

Irish Wetland Bird Survey: Results of waterbird monitoring in Ireland in 2003/04 & 2004/05

Helen Boland & Olivia Crowe

*BirdWatch Ireland, Unit 1 Springmount,
Newtownmountkennedy, Co. Wicklow.*

The Irish Wetland Bird Survey aims to monitor wintering waterbird populations and their wetlands in the Republic of Ireland. This objective is achieved through regular monitoring of the main wetland sites between September and March each season. I-WeBS has been carried out during all seasons since 1994/95. This section of the report aims to present detailed information on the results from the 11th and 12th seasons (2003/04-2004/05) as well as longer-term results on the waterbirds and wetland sites. Overall, 339 sites comprising 959 subsites were covered in 2003/04 and 2004/05. Greatest coverage in both seasons was achieved in January. Coverage in the 2003/04 season was somewhat low with several of the main wintering sites not being counted in January, including Lough Swilly, Donegal Bay, Ballysadare Bay, Lough Ree and Shannon and Fergus Estuary. This was substantially improved upon for January 2005 with only a few significant sites not being covered. Total waterbird numbers overall peaked in January in both seasons. Lapwing *Vanellus vanellus*, Golden Plover *Pluvialis apricaria* and Dunlin *Calidris alpina* were among the most numerous wader species recorded and the leading wildfowl species were Wigeon *Anas penelope* and Teal *Anas crecca*, while Black-headed Gull *Larus ridibundus* was the most numerous gull species recorded. A total of 54 internationally important and 96 nationally important sites were defined, based on the mean over the 2000/01 to 2004/05 period, with Dundalk Bay, Wexford Harbour & Slobs, Lough Foyle, Lough Corrib and Shannon & Fergus Estuary remaining the most important sites. Overall, wildfowl and waders in the Republic of Ireland have shown an annual increase of 1.7% over the 11 seasons since 1994/95. There are 6 wildfowl and 9 wader species that have shown more than a 2% annual increase, but also 5 wildfowl and 3 wader species that have declined to the same extent. Some of the species showing an increase include Whooper Swan *Cygnus cygnus*, Ringed Plover *Charadrius hiaticula*, Black-tailed Godwit *Limosa limosa*, Bar-tailed Godwit *L. lapponica*, Redshank *Tringa totanus*, Greenshank *T. nebularia* and Turnstone *Arenaria interpres*, while declines were shown in Great Crested Grebe *Podiceps cristatus*, Wigeon, Pintail *Anas acuta*, Goldeneye *Bucephala clangula*, Red-breasted Merganser *Mergus serrator*, Grey Plover *Pluvialis squatarola*, Lapwing and Dunlin.



Introduction

Ireland supports over a million migrant waterbirds each winter, which occur on passage and/or remain for the duration of the winter period. Most species which occur

in Ireland migrate from the north and northwest (principally Canada, Greenland and Iceland), or from the northeast (northern Europe, Scandinavia, Russia and

Plate 3. Dunlin (Clive Timmons).



Plate 4. Sanderling (Clive Timmons).

Siberia), moving south to winter predominantly in west and northwest Europe and west Africa (Wetlands International 2002, Wernham *et al.* 2003). Ireland's relatively mild climate and vast array of wetland habitats provide ample feeding throughout the winter period, particularly when many other parts of northwest Europe are frozen over. Both these factors make Ireland particularly attractive for wintering waterbirds.

The Irish Wetland Bird Survey (I-WeBS) was initiated in the Republic of Ireland in 1994/95. This survey is ongoing, and aims to continue to monitor wintering waterbird populations and the wetlands upon which they rely in Ireland. On the basis of the data collated through this survey, as well as previous wetland bird surveys the Winter Wetland Survey (1984/85-1986/87) and the Wetlands Enquiry (1971/72-1973/74), in excess of 80 wetlands in Ireland have been designated as Special Protection Areas (SPAs) under the EU Birds Directive for wintering waterbirds.

This report aims to present summarised results of data collated in 2003/04 and 2004/05, and also on how wintering waterbird populations have been faring in the Republic of Ireland since the project's inception in the mid-1990s.

Methods

Full details on the methods used have been described in detail in Crowe & Boland (2004). The scientific names of all species mentioned are listed in the Appendix.

Results

Coverage

In total, 339 sites comprising 959 subsites were covered in 2003/04 and 2004/05, and included 175 lakes/turloughs/reservoirs, 90 coastal sites (estuarine/open coast) and 65 rivers, with remaining sites including gravel pits (3 sites), marsh (4) and farmland sites (2). A total of 247 sites (706 subsites) and 284 sites (779 subsites) were covered in the two seasons respectively (Fig. 1). During both seasons, most sites (23% & 27% respectively) were covered in one month only, while 67% and 61% of sites were covered in at least three of the seven months. Greatest coverage in both seasons was in January, with 76% and 82% of sites covered in the two seasons respectively (Tables 1a&b).

Aerial censuses of the Shannon and Fergus Estuary, Lough Derg, the Little Brosna Callows, Shannon Callows and Suck Callows were carried out on 10 February 2004, 19 November 2004 and 21 January 2005.

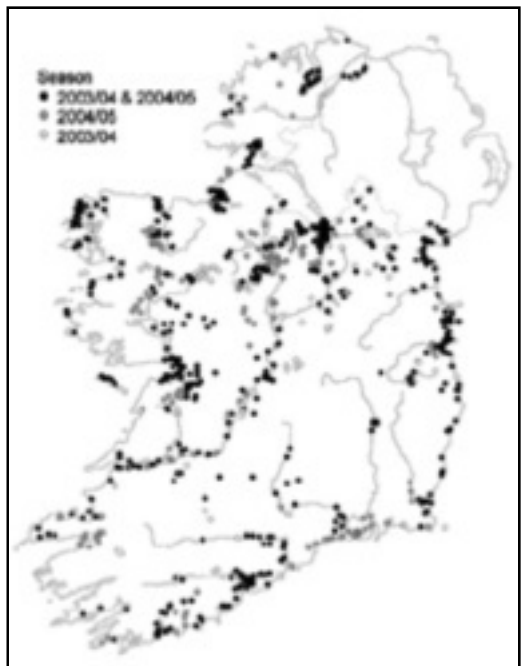


Figure 1. Subsite coverage for I-WeBS in 2003/04 (light grey circles), 2004/05 (dark grey) and in both seasons (black circles).

Table 1a. Total numbers of waterbirds counted during I-WeBS in the Republic of Ireland in 2003/04.

