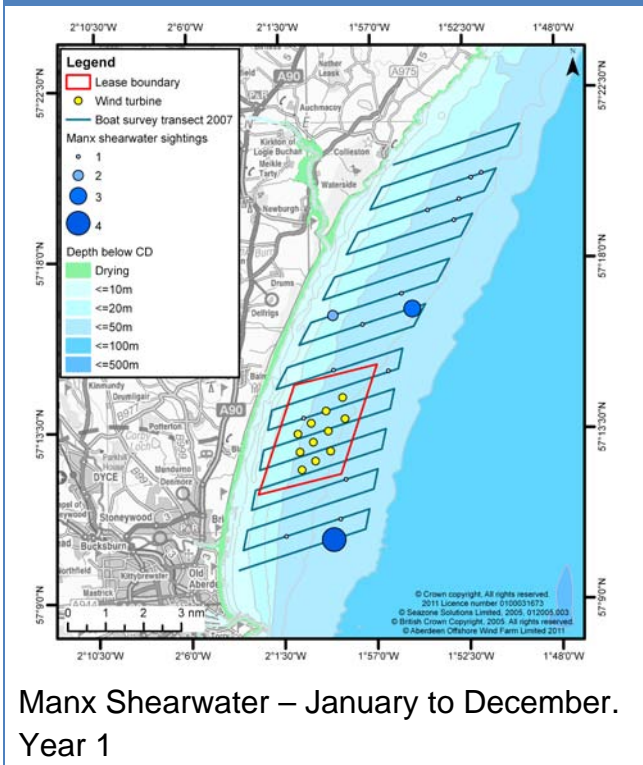


Gannet – April to August.
Year 2

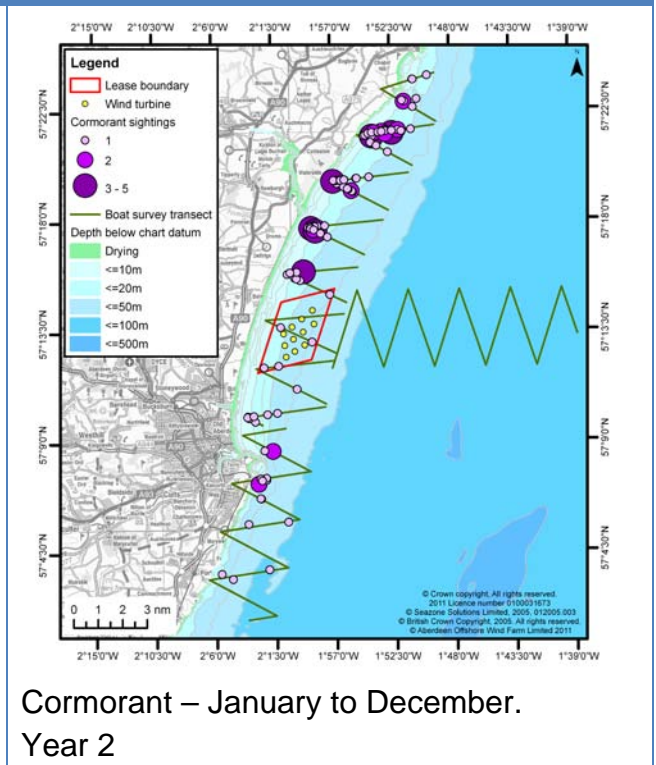
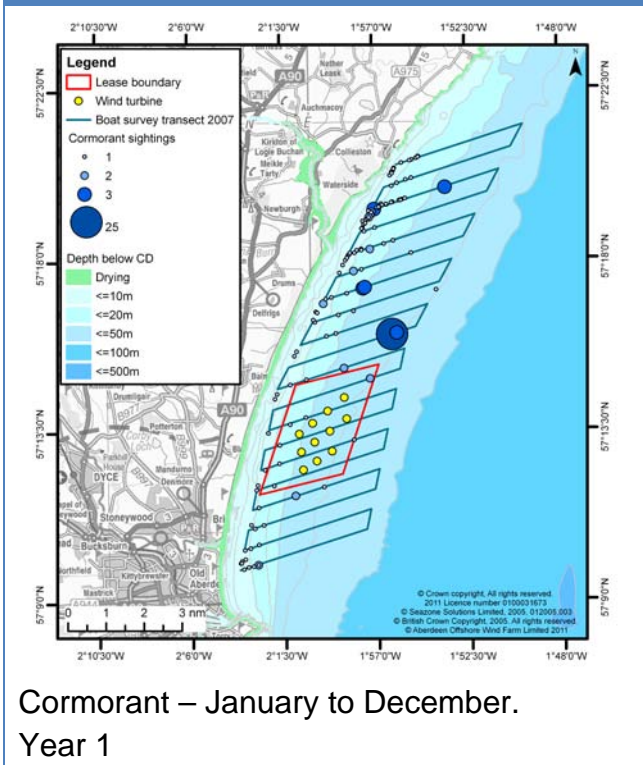


