A literature review of the birds of Chesil Fleet between Abbotsbury and Rodden Hive

For Natural England

John Underhill-Day

Bryan Pickess

&

Sophie Lake

Date: June 2014
Version: Final
Recommended Citation: Underhill-Day, J. C., Pickess, B. P. & Lake, S.(2014). A literature review of the birds of Chesil Fleet between Abbotsbury and Rodden Hive. Unpublished report by Footprint Ecology for Natural England.

Table of Contents

1. Summary

This report surveys the available information and literature on the Birds of The Fleet, Dorset and that part of the site between Abbotsbury and Rodden Hive (the study area). The main species accounts are those chosen for inclusion by Natural England. The WeBS information and Reports of the Dorset Bird Club have provided much of the information on the status of the birds and show that the study area is an important part of The Fleet and holds most of the wintering Mute swans, pochard and coot and makes a significant contribution to the populations of red-breasted merganser, little egret and shoveler. Neither The Fleet nor the study area is of more than local importance for waders other than lapwing and greenshank on passage. There is a nationally important breeding population of Mute swans at Abbotsbury and a regionally important colony of breeding terns.

The available local literature on disturbance issues to birds on The Fleet is sparse and we could find no systematic studies or research on this aspect of the site. There is, however, an extensive literature on disturbance to waterfowl generally and this has been briefly summarised.

An Appendix includes the latest records for The Fleet for those species not included in the main species accounts.

2. Acknowledgements

We would like to thank Maxine Chavner for obtaining much of the information on which this report is based and the BTO and DERC for supplying information from their databases. Durwyn Liley has been helpful in pointing the way to many of the disturbance references and Fenella Lewin has completed the final formatting.

3. Introduction

3.1 Chesil Beach and The Fleet are located on the south coast in Dorset to the west of Weymouth. Chesil Beach is one of the three largest shingle structures in the UK and for about half its length it encloses The Fleet water body. This is the largest tidal lagoon in Britain and is connected to the sea in Portland Harbour at the eastern end with a tidal flow which extends approximately halfway along the 13km lagoon. The lagoon is therefore saline at the eastern end and freshwater at the western end, with a number of small streams and channels draining into it from the higher ground to the north (where the drainage catchment is 20 square kilometres), of which the largest are the Abbotsbury Brook and the Rodden stream. Average rainfall is about 890mm p.a.

3.2 Chesil Fleet was designated as a Special Protection Area in July 1985 under Article 4.2 of the Birds Directive[1], as it regularly supports 1.1% of the wintering population of dark-bellied Brent goose *Branta bernicla bernicla.*

3.3 The site has also been listed as a RAMSAR site under Criterion 6 for peak counts in winter of dark-bellied Brent goose with an average population of 1,400 individuals representing 1.4% of the GB population and of Mute swan *Cynus olor* with an average of 1,169 individuals representing an average of 3.1% of the GB population.

3.4 In addition, the RAMSAR designation includes the following as noteworthy species:

Species regularly supported during the breeding season:

- Little tern *Sterna albifron albifrons* - 81 apparently occupied nests representing an average of 4.1% of the GB population
- Species with peak counts in spring and autumn
- Common greenshank *Tringa nebularia* - 6 individuals representing an average of 1% of the GB population

Species with peak counts in winter:

- Little egret *Egretta garzetta* - 24individuals representing an average of 1.4% of the GB population
- Common pochard *Aythya farina* - 659 individuals representing an average of 1.1% of the GB population
- Red-breasted merganser *Mergus serrator* - 270 individuals representing an average of 2.7% of the GB population
- Common Coot *Fulica atra atra - 2,139* individuals representing an average of 1.2% of the GB population

3.5 Chesil Fleet is also part of the Chesil and The Fleet SSSI for a wide range of features. These include up to 1,200 wintering mute swans and a breeding colony of 20-100 pairs of this species and up to 7,500 wintering wigeon *Anas penelope.*

3.6 The report on water birds in the UK in 2011/2012 (Austin, GE *et al.* 2014) gives an average peak count for the number of waterbirds on Chesil Fleet and the Wey for the previous five years as 15,873 with a peak in 2010/2011 of 22,545 individuals. It lists the 21 sites of national importance for dark-bellied Brent geese of which The Fleet and Wey are number 14 with a five year mean peak of 2,040 and a peak of 2,416 in 2010/11.

3.7 Much of Chesil Fleet is on the South West Coast Path which follows the inland shore of The Fleet from Ferry Bridge to the south east to Rodden Hive, about two-thirds of the way to Abbotsbury, where it diverts inland. There are access points to The Fleet at a number of places, with the last of these about 1.25km south east of Rodden Hive. Between Rodden Hive and Abbotsbury there are no public paths or access points.

[1] Council Directive 2009/147/EC on the Conservation of Wild Birds (CD1).

3.8 The Fleet is however accessible by boat and apart from the entrance at Ferry Bridge there are a number of points where fishermen keep boats for crossing The Fleet onto Chesil Bank.

3.9 The aim of this study is to carry out a literature search to determine the distribution and patterns of bird use, both past and present, of The Fleet, with particular emphasis on the West Fleet, between Reeds End near Abbotsbury and Rodden Hive. Although not its main focus, this study will be used to inform future management and thus it would be advantageous to include any historic or current information about bird disturbance in this area. Any relevant roosting / nesting / loafing or habitat maps noted during the literature search have been referenced. We have also included some information on disturbance research on waterbirds.

3.10 In carrying out the literature search we have consulted the following sources:

- BTO WeBS data for the years 1999 to 2013
- Bird records from the Dorset Biological Record Centre (DERC) for the years 2000-2008
- DBR (DBC) published records for the years 2009-2011 (Up to 2008, these have been incorporated into the DERC record above)
- All the documents in The Fleet Study Group Archive held at Weymouth College which might be relevant
- The last ten years of the Proceedings of the Dorset Natural History and Archaeological Society
- Our own extensive library of journal, reports and grey literature
- We have carried out web searches using the search terms: Chesil, Chesil Fleet, Chesil birds, The Fleet, Fleet birds, Abbotsbury on:

  Google Scholar
  Thomson Web of Science
  Copac
  British Library EtHOS Service
  NERC Publications database
  JSTOR Journal articles
  Springer articles, books
  Elsevier Articles, books
  Natural England online publications catalogue
  JNCC publications catalogue
  Centre for Evidence Based Conservation/Environmental Evidence, reviews, articles

- Peer-reviewed literature in journal articles;
- BTO WeBS and BBS data;
- Fleet Study Group;
- Other relevant sources.

3.11 We understand that the former Chesil beach warden, Don Moxom has also kindly agreed to provide Natural England with additional information to supplement this report.

3.12 In the report that follows we have referred to the count area of The Fleet from Abbotsbury reedbed to Rodden Hive as the “study area” and the whole of Chesil fleet from the Abbotsbury reedbeds to Ferry Bridge as “The Fleet”.

3.13 The main data from WeBS for the whole of Chesil Fleet has been obtained from Austin et al (2014). This data is presented at the start of each species account as peaks for each winter across years and then as a mean peak over five years from 2008/09 to 2011/12. The data sheets for the study area have been analysed by year over a 15 year period and for each species data has been extracted giving total numbers for each year, maximum (peak) and minimum numbers and mean numbers and number of months surveyed (as in some years months have been missed). The data table for the species then gives the month(s) in which maximum and minimum numbers occurred and the number of months with a zero count, and finally the months in which counts took place.

3.14 The main WeBS data on the BTO website is for The Fleet and Wey and effectively includes the RSPB reserves at Radipole and Lodmoor in Weymouth and covers the winters across years. This data is complete to 2011/12. In some cases this will have little effect on the figures as almost all the birds recorded will be on The Fleet. However in a number of cases, shoveler, for example, there are reasonable numbers on the RSPB sites. In order to carry out a comparison with the numbers on The Fleet as a whole excluding the RSPB sites, the data for the study area has been tabulated on an annual basis to allow comparisons with the Dorset Bird Club reports (DBRs).

3.15 Where relevant, attention has been drawn to the thresholds for national and international importance for a species, whether The Fleet is within the criteria, and the proportion of the population occurring on the study area. Where The Fleet is within the top ten sites in the south-west of England, based on mean peak figures, it is considered to be of regional importance and where it is one of the top five sites in Dorset it is considered as of local (county) importance.

3.16 Figures from the DERC data base have been included where relevant, but in most cases where a species is included in the WeBS counts the figure will be the same or similar to WeBS as the DERC data is taken from the DBC reports which in some cases give numbers outside the WeBS data. However the DERC database includes figures only for the period 2011-2008, so the figures for 2009-2011 have been extracted from the DBRs. Both the DERC data and the DBR data have been included as appendices.

4. Species Accounts

Mute Swan

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	6157	760	26	513.08	12	7	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	5310	685	11	442.50	12	7	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	2373	700	100	395.50	6	1	1	6	1,2,9,10,11,12
2002	6440	725	200	536.67	12	6	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	7225	776	240	602.08	12	5	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	6333	720	175	527.75	12	5	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	7250	980	270	604.17	12	5	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	7074	860	260	589.50	12	7	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	7138	820	150	594.83	12	7	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	6417	720	193	534.75	12	5	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	6541	678	293	545.08	12	5	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	5976	741	16	498.00	12	6	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	6289	783	185	524.08	12	6	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	5785	633	296	482.08	12	7	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	5243	620	302	476.64	11	7	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**91551**	**980**	**11**	**529.20**	**173**				

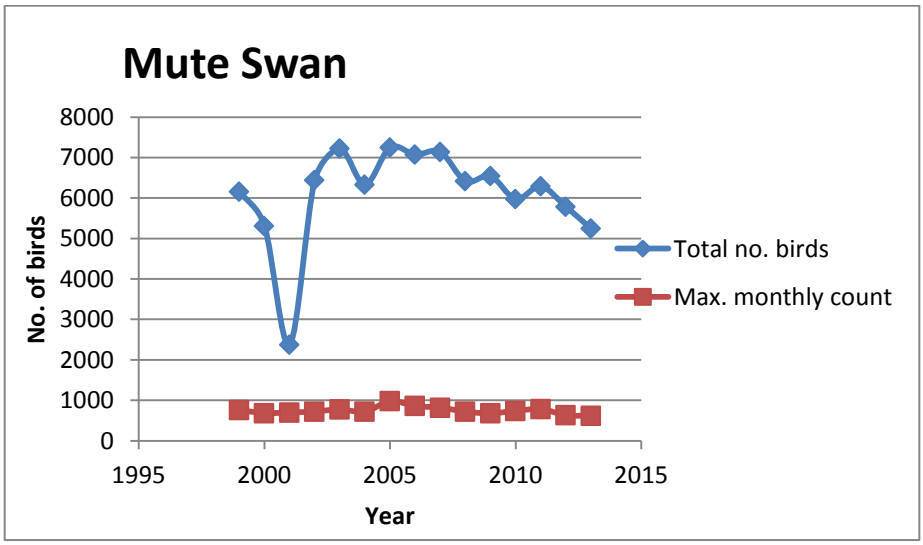


Figure 1 Trends in total numbers of birds and maximum monthly counts-Mute swan

4.1 Numbers of Mute swans on The Fleet in winter are of national and international importance and it is the second most important site in the UK for this species after the Somerset levels. The peak number of Mute swans on The Fleet during 2007 and 2011/2012 has remained fairly constant with a minimum peak count of 774 in 2011/20112 and a maximum peak count of 990 in 2008/2009. The average peak for the last five years has been 890 with the highest numbers in July. The overall annual numbers of birds in the reedbeds/Rodden section fell sharply in 2001 but then climbed to between 5,243 and 7,250 during 2002 and 2013 with highest numbers generally in May/June July. Highest peak counts, however, remained remarkably stable and over the last five years have represented 80% of the numbers on The Fleet as a whole.

4.2 Breeding numbers of Mute swans at Abbotsbury during the five years to 2011 (recorded from DBRs) have averaged 137 pairs with a minimum of 120 pairs in 2011 and a maximum of 158 pairs in 2008. The last national Mute swan census (Ward, RM et al. 2007) noted that the most densely populated 10km square was at Abbotsbury with 146 nesting pairs and 260 unpaired non-breeders. This represented 2.1/2.6% of the estimated national breeding population and 1.1/1.6% of the estimated national population of non-breeders.

Summary

4.3 The Fleet is of national and international importance for its wintering Mute Swan population and nationally important for its breeding population of this species. Numbers have remained fairly stable in recent years with almost all the breeding population and 80% on the wintering population in the reedbed to Rodden Hive section of the site.

Table 1: Mute swan monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
Wintering	**2007**	**2008**	**2009**	**2010**	**2011**
January	897	651	591	754	448
February	761	714	604	791	742
March	625	633	531	644	563
April	668	676	612	594	563
May	730	722	587	636	626
June	748	689	639	752	783
July	824	705	684	723	774
August	827	690	703	705	732
September	814	764	767	593	640
October	779	947	831	909	706
November	761	620	732	530	530
December	747	820	897	732	502

Breeding	2007	2008	2009	2010	2011
	142	**158**	**150**	**130**	**120**

Brent Goose (Dark-bellied)

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	23	12	0	1.92	12	11	2	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	3	2	0	0.50	6	2	9	4	1,2,9,10,11,12
2002	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	1	1	0	0.08	12	12	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	1	1	0	0.08	12	12	2	10	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 1
2007	3	2	0	0.25	12	12	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	2	2	0	0.17	12	2	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	5	5	0	0.42	12	11	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	0	0	0	0.00	11	1	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**38**	**12**	**0**	**0.22**	**173**				

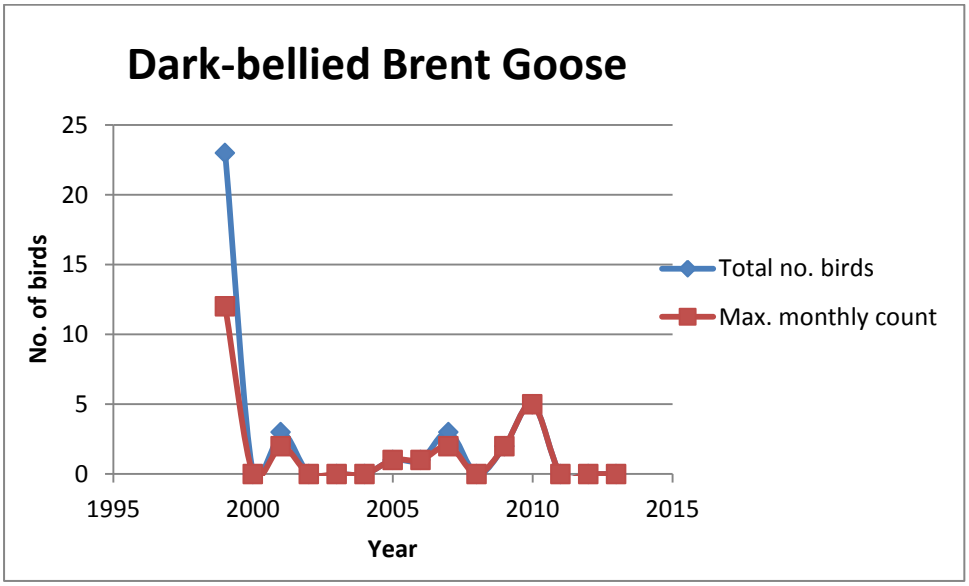


Figure 2: Trends in total numbers of birds and maximum monthly counts-Dark-bellied Brent Goose

4.4 The population of Dark-bellied Brent geese on The Fleet is of national and international importance and is listed in both the SPA and SSSI designations. Over the last five years the average number from WeBS for the whole of The Fleet is 2,123 individuals with a peak in November and a maximum peak in 2010/2011 of 2,416 birds. It is clear from the table above that in most years no Dark-bellied Brent geese have been recorded in the reedbed/Rodden sector with a maximum count of 12 in 1999. Based on the DBR mean peak records for the whole of The Fleet during 2007-2011, the study area mean peak has been 0.4% of the total.

