Biological Environment

Appendix 6C: Intertidal and Near-shore Bird Surveys (2012/13)

Contents

List of Tables

List of Figures

Glossary

Application Site	The area within the red line planning boundary comprising the Onshore Transmission Works (OnTW), as defined.
EIA Report	Report presenting the findings of the Environmental Impact Assessment (EIA).
Judicial Review	Court proceeding in which a judge reviews the lawfulness of a decision or action made by a public body.
Landfall	Point where up to two Offshore Export Cables from ICOL's Offshore Wind Farm will be brought ashore.
Offshore Export Cable	The subsea, buried or protected electricity cables running from ICOL's Offshore Wind Farm offshore substation to the Landfall and from the Landfall to the Onshore Substation.
Onshore Export Cables	Electricity cables from the Onshore Substation to the grid connection point.
Onshore Substation	The electrical substation comprising of all the equipment and associate infrastructure required to enable connection to the electrical transmission grid.
Onshore Transmission Works (OnTW)	All proposed works within the Application Site, typically including the Onshore Substation, cables transition pits, cable jointing pits, underground electricity transmission cables connecting to the Onshore Substation and further underground cables required to facilitate connection to the national grid. This includes all permanent and temporary works required. See *Chapter 5: Description of Development* for full details.
Original Onshore Substation	The electrical substation comprising of all the equipment and associate infrastructure required to enable connection to the electrical transmission grid as was granted planning permission in principle in September 2014, under ELC reference 14/00456/PPM.
Original OnTW	The OnTW, as was granted planning permission in principle in September 2014, under ELC reference 14/00456/PPM.

Abbreviations and Acronyms

BTO	British Trust for Ornithology
EcIA	Ecological Impact Assessment
GIS	Geographic Information System
HRA	Habitats Regulations Appraisal
JNCC	Joint Nature Conservation Committee
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
NM	Nautical Miles
RSPB	Royal Society for the Protection of Birds
pSPA	Proposed Special Protection Area
SAC	Special Area of Conservation
SNH	Scottish Natural Heritage
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WeBS	Wetland Bird Survey
WWT	Wildfowl and Wetlands Trust

6C Intertidal and Near Shore Bird Surveys

6C.1 Introduction

6C.1.1 Purpose and Scope of the Report

1 This report details the results of intertidal and near shore coastal bird surveys undertaken to inform the assessment of the Onshore Transmission Works (OnTW).

2 These surveys were originally carried out to inform the assessment of the Original OnTW which were identified to make landfall approximately 300 m further west along the shore from the OnTW. However, the report which was prepared for that assessment (presented as Appendix 15C: Intertidal and Near-shore Coastal Bird Baseline of the 2013 Inch Cape Environmental Statement (ES) (ICOL, 2013)) only detailed the results of the surveys conducted immediately adjacent to that landfall point (Sectors A and B, see *Section 2*), as well as a proposed alternative landfall point several kilometres further along the shore to the east. As the OnTW is located further along the shore the results of surveys undertaken adjacent to this new location which were not previously reported on are now deemed to be relevant to the assessment of the OnTW, hence the preparation of this report.

3 The surveys were designed to assess the use of the intertidal and near shore coastal habitats associated with the Export Cable Landfall (the point where the Offshore Export Cables connect to the Onshore Export Cables), particularly qualifying species of coastal/ marine designated sites of nature conservation interest associated with the Firth of Forth. Given the coastal location of the OnTW and the wide-ranging foraging behaviour of seabirds, this included sites within a seaward buffer of up to 40 km from the OnTW Application Site. These include:

- Firth of Forth Special Protection Area (SPA) and Wetland of International Importance (Ramsar Site);
- Forth Islands SPA;
- Imperial Dock Lock, Leith SPA; and
- The proposed Outer Firth of Forth and St. Andrews Bay SPA (pSPA).

4 The findings of these surveys will be used to inform the Ecological Impact Assessment (EcIA) for the OnTW as well as the Habitats Regulations Appraisal (HRA) required in relation to the above designated sites.

5 The main objectives of these surveys were to identify any areas:

- Which support significant numbers of qualifying species of the various coastal/marine designated sites in the Firth of Forth;
- Which are of importance for large assemblages of wetland birds; and
- Seasonal periods of sensitivity for wetland birds (e.g. staging posts for migratory birds or traditional feeding and roosting grounds).

6C.1.2 International Designated Sites Associated with the Firth of Forth

Firth of Forth SPA and Ramsar Site

6 The Firth of Forth SPA consists of over 25 individual intertidal sites stretching from the inner reaches of the Forth Estuary near Alloa, Clackmannanshire (NS 863 914) in the west to Fife Ness, Fife (NO 639 096) and Dunbar, East Lothian (NS 677 729) at the outer reaches of the Firth of Forth in the east. This complex of sites contains a variety of coastal and estuarine habitats which attract large numbers and a wide variety of over-winter and passage wetland birds (waders and waterfowl) to the area.

7 This area is designated under the European Union (EU) Birds Directive (2009/147/EC) due to its importance in protecting and conserving certain European wild bird populations and their habitats, as well as protecting migratory birds and those considered rare or vulnerable. The site qualifies under Article 4.1 of the directive by supporting populations of European importance of species listed on Annex 1, and under Article 4.2 of the directive by regularly supporting winter populations of European and international importance of certain migratory species. The site further qualifies by supporting a winter waterfowl assemblage of European importance consisting of at least 95,000 individuals including a further 17 species to those designated under Articles 4.1 and 4.2 alone. The full list of qualifying species of the Firth of Forth SPA is presented in Annex 1, Table A1.1. A copy of the full Firth of Forth SPA citation can be found on Scottish Natural Heritage's (SNH) SiteLink website (http://gateway.snh.gov.uk/sitelink/index.jsp).

8 Table A1.1 also presents the populations for the full suite of SPA qualifying species at classification as presented in the SPA citation. However, these population figures are derived from British Trust for Ornithology (BTO) Wetland Bird Survey (WeBS) five year peak counts from the periods 1992/93 - 1996/97 and 1993/94 - 1997/98 and are thus almost 20 years out of date. Therefore, more up to date population figures were sought from SNH for the period 2010/11 – 2014/15[1]. These figures are also presented in Table A1.1.

9 The Firth of Forth is also listed as a Ramsar Site under the Conservation of Wetlands of International Importance especially as Waterfowl Habitat (an agreement signed in Ramsar, Iran 1971). The qualifying bird interests of the Ramsar site are the same as for the Firth of Forth SPA. There is no specific legislation governing the protection of Ramsar Sites. However, all Ramsar Sites are also Natura Sites and so are protected under the relevant statutory requirements (The Scottish Government, 2014).

10 In addition, the Firth of Forth is a nationally important site designated as a Site of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act 1981 (as amended). Notified in August 2000, for both biological and geological features, the SSSI has 46 qualifying interests including many bird species and habitats. A full list can be found on SNH's SiteLink website (http://gateway.snh.gov.uk/sitelink/index.jsp).

[1] Site condition monitoring data provided by Malcolm Fraser (SNH Area Officer), 28.07.17.

11 The OnTW Application Site is located approximately 10 m from the boundary of the Firth of Forth SPA, Ramsar site and SSSI as shown in Figure 6C.1.

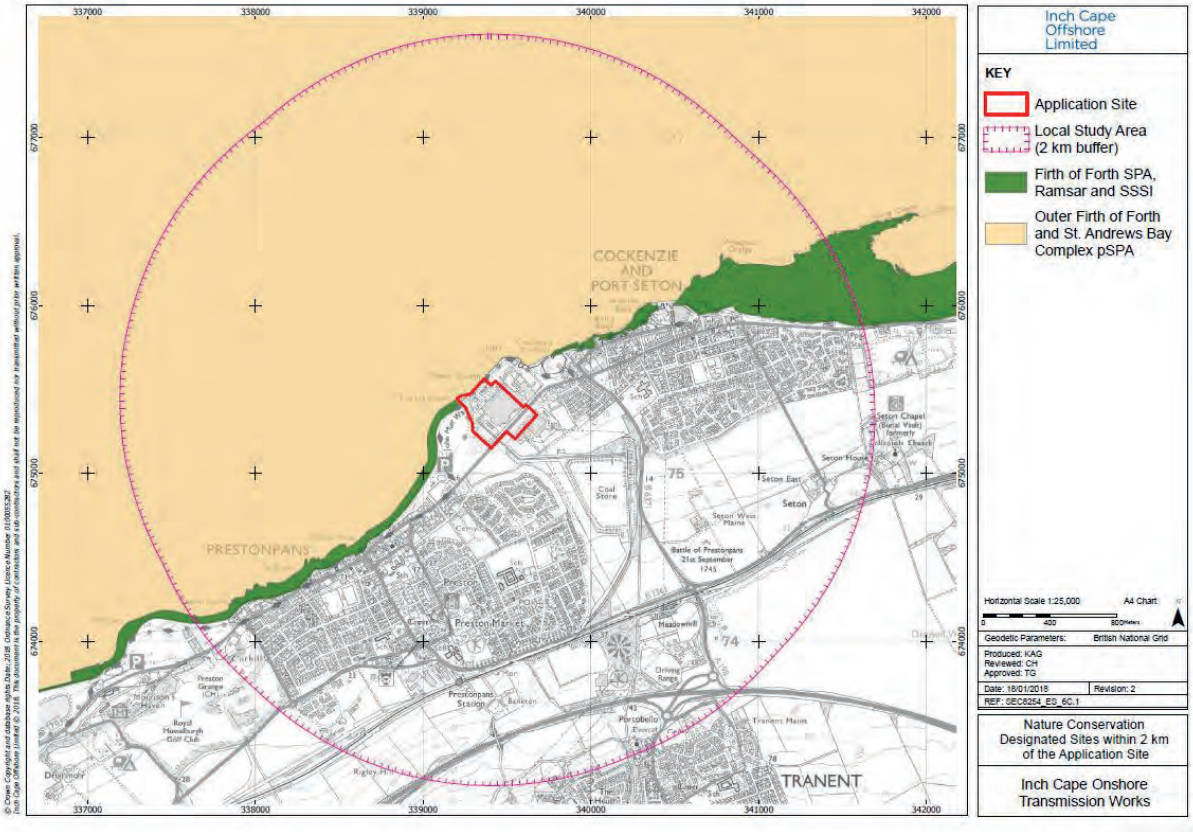


Figure 6C.1: Nature Conservation Designated Sites in Proximity to the Application Site

Imperial Dock Lock, Leith SPA

12 The Imperial Dock Lock, Leith SPA is located in the Port of Leith and is designated for the important breeding population of the Annex 1 species common tern which it supports. When the site was designated this site supported an average of 558 pairs (based on data from 1997-2001). However, the population has increased since the latest population data such that the latest population estimate is 782 pairs (average based on site condition monitoring data from 2012-2017)[1]. This represents the largest colony of common tern in the Forth, and is one of the largest colonies in Britain. Details of the Imperial Dock Lock, Leith SPAs common tern population are presented in Annex 1, Table A1.2.

13 At its closest point, Imperial Dock Lock, Leith SPA is located approximately 12.3 km to the west of the Application Site (see Figure 6C.2).

Forth Islands SPA

14 Forth Islands SPA consists of a series of islands supporting the main seabird breeding colonies in the Firth of Forth and encompasses the islands of Long Craig, Inchmickery, Isle of May, Fidra, The Lamb, Craigleith and Bass Rock. The extent of the Forth Islands SPA includes these islands themselves, as well as seaward extensions of approximately two kilometres into the marine environment around all but Long Craig, to include the seabed, water column and surface

associated with the islands. The closest part of the SPA to the Application Site is the western seaward extent surrounding Fidra at approximately 13.5 km due north east of the Application Site, with the furthest part being the north eastern seaward extent surrounding the Isle of May at approximately 40 km due north east of the Application Site (see Figure 6C.2).

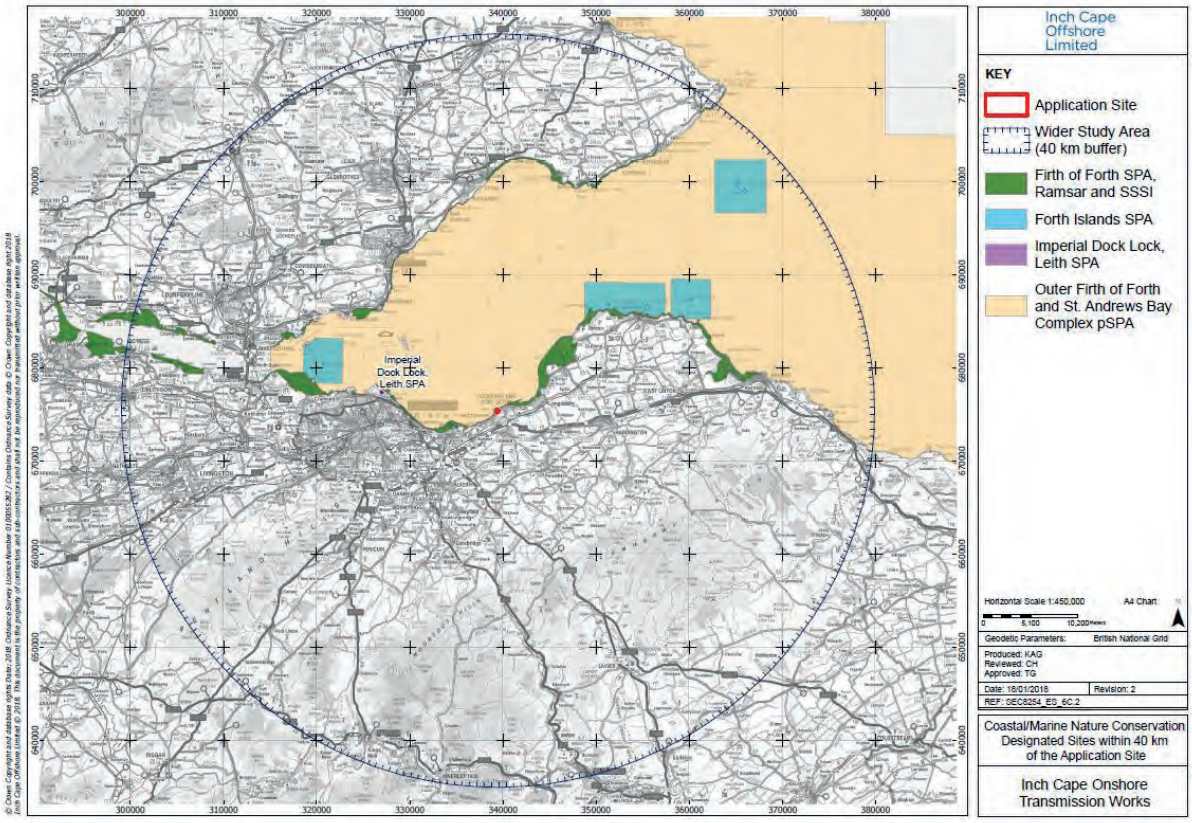


Figure 6C.2: Nature Conservation Designated Sites in the wider Firth of Forth

15 These islands qualify by regularly supporting breeding populations of European importance of the Annex 1 species Arctic tern, common tern, Sandwich tern and roseate tern. Long Craig was designated for supporting the largest colony of roseate tern in Scotland and is the most northerly of only six regular British colonies of this species. They also qualify by regularly supporting breeding populations of European importance of the migratory species Northern gannet, European shag, lesser black-backed gull and Atlantic puffin.

