Scottish Natural Heritage
Archive Report No. 009

Waders and wildfowl on the Ythan Estuary 1999/2000

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

ARCHIVE REPORT

Archive Report No. 009

Waders and wildfowl on the Ythan Estuary 1999/2000

For further information on this report please contact:

Annabel Drysdale
Scottish Natural Heritage
Little Collieston Croft
Collieston
ELLON
AB41 8RU
Telephone: 01358 751330
E-mail: annabel.drysdale@snh.gov.uk

This report should be quoted as:

Patterson, I.J. and Thorpe, A.W. 2000. Waders and wildfowl on the Ythan Estuary 1999/2000. *Scottish Natural Heritage Archive Report No. 009.*

Archive Reports

Scottish Natural Heritage is committed to making the findings of all of its research publicly available whenever possible.

In the past, a number of reports from staff and contractors were produced as paper documents and lodged in the SNH library or file systems. Some related to Site Condition Monitoring, others covered a range of subjects. These were not published as Commissioned Reports for a number of reasons.

In order to make these reports more available, we have decided to publish them online under the series title of **Archive Reports**. These will be numbered consecutively in the order that they are prepared for web publication. Their publication date, authors and title will be recorded as presented in the original report.

The Archive reports will be published as scanned PDF files of the original reports. They have not been subject to any new editing, formatting or other changes, other than the cover, title page and this page.

Many of the reports published as Archive Reports were produced by contractors and were originally intended as internal documents to inform our policy and advice. As a result they may contain historical information that is no longer current or accurate, and may contain views of contractors or staff which do not represent the current views and policy of SNH.

WADERS AND WILDFOWL ON THE

YTHAN ESTUARY 1999/2000

A REPORT TO SNH

I J Patterson and A.W. Thorpe

Aberdeen University Zoology Department
Culterty Field Station, Newburgh, Aberdeenshire

INTRODUCTION

The wader and wildfowl counts in this report are a direct continuation of the series started in 1989/90, with the same objective of monitoring the bird populations of the Ythan estuary by means of twice-monthly surveys of numbers and distribution. The counts were carried out from 5 July 1999 to 21 June 2000, using the same methods as in previous years (Patterson and Thorpe 1999; Appendix 1). Since the field surveys in 1999/2000 were again carried out by a specialist ornithologist, it was possible to include counts of species which occur less commonly on the Ythan.

RESULTS

a) Individual species

As in previous reports, the data are presented in separate species accounts, arranged in taxonomic order. For each species, a table shows the number of birds found in each section of the estuary from the mouth upstream (ie, Mouth, Inches, Quay, Tarty, Sleek, Haddo, Snub, Machar, and Logie), as defined in Figure 1, and the total on the whole estuary on each count date. Information which is not obvious from the data tables is appended and peak numbers are compared with those in the previous year. Only the commoner species, which were included in previous reports, are dealt with in this section; the species recorded less commonly during the year are tabulated in section d).

HERON *Ardea cinerea*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	1	9	4	0	9	2	4	0	1	30
20	7	1999	0	0	0	25	0	0	1	0	0	26
5	8	1999	0	0	1	11	16	2	5	0	4	39
27	8	1999	1	10	3	38	1	3	0	2	1	59
13	9	1999	0	14	3	0	8	1	1	0	0	27
30	9	1999	3	16	4	0	5	7	3	2	2	42
15	10	1999	1	0	0	3	4	0	0	0	0	8
28	10	1999	1	6	0	2	5	1	1	2	0	18
10	11	1999	1	5	0	1	3	0	0	0	0	10
25	11	1999	3	4	1	0	3	0	1	0	0	12
15	12	1999	0	1	5	0	3	4	0	0	0	13
30	12	1999	0	3	2	2	3	0	0	0	0	10
11	1	2000	0	0	2	0	0	0	1	0	1	4
25	1	2000	1	3	2	2	3	0	0	1	1	13
9	2	2000	0	2	1	0	6	2	0	0	1	12
23	2	2000	0	2	1	0	4	0	0	0	1	8
13	3	2000	0	5	0	2	3	0	1	0	0	11
31	3	2000	0	3	0	0	5	0	0	0	0	8
10	4	2000	0	7	2	0	0	1	0	0	1	11
27	4	2000	0	1	2	0	3	0	2	1	0	9
13	5	2000	0	0	0	4	3	0	0	0	0	7
23	5	2000	0	2	0	2	4	1	0	0	0	9
6	6	2000	1	7	2	1	1	0	0	0	0	12
21	6	2000	1	0	1	8	6	1	1	0	0	18

Peak; 59: (1998/99 peak; 27)

MUTE SWAN *Cygnus olor*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	0	2	0	0	5	9	0	0	2	18
20	7	1999	0	0	0	0	9	6	0	0	3	18
5	8	1999	0	0	0	0	3	5	0	0	0	8
27	8	1999	0	0	0	0	7	0	0	0	1	8
13	9	1999	0	0	0	0	0	0	4	1	0	5
30	9	1999	0	0	7	0	0	0	0	2	0	9
15	10	1999	0	3	0	0	17	0	0	0	0	20
28	10	1999	0	0	8	0	26	0	0	0	1	35
10	11	1999	0	3	0	0	13	9	0	0	1	26
25	11	1999	0	5	0	0	8	10	0	0	0	23
15	12	1999	0	0	6	0	6	7	0	0	0	19
30	12	1999	0	1	0	0	2	10	0	0	0	13
11	1	2000	0	2	0	0	2	0	0	0	0	4
25	1	2000	0	0	0	0	1	0	0	0	1	2
9	2	2000	0	0	0	0	0	0	0	0	4	4
23	2	2000	0	0	0	0	1	3	0	0	2	6
13	3	2000	0	0	0	0	2	0	0	0	0	2
31	3	2000	0	0	0	0	6	0	0	0	0	6
10	4	2000	0	3	2	0	3	0	0	0	0	8
27	4	2000	0	1	0	2	2	1	0	0	0	6
13	5	2000	0	0	2	2	12	2	1	0	0	19
23	5	2000	0	3	0	0	24	0	1	1	0	29
6	6	2000	0	0	4	0	30	10	1	0	0	45
21	6	2000	0	0	3	0	5	35	2	0	0	45

Peak; 45: (1998/99 peak; 58)

SHELDUCK *Tadorna tadorna*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	0	3	2	0	25	41	2	7	2	82
20	7	1999	0	0	0	0	7	2	0	0	0	9
5	8	1999	0	1	0	0	32	2	0	7	3	45
27	8	1999	0	2	0	0	0	15	5	0	0	22
13	9	1999	0	0	0	0	5	3	0	4	0	12
30	9	1999	0	0	0	0	0	2	0	0	0	2
15	10	1999	0	0	0	0	0	2	1	0	0	3
28	10	1999	0	0	0	0	5	0	0	0	0	5
10	11	1999	0	0	0	0	7	6	0	0	0	13
25	11	1999	0	0	0	0	2	15	0	0	0	17
15	12	1999	0	0	0	0	7	13	0	0	0	20
30	12	1999	0	0	12	0	24	0	0	0	0	36
11	1	2000	0	2	6	0	32	2	0	1	0	43
25	1	2000	2	3	7	0	40	25	4	2	0	83
9	2	2000	0	6	8	5	29	33	3	13	0	97
23	2	2000	0	12	3	4	52	35	0	8	0	114
13	3	2000	0	7	9	16	52	25	12	10	0	131
31	3	2000	0	2	13	5	65	34	0	2	2	123
10	4	2000	0	2	6	11	69	38	6	4	0	136
27	4	2000	0	8	8	6	55	10	0	0	0	87
13	5	2000	0	1	0	15	28	15	4	20	2	85
23	5	2000	0	4	2	7	96	6	11	16	4	146
6	6	2000	0	1	2	4	112	33	5	6	1	164
21	6	2000	0	3	6	7	76	29	0	4	2	127

Peak, 164. (1998/99 peak; 144)

As in previous years, the counts do not include the whole breeding population, since birds on freshwater pools, in the Forvie dunes and on the Ythan above Logie Buchan bridge were not counted.