Species name	Sep	Oct	Nov	Dec	Jan	Feb	Mar
No. sites	90	121	141	139	188	148	138
No. subsites	212	229	333	283	511	331	300
Red-throated Diver	57	9	182	86	69	134	45
Black-throated Diver	0	0	34	0	4	2	1
Great Northern Diver	10	6	291	62	321	240	147
Little Grebe	592	451	821	702	707	334	346
Great Crested Grebe	408	484	1,625	714	729	613	461
Slavonian Grebe	0	2	62	16	9	17	7
Cormorant	2,388	1,866	2,169	2,198	2,071	1,909	801
Grey Heron	604	532	618	422	524	343	170
Little Egret	233	209	144	111	88	118	63
Mute Swan	1,106	1,582	2,017	1,330	2,513	1,927	1,123
Black Swan	0	0	0	0	2	3	0
Bewick's Swan	0	2	2	76	274	155	18
Whooper Swan	1	439	3,423	3,220	4,135	2,249	1,339
Bean Goose	0	0	1	1	2	2	0
Pink-footed Goose	10	6	6	11	11	15	4
European White-fronted Goose	0	0	0	0	0	0	3
Greenland White-fronted Goose	52	7,255	8,279	7,385	7,350	9,524	1,099
Greylag Goose	118	254	1,338	2,441	1,787	2,934	1,266
Snow Goose	0	1	1	1	0	1	0
Canada Goose	16	23	21	2	332	33	11
Barnacle Goose	5	7	8	607	4,216	61	801
Dark-Bellied Brent Goose	0	0	0	3	4	2	1
Black Brant	0	0	0	0	1	0	1
Light-bellied Brent Goose	942	4,456	5,178	10,940	11,669	8,300	9,469
Feral/hybrid Goose	37	14	20	24	97	70	96
Shelduck	104	591	3,298	3,319	6,414	6,167	4,017
Unidentified Duck	0	0	0	250	96	0	0
Wigeon	1,564	13,388	22,963	26,342	36,306	35,181	10,005
American Wigeon	0	0	1	2	4	4	2
Gadwall	51	96	147	367	247	215	131
Teal	2,626	6,902	10,158	11,128	16,215	14,527	5,605
Green-winged Teal	0	0	0	1	4	1	0
Mallard	9,016	8,388	7,005	6,846	8,429	6,154	2,339
Pintail	33	224	247	615	688	749	292
Shoveler	25	145	515	1,203	742	1,329	207
Pochard	3	6,607	16,326	5,809	2,533	863	238
Lesser Scaup	0	0	0	0	1	0	0
Ring-necked Duck	1	0	10	2	1	0	0
Tufted Duck	465	1,693	6,880	5,998	5,172	2,905	1,475
Scaup	16	234	63	109	667	355	67
Eider	626	645	199	16	13	20	30
Long-tailed Duck	0	0	7	17	12	20	0
Common Scoter	1,902	32	870	3,329	2,418	2,098	1,815
Velvet Scoter	0	0	3	0	0	0	0
Goldeneye	6	50	706	1,275	1,132	769	540
Smew	0	1	1	3	5	3	1
Red-breasted Merganser	303	311	877	535	602	703	382
Goosander	0	10	0	0	5	7	0
Ruddy Duck	0	0	0	1	5	0	0
Feral/hybrid Mallard type	0	0	0	0	1	0	0
Coot	1,775	12,023	26,593	4,719	6,939	2,528	563

Moorhen	342	426	390	301	402	384	300
Crane	0	3	0	0	0	0	0
Water Rail	13	15	20	21	12	24	22
Total wildfowl	25,450	69,382	123,519	102,560	125,980	103,992	45,303
Oystercatcher	19,554	17,880	20,309	14,817	23,290	27,754	18,201
Little Ringed Plover	0	0	0	0	1	0	0
Ringed Plover	2,658	1,443	3,301	2,360	3,692	2,566	826
Golden Plover	3,015	35,959	53,747	66,948	78,459	78,665	32,084
Grey Plover	876	718	1,629	2,003	1,619	4,087	1,131
Lapwing	1,593	11,087	39,096	51,006	62,715	64,774	2,356
Knot	748	1,272	4,916	5,706	15,814	18,122	12,929
Sanderling	1,298	833	1,734	848	1,561	1,133	928
Little Stint	1	1	0	0	0	0	0
Pectoral Sandpiper	4	0	0	0	0	0	0
Curlew Sandpiper	5	2	0	0	0	0	0
Purple Sandpiper	21	12	55	68	65	59	47
Dunlin	5,739	7,426	22,803	24,897	39,751	37,879	13,345
Ruff	14	3	0	4	21	8	0
Jack Snipe	0	4	10	24	25	22	23
Snipe	87	377	896	752	735	683	456
Woodcock	0	0	0	0	0	6	0
Black-tailed Godwit	5,876	7,551	6,617	4,641	8,252	9,039	4,393
Bar-tailed Godwit	2,616	3,807	6,385	6,819	6,154	7,036	3,675
Whimbrel	60	1	0	0	38	3	0
Curlew	11,422	10,040	10,234	12,117	15,847	22,816	6,833
Spotted Redshank	1	7	4	11	8	6	1
Redshank	10,005	10,393	13,892	7,649	9,592	15,373	9,515
Greenshank	424	392	413	237	340	395	165
Lesser Yellowlegs	0	2	0	0	0	0	0
Green Sandpiper	3	2	0	1	11	1	3
Common Sandpiper	5	4	3	2	5	26	1
Turnstone	1,155	1,222	2,296	1,494	1,960	1,799	1,392
Total waders	67,180	110,438	188,340	202,404	269,955	292,252	108,304
Mediterranean Gull	22	12	25	12	5	14	15
Little Gull	0	6	0	0	0	2	1
Sabine's Gull	0	0	1	0	0	0	0
Black-headed Gull	15,555	10,390	14,297	14,629	18,320	17,159	6,724
Ring-billed Gull	2	1	0	3	6	0	2
Common Gull	5,867	7,041	4,507	4,681	5,792	4,869	2,778
Lesser Black-backed Gull	10,478	1,396	1,326	364	367	1,035	1,026
Herring Gull	1,260	838	1,424	888	1,226	1,524	1,993
American Herring Gull	1	0	0	0	0	0	0
Iceland Gull	0	0	8	0	0	2	0
Glaucous Gull	0	0	0	0	2	1	1
Great Black-backed Gull	1,129	1,027	1,037	852	1,287	1,112	451
Total gulls	34,314	20,711	22,625	21,429	27,005	25,718	12,991
Unidentified Tern	0	0	0	0	0	0	3
Sandwich Tern	477	37	4	0	7	0	12
Roseate Tern	8	0	0	0	0	0	0
Common Tern	104	3	0	1	0	31	17
Total terns	589	40	4	1	7	31	32
Kingfisher	14	10	10	11	13	11	8
Total waterbirds	127,547	200,581	334,498	326,405	422,960	422,004	166,638

Table 1b. Total numbers of waterbirds counted during I-WeBS in the Republic of Ireland in 2004/05.