Gannet – September to October.
Year 2

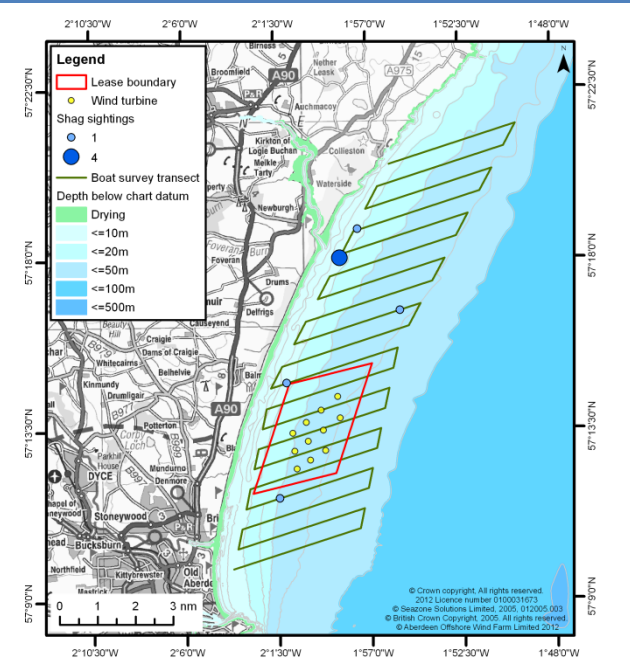
7.0 MANX SHEARWATER DISTRIBUTION



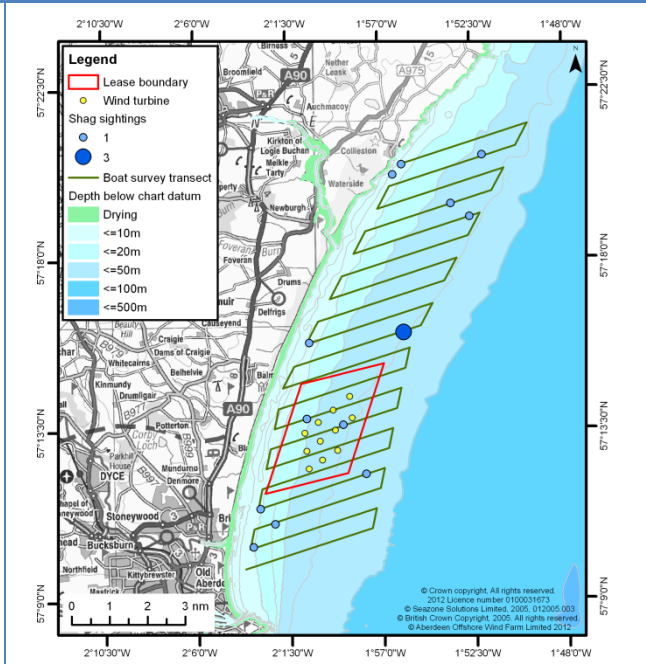
8.0 CORMORANT DISTRIBUTION



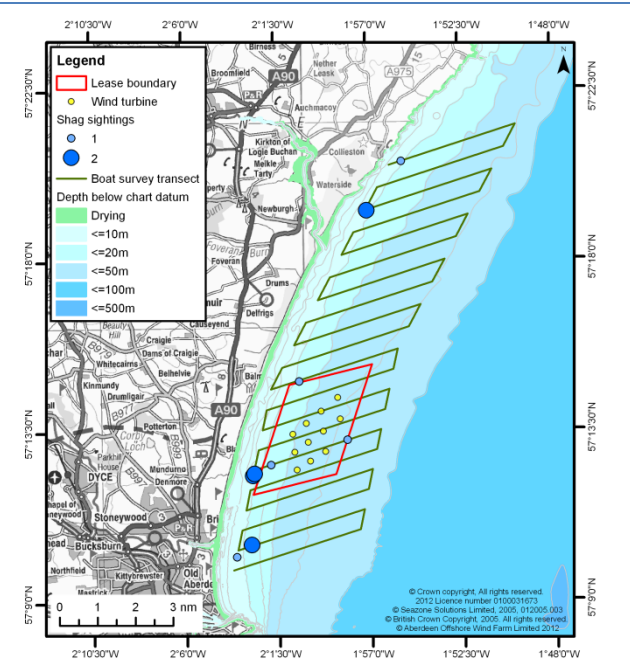
9.0 EUROPEAN SHAG DISTRIBUTION



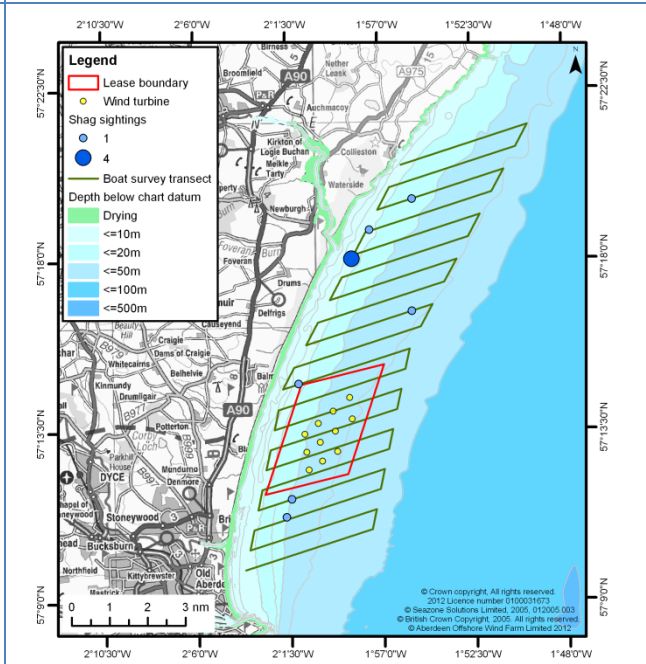
Shag – November to March.
Year 1



Shag – April to July.
Year 1

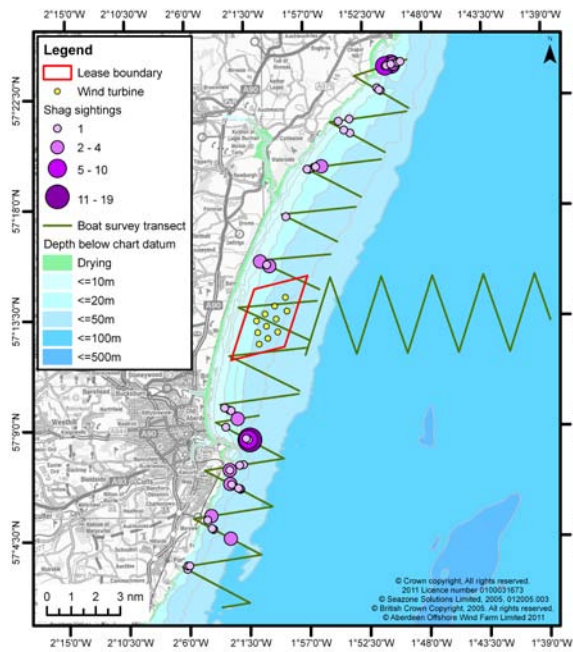


Shag – August to October.
Year 1

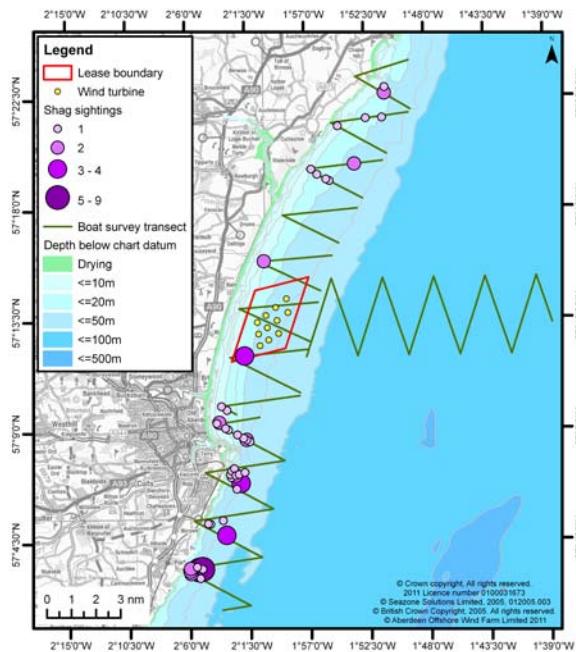


Shag – November to March.
Year 2

EUROPEAN SHAG DISTRIBUTION

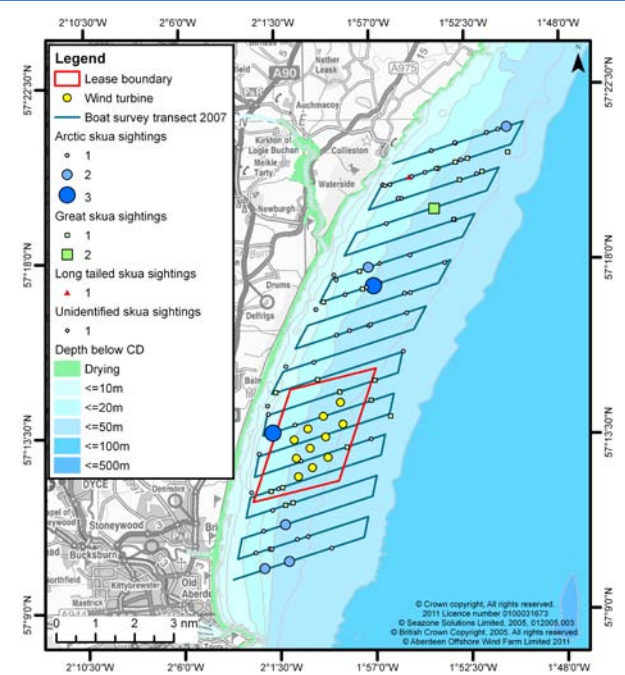


Shag – April to July.
Year 2

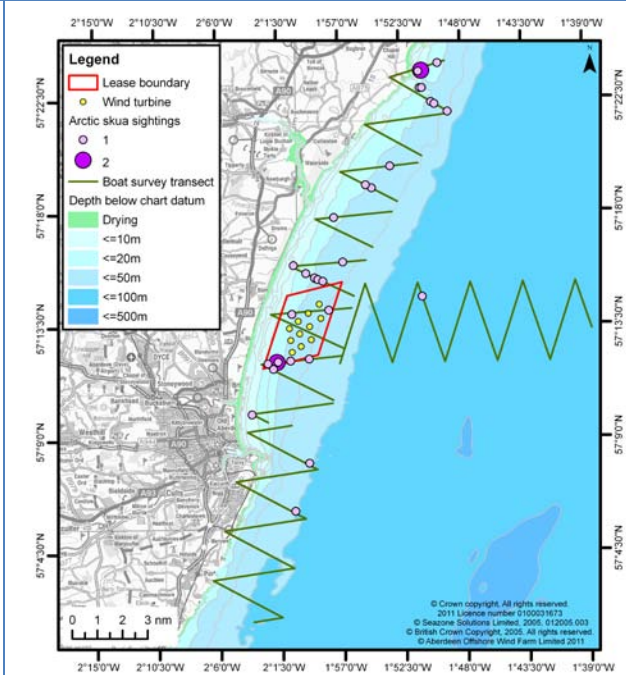


Shag – August to October.
Year 2

10.0 ARCTIC SKUA DISTRIBUTION

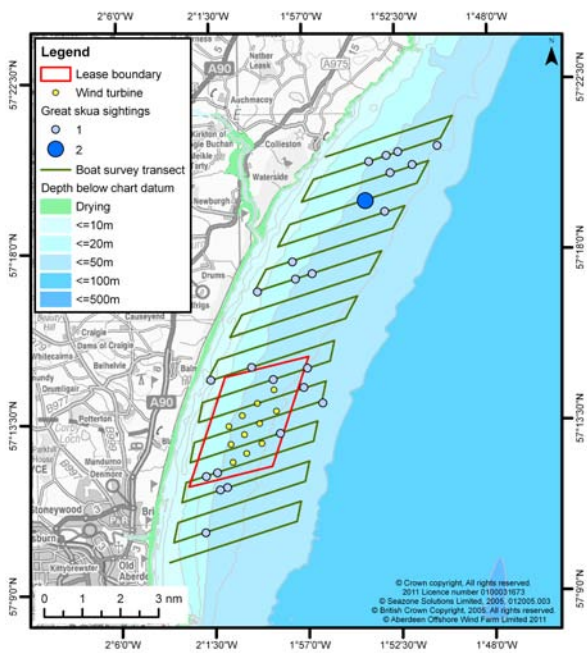


Arctic Skua – January to December.
Year 1

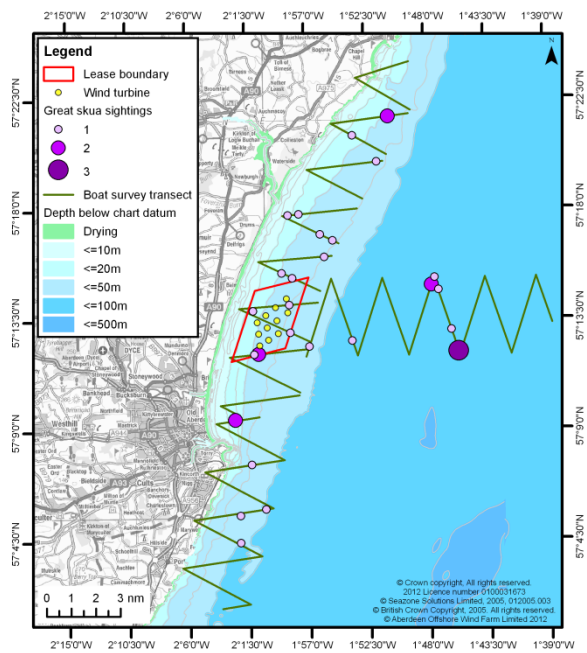


Arctic Skua – January to December.
Year 2

11.0 GREAT SKUA DISTRIBUTION

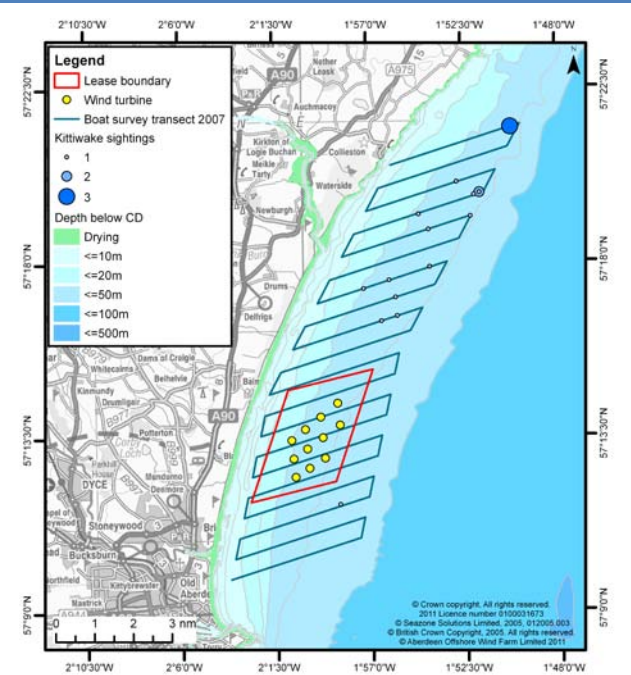


Great Skua – January to December.
Year 1

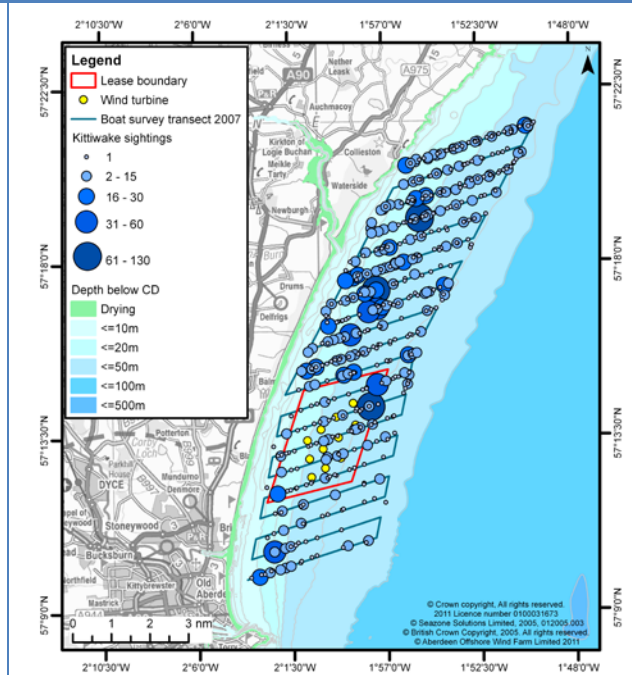


Great Skua – January to December.
Year 2

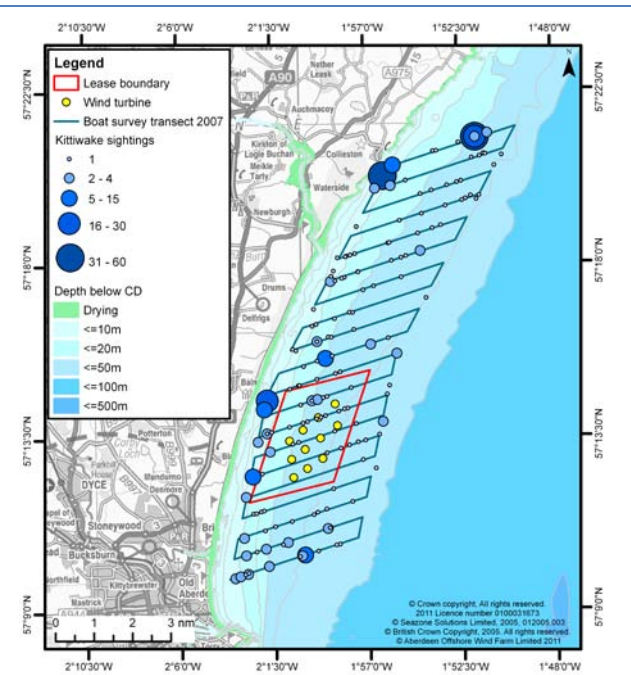
12.0 KITTIWAKE DISTRIBUTION