16 The Forth Islands SPA is also designated for regularly supporting a breeding seabird assemblage in excess of 20,000 individuals. Named species of the assemblage (i.e. those occurring in nationally important populations) include the species listed above as well as razorbill, common guillemot, black-legged kittiwake, herring gull, great cormorant and Northern fulmar.

17 Table A1.3 in Annex 1, presents the populations for the Forth Islands SPA qualifying species provided by SNH for the period 2012-2016[1], as presented in Table A1.3.

18 It is notable from the Table A1.3, the breeding populations of Sandwich tern and Roseate tern associated with the Forth Islands SPA have declined to few or no pairs. This decline coincided

with low numbers elsewhere in the southeast of Scotland and increased numbers in northeast Scotland, suggesting there may have been a shift in the population's distribution (SNH, 2004).

Proposed Outer Firth of Forth and St. Andrews Bay Complex pSPA

19 The Outer Firth of Forth and St Andrews Bay Complex pSPA stretches from Arbroath to St. Abb's Head encompassing the Firth of Forth, the outer Firth of Tay and St. Andrews Bay and comprises an area of 2,720.68 km^2. The site extends beyond the 12 nautical miles (nm) boundary of territorial and offshore waters to encompass the feeding areas of some seabirds.

20 The Outer Firth of Forth and St Andrews Bay Complex pSPA attracts one of the largest and most diverse concentrations of marine birds in Scotland. During the non-breeding season, it provides important wintering grounds used for feeding, moulting and roosting by a variety of divers, grebes and seaducks including the largest aggregations of red-throated diver and common eider in Scotland. The Firth of Forth is also notable for its concentrations of wintering gulls, including little gull, kittiwake, black-headed gull, common gull and herring gull. Together with guillemot, shag and razorbill these species contribute to an assemblage of over 40,000 seabirds using the site during the non-breeding season.

21 The site also encompasses feeding grounds for breeding common tern, Arctic tern and shag nesting colonies. During the breeding season kittiwake, gannet, herring gull, guillemot, puffin, and Manx shearwater also contribute to a major assemblage of over 100,000 seabirds.

22 Table A1.4, in Annex 1, presents the populations for the proposed Outer Firth of Forth and St Andrews Bay Complex pSPA qualifying species as presented in the site's Advice to Support Management document (SNH, 2016).

23 The boundary of the proposed Outer Firth of Forth and St Andrews Bay Complex pSPA follows the Mean Low Water Springs (MLWS) mark. It is therefore adjacent to the boundary of the Application Site at the MLWS mark immediately in front of the site of the former Cockenzie Power Station (i.e. the distance between the Application Site and the proposed Outer Firth of Forth and St Andrews Bay Complex pSPA is 0 m, see Figure 6C.1 and 6C.2).

6C.2 Methodology

6C.2.1 Intertidal and Near Shore Coastal Bird Surveys

24 The programme of monthly intertidal and near shore coastal bird surveys was conducted over a period of thirteen months between January 2012 and January 2013 inclusive. Although the largest numbers of birds were expected to be present during the non-breeding season (approximately September to March, covering the spring and autumn migration periods as well as the winter months), data was collected for the full year in order to cover the breeding and post-breeding periods.

25 The intertidal and near shore coastal bird survey area extended for approximately six kilometres along the East Lothian coast from Prestonpans Sea Front at Ox Rocks (NT 38288 74352) to the eastern end of Seton Sands (NT43301 76480) in order to cover the full area

originally under investigation for potential cable landfall sites. Given the extent of this survey area it was segregated into five discrete count sectors[2] (Sectors A-E) (Figure 6C.3), identified as follows:

- **Sector A: Prestonpans Sea Front** (Ox Rocks (NT 38288 74352) to Lidl Supermarket (NT 39045 74987));
- **Sector B: Former Cockenzie Power Station Sea Front** (Lidl Supermarket (NT 39045 74987) to Cockenzie Harbour (NT 39678 75626));
- **Sector C: Cockenzie and Port Seton Sea Front** (Cockenzie Harbour (NT 39678 75626) to Wrecked Craigs, Seton Sands West (NT 40808 75976));
- **Sector D: Seton Sands West** (Wrecked Craigs, Seton Sands West (NT 40808 75976) to **Seton Sands Holiday Village** (NT 41954 75889)); and
- **Sector E: Seton Sands** (Seton Sands Holiday Village (NT 41954 75889) to Seton Sands East (NT43301 76480)).

26 Ultimately, the proposed Export Cable Landfall and OnTW Application Site was identified by ICOL at the site of the former Cockenzie Power Station (Figure 6C.3). The most relevant survey sector to this location is Sector B. However, the data for Sectors A and C are also considered in this report in order to identify any potentially important foraging or roosting grounds within at least 500 m of the proposed Export Cable Landfall. Consequently, Sectors A-C combined are considered to represent the 'Survey Area'.

27 All other survey sectors (i.e. Sectors D and E) were not considered to be relevant to the OnTW and so are not considered further here.

28 Each survey sector extended out to 1.5 km from the Mean High Water Springs (MHWS) mark. To identify the distribution of birds, the count sectors were segregated into three distance bands; 0 - 500 m, 500 m - 1 km and 1 km - 1.5 km (Figure 6C.3).

29 Surveys of each sector were conducted by a team of surveyors at approximately fortnightly intervals between January 2012 and January 2013. During each survey the number of birds present along the foreshore and near shore coastal waters was counted and ascribed to one of the three distance bands. Observations of bird species (including the numbers of each species in a given location and behaviour – see below) were plotted onto a field map using standard BTO species codes.

[2] Segregating smaller count sectors is a recognised way of simplifying field surveys where large distances are involved as it reduces the size of large expansive habitats (e.g. exposed intertidal mudflats) and introduces a systematic and effective way of counting the entire site. It also allows the results to be interpreted at much greater detail enabling definitive conclusions to be made with regard to the objectives of the study.

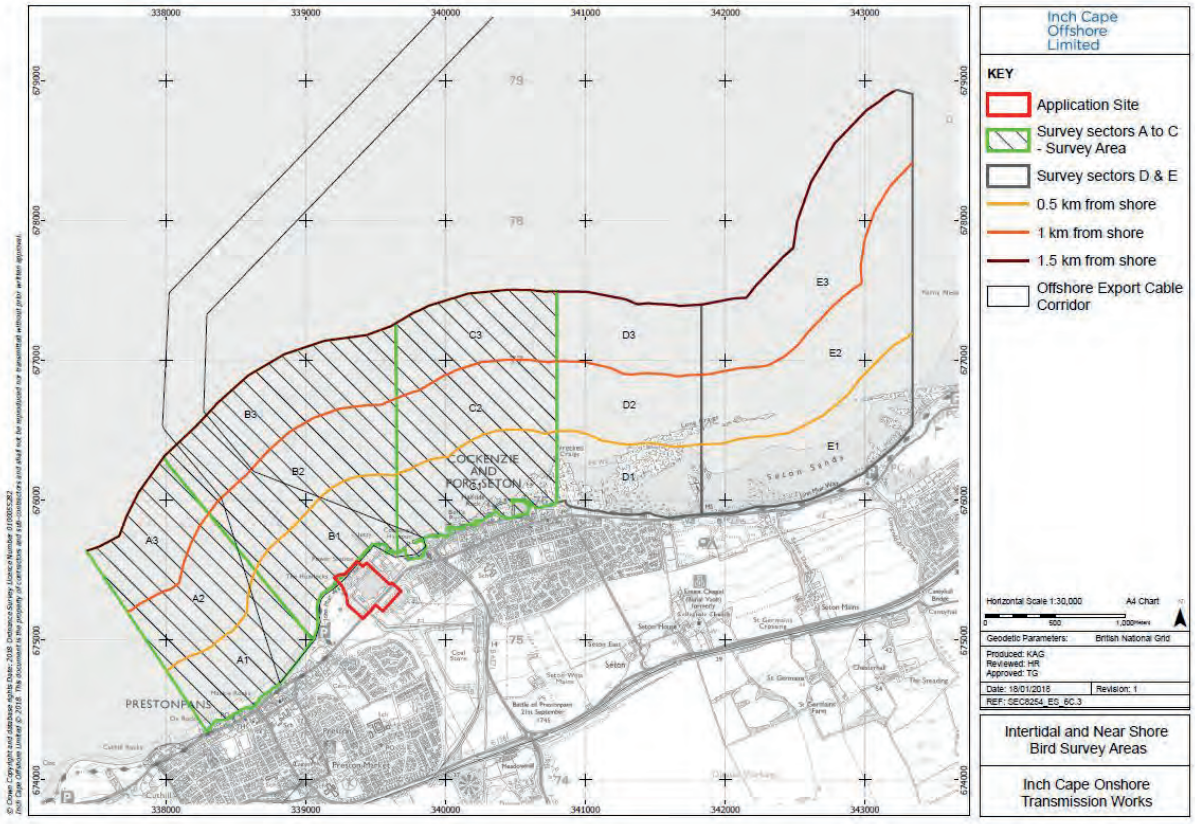


Figure 6C.3: Intertidal and Near Shore Bird Survey Areas

30 Surveys were scheduled to cover a range of different tidal conditions (high, low and mid-tide; spring and neap tides) throughout the survey programme. Survey methods were based on the high tide (core count) methodology of the BTO/JNCC/RSPB/WWT WeBS scheme (Musgrove et al. 2003 and Holt et al. 2011). This involved the surveyor counting birds from vantage points along the coast using binoculars and a telescope. In addition to the location and number of birds, notes were also made as to whether they were foraging, roosting or loafing. Flying birds were also recorded although for the purposes of this report only those birds which were obviously using the habitats of the Survey Area (e.g. foraging terns or gannets, as opposed to birds simply flying over/through the sectors) have been included here.

31 Field records were transferred to a Geographic Information System (GIS). This produced accurate information on the distribution of birds within the Survey Area and enabled maps to be produced so that areas of ornithological importance could be identified.

32 Weather conditions including wind speed (using the Beaufort Scale), cloud cover (estimated as eighths or octas of the sky), visibility and temperature were also recorded as well as sources of disturbance to birds encountered during surveys. Details of the intertidal and near shore coastal bird survey effort is presented in Table 6C.1.

Table 6C.1: Intertidal and Near Shore Coastal Bird Survey Effort & Tide Coverage

Month	Date	Sector	Survey Start Time (hr:min)	Survey End Time (hr:min)	Tidal State	Observer
Jan '12	28/01/12	A	09:30	10:00	Mid to low tide	JD
	28/01/12	B	10:00	10:45	Mid to low tide	JD
	28/01/12	C	11:00	11:30	Low to mid tide	JD
Feb '12	19/02/12	A	10:50	11:50	Mid to high tide	KAS
	19/02/12	B	11:50	12:25	Mid to high tide	KAS
	19/02/12	C	12:25	13:30	High to mid tide	KAS
	23/02/12	A	11:50	12:29	Mid to low tide	KAS
	23/02/12	B	12:30	13:14	Mid to high tide	KAS
	23/02/12	C	13:15	14:14	Mid to high tide	KAS
	29/02/12	A	10:45	12:00	Mid to low tide	JN
	29/02/12	B	12:05	12:40	Low to mid tide	JN
	29/02/12	C	12:45	13:30	Low to mid tide	JN
Mar '12	03/03/12	A	11:05	11:50	High to mid tide	KAS
	03/03/12	B	11:50	12:40	High to mid tide	KAS
	03/03/12	C	12:40	13:40	Mid to low tide	KAS
	22/03/12	A	06:30	07:15	Mid to low tide	JN
	22/03/12	B	07:15	07:50	Mid to low tide	JN
	22/03/12	C	08:00	08:45	Mid to low tide	JN
Apr '12	08/04/12	A	09:05	10:00	Mid to low tide	KAS
	08/04/12	B	10:00	10:55	Low to mid tide	KAS
	08/04/12	C	10:55	12:10	Low to mid tide	KAS
	22/04/12	A	12:40	13:25	Low to mid tide	KAS
	22/04/12	B	13:25	14:15	Mid to high tide	KAS
	22/04/12	C	14:25	15:20	Mid to high tide	KAS
May '12	02/05/12	A	11:25	12:10	Mid to high tide	KAS
	02/05/12	B	12:10	13:05	High to mid tide	KAS
	02/05/12	C	13:10	14:10	High to mid tide	KAS
	24/05/12	A	10:26	11:15	Mid to low tide	KAS

