

THE EFFECTS OF THE SEVERE WEATHER IN DECEMBER 1981 AND JANUARY 1982 ON WADERS IN BRITAIN

by Nigel A. Clark

This is a preliminary round-up of the effects of the recent severe winter weather on waders in various parts of Britain. My main aim was to draw together information from various observers around the country, that might have otherwise have become difficult to collate in the future. It is not intended as a complete survey covering all parts of Britain; some of the information is not directly comparable between estuaries, since methods of collecting it varied. Most of the data available at the time of writing concerns the number of waders found dead, but I have included some further information, where it seems relevant, on other effects of the severe weather. Names in parentheses in the text refer to contributors for the area indicated. Localities mentioned in the text are shown in Figure 1.

In northern Britain, severe weather occurred in two periods: 6 - 26 December 1981 and 5 - 16 January 1982. On most days in both periods, mean daily temperatures were below 0°C. Between the two severe periods there were ten days of milder weather. On most of the east coast of Britain, winds were light throughout the severe weather, but were generally stronger to the north of the Firth of Forth.

The information that I summarise below shows that there were marked differences between estuaries in the severity of the effects, on waders, of the cold weather. Reported mortality was highest on two parts of the east coast of Scotland: the Montrose Basin and the Moray Firth. As in some previous severe winters (see e.g. Goss-Custard et al. 1977, Baillie 1980), highest mortality seems to have been amongst Redshanks *Tringa totanus* and Oystercatchers *Haematopus ostralegus*. Waders on several south and west coast estuaries were apparently unaffected by the severe weather.

Moray Firth (F.L.Symonds). The first dead waders were found on 8 January, with most being found between 17 and 22 January. Forty-three Oystercatchers were found. These comprised 6 adults, 7 sub-adults, 9 juveniles and 17 of undetermined age. In Findhorn Bay, an additional 150 Oystercatchers were found dead before 20 January. The only other wader corpses found were 2 Redshanks and 5 Curlews *Numenius arquata*.

Ythan estuary, Grampian (S.P.R.Greenstreet). Complete counts of all waders were made on 15 December and 14 January. On both occasions there was complete snow cover on land, and no waders were present on the fields. Redshanks were counted also on four other days (Table 1). Numbers of both Redshanks and Oystercatchers were lower on 14 January than in other, mild, winters.

Table 1. Numbers of waders on the Ythan estuary in 1981/82.

		Dec.			Jan.	Feb.	
		3	15	17	14	1	11
Redshank	<i>Tringa totanus</i>	649	874	742	586	623	596
Oystercatcher	<i>Haematopus ostralegus</i>		495		393		
Curlew	<i>Numenius arquata</i>		147		242		
Dunlin	<i>Calidris alpina</i>		715		1254		
Bar-tailed Godwit	<i>Limosa lapponica</i>		68		51		

When the mudflats froze over, Redshanks moved to other parts of the estuary. As the flats thawed, they moved back, territorial birds arriving first. Some birds returned later, and may have been away from the Ythan estuary: one colour-marked bird seen at the same site on the Ythan, on thirteen occasions between 2 November and 18 December 1981, was recorded at Tynninghame, East Lothian, 150 km to the south of the Ythan, on 9 January 1982. No corpses were found on the tideline during the severe weather, but remains of 30 Redshanks were found in late January away from the tideline. Four of these were birds ringed on the Ythan.

Montrose Basin, Tayside (N.K.Atkinson, N.A.Clark). The first reports of dead birds were received on 12 January. On that day, a search of the tideline by the roost site at the south-east corner of the basin found corpses of 122 Redshanks, 19 Oystercatchers, 5 Dunlins, 1 Curlew and 13 individuals of several species of ducks and geese. There were also many corpses floating in the water. At this time, all Redshanks at Montrose were using the south-east roost, as the other roost site, in the north-west corner of the basin, was completely covered by ice. The roost consisted of 300 Redshanks, all of which were reluctant to fly: 100 would fly only 5 to 10 metres when disturbed, and 20 seemed incapable of flight. Other waders seemed less seriously affected. Some further Redshanks were found freshly dead, or dying, on 16 January, after another two nights of severe frost. All the tideline of the basin was searched between 17 and 23 January, as the ice melted. This revealed additional corpses, bringing the total found to 341 Redshanks, 104 Oystercatchers, 16 Dunlins, 3 Knots *Calidris canutus* and 5 Curlews. However, these figures underestimate the total mortality for several reasons. Firstly, most deaths probably occurred at the south-east roost, less than 300 metres from the exit of the basin to the sea, so many were washed out to sea. There is some corroborative evidence for this: on the north side of the entrance, where little tiderack is normally deposited because of steep banks, only 4 Oystercatchers, 1 Dunlin and 1 Redshank were found dead, but these corpses formed most of the tide-rack; also, 6 Oystercatchers and 4 Redshanks were found dead on the beach just to the north of the entrance, where few Oystercatchers and no Redshanks fed or roosted. Secondly, many birds were washed up in large ice-fields, and were seen to be eaten by scavengers as the ice thawed. The remains of these corpses were not found during tideline searches. Thirdly, many birds died on fields near the basin, but only a few corpses were recovered from these areas.

By 23 January, the Redshank population had increased to 600 birds, 165 of which were caught on 24 and 28 January. All but three of the 30 already ringed birds in these catches had been ringed on the Basin. No juveniles were caught. By 7 February, about 1,000 Redshanks were present at the Basin, but even this was well below the mild winter population of 1,500 to 2,000 birds.

Firth of Forth (Dr. M.Marquis, N.A.Clark). Observations made on waders at Musselburgh, on the south side of the Forth, between 18 and 23 December suggested that Dunlins and Redshanks were being adversely affected by the weather conditions, because they returned to the feeding grounds from their roost site within half an hour of high tide. There, they were forced to feed near the tideline at all times, because the mud froze within twenty minutes of becoming exposed. Redshanks caught on 23 December had very low weights, but only 1 Redshank and 1 Curlew were found dead. By 5 January,

weights of Redshanks were higher, although some were still lighter than in mild winters. Redshanks and Turnstones *Arenaria interpres* seemed worst affected by the second cold spell, and on 12 January they were reluctant to fly when disturbed from their feeding grounds. However, only 2 Redshanks were found dead. On 23 January, Redshanks had weights that were normal for mild winters (cf. Davidson in press).

8 kilometres of the north shore, checked between 21 and 29 January, yielded corpses of 8 Curlews, 3 Redshanks, 2 Bar-tailed Godwits, 2 Oystercatchers, 1 Knot and 2 Lapwings *Vanellus vanellus*. Regular counts of Redshanks in North Queensferry Bay showed that the population had decreased by half by the end of the cold weather.

At Aberlady Bay, waders moved from their usual roost sites because of the formation of large ice-fields, but few waders were found dead.

Tynninghame Bay, East Lothian (A.Clunas, P.Whitfield). The numbers of Oystercatchers (580 to 509) and Dunlins (560 to 488) decreased at Tynninghame between 6 December 1981 and 24 January 1982, but numbers of Redshanks (171 to 238), Grey Plovers *Pluvialis squatarola* (67 to 122), Curlews (30 to 47) and Bar-tailed Godwits (69 to 109) increased. On 24 January the numbers of Grey Plovers and Bar-tailed Godwits were higher than any in recent mild winters, and Redshanks also showed possible immigration (see the record of a movement from the Ythan estuary). A tideline search at the end of January found corpses of 6 Oystercatchers, 1 Dunlin, 10 Redshanks, 4 Curlews, 1 Bar-tailed Godwit, 3 Lapwings and 1 Woodcock *Scolopax rusticola*. On the nearby rocky shores, neither Redshanks nor Turnstones appeared adversely affected.

Teesmouth, Co. Cleveland (N.C.Davidson). Tideline checks within the estuary revealed corpses of 2 Redshanks and 1 Curlew. Some Dunlins, Redshanks and Grey Plovers had lower weights than normal for mild winters (see Davidson this issue). No notable changes in foraging behaviour were recorded. Counts of Bar-tailed Godwits, Curlews, Grey Plovers and Sanderlings *Calidris alba* were similar to previous, mild winters.

The Humber (I.Shepherd). Weekly low water counts at Pyewipes, on the south shore of the Humber, suggested a possible decrease in the numbers of Redshanks, but increases in the numbers of Grey Plovers and Bar-tailed Godwits. However, these may have been due to movements within the estuary, rather than inter-estuarine movements. Two miles of the tideline in the lower estuary were checked for corpses on 1 January, and 2 Redshanks, 1 Grey Plover, 1 Golden Plover *Pluvialis apricaria* and 1 Lapwing were found. Additionally, 3 Redshanks were found dead on a factory roof, a regular roost site.

The Wash (A.Ball, J.Kew, M.Peat, N.Watts). Seven kilometres of the east shore were searched between 23 and 28 December, and corpses of 25 Redshanks, 4 Dunlins, 2 Knots, 2 Oystercatchers, 1 Bar-tailed Godwit and 5 Grey Plovers were found. On 5 January, 1.6 kilometres of the north-west shore were searched, and 41 Redshanks, 1 Bar-tailed Godwit, 2 Curlews, 3 Turnstones and 1 Grey Plover were found dead.

Also in early January, 20 Redshanks, three of which were ringed, were reported by a wildfowler at Terrington, on the south shore. During the second cold spell (5 - 16 January) much ice was pushed up on the tideline, covering all corpses. These were probably eaten by scavengers as they became exposed, so few corpses were found in tideline searches. The Wash Wader Ringing Group had, by the end of February, received ringing recoveries of 13 Redshanks, 5 Oystercatchers and 4 Grey Plovers found dead on the tideline between 25 December and 4 January.

Sandwich Bay, Kent (P.J.Findley). No dead waders were reported. There were small increases in the numbers of Dunlins, Grey Plovers and Bar-tailed Godwits, but numbers of Oystercatchers, Golden Plovers and Lapwings decreased. On neap high tides, birds tended to roost and feed on exposed mud, rather than assemble on normal roosts.

Poole Harbour, Dorset (C.Reynolds). Plym estuary, Devon (R.Swinfen). Severn estuary, Gwent (Dr. P.N.Ferns). No mortality, or unusual movements, of waders were noted in these areas.

North Wales/Menai Straits, Gwynedd (D.Stanyard). Counts were made regularly at Foryd Bay throughout the winter. On 10 January 1982, numbers of several species differed markedly from those in mild winters (Table 2). The number of Curlews on 10 January was too high to have arisen only through local movements of birds from frozen fields to the shore. No wader corpses were found on two kilometres of the shore.

Table 2. Numbers of waders at Foryd Bay, North Wales.

	early Jan., mild winters	10 Jan. 1982
Oystercatcher	800	800
Lapwing	250	210
Ringed Plover	1 or 2	40
Grey Plover	1 or 2	33
Turnstone	50	40
Curlew	400	1300
Redshank	200 - 450	45
Knot	5 - 10	120
Dunlin	200 - 400	75

On Anglesey, in early October 1981, juvenile Redshanks formed 10.6% of a catch of 200 birds. This was about the normal winter proportion. However, in a catch of 500 birds on 7 February 1982, there were only 3.5% juveniles. Numbers of Redshanks were also lower (500 on 7 February 1982, compared with 1500 - 2000 during mild winters), but the difference in the percentage of juveniles can account only partly for the low number on 7 February.

Morecambe Bay (J.Sheldon). A check of all the sites where large numbers of waders have been found dead in some previous severe winters produced 15 Redshanks, 1 Turnstone, 9 Oystercatchers, 4 Curlews and 4 Knots. This is very few compared to the 1978/79 and 1962/63 winters.

Solway Firth (B.Turner). Most of the north shore of the Solway was checked for corpses, but none were found.

Clyde estuary (Dr. R.W.Furness). 2.5% of the Lapwings on the Clyde were colour-marked by the middle of November 1981. Throughout the winter, the proportion of colour-marked birds in the population, and the total population, remained stable. This suggests that there was no immigration into, or emigration from, this coastal population. The only dead waders found were 4 Lapwings and 3 Oystercatchers. Samples of Redshanks were caught on 12 December 1981, 27 January and 6 February 1982. On all three occasions, weights were within normal winter ranges.

I would like to thank all those who have been out, often in inclement weather, watching and catching waders, and collecting corpses, for their help in compiling this report; and Dr. N.C.Davidson and Dr. M.W.Pienkowski for helpful comments on an earlier draft.

References

Baillie, S. 1980. The effect of the hard weather of 1978/79 on the wader populations of the Ythan estuary. Wader Study Group Bull. 28: 16-17.

Davidson, N.C. in press. Changes in the body condition of Redshanks during mild winters: an inability to regulate reserves? Ringling & Migration.

Goss-Custard, J.D., Jenyon, R.A., Jones, R.E., Newbery, P.E. & Williams, R. le B. 1977. The ecology of the Wash. 2. Seasonal variation in the feeding conditions of wading birds (Charadrii). J. appl. Ecol. 14:701-719.

N.A. Clark, Department of Zoology, University of Edinburgh, West Mains Road, Edinburgh EH9 3JT, GB.

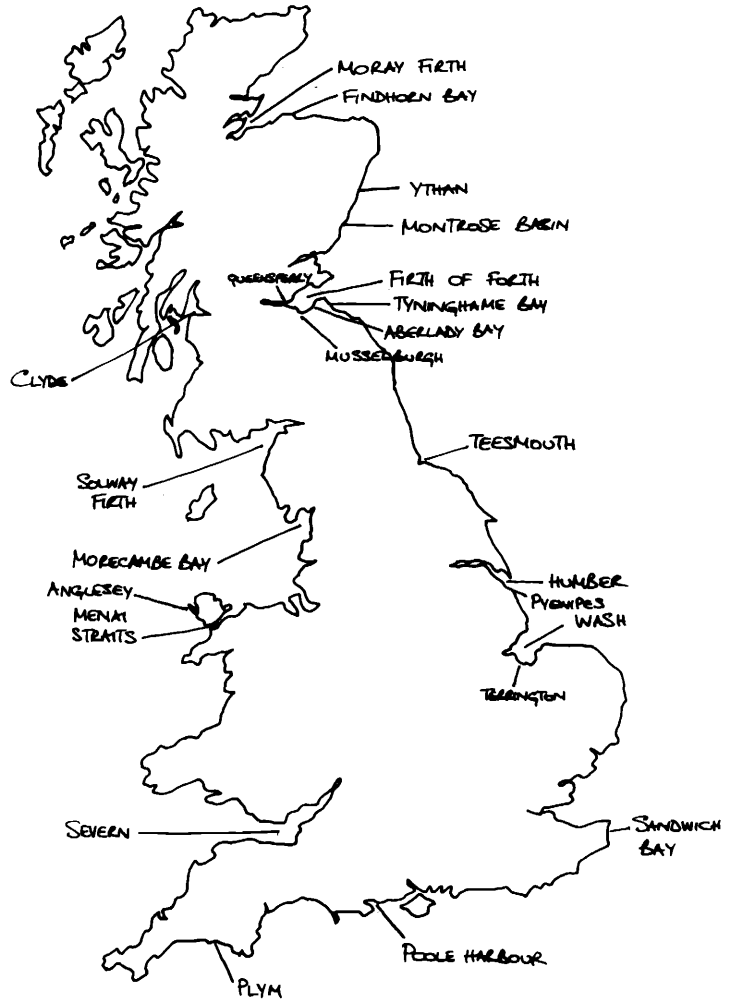


Figure 1. Intertidal areas mentioned in the text.

WHAT THE PAPERS SAID

British newspapers maintained their usual record of accuracy in reporting when describing the effects of cold weather on birds, and the imposition of the ban. Scotland's 'Sunday Standard' found some difficulty in identifying the usual habitat of waders: "Mr Mower said the society had evidence of duck and geese being forced to desert frozen inland lochs and move to coastal areas in search of feed [sic]. Similarly, other wading birds [sic], like Curlews, redshanks and ring plovers were being spotted on beaches."

Even the imposition of the wildfowling ban itself went unreported in most newspapers. However, the 'Durham Advertiser', a local paper in north-east England, seemed to work on the principal of 'better late than never'. The following notice duly appeared: "Michael Heseltine, Secretary of State for the Environment, has signed a further order under section seven of the Preservation of Birds Act 1967 banning the shooting of wildfowl, including snipe, woodcock, redshank and golden plover and of wild ducks and geese. The ban came into effect at midnight last night and remains in operation, unless modified for 14 days until midnight on Tuesday, January 26. The Government has been advised by the Nature Conservancy Council that the continuing severe weather is having an adverse effect on all wild birds and in particular ducks and shore-waders."

Despite the reference to "last night", the notice was not published until 22 January. The ban was lifted at 0001 on 23 January.