Species name	Sep	Oct	Nov	Dec	Jan	Feb	Mar
No. sites	98	114	161	138	233	159	119
No. subsites	198	271	426	304	631	356	280
Unidentified Diver				33			
Red-throated Diver	128	27	195	266	196	103	112
Black-throated Diver			9	2	14	4	21
Great Northern Diver	3	42	226	82	443	178	389
Little Grebe	344	419	609	533	688	333	171
Great Crested Grebe	186	531	771	500	987	474	160
Red-necked Grebe					1		
Slavonian Grebe		1		6	4	3	10
Black-necked Grebe			1	1			
Unidentified Cormorant/Shag	198	300	350	136		127	
Cormorant	2,245	1,876	2,831	1,532	2,911	1,546	1,019
Grey Heron	534	508	723	440	629	289	245
Little Egret	334	169	202	157	206	192	124
Mute Swan	943	1,576	3,565	2,164	3,659	1,799	1,153
Black Swan			1	1			
Bewick's Swan		8	13	28	220	156	
Whooper Swan	27	1,431	5,330	2,924	5,468	2,331	2,591
Pink-footed Goose			4	11	9	3	2
Greenland White-fronted Goose	8	401	7,603	9,909	10,062	769	384
Greylag Goose	190	392	5,766	2,657	1,732	681	2,191
Snow Goose				1	1		
Canada Goose	24	19	98	36	203	7	7
Barnacle Goose		76	856	884	3,508	727	1
Dark-Bellied Brent Goose						1	
Black Brant			1				
Light-bellied Brent Goose	1,008	3,846	17,346	15,752	11,542	13,539	9,313
Feral/hybrid Goose	26	20		18	17	25	24
Shelduck	246	2,186	3,760	5,834	6,618	5,557	3,031
Unidentified Duck					50		
Wigeon	2,978	18,221	37,558	31,801	47,440	20,047	7,239
American Wigeon	1	1	1			1	
Gadwall	92	168	358	244	616	207	95
Teal	2,401	5,751	14,854	13,748	23,565	9,936	5,399
Green-winged Teal			2			1	
Mallard	7,277	7,179	9,459	7,448	9,559	4,273	2,547
Pintail	85	73	401	899	1,024	694	171
Garganey						1	
Shoveler	56	339	1,368	1,685	1,444	1,154	324
Pochard	5	296	9,531	2,201	6,854	3,683	414
Ring-necked Duck				2	1		1
Ferruginous Duck						1	
Tufted Duck	404	1,016	8,007	3,213	10,256	2,900	1,294
Scaup		612	184	862	582	403	4
Eider	14	90	5	3	18	20	19
Long-tailed Duck		3	33	22	31	45	26
Common Scoter	2,622	786	2,991	1,275	3,000	2,227	2,236
Surf Scoter		1	3			3	
Velvet Scoter			6	2			
Goldeneye	1	78	803	805	1,436	616	313
Smew				1	1		
Red-breasted Merganser	240	439	804	436	761	452	576
Goosander				3		3	

Ruddy Duck		2		1	2	2	
Coot	1,541	3,566	23,144	8,757	12,073	2,421	526
Moorhen	357	401	344	365	558	380	302
Water Rail	13	6	20	13	20	18	13
Total wildfowl	24,531	52,856	160,136	117,693	168,409	78,332	42,447
Oystercatcher	18,264	23,273	27,293	19,866	30,158	22,062	13,365
Avocet				3	1	1	
Ringed Plover	1,743	2,678	5,071	2,672	2,493	1,972	549
Golden Plover	2,655	35,837	86,540	84,160	111,756	47,875	25,512
Grey Plover	171	445	1,113	788	1,547	1,693	392
Lapwing	1,095	8,271	59,046	53,615	118,985	25,892	909
Knot	1,864	4,675	4,870	12,296	11,463	6,483	3,073
Sanderling	102	493	1,524	1,917	1,330	1,877	794
Little Stint			1				
Baird's Sandpiper	1						
Pectoral Sandpiper		1					
Curlew Sandpiper	31	4			2		
Purple Sandpiper		2	71	13	61	24	66
Dunlin	4,692	11,258	38,357	27,977	46,050	29,379	6,508
Ruff	13	20	3	686	456	3	2
Jack Snipe		1	17	23	24	19	23
Snipe	104	271	450	564	625	507	223
Woodcock			3	2	1	1	4
Black-tailed Godwit	8,247	5,270	11,738	8,745	9,149	8,678	5,091
Bar-tailed Godwit	1,152	4,517	5,831	5,829	6,480	5,552	4,846
Whimbrel	16	61		2	1	1	1
Curlew	8,942	9,570	16,044	13,615	23,912	15,669	6,883
Spotted Redshank	2	4	3	4	4	2	
Redshank	10,594	11,455	16,795	10,632	14,836	10,208	9,396
Greenshank	395	383	505	378	496	402	274
Green Sandpiper	2	2	1	2	5	7	
Wood Sandpiper							
Common Sandpiper	6	3	3	2	2	1	
Turnstone	1,080	1,536	2,883	1,698	2,056	1,805	1,883
Grey Phalarope	1	30					
Total waders	61,172	120,060	278,162	245,489	381,893	180,113	79,794
Unidentified gull				69			45
Mediterranean Gull	32	16	16	27	15	22	12
Little Gull	2	1	5				2
Black-headed Gull	14,771	13,342	14,906	14,325	22,796	15,008	12,207
Ring-billed Gull	1	1	3	3	2	3	1
Common Gull	4,844	6,445	7,401	6,339	9,200	3,463	7,267
Lesser Black-backed Gull	2,028	1,167	873	1,340	1,812	366	811
Herring Gull	1,549	1,386	1,945	1,226	2,785	1,465	1,117
Yellow-legged Gull						1	
Iceland Gull				2	10	14	4
Glaucous Gull					17	16	13
Great Black-backed Gull	1,244	1,354	1,341	1,197	1,523	1,176	740
Total gulls	24,471	23,712	26,490	24,528	38,160	21,534	22,219

