

## Appendix B. Bird Data

### 1.1 Introduction

This appendix presents data used in the Habitats Regulations Appraisal (HRA) for the Forth Road Bridge (FRB) Ten-Year Marine Licence application. This comprises data from the British Trust for Ornithology's (BTO) Wetland Bird Surveys (WeBS) (Section 1.2); the Royal Society for the Protection of Birds (RSPB) roseate tern LIFE project; and Jacobs monitoring data from the Long Craig Island tern ECoW (Section 1.3) and Port Edgar Sandwich Tern surveys (Section 1.4).

### 1.2 BTO WeBS Data

Data from BTO WeBS is presented for two sectors in the vicinity of the FRB for the survey years 2019/2020 to 2023/2024. The values reported in Tables 1 and 2 represent the highest count obtained between July and June for the year and species in question. The FRB falls within the 'Forth Cult Ness' sector to the north side of the Firth of Forth and the 'Hound Point to South Queensferry' sector to the south. Forth Cult Ness encompasses the estuary west of the rail bridge to St Margaret's Marsh. Hound Point to South Queensferry encompasses the estuary from the eastern breakwater of Port Edgar to Hound Point. It should be noted that the Forth Cult Ness sector is approximately a third of the size of Hound Point to South Queensferry. Refer to Figure 3 which accompanies the main report for the locations and extents of these survey sectors.

The WeBS data is presented as five-year summaries for each species recorded in the Forth Cult Ness sector (Table 1) and Hound Point to South Queensferry (Table 2) below. Note that the WeBS counting year runs from July to June, so for example the year 2019/2020 includes data from July 2019 to June 2020 inclusive.

Arctic tern, common scoter, gannet, grey plover, golden plover, guillemot, kittiwake, long-tailed duck, puffin, razorbill, ringed plover, roseate tern, shag and velvet scoter are shown in the dataset for both sectors although no counts were recorded as they are qualifying interests of one or more of the designated sites. The same applies to bar-tailed godwit, goldeneye, knot, lapwing, pink-footed goose, scaup, Slavonian grebe and wigeon for the Forth Cult Ness Sector, and to bar-tailed godwit, pink-footed goose, red-throated diver and scaup for the Hound Point to South Queensferry Sector. Null counts from the WeBS survey data are presented in Tables 1-3 for Qualifying Interests of the three sites but are not presented for other species. In summary, 28 bird species were recorded in one or both sectors, of which 26 were found in the Forth Cult Ness sector, 28 in the Hound Point to South Queensferry sector. Of the 26 species found in the Forth Cult Ness, 13 were qualifying interests of the Firth of Forth SPA/Ramsar and/or Forth Islands SPA, whilst the same was true of 19 of the 28 species in the Hound Point to South Queensferry sector.