EIDER *Somateria mollissima*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	1810	86	53	0	14	1	0	0	0	1964
21	7	1999	1448	133	76	0	8	0	0	0	0	1665
9	8	1999	1407	144	69	0	8	3	0	0	0	1631
25	8	1999	1077	12	35	0	6	0	0	0	0	1130
12	9	1999	1100	7	54	0	37	0	0	0	0	1198
28	9	1999	904	180	10	96	0	0	0	0	0	1190
14	10	1999	418	0	591	0	2	0	0	0	0	1011
25	10	1999	354	115	827	0	1	0	0	0	0	1297
10	11	1999	184	249	721	0	0	0	0	0	0	1154
22	11	1999	106	328	730	0	2	0	0	0	0	1166
7	12	1999	0	889	428	0	10	0	0	0	0	1327
23	12	1999	346	1466	0	0	0	0	0	0	0	1812
6	1	2000	93	1083	202	0	7	0	0	0	0	1385
20	1	2000	29	515	422	0	47	0	0	0	0	1013
2	2	2000	80	670	206	0	6	0	0	0	0	962
15	2	2000	281	313	93	0	45	0	0	0	0	732
2	3	2000	272	356	48	0	26	0	0	0	0	702
21	3	2000	319	6	469	0	58	0	0	0	0	852
5	4	2000	583	60	397	0	9	0	0	0	0	1049
18	4	2000	1415	226	404	0	34	0	0	0	0	2079
28	4	2000	1251	2012	168	0	14	0	0	0	0	3445
1	5	2000	1390	1713	229	0	61	0	0	0	0	3393
8	5	2000	737	1975	502	0	77	0	0	0	0	3291
17	5	2000	913	1553	149	0	34	0	0	0	0	2649
23	5	2000	1930	1308	230	0	9	0	0	0	0	3477
29	5	2000	2233	1304	204	0	15	0	0	0	0	3756
6	6	2000	2600	569	155	0	4	0	0	0	0	3328
12	6	2000	2623	553	106	0	8	0	0	0	0	3290
19	6	2000	2333	323	82	0	11	0	0	0	0	2749

Peak; 3,756 (1998/99 peak; 3,321)

The number of ducklings fledged in 2000 was 212, a decrease from the 614 fledged in 1999.

WIGEON *Anas penelope*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	0	0	0	0	0	10	0	0	0	10
20	7	1999	0	0	0	0	0	3	0	0	0	3
27	8	1999	0	0	0	0	0	12	0	0	0	12
13	9	1999	0	0	0	0	0	17	22	0	0	39
30	9	1999	0	35	0	0	125	21	121	0	0	302
15	10	1999	3	18	30	0	120	0	0	0	0	171
28	10	1999	60	13	8	0	260	0	0	0	0	341
10	11	1999	157	145	22	0	49	0	0	0	0	373
25	11	1999	197	79	106	0	109	0	0	0	0	491
15	12	1999	116	144	0	0	47	0	0	0	0	307
30	12	1999	151	53	67	0	581	0	25	0	0	877
11	1	2000	267	204	50	0	57	0	0	0	0	578
25	1	2000	56	145	147	0	28	0	0	0	0	376
9	2	2000	28	96	34	0	117	0	0	0	0	275
23	2	2000	0	80	20	0	92	0	2	0	0	194
13	3	2000	26	32	0	0	77	0	164	0	0	299
31	3	2000	0	3	0	0	57	0	37	0	0	97
10	4	2000	0	2	0	0	183	0	0	0	0	185
27	4	2000	0	0	0	0	35	0	5	0	0	40
13	5	2000	0	0	0	0	6	0	0	0	0	6
21	6	2000	0	0	0	0	8	0	0	0	0	8

Peak; 877: (1998/99 peak; 502)

TEAL *Anas crecca*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	0	3	0	0	0	0	0	0	0	3
27	8	1999	2	0	0	0	0	0	0	0	0	2
30	9	1999	1	0	0	0	9	0	16	0	0	26
15	10	1999	0	0	0	0	0	0	0	11	15	26
28	10	1999	0	0	0	0	1	0	0	0	0	1
10	11	1999	0	3	0	0	0	0	0	0	0	3
25	11	1999	0	0	0	0	0	0	0	0	99	99
11	1	2000	0	0	0	0	0	0	0	0	45	45
25	1	2000	0	0	0	0	0	0	0	0	5	5
9	2	2000	0	0	0	0	0	0	0	0	2	2
13	3	2000	0	0	1	0	0	0	0	4	3	8
31	3	2000	0	0	0	0	0	0	0	20	33	53
10	4	2000	0	0	0	0	0	0	10	0	12	22
27	4	2000	0	0	0	0	0	0	0	8	0	8
23	5	2000	0	0	0	0	0	0	0	0	4	4

Peak; 99: (1998/99 peak; 77)

MALLARD *Anas platyrhynchos*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	0	1	0	0	0	2	0	0	9	12
20	7	1999	0	3	0	0	0	2	0	0	6	11
5	8	1999	0	0	0	0	0	0	0	0	5	5
27	8	1999	0	0	0	0	0	0	0	0	5	5
10	11	1999	2	0	6	0	0	0	0	0	0	8
25	11	1999	0	9	0	0	5	0	0	0	2	16
15	12	1999	4	1	13	0	5	2	8	0	4	37
30	12	1999	0	9	19	0	10	0	0	0	0	38
25	1	2000	0	0	6	0	10	0	0	0	0	16
9	2	2000	0	0	13	0	7	0	0	0	0	20
23	2	2000	0	0	6	0	5	0	0	0	0	11
13	3	2000	0	3	10	0	18	0	2	0	0	33
31	3	2000	0	9	2	1	3	0	4	2	0	21
10	4	2000	0	0	3	0	3	3	4	0	0	13
27	4	2000	0	0	1	0	1	0	0	0	0	2
13	5	2000	0	4	0	0	0	6	0	6	0	16
23	5	2000	0	2	0	2	0	2	0	0	0	6
6	6	2000	0	1	0	0	0	0	0	2	1	4
21	6	2000	0	0	0	2	1	0	0	0	8	11

Peak; 38 (1998/99 peak; 14)

The peak number shows a return to the level found in 1997/98 (36).