Unidentified Tern	248						
Sandwich Tern	2,103	3		2			5
Roseate Tern	117						
Common Tern	100			1	1		
Arctic Tern	78	1					
Total terns	2,646	4	0	3	1	0	5
Kingfisher	10	15	14	8	10	9	9
Total waterbirds	112,830	196,647	464,802	387,721	588,473	279,988	144,474

Site coverage in January 2004 was relatively poor, and several of the top wintering sites were not counted, including Lough Swilly, Donegal Bay, Dunfanaghy Estuary, Sligo Harbour, Ballysadare Bay, Southern Roscommon Lakes, River Suck, Lough Ree, Lough Kinale & Derragh Lough, Rahasane Turlough, River Shannon (Lower), Shannon & Fergus Estuary, Castlemaine Harbour & Rossbehy, Clonakilty Bay, Dungarvan Harbour, Tramore Back Strand & Bay, Lady's Island Lake, Shannon Callows, Little Brosna Callows. Coverage of the main sites in January 2005 was significantly better; significant sites with missing counts included River Foyle, Dunfanaghy Estuary, Rahasane Turlough, Ballymacoda, Blackwater Estuary and Lough Ennell.

Total waterbird numbers

During both seasons, total waterbird numbers overall peaked in January, and the peak recorded in January 2005 at almost 600,000 represents the highest total recorded in any month since January 2000. The peak count in 2003/04 was considerably lower (compare Tables 1a & 1b), due mainly to poorer coverage in that season. Wildfowl (including their allies) numbers overall also peaked in January, and this trend was consistent among most members of this group. Waders also peaked in January during the 2004/05 season, but most species peaked, and consequently the overall peak was recorded, in February during the previous season. This was largely driven by the February peaks in high-density species such as Oystercatcher, Golden Plover, Lapwing, Knot, Curlew and Redshank (Table 1a). These peaks probably resulted from the February aerial census that season.

Gull numbers also tended to peak during January. The very high peak of Lesser Black-backed Gull recorded in September 2003 (Table 1a) was due to coverage during this particular month at Ballymacoda, when 6,500 were recorded. This site was not covered during the 2004/05 season. This site is the only internationally important site recorded in Ireland for this species, whose numbers are

typically highest during the early autumn and decline thereafter.

The peaks in both seasons largely comprised waders (64% and 65% in the two seasons respectively), with most of the remaining composing of wildfowl. Lapwing, Golden Plover and Dunlin were among the most numerous wader species recorded, while Wigeon and Teal predominated the wildfowl. Black-headed Gull was by far the most numerous gull species recorded (Tables 1a & b).

Important sites

The top ten most important sites based on the most recent five-season period (2000/01-2004/05) remains largely unchanged when compared with the 1998/99-2002/03 rankings (Boland & Crowe 2005), with the exception of the Little Brosna Callows, where numbers have since declined, and it has been replaced in the top-10 by Bannow Bay. This was largely the result of the site being divided into aerial versus ground-based counts, rather than assuming the peaks of either method for each species. Dundalk Bay, Wexford Harbour & Slobs, Lough Foyle, Lough Corrib and Shannon & Fergus Estuary remain the most important sites in the Republic.

A total of 54 internationally important and 96 nationally important sites were defined (Table 2). Of the internationally important sites, 15 supported in excess of 20,000 waterbirds (excluding gulls). This list of sites includes Dungarvan Bay, Bannow Bay and Inner Galway Bay, which previously supported less than 20,000 waterbirds (Boland and Crowe 2005). In contrast, numbers recorded on the Shannon Callows in 2003/04 were relatively low, and the overall mean is now below 20,000.

The number of important concentrations (internationally or nationally) has largely either remained stable or has increased relative to recent seasons (Table 3). Particularly notable increases were seen in Whooper Swans and Light-bellied Brent Goose for internationally important sites, and Gadwall, Pintail, Shoveler, Common

Scoter, Oystercatcher, Lapwing, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Greenshank and Turnstone. There were declines in the numbers of nationally important concentrations recorded of Grey Plover, Sanderling and Dunlin. These results are not consistent with the trends of several of these species.

Trends

Overall, there has been an increase in both waders and wildfowl in the Republic of Ireland over the 11 seasons since 1994/95 (Fig. 2), by 1.7% annually. In total, 15 species showed increases in excess of 2% per year, including 6 wildfowl and 9 wader species, while eight species showed declines of at least the same magnitude, including five wildfowl and three wader species (Table 4). There have been substantial increases (in excess of 4% annually) in Little Egret, Light-bellied Brent Goose, Gadwall, Pochard, Coot, Oystercatcher, Sanderling and Purple Sandpiper. However, the sample of sites included in the analyses for Little Egret and Purple Sandpiper was relatively small due to recent colonisation and spread of the former species, and a greater proportion of the latter species occurring along non-estuarine coast (which is not regularly monitored during I-WeBS). Therefore, caution is urged in the interpretation of these particular trends. Other species with increasing trends include Whooper Swan, Ringed Plover, Black-tailed Godwit, Bar-tailed Godwit, Redshank, Greenshank and Turnstone. However, these trends have masked the significant declines seen in several species, particularly Great Crested Grebe, Wigeon, Pintail, Goldeneye, Red-breasted Merganser, Grey Plover, Lapwing and Dunlin. (Table 4). Remaining species have largely remained stable.

Discussion

I-WeBS has continued to highlight the importance of wetland sites in Ireland for wintering waterbirds. The most important sites have remained relatively consistent since the mid-1990s, though waterbird numbers at some sites have changed considerably. It is likely that these changes are in part due to habitat loss and/or disturbance.

The majority of sites listed as internationally important are either proposed or designated SPAs. Exceptions include sites that have only recently qualified, such as the Courtmacsherry, Broadstrand and Dunworley complex which is now internationally important for Black-tailed Godwit, and also a suite of lake/turlough complexes, such as the North Central Galway Lakes, Ballyhaunis Lakes and the Corofin Wetlands. These

complexes are important for swans, which are relatively dispersed on both the wetlands and adjacent grasslands, thus the regularly used areas are difficult to define. Furthermore, the latter two complexes support significant proportions of Mute Swan only, and as the Irish population is no longer considered migratory, these sites do not qualify for SPA designation.

There have been dramatic increases in some species and severe declines in others occurring on Irish wetlands. Many of these changes are also evident at flyway level, and it had been suggested that climate change has altered the distribution range of several species (Allen *et al.* 2004, Austin & Rehfish 2005).

