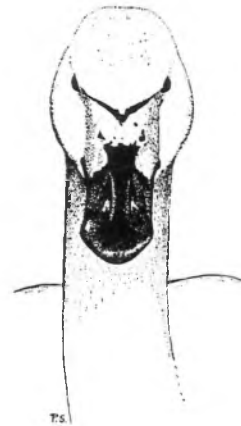


Bewick's and Whooper Swans: the 1989-90 season

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The 1989-90 winter proved unusually mild but there was no corresponding decrease in the number of Bewick's *Cygnus columbianus bewickii* and Whooper Swans *C. cygnus* recorded at Trust Centres this season. Bewick's Swans seem more likely to remain at wintering sites in The Netherlands and Germany in mild years, so climatic conditions may perhaps be responsible for the comparatively low counts of up to 253 Bewick's Swans at Slimbridge and 339 throughout Gloucestershire. At Welney, however, the number of Bewick's Swans present during December was well above average and 5984 birds found on the Ouse Washes on 15 January was the second highest total for the site, representing nearly one third of the European population. Moreover, a count of 660 Bewick's Swans at Martin Mere on 29 December was a new record for the site, and 686 Whooper Swans on the Ouse Washes (which includes the Trust's Welney refuge) on 15 January was the greatest concentration of the species ever recorded in England or Wales.

Reports from the Centres all indicated that the Bewick's Swans had an exceptionally good breeding year in 1989, with estimates of 21.8% young at Slimbridge and 18.6% young on the Ouse Washes. Whooper Swans fared less well, however; just 13.3% of 686 Whooper Swans on the Ouse Washes and 10.2% of 2819 seen in Ireland in mid-January were cygnets. The late thaw in the Icelandic highlands in spring 1989, which reduced the breeding success of Whooper Swans nesting in these areas, was probably the factor underlying the low proportion of cygnets in the wintering population.

Review of the season at Trust Centres

Slimbridge

The first four Bewick's Swans landed at Slimbridge on 18 October, an average date, and

numbers rose from 13 on 29 October, to 22 by 4 November, and 48 on 7 November. The early arrivals included "Prongy", first recorded at Slimbridge as a cygnet during the 1965-66 season, who returned for her 25th consecutive winter. "Prongy" was accompanied by her third mate, "Porcupine"; Bewick's Swans pair for life but if one member of a pair dies then its mate usually finds a new partner within one to two years. In early November the swans spent most of the day sleeping and grazing in fields on the New Grounds refuge (mainly the Dumbles and New Pieces), but returned to the Rushy Pen for the late afternoon distribution of grain and to roost. From mid-November onwards, however, the swans spent the day on a new ley of grass (sown in September) in another part of the refuge, and continued to select this particular field until their movement to Walmore Common in mid-December.

The first major influx of Bewick's Swans occurred in mid-November, when daily counts rose from 70 on 14 November to 112 on 15 November and 204 by 19 November. Numbers stabilised at around 235 during the first week of December and reached 249 on 12 December. Heavy rainfall in mid-December caused extensive flooding, however, providing excellent feeding and roosting conditions elsewhere in the county, most notably at Walmore Common some 10 km from Slimbridge on the other side of the River Severn. Numbers at Slimbridge fell to 189 by 14 December, then fluctuated between 80-100 birds from 19 December until the end of the month. Most of the missing birds were identified on the flooded meadows at Walmore Common during this period. Swans arriving in the area usually visited Slimbridge before joining the main flock across the river. As in previous years, the birds that remained at the New Grounds were mostly swans that roosted in pens within the Trust's enclosures, rather than the group that frequented the Rushy Pen. Simultaneous counts made at Slimbridge and Walmore indicated that

the total present in Gloucestershire rose to 263 on 22 December and 339 on 30 December, the maximum count for the county this winter. This figure was an improvement upon the 253 Bewick's Swans recorded in Gloucestershire during the mild 1988-89 season but was still below the 400-500 birds recorded during the early 1980s and 610 in January 1979.