Month	Date	Sector	Survey Start Time (hr:min)	Survey End Time (hr:min)	Tidal State	Observer
	24/05/12	B	11:16	11:56	Low to mid tide	KAS
	24/05/12	C	11:57	13:26	Low to mid tide	KAS
Jun '12	02/06/12	A	10:15	11:05	Mid to high tide	KAS
	02/06/12	B	10:16	11:05	Mid to high tide	KAS
	02/06/12	C	11:16	12:45	Mid to high tide	KAS
	20/06/12	A	08:50	09:20	Mid to low tide	KAS
	20/06/12	B	09:20	10:15	Low to mid tide	KAS
	20/06/12	C	10:15	11:35	Low to mid tide	KAS
July '12	13/07/12	A	10:35	11:20	High to mid tide	KAS
	13/07/12	B	11:20	12:05	High to mid tide	KAS
	13/07/12	C	12:05	13:20	High to mid tide	KAS
	26/07/12	A	11:10	11:55	Mid to low tide	KAS
	26/07/12	B	11:55	12:45	Mid to low tide	KAS
	26/07/12	C	12:45	14:00	Mid to low tide	KAS
Aug '12	12/08/12	A	10:50	11:40	High to mid tide	KAS
	12/08/12	B	11:40	12:30	High to mid tide	KAS
	12/08/12	C	12:30	13:30	High to mid tide	KAS
	24/08/12	A	13:50	14:40	Low to mid tide	KAS
	24/08/12	B	14:40	15:35	Low to mid tide	KAS
	24/08/12	C	15:35	16:45	Low to mid tide	KAS
Sept '12	07/09/12	A	11:15	12:10	Mid to low tide	KAS
	07/09/12	B	12:10	13:05	Low to mid tide	KAS
	07/09/12	C	13:05	14:20	Low to mid tide	KAS
	26/09/12	A	09:40	11:10	Mid to high tide	KAS
	27/09/12	B	10:45	12:00	Mid to high tide	KAS
	27/09/12	C	12:00	13:30	Mid to high tide	KAS
Oct '12	05/10/12	A	16:30	17:30	Mid to high tide	JN
	08/10/12	B	09:50	10:00	High to mid tide	JN
	08/10/12	C	10:05	11:05	High to mid tide	JN

Month	Date	Sector	Survey Start Time (hr:min)	Survey End Time (hr:min)	Tidal State	Observer
	19/10/12	A	11:00	12:05	Mid to low tide	KAS
	21/10/12	B	10:10	11:20	Mid to low tide	KAS
	21/10/12	C	11:20	12:45	Mid to low tide	KAS
Nov '12	02/11/12	A	12:40	14:05	Mid to high tide	KAS
	03/11/12	B	10:10	11:20	Low to mid tide	KAS
	03/11/12	C	11:20	13:10	Low to mid tide	KAS
	23/11/12	A	12:30	13:50	High to mid tide	KAS
	24/11/12	B	09:10	10:35	Mid to high tide	KAS
	24/11/12	C	10:35	12:00	High to mid tide	KAS
Dec '12	07/12/12	A	12:30	13:50	Mid to low tide	KAS
	15/12/12	B	09:20	10:40	Low to mid tide	KAS
	15/12/12	C	10:40	12:05	Low to mid tide	KAS
	29/12/12	A	12:40	13:40	Mid to high tide	KAS
Jan '13	01/01/13	B	09:05	10:15	Mid to low tide	KAS
	01/01/13	C	10:15	11:40	Low to mid tide	KAS
	09/01/13	A	12:15	13:40	High to mid tide	KAS
	14/01/13	B	09:15	10:15	Mid to low tide	KAS
	14/01/13	C	10:15	11:45	Low to mid tide	KAS
	30/01/13	A	12:25	13:30	Low to mid tide	KAS
Notes: Observer key: JD = Joris Driessen; JN = John Nadin; KAS = Kathy Shaw						

33 In terms of representative tidal coverage across the three count sectors this is summarised in Table 6C.2.

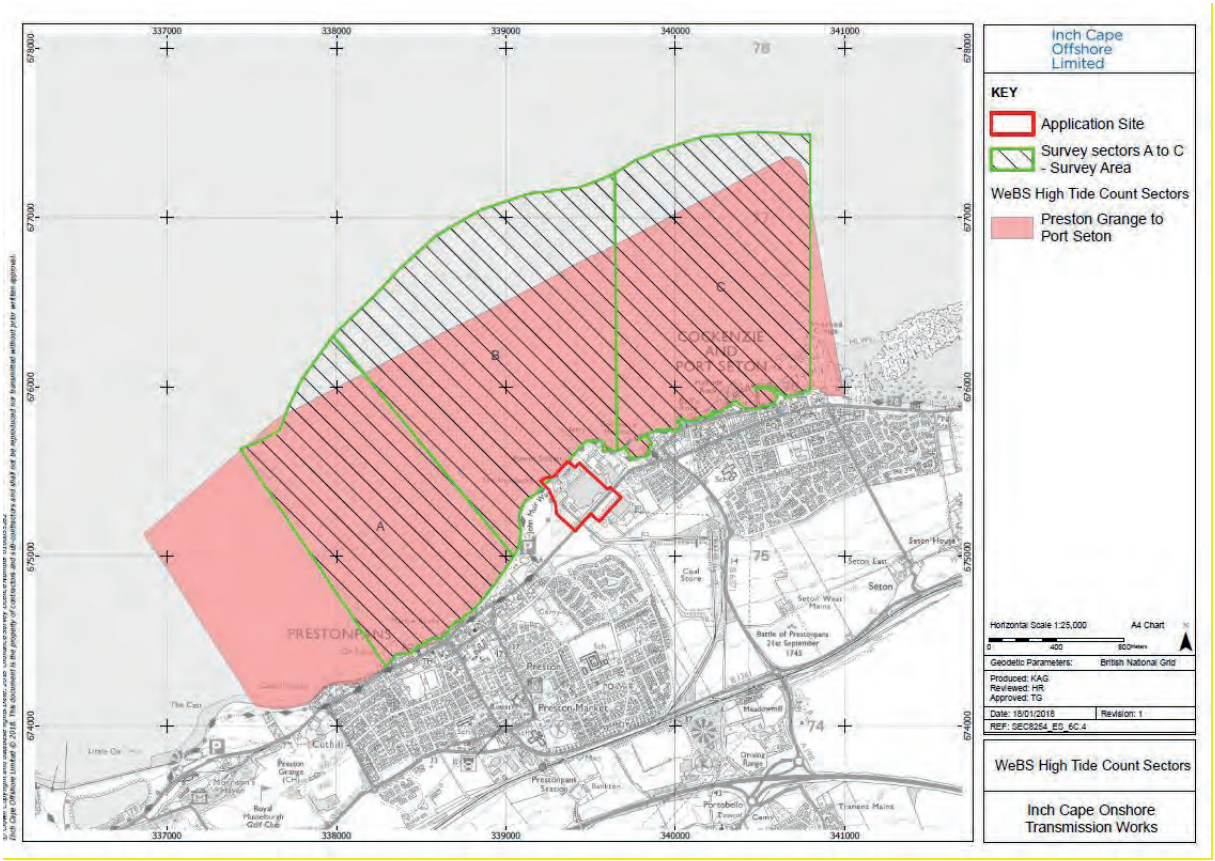
Table 6C.2: Proportion of Surveys across the Tidal Cycle within Each Count Sector

Sector	Total Number of Surveys	Number (and Proportion) of Surveys at Different Tidal States			
		High-Mid Tide	Mid-Low Tide	Low-Mid Tide	Mid-High Tide
A	26	5 (19 %)	11 (42 %)	3 (12 %)	7 (27 %)
B	25	5 (20 %)	6 (24 %)	8 (32 %)	6 (24 %)
C	30	6 (20 %)	5 (17 %)	12 (40 %)	7 (23 %)

6C.2.2 Contextual Background Data

WeBS Data[3]

34 WeBS count data were obtained from the BTO for the most recent high and low tide datasets gathered from survey area which most closely corresponded to count sectors A, B and C. These are the Preston Grange – Port Seaton High Tide Sector (sector reference: 83417) and the Prestonpans Seafront and Cockenzie Power Station Seafront Low Tide Sectors (sector references: BF105 and BF106) the extents of which are shown in Figures 6C.4 and 6C.5. High tide data covered the five year period 2010/11 - 2014/15 while the most up to date low tide data available was from 2009/10.



[3] The Wetland Bird Survey is a national bird census programme co-ordinated through the BTO, WWT, RSPB and JNCC.

Figure 6C.4: WeBS High Tide Count Sectors

35 WeBS counts are specifically aimed at recording the number of water birds which use particular wetland and coastal habitats. Core (high tide) counts are undertaken annually and conducted around high water on all estuaries and key wetland sites in the UK, generally on a set day each month. At this time water birds tend to gather at high tide roosts and counts undertaken around high water provide an estimate of the total population of birds using an area of coast.

36 The WeBS low tide count scheme generally records the number of waders and wildfowl that are foraging within a count sector. It aims to monitor the importance of inter-tidal feeding areas of UK estuaries and complement the information gathered by WeBS core counts. Low tide counts provide information to gauge the potential effects on waterbirds of a variety of human activities which affect the extent or value of inter-tidal habitats.

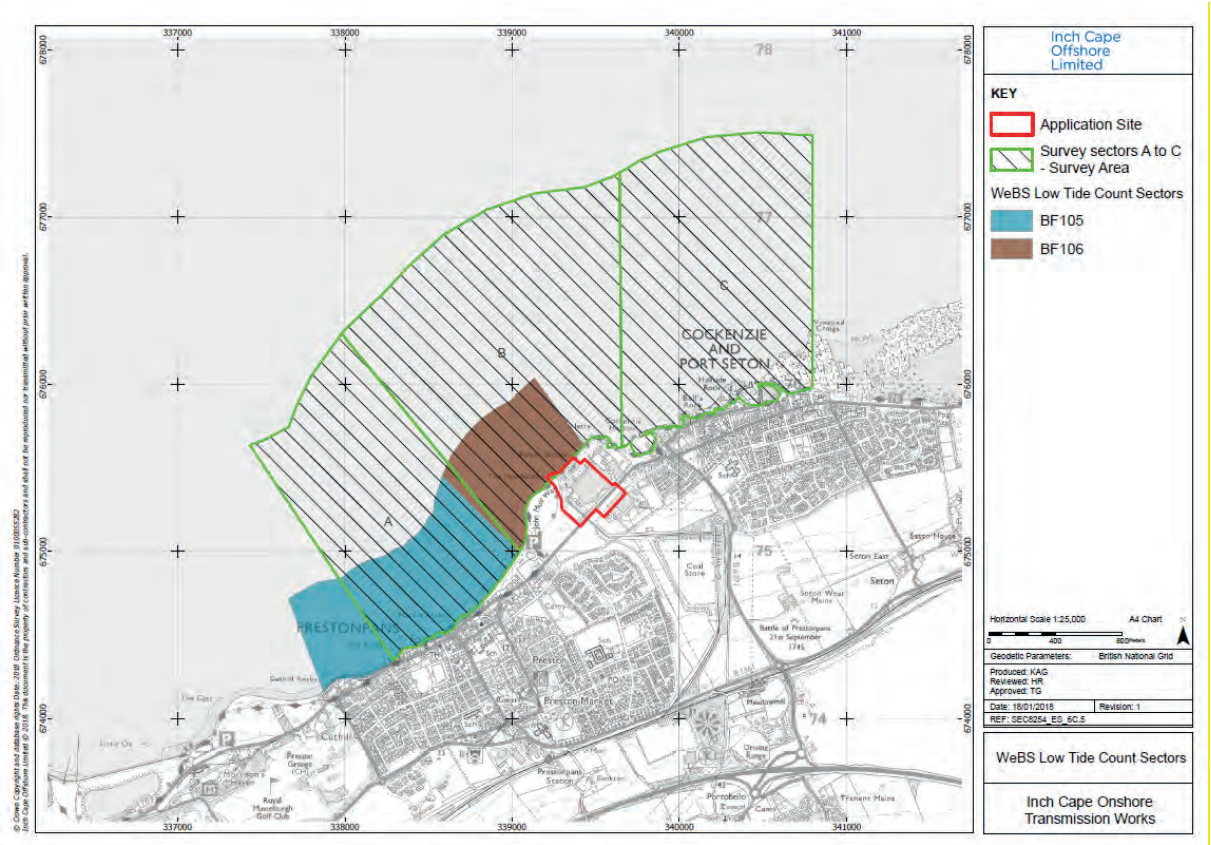


Figure 6C.5: WeBS Low Tide Count Sectors

37 Although extremely valuable in providing historical and contextual wetland bird data for particular sites of interest, WeBS data is sometimes limited by the fact that it covers comparatively large areas and is therefore not necessarily representative of small scale patterns of bird abundance and distribution. Furthermore, it is extremely unlikely that the defined WeBS count sectors will cover exactly the same areas being covered in targeted, project-specific surveys. As it is however, the Prestonpans – Port Seaton WeBS Sector corresponds very closely with the Survey Area as shown in Figure 6C.4. The low tide count sectors are slightly less comparable although they are still expected to be relatively representative of the birds present in these corresponding areas. Consequently, the WeBS

data was used to supplement the more site specific data gathered during the intertidal and near shore bird surveys as well as provide a direct comparison upon which to compare the representativeness of the survey results, as presented in *Section 6C.4*.

6C.3 Results

38 The following presents interpretation of the intertidal and near shore bird survey results. Data tables and summarised accounts of each species are presented under the following species group headings; waterfowl, wading birds and herons, diver and grebes, gulls and terns and seabirds. The data tables show the peak counts for each species in each month in each survey sector as well as the peak count over the course of the entire survey period.

39 Although it would appear as if the monthly and overall peak counts in each survey sector could be added together to give overall peak counts for the Survey Area as a whole, this is not possible due to the fact that many of the surveys in each sector were conducted on different dates. Even where surveys were conducted on the same dates, because there was more than one survey in each sector in some months, the monthly peak counts in each sector may not have occurred during those same surveys. Consequently, there is a reasonably high likelihood of birds being double counted were the peak counts in each survey sector to be considered together. This would have artificially increased the number of birds apparently using the intertidal and near shore habitats adjacent to the Application Site.

40 More detailed tables showing the distribution of birds between the different distance bands within each count sector are presented in Annex 2, Tables A2.1 – A2.3, and Figures 6C.6 – 6C.45.

41 For the purposes of clarity, reference to the breeding, non-breeding, post-breeding and passage seasons in the following text relate to the following periods:

- Breeding Season (mid-March-August inclusive);
- Non-Breeding Season (September-mid-March inclusive);
- Post-breeding Season (mid-July-September);
- Autumn Passage (September-November Inclusive); and
- Spring Passage (March-mid-May inclusive).

6C.3.1 Habitat Description

The Survey Area comprises a combination of intertidal and shallow near shore coastal habitats stretching from Prestonpans at the western extent to Cockenzie to the east. The tidal range along most of this stretch of coastline is limited to less than 50 m and at low tide narrow strips of pebble and boulder beach interspersed with rocky outcrops become exposed, particularly in sectors A and C. The site of the former Cockenzie Power Station, which is located in Sector B, is protected from the sea by a large brick and concrete sea wall. The tidal range at this location is such that the tide barely retreats below the bottom of the sea wall at low tide while

at high tide the water rises to around half way up the wall. Sector B also includes the former Cockenzie Power Station's jetty.