The interpretation of the species trends without the inclusion of Northern Ireland data (aside from the two cross-border sites) is to some extent less meaningful. It is known that several sites in Northern Ireland are highly influential on trends, and without inclusion of these data, we cannot comment on possible redistribution of species within the island as opposed to whether an actual increase or decline is occurring. Analyses of data from the Republic and Northern Ireland have shown that wildfowl and waders are declining on the island as a whole. Full details on the trends of Irish wintering waterbirds are presented in Crowe *et al.* (in prep.). In particular, Loughs Neagh and Beg support an extremely high proportion of Ireland's wintering waterbirds, especially diving ducks and Coot. There have been severe declines in these species at this site since 2000/01 (Allen *et al.* 2004). Thus, with the exception of Coot, which appears to have remained stable in Ireland over the 10 seasons between 1994/95 and 2003/04 (Crowe *et al.* in prep.), these declines at Lough Neagh appear to have driven the overall decline in all other species at all-Ireland level (Crowe *et al.* in prep.). Furthermore, there has been a recent decline in Mute Swan at Loughs Neagh and Beg (Collier *et al.* 2005), and this is largely been implicated in driving an overall decline in this species in Northern Ireland. Mute Swans in the Republic appear to have remained relatively stable.

Wintering waterbird populations in the Republic of Ireland appear to have fared relatively well since 1994/95. However, at an all-Ireland level, more species declines are apparent. It is important that we, and other countries which support species within these flyways, maintain current monitoring efforts so that we may continue to measure species trends, and distinguish true declines from simple shifts in species distributions. It is equally important that we continue to collect this data to help monitor and protect Ireland's important wetlands.

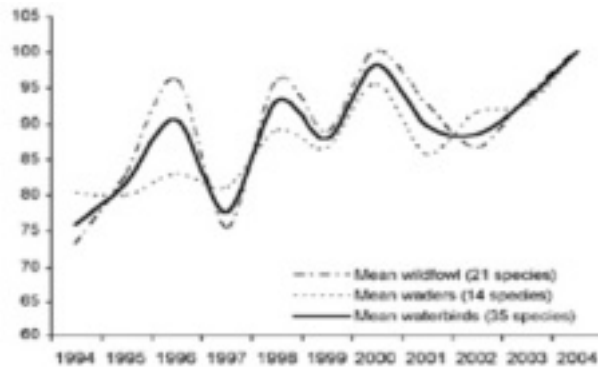


Figure 2. Trends in wildfowl, waders and waterbirds overall in the Republic of Ireland between 1994/95 (indicated by 1994 on the axis) and 2004/05 (indicated by 2004).

Table 4. Population indices for wintering waterbirds in the Republic of Ireland between 1994/95 and 2004/05.

Species	% annual change	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Little Grebe	-1.5	120	129	106	77	120	108	98	114	90	113	100
Great Crested Grebe	-4.6	165	136	180	161	145	230	158	137	151	121	100
Cormorant	1.9	54	98	89	68	97	90	87	77	81	97	100
Grey Heron	1.8	77	86	106	91	94	91	104	102	100	103	100
Little Egret	8.4	4	10	14	14	25	30	50	39	52	72	100
Mute Swan	1	88	90	94	78	110	97	106	98	100	91	100
Whooper Swan	2.7	79	64	65	55	67	95	79	75	83	85	100
Light-bellied Brent Goose	4	54	59	50	47	63	62	87	95	69	66	100
Shelduck	-0.7	81	124	132	97	115	116	112	107	103	97	100
Wigeon	-3.9	152	124	109	109	129	91	105	103	92	103	100
Gadwall	4	20	39	57	67	74	37	57	53	72	49	100
Teal	-0.9	107	113	96	114	123	109	108	105	99	104	100
Mallard	-1.6	114	130	126	101	111	124	120	111	105	111	100
Pintail	-2.8	94	134	130	80	128	74	91	64	88	100	100
Shoveler	-0.8	83	102	110	97	98	73	123	83	79	84	100
Pochard	4.8	64	37	139	23	111	136	174	157	48	109	100
Tufted Duck	1.2	68	64	114	82	81	56	85	112	86	63	100
Goldeneye	-7.5	163	189	146	142	138	136	108	122	98	115	100
Red-breasted Merganser	-3.3	104	127	127	136	118	111	118	94	98	84	100
Coot	4.1	59	50	130	58	85	65	124	76	71	138	100
Moorhen	0	113	112	102	86	104	110	86	105	105	122	100
Oystercatcher	4.5	56	68	77	80	84	87	98	91	117	100	100
Ringed Plover	2.6	76	97	95	77	95	87	109	105	111	108	100
Golden Plover	1.2	93	75	81	82	110	106	96	97	82	97	100
Grey Plover	-8.3	177	218	199	166	146	169	169	183	119	132	100
Lapwing	-7.2	140	141	151	123	115	81	108	99	79	93	100
Knot	-1.1	127	107	146	115	101	107	130	82	120	140	100
Sanderling	4.1	62	45	61	47	49	63	64	59	94	75	100
Purple Sandpiper	4.2	21	18	16	28	26	26	22	27	25	31	100
Dunlin	-4.7	131	144	151	117	120	129	119	113	97	95	100
Black-tailed Godwit	2.6	121	50	49	63	94	90	127	90	98	88	100
Bar-tailed Godwit	2.2	75	115	150	97	129	119	142	132	166	113	100
Redshank	3.2	66	79	65	86	87	85	102	85	86	104	100
Greenshank	3.8	51	68	58	85	87	73	89	70	90	94	100
Turnstone	2	70	74	70	64	94	80	80	65	80	88	100

Table 2. Total numbers of waterbirds at principal wetlands counted by I-WeBS between 1999/00 and 2004/05. Totals are derived from summed annual maxima of each species across all months Sep - Mar inclusive in each year. Species codes are given below, with those shown in lower- and upper-case indicating occurrence in nationally and internationally important numbers respectively (based on the 2000/01-2004/05 period). Asterisks illustrate incomplete counts.