GOLDENEYE *Bucephala clangula*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	1	0	1	0	0	0	0	0	0	2
27	8	1999	0	0	0	0	0	0	0	0	1	1
13	9	1999	0	0	1	0	0	0	0	0	0	1
15	10	1999	0	0	0	0	0	0	1	0	0	1
28	10	1999	0	0	2	0	0	0	0	0	0	2
10	11	1999	0	0	13	0	0	0	0	7	0	20
25	11	1999	0	4	1	0	6	1	1	8	1	22
15	12	1999	5	10	1	0	0	1	0	0	0	17
30	12	1999	5	8	4	0	2	0	2	0	0	21
11	1	2000	2	2	12	0	1	0	0	3	1	21
25	1	2000	2	1	7	0	5	0	1	0	6	22
9	2	2000	2	3	3	0	10	0	3	0	0	21
23	2	2000	6	0	2	0	6	0	3	0	2	19
13	3	2000	0	2	1	0	10	12	4	1	1	31
31	3	2000	0	1	2	0	10	8	4	1	2	28
10	4	2000	1	3	0	0	49	12	6	0	2	73
27	4	2000	0	0	0	0	0	6	14	0	0	20
23	5	2000	0	0	3	0	0	0	0	0	1	4

Peak; 73: (1998/99 peak; 37)

The peak count was more than twice as large as the next highest (31).

RED-BREASTED MERGANSER *Mergus serrator*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	0	0	0	0	1	0	0	0	0	1
5	8	1999	1	1	0	0	0	0	0	0	0	2
27	8	1999	1	0	0	0	0	0	0	0	0	1
13	9	1999	1	0	12	0	1	0	0	0	0	14
30	9	1999	6	0	22	0	1	0	0	3	0	32
15	10	1999	14	2	0	0	9	6	1	0	0	32
28	10	1999	4	4	3	0	8	0	0	0	0	19
10	11	1999	10	9	7	0	0	0	2	0	0	28
25	11	1999	4	17	4	0	7	0	0	0	0	32
15	12	1999	4	7	5	0	0	0	0	0	0	16
30	12	1999	3	14	4	0	1	0	0	0	0	22
11	1	2000	6	2	6	0	0	0	0	0	0	14
25	1	2000	9	13	3	0	3	0	0	0	0	28
9	2	2000	8	10	0	0	5	0	0	0	0	23
23	2	2000	3	4	0	0	4	0	0	0	0	11
13	3	2000	11	6	12	0	0	0	0	0	0	29
31	3	2000	4	10	8	0	4	0	0	0	0	26
10	4	2000	1	2	6	0	0	0	0	0	0	9
27	4	2000	6	12	0	0	0	0	0	0	0	18

Peak; 32: (1998/99 peak; 40)

OYSTERCATCHER *Haematopus ostralegus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	53	136	19	6	21	17	0	0	0	252
20	7	1999	147	74	21	3	23	16	0	17	1	302
5	8	1999	255	159	8	0	9	7	0	3	0	441
27	8	1999	214	163	22	0	10	4	0	0	0	413
13	9	1999	257	116	31	0	8	0	0	0	0	412
30	9	1999	261	152	0	0	18	10	0	1	0	442
15	10	1999	264	111	4	0	16	0	0	0	0	395
28	10	1999	128	108	17	0	24	4	0	0	0	281
10	11	1999	229	121	25	0	70	12	0	0	0	457
25	11	1999	155	53	4	0	10	4	0	0	0	226
15	12	1999	234	74	49	1	16	0	0	0	1	375
30	12	1999	192	62	50	0	17	5	0	0	0	326
11	1	2000	198	71	26	2	16	4	2	3	0	322
25	1	2000	165	103	51	0	19	35	0	0	0	373
9	2	2000	162	123	32	1	18	12	2	0	0	350
23	2	2000	143	75	39	8	24	60	8	2	0	359
13	3	2000	40	101	45	31	17	71	33	0	2	340
31	3	2000	54	55	7	10	23	5	8	2	0	164
10	4	2000	55	63	11	18	62	64	3	8	2	286
27	4	2000	39	62	6	23	9	6	3	0	0	148
13	5	2000	23	33	1	2	12	0	8	16	0	95
23	5	2000	77	31	3	2	8	2	5	0	0	128
6	6	2000	61	72	3	2	8	27	4	0	0	177
21	6	2000	39	124	2	2	7	4	13	0	0	191

Peak; 457: (1998/99 peak; 636)

The peak count was close to that in 1997/98 (468).

RINGED PLOVER *Charadrius hiaticula*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	1	0	0	0	0	0	0	0	0	1
20	7	1999	17	11	0	0	0	0	0	0	0	28
5	8	1999	0	19	0	0	0	0	0	0	0	19
27	8	1999	5	55	0	0	0	1	0	0	0	61
13	9	1999	1	0	0	0	0	0	0	0	0	1
30	9	1999	1	13	0	0	0	0	0	0	0	14
15	10	1999	0	3	0	0	0	0	0	0	0	3
28	10	1999	0	0	0	4	0	0	0	0	0	4
10	11	1999	0	0	0	7	0	0	0	0	0	7
25	11	1999	1	0	0	0	0	0	0	0	0	1
15	12	1999	0	0	0	0	0	4	0	0	0	4
11	1	2000	1	0	0	3	0	0	0	0	0	4
9	2	2000	0	4	1	0	0	0	0	0	0	5
23	2	2000	1	0	0	0	0	0	0	0	0	1
13	3	2000	1	0	0	0	4	17	0	0	0	22
31	3	2000	7	7	0	0	1	0	0	0	0	15
10	4	2000	1	6	0	0	0	6	0	0	0	13
27	4	2000	0	10	0	0	1	0	0	0	0	11
13	5	2000	99	0	0	0	0	0	0	0	0	99
23	5	2000	0	4	43	0	42	0	0	0	0	89
21	6	2000	6	0	0	0	0	0	0	0	0	6

Peak; 99: (1998/99 peak; 137, but the next highest count was 32)

GOLDEN PLOVER *Pluvialis apricaria*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	0	0	15	0	36	0	0	0	0	51
5	8	1999	0	270	28	0	5	86	0	0	0	389
27	8	1999	0	543	459	0	0	3	0	0	0	1005
13	9	1999	0	108	190	0	0	270	0	0	0	568
30	9	1999	0	2550	0	0	300	0	3	0	0	2853
15	10	1999	0	875	0	0	0	260	0	0	0	1135
28	10	1999	0	2425	88	0	620	0	0	0	0	3133
10	11	1999	0	15	0	0	0	3300	0	0	0	3315
25	11	1999	0	3	0	0	0	3000	0	0	0	3003
15	12	1999	0	9	3	0	0	0	0	0	0	12
30	12	1999	0	16	11	0	0	0	0	0	0	27
11	1	2000	0	0	25	0	0	0	0	0	0	25
25	1	2000	0	52	0	0	0	0	0	0	0	52
9	2	2000	0	4	0	0	0	0	0	0	0	4
23	2	2000	0	11	0	0	0	0	0	0	0	11