6C.3.2 Intertidal and Near Shore Bird Data

42 A total of 40 waterbird species were recorded within the intertidal and near shore Survey Area during the survey programme. The following interpretation of survey results for each species should be read in conjunction with Tables 6C.3 – 6C.7.

Waterfowl

43 **Eider duck** was the most abundant and regularly present waterfowl species throughout the Survey Area. Birds were recorded on every month of the survey programme in all three survey sectors with numbers typically ranging between approximately 20 to 70 individuals. Occasionally however, counts of over 100 individuals were recorded with the highest counts in each sector ranging from 105 in Sector B (September 2012), 136 in Sector A (January 2013) to the overall peak of 196 in Sector C (June 2012). All birds were recorded out on the open water with the majority being present within one kilometre of the shore. Given the consistent occurrence of the species throughout the year in all survey sectors and the occasional occurrence of large numbers of birds, the data indicates that the Survey Area is of reasonable importance to this species.

44 **Velvet scoters** were regularly present throughout the passage and winter months although they were generally represented by small numbers of individuals, typically fewer than 15 birds. Occasional large numbers were recorded, with counts of 63 and the overall peak of 120 (February and January 2012 respectively), both of which were from Sector C. Birds were recorded in all distance bands from the shore, although the majority were located between 500 m and 1.5 km from the shore. The regular occurrence and occasional large counts suggests that the near shore coastal waters of the Survey Area are of some importance to velvet scoters.

45 **Common scoters** were generally only recorded in the winter and spring passage months and typically represented small counts of fewer than 10 individuals. The exception to this was in January 2013 with the presence of reasonable counts in all three survey sectors of between 20 and the overall peak of 33 birds. Birds were recorded in all distance bands from the shore, although the month in which peak counts in each survey sector occurred all birds were located within 500 m from the shore. This may have been due to the birds sheltering from stormy conditions further out in the Firth of Forth. In general however, the data suggests that the Survey Area is of low importance to common scoters.

46 **Red-breasted mergansers** were recorded intermittently throughout the survey programme in all three survey sectors and in relatively low numbers, typically no more than 10 individuals. The overall, peak count of 27 was recorded in Sector A (December 2012). Almost all birds were recorded within one kilometre offshore. In general however, the data suggests that the Survey Area is of low importance to common scoters.

47 **Long-tailed ducks** were recorded intermittently and predominantly during the winter and passage months in small numbers of no more than six individuals (Sector B, March 2012). The infrequent presence and low abundance of this species suggests that this Survey Area is of low importance to long-tailed ducks.

48 **Goldeneye** were only recorded within the Survey Area in January 2012, with counts of 20 and the overall peak of 80 individuals in Sectors A and C respectively. The rare presence of this species suggests that this Survey Area is of low importance to goldeneye.

49 **Mallard**, **wigeon** and **mute swan** were also recorded, but rarely and in small numbers, with the overall peak count for wigeon being seven individuals, mute swan being eight individuals and mallard being represented by a single bird. Consequently, the data suggests that the Survey Area is of negligible importance to these species.

Table 6C.3: Monthly and Overall Peak Counts of Waterfowl Recorded within Each Survey Sector over the Survey Programme

Species	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak
Eider duck	A	24	18	20	22	16	10	26	30	39	30	29	43	136	**136**
	B	30	21	55	59	11	10	3	12	105	20	11	62	82	**105**
	C	74	78	77	65	83	196	154	39	53	23	73	28	91	**196**
Velvet scoter	A	2	-	18	5	1	-	-	-	-	4	7	4	3	**18**
	B	2	4	4	1	35	-	-	-	2	4	7	5	1	**35**
	C	120	63	6	-	28	-	-	-	-	2	9	14	11	**120**
Common scoter	A	-	-	-	1	1	-	-	-	-	-	-	8	30	**30**
	B	1	1	-	2	1	-	-	-	-	-	-	-	33	**33**
	C	-	10	1	5	1	-	-	-	-	-	-	-	20	**20**
Red-breasted merganser	A	-	3	2	-	-	-	11	-	-	3	1	27	7	**27**
	B	-	1	-	-	-	-	-	-	-	-	1	1	-	**1**
	C	3	-	8	-	-	-	6	6	-	-	-	9	1	**9**
Long-tailed duck	A	-	-	3	-	-	-	-	-	-	-	1	-	1	**3**
	B	-	-	6	-	-	-	-	4	-	-	1	-	-	**6**
	C	-	1	-	1	-	-	-	-	-	-	-	-	1	**1**
Goldeneye	A	20	-	-	-	-	-	-	-	-	-	-	-	-	**20**
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	80	-	-	-	-	-	-	-	-	-	-	-	-	**80**

Species	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak
Mallard	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
Wigeon	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	6	5	-	-	-	-	-	-	-	7	-	-	**7**
Mute swan	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	1	-	-	-	-	-	**1**
	C	-	-	-	-	-	-	-	-	8	-	-	-	-	**8**

Wading Birds (including Herons)

50 **Oystercatcher** was the most abundant and regularly present wading bird species throughout the Survey Area with birds being recorded on almost every month of the survey programme in all three survey sectors. Numbers were highest in Sector C, typically ranging between approximately 20 and 40 individual, as well as the overall, peak count of 316 individuals (November 2012). This exceptional count was recorded during particularly cold conditions indicating that the intertidal habitats of this particular survey sector may be an important severe weather refuge for this species. By comparison, Sectors A and B typically supported no more than 15 birds each. Given the consistent occurrence of the species throughout the year in all survey sectors, the data indicates that the Survey Area is of reasonable importance to this species, particularly Sector C.

51 **Turnstones** were regularly present in Sectors A and C throughout the passage and winter months, but rarely present in Sector B. Numbers were variable, but occasional moderate counts of between 31 and 66 individuals were recorded in Sector C. By comparison, Sectors A and B typically supported no more than 13 birds. Given the regular occurrence of the species during passage and winter months, the data indicates that the Survey Area is of reasonable importance to this species, particularly Sector C.

52 **Curlew** occurred throughout the Survey Area but were rarely recorded in Sectors A and B and were only ever represented in these areas by no more than two individuals. By comparison, the species was recorded in Sector C throughout the year although there too numbers were generally low, typically being represented by no more than six individuals with peak count of 15 (February 2012). Given the general low abundance of the species, the data indicates that the Survey Area is of low importance to curlew.

53 **Redshank** also occurred throughout the Survey Area but as with curlew, were rarely recorded in Sectors A and B and were only represented in these areas by no more than three individuals. Although the species was recorded more frequently in Sector C numbers were generally low

there as well, typically being represented by no more than six individuals with peak count of 15 (November 2012). Given the general low abundance of the species, the data indicates that the Survey Area is of low importance to redshank.

54 **Ringed plovers** were only ever recorded in Sector C. Although regularly present the species was typically represented by fewer than 10 individuals, with the exception of a peak count of 100 individuals (November 2012). This exceptional count was recorded during particularly cold conditions indicating that the intertidal habitats of this particular survey sector may be an important severe weather refuge for this species. Despite this however, the general low abundance of the species indicates that the Survey Area is of low importance to ringed plover.

Four other wading bird species were recorded in the Survey Area; **dunlin**, **knot**, **grey plover** and **purple sandpiper**, as well as **grey heron**. However, all of these species were recorded infrequently and in low numbers indicating that the Survey Area is of negligible importance to these species.

Table 6C.4: Monthly and Overall Peak Counts of Wading Birds and Herons Recorded within Each Survey Sector over the Survey Programme

Species	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak
Oyster-catcher	A	2	10	36	-	3	2	2	6	7	1	13	2	-	**36**
	B	12	10	2	5	4	1	4	-	10	9	15	11	7	**15**
	C	9	26	22	17	30	6	12	33	29	28	316	32	40	**316**
Turnstone	A	-	21	2	-	-	-	-	2	5	5	10	5	8	**21**
	B	-	4	-	-	-	-	-	-	13	-	-	-	-	**13**
	C	6	21	7	-	2	-	-	8	66	6	53	31	10	**66**
Curlew	A	-	2	1	-	-	-	-	1	1	2	1	-	-	**2**
	B	-	-	-	-	-	-	-	-	-	1	-	-	-	**1**
	C	1	15	3	6	1	-	4	4	-	2	12	2	3	**15**
Redshank	A	-	3	-	-	-	-	-	-	-	-	2	-	1	**3**
	B	1	-	-	-	-	-	-	-	-	-	1	2	-	**2**
	C	2	6	1	-	-	-	6	2	1	3	15	6	6	**15**
Ringed plover	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	9	1	-	-	-	-	2	-	1	5	100	-	9	**100**
Dunlin	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Species	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak
	C	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
Knot	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	10	-	-	-	-	-	-	-	-	-	-	-	**10**
Grey plover	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	1	-	-	-	-	-	-	-	-	-	-	-	**1**
Bar-tailed godwit	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	1	1	-	-	-	-	-	1	-	-	1	3	1	**3**
Purple sandpiper	A	-	3	-	-	-	-	-	-	-	-	3	-	-	**3**
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	6	-	-	-	-	-	-	-	-	6	-	-	**6**
Grey heron	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	-	-	-	-	-	-	-	1	-	1	-	-	**1**

Divers and Grebes

55 **Red-throated divers** were recorded occasionally throughout the Survey Area during the autumn passage and early winter months. Although numbers were low, with an overall peak count of just five individuals (November 2012, Sector B), this species does not typically occur in large aggregations during the non-breeding season. Birds were recorded in all three distance bands from the shore. Despite its low abundance, the frequent occurrence of the species suggests that the near shore coastal waters of the Survey Area are of some importance to red-throated divers.

56 **Slavonian grebes** were recorded infrequently within the Survey Area and were represented by no more than two individuals in each survey sector with birds typically being recorded within one kilometre offshore. The infrequent presence and low abundance of this species suggests that in general the Survey Area is of limited importance to Slavonian grebes.

57 **Great crested grebe**, **red-necked grebe** and **little grebe** were also recorded in the Survey Area although all three were rarely present and were only ever represented by one or two

individuals. Consequently the data indicates that the Survey Area is of negligible importance to these species.

Table 6C.5: Monthly and Overall Peak Counts of Divers and Grebes Recorded within Each Survey Sector over the Survey Programme

Species	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak
Red-throated diver	A	-	-	-	-	-	-	-	-	-	2	2	-	-	**2**
	B	-	-	-	-	-	-	-	-	4	2	5	-	1	**5**
	C	-	-	-	-	-	-	-	-	-	1	2	-	-	**2**
Slavonian grebe	A	-	-	-	-	-	-	-	-	-	-	2	-	1	**2**
	B	-	-	-	-	-	-	-	-	-	-	2	-	2	**2**
	C	-	-	-	-	-	-	-	-	-	1	-	-	2	**2**
Great crested grebe	A	-	-	-	-	-	-	-	-	-	-	1	-	-	**1**
	B	-	-	-	-	-	-	-	-	2	-	-	-	-	**2**
	C	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Red-necked grebe	A	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
	C	-	-	-	-	-	-	-	-	-	2	-	-	-	**2**
Little grebe	A	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
	B	-	-	-	-	-	-	1	-	-	-	-	-	-	**1**
	C	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**

Gulls and Terns

58 **Herring gull** was by far the most abundant and regularly present gull species recorded throughout the Survey Area, being present on every month of the survey programme in all three survey sectors. Numbers were consistently higher in Sector C generally ranging between just over 100 to the overall peak of 595 individuals (August 2012). In Sectors A and B numbers typically ranged between approximately 30 and 75 birds, with peaks of 71 in Sector A (March 2012) and a more exceptional count of 430 in Sector B (August 2012). Birds were recorded in all three distance bands from the shore, although most birds were recorded in the shallow near shore waters between 0-500 m. Given the consistent occurrence and general high abundance of the species throughout the year the data indicates that the Survey Area is reasonably important to this species.

59 **Black-headed gulls** were also regularly present throughout the year although numbers were rarely greater than 35 individuals. However, large counts of just over 100 individuals were occasionally recorded in Sectors B and C, with the overall peak count being of 113 individuals (November 2012, Sector B). Birds were recorded in all three distance bands from the shore, although most were recorded in the shallow near shore waters between 0-500 m. Given the regular occurrence of the species throughout the year along with the occasional high counts, the data suggests that the Survey Area is of some importance to this species.

60 **Common gulls** were also regularly recorded throughout the year. However, other than the exceptional overall peak count of 118 individuals (August 2012, Sector B), the species was generally present in low abundance, typically being represented by fewer than 20 individuals. Consequently, the data indicates that the Survey Area is of low importance to common gull.

61 **Great black-backed gulls** were also recorded in the Survey Area throughout the year, but were most abundant in Sector C where numbers ranged from fewer than 10 individuals to the overall peak of 51 (August 2012). By comparison, the species was typically represented by no more than five individuals in Sectors A and B, despite being regularly present. Given the above, the data suggests that while Sectors A and B are of limited value to great black-backed gulls, Sector C is of some importance to the species.

62 **Lesser black-backed gulls** frequently occurred throughout the Survey Area but were typically represented by no more than seven individuals with an overall peak count of 12 (August 2012, Sector B). Consequently, the data indicates that the Survey Area is of low importance to this species.

63 **Kittiwake** were rarely recorded within the Survey Area and other than the overall peak count of 18 individuals (August 2012, Sector B), were represented by no more than three birds. Consequently, the data indicates that the Survey Area is of limited importance to this species.

64 **Sandwich terns** were regularly present throughout the Survey Area during the breeding and post-breeding season in all three survey sectors. Although the species was generally represented by fewer than 20 individuals, the peak counts for each survey sector of between 21 and the overall peak of 28 (August 2012, Sector A) were all recorded during the post-breeding period. The majority of birds were recorded within the 500 m from the shore indicating that the shallow near shore waters of the Survey Area are of some importance to this species at this time of year.

65 **Common terns** were rarely recorded within the Survey Area and were only ever represented by one or two individuals. Consequently, the survey data suggests that the Survey Area is of negligible importance to common terns.