ND	Great Northern Diver	T.	Teal	RP	Ringed Plover
LG	Little Grebe	MA	Mallard	GP	Golden Plover
GG	Great Crested Grebe	PT	Pintail	GV	Grey Plover
CA	Cormorant	SV	Shoveler	L.	Lapwing
H.	Grey Heron	PO	Pochard	KN	Knot
MS	Mute Swan	TU	Tufted Duck	SS	Sanderling
BS	Bewick's Swan	SP	Scaup	PS	Purple Sandpiper
WS	Whooper Swan	LN	Long-tailed Duck	DN	Dunlin
NW	Greenland White-fronted Goose	E	Eider	BW	Black-tailed Godwit
GJ	Greylag Goose	CX	Common Scoter	BA	Bar-tailed Godwit
BY	Barnacle Goose	GN	Goldeneye	CU	Curlew
PB	Light-bellied Brent Goose	RM	Red-breasted Merganser	RK	Redshank
SU	Shelduck	CO	Coot	GK	Greenshank
WN	Wigeon	OC	Oystercatcher	TT	Turnstone
GA	Gadwall				

Site	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Mean (2000- 2004)	Species occurring insignificant numbers
Internationally important sites supporting >20,000 waterbirds								
Dundalk Bay	66,903	42,832	45,551	47,016	66,321	52,895	50,923	gg, ca, h., gj, PB, su, t., ma, pt, cx, rm, oc, rp, gp, gv, l., KN, dn, BW, BA, cu, RK
Wexford Harbour & Slobs	32,716*	24,515*	32,835*	51,459	49,693	41,894	47,682	lg, gg, ca, h., et, MS, bs, WS, NW, PB, su, wn, ga, t., ma, pt, sp, rm, mh, rp, GP, gv, l., dn, BW, BA, cu, rk
Lough Foyle [†]	36,766	37,191	29,466	34,151	37,111	34,254	34,435	rh, gg, h., WS, GJ, PB, su, wn, t., ma, pt, e., ln, rm, oc, gp, l., kn, dn, bw, BA, cu, rk, gk
Lough Corrib	34,590	35,158	43,386	19,439	41,527	26,758	33,254	MS, nw, ga, PO, tu, co, gp
Shannon & Fergus Estuary			37,128	13,290	43,791	35,165	32,344	ca, WS, gj, PB, su, wn, ga, t., sp, gp, l., kn, dn, BW, cu, rk, gk
Dublin Bay	29,357	26,254	30,331	36,072	27,843	27,954	29,691	gg, h., PB, su, wn, t., pt, sv, rm, oc, rp, gv, kn, ss, dn, BW, BA, cu, RK, gk, tt

Cork Harbour	30,339*	28,686*	26,476	29,551	30,368	31,198	29,398	lg, gg, ca, h., et, su, wn, ga, t., ma, pt, sv, rm, mh, oc, gp, l., ss, dn, BW, ba, cu, rk, gk, tt
Lough Swilly	28,513	28,515	29,251	23,960	13,674	27,182	24,516	rh, lg, gg, MS, WS, NW, GJ, PB, su, wn, t., ma, sv, gn, rm, oc, kn, dn, cu, RK, gk
Tralee Bay, Lough Gill & Akeragh Lough	31,157	25,700*	19,044	23,758*	23,361*	26,287	22,666	MS, by, PB, t., ma, sv, sp, oc, rp, gp, gv, l., ss, BW, ba, cu, rk, gk, tt
Bannow Bay	13,086		1,669*	26,433		18,062	22,248	rh, PB, su, gp, gv, l., kn, dn, ba, rk
Ballymacoda	26,682	26,710	18,149	20,725	21,033		21,654	et, su, wn, t., GP, gv, l., kn, ss, dn, BW, ba, cu, rk, LB
Little Brosna Callows	17,515	27,380	20,727	14,290	23,223	20,468	21,218	gg, nw, wn, ga, t., pt, sv, RP, gp, l., BW
Dungarvan Harbour	15,349		19,375	23,064		21,139	21,193	PB, su, oc, gp, gv, l., kn, ss, dn, BW, BA, cu, rk, tt
Rogerstown Estuary	11,947	23,861	21,404	15,903	22,549	22,234	21,190	gj, PB, su, wn, ga, t., sv, oc, rp, gv, l., kn, ss, dn, BW, cu, rk, gk, tt
Inner Galway Bay	20,047	15,301	21,352	24,607	17,312	24,870	20,688	ND, lg, ca, h., MS, PB, wn, t., sv, sp, rm, rp, gp, gv, l., dn, ba, cu, rk, gk, tt
Other Internationally important sites								
Shannon Callows	31,835		26,816	9,218	16,917	20,594	18,386	MS, ws, wn, gp, l., BW
Boyne Estuary	12,224	18,053	20,833	11,034			16,640	PB, su, oc, gp, gv, l., kn, ss, bw, ba, rk
The Cull & Killag	15,137		76*	15,246	15,027	14,229	14,834	bs, ws, PB, gp, l., bw, ba
Lough Ree	9,651	22,020	8,476	10,275*	689	24,193	13,845	lg, MS, ws, wn, t., pt, sv, tu, gn, co, mh, gp, l
Broadmeadow (Malahide Estuary)	9,394	10,474	13,156	9,612	16,259	13,982	12,697	gg, PB, su, ga, pt, gn, rm, oc, gp, gv, kn, dn, BW, ba, rk, gk, tt
Rahasane Turlough	15,839	13,984	12,185	16,660*	7,927	12,812	11,727	wn, ga, pt, sv, gp, BW
River Suck	4,777		9,836	8,544	10,433	16,908	11,430	MS, nw, wn, gp, l