Rainfall continued to play an important role in regulating the distribution of Bewick's Swans in Gloucestershire for the rest of the season. The swans started returning to Slimbridge from Walmore on 6 January, as flood levels on the Common began to subside, and numbers at the New Grounds peaked at 253 on 12 January. There was a second exodus to Walmore, however, following the torrential rains in late January. Only 50-80 birds were present at Slimbridge for most of February, whilst the counts at Walmore usually fluctuated between 150 and 200. On 22 February a combined count of 232 Bewick's Swans at Walmore and 36 at Slimbridge indicated that there were still at least 268 birds in the Gloucestershire area. Other sites traditionally used by Bewick's Swan in the county received comparatively few birds; up to 20 were seen at Coombe Hill, 15 at Ashleworth Ham, eight on the Avon Meadows and just five at Rodley. Presumably the birds were able to obtain sufficient food at the New Grounds and Walmore Common. The Moors, a site previously favoured by Bewick's Swans, situated just 2 km from the New Grounds, was ploughed during the autumn but up to 50 swans were seen in adjacent fields.

Most of the swans departed on spring migration during the last days of February. Some birds that had been seen at Walmore Common returned briefly to Slimbridge and 139 were recorded at the New Grounds on 26 February, but numbers dropped to 63 on 28 February and just nine birds remained on 1 March. Walmore Common, Rodley and sites around Tewkesbury were all checked on 28 February but the floods had subsided and no swans were found.

A total of 403 Bewick's Swans was recorded at Slimbridge during the course of the winter, including 88 (21.8%) juveniles. The mean brood size was 2.1 cygnets per family. There was a surprisingly high proportion of new birds recorded at the site in view of the mild weather; just 49.5% of the adults and yearlings had been recorded at Slimbridge in previous years. A further 65 swans ringed at Slimbridge, not seen at the site during 1989-90 but reported elsewhere during the winter, included 24 birds identified in the Netherlands, 26 on the Ouse Washes, nine in other parts of Britain and six in Ireland. Nine

swans sighted during the winter were known to be at least 20 years old: "Prongy", "Daniel", "Ku", "Cuba", "Quixote", "Lyre", "Flue", "Kaka" and "Flossie". Interestingly, seven of these birds were females. Although "Prongy" is the only bird seen at Slimbridge during the 1965-66 winter known to be still alive, "Daniel" is believed to be older since he was first recorded as an adult bird in 1966-67, when "Prongy" was still just a yearling. For the last two years "Daniel" has wintered at the Idle Valley in Nottinghamshire.

Welney

Three Whooper Swans were seen in front of the observatory at Welney on 9 October, three Bewick's Swans arrived the following day, and some 34 Whoopers and 26 Bewick's Swans were present on 16 October. By the end of October the number of Whoopers had risen to just 65 birds but Bewick's Swan counts had reached 349. Relatively dry conditions on the Ouse Washes in early November ensured that most of the birds returned to the main lagoon to roost each evening, and counts of over 1000 yellow-billed swans could be seen from the observatory mid-month. The swans flew out to the fields at first light, some to graze on winter wheat but most to feed on waste potatoes or sugar beet behind the Welney reception area. A Whooper Swan family, which included three "adopted" cygnets, arrived at Welney on 15 November. The adopted cygnets had been ringed in Iceland by Sverrir Thorstensen on 28 July 1989, but their natural parents were subsequently driven from their brood-rearing site by a pair with two cygnets occupying the adjacent territory. The abandoned cygnets became attached to the dominant family; the adoptive adults and their two natural cygnets were also marked with leg-rings when the group was caught by Eileen Rees and Sverrir Thorstensen on 9 August 1989. Happily all five cygnets survived migration to the Ouse Washes.

Thick fog on the evening of 3 December resulted in some 50 swans (both Bewick's and Whoopers) being killed by collision with power lines during evening flight from the fields to the roost. The Trust has now embarked upon a study of power-line casualties to identify features common to areas where the birds are particularly at risk. The mid-monthly count of the Ouse Washes found 4981 Bewick's and 508 Whooper Swans in the area - the Bewick's Swan figure being a December record for the site. A rapid rise in flood levels during the second half of

December caused the birds to disperse more widely but 5984 Bewick's Swans and a record 686 Whooper Swans found on the Ouse Washes on 15 January were excellent figures for a mild winter. A pair of Whooper Swans was observed mating on the lagoon on 4 January.