Table 6C.6: Monthly and Overall Peak Counts of Gulls and Terns Recorded within Each Survey Sector over the Survey Programme

Species	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak
Herring gull	A	22	29	71	56	46	69	38	60	66	35	69	42	59	**71**
	B	8	18	38	70	115	75	73	430	23	25	111	18	39	**430**
	C	121	166	112	40	140	505	269	595	193	243	161	294	106	**595**
Black-headed gull	A	7	14	22	1	-	-	12	9	10	33	17	2	8	**33**
	B	-	-	-	2	-	-	-	110	-	13	113	28	49	**113**
	C	1	10	-	10	-	-	3	8	3	6	3	109	1	**109**
Common gull	A	2	1	2	-	-	-	5	3	-	9	-	-	4	**9**
	B	1	-	-	2	-	-	-	118	2	5	2	22	16	**118**
	C	-	4	-	1	-	-	2	-	1	-	15	11	3	**15**
Great black-backed gull	A	2	1	1	1	3	1	1	2	2	1	2	3	2	**3**
	B	-	3	1	2	5	3	2	12	-	5	2	4	2	**12**
	C	2	3	5	11	28	30	32	51	14	21	16	17	5	**51**
Lesser black-backed gull	A	-	-	-	-	2	-	-	1	1	1	1	-	-	**2**
	B	-	-	-	1	-	-	-	12	-	-	1	-	-	**12**
	C	-	-	-	-	-	7	6	2	-	-	-	-	-	**7**
Kittiwake	A	-	-	-	-	-	-	-	-	1	-	-	-	-	**1**
	B	-	-	-	-	-	-	2	18	-	-	-	-	-	**18**
	C	-	-	-	-	-	-	-	-	3	-	-	-	-	**3**
Sandwich tern	A	-	-	-	-	11	5	10	28	1	-	-	-	-	**28**
	B	-	-	-	-	5	1	8	23	1	-	-	-	-	**23**
	C	-	-	-	-	4	4	16	18	21	-	-	-	-	**21**
Common tern	A	-	-	-	-	-	-	2	2	-	-	-	-	-	**2**
	B	-	-	-	-	-	1	-	-	-	-	-	-	-	**1**
	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Seabirds

66 **Cormorants** were also regularly present within the Survey Area throughout the year although numbers were generally low with the species typically being represented by fewer than 10 individuals. The highest counts were recorded in Sectors B and C although the peak counts of 16 (Sector C, August 2012) and 18 (Sector B, July and November 2012) were still relatively low.

The majority of birds recorded were observed within the 0-500 m distance band in the shallow near shore waters of the Survey Area. Despite the species' reasonably low abundance, the regular occurrence of cormorants throughout the year suggests that the near shore coastal waters of the Survey Area are of some importance to the species.

67 **Shags** were also present within the Survey Area throughout the year although similar to cormorant, numbers were generally low with the species typically being represented by no more than 10 individuals. Higher counts than this were rare, the highest being recorded in Sectors B and C with peak counts of 26 (Sector C, August 2012) and 30 (Sector B, October 2012). As with cormorant, the majority of shags were observed within 0-500 m from the shore. In general, however, the data suggests that the Survey Area is of low importance for shags.

68 **Guillemots** were regularly recorded within the Survey Area throughout the year, although numbers were highest during the breeding and autumn passage months, particularly the post-breeding period. The highest counts in each sector, which all occurred in August 2012, included 85 individuals in Sector A, 125 in Sector C and the exceptional overall peak count of 414 in Sector B. Birds were distributed across all three distance bands from the shore indicating that the near shore coastal waters of the Survey Area may be important to this species, particularly during the post-breeding period.

69 **Razorbills** were also regularly recorded within the Survey Area throughout the year with very similar occurrence and abundance patterns to guillemot. Typically, no more than 20 individuals were recorded However, the highest counts in each sector, which also all occurred in August 2012, included 84 individuals in Sector A, 94 in Sector C and a similarly exceptional overall peak count of 416 in Sector B. Birds were distributed across all three distance bands from the shore indicating that the near shore coastal waters of the Survey Area may be important to this species, particularly post-breeding period.

70 **Gannets** were regularly present throughout the Survey Area during the breeding season although numbers were generally low with the species typically being represented by no more than 14 individuals. The highest counts were recorded in Sector B with counts of 40 (May 2012) and 46 (August 2012). The majority of birds were observed in flight between one kilometre and 1.5 km off shore indicating that the deeper coastal waters were more important to the species than the shallower near shore waters. In general, however, the data suggests that the Survey Area is of low importance for gannets.

71 **Fulmar** and **puffin** were also recorded within the Survey Area. However, both were recorded rarely and in small numbers; the peak count for puffin being of just eight individuals while fulmar was represented by a single bird. Consequently, the data suggests that the Survey Area is of negligible importance to these species.

Table 6C.7: Monthly and Overall Peak Counts of Seabirds Recorded within Each Survey Sector over the Survey Programme

Species	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak
Cormorant	A	-	-	3	1	1	3	6	8	8	1	6	1	1	**8**
	B	-	8	-	4	2	-	18	14	2	15	18	15	-	**18**
	C	2	1	14	2	1	3	15	16	3	9	6	4	1	**16**
Shag	A	2	1	3	2	-	1	4	14	6	10	6	11	2	**14**
	B	3	3	5	18	1	1	9	25	6	30	6	19	10	**30**
	C	1	1	5	-	1	2	10	26	8	8	1	-	1	**26**
Guillemot	A	-	-	-	1	1	8	4	85	14	8	3	1	-	**85**
	B	-	-	2	1	18	31	7	414	71	40	2	-	1	**414**
	C	-	-	1	1	-	15	3	125	22	13	-	1	-	**125**
Razorbill	A	-	-	5	1	9	7	1	84	8	-	-	-	-	**84**
	B	-	1	18	-	20	5	2	416	-	3	-	-	-	**416**
	C	3	-	8	-	4	1	-	94	-	5	-	-	-	**94**
Gannet	A	-	-	-	-	1	2	11	6	2	1	-	-	-	**11**
	B	-	-	-	-	40	2	6	46	14	-	-	-	-	**46**
	C	-	-	-	-	6	10	12	24	12	-	-	-	-	**24**
Fulmar	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	1	-	-	-	-	**1**
	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puffin	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	8	1	-	-	-	-	-	-	-	**8**
	C	-	-	-	-	2	3	-	-	-	-	-	-	-	**3**
Unidentified auk sp.	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	50	6	-	-	**50**
	C	-	-	-	-	-	-	-	-	16	-	-	-	-	**16**

6C.4 Comparison of Survey and WeBS Data

72 The high tide WeBS data, which covers the period 2010/11 - 2014/15, included the following information:

- Five-year average monthly counts for each species;

- Five-year peak monthly counts for each species;
- Five-year peak counts for both autumn and winter and the month in which they were recorded in; and
- Details of the international and national importance of the sectors for each species.

73 By comparison the low tide data are much less detailed and only give peak and mean counts of the various species recorded in each individual count sector over the winter period November 2010 - February 2011. On review, the peak counts for species reported in the low tide data were much lower than those reported in the high tide data. Consequently, it was concluded that the high tide data provided a better representation of the importance of the coastal habitats than the low tide data, and as such the low tide data was disregarded.

6C.4.1 Summary of Relevant WeBS Data

74 Tables 6C.8 – 6C.12 present the monthly and overall five-year mean peak counts from the relevant Preston Grange to Port Seton WeBS count sector. These should be read in comparison with Tables 6C.3 – 6C.7 in *Section 6C.3*.

75 The WeBS data lists 35 species having been recorded in the comparative WeBS count sector. This compares closely to the 40 species recorded during the Inch Cape intertidal and near shore bird surveys. The following interpretation of the WeBS data for each species should be read in conjunction with the corresponding data tables for that species' group.

Waterfowl

76 **Eider duck** is the most abundant and consistently present waterfowl species within the WeBS sector, with large numbers of birds occurring throughout the year. Monthly mean peak counts range between approximately 50 and the peak count of 235 individuals with counts of over 100 birds regularly being present. This corresponds well with the combined sector counts for the intertidal and near shore bird surveys and supports the conclusion that the coastal habitats of the Survey Area are of reasonable importance to this species.

77 As with the intertidal and near shore bird survey data, the WeBS data shows that **velvet scoters** are regularly present within WeBS sector throughout the passage and winter months. Monthly mean peak typically counts range between approximately 10 and 60 individuals, with the exception of the mean peak of 315 individuals. This corresponds reasonably well with the combined sector counts for the Survey Area and supports the conclusion that the coastal habitats of the Survey Area are of some importance to velvet scoters.

78 **Red-breasted mergansers** regularly occur within the WeBS sector throughout the year. However, other than the mean peak count of 43 (September), the species is typically represented by low numbers of no more than 16 individuals. This generally corresponds closely with the Survey Area data for this species, and supports the conclusion that the Survey Area is of low importance to red-breasted mergansers.

79 The WeBS data shows that **long-tailed ducks** occur infrequently during the winter and passage months and, with the exception of the mean peak of 55 birds in April, are typically present in small numbers. This generally corresponds closely with the Survey Area data for this species.

80 **Common scoter, goldeneye**, **mallard**, **wigeon** and **mute swan** also occur within the WeBS sector, although all are recorded rarely and/or in very small numbers. This corresponds well with the intertidal and near shore survey data for mallard, wigeon and mute swan and reasonably closely with the Survey Area data for common scoter and goldeneye which were only rarely recorded in larger numbers during the surveys.

Table 6C.8: Monthly Five-year Peak Mean Counts of Waterfowl Recorded within the WeBS High Tide Count Sector

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Peak
Eider	206	42	140	71	51	181	235	30	139	60	112	62	**235**
Velvet scoter	16	11	35	315	0	0	0	0	18	2	54	0	**315**
Red-br'st'd merganser	2	4	0	2	1	0	0	0	43	7	16	0	**43**
Long-tailed duck	4	13	0	55	0	0	0	0	0	0	0	0	**55**
Common scoter	0	4	3	0	0	0	0	0	0	0	0	0	**4**
Goldeneye	1	4	0	1	0	0	0	0	0	0	4	0	**4**
Mallard	0	0	0	2	0	0	0	0	0	0	0	0	**2**
Wigeon	0	0	0	6	0	0	0	2	0	0	0	11	**11**
Mute swan	0	2	0	0	1	0	0	0	0	0	0	0	**2**

Wading Birds (including Herons)

81 **Oystercatcher** is the most abundant and consistently present wading bird species within the WeBS sector, as was found during the intertidal and near shore bird surveys. Monthly mean peak counts typically range between approximately 20 and 50 individuals although high counts of over 100 birds occasionally occur with the peak count being of 194. This corresponds very closely with the combined sector counts for the Survey Area as a whole and supports the conclusion that the coastal habitats of the Survey Area are of reasonable importance to this species.

82 **Turnstones** also occur within the WeBS sector throughout most of the year with monthly mean peak counts ranging between lows of fewer than 10 individuals to the highest counts of between 43 and the peak of 54 birds. This also corresponds very well with the combined sector counts for the Survey Area as a whole and supports the conclusion that the coastal habitats of the Survey Area are also of reasonable importance to turnstone.

83 **Curlew** and **redshank** both occur within the WeBS sector for much of the year, particularly the non-breeding season, but in comparatively low numbers with peak counts of 25 and 29

respectively. This corresponds reasonably well with the combined sector counts for the Survey Area as a whole and supports the conclusion that the Survey Area is of low importance to these species.

84 **Ringed plover** regularly occur within the WeBS sector, particularly during the non-breeding season. However, numbers are generally low with counts typically being of fewer than 20 individuals and a peak count of 30. This corresponds reasonably well with the combined sector counts for the Survey Area as a whole and supports the conclusion that the Survey Area is of low importance to ringed plover.

85 **Golden plover** and **grey plover** are represented in the WeBS data but were not recorded during the intertidal and near shore bird surveys. Both of these species occur infrequently during the non-breeding season and in generally in low numbers with peak counts of 31 and 21 respectively. While reference to these species in the WeBS data confirms that they do occur within the Survey Area their infrequent presence and absence during the intertidal and near shore bird surveys suggests that the Survey Area is of negligible importance to these species.

86 **Black-tailed godwit**, **knot**, **purple sandpiper** and **grey heron** also occur within the WeBS sector, although all are recorded rarely and/or in very small numbers. With the exception of black-tailed godwit which wasn't recorded during the intertidal and near shore bird surveys, this corresponds well with the intertidal and near shore survey data indicating that the Survey Area is of negligible importance to these species.

Table 6C.9: Monthly Five-year Peak Mean Counts of Wading Birds and Herons Recorded within the WeBS High Tide Count Sector

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Peak
Oystercatcher	187	33	51	39	16	39	27	18	21	194	115	21	**194**
Turnstone	43	8	12	19	4	0	0	5	45	54	15	11	**54**
Curlew	10	12	19	2	1	1	25	0	2	10	8	7	**25**
Redshank	11	29	22	26	0	0	0	0	10	26	7	16	**29**
Ringed plover	16	6	0	2	0	0	1	0	30	15	22	0	**30**
Bar-tailed godwit	3	3	0	13	0	0	0	0	0	4	1	0	**13**
Golden plover	0	0	0	0	0	0	0	0	31	0	0	15	**31**
Grey plover	12	8	0	0	0	0	0	0	21	0	0	0	**21**
Black-tailed godwit	0	3	0	0	0	0	0	0	0	0	0	0	**3**
Knot	0	4	0	17	0	0	0	0	0	0	0	0	**17**
Purple sandpiper	2	0	0	2	0	0	0	0	0	0	0	0	**2**
Grey heron	0	0	0	1	0	0	0	0	0	0	1	0	**1**

Divers and Grebes

87 **Red-throated divers** occur reasonably frequently within the WeBS sector during winter and passage months but in small numbers with the highest monthly mean peak count being of just eight individuals (April). This corresponds closely with the Survey Area data and supports the conclusion that the Survey Area is of some importance to red-throated divers.

88 The WeBS data shows that **Slavonian grebes** occur infrequently during the winter and passage months and in small numbers of no more than one or two individuals. This generally corresponds closely with the Survey Area data and supports the conclusion that the Survey Area is of limited importance to Slavonian grebes.

