Factors affecting the numbers of waterfowl on the Fleet during the last ten years (1983-1993)

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The numbers and variety of waterfowl species are, to an extent, good indicators of the quantity and diversity of plants and other animals in the Fleet. For example the presence of large numbers of swans, Brent geese and wigeon over two or three months require flourishing beds of *Zostera* and *Ruppia* to provide food. Numerous cormorants and red-breasted mergansers indicate that fish are abundant.

Mute Swan *(Cygnus olor)*

The species of waterfowl which are at present making the largest impact are the swans. No doubt *Zostera* and *Ruppia* benefit to some extent from fertilisation with swan droppings. Three surveys by Dr Nigel Holmes appear to indicate that these plants are currently in a healthy state. It has been calculated that each swan requires almost four kilograms of wet plant material per day and Dr Pelle Andersen-Harild considers this to be an underestimate. The removal of the leaves (but not the rhizome) of the plants by grazing, usually by the end of January, may retard the speed with which the Fleet silts up.

There has been an increase in swan numbers on the Fleet during the last three years. It is uncertain whether this is due to immigration or improved survival. However, the trend is similar to the 42% increase which has occurred over great Britain as a whole in the past ten years.

The number of fledged cygnets each year lies at around 120 but this is only about twenty in excess of the annual number found dead (ninety in 1992-93). Infertility of eggs, predation of cygnets and adverse winter weather all affect recruitment and recent population increases may relate to mild winters since 1986.

Swans, with their long necks, are able to reach plants in deep water at high tide. Wigeon and Brent geese can be seen early in the season, down wind of feeding swans, picking up bits which they discard in their wasteful feeding. As the season progresses and the plants have been thinned out, this activity is less obvious. Swans eat *Zostera*, *Ruppia* and during February, March and April when these are scarce, the algae *Ulva lactuca* and *Enteromorpha*. Grazing of grassland around the Fleet, mostly on estate land these days, occurs until May, by which time the eel grasses are 15-25 cm in length. At Clouds Hill hand feeding in January supplements the natural diet, reducing pressure on available grazing and, at the same time, permitting assessment of swan ring numbers.

During the breeding season most of the non-breeding swans, including the previous year's young, establish themselves further east in the Fleet.

White-fronted goose *(Anser albifrons)*

The last time that large numbers occurred was in 1962-63 and 1978-79.

Greylag goose *(Anser anser)*

These are probably feral in origion.

Canada goose *(Branta canadensis)*

These introduced birds have undergone a dramatic increase . They are only present regularly in winter and for short periods, in small numbers, in the summer. They do not breed successfully owing to predation by fox and crow. Canada geese are herbivores and spend some of their time feeding on eelgrasses but mostly grazing and "stubbling" in the fields.

Brent Goose *(Branta bernicla)*

The most dramatic increase in any species of waterfowl has occurred with this species which breeds in Arctic Russia and feeds on similar plant material to swans and wigeon. In common with other parts of the country, numbers on the Fleet have increased tremendously as the Brent goose is now legally protected. When I first came to the Fleet in 1974, if one could find a dozen Brent it was unusual. In 1991-92 4,355 were counted. As in the case of wigeon the numbers using the Fleet are affected by prolonged gales. In 1992 many Brent left the area after most of the eelgrass was washed ashore and rough water made it difficult for the birds to feed.

Shelduck *(Tadorna tadorna)*

Numbers of shelduck are relatively large for the area concerned, particularly as most of them occur in the West Fleet. Normally 2-5 pairs per year have reared young in the Fleet over the past twenty years, always in the West Fleet. Probably disturbance in the east Fleet inhibits breeding. Twenty to thirty young are reared in most years.

Shelduck feed almost entirely on small gastropods - *Hydrobia* and *Littorina* which must be extremely abundant in the West Fleet. The young birds are believed to feed on amphipods from rotting *Zostera*.

Wigeon *(Anas penelope)*

Wigeon are the most numerous waterfowl eating essentially the same plants as swans. Counts fluctuate considerably due to the mobility of the birds and their tendency to move onto relatively shallow, nearby flooded areas of grassland during prolonged gales. The Somerset Levels, Lodmoor and Puddletown are favoured. In common with most species on the Fleet peak numbers are generally encountered in December or January. However, in 1992-93 high winds combined with heavy rain in November resulted in reduced numbers on the Fleet and exceptionally large populations on the Somerset Levels.

Weather conditions exert a critical influence on wigeon numbers. The eelgrass on which the birds feed may be uprooted when gales coincide with high water of spring tides. Conversely, as in 1986-87, large numbers may aggregate in unfrozen areas of water. In that year most of the 10,400 were counted in the Butterstreet and Littlesea areas.

Mallard *(Anas platyrhynchos)*

Usual numbers about 400 with some 50 breeding pairs. This is an omnivorous species eating anything from sparrows (recorded in Switzerland) to acorns.

Gadwall *(Anas strepera)*

Since reaching a peak, of international significance, the number of gadwall on the Fleet has declined. There are a few breeding pairs each year. The birds feed on seeds, small fish, stoneworts and *Ruppia*, mostly found in the West Fleet.

Pintail *(Anas acuta)*

Of Finnish/Russian origins (Abbotsbury decoy returns). Pintails are said to be omnivorous and eat more live food than most dabbling ducks, taking *Zostera*, insects, molluscs and Crustacea.

Shoveler *(Spatula clypeata)*

Spending most of their time in the West Fleet, these ducks make occasional sorties into Rodden Hive and Herbury. Much of the food is plankton filtered from the water but many molluscs and crustaceans are also eaten. Of the few birds ringed one or two came from western Europe.

Teal *(Anas crecca)*

Teal are very mobile species and, like wigeon, love the shallow water over fields (i.e. drowned pasture). This is the species most commonly 'rung' in the decoy and is of great interest to the wildfowl and wetlands trust. Most teal appear to be of Russian/Finnish origins and the availability of data from these sources is likely to decrease. Numbers are much affected by prolonged gales. The birds feed on very small seeds and crustaceans.

Pochard *(Aythia ferina)*

The Fleet population of pochard has remained remarkably constant over the last 10 years, with separate groups of birds on Radipole and on the Fleet which sometimes join forces. Numbers are usually 400 to 500 but in 1992-93 were 2,000 probably due to a "cold snap".

Tufted duck *(Aythia fuligula)*

This species prefers fresh water and rarely leaves the extreme western Fleet except to feed at night in the Herbury area. Numbers usually around 300 and remarkably constant - Polish and Russian origins.

Like the Pochard this species has a sub-population on Radipole. Both pochard and tufted duck feed, in brackish water, on snails such as *Hydrobia* and *Littorina* as well as Crustacea, small fish and *Ruppia*.

Scaup *(Aythya marila)*

Scaup are similar to pochard and the 20 or so individuals which appear in most years (probably the same individuals) spend most of their time with the larger numbers of pochard feeding on similar things.

Goldeneye *(Bucephala clangula)*

Goldeneye are present in numbers of around 200, with occasional increases but no marked decreases. Over the winter the birds tend to move around in flocks of thirty or more, aggregating into groups of about twice that number just prior to commencing their northward migration in late April.

In the last 20 years the birds seem to prefer the western Fleet although prior to that large flocks could be seen in the Littlesea area. The birds tend to be very shy of humans and it is possible that increased levels of disturbance or changes in food distribution are responsible for the changes in distribution.

These ducks feed mainly on molluscs, crustaceans and small fish such as gobies and 3 spined stickleback. Seeds of *Zostera* and *Ruppia* are also taken.

Smew *(Mergus albellus)*

This is the rarest duck on the Fleet in winter and appears to be the harbinger of severe weather, ice and snow.

Red-breasted Merganser *(Mergus serrator)*

About thirty merganser arrive in September each year in the Swannery bay. Like other diving (fish eating) ducks these birds tend to shift about quite a lot. The red-breasted merganser feeds on eels, sticklebacks, gobies, flounders, shrimps and shore crabs. By the end of the winter much larger numbers are present using Portland Harbour aswell as the Fleet.

Coot *(Fulica atra)*

The greatest number of coot recorded within the past ten years was 3,315. This is a great deal fewer than in the past and unlikely to affect food resources. Danish scientists believe that high densities of coots may deplete eelgrass supplies. Roughly fifty percent of the food of coots consists of eel grasses and algae and the remainder of associated molluscs and crustaceans.

Conclusion

The waterfowl are dependent upon the various plants, fish and invertebrates of the Fleet. Any changes in the community structure or abundance of food materials would seem likely to influence the periods of residence of bird species. The western Fleet and the special protection it has always enjoyed is crucial to all the species of waterfowl.

Wildfowl counts on the Fleet 1982-1993

The wildfowl counts are recorded monthly each winter from September to February inclusive. This table is a summary of the data and records the highest total in any month for each species during each winter. Data supplied by John Fair.

Species	82/83	83/84	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	Highest count
Whooper Swan	0	0	N/A	8	0	0	0	0	0	0	0	8
Bewick's Swan	0	0	N/A	1	4	2	0	7	8	8	6	8
Mute Swan	769	665	681	650	812	866	795	853	1007	1163	1069	1163
White-fronted Goose	20	0	N/A	1	4	1	0	0	0	0	0	20
Greylag Goose	2	2	N/A	0	4	1	0	1	0	4	0	4
Canada Goose	2-3	1-2	N/A	12	0	0	16	35	63	88	200	200
Brent Goose	548	468	329	1354	798	1000	1745	851	2000	4355	1982	4355
Shelduck	73	66	147	64	163	53	59	50	76	93	66	163
Wigeon	2000+	2232	7434	5077	10400	4030	4231	4329	6164	8245	5319	10400
Mallard	350+	391	400	400+	529	300	670	517	406	526	465	670
Gadwall	30+	44	93	136	54	187	128	59	152	50	21	187
Pintail	70+	100+	125	101	114	50	75	60	118	182	141	182
Shoveler	20	29	42	122	165	65	88	100	90	187	380	380
Teal	770	265	82	285	188	262	455	530	560	315	540	770
Ruddy Duck	3	0	N/A	0	4	2	0	1	2	1	0	4
Pochard	700+	432	360	450	300	446	350	480	500	510	2000	2000
Tufted Duck	300	84	380	267	274	327	260	300	204	240	380	380
Scaup	18	2	N/A	20	24	18	25	10	24	14	4	25
Long-tailed duck	0	0	N/A	2	0	3	4	0	3	10	3	10
Goldeneye	104	171	199	116	232	101	157	134	185	256	115	256
Smew	0	0	N/A	0	4	0	0	0	2	0	0	4
Red Breasted M'ganser	0	126	95	58	185	69	256	159	213	150	132	256
Coot	2300	2300	N/A	2079	2173	2000	1860	1330	2480	3315	3141	3315

0 - Nil
N/A - figure not available