**Table 1: Five-year annual peak counts for species within the Forth Cult Ness WeBS sector**

Species	Qualifying Interest of Designated Site (Y/N)			Annual Peak Counts and Month Recorded					
	Firth of Forth SPA	Firth of Forth Ramsar	Forth Islands SPA	2019/20	2020/21	2021/22	2022/23	2023/24	Mean Peak
Arctic tern	N	N	Y	0	0	0	0	0	0
Bar-tailed godwit	Y	Y	N	0	0	0	0	0	0
Black-headed gull	N	N	N	58 (AUG)	126 (FEB)	56 (OCT)	72 (SEP)	163 (DEC)	95
Common gull	N	N	N	0	4 (DEC)	8 (DEC)	3 (AUG)	2 (DEC)	3
Common sandpiper	N	N	N	0	0	0	1 (AUG)	0	0
Common tern	N	N	Y	161 (AUG)	80 (JUL)	82 (MAY)	30 (JUN)	11 (JUN)	73
Common scoter	Y	Y	N	0	0	0	0	0	0
Cormorant	Y	Y	Y	3 (NOV)	16 (NOV)	5 (OCT)	5 (AUG)	6 (AUG)	7
Curlew	Y	Y	N	5 (JAN)	8 (AUG)	8 (FEB)	17 (OCT)	9 (AUG)	9
Dunlin	Y	Y	N	1 (DEC)	2 (OCT)	5 (JAN)	9 (DEC)	0	3
Eider	Y	Y	N	19 (JUN)	17 (JUL)	13 (APR)	29 (JUN)	6 (FEB)	17
Gannet	N	N	Y	0	0	0	0	0	0
Goldeneye	Y	Y	N	0	0	0	0	0	0
Golden plover	Y	Y	N	0	0	0	0	0	0
Grey plover	Y	Y	N	0	0	0	0	0	0
Goosander	N	N	N	0	0	0	2 (DEC)	4 (AUG)	2
Great black-backed gull	N	N	N	2 (NOV)	2 (JAN)	1 (DEC)	3 (AUG)	2 (NOV)	2
Great crested grebe	Y	Y	N	0	0	0	0	1 (FEB)	0
Grey heron	N	N	N	0	1 (OCT)	2 (DEC)	1 (NOV)	1 (JUN)	1
Guillemot	N	N	Y	0	0	0	0	0	0
Herring gull	N	N	Y	13 (JUN)	217 (SEP)	28 (MAY)	70 (APR)	17 (DEC)	69
Kingfisher	N	N	N	0	1 (OCT)	0	0	0	0
Kittiwake	N	N	Y	0	0	0	0	0	0
Knot	Y	Y	N	0	0	0	0	0	0
Lapwing	Y	Y	N	0	0	0	0	0	0
Long-tailed duck	Y	Y	N	0	0	0	0	0	0
Lesser black-backed gull	N	N	Y	2 (NOV)	5 (APR)	2 (OCT)	4 (OCT)	3 (AUG)	3
Little grebe	N	N	N	0	1 (NOV)	1 (FEB)	0	1 (DEC)	1
Mallard	Y	Y	N	0	6 (NOV)	10 (MAR)	2 (APR)	4 (FEB)	4
Mute swan	N	N	N	0	0	1 (JAN)	0	0	0
Oystercatcher	Y	Y	N	11 (MAR)	18 (AUG)	13 (DEC)	18 (NOV)	19 (OCT)	16

Species	Qualifying Interest of Designated Site (Y/N)			Annual Peak Counts and Month Recorded					
	Firth of Forth SPA	Firth of Forth Ramsar	Forth Islands SPA	2019/20	2020/21	2021/22	2022/23	2023/24	Mean Peak
Pink-footed goose	Y	Y	N	0	0	0	0	0	0
Puffin	N	N	Y	0	0	0	0	0	0
Razorbill	N	N	Y	0	0	0	0	0	0
Red-breasted merganser	Y	Y	N	0	19 (JAN)	12 (MAR)	7 (APR)	10 (DEC)	10
Redshank	Y	Y	N	53 (JAN)	68 (SEP)	53 (MAR)	58 (OCT)	38 (AUG)	54
Red-throated diver	Y	Y	N	0	0	1 (JAN)	0	1 (NOV)	0
Ringed plover	Y	Y	N	0	0	0	0	0	0
Roseate tern	N	N	Y	0	0	0	0	0	0
Sandwich tern	Y	Y	Y	16 (AUG)	12 (AUG)	0	3 (AUG)	3 (AUG)	8
Scaup	Y	Y	N	0	0	0	0	0	0
Shag	N	N	Y	0	0	0	0	0	0
Shelduck	Y	Y	N	5 (FEB)	16 (FEB)	10 (FEB)	2 (JAN)	17 (FEB)	10
Slavonian grebe	Y	Y	N	0	0	0	0	0	0
Teal	N	N	N	0	6 (DEC)	0	0	0	1
Turnstone	Y	Y	N	3 (MAR)	6 (SEP)	2 (OCT)	1 (OCT)	6 (NOV)	4
Velvet scoter	Y	Y	N	0	0	0	0	0	0
Wigeon	Y	Y	N	0	0	0	0	0	0