Peak; 3,315: (1998/99 peak; 2,008)

LAPWING *Vanellus vanellus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	0	1	17	20	141	45	91	80	0	395
20	7	1999	0	2	0	0	158	39	213	65	0	477
5	8	1999	0	40	139	9	252	78	200	56	7	781
27	8	1999	0	50	298	30	310	505	160	182	0	1535
13	9	1999	0	103	461	0	349	290	117	0	0	1320
30	9	1999	0	294	1000	0	470	1060	835	0	11	3670
15	10	1999	0	118	456	0	638	210	208	40	0	1670
28	10	1999	0	280	640	0	1190	860	170	0	0	3140
10	11	1999	0	0	184	0	164	580	390	18	0	1336
25	11	1999	0	718	230	420	397	2350	100	300	0	4515
15	12	1999	0	0	0	0	0	6	0	0	0	6
30	12	1999	0	39	121	3	80	280	0	0	0	523
11	1	2000	0	35	21	0	0	100	0	50	0	206
25	1	2000	0	1	8	0	73	22	150	0	0	254
9	2	2000	0	36	20	0	15	0	0	0	0	71
23	2	2000	0	1	0	0	241	80	0	0	0	322
13	3	2000	0	0	58	0	5	378	213	0	0	654
31	3	2000	0	0	4	0	0	0	0	0	0	4
10	4	2000	0	0	1	5	1	0	0	1	0	8
27	4	2000	0	0	2	0	0	3	0	0	0	5
13	5	2000	0	0	2	0	0	0	3	6	0	11
6	6	2000	0	0	4	9	2	0	8	0	0	23
21	6	2000	0	0	1	5	35	0	1	2	3	47

Peak; 4,515: (1998/99 peak; 2,450)

KNOT *Calidris canutus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	0	29	0	0	2	0	0	0	0	31
5	8	1999	0	1	0	0	0	0	0	0	0	1
27	8	1999	205	3	0	0	0	17	0	0	0	225
13	9	1999	180	0	0	0	0	0	0	0	0	180
30	9	1999	230	1	0	0	0	10	1	0	0	242
15	10	1999	77	0	0	0	0	0	0	0	0	77
28	10	1999	335	2	0	0	0	0	0	0	0	337
10	11	1999	0	286	0	0	0	0	0	0	0	286
25	11	1999	290	10	0	0	0	0	0	0	0	300
15	12	1999	0	402	0	0	0	0	0	0	0	402
30	12	1999	0	60	0	0	0	0	0	0	0	60
11	1	2000	360	0	0	0	0	0	0	0	0	360
25	1	2000	162	0	0	0	2	0	0	0	0	164
9	2	2000	461	11	2	0	0	0	0	0	0	474
23	2	2000	1	180	0	0	0	0	0	0	0	181
13	3	2000	232	1	0	0	0	0	0	0	0	233
31	3	2000	10	119	0	0	28	0	0	0	0	157
10	4	2000	0	3	0	0	20	0	0	0	0	23
27	4	2000	176	0	0	0	0	0	0	0	0	176

Peak; 474: (1998/99 peak; 217)

DUNLIN *Calidris alpina*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	3	38	0	0	19	6	0	0	0	66
5	8	1999	0	0	0	0	1	0	0	0	0	1
27	8	1999	1	85	13	0	2	2	0	1	0	104
13	9	1999	0	5	0	0	0	57	0	0	0	62
30	9	1999	15	72	0	0	2	161	3	37	7	297
15	10	1999	21	169	110	0	58	228	40	180	0	806
28	10	1999	0	45	5	0	5	601	82	0	0	738
10	11	1999	1	16	0	0	0	540	40	30	0	627
25	11	1999	3	140	10	0	12	240	90	0	0	495
15	12	1999	0	10	129	0	2	10	0	0	0	151
30	12	1999	0	10	50	0	10	240	0	0	0	310
11	1	2000	20	35	60	0	0	170	0	0	0	285
25	1	2000	5	387	0	6	45	10	0	0	0	453
9	2	2000	122	0	3	0	0	0	10	0	0	135
23	2	2000	290	10	0	0	0	0	0	0	0	300
31	3	2000	0	0	0	0	0	0	110	0	0	110
10	4	2000	0	0	0	0	0	72	0	0	0	72
27	4	2000	0	42	0	0	30	0	0	0	0	72
13	5	2000	206	0	0	0	0	0	1	0	0	207
23	5	2000	0	0	33	0	16	0	14	0	0	63

Peak; 806: (1998/99 peak; 648)

BAR-TAILED GODWIT *Limosa lapponica*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	0	0	3	0	0	0	0	0	0	3
20	7	1999	0	0	2	0	0	0	0	0	0	2
5	8	1999	0	2	2	0	0	0	1	0	0	5
27	8	1999	1	12	2	0	0	4	0	0	0	19
13	9	1999	0	3	5	0	0	3	0	0	0	11
30	9	1999	6	13	0	0	4	6	0	0	0	29
15	10	1999	1	14	22	0	0	0	0	0	0	37
28	10	1999	1	13	1	0	6	0	0	0	0	21
10	11	1999	6	37	5	0	19	2	0	0	0	69
25	11	1999	5	19	6	0	16	1	0	0	0	47
15	12	1999	2	12	8	0	27	1	0	0	0	50
30	12	1999	5	5	22	0	18	1	0	0	0	51
11	1	2000	2	50	3	0	1	0	0	1	0	57
25	1	2000	1	8	24	0	22	0	0	0	0	55
9	2	2000	7	54	5	0	2	0	0	0	0	68
23	2	2000	0	28	36	0	1	0	0	0	0	65
13	3	2000	1	0	6	0	26	0	0	0	0	33
31	3	2000	1	0	0	0	57	4	18	0	0	80
10	4	2000	0	0	0	0	0	24	0	0	0	24
27	4	2000	0	0	0	7	10	5	0	0	0	22
13	5	2000	7	3	0	0	0	0	1	0	0	11
23	5	2000	0	5	7	0	2	0	5	0	0	19
6	6	2000	0	0	0	0	17	0	0	0	0	17
21	6	2000	0	0	15	0	0	0	0	0	0	15

Peak; 80 (1998/99 peak; 98)

CURLEW *Numenius arquata*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	0	28	7	0	557	226	168	5	0	991
20	7	1999	1	78	2	19	119	153	3	5	0	380
5	8	1999	2	81	16	11	180	132	31	0	0	453
27	8	1999	6	138	7	11	407	96	3	1	1	670
13	9	1999	3	100	27	30	226	118	26	5	2	537
30	9	1999	4	147	0	3	574	19	0	1	2	750
15	10	1999	8	54	4	76	0	10	2	0	2	156
28	10	1999	62	201	13	19	170	6	6	0	3	480
10	11	1999	4	41	12	68	17	27	0	2	0	171
25	11	1999	251	238	4	7	149	66	1	1	1	718
15	12	1999	4	15	8	0	8	1	2	2	1	41
30	12	1999	2	38	8	44	179	146	0	0	0	417
11	1	2000	7	23	7	160	32	20	3	0	0	252
25	1	2000	0	559	17	8	1059	117	13	2	2	1777
9	2	2000	5	77	69	32	60	134	14	20	9	420
23	2	2000	0	322	6	61	230	103	62	20	0	804
13	3	2000	0	39	16	64	223	283	2	210	1	838
31	3	2000	1	37	14	4	26	55	2	0	0	139
10	4	2000	2	29	5	2	12	0	1	0	0	51
27	4	2000	0	3	0	3	295	15	0	0	0	316
13	5	2000	0	0	0	0	85	0	0	0	0	85
23	5	2000	0	28	8	0	20	0	0	0	0	56
6	6	2000	0	11	0	0	55	4	20	0	0	90
21	6	2000	0	50	8	3	61	23	3	3	0	151

Peak; 1,777: (1998/99 peak; 1,049)

The peak count was exceptionally high, and much higher than the next highest (991).