4.5 The BTO Alerts (Cook et al. 2013) classifies Dark-bellied Brent goose as having experienced a high increase of over 225% during the last 25 years (54% over last 10 years and 57% over last five years) on The Fleet as a whole. This distribution probably reflects the diet of the geese, eel grass, Zostera ssp. which is found in the more brackish waters at the eastern end of The Fleet. However, there are signs that Brent geese are increasingly using non-estuarine habitat for feeding, including winter cereals and managed grassland (Austin, GE et al. 2014) and this could happen here with birds moving to feed on farmland to the north of The Fleet.

Summary

4.6 Dark-bellied Brent geese are not found in significant numbers at the western end of The Fleet but elsewhere on the site the numbers have risen considerably over the last 25 years and continue to rise.

Table 1: Dark-bellied Brent goose monthly maximum totals by year for The Fleet (from Dorset DBRs).

		Site Max			
	2007	**2008**	**2009**	**2010**	**2011**
January	1000	996	1500	1336	1282
February	600	477	550	1086	712
March	100	53	40	108	200
April	86	1	1	2	-
May	1	-	-	-	-
June	-	-	-	-	-
July	-	1	-	-	-
August	-	1	-	-	-
September	6	37	-	-	-
October	2000	945	1150	1012	1025
November	2500	2300	1830	1530	2240
December	2000	2200	1774	2416	1937

Shelduck

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	232	56	0	19.33	12	11	2	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	261	50	1	21.75	12	2	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	52	20	0	8.67	6	11	5	0	1,2,9,10,11,12
2002	291	49	4	24.25	12	10	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	232	59	0	19.33	12	12	6	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	223	57	0	18.58	12	12	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	155	45	0	12.92	12	12	10	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	281	50	0	23.42	12	12	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	243	58	0	20.25	12	11	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	286	59	2	23.83	12	12	6	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	277	55	0	23.08	12	12	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	188	47	0	15.67	12	1	12	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	201	46	0	16.75	12	10	7	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	257	41	4	21.42	12	8	2	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	204	47	0	18.55	11	1	2	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**3383**	**59**	**0**	**19.55**	**173**				

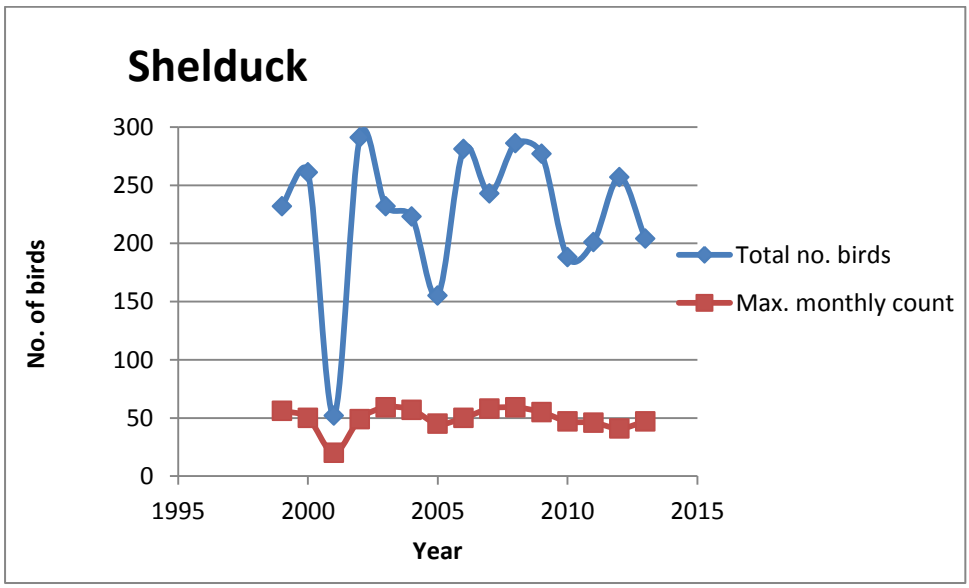


Figure3: Trends in total numbers of birds and maximum monthly counts-Shelduck

4.7 The Fleet is not nationally important for Shelduck with a mean five year peak 2007/08-2011/12 of 96 individuals, well below the national importance threshold of 610. After a marked dip in numbers in 2001, numbers have fluctuated with no clear trend. The study area has held about 73% of the mean peak numbers on The Fleet during 2007-2011 and is important in a Fleet context. There were no records in the DERC archive for this period, but the DBRs for 2007-2011 show a maximum count in April 2008 of 86 birds. There are no significant numbers at Radipole or Lodmoor. Peak numbers are in April and May.

Summary

4.8 Shelduck occur in modest numbers in The Fleet with about three-quarters in the study area and a peak in March/April/May

Table 2: Shelduck totals monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	2008	2009	2010	2011
January	68	44	51	33	23
February	62	74	66	40	8
March	80	62	66	57	68
April	43	86	65	76	65
May	35	44	53	37	31
June	63	39	27	27	33
July	32	33	13	33	3
August	21	18	11	2	15
September	-	4	7	6	-
October	4	2	-	3	-
November	1	15	16	3	7
December	27	36	37	33	27

Wigeon

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	669	284	0	55.75	12	2	9	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	147	82	0	12.25	12	2	3	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	1198	740	8	199.67	6	12	9	1	1,2,9,10,11,12
2002	485	236	0	40.42	12	1	6	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	226	100	0	18.83	12	12	6	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	321	160	0	26.75	12	1	2	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	393	122	0	32.75	12	2	4	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	296	100	0	24.67	12	2	3	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	526	220	0	43.83	12	2	1	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	171	52	0	14.25	12	2	6	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	193	100	0	16.08	12	2	7	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	527	145	0	43.92	12	12	4	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	247	108	0	20.58	12	8	5	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	607	480	0	50.58	12	12	1	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	687	380	0	62.45	11	1	8	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**6693**	**740**	**0**	**38.69**	**173**				

4.9

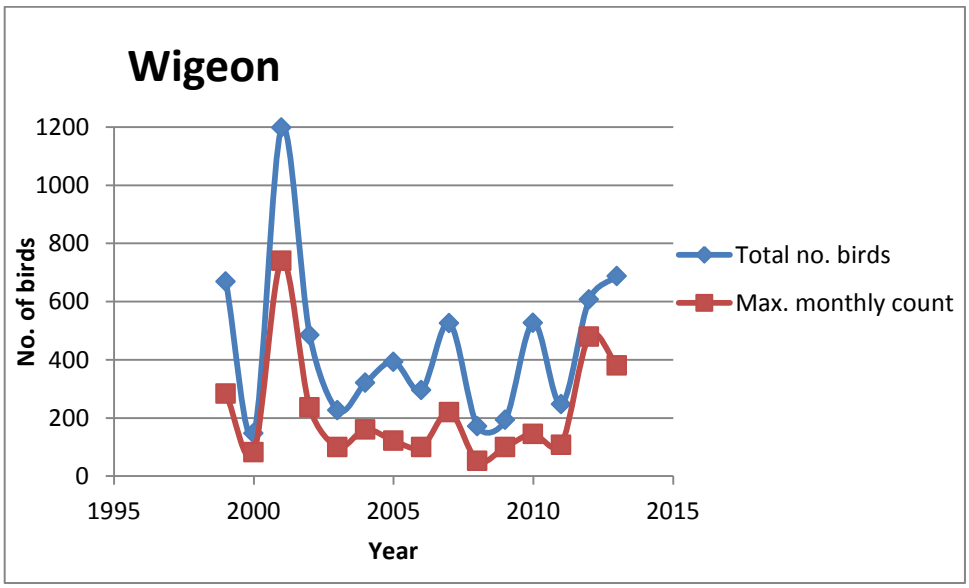


Figure 3: Trends in total numbers of birds and maximum monthly counts-Wigeon

4.10 With a five year mean peak population of 4,312 (2007/08-2011/12) Wigeon numbers on The Fleet fall just below the threshold for national importance (at 4,400). However winter peak numbers in 2010/2011 reached 8,244 in December and 6,000 in February (DBR) and the trend is clearly upward so that it seems likely that the site will be notified as of national importance for this species at the next review of the SPA and SSSI. The study area has recorded an average peak count of 125 (2007-2011), about 3% of The Fleet as a whole, but this also seems to be increasing with the peak 2012 increasing to 480. The DBRs give no separate figures for the Radipole and Lodmoor. The highest numbers are in December, January and February.

4.11 There are no records for this species for the study area from the DERC records, but Bird Club records for 2009-2011 show that numbers build up slowly in the autumn from September, reach a peak mid-winter and then drop sharply in March with none, or a few individuals over the summer.

Table 4 Wigeon monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
Wintering	**2007**	**2008**	**2009**	**2010**	**2011**
January	1140	3000	3000	2000	2635
February	700	719	725	6000	2000
March	16	358	400	761	60
April	8	30	4	15	-
May	-	-	-	6	4
June	-	-	-	5	2
July	-	-	-	0	1
August	10	5	8	7	-
September	500	1000	569	180	5
October	1285	1637	1750	1200	2333
November	2284	3056	1541	2000	1999
December	3000	3078	5131	8240	2833

Gadwall

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	195	70	0	16.25	12	5	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	121	44	0	10.08	12	9	2	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	107	53	0	17.83	6	1	2	10	1,2,9,10,11,12
2002	106	50	0	8.83	12	7	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	35	12	0	2.92	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	21	9	0	1.75	12	4	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	36	20	0	3.00	12	7	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	51	26	0	4.25	12	4	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	37	14	0	3.08	12	4	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	31	15	0	2.58	12	7	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	46	26	0	3.83	12	5	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	162	110	0	13.50	12	5	1	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	51	27	0	4.25	12	8	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	87	27	0	7.25	12	5	2	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	87	46	0	7.91	11	5	8	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**1173**	**110**	**0**	**6.78**	**173**				

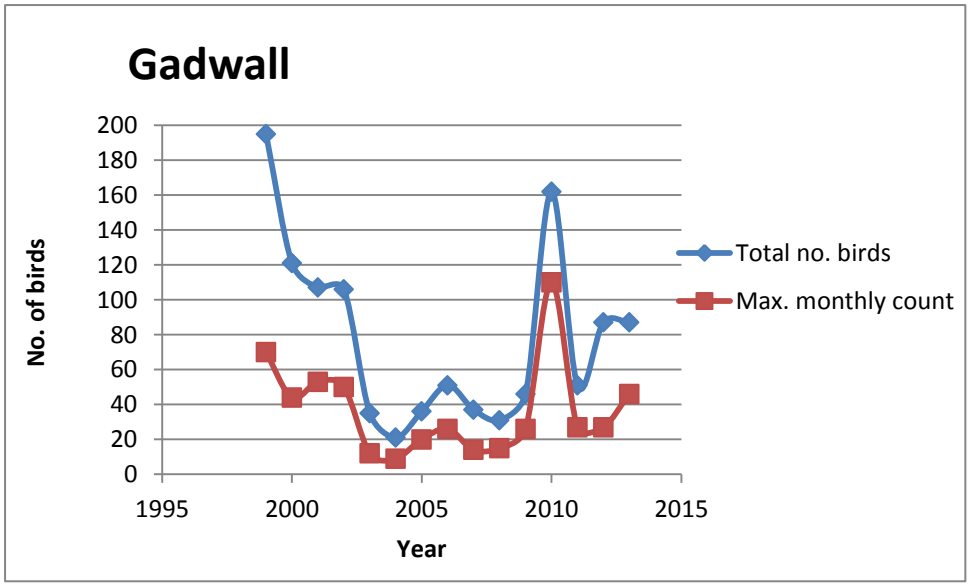


Figure 4: Trends in total numbers of birds and maximum monthly counts-Gadwall

4.12 Numbers of Gadwall on The Fleet and Wey have risen sharply over the last three years with peak counts of 42 and 49 in 2007/08 and 2008/09 respectively and them 133, 591 and 234 in the following three years giving a mean of 210 individuals. The national threshold is 250, so if numbers continue to remain over 200 for another two years then The Fleet and Wey will move into being of national importance for this species. Although the figures are difficult to match, it is apparent from the DBRs (Table5) that there has been a similar trend for The Fleet alone with peak numbers also rising and a mean 2007/2011 of 139, well below the national threshold. Highest numbers are in December and January.

4.13 The study area peak average was 44 during 2007-2011 with a maximum of 110 in 2010, just over 30% of The Fleet peak average.

Summary

4.14 Numbers of gadwall have recently increased in the area with 65-70% of The Fleet and Wey population on The Fleet of which about 30% are in the study area. Highest numbers occur in mid-winter.

Table 5: Gadwall monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	**2008**	**2009**	**2010**	**2011**
January	-	2	150	150	130
February	14	20	28	24	20
March	3	3	2	29	10
April	7	2	6	-	7
May	-	5	1	-	-
June	-	-	1	-	-
July	-	2	-	-	-
August	2	-	6	6	27
September	-	-	-	-	-
October	1	-	-	-	-
November	6	5	10	1	3
December	10	47	5	358	-

Shoveler

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	469	110	0	39.08	12	4	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	297	76	0	24.75	12	5	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	273	96	17	45.50	6	9	12	0	1,2,9,10,11,12
2002	497	130	0	41.42	12	8	12	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	227	100	0	18.92	12	6	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	198	100	0	16.50	12	10	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	221	92	0	18.42	12	7	1	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	264	84	0	22.00	12	8	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	352	82	0	29.33	12	8	12	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	561	160	0	46.75	12	5	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	373	135	0	31.08	12	9	12	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	272	120	0	22.67	12	6	12	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	245	65	0	20.42	12	6	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	261	60	0	21.75	12	8	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	234	68	0	21.27	11	8	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**4744**	**160**	**0**	**27.42**	**173**				

4.15

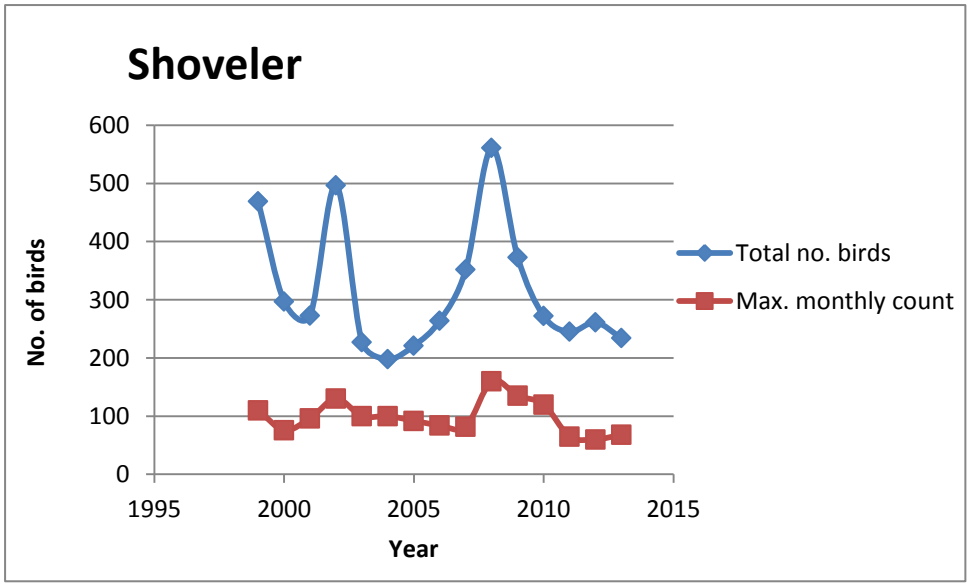


Figure 6: Trends in total numbers of birds and maximum monthly counts-Shoveler

4.16 The Fleet just falls short of being of national importance for Shoveler with a five year mean of 163 against a threshold of 180. Radipole and Lodmoor are included in the figures and without their contribution the mean peak for the years 2007-2011 (Table ???) is 140, suggesting that The Fleet alone is some way from being of national importance in its own right. The study area mean peak for 2007/11 was 112, suggesting that about 65- 70% of the birds are in this area. This is not surprising given this species is often associated with reedbed edges.

Summary

4.17 The Fleet is of regional importance for Shoveler with the study area holding 65-70% of the total numbers in The Fleet.