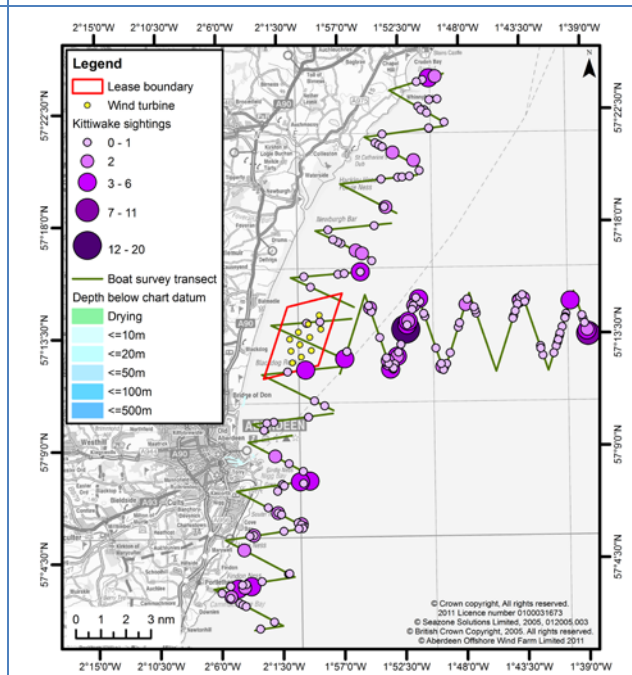
Kittiwake – November to March.
Year 1



Kittiwake – April to July.
Year 1

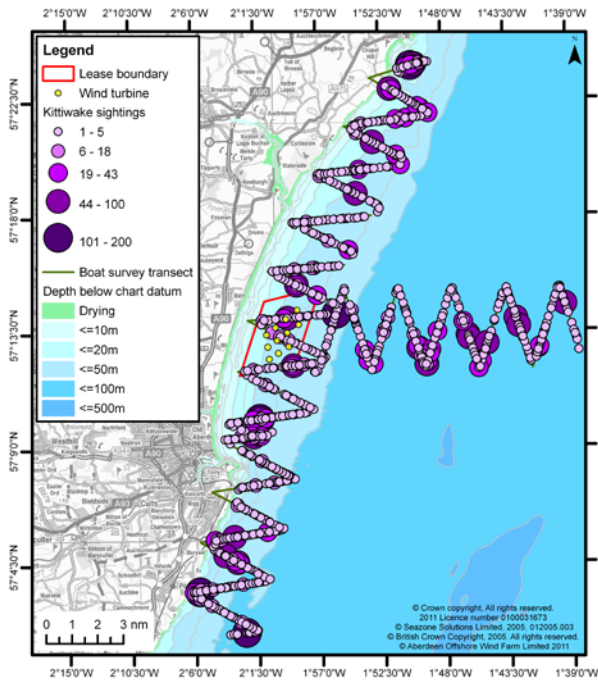


Kittiwake – August to October.
Year 1

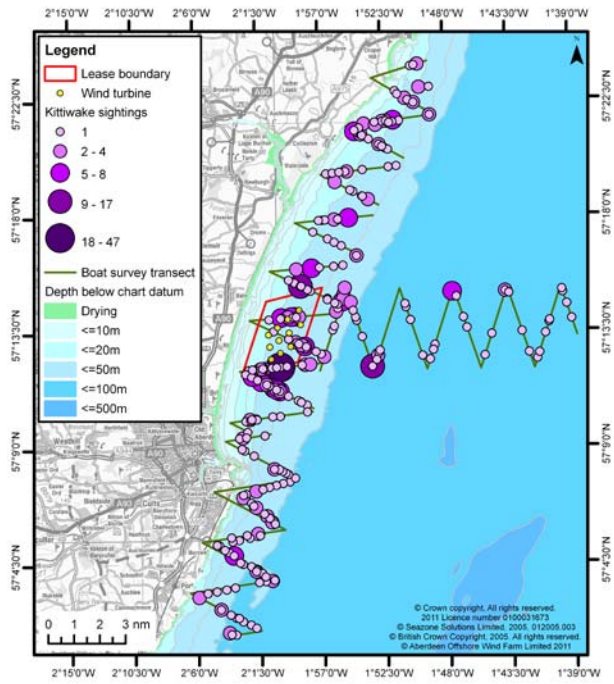


Kittiwake – November to March.
Year 2

KITTIWAKE DISTRIBUTION

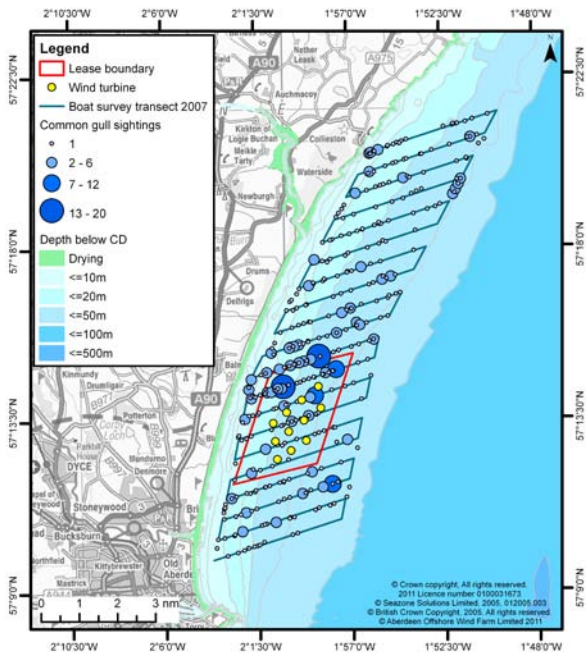


Kittiwake – April to July.
Year 2

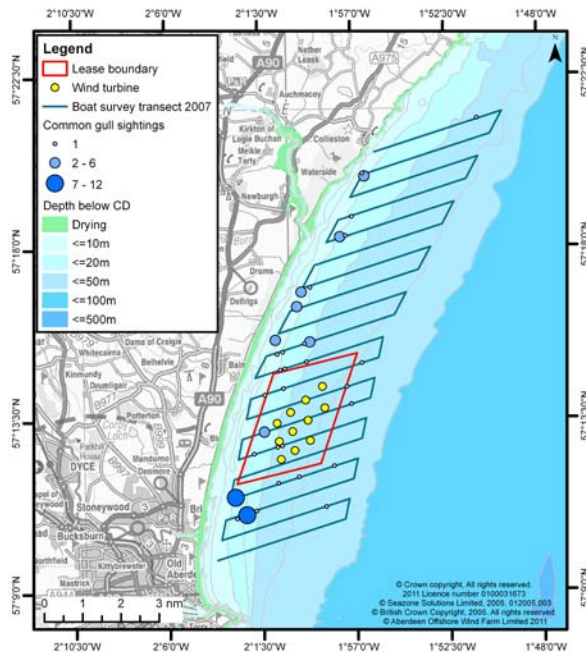


Kittiwake – August to October.
Year 2

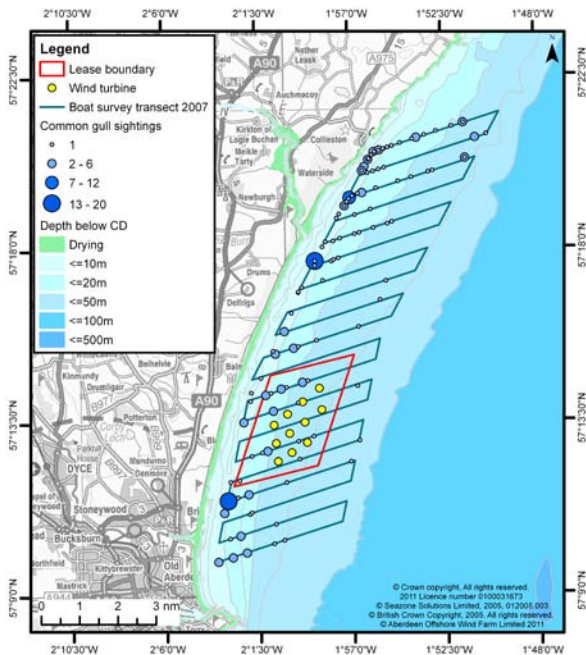
13.0 COMMON GULL DISTRIBUTION



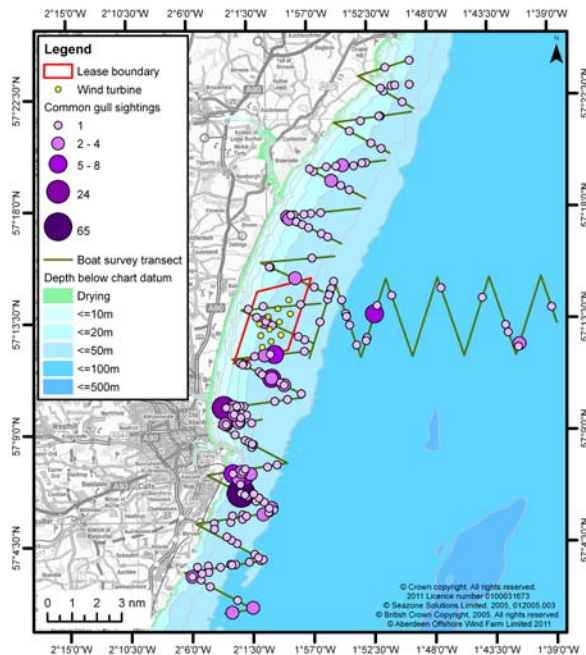
Common Gull – November to March.
Year 1



Common Gull – April to July.
Year 1

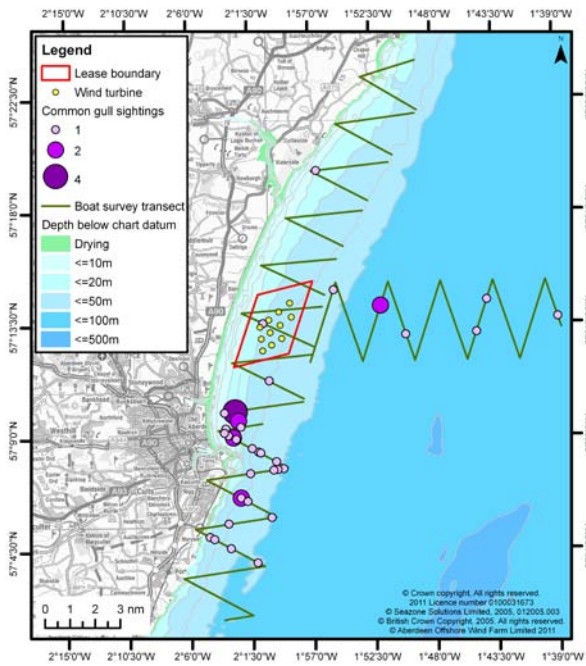


Common Gull – August to October.
Year 1

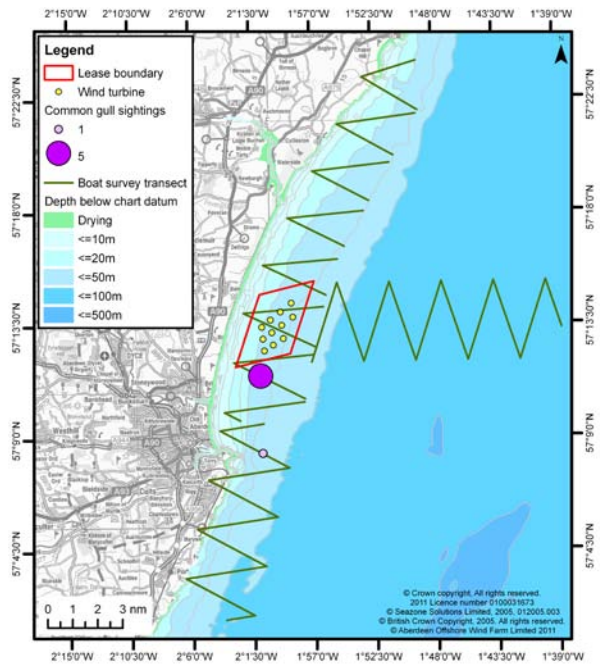


Common Gull – November to March.
Year 2

COMMON GULL DISTRIBUTION

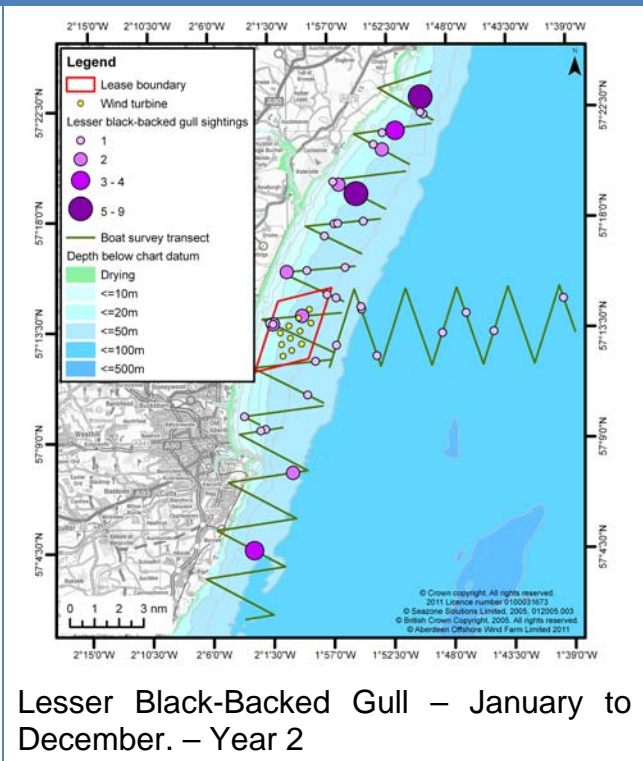
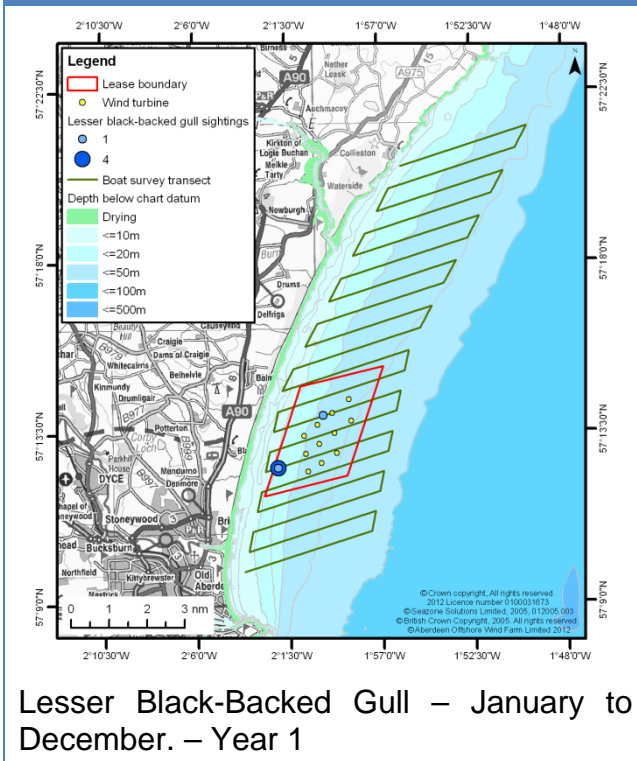


Common Gull – April to July.
Year 2

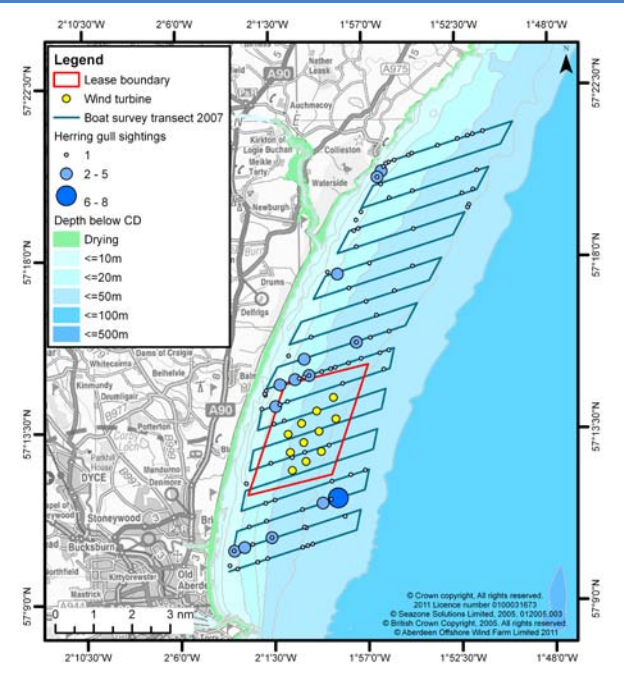


Common Gull – August to October.
Year 2

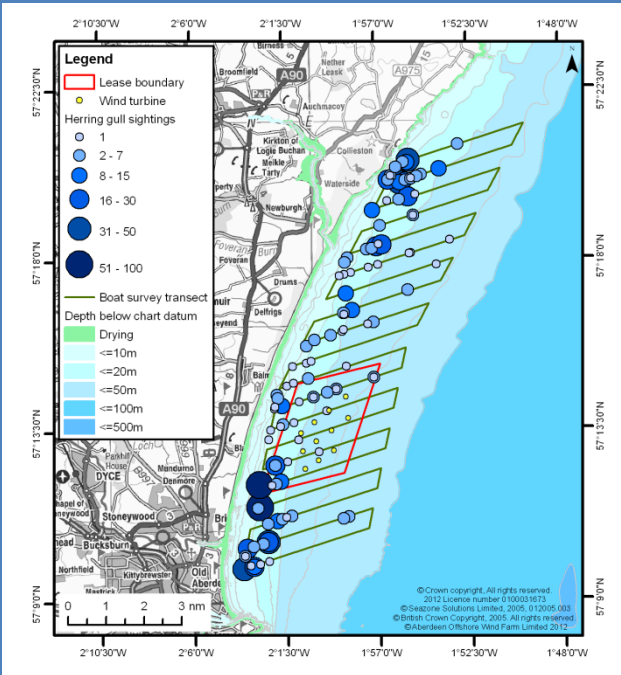
14.0 LESSER BLACK-BACKED GULL DISTRIBUTION



