EUROPE'S MINI ICE-AGE

by P. R. Evans

A year ago, I published a short article in this Bulletin entitled 'Why catch waders in cold weather?' (Evans 1981). It set out some suggestions for the type of scientific studies needed to evaluate the effects of cold weather on birds, especially shorebirds. Clearly, the hidden force that controls the world's weather also reads the W.S.G. Bulletin, for it provided us with one of the coldest winters on record in 1981/82. As a result, the British government introduced bans on wildfowling in England, Wales and Scotland, following the criteria set out in my earlier article. Unfortunately it also attempted to ban cannon-netting for scientific purposes, but luckily the message did not get through to all groups who thought they had been given exemption in advance from any ban, on scientific grounds. Therefore, a few groups continued to gather valuable data on shorebird weights and condition - data which is absolutely essential if the efficacy of these wildfowling bans is to be evaluated from a biological, rather than a political, standpoint.

The cold weather in December 1981 arose from persistent, but usually light, northerly winds funnelled between extensive low pressure over Scandinavia and high pressure over the arctic ice cap in Greenland. Small, additional, low pressure areas brought very localized blizzards to southern and northwest England in early December and to the northeast later in the month.

The sequence of events involving bans on wildfowling in Britain in December and January was as follows: On 7th December, more than half of the 13 meteorological stations chosen to give representative information from around the British coasts recorded 'State of the Ground' in categories 3(frozen) to 9(covered by loose dry snow). After seven consecutive days of such conditions, the Nature Conservancy Council (NCC) issued a request on 15 December for "voluntary restraint" in wildfowling. After a further seven days of similar conditions, and a certain amount of governmental confusion, a statutory ban was recommended and came into force at 0001 hours on 22 December in England and Wales, and 0001 hours on 23 December in Scotland. 29 December was the first day when less than seven stations recorded State of Ground 3-9, but a further seven such days followed and on 5 January 1982 the ban ended, the eight days recovery period having previously been agreed as a minimum period after a thaw commencing on 29 December. From 5 January all three Scottish stations recorded State of Ground 3-9 and although the ban had ended in Scotland, voluntary restraint, and if necessary local voluntary bans, was requested. After continued reports of the severity of weather in Scotland, NCC recommended a re-imposition of the ban on 8 January; this came into force at 0001 hours on 11 January. From 6 January State of Ground 3-9 was again recorded from seven or more stations throughout the country, and a statutory ban was again recommended for England and Wales; this came into force at 0001 hours on 13 January. The bans were finally lifted at 0001 hours on 25 January.

Three features distinguish the 1981/82 winter from earlier severe winters (i) the comparatively early onset of cold conditions - almost one month before e.g. those in the 1962/63 or 1978/79 winters; (ii) the earlier onset of low temperatures in Britain than in continental Europe; and (iii) the calm conditions associated with many of the coldest days.

The implications of these three features are as follows: (i) most individuals of most species should have been carrying peak fat reserves when the cold weather started; (ii) any birds displaced from European coasts found colder conditions on arrival in Britain than those they had left on the Continent; and (iii) birds often lost heat less rapidly than under similar temperatures in the windy 1978/79 winter. Hence their fat reserves should have tended to last longer than in the earlier winter, even though temperatures were often somewhat lower. Also, the buffetting effects of wind, which prevent some species (particularly plovers) in some situations from feeding effectively, were absent.

Because temperatures were exceptionally low during some nights, the possibility exists that some waders might have been killed by cold alone, rather than by starvation. This could have happened if they were unable to burn their energy reserves fast enough to balance the rate at which they lost heat. If so, they would have been found dead with some fat still on the carcass, rather than in an emaciated condition. This will be examined in birds found dead at Montrose by Nigel Clark and others (see elsewhere in this issue) and supplied to Nick Davidson.

Questions related to the wildfowling ban still stand. Even though most waders are no longer legal quarry species (under the new Wildlife and Countryside Act), they may be disturbed, whilst attempting to feed, by the actions of wildfowlers. Is a statutory ban imposed after 14 days of severe weather too late to improve their chances of survival? Is an eight day recovery period at the end of severe weather long enough? Should bans be imposed on a regional basis, rather than just on a Scotland, W. England and Wales basis?

As emphasized in my earlier article, we need to determine the "normal", mild winter, patterns of movements and weight changes of waders in estuaries around the whole of the British Isles before we can interpret the weights and movements recorded in severe winters and assess their implications for the survival rates of different species. We also need information on the mortality of birds following influxes to an estuary. There is an idea finding favour in certain quarters that arrivals of birds, or their concentration by frozen ground into more limited feeding areas, may "overburden" the food supply and lead to emigration or death. Is this true only of wildfowl or also of waders?

Another area in which information is needed is the estimation of mortality from birds found dead. Are wader corpses scavenged more or less quickly under severe weather conditions? If they lie deep-frozen on the high tide line, are they left or removed by foxes, crows and gulls? How do changes in numbers alive, from day-to-day, relate to numbers found dead? There is plenty of scope for WSG members to tackle some of these questions!

Reference

Evans,P.R. 1981. Why catch waders in cold weather. WSG Bulletin 31: 23-24.

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