Table 7: Shoveler totals monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	**2008**	**2009**	**2010**	**2011**
January	50	121	80	100	71
February	60	175	60	40	42
March	44	83	50	36	57
April	8	78	4	6	-
May	-	-	2	0	-
June	-	-	-	4	-
July	7	-	-	-	-
August	9	23	-	15	4
September	37	47	-	15	15
October	62	31	-	30	26
November	79	46	54	41	40
December	103	117	32	220	120

Pochard

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	1621	500	0	135.08	12	2	3	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	1352	440	0	112.67	12	2	3	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	2031	750	3	338.50	6	1	2	0	1,2,9,10,11,12
2002	2001	650	0	166.75	12	1	5	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	2671	700	0	222.58	12	12	3	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	2468	600	0	205.67	12	12	3	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	2406	625	0	200.50	12	1	4	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	3182	860	0	265.17	12	1	4	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	2951	700	6	245.92	12	2	3	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	3752	950	6	312.67	12	12	5	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	2718	718	6	226.50	12	1	4	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	3001	650	3	250.08	12	2	3	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	2630	560	0	219.17	12	1	2	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	2454	690	3	204.50	12	1	3	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	2017	642	3	183.36	11	1	3	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**37255**	**950**	**0**	**215.35**	**173**				

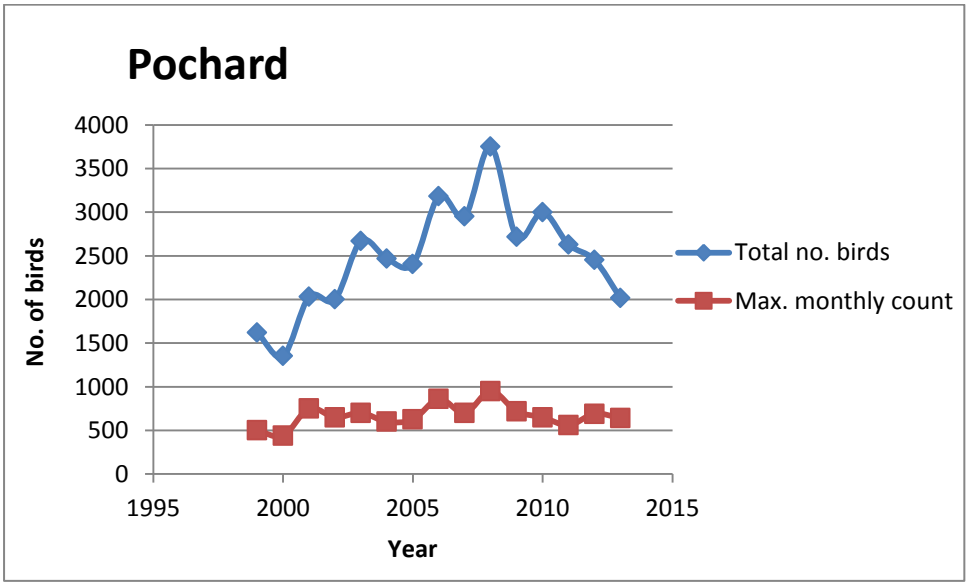


Figure 7: Trends in total numbers of birds and maximum monthly counts-Pochard

4.18 Chesil Fleet is nationally important for Pochard with a mean five year mean peak of 769 for 2007/08-2011/12, well above the threshold for national importance of 380. Stripping out the figures for those years for Radipole and Lodmoor makes little difference and gives a mean peak from the Bird Club Reports (Table 7) of 715. The study area has a mean peak for 2008-2013 of 652 which makes it nationally important for this species. From the WeBS data, on average the study area has over 90% of the wintering population of this species with the highest numbers from December to February and the highest individual count in the study area of 950 in February 2008. The Pochard is the fastest declining wintering duck in the UK with numbers dropping by 47% in the ten years to 2010-11 (Austin, GE et al. 2014). There is some indication that total numbers have declined since 2008 on The Fleet and in the study area, but a further period of recording is needed to confirm this as it is not mirrored by the WeBS peak count numbers over the last five years.

Summary

4.19 The study area holds most of the wintering Pochard on The Fleet which has a nationally important population. The highest numbers are in mid-winter.

Table 8: Pochard monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	**2008**	**2009**	**2010**	**2011**
January	600	760	650	640	530
February	612	950	718	610	560
March	60	420	130	230	230
April	10	12	11	37	15
May	14	13	7	13	112
June	25	9	6	3	8
July	6	6	6	4	4
August	12	7	21	4	-
September	7	74	165	75	17
October	220	320	360	215	194
November	620	570	260	520	510
December	700	611	600	650	550

Red-breasted Merganser

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	206	82	0	17.17	12	6	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	247	108	0	20.58	12	8	5	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	78	37	0	13.00	6	9	2	1	1,2,9,10,11,12
2002	209	65	0	17.42	12	5	1	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	206	50	0	17.17	12	4	9	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	186	56	0	15.50	12	7	3	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	151	43	0	12.58	12	5	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	192	64	0	16.00	12	4	3	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	149	40	0	12.42	12	8	12	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	220	90	0	18.33	12	4	3	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	154	36	0	12.83	12	3	1	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	142	40	0	11.83	12	7	12	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	119	48	0	9.92	12	3	9	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	168	52	0	14.00	12	5	1	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	127	55	0	11.55	11	3	1	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**2554**	**108**	**0**	**14.76**	**173**				

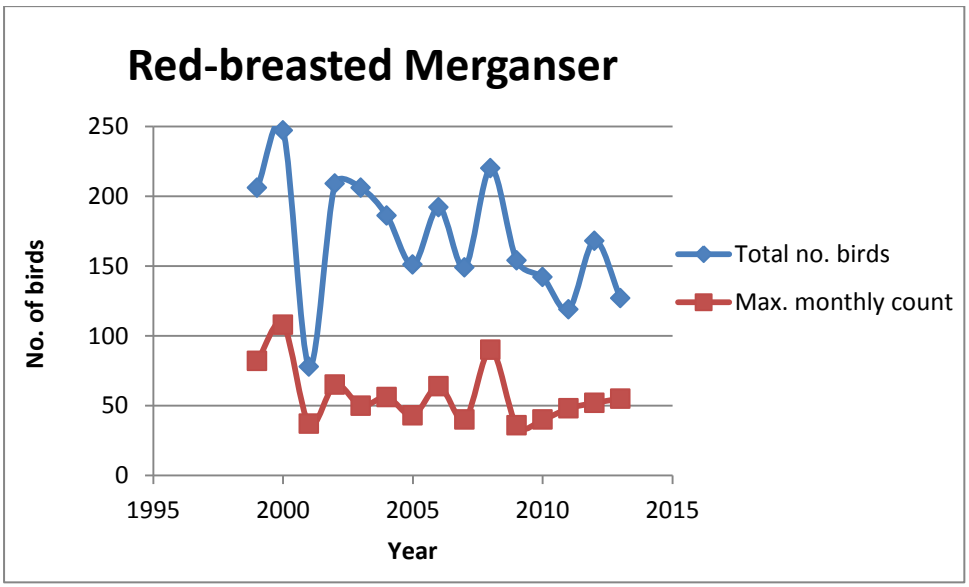


Figure 9: Trends in total numbers of birds and maximum monthly counts-Red-breasted merganser

4.20 Chesil Fleet is the most important site in the UK for wintering Red-breasted merganser with a mean peak of 294 birds 2007/08-2011/12 against a nationally important threshold of 84. Birds start to arrive in October and build to a peak in February and leave again in April. In the study area during 2008-2012 numbers averaged some 18% of the numbers for The Fleet as a whole (from WeBS) but numbers here did not reach the nationally important threshold. In 2008 numbers in the study area reached just under 30% of The Fleet population. No comparison can be made with the DBRs as these include both The Fleet and Portland Harbour. There are no clear trends in either The Fleet population or that of the study area.

Summary

4.21 The study area makes a substantial contribution of nearly a fifth to the nationally important population of over-wintering Red-breasted mergansers on The Fleet.

Great-crested grebe

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	106	20	1	10.6	10	10	2,11	3	2, 3, 4, 5, 6, 7, 8, 9, 10, 11
2000	169	33	5	16.9	10	3	2	6	2, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	77	24	7	15.4	5	10	1	0	1, 2, 9, 10, 11
2002	194	35	4	19.4	10	12	12	5	2, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	214	34	6	19.5	11	1	12	4	1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	201	37	1	18.3	11	10	11	3	2, 3, 4, 5, 6, 7, 8, 9, 10, 11
2005	182	33	4	16.5	11	2	12	5	1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	282	46	3	23.5	12	2	12	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	211	30	7	17.6	12	10	12	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	251	33	7	20.9	12	2	12	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	232	37	3	19.3	12	11	11	5	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	300	55	5	27.3	11	11	12	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	238	51	8	19.8	12	10	11	6	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	291	78	3	26.5	11	11	11	6	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	229	36	11	20.8	11	11	1, 4	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	3177	78	1	19.5	161				

Graph to be inserted

4.22 The mean peak count for The Fleet and Wey 2007/08-20111/12 was 50 with peak counts in June. The national importance threshold is 190, well above the local figure. Excluding Radipole and Lodmoor the mean peak figure for The Fleet 2007-2011 was 42 with the mean peak for the same period in the study area of 41, indicating that almost all the Great-crested grebes counted on The Fleet were in the study area. Trends both for the WeBS and DBR figures suggest a slight increase over the last 15 years. The peak months vary between April and August/September suggesting the summering populations are augmented by passage birds in late spring and early autumn.

Summary

4.23 The Great-crested grebe population on The Fleet is of local importance with the population concentrated in the study area and augmented with small numbers of spring and autumn passage birds.

Table 10: Great-crested grebe totals monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	2008	2009	2010	2011
January	17	9	14	21	13
February	25	19	12	14	6
March	22	10	10	10	21
April	16	33	29	36	54
May	16	29	31	37	46
June	12	26	22	37	19
July	20	22	23	32	20
August	28	11	40	40	38
September	30	29	38	55	10
October	28	28	23	43	33
November	12	27	17	24	36
December	13	21	30	5	18

Little Egret

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	7	3	0	0.58	12	5	1	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	54	11	0	4.50	12	6	11	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	22	6	0	3.67	6	11	2	0	1,2,9,10,11,12
2002	83	20	1	6.92	12	5	11	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	60	12	2	5.00	12	6	3	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	65	13	1	5.42	12	2	3	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	65	9	2	5.42	12	3	2	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	98	16	3	8.17	12	4	1	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	144	29	1	12.00	12	8	1	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	118	23	4	9.83	12	9	1	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	88	20	1	7.33	12	8	2	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	143	37	0	11.92	12	8	2	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	83	14	1	6.92	12	8	1	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	91	17	2	7.58	12	8	1	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	74	14	3	6.73	11	1	2	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**1195**	**37**	**0**	**6.91**	**173**				

4.24

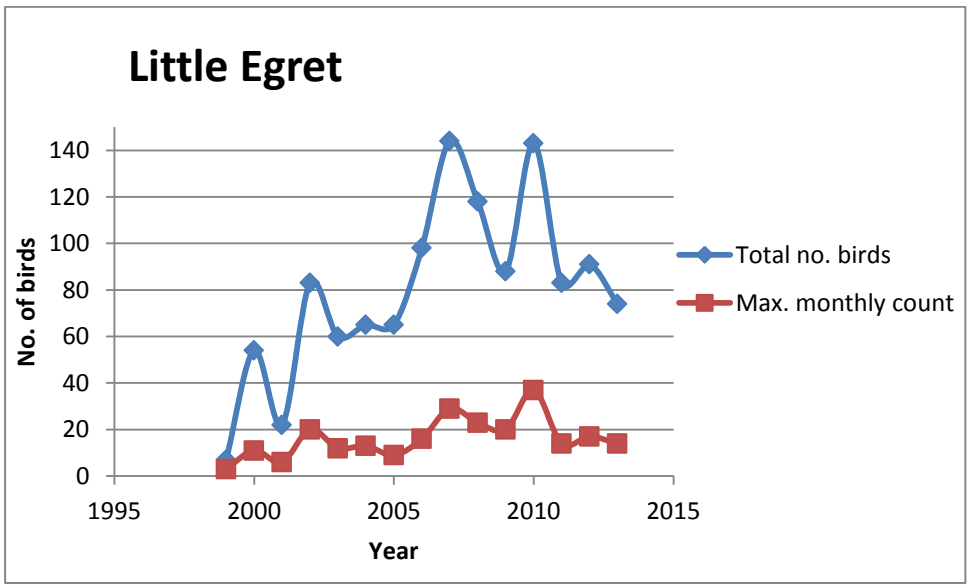


Figure 10: Trends in total numbers of birds and maximum monthly counts-Little egret

4.25 This species is a recent arrival to the UK, first breeding in Poole Harbour in Dorset in 1996 (Lock & Cook 1998). The threshold for nationally important numbers is 45 and Chesil Fleet is nationally important for this species with a five year mean peak of 58. The peak for the study area for 2001-2011 is 25, against a mean peak for the whole of The Fleet from the DBRs of 54 so the study area is an important part of The Fleet for this species with about 46% of the total numbers. The peak numbers can occur at any time of year. There are few records in the DERC archive but the DBRs show that there are reasonable numbers on The Fleet all the year round with no clear pattern, although numbers possibly increase during cold weather in winter when birds move to the coast.

Summary

4.26 Little egrets have non-breeding populations all the year round on The Fleet with nationally important numbers of which about a third are within the study area.

Table 9 Little egret monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
Wintering	2007	2008	2009	2010	2011
January	42	30	60	20	10
February	39	45	42	41	15
March	55	35	58	56	28
April	50	51	40	36	14
May	10	15	10	28	15
June	25	13	18	18	12
July	26	26	30	39	23
August	62	33	55	32	31
September	56	44	42	31	17
October	43	61	40	15	20
November	50	30	20	25	16
December	50	46	54	15	12

Grey Heron

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	82	16	0	6.83	12	12	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	88	32	0	7.33	12	2	3	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	32	10	1	5.33	6	1	10	2	1,2,9,10,11,12
2002	49	9	0	4.08	12	12	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	31	7	0	2.58	12	12	4	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	12	2	0	1.00	12	11	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	17	4	0	1.42	12	12	2	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	19	8	0	1.58	12	9	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	21	9	0	1.75	12	1	2	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	15	4	0	1.25	12	11	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	8	2	0	0.67	12	12	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	23	7	0	1.92	12	3	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	13	3	0	1.08	12	11	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	22	5	0	1.83	12	10	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	10	3	0	0.91	11	9	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**442**	**32**	**0**	**2.55**	**173**				

4.27

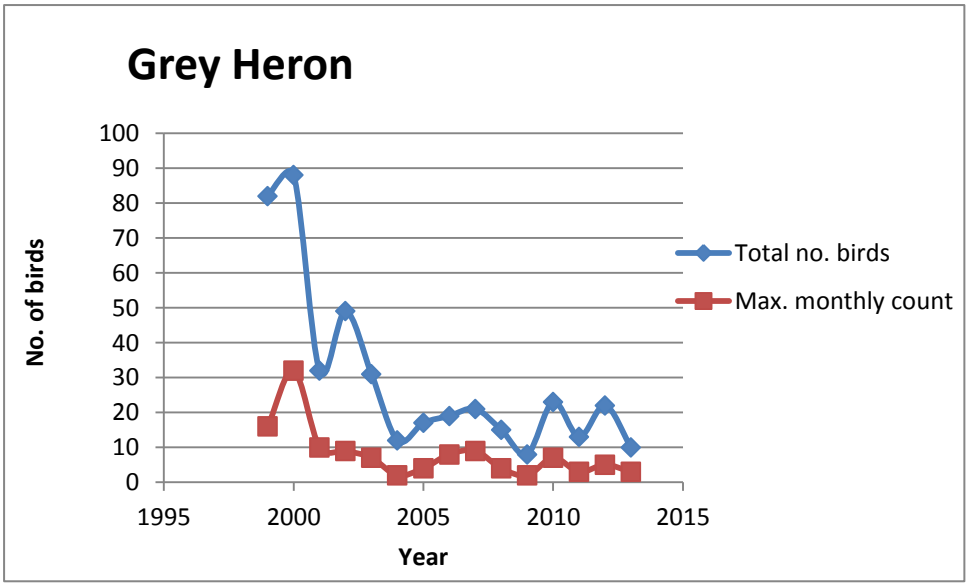


Figure 11 Trends in total numbers of birds and maximum monthly counts-Grey heron

4.28 Nationally important number for grey heron from WeBS is 610 individuals, a figure not reached by any site in the UK. The figures for The Fleet and Wey give a mean peak of 24 individuals for 2007/08-2010/11 with a maximum in March. The DBR figures show that about 60% of the recorded birds from WeBS were on The Fleet and some 35% of these were in the study area where numbers appear to have declined. Overall the WeBS figures have remained stable but have declined on The Fleet and increased at Radipole and Lodmoor.