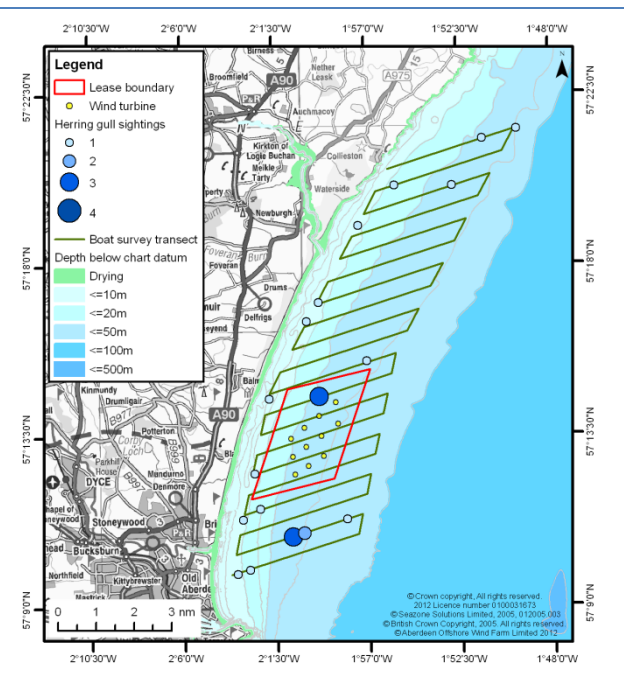
15.0 HERRING GULL DISTRIBUTION



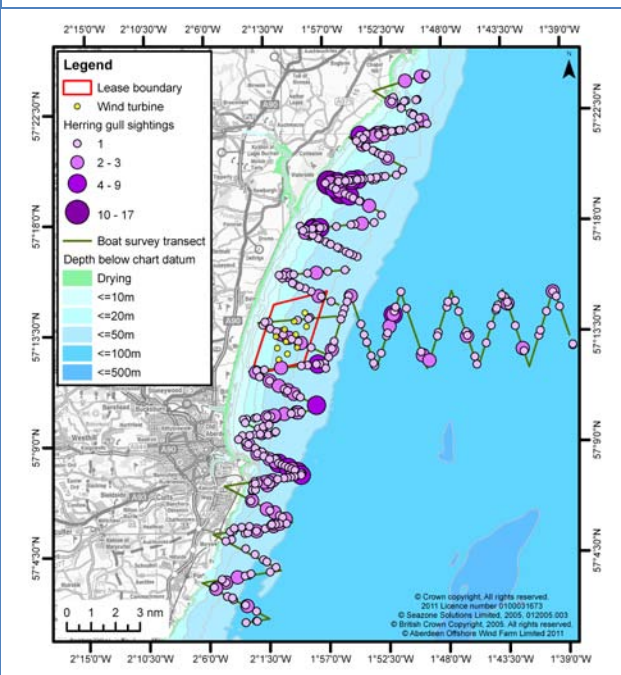
Herring Gull – November to March.
Year 1



Herring Gull – April to July.
Year 1

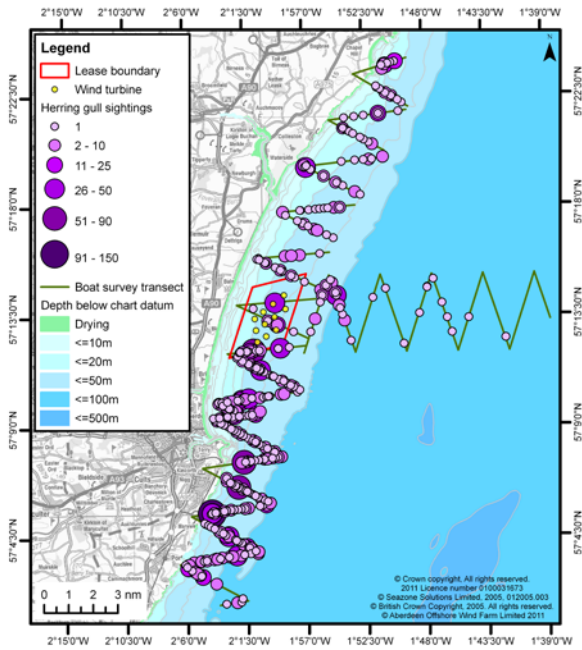


Herring Gull – August to October.
Year 1

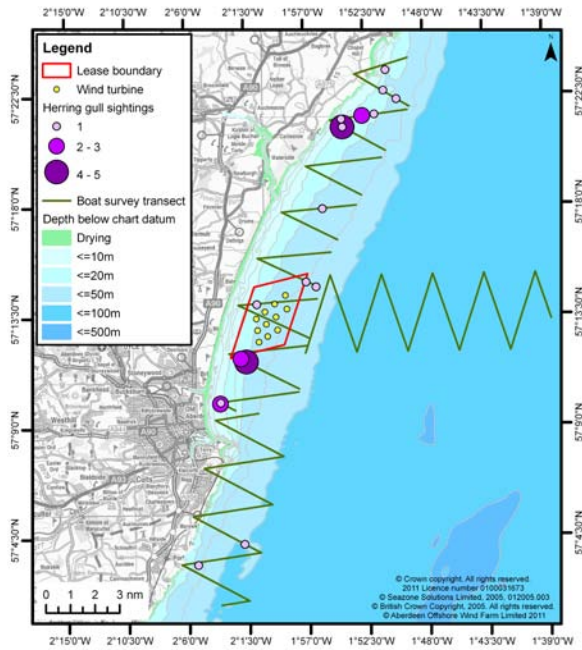


Herring Gull – November to March.
Year 2

HERRING GULL DISTRIBUTION

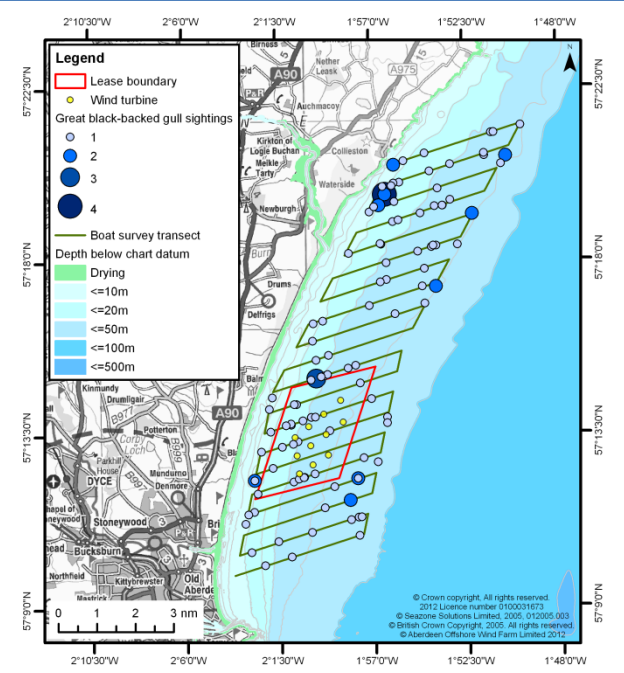


Herring Gull – April to July.
Year 2

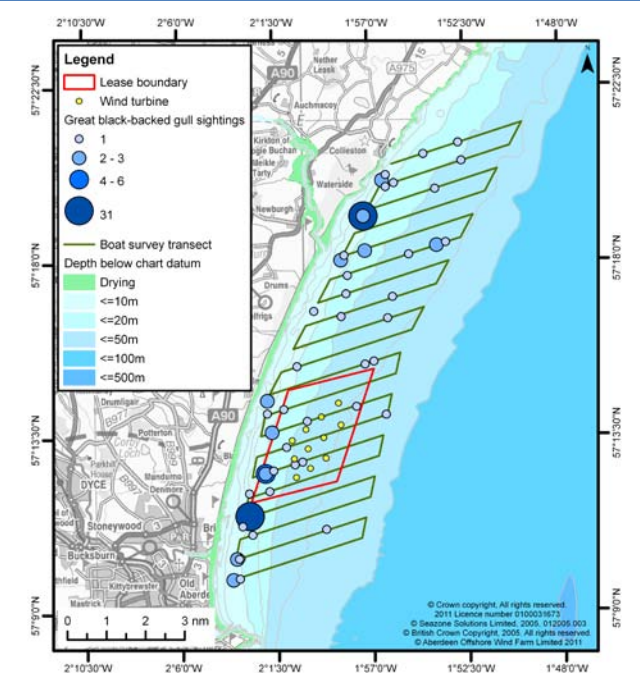


Herring Gull – August to October.
Year 2

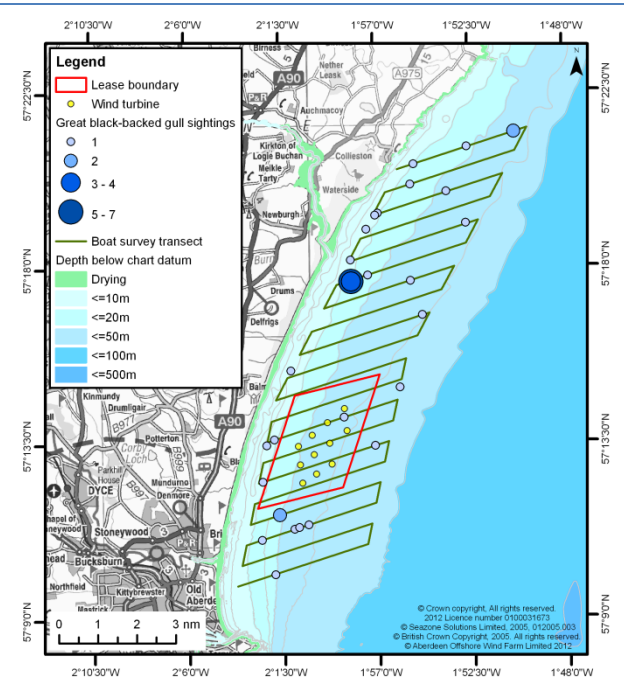
16.0 GREAT BLACK-BACKED GULL DISTRIBUTION



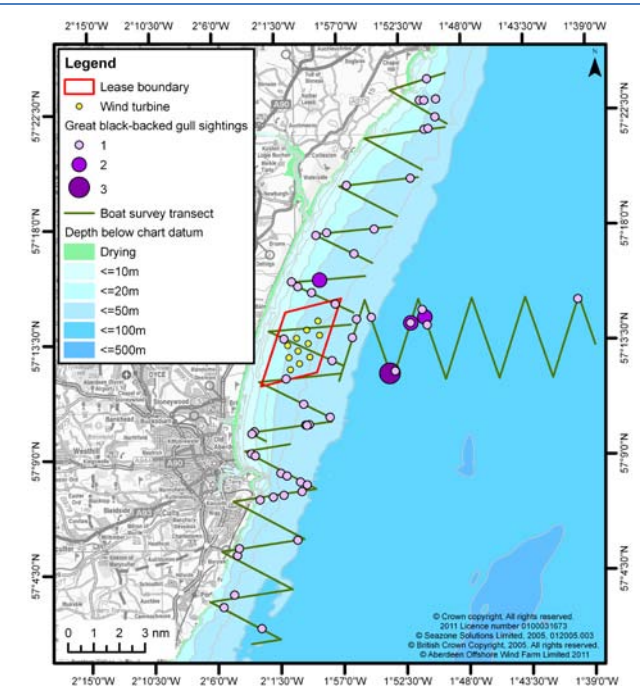
Great Black-Backed Gull – November to March. Year 1