**Table 2: Five-year annual peak counts for species within the Hound Point to South Queensferry WeBS sector**

Species	Qualifying Interest of Designated Site			Annual Peak Counts and Month Recorded					
	Firth of Forth SPA	Firth of Forth Ramsar	Forth Islands SPA	2019/20	2020/21	2021/22	2022/23	2023/24	Mean Peak
Arctic tern	N	N	Y	0	0	0	0	0	0
Bar-tailed godwit	Y	Y	N	0	0	0	0	0	0
Black-headed gull	N	N	N	105 (SEP)	92 (JAN)	300 (DEC)	69 (SEP)	53 (FEB)	124
Common scoter	Y	Y	N	0	0	0	0	0	0
Common tern	N	N	Y	10 (JUL)	0	11 (MAY)	10 (JUN)	0	6
Cormorant	Y	Y	Y	3 (NOV)	3 (AUG)	1 (DEC)	1 (JUL)	6 (OCT)	3
Curlew	Y	Y	N	6 (JAN)	0	0	10 (JAN)	234 (MAR)	50
Dunlin	Y	Y	N	0	0	0	0	0	0
Eider	Y	Y	N	10 (NOV)	50 (AUG)	11 (APR)	19 (MAR)	55 (MAR)	29
Gannet	N	N	Y	0	0	0	0	0	0
Goldeneye	Y	Y	N	0	0	5 (DEC)	1 (JAN)	0	1
Golden plover	Y	Y	N	0	0	0	0	0	0
Goosander	N	N	N	0	4 (JAN)	4 (OCT)	0	1 (OCT)	2
Great black-backed gull	N	N	N	0	0	0	0	3 (MAR)	1
Great crested grebe	Y	Y	N	0	0	0	2 (JAN)	0	0
Grey plover	Y	Y	N	0	0	0	0	0	0
Guillemot	N	N	Y	0	0	0	0	0	0
Herring gull	N	N	Y	104 (SEP)	63 (JUN)	250 (APR)	32 (MAR)	133 (AUG)	116
Kittiwake	N	N	Y	0	0	0	0	0	0
Knot	Y	Y	N	0	0	0	0	0	0
Lapwing	Y	Y	N	0	0	0	0	3 (MAR)	1
Lesser black-backed gull	N	N	Y	30 (JUN)	14 (AUG)	20 (SEP)	10 (JUL)	5 (AUG)	16
Little grebe	N	N	N	2 (FEB)	0	1 (JAN)	2 (APR)	1 (OCT)	1
Long-tailed duck	Y	Y	N	0	0	0	0	0	0
Mallard	Y	Y	N	0	0	0	0	10 (DEC)	2
Mute swan	N	N	N	0	0	0	6 (FEB)	2 (JAN)	2
Oystercatcher	Y	Y	N	30 (DEC)	30 (FEB)	30 (DEC)	43 (DEC)	82 (MAR)	43
Pink-footed goose	Y	Y	N	0	0	0	0	0	0
Puffin	N	N	Y	0	0	0	0	0	0
Purple sandpiper	N	N	N	0	0	0	1 (SEP)	0	0

Species	Qualifying Interest of Designated Site			Annual Peak Counts and Month Recorded					
	Firth of Forth SPA	Firth of Forth Ramsar	Forth Islands SPA	2019/20	2020/21	2021/22	2022/23	2023/24	Mean Peak
Razorbill	N	N	Y	0	0	0	0	0	0
Red-breasted merganser	Y	Y	N	7 (NOV)	0	0	0	0	1
Redshank	Y	Y	N	5 (JAN)	6 (DEC)	2 (JAN)	4 (MAR)	25 (MAR)	8
Red-throated diver	Y	Y	N	0	0	0	0	0	0
Ringed plover	Y	Y	N	0	0	0	0	0	0
Roseate tern	N	N	Y	0	0	0	0	0	0
Sandwich tern	Y	Y	Y	0	50 (AUG)	20 (AUG)	28 (SEP)	7 (AUG)	21
Scaup	Y	Y	N	0	0	0	0	0	0
Shag	N	N	Y	0	0	0	0	0	0
Shelduck	Y	Y	N	0	0	0	0	2 (MAY)	0
Slavonian grebe	Y	Y	N	0	0	0	0	0	0
Turnstone	Y	Y	N	19 (JAN)	0	0	8 (JAN)	35 (FEB)	12
Velvet scoter	Y	Y	N	0	0	0	0	0	0
Wigeon	Y	Y	N	0	0	0	6 (DEC)	2 (DEC)	2

### 1.3 Long Craig Island Tern Colony Data

Historic data for breeding terns on Long Craig Island was obtained through the Scottish Wildlife Trust (SWT), from the roseate tern LIFE project and Royal Society for the Protection of Birds (RSPB). The data is presented in Table 3 below. More recent data for 2021 to 2025 is presented in Table 4 and is collated from Jacobs' ECoW monitoring. Productivity was calculated by dividing the minimum number of fledged chicks by the peak count of active nests.

**Table 3. Common tern breeding pair data from Long Craig Island, 1981-2020**

Year	Breeding pairs/adults on nests	Minimum number of chicks fledged	Productivity
1981	60	No Data	---
1982	40	No Data	---
1983	40	No Data	---
1984	40	No Data	---
1985	40	No Data	---
1986	30	No Data	---
1987	No Data	No Data	---
1988	45	No Data	---
1989	100	No Data	---
1990	143	No Data	---
1991	145	No Data	---
1992	No Data	No Data	---
1993	No Data	No Data	---
1994	No Data	No Data	---
1995	76	80	1.05
1996	0	0	0.00
1997	69	No Data	---
1998	No Data	No Data	---
1999	No Data	No Data	---
2000	75	74	0.99
2001	24	No Data	---
2002	55	No Data	---
2003	126	167	1.33
2004	171	No Data	---
2005	120	140	1.17
2006	92	105	1.14
2007	172	91	0.53
2008	90	38	0.42
2009	122	152	1.25
2010	109	100	0.92
2011	105	122	1.16
2012	0	0	0.00
2013	73	90	1.23
2014	131	130	0.99
2015	132	157	1.19
2016	168	44	0.26
2017	165	35	0.21
2018	78	5	0.06
2019	128	163	1.27
2020	113	97	0.86

**Table 4. Common tern breeding pair data from Long Craig Island, 2021-2025**

Year	Peak number of adult terns	Peak number of nests	Minimum number of chicks fledged	Productivity
2021	169 (1 July 2021)	63 (16 June 2021)	Estimated 5-18	0.08-0.29
2022	No Data	No Data	No Data	---
2023	74 (15 June 2023)	25 (29 June 2023)	0	0
2024	No Data	No Data	No Data	---
2025	195 (14 July 2025)	34 (14 July 2025)	Estimated 17-24	0.5-0.7

### 1.4 Port Edgar Sandwich Tern Colony Data

Sandwich tern surveys were conducted between July and September 2025 inclusive in Port Edgar Marina in South Queensferry. Counts were conducted using a spotting scope and binoculars across three vantage points to observe presence across the marina, with particular focus on the purpose-built tern raft, tyre raft and the east and west breakwaters. Results are presented in Table 5 below.

**Table 5. Sandwich tern presence in Port Edgar Marina, July - September 2025**

Date	East breakwater	West breakwater	Tyre raft	Tern raft	In flight
02/07/2025 (daytime)	0	0	0	0	0
11/07/2025 (daytime)	0	0	0	0	0
14/07/2025 (daytime)	0	0	0	0	0
23/07/2025 (daytime)	0	0	0	0	0
31/07/2025 (daytime)	0	0	0	0	0
12/08/2025 (daytime)	0	0	0	0	0
21/08/2025 (daytime)	0	0	10 (1 adult, 9 juveniles)	0	0
29/08/2025 (daytime)	0	0	52 (juveniles)	0	0
01/09/2025 (daytime)	0	0	18	0	0
08/09/2025 (daytime)	0	0	10 (juveniles)	0	2
18/09/2025 (daytime)	0	0	0	0	6
26/09/2025 (dawn)	0	0	0	0	0
30/09/2025 (dusk)	0	0	0	0	0