Summary

4.29 The Fleet is of no more than local importance for grey heron and numbers have declined in recent years. The study area supports about 35% of the birds counted on The Fleet.

Table 120: Grey heron monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	**2008**	**2009**	**2010**	**2011**
January	3	-	2	7	4
February	3	8	1	2	-
March	4	3	3	7	-
April	4	4	5	7	1
May	1	6	6	9	2
June	7	7	6	10	-
July	4	5	5	3	3
August	18	19	11	18	5
September	13	11	10	9	4
October	1	4	5	6	2
November	5	5	7	8	1
December	2	6	7	2	3

Water Rail

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	8	6	0	0.73	12	11	4	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	7	3	0	0.58	12	10	4	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	5	2	0	0.83	6	11	9	0	1,2,9,10,11,12
2002	4	3	0	0.33	12	1	4	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	9	3	0	0.75	12	1	6	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	8	4	0	0.67	12	12	5	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	5	3	0	0.42	12	12	5	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	4	2	0	0.33	12	11	5	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	1	1	0	0.08	12	12	7	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	5	3	0	0.42	12	2	7	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	3	2	0	0.25	12	2	6	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	6	2	0	0.50	12	12	6	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	3	2	0	0.25	12	2	8	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	5	3	0	0.42	12	12	7	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	3	2	0	0.27	11	1	6	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**76**	**6**	**0**	**0.44**	**173**				

4.30

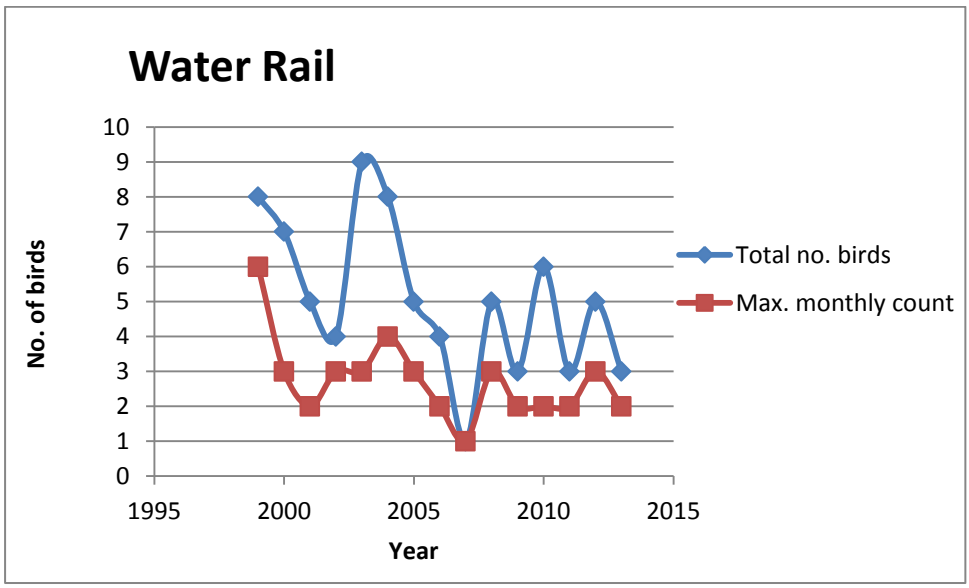


Figure 113: Trends in total numbers of birds and maximum monthly counts-Water rail

4.31 Water rails are such secretive species that recorded numbers are always low and unlikely to represent anything other than a small proportion of the birds that might be present. It is not surprising then that there are no sites which reach the national importance threshold of 527 birds.

4.32 The WeBS figures for Fleet and Wey show an average during 2007/08-2011/12 of 6 birds with a maximum of 11 in 2009/10 and a minimum of 2 in 2007/08. However, figures from the DBRs (Table11) for The Fleet only, show that more birds were recorded in some years than the WeBS counts with a total of 39 by The Fleet during 2007-2011, an average of 7.8 p.a. over the period, and a maximum of 11 in January 2009 (the same figure in the WeBS count) and none recorded in 2011/12. In the study area over fifteen years there were no clear trends with a minimum of 1 and a maximum of 6 and an average of 2.7 p.a. over fifteen years and 2.2 over the last five.

Summary

4.33 Water rails are recorded in low numbers on The Fleet as a whole with between 40-50% of the records coming from the study area. The site is of county importance for this species.

Table 14: Water rail monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	2008	2009	2010	2011
January	1	8	11	4	-
February	-	1	-	1	-
March	-	-	1	3	-
October	-	-	-	1	-
November	-	3			-
December	-	1	2	2	

Moorhen

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	69	15	0	5.75	12	4	6	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	55	8	1	4.58	12	4	6	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	69	30	3	11.50	6	2	9	2	1,2,9,10,11,12
2002	180	30	1	15.00	12	3	6	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	137	35	0	11.42	12	1	5	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	184	28	1	15.33	12	2	7	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	147	24	0	12.25	12	3	5	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	203	40	5	16.92	12	3	5	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	181	30	2	15.08	12	2	5	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	197	30	6	16.42	12	4	5	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	124	30	2	10.33	12	3	9	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	163	31	0	13.58	12	12	6	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	94	20	1	7.83	12	3	6	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	110	16	2	9.17	12	3	5	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	60	12	2	5.45	11	2	5	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**1973**	**40**	**0**	**11.40**	**173**				

4.34

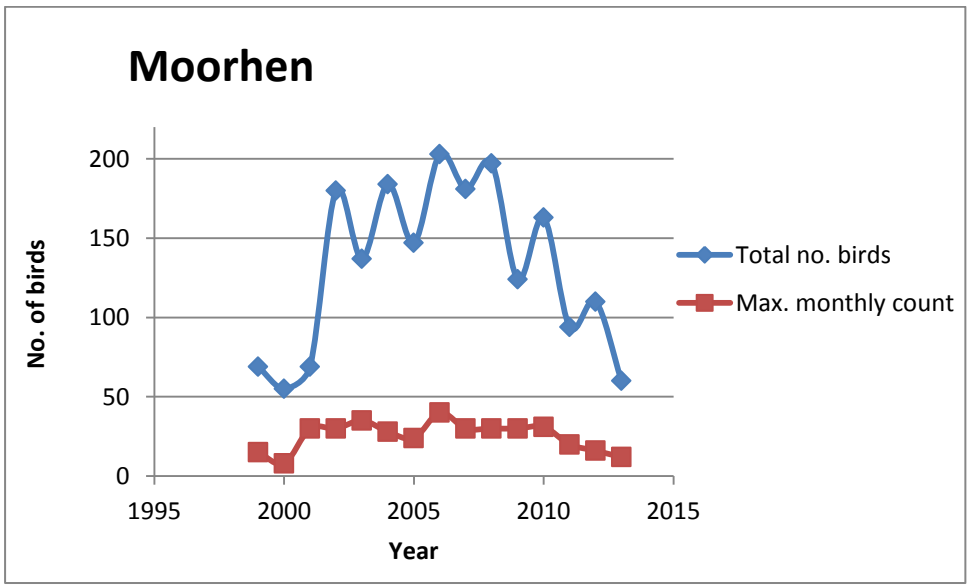


Figure 15: Trends in total numbers of birds and maximum monthly counts-Moorhen

4.35 Moorhen is another species where no site in the UK reaches the national importance threshold of 3,200. On The Fleet and Wey, the five year average is 58 with the highest number 84 in 2008/09 and the lowest 39 in 2011/12. The study area average 2007-2011 was 28 about 50% of the WeBS number with the DBRs (Table12) having similar figures for the whole of The Fleet. Highest numbers are during September-March but with no clear pattern from year to year. This suggests that only about half the numbers in the WeBS count are on The Fleet and most of these are in the study area. The DBRs show similar numbers occurring numbers at both Radipole and Lodmoor.

Summary

4.36 Moorhen numbers on The Fleet are of local (County) importance with most individuals in the study area and higher numbers present during winter but wide fluctuations between years.

Table 16: Moorhen totals monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	**2008**	**2009**	**2010**	**2011**
January	21	20	20	31	18
February	16	25	13	22	7
March	14	23	13	25	8
April	10	9	4	3	4
May	2	7	4	3	7
June	9	6	3	18	7
July	6	10	7	10	1
August	9	9	7	12	2
September	23	27	5	10	6
October	28	16	16	13	1
November	30	21	8	31	2
December	15	30	30	-	13

Coot

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	5347	1500	20	445.58	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	5415	1130	2	451.25	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	2172	830	0	362.00	6	1	1	6	1,2,9,10,11,12
2002	7625	2000	78	635.42	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	5820	1200	90	485.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	8620	1900	65	718.33	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	8165	1560	70	680.42	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	8610	1810	0	717.50	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	6735	1220	96	561.25	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	8340	2125	128	695.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	5180	1660	39	431.67	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	5540	3000	10	461.67	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	7609	3100	80	634.08	12	7	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	3800	1000	23	316.67	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	3371	583	39	306.45	11	1	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**92349**	**3100**	**0**	**533.81**	**173**				

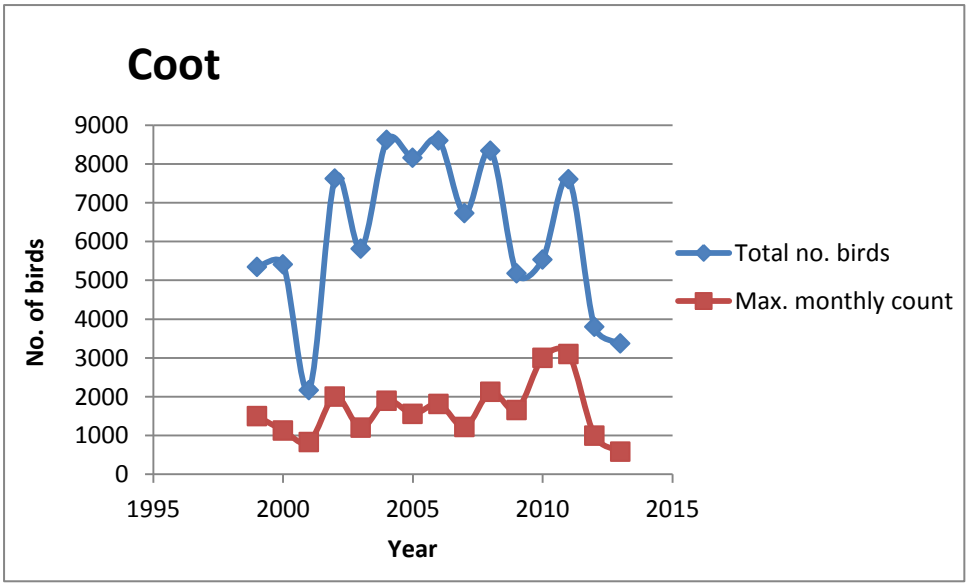


Figure 174: Trends in total numbers of birds and maximum monthly counts-Coot

4.37 The numbers of coot on The Fleet are of national importance with peak counts during 2007/08-2011/12 of 2451 against a threshold of national importance of 1800. Over this period The Fleet held the eleventh largest population of wintering coot in the UK. Removing the figures for Radipole and Lodmoor for the years 2007-2011 (Table13) gives a peak average of 2,542 which is still comfortably above the National Importance threshold.

4.38 The study area has held nearly 90% of the Coots on The Fleet during the five years to 2012 with a maximum count of 3,100 in December 2010 (maximum for The Fleet 3000 according to DBR). Total numbers of wintering birds reached a peak during 2004-2006 and have since declined. Peak counts were highest in 2010/2011 but have fallen away in the last two winters, possibly a reflection of milder weather. Numbers nationally have shown a slight decline since 1999/2000.

Summary

4.39 The Fleet is a nationally important site for wintering coot with the study area holding most of the population. Numbers may have been influenced by hard weather in some winters.

Table 18: Coot totals monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	**2008**	**2009**	**2010**	**2011**
January	1811	1000	1857	1711	3494
February	766	1000	1005	780	2100
March	420	350	442	377	475
April	172	50	125	83	83
May	98	-	39	62	87
June	179	-	85	190	106
July	257	-	271	228	265
August	580	200	612	520	371
September	892	1000	500	570	938
October	1520	2500	638	507	1452
November	910	2000	2200	1166	1552
December	1860	2000	1660	3000	1520

Oystercatcher

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	1	1	0	0.08	12	2	5	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	5	2	0	0.42	12	1	7	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	1	1	0	0.17	6	9	10	2	1,2,9,10,11,12
2002	3	2	0	0.25	12	9	6	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	0	0	0	0.00	12	12	5	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	5	3	0	0.42	12	7	4	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	14	7	0	1.17	12	1	5	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	17	6	0	1.42	12	1	5	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	15	6	0	1.25	12	1	2	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	13	5	0	1.08	12	12	5	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	16	4	0	1.33	12	12	2	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	19	4	0	1.58	12	12	4	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	10	3	0	0.83	12	3	4	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	16	4	0	1.33	12	4	6	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	29	7	0	2.64	11	1	5	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**164**	**7**	**0**	**0.95**	**173**				

4.40

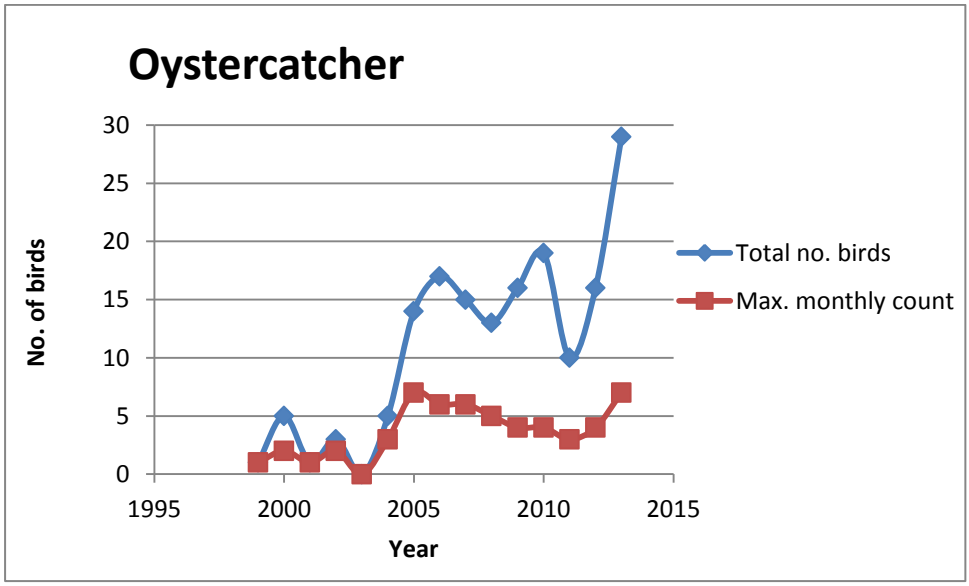


Figure 19: Trends in total numbers of birds and maximum monthly counts-oystercatcher

4.41 Oystercatcher numbers from WeBS show that Fleet and Wey is not a significant site for this species with a five year peak mean of just 76 individuals. Separate numbers for The Fleet are not given in the DBR. Although the trend for the study area is up for both total numbers and peak numbers, the latter is under 10 individuals and the study area is clearly unimportant for this species in the context of The Fleet as a whole, which itself is of only local importance.