Great Black-Backed Gull – April to August. Year 1

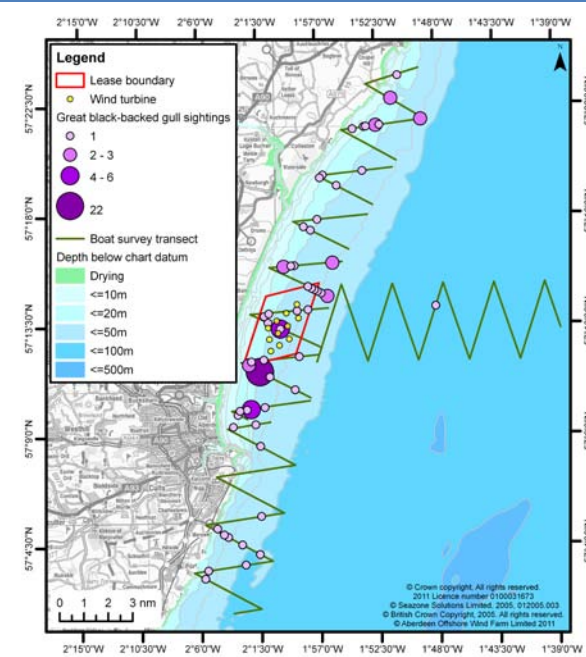


Great Black-Backed Gull – September to October. Year 1

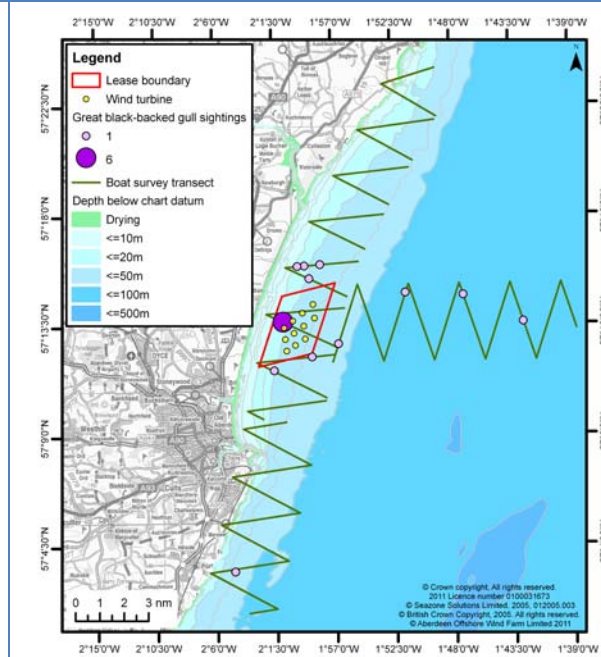


Great Black-Backed Gull – November to March. Year 2

Great Black-Backed Gull Distribution

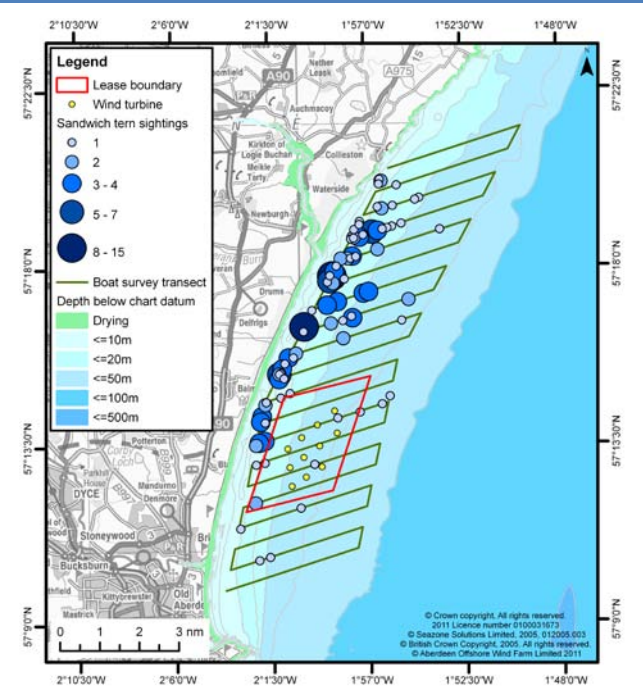


Great Black-Backed Gull – April to August. Year 2

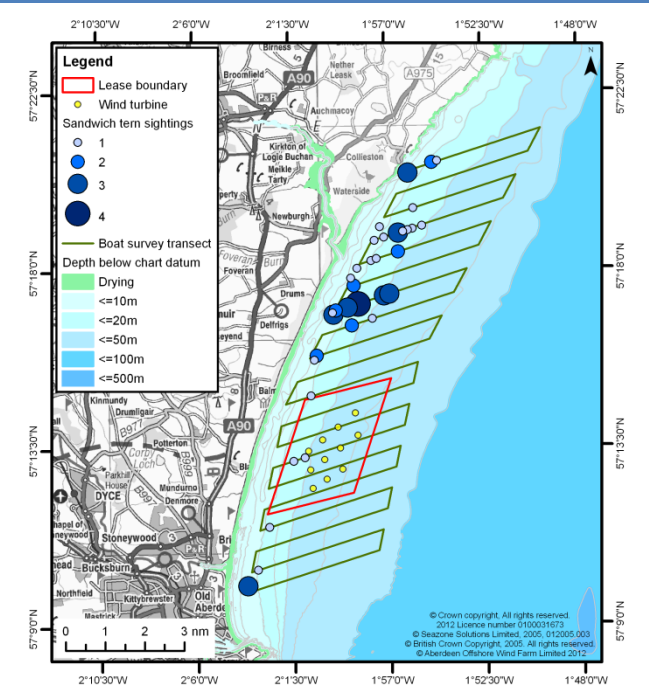


Great Black-Backed Gull – September to October. Year 2

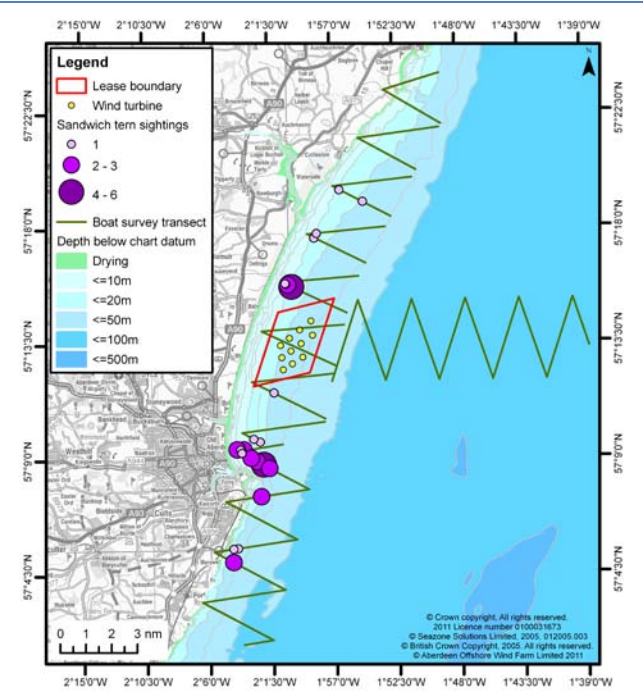
17.0 SANDWICH TERN DISTRIBUTION



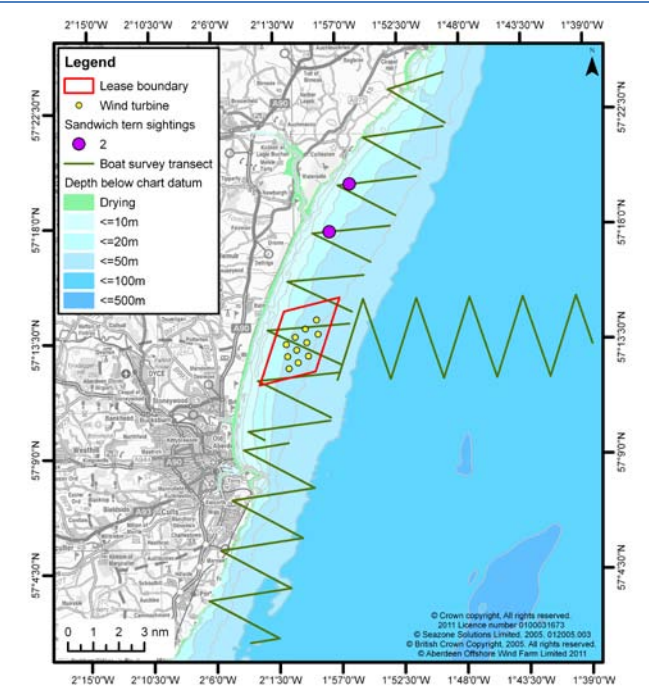
Sandwich Tern – April to July.
Year 1



Sandwich Tern – August to March.
Year 1

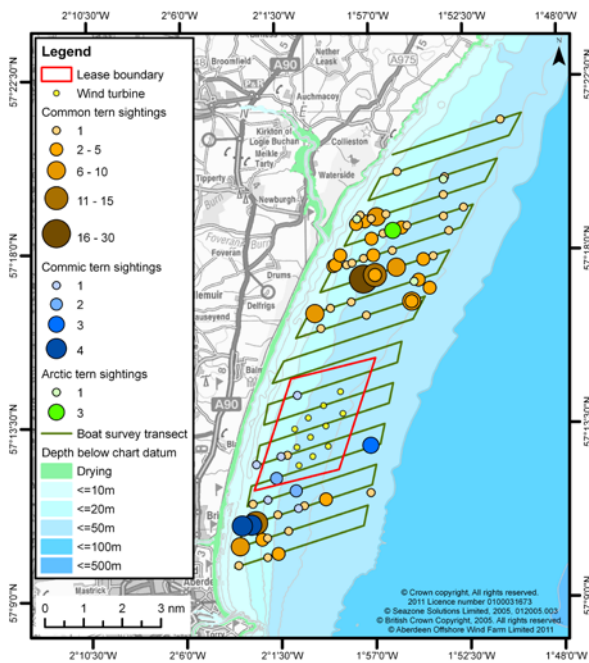


Sandwich Tern – April to July.
Year 2

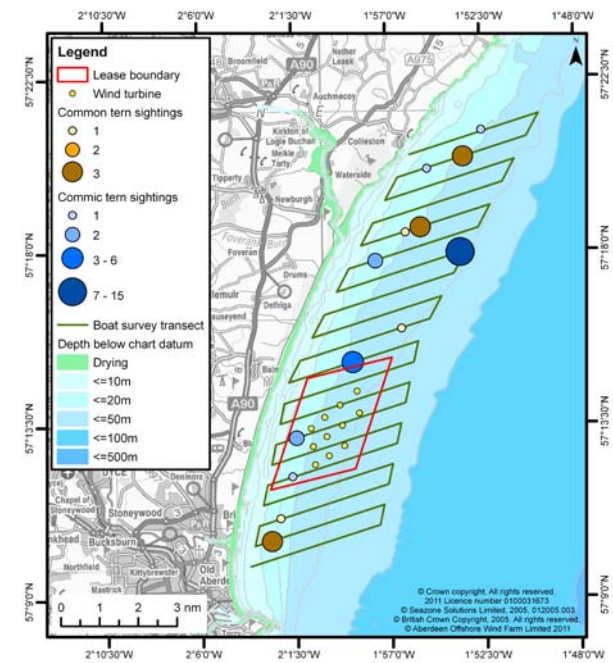


Sandwich Tern – August to March.
Year 2

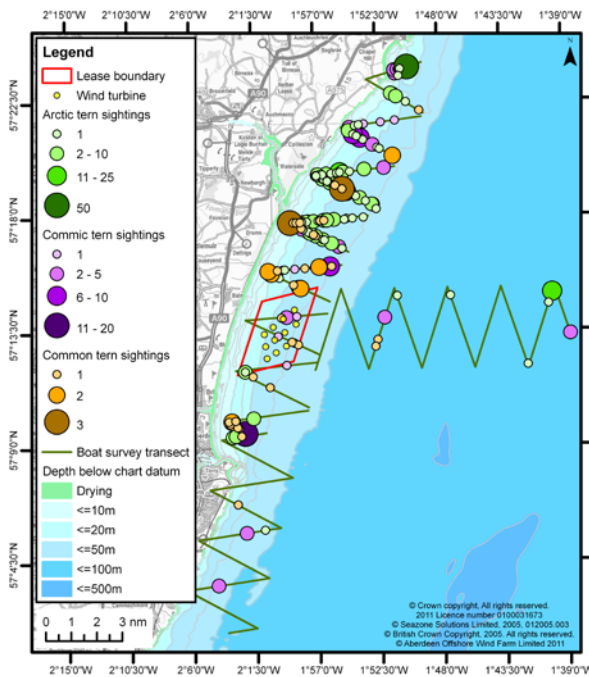
18.0 ARCTIC/COMMON/'COMMIC' TERN DISTRIBUTION



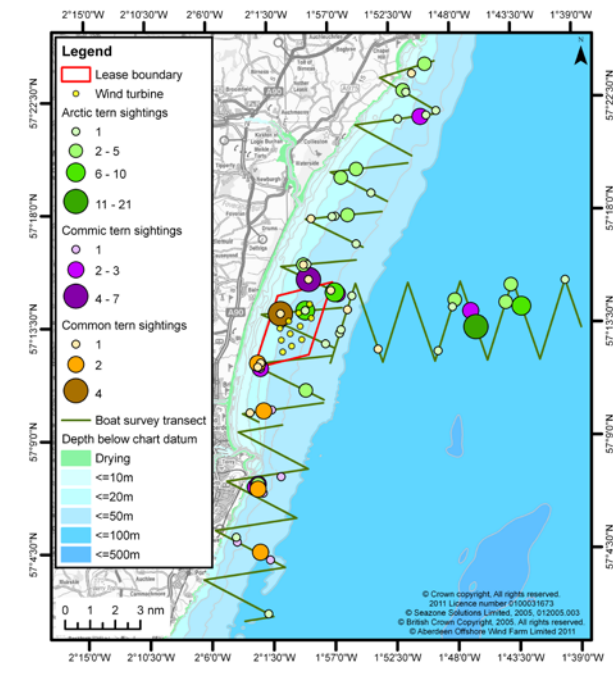
Arctic, Common and 'Commic' Terns April to July. Year 1