Water levels dropped in mid-January and the Bewick's Swans found good supplies of marsh yellow-cress on the reserve. Heavy rainfall towards the end of the month resulted in another rapid rise in water levels, however, and by mid-February very little land was showing, forcing the swans to roost on the water. Large numbers of birds were seen feeding in fields west of the town of March, including several identified by ring number, but they headed towards the Nene Washes rather than to the Ouse Washes each evening to roost. A dawn count on 23 February found 557 Whoopers and just 1070 Bewick's Swans on the Welney reserve, although at least 1000 more Bewick's Swans feeding on waste potatoes in a field near March were thought to be roosting on the Nene Washes. The Bewick's Swans did depart upon their spring migration during the last few days in February, however; a count on 12 March found only a handful of Bewick's Swans in the area but 447 Whoopers remained on the reserve, with 584 present over the whole of the Washes. The Whoopers finally departed in late March with just 100 present during the last week of the month, 26 on 8 April and 5 on 18 April.

A total of 28 ringed Whooper Swans was recorded in the Welney area during the winter; ten had been ringed at Welney, five at Caerlaverock and 13 in Iceland. A further 71 Bewick's Swans were identified, although many were seen only in the fields and not on the Welney reserve; 23 were Welney-ringed birds, 47 were from Slimbridge (including several individuals sighted on their way to or from Gloucestershire) and one swan had been ringed in the Netherlands. There was a sad but interesting report of a Welney-ringed bird, named "Lincoln", who was found shot in the Budennovsky District of the USSR, on the northern shore of the Caspian Sea, some 3200 km east of Welney.

Caerlaverock

The first Whooper Swan of the season arrived alone at 4.00 pm on 27 September, just two days later than the earliest arrival for the site, recorded in autumn 1988. Numbers built up slowly at first, with 26 counted on the refuge on 15 October and an additional ten birds sighted

further up the River Lochar. By 26 October, 49 birds were present but only 12 could be found the next day and this proved to be a feature of the winter, with many ringed birds being located within flocks in the surrounding area.

Swan numbers rose steadily during the last week of October; 100 were present by 30 October, rising to 120 by early November. Numbers then remained constant with 100-120 swans present in the area throughout November, December and into January although numbers on the refuge varied from day to day as birds altered their feeding sites. A slight increase at the end of January and in the first week of February led to a peak count of 146 birds on the Whooper pond on 4 February. This proved to be the highest count of the season but was well below the 218 recorded in November 1988.

Numbers at Caerlaverock usually peak in early November as birds alight during their migration to other wintering sites. This year the autumn passage appeared less intense, possibly due to a mild autumn in Iceland. Caerlaverock-ringed Whooper Swans were well dispersed throughout the winter; Trust staff and local ornithologists identified 35 birds at alternative sites including 27 not recorded at Caerlaverock this season. Thirteen birds were recorded at local sites in Dumfriesshire, while a further five were located nearby in Cumbria. Of the remaining birds, one was found in North Uist, one on Orkney, five at Welney, two at Martin Mere and seven in Ireland. Two more Caerlaverock-ringed birds were located in Iceland during the breeding season and a third, named "Perky", was recovered in Iceland in January having failed to migrate.

Most of the ringed birds had reached Caerlaverock by the end of November, the last arriving on 6 January and, by the end of the season, 127 birds had been identified, including 30 newly ringed birds. Four Icelandic-ringed birds appeared including a pair, "Viking" and "Vickie", who arrived on 31 January having spent the first half of the winter at Martin Mere.

Numbers stabilised at around 115 in mid-February and did not decline until the end of March with 94 birds on 31 March dropping to 75 by 1 April. Cold northerly winds and snow at the start of April held the swans back, however, and 45 were still present on 6 April, a good count for such a late date. With less harsh conditions in the second week of April, the remaining swans departed, the last five being seen on 12 April.

Numbers of Bewick's Swans at Caerlaverock have never recovered to the levels of the early

1980s, when up to 77 were present. It was therefore pleasing that small numbers of Bewick's Swans were seen during the winter. The first bird arrived on 26 October and was immediately recognised by its distinctive bill pattern as being a bird that had been present last season. By 27 October six birds were present including a Slimbridge-ringed bird, "Cobra", with its mate and two cygnets, and the total had increased to a respectable 20 by 28 October. No Bewick's Swans were to be found on 29 October, however, and just two birds were observed infrequently during November and early December. A small influx occurred in the new year when 11 birds were recorded on 5 January, rising to 19 mid-month, but there were no further reports of Bewick's Swans in the area after the third week of January.