Summary

4.42 Oystercatchers occur in low numbers in The Fleet, with very low numbers in the study area.

Ringed Plover

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	6	3	0	0.50	12	9	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	3	2	0	0.25	12	8	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	2	2	0	0.33	6	9	1	5	1,2,9,10,11,12
2002	3	2	0	0.25	12	8	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	4	4	0	0.33	12	8	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	4	2	0	0.33	12	9	1	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	8	6	0	0.67	12	5	1	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	4	2	0	0.33	12	5	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	0	0	0	0.00	12	5	1	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	4	2	0	0.33	12	7	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	4	2	0	0.33	12	12	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	3	2	0	0.25	12	12	1	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	1	1	0	0.08	12	5	1	8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	0	0	0	0.00	12	2	1	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	2	2	0	0.18	11	7	2	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**48**	**6**	**0**	**0.28**	**173**				

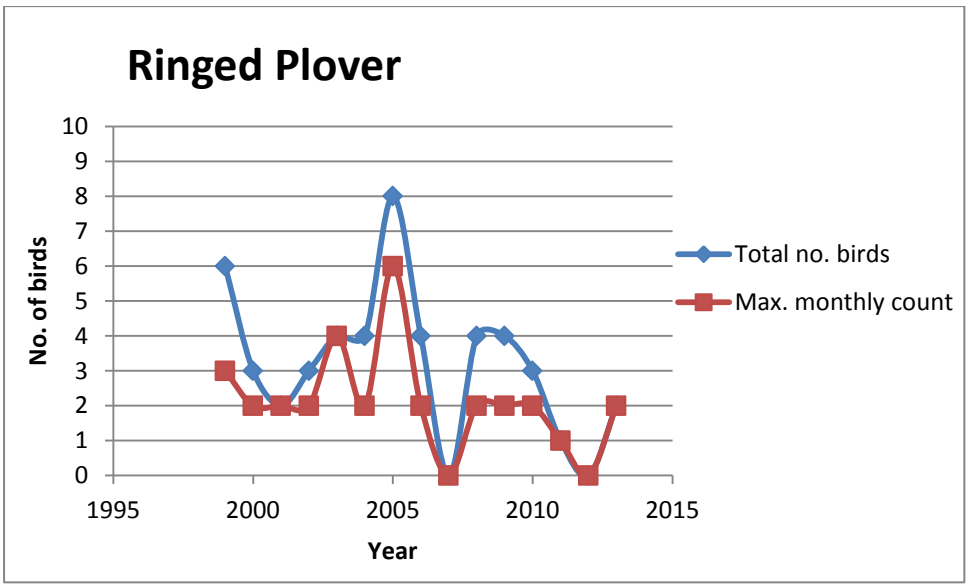


Figure 16: Trends in total numbers of birds and maximum monthly counts-Ringed plover

4.43 The WeBS data for Chesil Fleet shows an average peak wintering population of 92 during 2007/08-2011/12 with a peak of 125 in 2007/08. This gives some context to the figures for the study area where the maximum figure from the WeBS count was 2 in 2008. Peak wintering numbers on the study area during 2008-2012 were just 2.6% of those recorded for The Fleet as a whole. There has been a marked downward trend in WeBS peaks for The Fleet from 125 birds in 2007/08 to 47 in 2011/12 but numbers are too low on the study area to detect whether numbers are also declining here although it is probable. There has been a national decline in numbers of Ringed plover of -44% over 25 years and -37% over ten years to 2011 (Austin, GE et al. 2014). Peak numbers from the DBR show August and September are the months with the highest numbers presumably reflecting passage birds moving through to winter further south. There is no clear indication as to whereabouts on The Fleet these records were made.

4.44 As a breeding species, Ringed plover are confined to the beach, and although there are no records on the DERC database, the DBRs indicate that there has been a huge decline from 100 pairs on Chesil beach in 1967 to 2 pairs in 2008. In that year there were only 7 pairs in the whole of Dorset. The DBR for 2008 notes "As a beach nester this species has become an obvious victim of increasing disturbance by people and dogs", a picture that is repeated nationally. The national survey in 2007 (Conway, GJ et al. 2008) found an overall decrease in UK population of around 37% since 1984. The report notes "plovers that choose beaches for nesting are especially vulnerable to disturbance". Prater (1989) noted in southern and eastern England that most plovers bred in protected areas. Human usage of beach areas severely restricts the availability of this habitat to nesting plovers (Liley & Sutherland 2007).

Table 14 Ringed plover monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
Wintering	2007	2008	2009	2010	2011
January	55	72	66	59	51
February	25	50	50	30	40
March	36	50	35	40	30
April	32	70	35	35	15
May	20	51	40	25	29
June	20	10	20	10	10
July	35	66	40	48	26
August	300	190	175	170	150
September	75	130	122	150	140
October	69	60	71	78	50
November	65	68	55	51	44
December	64	54	54	25	50

Lapwing

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	615	170	0	51.25	12	8	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	876	300	0	73.00	12	8	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	753	400	27	125.50	6	9	1	5	1,2,9,10,11,12
2002	1254	550	0	104.50	12	5	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	924	334	0	77.00	12	7	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	690	300	0	57.50	12	7	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	1007	450	0	83.92	12	5	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	1613	520	0	134.42	12	8	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	453	200	0	37.75	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	2196	650	0	183.00	12	4	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	1872	1200	0	156.00	12	8	2	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	566	275	0	47.17	12	7	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	343	180	0	28.58	12	9	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	974	435	0	81.17	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	345	280	0	31.36	11	9	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**14481**	**1200**	**0**	**83.71**	**173**				

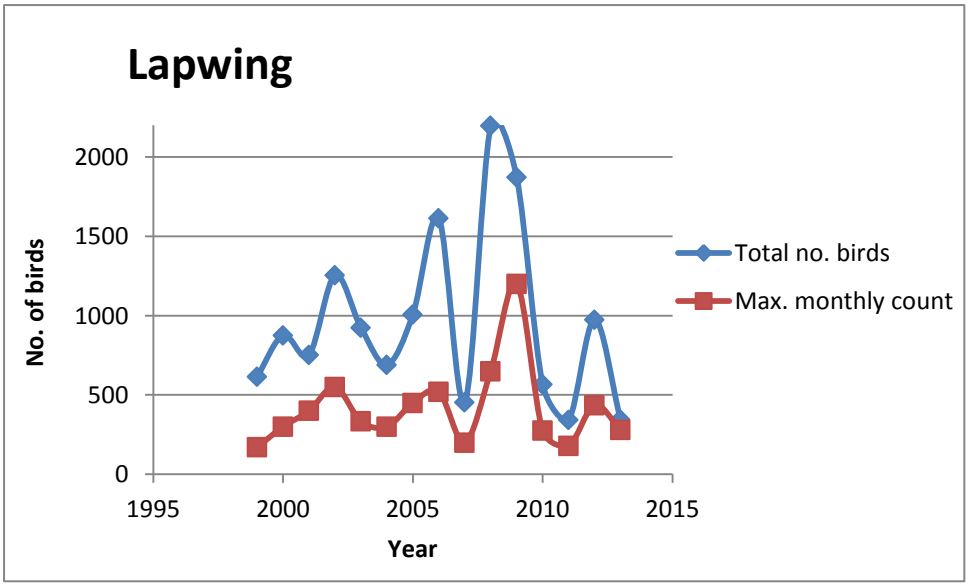


Figure 20: Trends in total numbers of birds and maximum monthly counts-lapwing

4.45 The WeBS average peak for Lapwing for The Fleet and Wey 2007/08-2011/112 was 863, a small number in comparison with the best sites and far below the national important threshold of 6,200. Figures from the DBR show an average peak for 2007-2011 of 1,149, suggesting that most birds were on or around The Fleet and that an occasional high count can influence the overall numbers. The DBR count of 3,000 in January 2010 was not included in the WeBS data presumably as was not on an official count day. However the changes in numbers also reflect the tendency of this species to respond rapidly to winter weather with cold weather movements. What is also striking is the rapid disappearance of birds by March and a rapid increase from October. It is not known if the absence of data for some winter months reflects an absence of birds or an absence of observer records.

4.46 On the study area numbers have declined over the last five years reflecting declines of wintering birds in Dorset and nationally (Andrews, 2007) (Calbrade et al. 2010). During 2007-2011 the average winter peak was 501, about 40-45% of The Fleet populations. It seems probable that the numbers recorded also reflects the type and distribution of crops to the north of The Fleet, where birds are likely to roost and rest during daytime.

Summary

4.47 Lapwings occur in relatively small numbers around The Fleet where, in common with other areas, numbers have declined. Occasional larger flocks can reflect hard weather movements. Overall The Fleet and study area of local importance for this species.

Table 15: Lapwing monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	**2008**	**2009**	**2010**	**2011**
January	226	616	1373	3000	28
February	-	642	147	565	-
March	-	4	1	-	-
April	-	3	-	-	-
May	-	-	-	-	-
June	-	6	-	4	1
July	2	3	-	4	3
August	4	4	413	-	3
September	3	-	-	67	10
October	324	79	-	350	40
November	140	250	-	459	134
December	60	650	-		400

Dunlin

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	9	3	0	0.75	12	10	6	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	23	16	0	1.92	12	3	5	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	22	22	0	3.67	6	10	11	0	1,2 ,9, 10, 11,12
2002	50	31	0	4.17	12	12	5	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	9	7	0	0.75	12	1	5	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	33	20	0	2.75	12	10	5	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	151	110	0	12.58	12	2	4	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	46	39	0	3.83	12	2	5	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	89	58	0	7.42	12	10	1	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	9	3	0	0.75	12	2	5	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	68	30	0	5.67	12	11	2	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	10	5	0	0.83	12	11	3	7	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	169	150	0	14.08	12	10	4	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	99	48	0	8.25	12	11	4	6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	64	32	0	5.82	11	11	5	4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**851**	**150**	**0**	**4.92**	**173**				

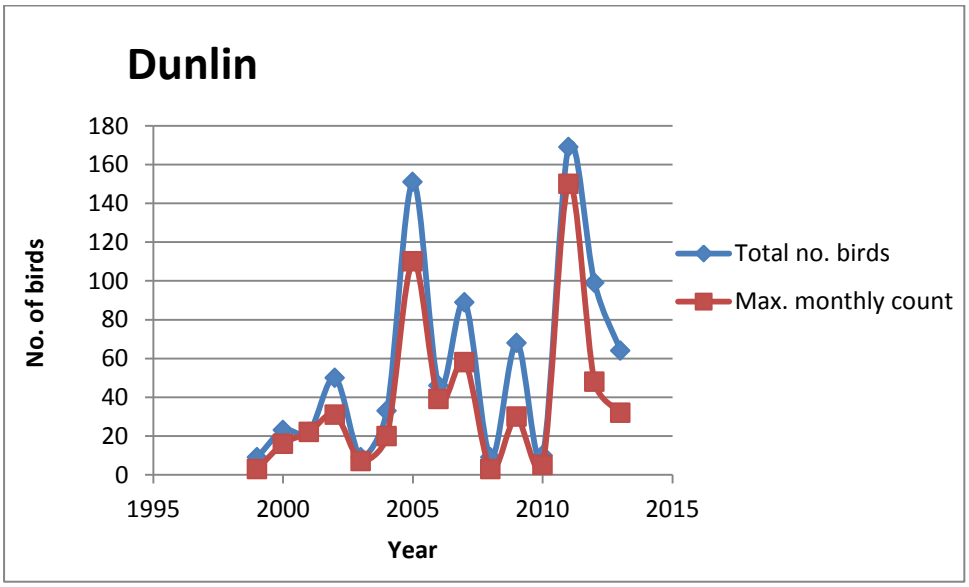


Figure 21: Trends in total numbers of birds and maximum monthly counts-Dunlin

4.48 The national threshold for this species is 3,500 individuals. The WeBS figure for The Fleet and Wey falls well short of this with a mean peak for 2007/08-20111/12 of 337. Practically all these birds are found on The Fleet as the DBR figures, which presumably include some high supplementary counts not available in WeBS give a mean peak for 2007-2011 of 357. Over the same period the mean peak for the study area is 49, just 14% of The Fleet as a whole. There is no obvious trend for this species either from The Fleet and Wey WeBS or The Fleet alone, where peak numbers can occur both in summer and winter. Nationally Dunlin reached their lowest ever numbers in 2008/09 but have since shown a slight recovery. Over a ten year period to 2010/11 dunlin have shown a decline of 22%.

Summary

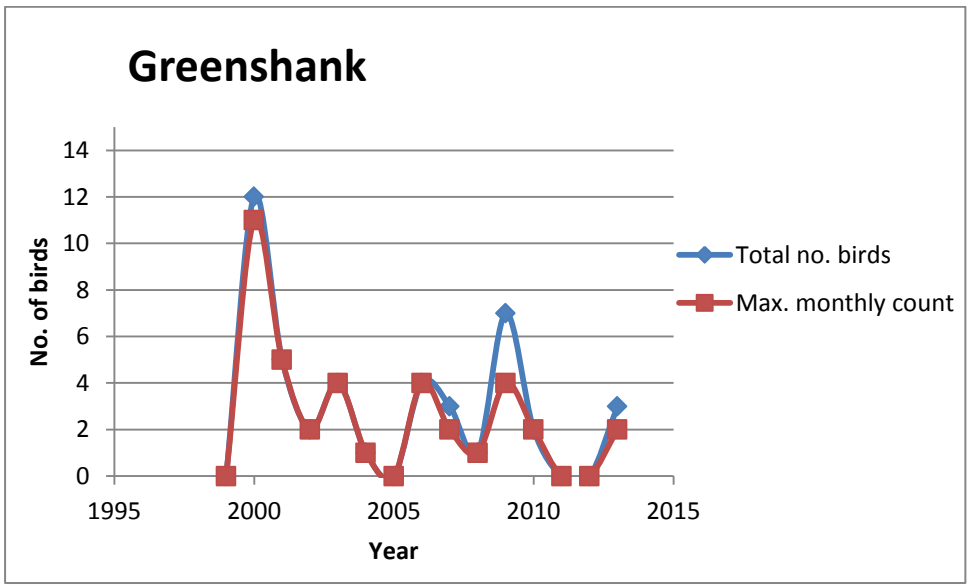
4.49 Dunlins occur in modest numbers on The Fleet with a small proportion in the study area. The national fluctuations do not seem to be replicated here, at least in recent years.

Table 22: Dunlin totals monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	**2008**	**2009**	**2010**	**2011**
January	142	160	280	151	200
February	150	200	114	100	100
March	150	175	100	130	100
April	50	70	30	20	20
May	450	100	70	54	474
June	20	41	10	13	15
July	90	35	30	106	70
August	220	340	137	101	100
September	196	59	80	70	50
October	60	50	103	16	50
November	135	50	20	72	35
December	200	200	140	240	85

Greenshank

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	12	11	0	1.00	12	8	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	5	5	0	0.83	6	9	1	5	1,2,9,10,11,12
2002	2	2	0	0.17	12	7	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	4	4	0	0.33	12	8	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	1	1	0	0.08	12	5	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	4	4	0	0.33	12	8	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	3	2	0	0.25	12	8	1	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	1	1	0	0.08	12	8	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	7	4	0	0.58	12	8	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	2	2	0	0.17	12	8	1	11	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	0	0	0	0.00	12	1	1	12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	3	2	0	0.27	11	8	1	9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**44**	**11**	**0**	**0.25**	**173**				



4.50

Figure 19: Trends in total numbers of birds and maximum monthly counts-Greenshank

4.51 Greenshank are generally passage migrants with numbers passing through in April and May and the peak month for the return migration in August. The threshold for nationally important numbers is just six. The five year WeBS mean in The Fleet as a whole for 2007/08-2011/12 was 2 and for the study area for the last five years 1.6. However, with seven birds recorded on August 14th 2009 at Rodden Hive (DBR) the study area is clearly important in a local context. The DBR notes 4 at Abbotsbury in August 2009 and 1-5 in spring 2011.

Summary

4.52 Greenshank occur on passage in late summer in small numbers. The study area is important for this species within The Fleet in spring and summer.