Arctic, Common and 'Commic' Terns – August to March. Year 1

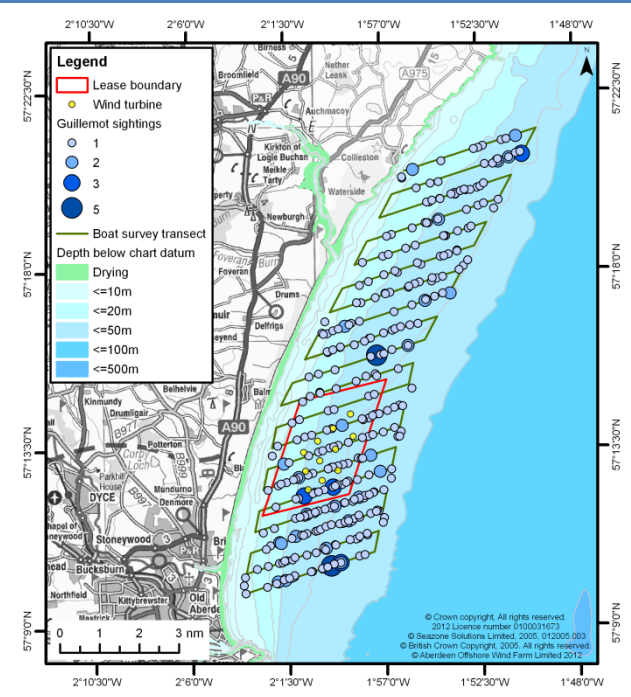


Arctic, Commic and Common Tern – April to July. Year 2

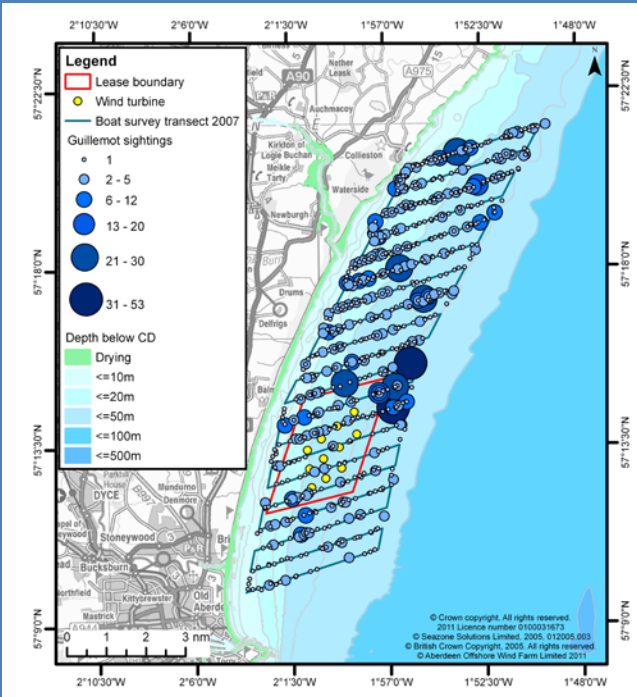


Arctic, Commic and Common Tern – August to March. Year 2

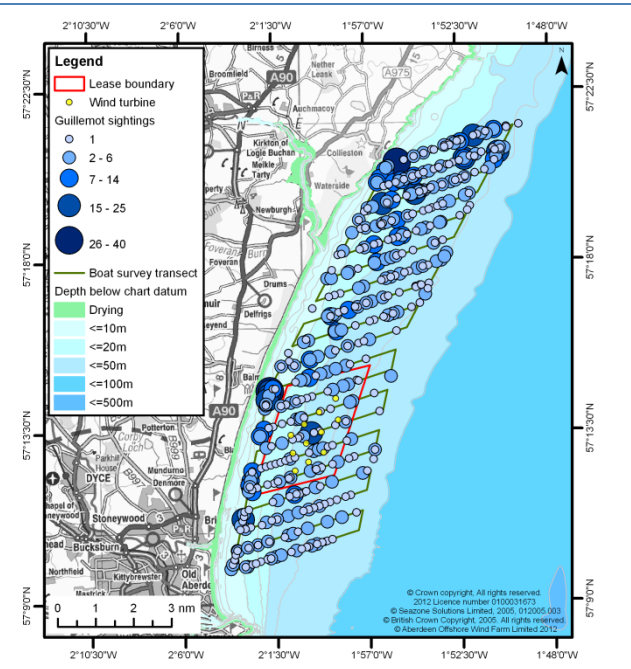
19.0 GUILLEMOT DISTRIBUTION



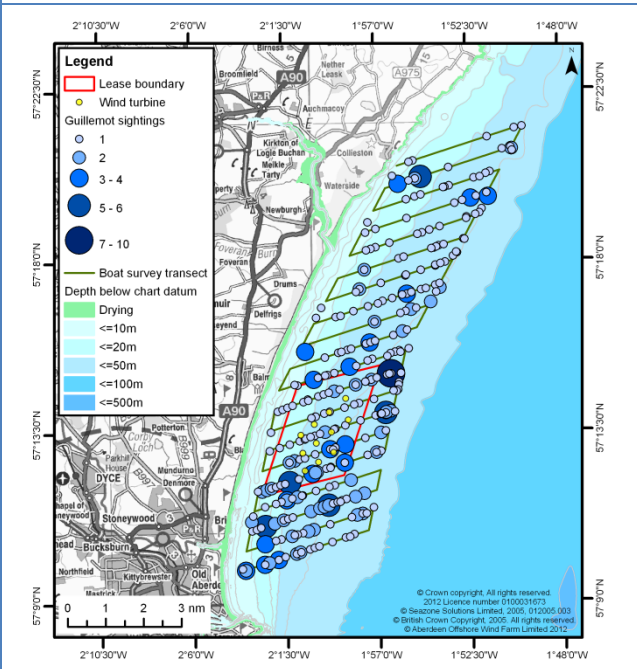
Guillemot – December to March.
Year 1



Guillemot – April to July.
Year 1

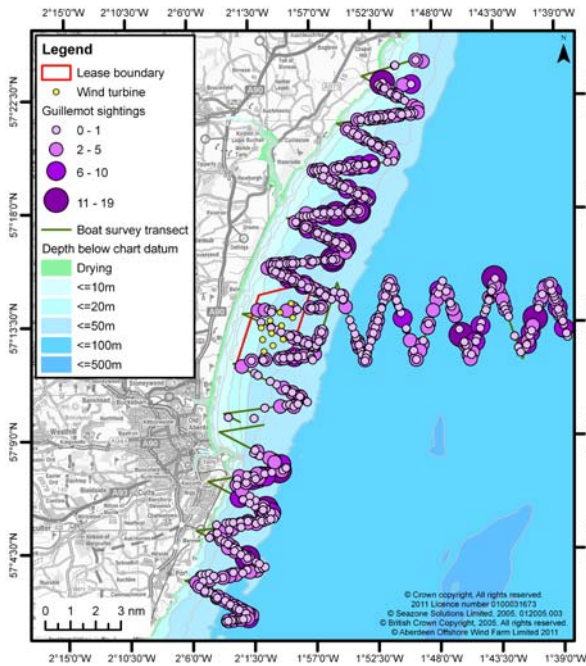


Guillemot – August and September.
Year 1

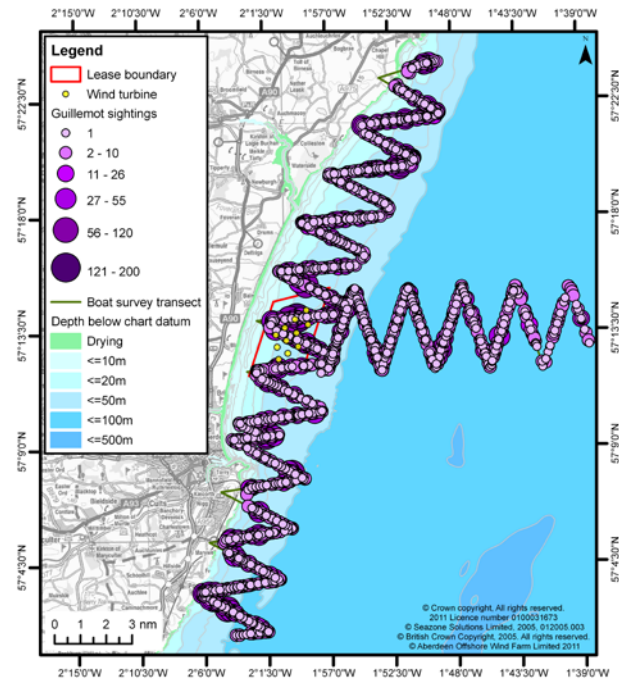


Guillemot – October and November.
Year 1

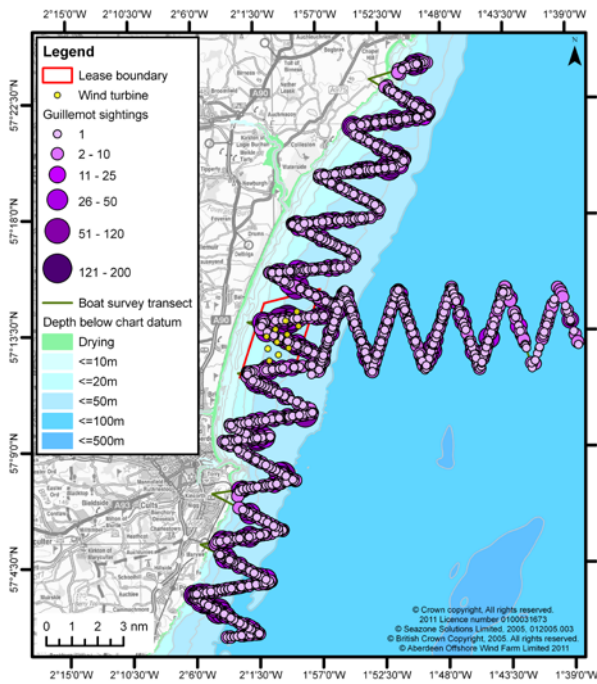
GUILLEMOT DISTRIBUTION



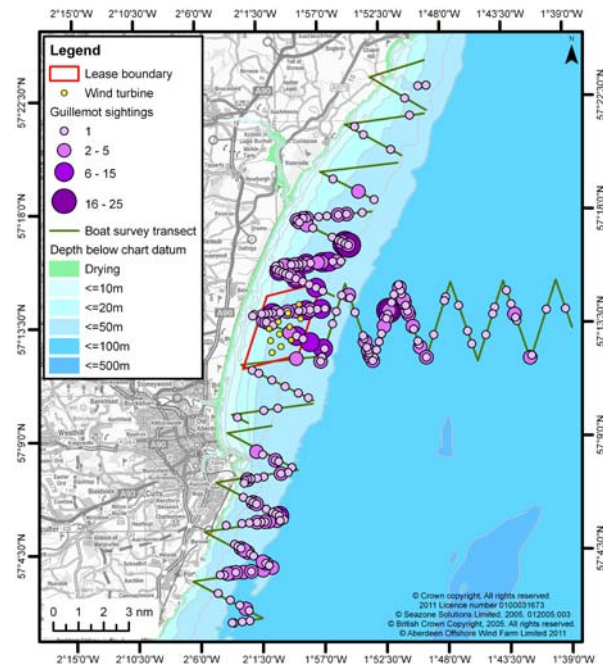
Guillemot – December to March.
Year 2



Guillemot – April to July.
Year 2

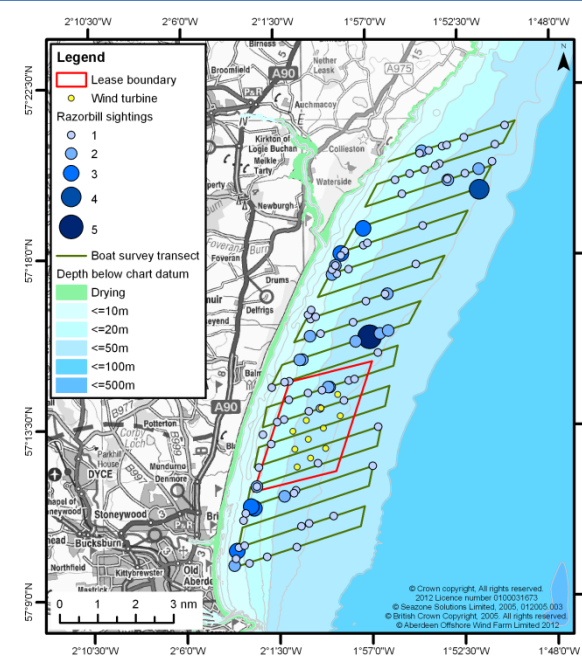


Guillemot – August and September.
Year 2

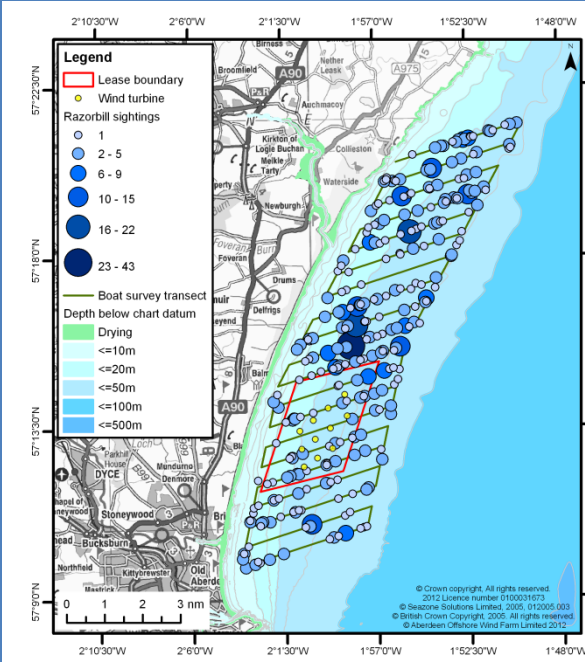


Guillemot – October and November.
Year 2

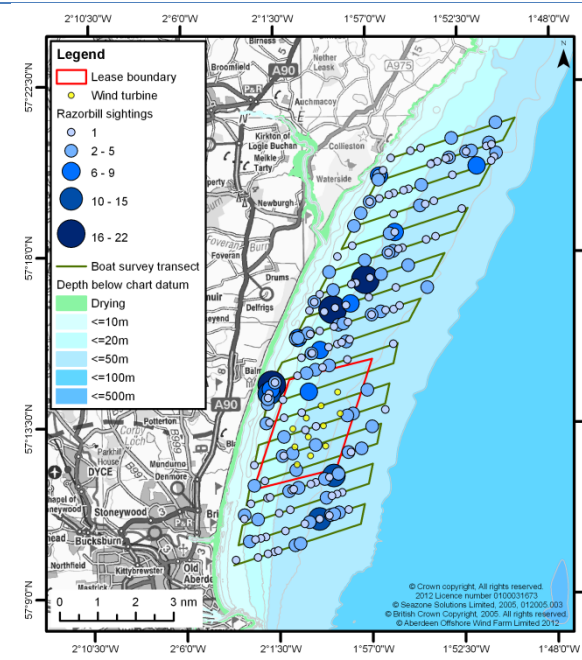
20.0 RAZORBILL DISTRIBUTION



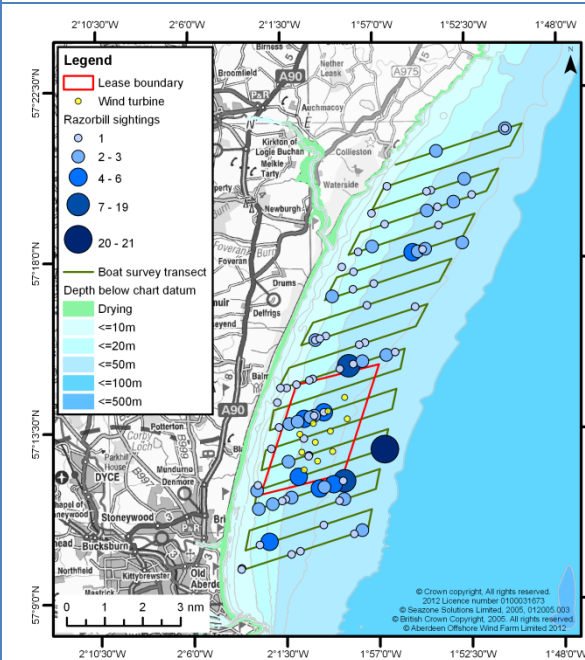
Razorbill – December to March.
Year 1



Razorbill – April to July.