REDSHANK *Tringa totanus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	0	0	0	0	22	60	15	10	0	107
20	7	1999	0	17	27	6	592	241	170	7	0	1060
5	8	1999	3	97	185	0	842	274	91	10	0	1502
27	8	1999	6	94	199	17	143	205	44	163	5	876
13	9	1999	6	99	62	10	129	461	128	131	15	1041
30	9	1999	38	117	55	22	151	520	116	43	7	1069
15	10	1999	11	81	20	10	121	406	21	14	3	687
28	10	1999	78	141	31	15	492	335	23	30	2	1147
10	11	1999	51	106	60	37	184	218	56	7	3	722
25	11	1999	33	62	8	31	209	135	69	4	1	552
15	12	1999	25	58	31	94	240	74	23	6	2	553
30	12	1999	15	28	16	49	212	230	130	0	0	680
11	1	2000	25	52	7	52	155	185	92	15	0	583
25	1	2000	7	86	20	50	136	214	128	44	2	687
9	2	2000	17	218	7	39	167	245	102	16	0	811
23	2	2000	2	53	26	69	0	195	69	0	0	414
13	3	2000	4	42	28	42	68	380	154	5	0	723
31	3	2000	2	46	22	81	138	725	360	8	0	1382
10	4	2000	3	38	80	41	95	498	278	0	0	1033
27	4	2000	0	24	7	303	553	163	0	0	0	1050
13	5	2000	0	0	0	0	1	0	1	8	0	10
23	5	2000	0	0	0	3	1	0	10	0	0	14
6	6	2000	0	0	0	3	0	0	0	16	0	19
21	6	2000	0	0	0	35	25	2	0	30	0	92

Peak; 1,502: (1998/99 peak; 1,463)

TURNSTONE *Arenaria interpres*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	0	3	2	0	0	0	5	0	0	10
5	8	1999	4	8	0	0	4	0	0	0	0	16
27	8	1999	9	9	33	0	0	0	0	0	0	51
13	9	1999	3	0	10	0	0	0	0	0	0	13
30	9	1999	12	9	0	0	0	0	0	0	0	21
15	10	1999	43	4	10	0	0	0	0	0	0	57
28	10	1999	9	31	3	0	0	0	0	0	0	43
10	11	1999	1	18	18	0	2	0	0	0	0	39
25	11	1999	6	8	0	0	6	0	0	0	0	20
15	12	1999	8	18	2	0	0	0	0	0	0	28
30	12	1999	1	19	1	0	2	0	0	0	0	23
11	1	2000	4	7	4	0	0	0	0	0	0	15
25	1	2000	5	7	0	0	0	0	0	0	0	12
9	2	2000	5	18	3	0	0	1	0	0	0	27
23	2	2000	4	13	1	0	0	0	0	0	0	18
13	3	2000	3	6	1	0	0	0	0	0	0	10
31	3	2000	3	4	1	0	4	0	0	0	0	12
10	4	2000	2	0	3	0	0	0	0	0	0	5
27	4	2000	7	19	0	0	1	0	0	0	0	27

Peak; 57: (1998/99 peak; 84)

b) Total number of birds on the estuary

The total number of birds of all species was calculated for each count date and the mean taken for each month. Since Eiders were so numerous, they were considered separately.

Month	Eiders	Other species	Total
1999			
July	1815	2210	4025
August	1381	4482	4863
September	1194	7120	8314
October	1154	7603	8757
November	1160	9143	10303
December	1570	2810	4380
2000			
January	1199	3668	4867
February	847	2928	3775
March	777	2956	3722
April	2191	2249	4440
May	3313	625	3938
June	3122	649	3771

The total number of birds of all species on the estuary increased over the late summer, autumn and early winter, from 4,025 in July 1999 to over 10,000 in November, resulting mainly from large changes in the numbers of species other than Eiders (Figure 2). Numbers of these species decreased markedly in spring, whereas Eiders were by far the commonest species in May and June. From December 1999 to June 2000, the total number of birds present on the estuary remained around 4,000.

c) Comparison between 1998/99 and 1999/2000

(i) Total number of birds

The monthly mean numbers of birds of all species (including Eiders) were consistently higher in 1999/2000 than in 1998/99, with the former year having the higher total in every month except December. The peak total of 10,303 in December was considerably higher than the 5,496 counted in the same month in 1998/99 and higher than the peak of 7,822 in that year (in September).

A comparison between years for Eiders and for birds other than Eiders, considered separately, gave similar results. Eider numbers were higher in 1999/2000 than in 1998/99 in all but two months and birds of other species were higher in 1999/200 in all but three months. The peak monthly mean count of Eiders increased from 2,903 to 3,313 and that of birds of other species from 5,884 to 9,143. However, as was emphasised in previous reports, such peak monthly values may be affected by year-to-year differences in the timing and extent of migratory movements and so may not be meaningful in making comparisons between years.

A less variable measure, the mean monthly total of species other than Eiders over the whole autumn and winter (August to February) also showed a considerable increase, from 3,709 in 1998/99 to 5,393 in 1999/2000.

(ii) Individual species

For each of the commonly-recorded species, the mean of the three highest counts in 1999/2000 was compared with the same measure for the previous year (Patterson and Thorpe 1999).

Species	1998/99	1999/2000	Change
Heron	23	47	+
Mute Swan	43	42	-
Shelduck	138	149	+
Eider	3204	3559	+
Wigeon	413	649	+
Teal	61	66	+
Mallard	12	36	+
Goldeneye	35	44	+
Red-breasted Merganser	31	32	+
Oystercatcher	563	447	-
Ringed Plover	67	83	+
Golden Plover	1266	3150	+
Lapwing	1999	3775	+
Knot	191	412	+
Dunlin	577	724	+
Bar-tailed Godwit	89	72	-
Curlew	926	1202	+
Redshank	1245	1344	+
Turnstone	61	50	-

Of the eight wildfowl species, seven showed increases and only one (Mute Swan) showed a decrease, (which was negligible). Of the 10 wader species, seven showed increases and three decreased. The data are of course subject to the difficulty that some species (eg Golden Plover and Lapwing) occurred in unusually large numbers in only a few counts out of the whole year, so that peak counts can be misleading.