Redshank

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	7	4	0	0.58	12	4	1	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	26	9	0	2.17	12	4	9	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	6	2	0	1.00	6	2	9	2	1,2,9,10,11,12
2002	39	15	0	3.25	12	4	7	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	20	7	0	1.67	12	4	10	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	16	4	0	1.33	12	4	9	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	27	8	0	2.25	12	5	8	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	12	4	0	1.00	12	5	10	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	6	2	0	0.50	12	6	9	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	15	6	0	1.25	12	4	7	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	21	8	0	1.75	12	2	9	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	41	10	0	3.42	12	3	8	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	21	7	0	1.75	12	4	9	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	22	6	0	1.83	12	4	10	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	32	8	0	2.91	11	5	10	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**311**	**15**	**0**	**1.80**	**173**				

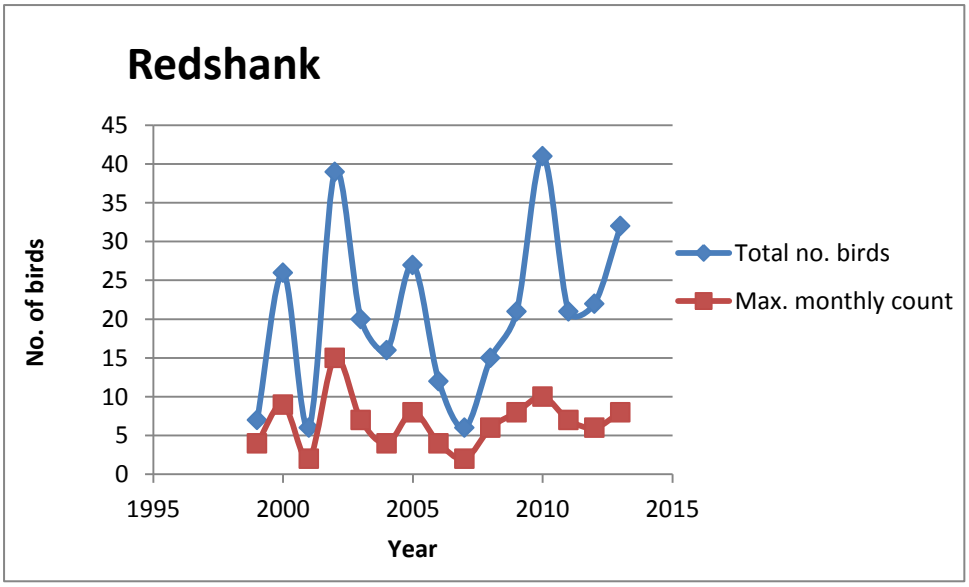


Figure 230: Trends in total numbers of birds and maximum monthly counts-Redshank

4.53 Average WeBS peak number for The Fleet and Wey 2007/08-2011/12 was 52, far below the threshold figure for national importance of 1,200. Largest numbers were in December. The figures from the DBRs were for The Fleet 2007 and 2008 but for The Fleet/Ferry Bridge for the following years which seems to be reflected mainly in the higher figures for summer. Mean peak number for 2007-2011 was 79 of which about 10% were recorded in the study area. Peak numbers were in early autumn and late winter suggesting an autumn passage with wintering numbers reinforced by spring migrants. There appears to be no strong trend for either The Fleet or study area although nationally, wintering redshank declined by 24% during 2000/01-2010/11 (Austin, GE et al. 2014)

Summary

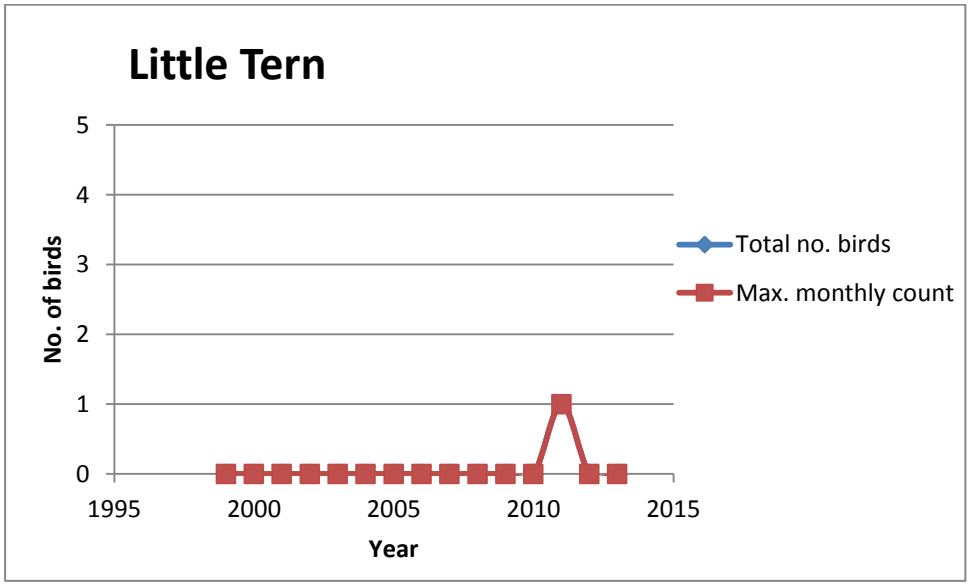
4.54 Numbers of Redshank migrating and wintering on The Fleet are low and the study area contributes very low numbers to The Fleet population.

Table 24: Redshank monthly maximum totals by year for The Fleet (from DBRs).

		Site Max			
	2007	**2008**	**2009**	**2010**	**2011**
January	17	24	35	25	60
February	31	45	49	45	50
March	10	36	41	70	50
April	-	-	18	22	6
May	-	-	9	1	-
June	-	-	25	2	2
July	-	-	9	2	-
August	5	27	2	7	1
September	3	-	2	-	116
October	113	-	2	25	26
November	40	22	6	45	40
December	25	45	50	40	35

Little Tern

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	0	0	0	0.00	12	12	11	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	0	0	0	0.00	12	12	1	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	0	0	0	0.00	6	10	12	1	1,2,9,10,11,12
2002	0	0	0	0.00	12	12	4	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	0	0	0	0.00	12	11	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	0	0	0	0.00	12	12	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	0	0	0	0.00	12	11	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	0	0	0	0.00	12	1	6	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	0	0	0	0.00	12	1	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	0	0	0	0.00	12	12	6	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	0	0	0	0.00	12	12	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	0	0	0	0.00	12	12	1	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	1	1	0	0.08	12	1	4	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	0	0	0	0.00	12	12	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	0	0	0	0.00	11	1	5	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**1**	**1**	**0**	**0.01**	**173**				



4.55

Figure 21: Trends in total numbers of birds and maximum monthly counts-Little tern

4.56 Little terns are summer migrants nesting on bare sand or shingle on coastal sites. They are very susceptible to human disturbance and predation (Lloyd, Bibby & Everett 1975; Mavor et al. 2003) and many sites, including Chesil Beach, are protected during the breeding season. The last national census in 1998-2002 estimated a total population for Britain and Ireland of 2,153 pairs in 1998-2002, a decline of 25% since the previous census in 1984-88 (Mitchell et al. 2004). On Chesil Beach, which is the only regular breeding site for little terns in SW England, numbers have been counted at least as far back as the National census of seabirds in 1969/70 when there were 120 pairs. National census numbers in 1998-2002 were 81 pairs, but subsequent declines resulted in no breeding in 2009. Since then, numbers have climbed to 12 in 2010, 18 in 2011, 21 in 2012 and 25 in 2013 with productivity per pair in that year of 1.2 chicks in nests surviving to fledge. The terns forage mostly over the sea. There is just a single record of foraging in the study area which is clearly unimportant for this species.

Common Tern

Year	Total no. birds	Max. monthly count	Min. monthly count	Mean count	No. of months surveyed	Peak month	Month with lowest count (first month only where several)	No. months with zero count	Months surveyed
1999	36	14	0	3.00	12	12	4	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2000	37	18	0	3.08	12	1	5	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2001	0	0	0	0.00	6	12	2	0	1,2,9,10,11,12
2002	91	30	0	7.58	12	1	5	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2003	83	22	0	6.92	12	2	5	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2004	162	50	0	13.50	12	12	3	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2005	146	50	0	12.17	12	2	5	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2006	176	70	0	14.67	12	4	5	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2007	101	35	0	8.42	12	12	5	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2008	55	55	0	4.58	12	2	5	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2009	85	41	0	7.08	12	2	5	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2010	61	28	0	5.08	12	12	5	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2011	15	8	0	1.25	12	1	4	5	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2012	33	23	0	2.75	12	2	5	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
2013	197	100	0	17.91	11	2	5	2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,
Total	**1278**	**100**	**0**	**7.39**	**173**				

4.57

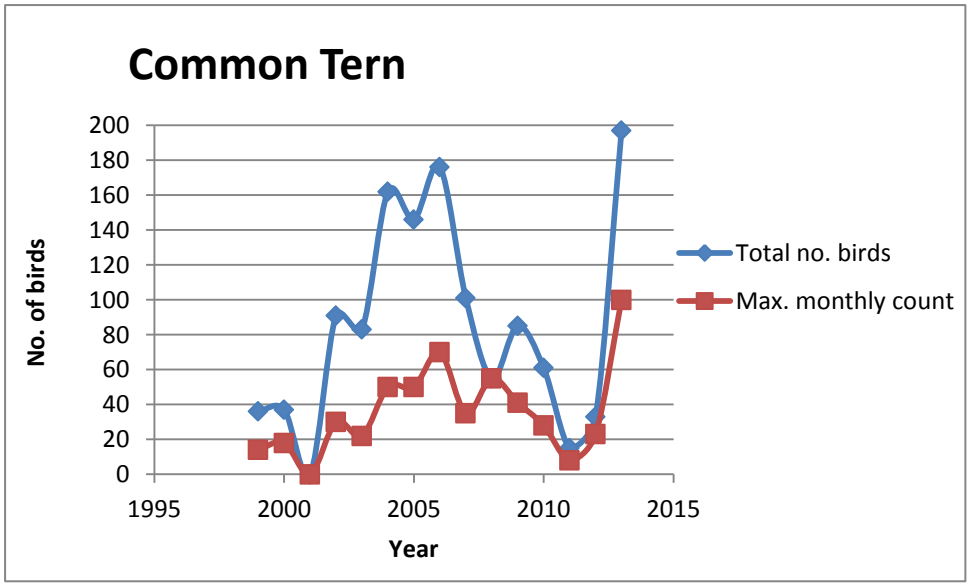


Figure 252: Trends in total numbers of birds and maximum monthly counts-Common tern

4.58 Common terns are summer visitors breeding at two locations locally, on an island at Abbotsbury and on shingle islands at Lodmoor. The other main breeding site in Dorset is Brownsea Island in Poole Harbour. Lodmoor was first colonised in 1996 with six pairs and has been a thriving colony since except for 2013 when for some reason, possibly associated with disturbance of predation, the whole colony deserted their nests, many with eggs. At Abbotsbury, the birds were also unsuccessful in 2008, 2009 and 2011 but there are no clear reasons given for this in the DBRs.

Table 18. Numbers of breeding Common terns at Abbotsbury and Lodmoor with fledged young in parenthesis

Breeding common terns	2007	2008	2009	2010	2011	2012	2013
Abbotsbury	30-35 (55)	25 (nil)	10 (nil)	15-20 (30-40)	5-10 (nil)	?	?
Lodmoor	60 (70)	40-45 (80-90)	65 (c80)	? (130)	75 (>113)	80 (20)	62 (nil)

5. Summary for all species

5.1 An assessment of the status of the birds wintering, on passage and breeding on Chesil Beach and The Fleet and the status of that part of the population found within the study area is given in Table19. Populations of wintering species in the study area are assessed as making a significant contribution to the international or national importance of The Fleet if they constitute 80% or more of the population of The Fleet as a whole. The study area has been assessed as making a significant contribution to the regional importance of The Fleet where it holds c 30% or more of the population for which The Fleet is within the top ten sites in the south-west, based on mean peak figures (the figure for red-breasted merganser is just under 30% but has been included as this is the most important site, with Portland Harbour for this species in the UK). The Fleet has been considered as of local (county) importance where it is one of the top five sites in the county and the study area as making a significant contribution to this if it holds over 30% of The Fleet population.

Table 19. The status of wintering and breeding bird species on The Fleet and in the Study Area

Species status for The Fleet	Significant contribution from the study area				
	International importance	National importance	Regional importance	Local importance	Not significant
WINTERING					
International					
Dark-bellied Brent					√
National					
Mute Swan		√			
Pochard		√			
R-B merganser			√		
Little egret			√		
Coot		√			
Regional					
Wigeon					√
Gadwall				√	
Shoveler			√		
Ringed plover					√
Local					
Shelduck				√	
G-C grebe				√	
Grey heron					√
Moorhen				√	
Oystercatcher					√
Lapwing				√	
Dunlin					√
Redshank					√
Not significant					
Water rail					√
PASSAGE					
Greenshank				√	

BREEDING					
National					
Mute Swan		√			
Regional					
Ringed plover					√
Little tern					√
Common tern				√	

5.2 What is clear from Table 19 is that The Fleet is only of local importance for wintering and passage waders and that apart from Lapwing and greenshank (on passage), the study area is of little significance for this group of species. The study area makes a significant contribution to the local importance of The Fleet for a range of other species including shelduck, great-crested grebe, moorhen, wigeon and gadwall, although The Fleet is also of regional importance for the last two.

5.3 The study area makes a significant contribution however to the national importance of The Fleet for the populations of wintering mute swans, pochard and coot as it holds the majority of the populations of these species found on The Fleet, and also makes a significant contribution to the regionally important populations of red-breasted merganser, little egret and shoveler.

5.4 A number of species have not been included in the main species accounts. These are listed in Appendix 1 with details from the latest bird reports for 2009, 2010 and 2011. In most cases the records refer to The Fleet but no specific locations are given. However it is probable that most records of reedbed species come from the study area which holds the largest extent of reedbed on The Fleet.

6. Evidence in the local literature of disturbance

6.1 Despite an exhaustive search, little could be found in the literature on bird disturbance and The Fleet. We could find no disturbance studies, and the references we were able to examine were largely expressions of opinion without empirical evidence.

6.2 Whilst there is believed to be a link between the decline of little terns and ringed plovers on Chesil Bank and human disturbance, and steps have been taken through wardening schemes to safeguard the birds, no links have been established between population fluctuations of wildfowl and waders on The Fleet and human activity.

6.3 The following section therefore details those references to disturbance in the local literature (and there may well be further references in the material held by Don Moxom), which suggest that there is a consensus among informed individuals and organisations that the present arrangements for a closed section of The Fleet should be retained.

6.4 The Heritage Coast Path runs along the inland edge of much of The Fleet and is used all year round by walkers and bird watchers. The Fleet and Chesil Beach are used for research and survey by academics and others. There are moorings in The Fleet and fishermen cross it to get

to the beach at several points. Parts of The Fleet are used for swimming, windsurfing, kite surfing and sailing, the waters are used for diving, shell fish cultivation and fishing and there is some bait digging and wildfowl shooting, (although no up-to-date information as to whether this latter activity still takes place) (JNCC 2008).

6.0 There is considerable recreational pressure at Ferry Bridge and increasing recreational pressure, particularly from waterborne sports in Portland Harbour with the potential for this to spill over into The Fleet(JNCC 2006).

6.1 Apart from Leisure activities, there are a number of references to disturbance from military activities and the use of helicopters to the birds of The Fleet but these are not quantified or identified specifically to area (Moxom, 1994)(Armitage *et al.* 2002).

6.2 In the 1970s a report on the recreational issues affecting The Fleet (Sturdy 1972) recognised that public access to The Fleet was poor, that this limited its recreation potential and that this was considered one of the principal factors that had safeguarded the high visual quality of the area in the past. Locals used the area for boating, picnicking, fishing and walking and there had been recent growth in sub-aqua diving, water skiing and power boating although it was not clear whether all these activities took place on The Fleet or on the sea nearby. However, the author also noted that "The Strangeway Estate extends over much of the western half (of The Fleet) and trespass by the public is strongly discouraged. There are few public footpaths in this area".