89 As with the intertidal and near shore bird survey data, the WeBS data demonstrates that **great crested grebe**, **red-necked grebe** and **little grebe** only occur within the high tide count sector rarely and in very low numbers of just one or two individuals. Consequently the WeBS data supports the conclusion that the Survey Area is of negligible importance to these species.

Table 6C.10: Monthly Five-year Peak Mean Counts of Divers and Grebes Recorded within the WeBS High Tide Count Sector

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Peak
Red-throated diver	0	2	0	6	0	0	0	0	0	1	8	0	**8**
Slavonian grebe	0	1	0	2	0	0	0	0	0	2	1	0	**2**
Great crested grebe	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Red-necked grebe	0	0	0	0	0	0	0	0	0	1	0	0	**1**
Little grebe	0	0	0	0	0	0	0	0	1	0	0	0	**1**

Gulls and Terns

90 **Herring gull** is by far the most abundant and consistently occurring gull species recorded within the WeBS sector, as was found during the intertidal and near shore bird surveys. Monthly mean peak counts range between approximately 50 and the peak count of 287 individuals with counts of over 100 birds regularly being present. This corresponds well with the combined sector counts for the Survey Area as a whole and supports the conclusion that the coastal habitats of the Survey Area are of reasonable importance to this species.

91 **Black-headed gulls** also occur within the WeBS sector throughout the year with monthly mean peak counts typically ranging between 10 and 50 birds and peak counts of around 90 birds. This corresponds well with the combined sector counts for the Survey Area as a whole and supports the conclusion that the coastal habitats of the Survey Area are of reasonable importance to black-headed gull.

92 For **common gull**, the WeBS data shows that the species only occurs rarely with a monthly peak count of 39 individuals (February). This does not correspond with the combined sector counts for the Survey Area which found common gulls to occur for much of the year, generally in low numbers but with occasional large counts. Consequently, the WeBS data implies that the coastal habitats of the Survey Area are of lower importance to common gulls than the survey data suggests.

93 **Great** and **lesser black-backed gulls** both occur within the WeBS sector throughout most of the year but in very low numbers of fewer than 10 individuals. While this generally corresponds with the intertidal and near shore survey data for lesser black-backed gull, the survey data showed that great black-backed gulls were regularly recorded within the Survey Area, often in numbers of between 20 and 65 individuals. Consequently, the WeBS data implies that the coastal habitats of the Survey Area are of lower importance to great black-backed gulls than the survey data suggests.

94 The WeBS data suggests that **Sandwich terns** are rarely present and only occur in low numbers of fewer than 10 individuals. This does not correspond with the combined sector counts for the Survey Area which found Sandwich terns to be present in reasonable numbers during the breeding and post-breeding periods. Consequently, the WeBS data implies that the coastal habitats of the SurveyArea are of lower importance to Sandwich terns than the survey data suggests.

95 As with the intertidal and near shore bird survey data, the WeBS data demonstrates that **common tern** occur within the high tide count sector rarely and in very low numbers. Consequently the WeBS data supports the conclusion that the Survey Area is of negligible importance to this species.

96 There are no records of **kittiwake** in the WeBS data which consequently implies that the Survey Area is of negligible importance to these species. Although kittiwake were recorded during the intertidal and near shore bird surveys, they were only rarely present and typically in low numbers. Consequently the WeBS data supports the conclusion that the Survey Area is of limited importance to this species.

Table 6C.11: Monthly Five-year Peak Mean Counts of Gulls and Terns Recorded within the WeBS High Tide Count Sector

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Peak
Herring gull	77	211	82	57	220	149	282	119	287	153	121	93	**287**
Black-headed gull	18	94	15	64	13	16	11	15	87	47	35	45	**94**
Common gull	0	39	0	0	0	0	0	0	0	3	0	0	**39**
Gt. black-backed gull	2	4	2	0	1	0	1	3	1	2	1	6	**6**
Lsr. black-backed gull	2	1	3	9	5	0	4	0	6	0	0	0	**9**

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Peak
Sandwich tern	0	0	0	0	0	0	0	0	2	7	0	0	**7**
Common tern	0	0	0	0	0	0	0	0	5	0	0	0	**5**

Seabirds

97 **Cormorants** occur within the WeBS sector throughout the year but are generally represented by low numbers with the majority of monthly mean peak counts being of no more than 18 individuals. However, the two highest mean peak counts of 72 and 43 individuals (September and October respectively) demonstrate that large numbers of birds do occasionally occur in the coastal waters of the count sector during the post-breeding/autumn passage period. This corresponds well with the combined sector counts for the Survey Area as a whole and supports the conclusion that the coastal habitats of the Survey Area are of some importance to cormorants.

98 **Shags** intermittently occur within the WeBS sector, primarily during the autumn passage period when mean peak counts of 51 and 62 individuals were recorded (September and October respectively). This does not correspond particularly well with the combined sector counts for the Survey Area which show that shags are present in reasonable numbers year-round, although the occurrence of peak numbers in the autumn passage period is reflected in both the WeBS and survey data. Consequently, the WeBS data implies that the coastal habitats of the Survey Area are of lower importance to shags than the survey data suggests.

99 There are no records of **guillemot**, **razorbill**, **gannet**, **fulmar** or **puffin** in the WeBS data which implies that the Survey Area is of negligible importance to these species. While this generally corresponds with the intertidal and near shore survey data for fulmar and puffin which were only recorded rarely and in low abundance, the survey data showed that guillemots and razorbills were regularly recorded within the Survey Area throughout the year and occurred in particularly large flocks of several hundred birds during the post-breeding period. Consequently, the WeBS data implies that the coastal habitats of the Survey Area are of lower importance to these two species than the survey data suggests.

Table 6C.12: Monthly Five-year Peak Mean Counts of Seabirds Recorded within the WeBS High Tide Count Sector

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Peak
Cormorant	8	9	13	11	5	11	13	18	72	43	15	9	**72**
Shag	0	4	6	1	0	0	0	0	51	62	0	0	**62**

Overview

100 Overall, the WeBS data suggest that the coastal habitats of the Survey Area support a similar diversity and abundance of waterbird species than was recorded during the intertidal and near

shore bird surveys. Thus the intertidal and near shore bird survey data is considered to be a good representation of the diversity and abundance of the waterbird assemblage which occurs within the Survey Area around the Export Cable Landfall site.

6C.5 Importance of Intertidal and Near Shore Habitats for Species Associated with Designated Sites of the Firth of Forth

101 This section considers the importance of the intertidal and near shore habitats of the Survey Area for qualifying bird species associated with the designated sites within the Firth of Forth (as introduced in *Section 6C.1*). The survey data for the species of each designated site are discussed in turn and accompanied by tables which present the monthly and overall peak counts for each species in each survey sector Tables 6C.13 – 6C.16. These tables also show what proportion the overall peak counts represent compared against the various SPA species latest population estimates, as provided in Tables A1.1 – A1.4, Annex 1. These representative proportions allow the relative importance of each count sector for individual SPA qualifying species to be identified as well as for the Survey Area as a whole. A critical threshold of one per cent of species qualifying populations was used to determine whether the particular sectors and/or the wider Survey Area were of significant importance for a particular species[4]. Sectors of greatest importance for SPA qualifying species, and intertidal and near shore waterbirds in general could then be identified, allowing a confident interpretation of the value of specific habitats within the Survey Area to be made.

Firth of Forth SPA

102 The following text should be cross referenced with Table 6C.13.

103 **Eider duck** was by far the most abundant and consistently present qualifying species of the Firth of Forth SPA recorded within the Survey Area, being present in moderate to large flocks throughout the year, not just the non-breeding season. Numbers typically ranged between approximately 20 to 70 individuals although counts of over 100 individuals were occasionally recorded in each survey sector with peak counts of 136 in Sector A (January 2013), 105 in Sector B (September 2012) and 196 in Sector C (June 2012). On their own, these peak sector counts represent 2.5 per cent, 1.9 per cent and 3.6 per cent of the species SPA population respectively and hence demonstrate that the Survey Area supports significant numbers of eider duck. Significant counts representing at least one per cent of the eider duck SPA population (i.e. >55 individuals) were regularly recorded in Sector C and occasionally in Sector B indicating that the near shore coastal waters of these sectors regularly support small but significant proportions of the SPA's eider population.

104 **Oystercatchers** were recorded in all three survey sectors and on almost every month of the survey programme. However, other than the exceptional peak count of 316 individuals recorded in Sector C (November 2012), which represented 4.4 per cent of the species' SPA

[4] It should be noted that there is no accepted criterion for establishing the importance of discrete sites within SPAs for individual qualifying species. Determining a count sectors importance for individual qualifying species by employing the critical threshold of one per cent of that species qualifying population is recognised within the ecology field as a standard method for assessing the importance of sites within SPAs and follows the Joint Nature Conservation Committee's recommended procedure for the selection of biological SSSIs.

population, oystercatchers were not present in significant numbers (i.e. greater than one per cent). Consequently the Survey Area is not considered to be important to the oystercatchers in the context of the SPA.

105 **Cormorants** were also regularly present within the Survey Area throughout the year. However, numbers were generally low with the species being represented by no more than 18 individuals and typically fewer than 10 individuals, the highest numbers typically occurring during the post-breeding, autumn passage and early winter months. Despite this however, due to the species relatively low SPA population (513), counts of just six individuals represented significant proportions. Counts of at least six were frequently recorded in all survey sectors with peak sector counts of eight (Sector A, August and September 2012), 18 (Sector B, July and November 2012) and 16 (Sector C, August 2012) representing 1.6 per cent, 3.5 per cent and 3.1 per cent of the SPA population respectively. Consequently, the data indicates that the Survey Area regularly supports small but significant proportions of the SPA's cormorant population.

106 **Turnstones** were regularly present in Sectors A and C throughout the passage and winter months, but rarely present in Sector B. Nonetheless, significant peak counts were recorded in all three sectors, of 21 (Sector A, February 2012), 13 (Sector B, September 2012) and 66 (Sector C, September 2012) individuals, representing 2.2 per cent, 1.4 per cent and 7.0 per cent of the SPA population respectively. However, significant counts representing at least one per cent of the species' SPA population (i.e. >nine individuals) were only regularly recorded in Sector C where the highest counts were recorded. Consequently, it is only really the intertidal habitats of that sector which are considered to be important to the species in the context of the SPA, while Sectors A and B only rarely support small but significant numbers of turnstone.

107 **Sandwich terns** were regularly present in the Survey Area during the breeding and post-breeding season in all three survey sectors. The peak sector counts of 28 (Sector A, August 2012), 23 (Sector B, August 2012) and 21 (Sector C, September 2012) represent 2.3 per cent, 1.9 per cent and 1.7 per cent of the SPA population respectively. Although significant counts representing at least one per cent of the species' SPA population (i.e. >12 individuals) were only recorded during the post-breeding period this is the period for which the site is designated for Sandwich tern. The data therefore indicates that the near shore coastal waters of the Survey Area are important to the species' SPA population during the post-breeding period.

108 **Velvet scoters** were regularly present throughout the passage and winter months although numbers were generally low with the species typically being represented by fewer than 15 birds. Despite this however, due to the species' relatively low SPA population (623), counts of just seven individuals represented significant proportions. While counts of at least seven were occasionally recorded in Sectors A and B they were more regular in Sector C with counts of 18 (Sector A, March 2012), 35 (Sector B, May 2012) and the peak of 120 (Sector C, January 2012) representing 2.9 per cent, 5.6 per cent and 19.3 per cent of the SPA population respectively. Consequently, the data indicates that the near shore coastal waters of the Survey Area, and in particular Sector C, are important to the species in the context of the SPA, occasionally supporting highly significant proportions of the SPA's population.

109 **Red-breasted mergansers** were recorded intermittently throughout the survey programme in all three survey sectors, but rarely in Sector B, and typically in low numbers of no more than 10 individuals. However, due to the species' relatively low SPA population (279), counts of just three individuals represented significant proportions. Counts of at least three birds were frequently recorded in Sectors A and C with peak counts of 27 (Sector A, December 2012) and nine (Sector C, December 2012) representing 9.7 per cent and 3.2 per cent of the species' SPA population respectively. Consequently, the data indicates that the near shore coastal waters of Sectors A and C are of some importance to the species in the context of the SPA.

110 **Red-throated diver**, **Slavonian grebe** and **great crested grebe** were all recorded infrequently within the Survey Area during autumn passage and winter months and in low numbers. Nonetheless, significant counts were recorded for all three species in whichever survey sector they occurred due to their low SPA populations (68, 32 and 78 respectively). This meant that the occurrence of individual birds was significant and so the overall peak counts for great crested grebe (two, Sector B), Slavonian grebe (two, all sectors) and red-throated diver (five, Sector B) represented 2.6 per cent, 6.3 per cent and 7.4 per cent respectively. Consequently, even though the abundance of these species was low, the frequent occurrence of small but significant proportions of their respective SPA populations indicates that the near shore coastal waters of the Survey Area are of some importance to them in the context of the SPA.

111 **Common scoters** were frequently recorded within the Survey Area during the non-breeding season but were typically represented very small counts of fewer than 10 individuals. The exception to this was the presence of counts of 20 (Sector C), 30 (Sector A) and the overall peak of 33 in Sectors B(all in January 2013) which represented 1.6 per cent, 2.4 per cent and 2.6 per cent of the species' SPA population. Despite this however, the general low abundance of this species suggests that the near shore coastal waters of the Survey Area are of limited importance to common scoter in the context of the SPA.

112 **Long-tailed ducks** were recorded infrequently in all three sectors of the Survey Area, predominantly during the winter and passage months, and in very small numbers of no more than six individuals (Sector B, March 2012). However, due to the species' low SPA population (177), the three counts of two individuals or more in Sector A (three, March 2012) and Sector B (six, March 2012 and four, August 2012) represented significant proportions of up to 3.4 per cent of the species' SPA population. Despite this however, the low abundance and infrequent occurrence of this species suggests that in general the near shore coastal waters of the Survey Area are of limited importance to long-tailed duck in the context of the SPA.

113 **Goldeneye** were only recorded within the Survey Area in January 2012, with counts of 20 and the overall peak of 80 individuals in Sectors A and C respectively. Although these counts represented 1.6 per cent and 6.4 per cent of the species' SPA population the absence of goldeneye in all other months suggests that the near shore coastal waters of the Survey Area are of negligible importance to the species in the context of the SPA.