An alternative measure, the median of the winter counts (1 September to 31 March) is not subject to this problem (Patterson and Cosgrove , 1998).

Species	Median 1997/98	1998/99	Change
Heron	5	12	+
Mute Swan	30	8	-
Wigeon	263	305	+
Teal	3	4	+
Mallard	6	14	+
Goldeneye	18	21	+
Merganser	20	25	+
Wildfowl total	345	389	+
Oystercatcher	389	344	-
Ringed Plover	7	6	-
Golden Plover	378	1010	+
Lapwing	711	1264	+
Knot	105	247	+
Dunlin	300	341	+
Bar-tailed Godwit	57	48	-
Curlew	452	536	+
Redshank	762	789	+
Turnstone	33	24	-
Wader total	3194	4609	+
Overall total	3298	3539	+

Of the six species of wildfowl which normally have their highest numbers in winter (ie excluding Eider and Shelduck), only the Mute Swan showed a decrease in its median count. Of the 10 wader species, four (Oystercatcher, Ringed Plover, Bar-tailed Godwit and Turnstone) showed decreases. The totals of the median values increased for both groups.

d) Species which occur less commonly on the Ythan, seen during the surveys

The various species recorded during the year are tabulated below. Comments are added where appropriate.

LITTLE GREBE *Tachybaptus ruficollis*

Date	Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
10 11 1999	0	2	0	0	0	0	0	0	1	3
25 11 1999	0	1	0	0	0	0	0	0	0	1
30 12 1999	0	0	0	0	0	0	2	0	0	2
23 2 2000	0	0	0	0	1	0	0	0	0	1
13 3 2000	0	0	0	0	0	0	0	0	1	1
31 3 2000	0	0	0	0	0	0	0	0	1	1
10 4 2000	0	0	0	0	0	0	0	0	1	1

A regular sighting at Logie Buchan in recent years.

SLAVONIAN GREBE *Podiceps auritus*

Date	Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
15 10 1999	1	0	0	0	0	0	0	0	0	1

SPOONBILL *Platalea leucorodia*

Date	Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
21 6 2000	0	2	0	0	0	0	0	0	0	2

Two birds remained till August and one till September, although they were not encountered on other count dates.

WHOOPER SWAN *Cygnus cygnus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
30	9	1999	0	0	2	0	0	0	0	0	0	2
15	10	1999	0	0	0	0	1	0	0	0	0	1
30	12	1999	0	0	0	0	0	3	0	0	0	3
13	3	2000	0	0	0	0	0	3	0	1	0	4
31	3	2000	0	0	0	0	0	4	0	0	0	4
10	4	2000	0	0	0	0	0	1	0	0	0	1

PINK-FOOTED GOOSE *Anser brachyrhychus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	0	0	0	0	2	0	0	0	0	2
20	7	1999	0	1	0	0	0	0	0	0	0	1
30	9	1999	0	0	0	0	0	0	1	0	0	1
23	2	2000	0	0	0	120	0	0	0	0	0	120
31	3	2000	0	0	0	0	0	37	12	0	0	49
10	4	2000	0	0	0	0	376	0	0	0	0	376
27	4	2000	0	0	0	0	80	0	0	0	0	80

GREYLAG GOOSE *Anser anser*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
27	8	1999	0	0	0	0	0	42	0	0	0	42
28	10	1999	0	0	0	0	13	0	0	0	0	13
30	12	1999	1	0	0	0	0	0	0	0	0	1
25	1	2000	0	0	0	0	0	0	0	0	47	47
27	4	2000	0	6	0	0	0	0	0	0	0	6
21	6	2000	0	0	0	0	3	0	0	0	0	3

CANADA GOOSE *Branta canadensis*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
27	8	1999	0	0	0	0	0	5	0	0	0	5

Probably some of the flock normally seen around the Meikle Loch.

BARNACLE GOOSE *Branta leucopsis*

Date	Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
27 8 1999	0	0	0	0	0	2	0	0	0	2
30 9 1999	0	0	0	0	0	5	0	0	0	5

BRENT GOOSE *Branta bernicla*

Date	Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
27 4 2000	0	1	0	0	0	0	0	0	0	1

Occasionally seen in small numbers on the estuary.

PINTAIL *Anas acuta*

Date	Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
30 9 1999	0	0	0	0	0	1	0	0	0	1

SHOVELER *Anas clypeata*

Date	Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
27 4 2000	0	0	2	0	0	0	0	0	0	2

TUFTED DUCK *Aythya fuligula*

Date	Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5 7 1999	0	0	0	0	0	0	0	0	1	1
10 11 1999	2	0	0	0	0	0	0	0	0	2
25 11 1999	1	0	0	0	0	0	0	0	0	1
30 12 1999	1	0	0	0	0	0	0	0	0	1
23 2 2000	1	0	0	0	0	0	0	0	0	1
13 5 2000	0	1	0	0	0	0	0	0	0	1

One bird stayed with the Scaup for much of the winter.

SCAUP *Aythya marila*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
30	9	1999	6	0	0	0	0	0	0	0	0	6
15	10	1999	1	0	0	0	0	0	0	0	0	1
10	11	1999	5	0	0	0	0	0	0	0	0	5
25	11	1999	17	0	0	0	0	0	0	0	0	17
15	12	1999	17	0	0	0	0	0	0	0	0	17
30	12	1999	13	0	0	0	0	0	0	0	0	13
11	1	2000	7	0	0	0	0	0	0	0	0	7
25	1	2000	4	3	0	0	0	0	0	0	0	7
9	2	2000	17	0	0	0	0	0	0	0	0	17
23	2	2000	12	0	0	0	0	0	0	0	0	12
13	3	2000	8	0	0	0	0	0	0	0	0	8
10	4	2000	0	1	0	0	2	0	0	0	0	3
27	4	2000	0	2	0	0	0	0	0	0	0	2
13	5	2000	0	1	0	0	0	0	0	0	0	1

Becoming regular on the estuary, with numbers in 1999/2000 higher than in previous years.

KING EIDER *Somateria spectabilis*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
28	9	1999	1	0	0	0	0	0	0	0	0	1
30	9	1999	1	0	0	0	0	0	0	0	0	1
2	3	2000	0	0	1	0	0	0	0	0	0	1
21	3	2000	0	0	1	0	0	0	0	0	0	1
5	4	2000	0	0	1	0	0	0	0	0	0	1
18	4	2000	0	1	0	0	0	0	0	0	0	1
8	5	2000	0	1	0	0	0	0	0	0	0	1
17	5	2000	0	1	0	0	0	0	0	0	0	1
6	6	2000	0	1	1	0	0	0	0	0	0	1

LONG-TAILED DUCK *Clangula hyemalis*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
30	9	1999	1	0	0	0	0	0	0	0	0	1
15	10	1999	0	0	1	0	0	0	0	0	0	1
28	10	1999	3	0	0	0	0	0	0	0	0	3
10	11	1999	1	0	2	0	0	0	0	0	0	3
25	11	1999	4	0	0	0	0	0	0	0	0	4
15	12	1999	9	0	0	0	0	0	0	0	0	9
30	12	1999	8	0	0	0	0	0	0	0	0	8
11	1	2000	17	0	0	0	0	0	0	0	0	17
25	1	2000	7	1	0	0	0	0	0	0	0	8
9	2	2000	7	0	0	0	0	0	0	0	0	7
23	2	2000	0	0	0	0	0	0	0	0	0	0
13	3	2000	2	0	0	0	0	0	0	0	0	2