6.3 The report further noted that activities at the time in the area included: caravanning, camping, picnicking, boating, swimming, angling, sub-aqua, riding, rambling, wildfowl and game shooting, natural history, dancing, historic buildings, swannery and gardens.

6.4 A later report by local councils and the Countryside Commission (Townley *et al.* 1996) noted that "*In recognition of the outstanding wildlife value of the Western Fleet and the need to avoid disturbance, the coast path diverges from the shoreline from Rodden Hive westwards, to re-join the coast at Abbotsbury Beach",* although it went on *"Paradoxically, some traditional activities continue in the Western Fleet in the form of fyke (eel) netting, launching of mackerel boats on the seaward face of Chesil Bank and wildfowling".* They also noted that *"The rare wildlife of The Fleet and Chesil……depend on a number of factors. These include avoiding excessive disturbance".*

6.5 In a report summarising the responses to the consultation (Le Pard 1996) under balancing provision for visitors with needs of conservation and local communities, 36% of respondent individuals did not think any further provision should be made for tourists and most organisations who responded (n=8) were opposed to an increase in visitor numbers. Under safeguarding and improving the health of The Fleet and Chesil Beach, from 63 individual respondents, typical comments included promote walks, 25% felt the main activity requiring control was farming, 5% felt access should be restricted as "*footpath access only"* or "*restrict access to sensitive areas".* The buffer zone around The Fleet was supported specifically by the South-West Way Association, English nature, Dorset Wildlife Trust and Dorset Association for the Disabled.

6.6 The Chesil management Scheme Newsletter No. 3 in February 1985 mentions erection of a fence on Chesil Beach to protect terns' nesting area because of inconsiderate walkers, and there is a considerable literature on disturbance of beach nesting terns generally. However, no references could be found to disturbance to the nesting common terns on the island at Abbotsbury which is the only tern nesting area in the study area.

6.7 In a much later paper Moxom (2012)asks the public to observe restrictions on access by not walking on the inner flank of Chesil Bank as this "*prevents disturbance to significant populations of waterbirds such as Brent geese and wigeon that migrate to The Fleet to join the swans for the winter".* A map accompanying the text shows the length of Chesil Bank between Rodden Hive and Abbotsbury as *"Winter access on crest and inner flank strictly prohibited"* with the length to the south of Rodden Hive to the Crown Estate boundary as *"Winter access along the inner flanks of beach discouraged".*

6.8 The Chesil Bank and The Fleet Management Plan 1999-2004 states "*Pressure continues to be exerted to move the S-W Coastal Path nearer The Fleet at N-W end. Ilchester Estate and various wildlife agencies continue to oppose such a move. It is suggested that considering the size of The Fleet, existing access is more than adequate. The issue was tested at public inquiry in 1980 and the Secretary of State accepted that the current access is appropriate. As already stated, much of the character and wildlife value of the area is due to its remoteness and lack of public access".* A further comment is that *"walkers currently outside footpaths are not encouraged along shore".*

6.9 Given the paucity of evidence on the potential for disturbance to wintering and passage birds on The Fleet from local sources, it is instructive to turn to the more general literature on disturbance to waterfowl outlined in the next section.

7. Brief review of waterbird disturbance in the literature

7.1 There is a huge literature on disturbance effects of various human activities on birds with a plethora of published papers particularly since the 1980s. Much of this work has concentrated on the effects of disturbance on bird behaviour, but it is more difficult to identify circumstances where such disturbance has implications for population levels (Drewitt 2007). Moreover, bird responses may reflect the condition of the bird rather than its vulnerability to disturbance (Gill 2007). For example, a well fed bird may fly away from a potential predator (an approaching human) at a greater distance than a poorly fed bird which continues to feed until the last possible moment. Much of the research data on this subject has been summarised in Kirby et. al. (2004), from which part of this summary has been derived.

7.2 The number and distribution of birds at a site such as The Fleet can be affected by the prevailing weather, salinity levels, the availability and extent of food supplies, the state of the tides, pollution incidents, predation and disturbance. For migratory species, weather conditions and food supplies sometimes hundreds of miles away can affect their numbers and distribution and the timing of their arrival. Therefore the assessment of the part played by disturbance is not straightforward.

7.3 Factors that might affect disturbance include distance from the disturbance source (Blumstein *et al.* 2005; Laursen, Kahlert & Frikke 2005; Rees, Bruce & White 2005) and the type and intensity of the disturbance event (Fox & Madsen 1997; Coleman, Salmon & Hawkins 2003; Beale & Monaghan 2004; Rees, Bruce & White 2005),

7.4 Disturbance can affect the distribution and numbers of waterbirds, their feeding rates and alert behaviour, their energy intakes and expenditures, where they feed and the food they choose, flock size and composition, and movements on the water or flight (Korschgen & Dahlgren 1992; Riddington *et al.* 1996; Plateeuw & Henkens 1998), (Taylor & Knight 2003; Laursen, Kahlert & Frikke 2005; Rees, Bruce & White 2005), (Coleman, Salmon & Hawkins 2003). Birds may also suffer physiological stress without behavioural responses being apparent (Plateeuw & Henkens 1998, Beale & Monaghan 2004). Different factors may also interact in the decisions that birds make, for example where to feed in relation to food resources when assessing the relative risks of disturbance and predation (Yasué 2005; Yasue 2006).

7.5 A number of studies have drawn attention to the widespread potential for disturbance to waterbirds and protected sites both at a UK and European level, with disturbance having the capacity to increase the effects of habitat loss and fragmentation (Tucker & Heath 1994; Hill *et al.* 1997).

7.6 No assessment of the current forms of disturbance on The Fleet has been undertaken, but likely forms of disturbance include walkers, birdwatchers, dog walkers and game shooting on the landward side of The Fleet (and some of the former on the seaward side) as well as fishing, boating and other forms of waterborne recreation. It is also important to recognise that some of these activities will take place simultaneously in the same or adjacent areas resulting in cumulative effects, and that the effects of different forms of activity can impact in on individual species or even the same species under altered circumstances in different ways.

7.7 It is also important to note that birds can become habituated to some forms of disturbance, or conversely can facilitate to disturbance by showing a heightened response (Kirby *et al.* 2004; Rees, Bruce & White 2005; Moller 2008). Habituation can occur where disturbance is at a low level and either continuous or predictable, although some studies have shown that there can still be affects which are not immediately obvious. Noise from traffic and other human activities is a good example where many studies have shown indirect effects on species richness, density, abundance and breeding success (summarised in (Kociolek *et al.* 2011).

7.8 On The Fleet, as on other water bodies, disturbance that causes birds to fly away may have energetic consequences, particularly in hard winter weather, but may also be compensated for by the birds feeding elsewhere or at different times (during the night, for example) or moving to another less disturbed site (Radipole or Lodmoor). However, such movements may result in the birds moving to poorer feeding sites, less favourable roost sites (more exposed to weather or at greater risk from predators for example) or to other sites where disturbance is also a problem (a distinct possibility at Radipole).

7.9 Most studies of disturbance from casual recreation (walking, dog walking, bird-watching, swimming for example) have been concerned with breeding birds, and such disturbance seems

to have been a features of the decline of nesting ringed plover and the former decline of little terns on Chesil Bank (Dorset Bird Reports). A study in Holland showed that most recreational activity is concentrated in the spring and summer with lower level of use during November-March. Disturbance effects were therefore most noticeable in late spring and early autumn, important times of years for wintering and passage birds arriving and leaving or passing through, and in the autumn an important time when some species of waterbird are moulting. The study showed that birds avoided the most heavily used areas for recreation (Plateeuw & Henkens 1997).

7.10 UK studies have shown disturbance effects during the winter to roosts and feeding birds (Mitchell, Moser & Kirby 1988; Goss-Custard & Verboven 1993; Mathers, Watson & Montgomery 2000) (Navedo & Herrera 2012). Other studies have shown that the numbers and distribution of some species changes at weekends when recreational pressure is general higher (Kirby, Clee & Seager 1993; Liley, Pickess & Underhill-day 2006).

7.11 A measure frequently used to assess the vulnerability of a species to disturbance is the distance at which they fly away as the cause of disturbance approaches. This approach has been used in a number of studies on a wide range of waterbird species (e.g (Cooke 1980; Watmough 1983a; b; Smit & Visser 1993). In some studies, the distance birds fly away from a disturbance source has been combined with measurements of the time it takes them to return (Bregnballe *et al.* 2009).

8. References

8.1 Andrews,, M. (Ed). (2007) *Dorset Bird Report 2007*. Dorset Bird Club, Dorset.

8.2 Armitage, M.J.S., Burton, N.H.K., Atkinson, P.W., Austin, G.E., Clark, N.A., Mellanby, H.J. & Rehfisch, M.M. (2002) *Reviewing the Impact of Agency Permissions and Activities on Bird Populations in Special Protection Areas: Level 1 Interpretation*. BTO Research Report, BTO, Thetford.

8.3 Austin, GE, Read, WJ, Calbrade, NA, Mellan, HJ, Musgrove, AJ, Skellorn, W, Hearn, RD, Stroud, DA, Wotton, SR & Holt, CA. (2014) *Waterbirds in the UK 2011/2012: The Wetland Bird Survey*. BTO, RSPB and JNCC in association with WWT, Thetford.

8.4 Beale, C.M. & Monaghan, P. (2004) Behavioural responses to human disturbance: a matter of choice? *Anim. Behav.*, **68**, 1065–1069.

8.5 Blumstein, D.T., Fernández-Juricic, E., Zollner, P.A. & Garity, S.C. (2005) Inter-specific variation in avian responses to human disturbance. *Journal of Applied Ecology*, **42**, 943–953.

8.6 Bregnballe, T., Speich, C., Horsten, A. & Fox, A.D. (2009) An experimental study of numerical and behavioural responses of spring staging dabbling ducks to human pedestrian disturbance. *Wildfowl*, **Special Issue 2**, 131–142.

8.7 Calbrade, N.A., Holt, C.A., Austin, G.E., Mellan, H.J., Hearn, R., Stroud, D., Wotton, S. & Musgrove, A.J. (2010) *Waterbirds in the UK 2008/09: The Wetland Bird Survey*. BTO/RSPB/JNCC.

8.8 Coleman, R.A., Salmon, N.A. & Hawkins, S.J. (2003) Sub-dispersive human disturbance of foraging oystercatchers Haematopus ostralegus. *Ardea*, **91**, 263–268.

8.9 Conway, GJ, Burton, NHK, Handschuh, M & Austin, GE. (2008) *The UK Population Estimates from the 2007 Breeding Little Ringed Plover and Ringed Plover Surveys*. BTO Research Report, BTO, Thetford.

8.10 Cook, A.S.C.., Barimore, C., Holt, C.A., Read, W.J. & Austin, G.E. (2013) *Changes in Numbers of Wintering Waterbirds in the Constituent Countries of the United Kingdom, Special Protection Areas (SPAs) and Sites of Specific Scientific Interest (SSSIs)*. BTO Research Report, BTO, Thetford, Norfolk.

8.11 Cooke, A.S. (1980) Observation on how close certain passerine species will tolerate an approaching human in rural and suburban areas. *Biological Conservation*, **18**, 85–88.

8.12 Drewitt, A.L. (2007) Birds and Recreational Disturbance. *Ibis*, **149**, 1–2.

8.13 Fox, A.D. & Madsen, J. (1997) Behavioural and distributional effects of hunting disturbance on waterbirds in Europe: implications for refuge design. *Journal of Applied Ecology*, **34**, 1–13.

8.14 Gill, J.A. (2007) Approaches to measuring the effects of human disturbance on birds. *Ibis*, **149**, 9–14.

8.15 Goss-Custard, J.D. & Verboven, N. (1993) Disturbance and feeding shorebirds on the Exe estuary. *Wader Study Group Bulletin*, **68**, 59–66.

8.16 JNCC. (2006) *Standard Data Form for Special Protection Areas-Chesil Beach and The Fleet*. JNCC, Peterborough.

8.17 JNCC. (2008) *Information Sheet on RAMSAR Wetlands-Chesil Beach and The Fleet*. JNCC, Peterborough.

8.18 Kirby, J.S., Clee, C. & Seager, V. (1993) Impact and extent of recreational disturbance to wader roosts on the Dee estuary: some preliminary results. *Wader Study Group Bulletin*, **68**, 53–58.

8.19 Kirby, J., Davidson, N., Giles, N., Owen, M. & Spray, C. (2004) *Waterbirds and Wetland Recreation Handbook*. Wildfowl and Wetlands Trust, Slimbridge, Gloustershire.

8.20 Kociolek, A.V., Clevenger, A.P., St. Clair, C.C. & Proppe, D.S. (2011) Effects of road networks on bird populations. *Conservation Biology*, **25**, 241–249.

8.21 Korschgen, C.E. & Dahlgren, R.B. (1992) Human disturbance of waterfowl: causes, effects and management. *Waterfowl Management Handbook*, Cross, D. H. Ed. USDI Fish and Wildlife Service La Crosse, WI, USA.

8.22 Laursen, K., Kahlert, J. & Frikke, J. (2005) Factors affecting escape distances of staging waterbirds. *Wildlife Biology*, **11**, 13–19.

8.23 Liley, D., Pickess, B. & Underhill-day, J.C. (2006) *The Number and Distribution of Black-Necked Grebes and Other Waterbirds at Studland, Dorset*. Footprint Ecology/Poole Harbour Study Group, Wareham Dorset.

8.24 Liley, D. & Sutherland, W.J. (2007) Predicting the population consequences of human disturbance for Ringed Plovers Charadrius hiaticula: a game theory approach. *Ibis*, **149**, 82–94.

8.25 Lloyd, C.S., Bibby, C.J. & Everett, M.J. (1975) Breeding terns in Britain and Ireland in 1969-74. *British Birds*, **68**, 221–237.

8.26 Lock, L. & Cook, K. (1998) The little egret in Britain: a successful colonist. *British Birds*, **91**, 273–280.

8.27 Mathers, R.G., Watson, S. & Montgomery, W.I. (2000) A study of the impact of human disturbance on Wigeon Anas penelope and Brent geese Branta bernicla hrota on an Irish sea loch. *Wildfowl*, **51**, 67–81.

8.28 Mavor, R.A., Parsons, M., Heubeck, M. & Mitchell, P.I. (2003) *Seabird Numbers and Breeding Success in Britain and Ireland , 2002*. JNCC, Peterborough, UK.

8.29 Mitchell, J.R., Moser, M.E. & Kirby, J.S. (1988) Declines in midwinter counts of waders roosting on the Dee estuary. *Bird Study*, **35**, 191.

8.30 Mitchell, P.I., Newton, S., Ratcliffe, N. & Dunn, T. (2004) *Seabird Populations of Britain and Ireland: Results of the Seabird 2000 Census*. Poyser, London.

8.31 Moller, A.P. (2008) Flight distances of urban birds, predation, and selection for urban life. *Behavioural Ecology & Sociobiology*, **63**, 63–75.

8.32 Moxom, D. (2012) Environmental considerations specific to members of the public accessing Chesil Bank between Abbotsbury and Portland.

8.33 Moxom,, . Ed. (1994) *The Birds of Chesil Bank, The Fleet and Portland Harbour*. Chesil Bank and The Fleet Nature Reserve, Portland, Dorset.

8.34 Navedo, J.G. & Herrera, A.G. (2012) Effects of recreational disturbance on tidal wetlands: supporting the importance of undisturbed roosting sites for waterbird conservation. *Journal of Coastal Conservation*, **16**, 373–381.

8.35 Le Pard, G. (1996) *The West Dorset Heritage Coast. Analysis of Responses to Issues Report*. Dorset CC, Dorchester.

8.36 Plateeuw, M. & Henkens, R.J.H.G. (1997) Waterbirds and aquatic recreation at Lake Ijsselmeer, The Netherlands: the potential for conflict. *Wildfowl*, **48**, 210–224.

8.37 Plateeuw, M. & Henkens, R. (1998) Possible impacts of disturbance of waterbirds: individuals, carrying capacity and populations. *Wildfowl*, **48**, 225–236.

8.38 Prater, AJ. (1989) Ringed Plover Charadrius hiaticula breeding population of the United Kingdom in 1984. *Bird Study*, **36**, 154–160.