The Mullet, Broadhaven & Blacksod Bays	8,644*	9,225*	8,111	11,555	13,391	7,449*	11,019	ND, ca, h., gj, BY, PB, cx, rm, RP, gp, ss, dn, ba, cu, gk
Killala Bay	15,223	8,858	11,523	9,529	13,169	11,152	10,846	PB, rm, rp, gp, gv, kn, dn, bw, ba, cu, rk, gk
Carlingford Lough†	10,029	8,431	9,593	10,601	10,282	11,243	10,030	gg, ca, PB, su, t., sp, gn, rm, oc, rp, dn, cu, rk, gk, tt
Castlemaine Harbour & Rossbehy	8,710	10,998	12,479	9,603*		6,456	9,978	PB, wn, ma, cx, kn, ss
Courtmacsherry Bay, Broadstrand Bay & Dunworley	14,459	10,135	11,737	8,459	10,202	8,671	9,841	nd, su, wn, rm, gp, dn, BW, cu, gk
Blackwater Estuary	7,659	11,286	7,979	8,960	8,640		9,216	et, dn, BW, ba, cu, rk, gk
Lough Owel	2,378		5,183	6,407	6,995	13,448	8,008	nw, SV, po, tu, co
Baldoyle Bay	7,859	5,751	8,891	6,825	4,290	4,626	6,077	PB, su, pt, rp, gv, ps, ba
Sligo Harbour	3,804	4,720			5,487	7,919	6,042	PB, oc, kn, ss, dn, ba, rk
North Wicklow Coastal Marshes	5,103	5,633	5,828	6,059	5,238	6,564	5,864	lg, gj, PB, wn, t., sv, mh
Tramore Back Strand & Bay	11,246	78	6,643	5,487	10,514	5,864		gj, PB, gp, gv, BW, ba, rk
Ballysadare Bay	7,517	5,940			4,184	4,674	4,933	rh, PB, cx, ss, dn, rk, gk
Donegal Bay	4,056	3,161		3,432	5,321	7,489	4,851	ND, MS, ws, nw, PB, cx, rm, gk
Clonakilty Bay	28	7,201	4,768	877		6,532	4,845	BW, gk
North Central Galway Lakes	3,494	9,323	3,709	2,539	2,330	3,174	4,215	WS, sv
Lough Derg (Shannon)	5,373	542	5,433	2,437	3,819	8,402	4,127	MS, tu, gn, co,
River Foyle	4,498	3,160	4,252*	4,441*	4,756		3,958	WS, gj, cu
Lough Ennell	1,636*		5,375	1,999	3,891		3,755	lg, MS, po, tu
Blackwater Callows	2,783	3,709	2,654	3,456	3,791	5,124	3,747	WS, wn, t., BW
Drumcliff Bay Estuary	5,440	1,838	137*		4,743	4,249	3,610	BY
Lough Oughter Complex	4,227	3,515	3,288	2,295	4,240	2,377	3,143	gg, MS, WS, ga, ma, tu, gn, mh
Hicks Tower, Robswall	2,742	2,239	5,043	2,303	2,304	2,799	2,938	PB, oc, gv, kn
Lough Derravaragh	7,356		3,107	2,373*	1,783	3,068	2,653	lg, MS, po, co
Ballyhaunis Lakes	2,876	3,154	3,003	2,534	1,332	659*	2,506	MS
Lough Kinale	596		1,369	2,854	3,376	1,889	2,372	lg, MS, tu, co
& Derragh Lough								
Skerries Islands	2,965	2,102	2,503	2,763	1,904		2,318	ca, PB, tt
Trawbreaga Bay	2,691		991	2,969			1,980	BY, PB
Corofin Wetlands	4,841	3,508	2,117	2,248	933	924	1,946	MS, ga, sv
Lady's Island Lake	5,444	715	817	1,089		4,484	1,776	et, bs, PB, gv
Seagrang Park	1,668	1,590	1,329	1,646	1,058	1,672	1,459	PB, BW
Dunfanaghy New Lake	1,290	874	1,002	849	1,370	1,208	1,061	nw, BY
Ballinskelligs Bay	202				894		894	ND, cx
Nationally important sites								
Cahore Marshes	4,863*	10,682	21,866	6,203*	11,913	9,828*	14,820	bs, nw, gj, wn, t., sv, gp, l., bw, cu

Southern Roscommon Lakes	20,438	14,196		13,027		2,707*	13,612	bs, nw, t., pt, sv, gp, l	
Inishcarra Reservoirs	7,043	11,556	9,982	8,198	8,525	10,470	9,746	gj, t., ma, sv, tu, gp	
River Maigue	1,276		8,735				8,735	ga, gp, dn, cu	
Tacumshin Lake	12,683		1,423	3,935	12,271	14,082	7,928	gj, wn, ga, t., pt, sv, gp	
Nanny Estuary & shore	6,002	4,974	9,867	4,580	6,967	10,751	7,428	cx, oc, rp, gp, kn, ss	
Ballycotton Shanagarry	6,121	5,904	7,064	9,127	7,819	6,946	7,372	t., gp, gv, ss, bw, cu, tt	
Cashen River & Estuary	6,728	133	9,591	4,837	13,533	1,343*	7,024	ws, gp, l	
Lough Sheelin	1,799	2,240	5,072	7,578	11,125	7,359	6,675	lg, gg, ca, po, tu, gn	
River Barrow (Checkpoint-New Ross)				4,269			4,269	et, bw, cu	
Clew Bay	1,893	4,279*	4,749	3,996	4,959	2,898	4,151	nd, h., by, rm, rp, rk, gk	
Charleville Lagoons	3,124	3,359	6,570	2,719	1,513	6,265	4,085	sv, gp	
Braganstown	3,398	4,190	362	2,330	1,641	10,237	3,752	gj, gp	
Rosscarbery	3,227	3,738	3,798	3,850	3,357	3,354	3,619	gp	
Wexford Bay	7,480	5,933	4,519	525	2,750	2,230	3,191	rh, cx	
L. Coy - Blackrock - Bullaunagh - Ballylee	1,115	3,110	3,402	3,793	2,349	2,378	3,006	ws, wn	
Lough Rea	2,957	2,526	3,291	2,780	2,518	3,576	2,938	sv, co	
Ballyallia Lake	46	5,539	768	2,421			2,909	wn, t., ma, sv	
Fortwilliam Turlough	3,632	3,299	1,393			3,422	2,705	gp	
River Suir Lower	3,570	547	3,156	4,066	670	4,784	2,645	gj	
Cabragh Wetlands	1,993	1,883	1,931	1,716	2,398	4,913	2,568	sv	
Boyne Estuary - Skerries		2,508					2,508	cx	
Dunany Point - Clogher Head	6,683		2,737	2,148	2,789	2,318	2,498	rh, cx, kn	
South Mayo Coast	5,415	2,316	1,882	1,836	3,800	2,460	2,459	rp, ss	
Lough Iron	4,948		325*		2,607	2,284	2,446	ws, nw, sv, co	
Cordara Turlough	983	370	2,604			4,111	2,362	gp	
Lower Blackwater River	4,475	3,191	2,149	2,562	1,832	1,777	2,302	et, bw	
Lough Ramor	1,240	1,133	4,254	2,102	2,561	775	2,165	gn	
Rostaff Lake	6,285	2,938	2,827	1,581	1,420	1,707	2,095	sv	
Coole Lough - Newtown Turlough	791	2,513	1,894	1,611	1,220	1,874	1,822	ws	
Lough Carra	586	1,774	1,244	1,261	2,846	1,847	1,794	lg, ga, sv, gn	
Kiltullagh Lough			1,785				1,785	sv	
Annaghmore Lakes	3,438*	1,521	1,597	2,508	524	2,700	1,770	sv	
Castleplunket Turloughs	2,997	2,518		1,445	1,321	1100*	1,761	wn	
Kilcolman Marsh	1,254	2,782	1,199	1,385	1,602		1,742	gj, sv	
Glenamaddy Turlough			1,651				1,651	ws	
Dromore River	1,474*	1,636	1,665	890*	2759*	509*	1,651	mh	
Waterford Harbour	1,661		436*	640			2,640	oc, bw	
Ballyglass Wetlands							1,559	pt, sv	
River Slaney	2,212						1,557	t.	
Brandon Bay - Inner Brandon Bay	256*	250		1,626			2,693	1,523	rh, nd, sp, cx
Poulaphouca Reservoir	1,390*	1,525	2,348	1,302	1,296	651	1,424	gj, mh	
Lough Gur	2,813	2,425	1,249	1,341	1,091	445	1,310	gj, ga, sv	
Lough Arrow			657	1,578	1,930	823	1,247	lg, pt, tu, gn	
Stick Estuary (Oysterhaven)	555	553	1,194	1,000	1,559	1,719	1,205	bw	
Smerwick Harbour	1,723	1,077	1,340		1,170	1,199	1,197	rp	
Ballyness Bay	1,832	1,202	1,448	1,579	537		1,192	rp, ss	