Year 1

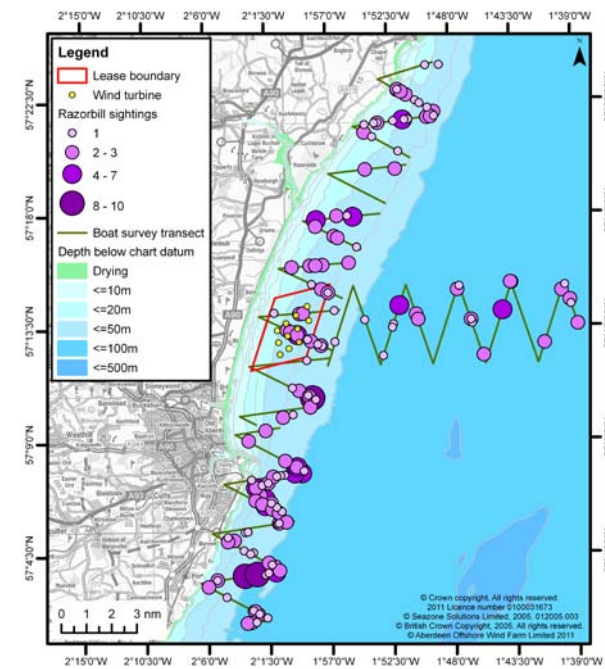


Razorbill – August and September.
Year 1

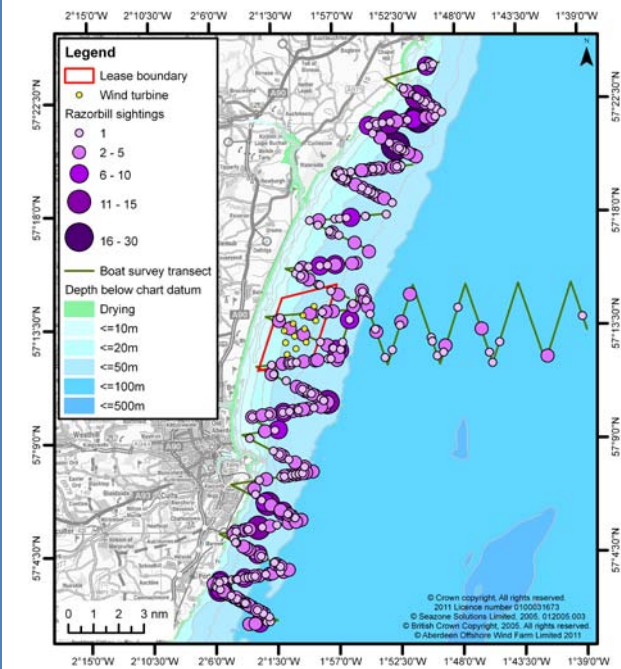


Razorbill – October and November.
Year 1

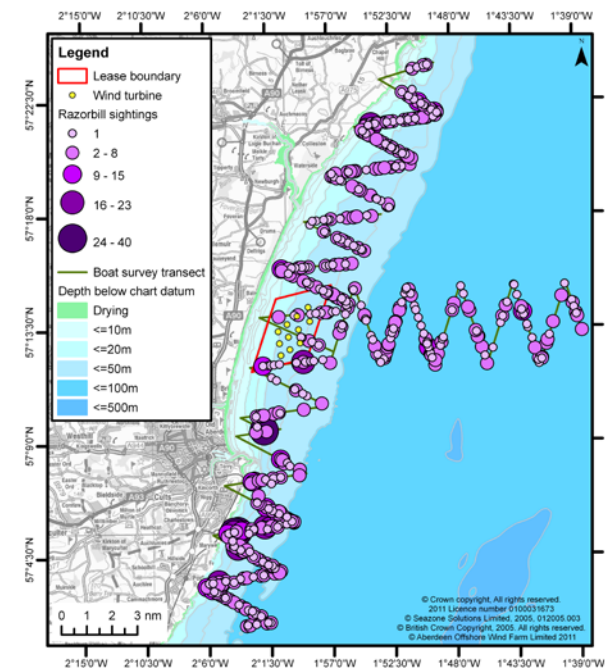
RAZORBILL DISTRIBUTION



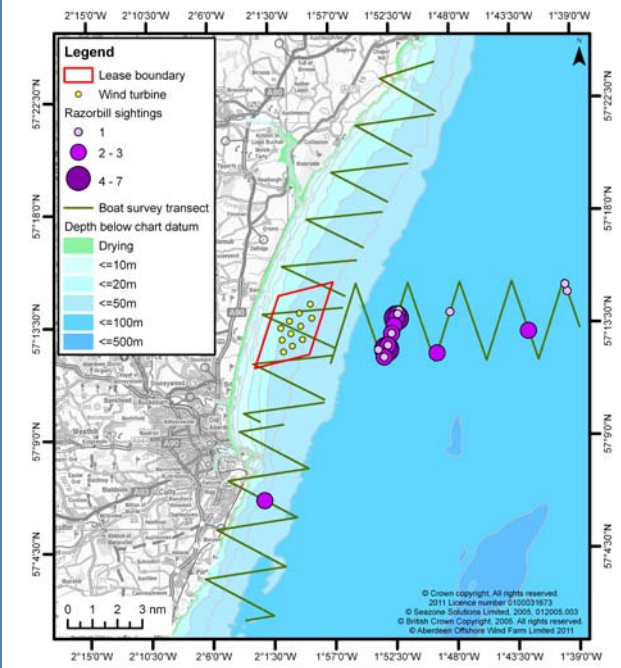
Razorbill – December to March.
Year 2



Razorbill – April to July.
Year 2

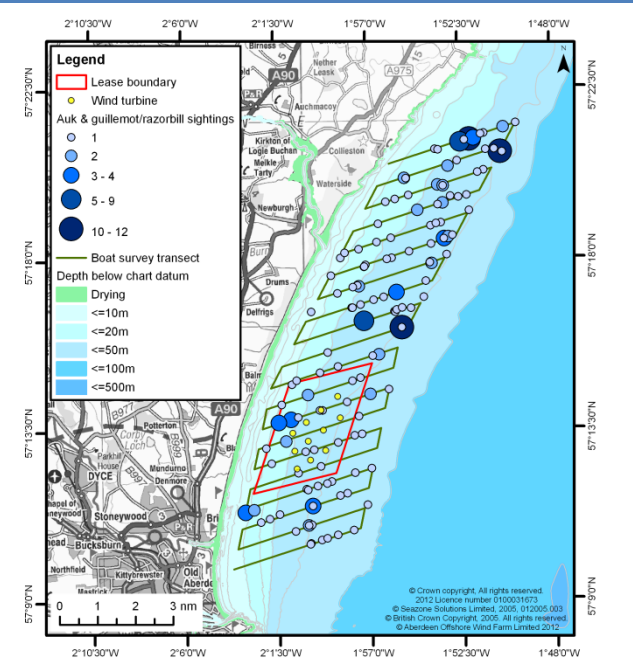


Razorbill – August and September.
Year 2

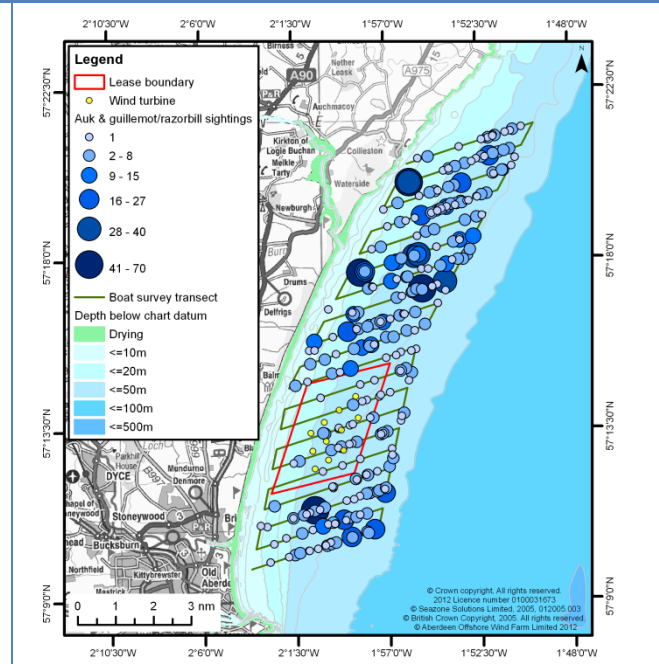


Razorbill – October and November.
Year 2

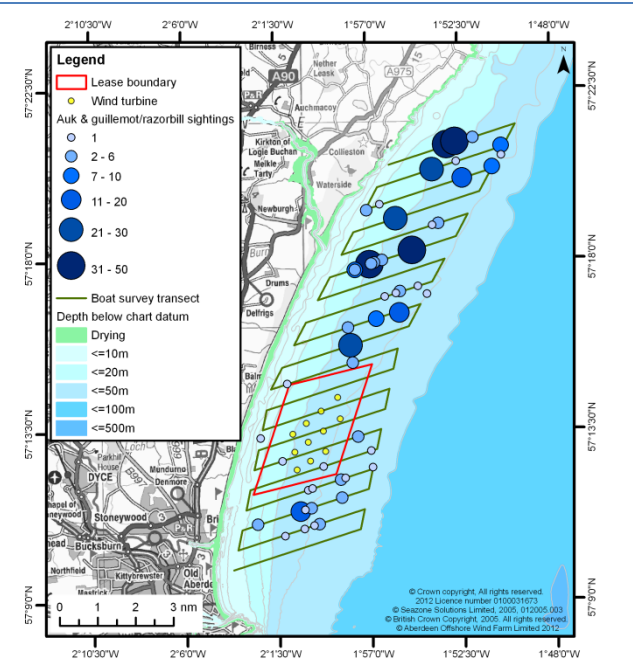
21.0 GUILLEMOT/RAZORBILL DISTRIBUTION



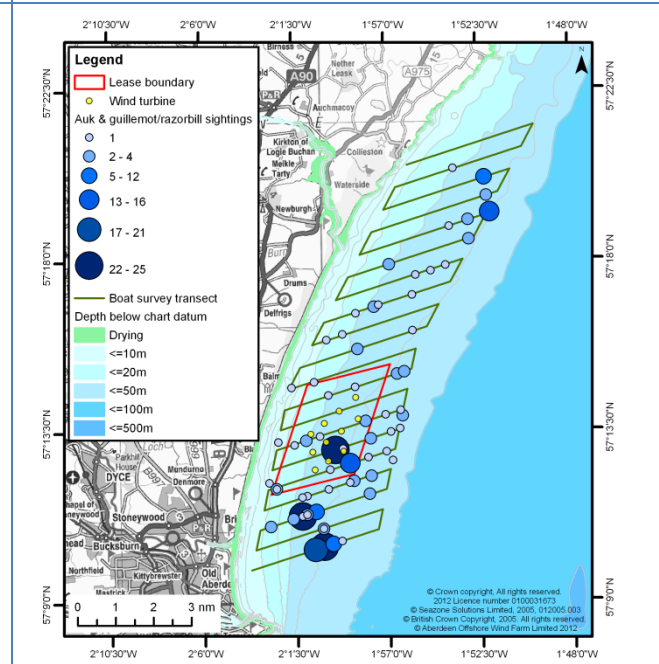
Auk Sp./Guillemot/Razorbill – December to March. Year 1



Auk Sp./Guillemot/Razorbill – April to July. Year 1

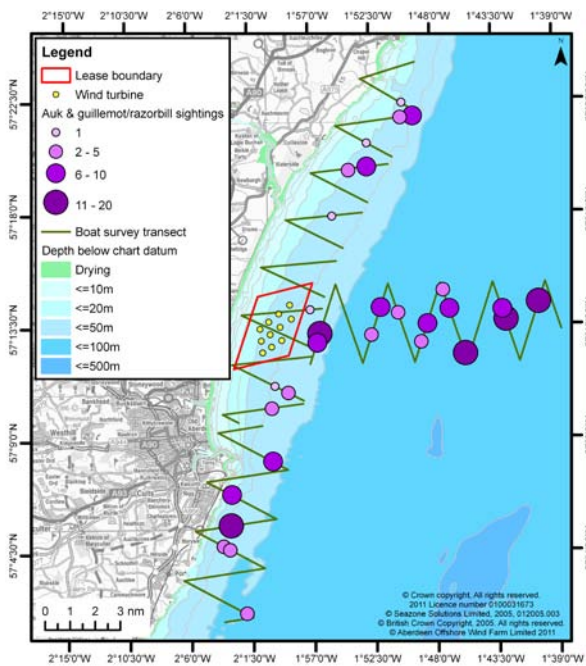


Auk Sp./Guillemot/Razorbill – August and September. Year 1

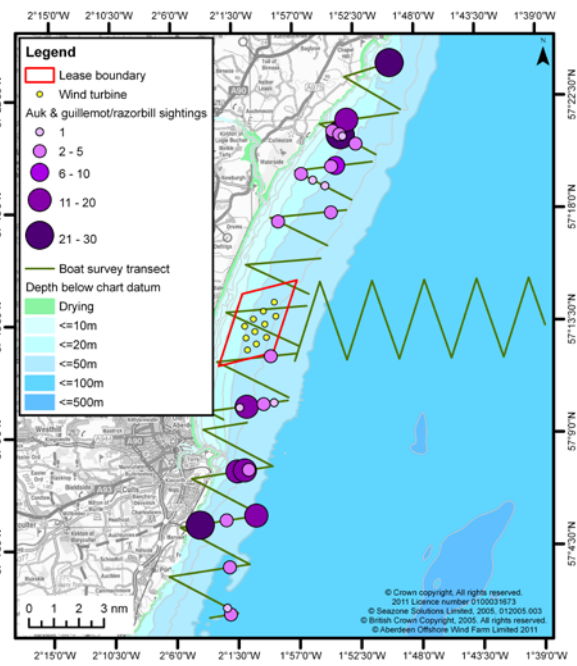


Auk Sp./Guillemot/Razorbill – October and November. Year 1

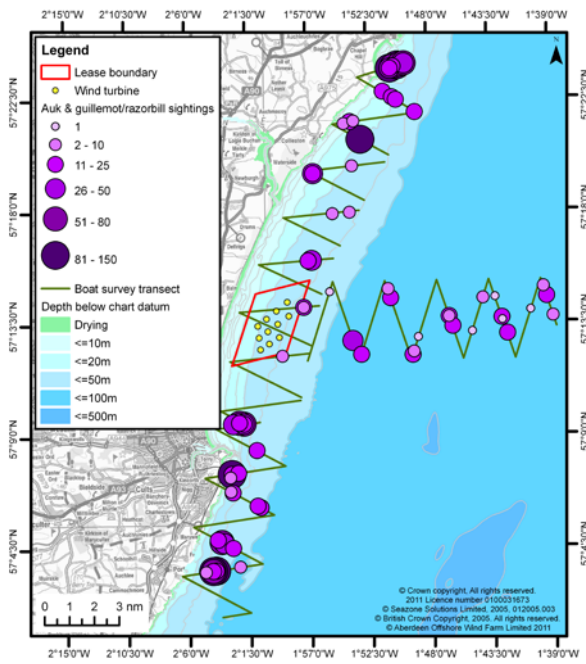
22.0 AUK SP./GUILLEMOT/RAZORBILL DISTRIBUTION



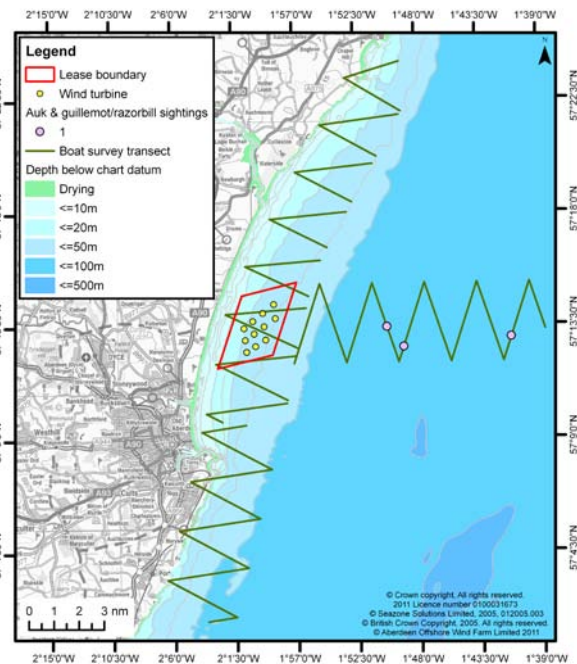
Auk Sp./Guillemot/Razorbill – December to March. Year 2