8.39 Rees, E.C., Bruce, J.H. & White, G.T. (2005) Factors affecting the behavioural responses of whooper swans (Cygnus c. cygnus) to various human activities. *Biol. Conserv.*, **121**, 369–382.

8.40 Riddington, R., Hassall, M., Lane, S.J., Turner, P.A. & Walters, R. (1996) The impact of disturbance on the behaviour and energy budgets of Brent Geese Branta b. bernicla. *Bird Study*, **43**, 269–279.

8.41 Smit, C.J. & Visser, G.J.M. (1993) Effects of disturbance on shorebirds: a summary of existing knowledge from the Dutch Wadden Sea and Delta area. *Wader Study Group Bulletin*, **68**, 6–19.

8.42 Sturdy, R. (1972) *An Investigation of Conservation and Recreational Issues Affecting The Fleet and Surrounding Area*.

8.43 Taylor, A.R. & Knight, R.L. (2003) Wildlife responses to recreation and associated visitor perceptions. *Ecological Applications*, **13**, 951–963.

8.44 Townley, R., Derrien, D., Burgess, R. & Cooke, S. (1996) *The West Dorset Heritage Coast Today and Tomorrow: Issues Facing the West Dorset Coast. A Report for Consultation*. Dorset CC, West Dorset DC, Countryside Commission and Weymouth & Portland BC, Dorchester.

8.45 Ward, RM, Cranswick, PA, Kershaw, M, Austin, GE, Brown, AW, Brown, LM, Coleman, JC, Chisholm, HK & Spray, CJ. (2007) Numbers of mute swans Cygnus olor in Great Britain: results of the national census in 2002. *Wildfowl*, 3–20.

8.46 Watmough, B.R. (1983a) The effects of recreation activities on wintering waterfowl. *Proceedings of a symposium on the subject of wildlife on man-made wetlands* ARC, Great Linford.

8.47 Watmough, B.R. (1983b) *The Effects on Wildfowl of Recreation at Reservoirs in the Mid-Trent Valley*. Severn Trent Water Authority.

8.48 Yasue, M. (2006) Environmental factors and spatial scale influence shorebirds' responses to human disturbance. *Biological Conservation*, **128**, 47–54.

8.49 Yasué, M. (2005) The effects of human presence, flock size and prey density on shorebird foraging rates. *Journal of Ethology*, **23**, 199–204.

9. Appendix 1

Bird records for those species not included in the main report recorded at key points along The Fleet - taken from Dorset Bird Reports - 2009, 2010 & 2011

The records abstracted do not take into account any birds flying along the Fleet or east of Chickerell Hive point

Waterfowl records are listed as The Fleet but **Wader** records are listed as Ferrybridge/The Fleet

Several records are listed as just Abbotsbury, so have not been included

Species	Day/ Month	The Fleet Site Max 2009	The Fleet Site Max 2010	The Fleet Site Max 2011	Abbotsbury 2009	Abbotsbury 2010	Abbotsbury 2011	Rodden Hive 2009	Rodden Hive 2010	Rodden Hive 2011	Butterstreet Cove 2009	Butterstreet Cove 2010	Butterstreet Cove 2011	General notes
Bewick's Swan	17-Jan									8				Flying N
Whooper Swan	24-Feb				4									4 on The Fleet from 01-Jan
														and last seen at Abbotsbury
	08-Oct-01-Dec				(9)									During period possibly 9
														different birds - incl 3 juv
Whitefronted	27-28 Oct					13								
Goose	25-Nov						2ad 3juv							
Canada Goose	20-Jun					Site max - 600								
Barnacle Goose	01-Jan						84							
	08-Jan					26								

	09-Jan											35		
	10-Jan								35					{Recorded from area 9/1 - 21/2
	14-Jan								47					{
	31-Jan						57							
	07-21-Feb								49					{
	05-Dec					31								Flock moved between sites
	07-15-Dec								38					{
	27-Dec					85								
Mandarin	11-Oct					3								
	07-Nov			2										
Teal	January	500	540	540										
	February	450	400	400										
	March	138	195	195										
	April	20	47	47										
	Jun	2	-	-										
	August	53	80	8										
	September	330	104	1										
	October	660	461	-										
	November	100	479	46										
	December	520	1000	300										
Mallard	January	588	475	362										
	February	379	339	257										
	March	261	227	148										
	April	169	159	92										
	May	220	170	188										
	June	334	285	269										
	July	238	360	384										
	August	552	505	570										

	September	495	640	613										
	October	610	462	562										
	November	440	523	379										
	December	481	593	496										
Pintail	January	200	150	116										
	February	46	45	75										
	March	46	23	28										
	April	-	5	-										
	May	-	2	-										
	June	-	1	-										
	July	-	-	-										
	August	-	-	-										
	September	55	8	8										
	October	87	-	72										
	November	40	200	170										
	December	64	90	200										
Garganey	11-Apl									1♂				
	14-Apl						1♂							
	16-19-Apl						2♂♂ 1♀							
	22-28-Apl						1♂							
	25-Apr					1♂								
	25-May				1♂									
	31-Jul					2								
	11-Aug					1 juv								
	25-26-Aug				1 juv									
Red-crested	08-Jan					1								
Pochard	10-Jan													1 at Chickerell Hive Point
	14-Jan					1								
	17-Oct					1								

	07-Dec													2 at Chickerell Hive Point
	24-Dec								1♂ 2 ♀♀					
Ferruginous	04-18-Dec				1♀									
Duck														
Tufted Duck	January	200	400	573										
	February	255	236	350										
	March	185	157	269										
	April	135	142	94										
	May	35	27	13										
	June	31	34	15										
	July	74	36	51										
	August	82	10	24										
	September	272	240	237										
	October	296	328	215										
	November	155	253	210										
	December	300	401	260										
Scaup	January				17	14	33							
	February				18	9	34							
	March				6	9	19							
	April				2	2	6							
	October				-	4	1							
	November				5	8	1							
	December				10	27	4							
	10-Jan									7		3		
	14-Jan											2		
	Jan/Nov-													1-6 recorded each end of year
	Dec													in eastern area of The Fleet
Long-tailed	01-07-Jan				2									

Duck														
Bufflehead	06-30-Mar					1 ♂								Bird ranged during period from
														Abbotsbury to Herbury
Goldeneye	January	-	45	54										
	February	-	50	50										
	March	-	13	1										
	November	-	8	2										
	December	-	70	8										
Smew	10-Jan					1 ♂ 4♀/imm	1							
	11-Jan					1 ♂ 3♀/imm								
	12-Jan					1♀/imm								
	9-23-Dec					1♀/imm								
	24-Dec					2♀/imm								
Goosander	08-Dec					1								A single, presumably the same
	20-Dec					1								bird, was recorded along The
														Fleet at different locations
														until 24/12
	up to 19-Mar				*3*			*3*						3 birds seen around The Fleet
														up to 19/03
Ruddy Duck	January				9									
	February				1									
	October				1									
	December				9									
	14-24-Jan					1								
	19-21-Feb						2							
	08-Mar						1							

	02-Apl						1							
	17-May					1								
	08-Jul					1								
	18-Nov					1								
	5-31-Dec					2 - 4								
Little Grebe	January	29	23	19										
	February	24	26	11										
	March	12	24	13										
	April	-	2	1										
	June	-	1	-										
	July	1	2	-										
	August	16	3	4										
	September	23	30	15										
	October	30	28	16										
	November	28	36	36										
	December	35	25	25										
	11-Jan					24+								
	22-Dec							2						
Red-necked	03-Apr													1 off Chickerell Hive Point
Grebe														
Slavonian Grebe	07-Feb-01-Mar					1								
	31-Mar-14-Apl						1 - 2							Recorded irregularly
	20-Nov								1					
Black-necked	February		1											
Grebe	March		1											
	September		1											

	October		1											
	04-Sep						1							
	20-Sep								1					
Cormorant	January	27	22	14										
	February	8	6	12										
	March	11	14	5										
	April	25	31	25										
	May	18	36	10										
	June	28	33	17										
	July	35	37	30										
	August	39	41	32										
	September	45	36	19										
	October	31	38	35										
	November	34	18	26										
	December	16	5	43										
Cattle Egret	03-Jan				1									
Spoonbill	14-Mar						1							
	25-May					1								
	01-Jun					1								
	19&21-Sept					1								
	25-Sep									1				
	25&26-Sept						1							
	10-Oct									1				
	12-Oct						1							
Red Kite	Oct & Dec					1								No dates given
	Apl & Dec											1		No dates given
Marsh Harrier	02&24-Jan				1									

	12-Jan												1	
	17-Jan						1							
	18-Jan					1								
	16-Feb				1		1							
	07-Mar				1									
	01-Apr					1								
	01-May						1							
	11-May				1									
	15&20-May					1								
	30-Jul					1								
	22-Aug						1							
	27-Aug					1								
	10-Sep				1									
	01-Oct						1							
	12-Oct					1								
	15-Oct				1									
	01&11-Nov						1							
	15-Nov				1									
	09-Dec					1								
	01-31-Dec				1									On several dates in December
Hen Harrier	07-Jan						1 roost							
	10&11-Jan					1								
	15-Jan								1					
	15-Mar				1									
	19-Apl				1♀/imm									
	29-Oct						1							
	21-Nov				1									
	02-22-Dec					1♂			1♂					A ring-tail was also about on
														The Fleet area but locations
														not clear.

Osprey	28-Apr					1								
	19-May						1							
	30-Jun				1									
	16-Aug				1									
	01-Sep					1								
	02-Sep				1									
	10-14-Sept					1								
Merlin	Jan - Feb											1		2 dates in Jan and one in Feb
	18-Jan				1									
	11-Jan								1					
	25-Mar											1		
	12-Sep				1									
	18-Sep					1								
	05&11-Oct				1									
	13-Oct				1									
	22-Oct						1							
	30-Oct					1								
	08-Nov					1								
	11-Nov						1							
	10-Dec					1								
	12-Dec				1									
	19-Dec											1		
	23&24-Dec											1		
Spotted Crake	24-ug				1									
Common Crane	15-Mar				2									
	07-14-Nov									1				
Avocet	12&14-Oct					1								

Little Ringed	18-Mar				1									
Plover	27-Apl									1				
	12-May					1								
	13&19-Aug				1									
	28-Aug					1								
	15-Sep				1									
	20-24-Sept				1									
Golden Plover	06-Nov									74				
Grey Plover	January	25	22	31										
	February	21	20	25										
	April	-	1	6										
	May	1	2	6										
	June	1	-	-										
	July	-	1	-										
	September	-	4	-										
	October	2	1	6										
	November	1	16	-										
	December	9	30	11										
	16-Apl										2			
	30-Apl						1							
	30-May									3				
	24-Sep				1									
Knot	January	25	9	13										
	February	5	10	2										
	March	2	7	-										
	May	-	3	29										
	July	1												
	August	2	-	15										
	September	12	-	1										

	October	2	3	1										
	November	2	4	1										
	December	1	80	-										
	14&223-Apl				1									
	11-May								3					
	18-19-Aug						1							
	22-23-Aug						1							
	29-Aug							2						
	24-Sep				1									
	08-Sep					1								
	08,12 &													
	17-Oct					1								
	1-18 -Oct						2 - 3							
Sanderling	January	-		1										No meaningful data given for
	March	-		2										(2010)
	April	4		4										
	May	8		32										
	June	-		8										
	July	11		27										
	August	8		10										
	September	9		6										
	October	-		1										
	15-May						1							
	19-May					1								
	20-May					4								
	30-May									12				
	11-Jul						2							
	25-Jul									5				
	24-Aug					1								
	August									10				Only month given

Little Stint	18-Aug				2									
	29-Aug						1							
	04-Sep					1								
	7&8-Sept				1									
	15-20-Sept				1									
	17-Sep						1							
Pectoral	27-Sep						1							
Sandpiper	15-Oct						1							
Curlew	06-May				1									
Sandpiper	08-Sep					1								
	11-Sep											2		
	16-Sep						1							
	21-22-Sept				1									
Ruff	10-Jan											48		Biggest gathering for 20 years
	23-Jan						1							
Jack Snipe	Jan-Mar							1						No date given
	01-Oct				1									
Woodcock	Nov-Dec				1									1/2 recorded during period
Black-tailed	January								3					No date given
Godwit														
Bar-tailed	Wintering													The Fleet population max.
Godwit														12 in December (2009)
														The Fleet population only
														7 (2010)
	01-May													19 on The Fleet - no location

														given (2010)
														The Fleet population 6 early
	30-Apl						100							2011 and 3 in December 2011
	24-Sep				1									
Whimbrel	23-Mar						1							
	12-Apl									1				
	18-Apl								8					
	24-Apl									1				
	11-May								17					
Curlew	January	20	16	3										
	February	22	23	1										
	March	5	8	-										
	April	4	-	-										
	May	4	-	-										
	June	4	10	1										
	July	8	8	12										
	August	12	15	14										
	September	23	20	12										
	October	9	10	24										
	November	19	14	4										
	December	23	29	9										
Green	Autumn				1-5									No dates given
Sandpiper	14-15-Apl					1								No dates given
	30-Apl						1							
	Aug- Sept					1 - 3								
	12-Nov									1				
Wood	13-Aug				1									
Sandpiper	14-20-Aug						1 - 2							

Turnstone	January	47	20	60										Records listed as
	February	55	40	30										Portland Harbour/Ferrybridge
	March	70	70	79										
	April	61	42	8										
	May	10	5	5										
	June	2	-	2										
	July	18	17	6										
	August	32	50	44										
	September	55	44	41										
	October	45	45	40										
	November	15	70	62										
	December	55	50	12										
Grey Phalarope	12-Jan				1 (dead)									
	08-14-Sept				1									
Sabine's Gull	06-Sep						1							
Yellow-legged	10-Aug-30-Oct					1								On four dates
Gull	15-Aug								1					
Great-Black-	20-Aug								170					
backed Gull	03-Sep							145						
Black-headed	10-Aug									1300				
Gull														
Little Gull	02-Feb										1			
	18-Feb										1			
	12-Oct										1			

Black Tern	25-May					1								
	2 & 14-Oct					1								
Arctic Tern	26-Apl						1							
	23-Aug				1									
	02/09-Sept						1							
	10-Sep					2								
	11-Oct				1									
	11&13-Oct						1							
Turtle Dove	27-28-May					1								
	15-16-June					1								
Short-eared Owl	16-Apl						1							
	23-Apr					1								
	27-Oct						1							
Woodlark	26-Jan										1			
Skylark											breeding			No numbers given
Meadow Pipit	04-Jan					50								
	05-Feb							80+						
Yellow Wagtail	12-Aug-11-Sept				30									Roosting
	26-Aug-17-Sept					50								Roosting
	17-Aug-11-Sept						800							Roost at Abbotsbury and
														peaked at 800 on 3-Sept

White Wagtail	25-Apl-11-May				1									On 4 dates
	10-Jul- 26-Sept				?									30 recorded between dates
Swallow	10-Sep							1000+						
House Martin	10-Sep							5000+						
Black Redstart	27-Jun					4								
	01-Jul					3								
Whinchat	10-Sep							1						
	24-Sep				1									
Stonechat	Breeding					2/3 pairs								Breeding Abbotsbury
														Coastguard (2011)
Song Thrush	Breeding					3 pairs								Breeding Abbotsbury -
														5 pairs in (2011)
Grasshopper	Spring				?									Only noted as recorded
Warbler	10-Apl						1							
	20-Apl						2							
	25-Apl						1							
	29-Apr					1								
	27-Jul						1							
Yellow-browed	13&15-Oct				1									
Warbler														
Radde's Warbler	31-Oct				1									

Wood Warbler	05-May					1								
	08-Aug										1			
Firecrest	Passage				?									Numbers & dates not given
Bearded Tit	08-Oct				Several									
	13-14-Oct					2								
	16-Oct						1							
	08-Nov						1							
Jackdaw	11-Jan					100+								
	30-Jun					200+								
	08-Aug							65						All juveniles
Rook	30-Jun					200+								
Starling	02-Jan				500									
Lapland	14-Oct				1									
Bunting														