Martin Mere

The first migratory swans to reach a Wildfowl and Wetlands Trust Centre this season were four unringed adult Whooper Swans that landed on the mere at Martin Mere on 26 September. The Bewick's Swans arrived slightly later, as usual, but eight individuals reached the mere on 15 October. The different arrival patterns for the two species can be attributed to their different migratory routes; Bewick's Swans breed on the arctic tundra of the Soviet Union and fly some 3700 km to winter in northwest Europe, whereas most of the British-wintering Whooper Swans are believed to be from the Icelandic-breeding population and have a comparatively short 800 km migration to Britain and Ireland.

The Whooper Swan flock at Martin Mere built up steadily throughout October; 68 were recorded on 15 October, 114 on 27 October and 290, with 124 Bewick's Swans, at dawn on 2 November. Brood counts made during the evening of 2 November found 36 (12.4%) Whooper Swan cygnets and 34 (27.4%) Bewick's Swan cygnets, which reflected the national trend. The main influx of Bewick's Swans occurred during November; a count of 645 Bewick's and 345 Whooper Swans was made on 23 November, excellent figures for the time of year. Although most of the birds flew to nearby fields to feed during the day, some 100 Bewick's and 200 Whoopers attended the morning distribution of grain in front of the Raines and Gladstone Hides.

Heavy frosts, combined with foggy mornings, encouraged most of the swans to remain on the reserve during the first week of December. A record 660 Bewick's Swans were counted during

2 December, together with 350 Whooper Swans, representing most of the migratory swans present in the area. Over 600 Bewick's remained until mid-December and counts then fluctuated between 450 and 580 during the second half of the month before rising to 660 again on 29 December.

Nearly a thousand swans were present during early January; the birds started roosting on Vinson's and Sunley's Marshes but flew back to the mere between 7:45 and 9:00 am for the morning feeds and remained for the rest of the day. A dawn count on 18 January found 541 Bewick's and 428 Whooper Swans at the site. The Whooper Swan figure was the highest since December 1987, when a record 429 were seen at Martin Mere.

Bewick's Swan numbers fluctuated between 420-470 in late January and early February, but 601 were counted on 22 February before their final departure at the end of the month. Just 287 Bewick's Swans remained on 28 February, 118 on 2 March and 18 by 9 March. Some 300-370 Whooper Swans were seen regularly throughout February and early March but Whooper counts also declined to 270 on 16 March, 192 on 17 March and 103 by 20 March as the birds started on their spring migration.

A total of 18 ringed Whooper Swans and six ringed Bewick's Swans was identified at Martin Mere during the winter. Most of the Whoopers had been ringed in Iceland but two, "Marty" and "Junket", were originally recorded at Caerlaverock before transferring their allegiance to Martin Mere. Of the six Bewick's Swans identified, three were ringed at Slimbridge, two at Welney and one at Martin Mere. Two Bewick's Swans with pale legs and feet were also sighted; one was a "penny-face" and the other had a "yellow-neb" bill pattern.

Arundel

The Wildfowl and Wetlands Trust's Centre at Arundel is a comparatively new Bewick's Swan site; the birds first visited the Centre during the 1984-85 winter, although a flock of some 150-170 swans traditionally occur on the nearby River Arun floodplain, which includes Amberley and Pulborough Wildbrooks. The swans have used Arundel mainly as an alternative roost site during cold weather, when their regular roost at Amberley became frozen, but this winter saw the birds visiting the Centre on a more regular basis.

An adult Bewick's Swan accompanied by three cygnets roosted on Swan Lake at Arundel during mid-November but returned to Amberley

as flood levels rose in early December. The swans recommenced roosting at Arundel during the first week in the New Year, when up to 76 birds including 16 (21.1%) cygnets were recorded on the wild area, but since the swans did not arrive until dusk it was not possible to see whether any were ringed. Numbers at Arundel declined in mid-January, although a pair with two cygnets became regular visitors in front of the Long Hide. Up to 47 were recorded during the week ending 20 January and 58 were present on 21 January; representing about half the flock wintering at Amberley. Some four or five birds continued visiting Arundel throughout February, and the last four birds (a family party) finally departed on 22 March.

Ringling

A small expedition to Iceland during July and August 1989 resulted in 108 Whooper Swans being caught, with invaluable help from Icelandic ringers and a separate British team. These included 31 non-breeding birds at Jokuldalsheidi, 29 family birds (including 21 cygnets) at sites near Myvatn, plus 43 non-breeders and five cygnets at Skagafjörður. A further 101 Whooper Swans were caught by Sverrir Thorstensen in the Myvatn area.