Auk Sp./Guillemot/Razorbill – April to July. Year 2

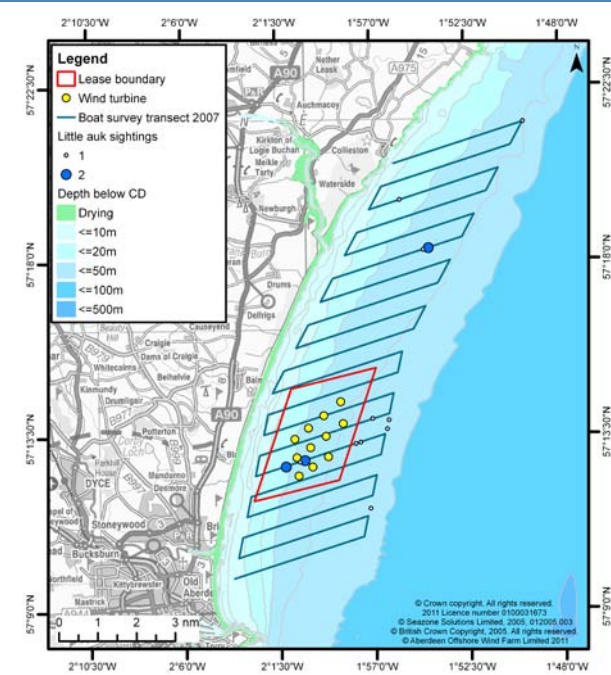


Auk Sp./Guillemot/Razorbill – August and September. Year 2

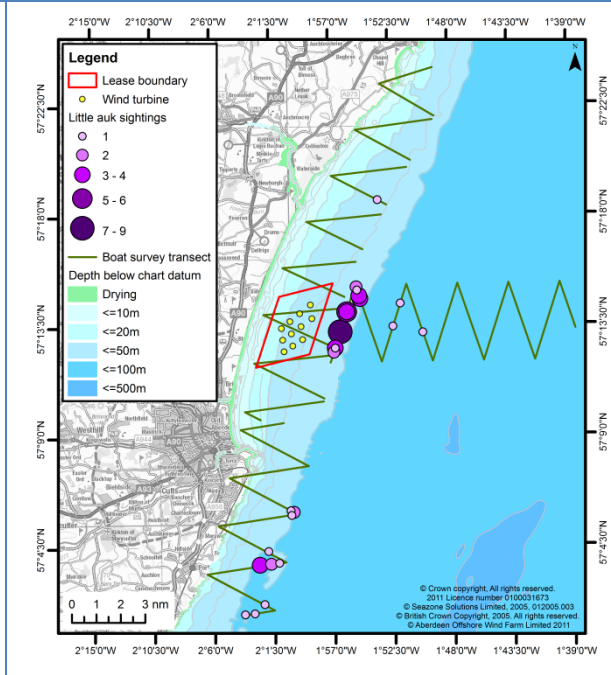


Auk Sp./Guillemot/Razorbill – October and November. Year 2

23.0 LITTLE AUK DISTRIBUTION

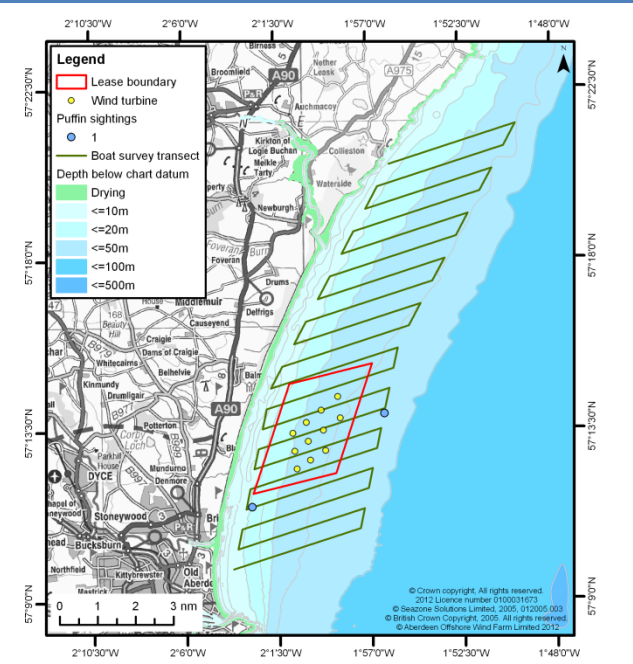


Little Auk – January to December.
Year 1

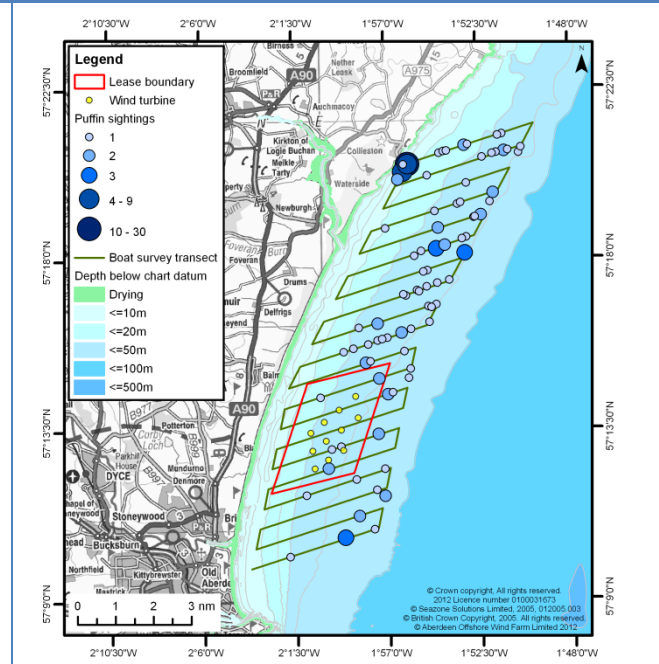


Little Auk – January to December.
Year 2

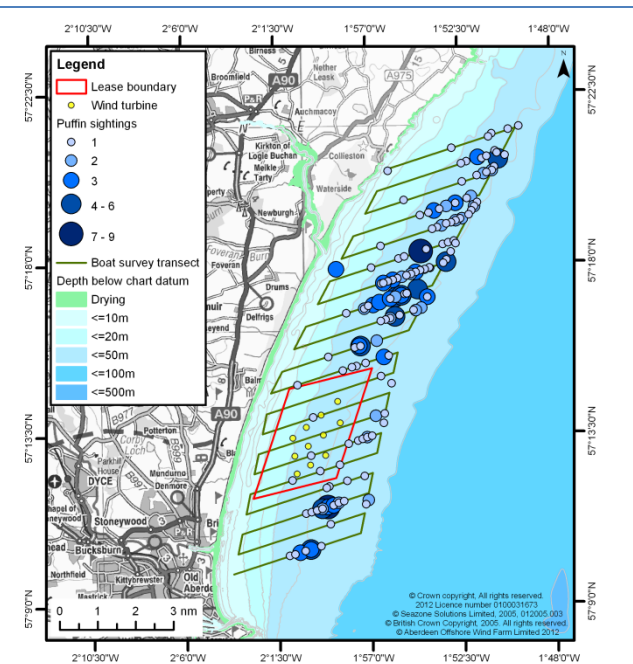
24.0 PUFFIN DISTRIBUTION



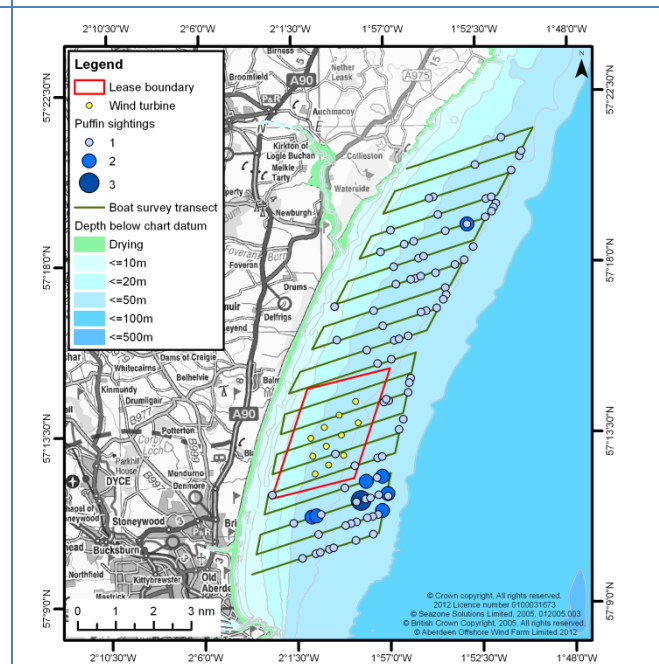
Puffin – December to March.
Year 1



Puffin – April to July.
Year 1

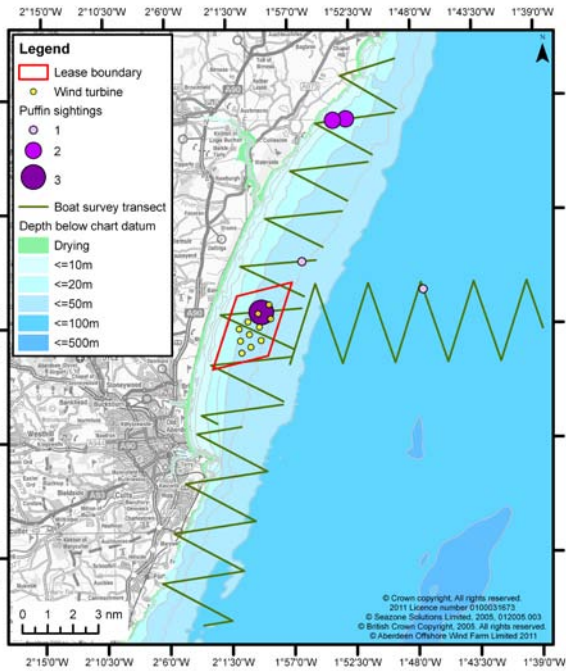


Puffin – August and September.
Year 1

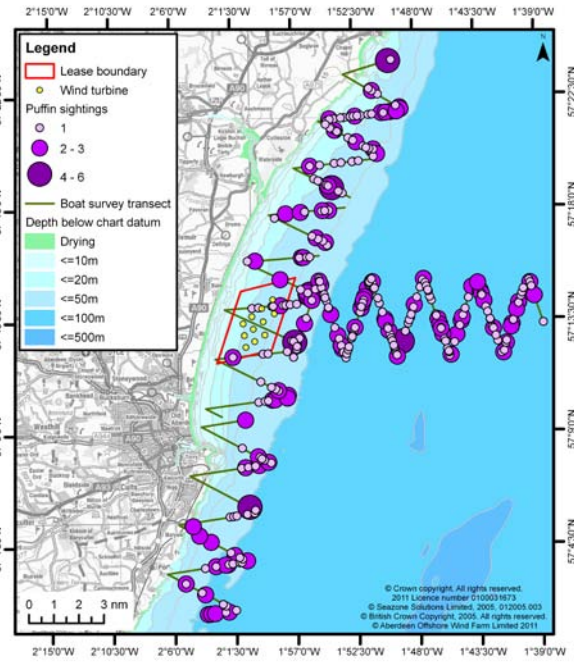


Puffin – October and November.
Year 1

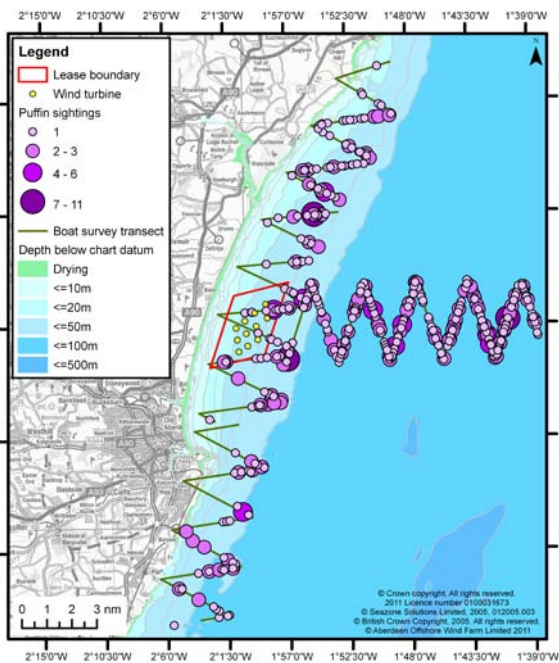
PUFFIN DISTRIBUTION



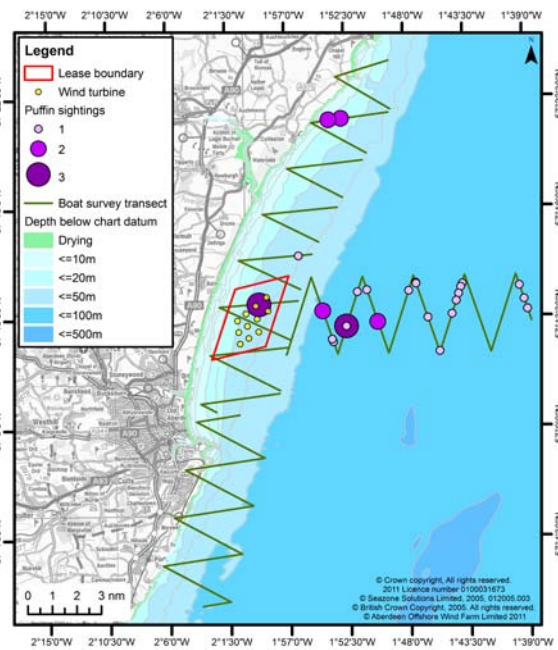
Puffin – December to March.
Year 2



Puffin – April to July.
Year 2



Puffin – August and September.
Year 2



Puffin – October and November.
Year 2