Skerries Coast	1,302	817	1,713	1,071	712	1022*	1,078	ss, ps
Ringabella Creek	611	1,029	1,377	801	976	1,111	1,059	bw
Clogher Head - Baltray					1,229	804	1,017	cx
Pollardstown Fen				403	1,778	868	1,016	gp

† Cross-border site - Entire site data provided by UK WeBS.

Other nationally important sites (species occurring in nationally important numbers): River Shannon (Lower) 994 (po, tu), Drumalough 919 (ws), Dublin Zoo Ponds 916 (tu, mh), Blackwater Railway Lake 909 (ws, t.), Lough Gowna 908 (pt), Greaghans 879 (sv), Caherglassaun Lough 868 (ga), Outer Sligo Bay 819 (by, e.), Pat Reddan's Lake 763 (ga, sv), Inner Lough Dartrey 760 (ma), Inishmore, Aran Islands 752 (rp, ss), Lambay Island 749 (gj), Marlfield Lake 708 (ga, sv, mh), Dromore Lakes (Clare) 696 (sv), Fane River Plain 663 (gj), Ballyconeely Bay 641 (rp), Bantry Bay 632 (lg), East Ballinamore Lakes 578 (ws), Tawny Lough 550 (ga), River Boyne 542 (mh), Omev Strand 534 (rp), Lough Aderry 492 (ga), Lough Eorna 484 (lg, mh), Trá na Rón (Inveran) 442 (rp), Skerries, Baldongan 442 (gj), Castlelough 417 (sv), Brittas Pools 407 (lg), Mountseskin/Gortlum 401 (gj), Tymon Park 390 (mh), River Glyde 381 (gj), Lyonstown Stud Farm 346 (ws), Cloghanhill 346 (ws), Grand Canal (Dublin) 325 (mh), Bray Harbour 319 (MS), Keenan's Cross Pond 280 (gj), Ballyshunnoch Reservoir 275 (mh), Arklow Ponds 264 (mh), Castlemartyr Lake 264 (ga), Yellow River 249 (WS), River Blackwater (Meath) 241 (WS), Blarney Lake 231 (ga), Vartry Reservoir 151 (lg), Blackwater Catchment 144 (lg), Gravelstown 142 (ws), Kilmeaden Cream (Blackknock) 80 (mh).

Table 3. Internationally and nationally important concentrations of waterbirds recorded in the Republic of Ireland each season between 1999/2000 and 2004/05. The threshold values used are based on Crowe *et al.* (in prep) (national) and Wetlands International (2002).

Species name	International						National					
	1999	2000	2001	2002	2003	2004	1999	2000	2001	2002	2003	2004
Red-throated Diver							8	4	4	7	4	7
Great Northern Diver	3	2	2	2	4	3	6	1	3	3	2	5
Little Grebe							19	14	17	13	16	17
Great Crested Grebe							9	7	9	10	9	9
Cormorant							9	10	7	10	10	9
Grey Heron							7	6	7	9	7	12
Little Egret							1	4	3	6	5	4
Mute Swan	14	11	13	13	13	14						
Bewick's Swan							2	1	2	2	2	4
Whooper Swan	9	8	10	9	8	10	5	5	6	8	5	9
Greenland White-fronted Goose	4	3	3	3	2	3	3	6	4	6	6	5
Greylag Goose	3	2	3	1		2	8	10	7	9	12	7
Barnacle Goose	3	1	1	2	3	2	4	1	4	5		2
Light-bellied Brent Goose	23	20	23	19	17	24						
Shelduck							15	12	9	15	10	13
Wigeon							25	19	19	26	22	22
Gadwall							8	8	13	13	8	14
Teal							27	27	20	22	19	21
Mallard							16	16	9	8	9	7
Pintail							11	8	8	12	9	15
Shoveler		2		1	1	1	22	20	27	20	21	26
Pochard	1	1	1	1	2	2	4	1	7	4	3	5
Tufted Duck							7	3	12	9	8	11
Scaup							3	4	4	5	3	6
Eider									1			1
Long-tailed Duck							1	2				1
Common Scoter							5	7	4	8	7	9
Goldeneye							10	6	9	6	9	6

Red-breasted Merganser							13	12	10	14	12	13
Coot					1		7	5	5	8	7	11
Moorhen							18	6	11	13	12	11
Oystercatcher	1			1	1		16	11	10	10	13	16
Ringed Plover			1	1	1	2	14	17	12	13	9	12
Golden Plover	3	1	2	2	3	4	25	22	27	24	22	24
Grey Plover							17	10	16	16	13	11
Lapwing	1						18	14	16	16	16	21
Knot	1	1	1	2	1	2	12	12	9	12	10	11
Sanderling							10	12	12	17	15	12
Purple Sandpiper							4	1	1	1	1	1
Dunlin	1						18	16	18	20	16	15
Black-tailed Godwit	14	12	18	16	13	16	8	6	6	8	8	11
Bar-tailed Godwit	3	2	2	5	3	2	18	13	14	12	10	16
Curlew					1		22	17	17	17	15	19
Redshank	2	3	1	4	2	3	13	11	14	15	15	14
Greenshank							11	9	15	14	15	19
Turnstone							12	6	7	11	10	12
Lesser Black-backed Gull		1	1		1							

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