Two major swan catches were made at Wildfowl and Wetlands Trust Centres during the 1989-90 winter. Seventy-one Bewick's Swans were caught at Slimbridge on 8 December, including 33 birds ringed for the first time. A further three cygnets were caught during the course of the season. As in previous years, the swans were all weighed and measured. Although Bewick's Swans receive legal protection from hunting throughout their migratory range, X-rays taken of 94 of the birds caught at Slimbridge during the last two years found that 38 (40.4%) were carrying lead pellets in their body tissues, including five out of 21 cygnets. These results arrived in time for the matter to be raised at the Third International Swan Symposium, which was held at Oxford in December 1989, and methods employed to ensure that the swans are protected from shooting will be re-considered within the different countries along the swans' migratory route.

A catch of 80 Whoopers and 38 Mute Swans at Caerlaverock on 28 November 1989 also proved most satisfactory, with some 13 adult and 18 juvenile Whooper Swans ringed for the first time. A single Whooper Swan cygnet was caught and ringed later in the season. In addition

to weighing and measuring the birds, blood samples were taken by a team from Nottingham University to determine family relationships between the birds by their genetic coding. Some 100 Whooper Swans were X-rayed during swan catches in 1988 and 1989 and 10 (10%) were found to have lead pellets in their tissues. The apparent difference in shooting pressure experienced by Bewick's and Whooper Swans may perhaps be attributed to differences in the distribution of the two species, with British-wintering Whooper Swans migrating to Iceland and Bewick's Swans to the USSR.

A mini swan catch was made at Welney on 13 January 1990 - seven Whooper Swans were trapped, including just one bird that had been ringed previously. The channel for the new Martin Mere swan-pipe was excavated during 1989 and the pipe should be completed before the swans return for the 1990-91 season.

Eighty-two Bewick's Swans were caught in the Netherlands by the Dutch ringling group during the winter (T. Haitjema pers. comm.), which makes a useful addition to their sample of 22 Bewick's Swans ringed on the Noordoostpolder on 14 December 1985 and the nine Bewick's Swans marked with neck-collars on the Onnerpolder on 9 March 1989. This year, three of the Dutch-ringed swans were also fitted with radio transmitters for a more detailed study of the movements of individual birds.

Research projects

During the 1960s and 1970s, studies of migratory swans undertaken by Wildfowl and Wetlands Trust staff were based mainly upon the detailed observations made of Bewick's Swans wintering at Slimbridge, where the birds could be watched at close quarters and individuals identified by the variation in their black-and-yellow bill markings. In more recent years, however, the swan research programme has aimed to determine factors affecting the reproductive success, feeding ecology and migratory movements of both Bewick's and Whooper Swans on a national and international level. Aspects of the breeding biology of Whooper Swans in Iceland is currently being investigated in collaboration with Icelandic colleagues. A study of the interaction between the two swan species wintering at Martin Mere will commence in autumn 1990. The Trust aims to make a detailed study of changes in the distribution of Bewick's and Whooper Swans in relation to habitat during the 1990-91 winter.

In January 1990, John Bowler and Olafur Einarsson visited Ireland with a view to locating Whooper Swans that had been ringed in Iceland during 1988 and 1989, and particularly birds first ringed as cygnets, to advance the study of juvenile survival at different stages of their development. A total of 2819 Whooper Swans was counted (1217 in Eire, 1602 in Ulster) of which 2513 were checked for rings; 36 marked

birds were found and 31 rings were read. Seven individuals were found to be at the same site as in the 1988-89 winter, reinforcing the view that migratory swans are faithful to particular wintering sites. The distribution of the marked birds appeared to be biased towards the north, with 2.02% of Ulster birds checked being ringed compared with 0.71% in Eire. The percentage of cygnets was found to be higher in Eire (11.7%) than in Ulster (9.0%).

We are grateful to the many people who reported their sightings of Bewick's and Whooper Swans during the winter and particularly to R. and C. Hesketh, P. Shimmings and O. Einarsson at Caerlaverock; C. Tomlinson at Martin Mere; D. Paynter, Ph. Scott, M. Smart and T. Jones at Slimbridge; and J. Kemp, J. Arbon, D.K. Scott and D. Revett at Welney.

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Capture of non-breeding Whooper Swans in Iceland, 1988.

Photo: Eileen Rees.