GOOSANDER *Mergus merganser*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
31	3	2000	0	0	0	0	0	0	1	0	0	1

OSPREY *Pandion haliaetus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	8	1999	0	1	0	0	0	0	0	0	0	1

WATER RAIL *Rallus aquaticus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	0	0	0	1	0	0	0	0	0	1

MOORHEN *Gallinula chloropus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	7	1999	0	0	0	0	0	0	0	0	2	2
27	8	1999	0	0	0	0	0	1	0	0	2	3
11	1	2000	0	0	0	0	0	0	0	0	1	1
10	4	2000	0	0	0	0	0	0	0	0	1	1

AMERICAN GOLDEN PLOVER *Pluvialis dominica*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
30	9	1999	0	0	0	0	0	1	0	0	0	1
27	4	2000	0	0	0	1	0	0	0	0	0	1

Only the second record for north-east Scotland.

GREY PLOVER *Pluvialis squatarola*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
27	8	1999	0	1	0	0	0	0	0	0	0	1
13	9	1999	0	0	0	6	0	0	0	0	0	6
30	9	1999	7	7	0	9	15	0	1	0	0	39
15	10	1999	3	10	0	0	34	0	0	0	0	47
28	10	1999	12	17	1	2	21	0	0	0	0	53
10	11	1999	6	14	0	0	11	0	0	0	0	31
25	11	1999	2	33	0	0	0	14	0	0	0	49
15	12	1999	3	12	6	0	0	0	0	0	0	21
30	12	1999	2	19	2	0	3	0	0	0	0	26
11	1	2000	3	8	0	0	0	0	0	0	0	11
25	1	2000	0	15	0	0	0	0	0	0	0	15
9	2	2000	2	11	0	0	0	0	0	0	0	13
23	2	2000	10	8	0	0	0	0	0	0	0	18
13	3	2000	0	10	0	0	0	0	0	0	0	10
31	3	2000	0	5	0	0	0	0	0	0	0	5
10	4	2000	2	0	0	0	0	0	0	0	0	2
27	4	2000	0	0	0	2	0	0	0	0	0	2

Numbers in 1999/2000 were considerably higher than in previous years.

SANDERLING *Calidris alba*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	0	22	0	0	0	0	0	0	0	22
5	8	1999	0	0	1	0	0	0	0	0	0	1
25	11	1999	0	30	0	0	0	0	0	0	0	30
15	12	1999	16	0	0	0	0	0	0	0	0	16

CURLEW SANDPIPER *Calidris ferruginea*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
27	8	1999	0	0	2	0	1	89	0	0	0	92
13	9	1999	0	0	0	0	0	7	0	0	0	7
30	9	1999	0	0	0	0	0	0	1	0	0	1

Although numbers have varied from year to year, the August count was exceptional.

RUFF *Philomachus pugnax*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
27	8	1999	0	1	0	0	0	0	0	0	0	1
30	9	1999	0	2	0	0	0	0	29	0	0	31
15	10	1999	0	6	0	0	0	0	0	0	0	6

SNIPE *Gallinago gallinago*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
10	11	1999	0	0	0	0	0	0	0	0	1	1
30	12	1999	0	0	1	0	0	0	0	0	0	1
23	2	2000	1	0	0	0	0	0	0	0	0	1

BLACK-TAILED GODWIT *Limosa limosa*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	0	3	2	0	0	0	0	0	0	5
27	8	1999	0	0	7	0	0	5	0	1	0	13
13	9	1999	0	32	1	7	0	24	0	0	0	64
30	9	1999	0	12	0	0	1	0	3	0	0	16
15	10	1999	0	0	0	0	3	3	0	0	0	6
28	10	1999	0	31	9	0	0	0	0	0	0	40
10	11	1999	0	29	0	0	0	0	0	0	0	29
25	11	1999	0	10	0	0	1	0	0	0	0	11
15	12	1999	0	7	3	0	0	0	0	0	0	10
30	12	1999	0	6	0	0	0	0	0	0	0	6
11	1	2000	0	12	0	0	0	0	0	0	0	12
25	1	2000	0	16	4	0	0	0	0	0	0	20
9	2	2000	0	9	0	0	0	0	0	0	0	9
13	3	2000	0	2	0	0	0	0	0	0	0	2
31	3	2000	0	3	0	0	0	0	0	0	0	3
10	4	2000	0	2	0	0	0	0	0	0	9	11
27	4	2000	0	3	0	0	0	10	0	0	0	13
23	5	2000	0	2	0	0	0	0	0	0	0	2

Counts in 1999/2000 were above average, especially during the winter.

WHIMBREL *Numenius phaeopus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
5	8	1999	0	4	0	0	0	0	0	0	0	4
27	4	2000	0	0	0	0	1	0	0	0	0	1

SPOTTED REDSHANK *Tringa erythropus*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
30	9	1999	0	0	0	0	0	1	0	0	0	1
27	4	2000	0	0	0	1	0	0	0	0	0	1

GREENSHANK *Tringa nebularia*

Date			Mo	In	Qu	Ta	Sl	Ha	Sn	Ma	Lo	Total
20	7	1999	0	0	0	2	1	0	2	0	0	5
5	8	1999	0	0	0	2	7	0	0	0	0	9
27	8	1999	0	0	0	4	6	1	0	3	0	14
13	9	1999	1	0	0	4	0	1	1	0	1	8
30	9	1999	0	0	0	2	1	0	1	1	0	5
15	10	1999	0	0	0	0	0	2	0	1	0	3
10	4	2000	0	0	0	3	0	0	0	0	0	3
27	4	2000	0	0	0	0	1	1	0	0	0	2

DISCUSSION

As in previous years, the large month-to-month fluctuations in the numbers of some of the most abundant species on the estuary makes it difficult to compare overall bird numbers between 1998/99 and 1999/2000, especially since many of the fluctuations may have been the result of large-scale movements, eg cold-weather effects or post-breeding dispersal, not related to conditions on the Ythan itself. Year-to-year comparisons must therefore be interpreted cautiously.

However, it seems reasonable to conclude that overall bird numbers increased between the two years. The increase in bird numbers which followed the lower coverage of *Enteromorpha* in 1996 (continuing to some extent in 1997; Raffaelli *et al.* 1999), appears to have been maintained. Indeed, the increase from 1998/99 to 1999/2000 was noticeably greater than in the previous year. Unfortunately, there was no survey of weed cover in the summer of 1999, so it is not possible to check whether the increase in bird numbers was associated with a decrease in weed. The coverage of weed mats in summer 2000, however, appears to have been greater than in recent years, (with even the musselbeds affected) so it is possible that bird numbers might decrease in 2000/01.

REFERENCES

Patterson, I.J. and Cosgrove, P.J. 1998. Waders and waterfowl on the Ythan estuary, 1997/98. A report to SNH.