114 **Ringed plover** were only ever recorded in Sector C and although frequently present were typically represented by fewer than 10 birds. The exception to this was the peak count of 100 individuals (November 2012) which represented 10.5 per cent of the SPA population. Despite

this however, the general low abundance of this species suggests that the near shore coastal waters of the Survey Area are of limited importance to ringed plover in the context of the SPA.

115 The eight remaining SPA qualifying species which were recorded within the Survey Area (grey plover, **bar-tailed godwit, redshank, curlew, knot, dunlin, mallard** and **wigeon**) were either regularly present but in comparatively low numbers, or were recorded both infrequently and in low numbers and represented less than one per cent of their respective SPA population estimates. Consequently, the data indicates that the Survey Area is not important to these SPA qualifying species.

116 There were no records of the following five SPA qualifying species within the Survey Area: **golden plover, pink-footed goose, shelduck, lapwing** and **scaup**. Consequently, the Survey Area is not considered to be important to these SPA qualifying species.

Table 6C.13: Importance of Intertidal and Near Shore Habitats for Qualifying Species of Firth of Forth SPA

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
Eider (5,506)	A	24	18	20	22	16	10	26	30	39	30	29	43	136	136	**2.5**
	B	30	21	55	59	11	10	3	12	105	20	11	62	82	105	**1.9**
	C	74	78	77	65	83	196	154	39	53	23	73	28	91	196	**3.6**
Oystercatcher (7,102)	A	2	10	36	-	3	2	2	6	7	1	13	2	-	36	0.5
	B	12	10	2	5	4	1	4	-	10	9	15	11	7	15	0.2
	C	9	26	22	17	30	6	12	33	29	28	316	32	40	316	**4.4**
Cormorant (513)	A	-	-	3	1	1	3	6	8	8	1	6	1	1	8	**1.6**
	B	-	8	-	4	2	-	18	14	2	15	18	15	-	18	**3.5**
	C	2	1	14	2	1	3	15	16	3	9	6	4	1	16	**3.1**
Turnstone (945)	A	-	21	2	-	-	-	-	2	5	5	10	5	8	21	**2.2**
	B	-	4	-	-	-	-	-	-	13	-	-	-	-	13	**1.4**
	C	6	21	7	-	2	-	-	8	66	6	53	31	10	66	**7.0**
Sandwich tern (1,242)	A	-	-	-	-	11	5	10	28	1	-	-	-	-	28	**2.3**
	B	-	-	-	-	5	1	8	23	1	-	-	-	-	23	**1.9**

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
	C	-	-	-	-	4	4	16	18	21	-	-	-	-	21	**1.7**
Velvet scoter (623)	A	2	-	18	5	1	-	-	-	-	4	7	4	3	18	**2.9**
	B	2	4	4	1	35	-	-	-	2	4	7	5	1	35	**5.6**
	C	120	63	6	-	28	-	-	-	-	2	9	14	11	120	**19.3**
Red-breasted merganser (279)	A	-	3	2	-	-	-	11	-	-	3	1	27	7	27	**9.7**
	B	-	1	-	-	-	-	-	-	-	-	1	1	-	1	0.4
	C	3	-	8	-	-	-	6	6	-	-	-	9	1	9	**3.2**
Red-throated diver (68)	A	-	-	-	-	-	-	-	-	-	2	2	-	-	2	**2.9**
	B	-	-	-	-	-	-	-	-	4	2	5	-	1	5	**7.4**
	C	-	-	-	-	-	-	-	-	-	1	2	-	-	2	**2.9**
Slavonian grebe (32)	A	-	-	-	-	-	-	-	-	-	-	2	-	1	2	**6.3**
	B	-	-	-	-	-	-	-	-	-	-	2	-	2	2	**6.3**
	C	-	-	-	-	-	-	-	-	-	1	-	-	2	2	**6.3**
Great crested grebe (78)	A	-	-	-	-	-	-	-	-	-	-	1	-	-	1	**1.3**
	B	-	-	-	-	-	-	-	-	2	-	-	-	-	2	**2.6**

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Common scoter (1,249)	A	-	-	-	1	1	-	-	-	-	-	-	8	30	30	**2.4**
	B	1	1	-	2	1	-	-	-	-	-	-	-	33	33	**2.6**
	C	-	10	1	5	1	-	-	-	-	-	-	-	20	20	**1.6**
Long-tailed duck (177)	A	-	-	3	-	-	-	-	-	-	-	1	-	1	3	**1.7**
	B	-	-	6	-	-	-	-	4	-	-	1	-	-	6	**3.4**
	C	-	1	-	1	-	-	-	-	-	-	-	-	1	1	0.6
Goldeneye (1,249)	A	20	-	-	-	-	-	-	-	-	-	-	-	-	20	**1.6**
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	80	-	-	-	-	-	-	-	-	-	-	-	-	80	**6.4**
Ringed plover (952)	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	9	1	-	-	-	-	2	-	1	5	100	-	9	100	**10.5**
Grey plover (411)	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	1	-	-	-	-	-	-	-	-	-	-	-	1	0.2
Bar-tailed godwit (1,614)	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
	C	1	1	-	-	-	-	-	1	-	-	1	3	1	3	0.2
Redshank (4,058)	A	-	3	-	-	-	-	-	-	-	-	2	-	1	3	0.1
	B	1	-	-	-	-	-	-	-	-	-	1	2	-	2	<0.1
	C	2	6	1	-	-	-	6	2	1	3	15	6	6	15	0.4
Curlew (3,337)	A	-	2	1	-	-	-	-	1	1	2	1	-	-	2	0.1
	B	-	-	-	-	-	-	-	-	-	1	-	-	-	1	<0.1
	C	1	15	3	6	1	-	4	4	-	2	12	2	3	15	0.4
Knot (4,590)	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	10	-	-	-	-	-	-	-	-	-	-	-	10	0.2
Dunlin (6,409)	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	-	-	-	-	-	1	-	-	-	-	-	-	1	<0.1
Mallard (1,342)	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	-	-	1	-	-	-	-	-	-	-	-	-	1	0.1
Wigeon (2,889)	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
	C	-	6	5	-	-	-	-	-	-	-	7	-	-	7	0.2
Golden Plover (1,125)	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pink-footed goose (21,375)	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shelduck (3,475)	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lapwing (2,218)	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scaup (22)	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Imperial Dock Lock, Leith SPA

117 Table 6C.14 shows that **common terns**, the only qualifying species of Imperial Dock Lock, Leith SPA, were rarely recorded within the Survey Area and were only ever represented by one or two individuals representing less than one per cent of the SPA population. Consequently, the Survey Area is not considered to be important to common terns associated with this SPA.

Table 6C.14: Importance of Intertidal and Near Shore Habitats for Qualifying Species of Imperial Dock Lock, Leith SPA

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
Common tern (782)	A	-	-	-	-	-	-	2	2	-	-	-	-	-	2	0.3
	B	-	-	-	-	-	1	-	-	-	-	-	-	-	1	0.1
	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Forth Islands SPA

118 The following text should be cross referenced with Table 6C.15.

119 **Herring gull** was by far the most abundant and consistently present qualifying species of the Forth Islands SPA recorded within the Survey Area. The species was present in moderate to large flocks between 50 and several hundred individuals in all three survey sectors throughout the year, not just the breeding season. Although significant counts of at least one per cent of the species' SPA population were frequently recorded in all three sectors, the highest counts were recorded in Sectors B and particularly Sector C where counts of over 200 individuals were regularly recorded. The peak counts in these sectors of 430 (Sector B) and 595 (Sector C) (both in August 2012) represented 7.2 per cent and 10.0 per cent of the species' SPA population respectively. The data therefore demonstrates that the Survey Area supports significant numbers in relation to the SPA's herring gull population.

120 **Sandwich terns** were regularly present throughout the Survey Area during the breeding and post-breeding season in all three survey sectors, as detailed in relation to the Firth of Forth SPA. With regards to Forth Islands SPA, the species' exceptionally low breeding population (two pairs / four individuals) is such that even the presence of single birds represented significant counts of at least one per cent. Consequently, the peak sector counts of 28 (Sector A, August 2012), 23 (Sector B, August 2012) and 21 (Sector C, September 2012) correspond respectively to 700 per cent, 575 per cent and 525 per cent of the SPA population. While the data suggests that the Survey Area supports highly significant proportions of the SPA's breeding Sandwich tern population it is important to note that the most significant counts occurred during the post-breeding period. It is well documented that during this time, birds arrive in the Firth of Forth from breeding colonies elsewhere along the eastern coast of Scotland and England as well as from sites in the Netherlands, Belgium and Ireland (Forrester

et al, 2007 and Bos, 2008). Indeed, it is during this period that the Firth of Forth SPA is specifically designated for the species, as discussed above. Consequently, most if not all of the birds observed in the Survey Area during the post-breeding period are likely to have come from breeding sites outwith the Forth and hence not associated with the very small Forth Islands SPA breeding population. Nonetheless, it is still possible that the smaller, albeit significant numbers of birds recorded during the breeding season are associated with the SPA's breeding colonies, based on the species' average foraging range of 49 km (Thaxter et al., 2012). However, given the vast availability of potential foraging areas in the wider Firth of Forth it is considered extremely unlikely that the entirety of the SPA's extremely small breeding Sandwich tern population would travel over 13 km specifically to use the near shore coastal waters of the Survey Area. It is more likely that the birds recorded within the Survey Srea were individuals either on passage or non-breeding birds. Even if birds associated with the SPA do use the habitats of the Survey Area, they are expected to do so infrequently given distance between the SPA and the Survey Area. Consequently, the Survey Area is considered unlikely to be important to Sandwich terns in the context of the SPA's breeding population.

121 **Common terns** were rarely recorded within the Survey Area and were only ever represented by one or two individuals during the breeding season. Nonetheless, these rare and exceptionally low counts represent significant proportions of the species' low SPA population (29 pairs), with the peak counts of one (Sector B, June 2012) and two (Sector A, July and August 2012) corresponding to 1.7 per cent and 3.4 per cent respectively. However, the average foraging range for nesting common terns is between eight kilometres and 10 km of breeding colonies (BirdLife International Seabird Database, 2012 and Thaxter et al., 2012). Consequently, it is considered unlikely that those birds recorded within the Survey Area were associated with species' breeding colonies within the Forth Islands SPA. The Survey Area is therefore considered to be of negligible importance to common terns in the context of the Forth Islands SPA.

122 **Cormorants** and **shags** were regularly present within the Survey Area throughout the year although numbers of both were generally low, often being represented by fewer than 10 individuals. Despite this, significant counts of both species were frequently recorded. For shag, peak sector counts of 14 (Sector A, August 2012), 26 (Sector C, August 2012) and 30 (Sector B, October 2012) represented 1.4 per cent, 2.7 per cent and 3.1 per cent of the SPA population respectively. By comparison, peak sector counts for cormorant of eight (Sector A, August and September 2012), 16 (Sector C, August 2012) and 18 (Sector B, July and November 2012) represented 4.8 per cent, 9.6 per cent and 10.8 per cent of the SPA population respectively. The data therefore shows that the Survey Area supports significant numbers of cormorants and shags relative to these species SPA populations, particularly during the latter part of the breeding season following dispersal from the breeding colonies.

123 **Guillemot and razorbill** were regularly recorded within the Survey Area particularly during the breeding and passage months although the highest numbers occurred during the post-breeding period. Indeed, it was only during this time that significant counts of each species were recorded. For guillemot the one off significant count of 414 individuals (Sector B, August 2012) represented 1.8 per cent of the SPA population while for razorbill the peak sector counts

of 84, 94, 416 individuals (Sectors A, C and B respectively, all in August 2012) represented between 2.2 per cent and a considerable 10.8 per cent of the species' SPA population. Consequently, the data indicates that the Survey Area is of some importance to these species in the context of the SPA.

124 The five remaining SPA qualifying species recorded within the Survey Area (**gannet, lesser black-backed gull, puffin, kittiwake** and **fulmar**) were either regularly present but in comparatively low numbers, or were recorded both infrequently and in low numbers and represented less than one per cent of their respective SPA population estimates. Consequently, the data indicates that the Survey Area is not important to these SPA qualifying species.

125 There were no records of two SPA qualifying species within the Survey Area: **Arctic tern** and **roseate tern**. Consequently, the Survey Area is not considered to be important to these SPA qualifying species.

Table 6C.15: Importance of Intertidal and Near Shore Habitats for Qualifying Species of Forth Islands SPA

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
Herring gull (5,936)	A	22	29	71	56	46	69	38	60	66	35	69	42	59	71	**1.2**
	B	8	18	38	70	115	75	73	430	23	25	111	18	39	430	**7.2**
	C	121	166	112	40	140	505	269	595	193	243	161	294	106	595	**10.0**
Sandwich tern (4)	A	-	-	-	-	11	5	10	28	1	-	-	-	-	28	**700**
	B	-	-	-	-	5	1	8	23	1	-	-	-	-	23	**575**
	C	-	-	-	-	4	4	16	18	21	-	-	-	-	21	**525**
Common tern (58)	A	-	-	-	-	-	-	2	2	-	-	-	-	-	2	**3.4**
	B	-	-	-	-	-	1	-	-	-	-	-	-	-	1	**1.7**
	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cormorant (167)	A	-	-	3	1	1	3	6	8	8	1	6	1	1	8	**4.8**
	B	-	8	-	4	2	-	18	14	2	15	18	15	-	18	**10.8**
	C	2	1	14	2	1	3	15	16	3	9	6	4	1	16	**9.6**
Shag (981)	A	2	1	3	2	-	1	4	14	6	10	6	11	2	14	**1.4**
	B	3	3	5	18	1	1	9	25	6	30	6	19	10	30	**3.1**
	C	1	1	5	-	1	2	10	26	8	8	1	-	1	26	**2.7**

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
Guillemot (23,453)	A	-	-	-	1	1	8	4	85	14	8	3	1	-	85	0.4
	B	-	-	2	1	18	31	7	414	71	40	2	-	1	414	**1.8**
	C	-	-	1	1	-	15	3	125	22	13	-	1	-	125	0.5
Razorbill (3,839)	A	-	-	5	1	9	7	1	84	8	-	-	-	-	84	**2.2**
	B	-	1	18	-	20	5	2	416	-	3	-	-	-	416	**10.8**
	C	3	-	8	-	4	1	-	94	-	5	-	-	-	94	**2.4**
Gannet (75,259)	A	-	-	-	-	1	2	11	6	2	1	-	-	-	11	<0.1
	B	-	-	-	-	40	2	6	46	14	-	-	-	-	46	0.1
	C	-	-	-	-	6	10	12	24	12	-	-	-	-	24	<0.1
Lesser black-backed gull (2,458)	A	-	-	-	-	2	-	-	1	1	1	1	-	-	2	0.1
	B	-	-	-	1	-	-	-	12	-	-	1	-	-	12	0.5
	C	-	-	-	-	-	7	6	2	-	-	-	-	-	7	0.3
Puffin (51,665)	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	8	1	-	-	-	-	-	-	-	8	<0.1
	C	-	-	-	-	2	3	-	-	-	-	-	-	-	3	<0.1
Kittiwake (3,911)	A	-	-	-	-	-	-	-	-	1	-	-	-	-	1	<0.1
	B	-	-	-	-	-	-	2	18	-	-	-	-	-	18	0.5

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
	C	-	-	-	-	-	-	-	-	3	-	-	-	-	3	0.1
Fulmar (1,024)	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	-	-	-	-	1	-	-	-	-	1	0.1
	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arctic tern (415)	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Roseate tern (0)	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Proposed Outer Firth of Forth and St. Andrews Bay Complex SPA

126 The following text should be cross referenced with Table 6C.16.

127 **Herring gull** was by far the most abundant and consistently present species of the proposed SPA recorded within the Survey Area. This species is proposed to be a qualifying interest for both the breeding and non-breeding season and moderate to large numbers were recorded within the Survey Area throughout the year.

128 During the breeding season, significant counts of at least one per cent of the species' proposed SPA population (i.e. >30) were recorded in every month and in all sectors with the highest sector peak counts of 430 (Sector B) and 595 (Sector C) representing 14.1 per cent and 19.6 per cent of the species' proposed SPA breeding population. However, as these highest counts occurred in the latter part of the breeding season it is likely that these were largely flocks made up of post-breeding adults as well as juveniles and immature birds. Furthermore, given the wide distribution and broad habitat preferences of herring gulls it is difficult to say whether the birds recorded in the Survey Area were associated with the SPA as many may have originated from other, non-SPA breeding colonies including urban breeding birds. Consequently, while the habitats of the Survey Area are evidently of some importance to the species during the breeding season, they are considered unlikely to be particularly important to birds directly associated with the SPA breeding population.

129 Although herring gulls were present throughout the non-breeding season significant counts of at least one per cent of the species' proposed SPA population (i.e. >123) were only recorded in Sector C, although such counts were regular. The peak count of 294 (Sector C) represented 2.4 per cent of the species' proposed SPA non-breeding population. The data therefore demonstrates that the Survey Area regularly supports small but significant numbers of herring gull during the non-breeding season, albeit only in Sector C.

130 **Black-headed gulls** were also present throughout the year and occasionally in reasonable numbers. However, the species large proposed SPA breeding and non-breeding populations mean that even the highest counts for this species did not represent significant proportions. Consequently while the coastal habitats of the Survey Area are of some importance to the species they are not considered to be important in the context of the proposed SPA.

131 **Eider duck** was also present throughout the year and in reasonable numbers in all survey sectors. However, the species large proposed SPA population means that even the highest counts for this species did not represent significant proportions. Consequently while the coastal habitats of the Survey Area are evidently of some importance to the species they are not considered to be important in the context of the proposed SPA.

132 **Velvet scoters** were regularly present throughout the passage and winter months although numbers were generally low with the species typically being represented by fewer than 15 birds. Despite this however, due to the species' relatively low SPA population (770), counts of just eight individuals represented significant proportions. While counts of at least eight were rarely recorded in Sectors A and B they were more regular in Sector C with counts of 18 (Sector

A, March 2012), 35 (Sector B, May 2012) and the peak of 120 (Sector C, January 2012) representing 2.3 per cent, 4.5 per cent and 15.6 per cent of the species' proposed SPA population respectively. Consequently, the data indicates that the near shore coastal waters of the Survey Area, and in particular Sector C, are important to the species in the context of the SPA, occasionally supporting highly significant proportions of the species' proposed SPA population.

133 **Red-breasted mergansers** were recorded intermittently throughout the survey programme in all three survey sectors, but rarely in Sector B, and typically in low numbers of no more than 10 individuals. However, due to the species' relatively low SPA population (370), counts of just four individuals represented significant proportions. While no counts of four or more birds were recorded in Sector B, such counts were frequently recorded in Sectors A and C with peak counts of 27 (Sector A, December 2012) and nine (Sector C, December 2012) representing 7.3 per cent and 2.4 per cent of the species' proposed SPA population respectively. Consequently, the data indicates that the near shore coastal waters of Sectors A and C are of some importance to the species in the context of the proposed SPA.

134 **Goldeneye** were only recorded within the Survey Area in January 2012, with counts of 20 and the overall peak of 80 individuals in Sectors A and C respectively. Although these counts represented 3.4 per cent and 13.6 per cent of the species' proposed SPA population the absence of goldeneye in all other months suggests that the near shore coastal waters of the Survey Area are of negligible importance to the species in the context of the proposed SPA.

135 **Slavonian grebe** was recorded infrequently within the Survey Area during autumn passage and winter months and in low numbers. Nonetheless, significant counts were recorded for in all three survey sectors due to the species' low proposed SPA population (30). This meant that the occurrence of individual birds was significant and so the peak counts of two recorded in each survey sector represented 6.7 per cent of the species' proposed population. Consequently, even though the abundance of Slavonian grebe was low, the occurrence of small but significant proportions of its SPA populations indicates that the near shore coastal waters of the Survey Area are of some importance to this species in the context of the proposed SPA.

136 **Shag** is proposed to be a qualifying interest of the SPA for both the breeding and non-breeding season and the species was regularly present within the Survey Area throughout the year although numbers of the species were generally low, often being represented by fewer than 10 individuals. During the breeding season, significant counts of just over one per cent of the species' proposed SPA population (i.e. $\geq$24) were only recorded once in Sectors B and C with peak counts of 25 and 26 individuals (both in August 2012). As these peak counts occurred in the latter part of the breeding season it is likely that they were of post-breeding adults, juveniles and immature birds which may have originated from the breeding colonies in the wider Firth of Forth. Although shags were present throughout the non-breeding season significant counts of at least one per cent of the species' proposed SPA non-breeding population (i.e. >24) were only recorded once in Sector B; the peak count of 30 representing 1.2 per cent. The data therefore suggests that the near shore coastal waters of the Survey Area are of limited importance to the species in the context of the proposed SPA.

137 **Guillemots** were regularly recorded within the Survey Area particularly during the breeding and passage months. However, numbers were typically very low and rarely represented significant proportions of the species' relevant breeding and non-breeding populations. The only exception to this was during the post-breeding period when large numbers of guillemots were recorded. Despite this it was only the exceptional peak count of 414 individuals (Sector B, August 2012) which was significant, representing 1.9 per cent of the species' proposed SPA breeding population. It is known that after fledging from the breeding colonies, chicks are accompanied by the male parent who travel far out to sea, where the chicks are provisioned for six to eight weeks until they learn to feed themselves (Forrester et al., 2007, and Camphuysen, 2002). Therefore, it is considered that the large aggregations of guillemots recorded during the post-breeding period within the Survey Area are more likely to have been post-breeding females, non-breeders and immature birds, many perhaps originating from breeding sites outwith the Firth of Forth. Consequently, while the habitats of the Survey Area are evidently of some importance to the species during the post-breeding period, they are considered unlikely to be particularly important in the context of the proposed SPA's breeding population.

138 The eight remaining proposed SPA qualifying species which were recorded within the surveys area (**red-throated diver**, **common tern**, **long-tailed duck**, **common scoter**, **gannet**, **kittiwake**, **puffin** and **common gull**) were either regularly present but in comparatively low numbers, or were recorded both infrequently and in low numbers and represented less than one per cent of their respective proposed SPA populations. Consequently, the data indicates that the Survey Area is not important to these proposed SPA qualifying species.

139 There were no records of three proposed SPA qualifying species within the Survey Area: **little gull**, **Arctic tern** and **Manx shearwater**. Consequently, the Survey Area is not considered to be important to these species.

Table 6C.16: Importance of Intertidal and Near Shore Habitats for Qualifying Species of the Proposed Outer Firth of Forth and St. Andrews Bay Complex pSPA

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
Herring gull (breeding: 3,040 / non-breeding: 12,310)	A	22	29	71	56	46	69	38	60	66	35	69	42	59	71 (b) / 71 (nb)	**2.3 (b)** / 0.6 (nb)
	B	8	18	38	70	115	75	73	430	23	25	111	18	39	430 (b) / 111 (nb)	**14.1 (b)** / 0.9 (nb)
	C	121	166	112	40	140	505	269	595	193	243	161	294	106	595 (b) / 294 (nb)	**19.6 (b)** / 2.4 (nb)
Black-headed gull (breeding: 28,120 / non-breeding: 26,830)	A	7	14	22	1	-	-	12	9	10	33	17	2	8	22 (b) / 33 (nb)	0.1 (b) / 0.1 (nb)
	B	-	-	-	2	-	-	-	110	-	13	113	28	49	110 (b) / 113 (nb)	0.4 (b) / 0.4 (nb)
	C	1	10	-	10	-	-	3	8	3	6	3	109	1	10 (b) / 109 (nb)	<0.1 (b) / 0.4 (nb)
Eider (21,550)	A	24	18	20	22	16	10	26	30	39	30	29	43	136	136	0.6
	B	30	21	55	59	11	10	3	12	105	20	11	62	82	105	0.5
	C	74	78	77	65	83	196	154	39	53	23	73	28	91	196	0.9
Velvet scoter (770)	A	2	-	18	5	1	-	-	-	-	4	7	4	3	18	**2.3**
	B	2	4	4	1	35	-	-	-	2	4	7	5	1	35	**4.5**
	C	120	63	6	-	28	-	-	-	-	2	9	14	11	120	**15.6**
	A	-	3	2	-	-	-	11	-	-	3	1	27	7	27	**7.3**

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
Red-breasted merganser (370)	B	-	1	-	-	-	-	-	-	-	-	1	1	-	1	0.3
	C	3	-	8	-	-	-	6	6	-	-	-	9	1	9	**2.4**
Goldeneye (590)	A	20	-	-	-	-	-	-	-	-	-	-	-	-	20	**3.4**
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C	80	-	-	-	-	-	-	-	-	-	-	-	-	80	**13.6**
Slavonian grebe (30)	A	-	-	-	-	-	-	-	-	-	-	2	-	1	2	**6.7**
	B	-	-	-	-	-	-	-	-	-	-	2	-	2	2	**6.7**
	C	-	-	-	-	-	-	-	-	-	1	-	-	2	2	**6.7**
Shag (breeding: 2,400/ non-breeding: 2430)	A	2	1	3	2	-	1	4	14	6	10	6	11	2	14(b) / 11 (nb)	0.6 (b) / 0.5 (nb)
	B	3	3	5	18	1	1	9	25	6	30	6	19	10	25 (b) / 30 (nb)	**1.0 (b) / 1.2 (nb)**
	C	1	1	5	-	1	2	10	26	8	8	1	-	1	26 (b) / 8 (nb)	**1.1 (b)** / 0.3 (nb)
Guillemot (breeding: 21,970 / non-breeding: 21,970)	A	-	-	-	1	1	8	4	85	14	8	3	1	-	85 (b) / 14 (nb)	0.4 (b) / 0.1 (nb)
	B	-	-	2	1	18	31	7	414	71	40	2	-	1	414 (b) / 71 (nb)	**1.9 (b)** / 0.3 (nb)
	C	-	-	1	1	-	15	3	125	22	13	-	1	-	125 (b) / 22 (nb)	0.6 (b) / 0.1 (nb)
Red-throated diver (850)	A	-	-	-	-	-	-	-	-	-	2	2	-	-	2	0.2
	B	-	-	-	-	-	-	-	-	4	2	5	-	1	5	0.6
	C	-	-	-	-	-	-	-	-	-	1	2	-	-	2	0.2

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
Common tern (1780)	A	-	-	-	-	-	-	2	2	-	-	-	-	-	2	0.1
	B	-	-	-	-	-	1	-	-	-	-	-	-	-	1	0.1
	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Long-tailed duck (1,950)	A	-	-	3	-	-	-	-	-	-	-	1	-	1	3	0.2
	B	-	-	6	-	-	-	-	4	-	-	1	-	-	6	0.3
	C	-	1	-	1	-	-	-	-	-	-	-	-	1	1	0.1
Common scoter (4680)	A	-	-	-	1	1	-	-	-	-	-	-	8	30	30	0.6
	B	1	1	-	2	1	-	-	-	-	-	-	-	33	33	0.7
	C	-	10	1	5	1	-	-	-	-	-	-	-	20	20	0.4
Kittiwake (breeding-12,020 / non-breeding: 3,190)	A	-	-	-	-	-	-	-	-	1	-	-	-	-	- (b) / 1 (nb)	- (b) / <0.1 (nb)
	B	-	-	-	-	-	-	2	18	-	-	-	-	-	18 (b) / - (nb)	0.1 (b) / - (nb)
	C	-	-	-	-	-	-	-	-	3	-	-	-	-	- (b) / 3 (nb)	- (b) / 0.1 (nb)
Puffin (61,090)	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	-	-	-	-	8	1	-	-	-	-	-	-	-	8	<0.1
	C	-	-	-	-	2	3	-	-	-	-	-	-	-	3	<0.1

Species (& SPA Population)	Sector	Jan'12	Feb'12	Mar'12	Apr'12	May'12	Jun'12	Jul'12	Aug'12	Sep'12	Oct'12	Nov'12	Dec'12	Jan'13	Peak	% SPA Pop
Gannet (10,950)	A	-	-	-	-	1	2	11	6	2	1	-	-	-	11	0.1
	B	-	-	-	-	40	2	6	46	14	-	-	-	-	46	0.4
	C	-	-	-	-	6	10	12	24	12	-	-	-	-	24	0.2
Common gull (14,650)	A	2	1	2	-	-	-	5	3	-	9	-	-	4	9	0.1
	B	1	-	-	2	-	-	-	118	2	5	2	22	16	118	0.8
	C	-	4	-	1	-	-	2	-	1	-	15	11	3	15	0.1
Little gull (196)	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arctic tern (1080)	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manx shearwater (2,890)	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-