Patterson, I.J. and Thorpe A.W. 1999. Waders and waterfowl on the Ythan estuary, 1998/99. A report to SNH.

Raffaelli, D., Balls, P., Way, S., Patterson, I., Hohmann, S. and Corp, N. 1999. Eutrophication-related trends in the ecology of the Ythan estuary, Aberdeenshire, Scotland. Aquatic Conservation: Marine and Freshwater Ecosystems 9: 219 – 236.

APPENDIX 1. Survey methods

Eiders were counted at high tide, when they were roosting on the shore or in sheltered bays, so that errors due to movement and diving would be minimised. All of the other species were counted at low tide, when they were feeding and so were dispersed over the intertidal area; roost counts at high tide were not practicable because roost sites were dispersed (some of them not known) and because some waders were known to feed in fields at high tide in mid-winter.

All surveys started at the estuary mouth and proceeded upstream, so as to minimise the risk of the count being curtailed by the incoming tide. Counts were made from standard observation points (Figure 1) and the counts were subdivided into eight areas of the estuary (Figure 1), so that the distribution of each species could be described. The observer moved quickly by car from one observation point to the next, so as to minimise errors due to birds moving between sections during the survey. Any such movements seen while driving were noted and allowed for in the counts.

The count data were recorded on a pro-forma recording sheet and later stored on computer in a dBase database. At the end of the survey year (after 30 June) the data were checked, sorted and analysed, using dBase functions and specially-written dBase programs.

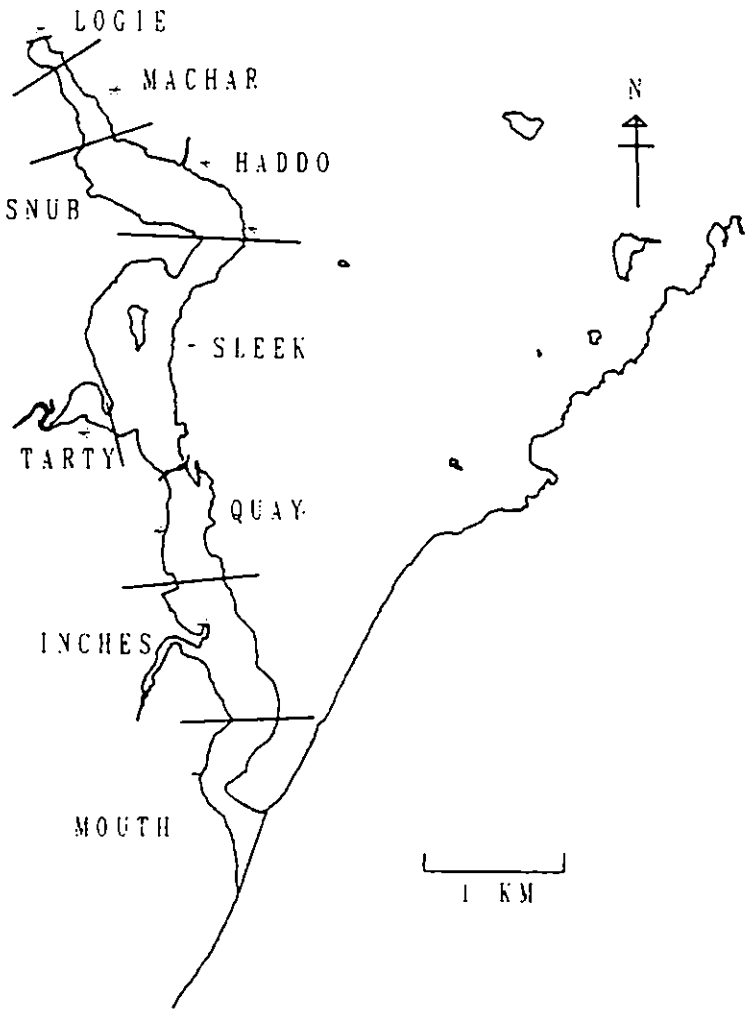

Figure 1. The Ythan estuary, showing the counting sections and count points (asterisks). The division between the Snub and Haddo areas is the centre of the low-tide river channel.

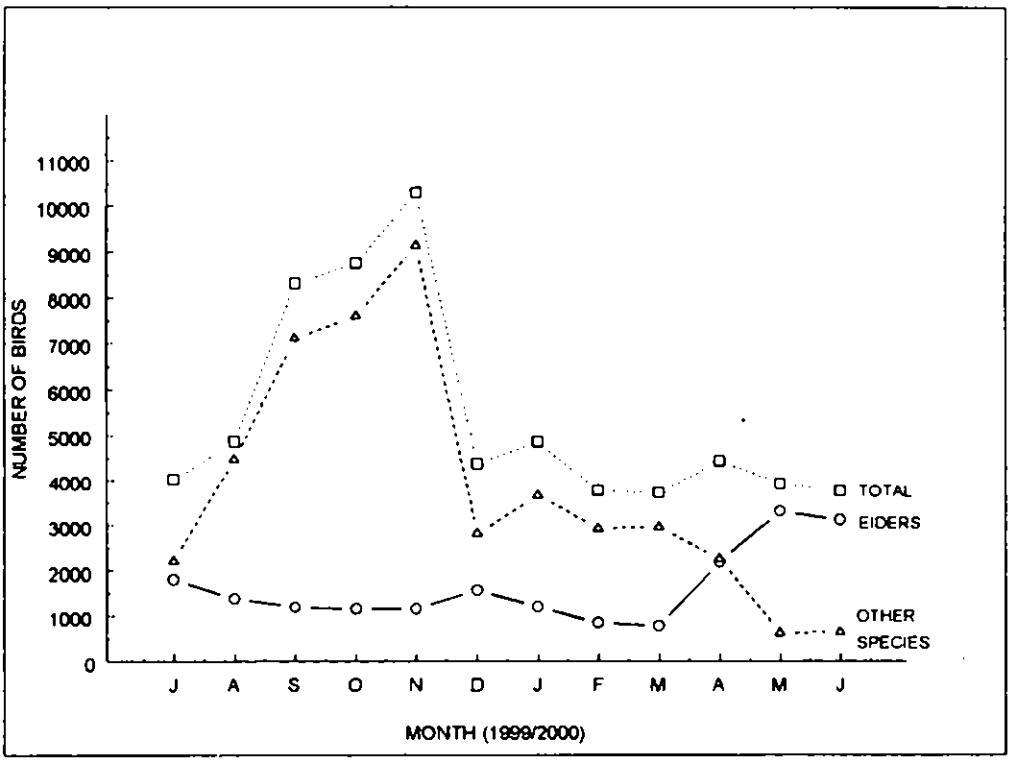

Figure 2. The mean number of Eiders (circles), birds of other species (triangles) and the total of all species (squares) on the Ythan estuary in 1999/2000.

www.snh.gov.uk

ISBN: 978-1-78391-260-5

Policy and Advice Directorate, Great Glen House,
Leachkin Road, Inverness IV3 8NW
T: 01463 725000

You can download a copy of this publication from the SNH website.

recycle

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad