The Swans Of Berwick-upon-Tweed

by Chris Spray, Muriel Fraser and Jon Coleman

NORTHUMBRIAN WATER

Introduction

The estuary of the river Tweed has long been the focus of activity for the town of Berwick-upon-Tweed. No modern picture of Berwick would be complete without a view of its famous herd of Mute Swans, swimming gracefully below the Quay walls or amongst the ships in the harbour. So much are they part of the scene, that they appear to have been there for centuries, yet until recently little was known about their history, origins, behaviour or indeed why so many came to Berwick.

It is because of its importance for the swans, and also Goldeneye duck, that the estuary was designated a Site of Special Scientific Interest in 1988 by the then Nature Conservancy Council.

Just how important the Tweed estuary is can be measured by the fact it holds the second largest gathering of swans in the United Kingdom; between three and four percent of the total British population and a study on the swans has been in progress for the last ten years.

This booklet tells the story behind Berwick's famous swan herd and describes current research work.

The Berwick Swan Herd

The swans you can see along the river Tweed and in the estuary are Mute Swans (Cygnus olor), one of three types of swan found in Britain and the only resident breeding species in the country. Quite when Mute Swans started to gather at Berwick is unknown, but it is probable that there were few prior to the beginning of the 20th century.

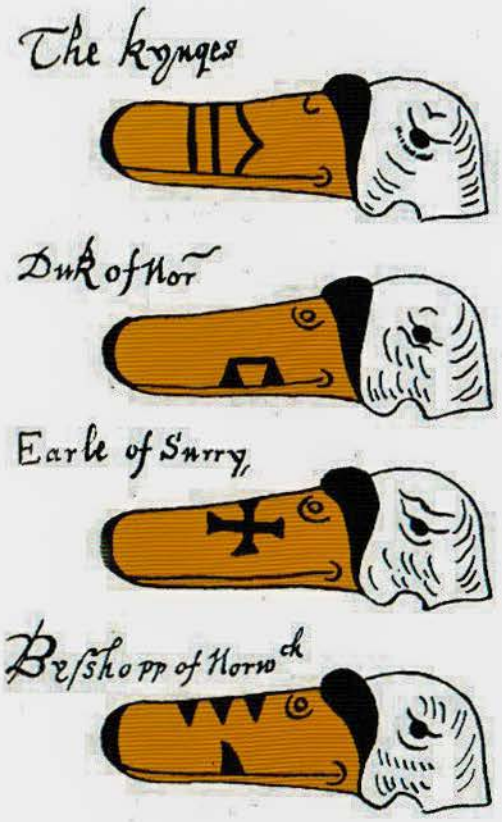
Certainly elderly residents living near the estuary report none or very few before the 1920's and "none during the 1914-18 war". By the time accurate counts of the Berwick herd were available in the early 1950's, numbers had already risen to over 200 birds.

Historical Origins

The earliest record of swans in Northumberland stems from a letter sent by a Roman soldier guarding Hadrian's Wall, requesting a supply of nets for catching swans (though whether these were Mute Swans or wintering Whooper Swans is unknown). More recently a record in 1387 recounts that the Bishop of Durham had 50 swans grace the banquet table for the visit of King Richard II that year.

This and other references indicate the importance of swans as a food source to the nobility at this time. Swans were bred for the table in specially built swanneries, and it is unlikely there were many living wild in the wider countryside.

The Household Book of the fifth Earl of Northumberland (1478-1527) refers to warrants to be served out "...yerely at Michaelmas for XX SWANNYS for th' expencez of my Lordes hous..." and also for "...twenty SIGNETTS to be taken of the breed of my Swannys within my Carre of Arrom within my Loordeship of Lekingfeld within the countie of Yorke whereof ye have the keepinge..."Although the Earl of Northumberland's swannery appears to have been in Yorkshire no similar references have been traced to further north or for Berwick itself.



A Royal Bird

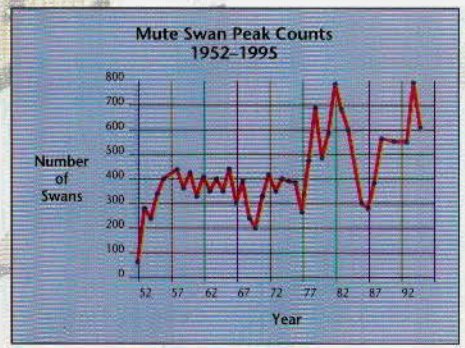
For centuries swans have been seen as royal birds, and the earliest surviving Rules for Swan Ownership produced in 1482 show that all swans belonged to the monarch, unless otherwise marked. Gradually over the years rights to own swans were granted to the nobility and the Church, and each new owner was allowed to possess their own "Swan Mark" (carved into the bill). The monarch appointed a Royal Swan Master to oversee these regulations, with regional deputies to organise swan courts and assist in other areas. Today the Crown can still lay claim to all Mute Swans in England and indeed on the Thames the Queen still exercises this right, in conjunction with the Vintners and Dyers Livery Companies. At Berwick, as elsewhere, although the birds can technically still be classed as 'Crown property', the Queen lays no claim to them and they are regarded as wild and free. It is only on the Thames therefore that the annual marking of all unmarked cygnets each July continues - the tradition of 'Swan Upping'.

The Swan Herd Today

Total Numbers:-

A glance at the diagram will show that the counts over the last 45 years reveal a huge increase in the number of swans at Berwick. These are maximum counts, usually in autumn, covering the river between the mouth and the Union bridge at Horncliffe some 8 kms upstream. After an initial rise in the 1950's, numbers stabilised at around 400 until the end of the 1970's. Since then, however, there has been a major increase with a peak count of 787 birds in September 1994. The huge drop in 1986 is no doubt due to the impact of an oil pollution incident on the estuary earlier that winter, when many birds were killed.

The reasons for this increase in the last 15 years probably owes more to factors away from Berwick, rather than to any sudden changes in the Tweed estuary quality or local food supplies. The long run of mild winters, the sequence of good breeding seasons, the banning of anglers' lead weights, the improvements in water quality, changes in agricultural practices and the creation of new wetland habitats have all helped the overall British population of Mute Swans to increase significantly in this period. A comparison with counts from other major Mute Swan sites in the North East (Loch Leven, Montrose Basin, Strathbeg Loch) show that they too have seen increases in numbers at, or around the same period, as have many other resident waterfowl in Britain.



Through the Seasons:-

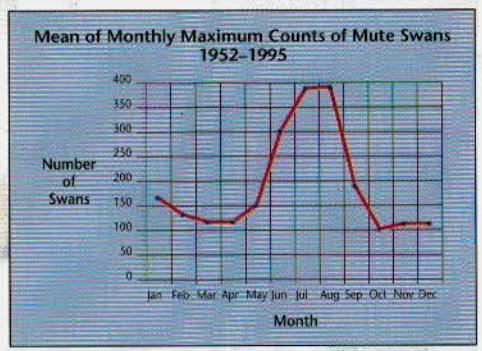
Regular counts each month show that numbers vary between seasons, with a peak in autumn and lowest numbers in early spring. This marked pattern owes its origin to the ecology and behaviour of swans; in particular to the regular migration of birds each autumn prior to the onset of moult.

Berwick has never been a breeding colony and indeed no pairs nest on the estuary. Instead it is the home to a large number of non-breeders. These are a mixture of old and immature birds: young swans which have not yet paired, paired swans which have not yet managed to establish their own breeding territories (away from the estuary) and unpaired birds that never found a mate, or, have become 'widowed' or 'divorced'. Together these form the core resident population, with roughly equal numbers of each sex.

In summer these birds are joined by other non-breeders and by territorial pairs that attempted to nest but failed that year. Like all waterfowl, swans shed all their flight feathers at once and then grow new ones each year. For a period of four to six weeks they are thus flightless and need to have found a safe site with an assured and plentiful food supply at which to spend their moult period. Over the years Berwick has become the traditional moult site for the whole of North East England, the Borders and South East Scotland providing a food-rich environment which is safe from too much disturbance, predation or pollution. At this time of year only the Fleet in Dorset holds more swans in the country.

Once moult is completed many birds leave, often to spend winter in urban areas where the late autumn food supply is supplemented with bread from the public. The actual autumn peak number in any one year varies, reflecting in part the success or otherwise of the breeding season that year and hence how many failed breeders migrate to moult at Berwick, rather than staying with their young broods elsewhere.

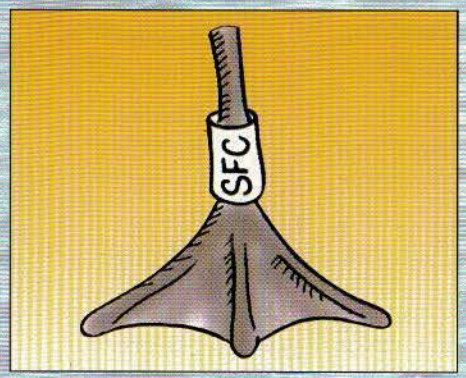
Winter numbers can also vary considerably, particularly in relation to harsh weather. Icing of inland lakes and rivers may cause birds to temporarily move to the ice-free coastal areas. In addition during early winter the first brown-coloured cygnets of the year arrive at Berwick. Some are in family groups with their parents, others alone having become separated or having been chased off their natal territory by their own parents. Many of these young birds will grow up at Berwick, find a mate here and in time establish a breeding territory away from the estuary when they are three to four years old or more.



Where Do Swans Come From and Go To

Counting swans alone cannot tell you where birds come from and go to, or how many individuals use the estuary, or whether they just pass through or remain as residents. To try and find out more a small team of experts has been catching and ringing swans with individually engraved colour rings. Ringing at Berwick only began with the 80 birds released after the 1986 oil incident, but ringing in the Borders and South East Scotland began in 1980 and has been complemented since 1988 by a study in Northumberland and Durham. Since 1992 detailed studies have been ongoing at Berwick on a monthly basis.

Birds ringed at Berwick and in the Borders carry a white leg ring, those from the Lothian's and Fife a light green or white one and those from Northumberland and Durham have blue or red rings, each engraved with a three digit/letter combination which can be easily read. In addition, each swan carries a small metal ring, giving its number and the address of the British Museum in London, as a permanent marker. Together this gives each bird a unique identity, allowing its movements to be tracked without having to be regularly caught (and it is much less damaging than carving out an individual 'swan mark' into the bill, as of old!). Some 1,800 different swans have now been recorded at Berwick, gradually enabling a picture to be built up of their use of the estuary.



Typically birds are first seen in their first winter, having come from further up the Tweed or Till rivers, or from one of the many ponds, lochs or reservoirs in the Borders, East Lothian or Northumberland. A second period of new arrivals occurs at the moult period, when young and older birds converge on Berwick from these areas and even further afield. By Autumn, the first year birds make up one quarter of the total population on the estuary. Many birds return to moult each year but others, particularly young birds, are less faithful and more mobile.

Recoveries of swans ringed at Berwick show a similar geographical distribution, though young unpaired birds occasionally move long distances, particularly south along the coastal lowlands and river valleys. Whilst the vast majority of sightings are in South East Scotland and North East England, exceptional records include birds recovered at places as far apart as Aberdeenshire, Loch Lomond, Glasgow, Dumfries, Coventry, Rutland, Northampton and even Devon - some 600 kms south.

What Attracts The Swans To Berwick and the Tweed Estuary

Observations of the swans throughout the year show that although the majority are seen on the lower estuary, below the Royal Border Bridge, their actual use of the river is much greater. Seasonal, tidal and diurnal factors all influence the activity and location of birds. Just counting birds in or around the harbour during daylight hours for instance can give a very distorted impression of the total numbers, their distribution and their activity. Their movements and their attraction to Berwick can best be explained by their need for food and safe roosting areas.

Swans are strict vegetarians, eating about three to four kgms of wet food per day, but they have very wide ranging diets. It is the estuary's natural food resources that are the real key to their presence. Estuaries are one of the most biologically productive of all types of habitats and both the variety of food, as well as its abundance attracts the swans - indeed many of the major swan sites in the country are in estuarine or brackish waters.

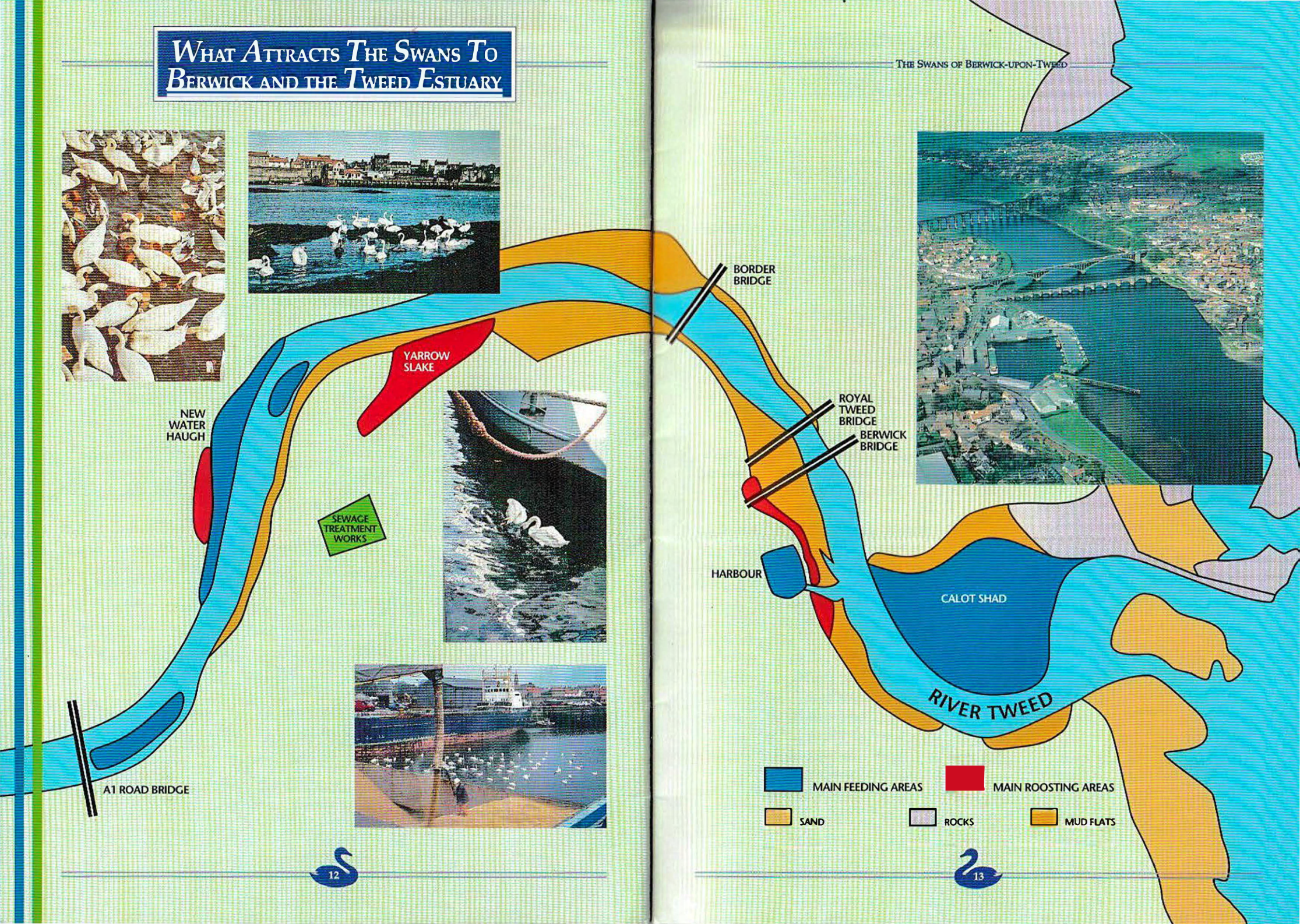
Swans in the lower estuary can be seen feeding on a variety of seaweeds and in particular the green algae enteromorpha. Further upstream, mainly during autumn, they feed on aquatic plants in the river with large groups of over 100 swans sometimes well upstream of the new A1 road bridge. Grazing on the banks is a common activity on the Slake and along New Water Haugh. To this abundance of natural food is added not only regular handouts from the public, but also the spillages of grain and other foodstuffs from the many ships in the docks and the waste products from industrial food processing.

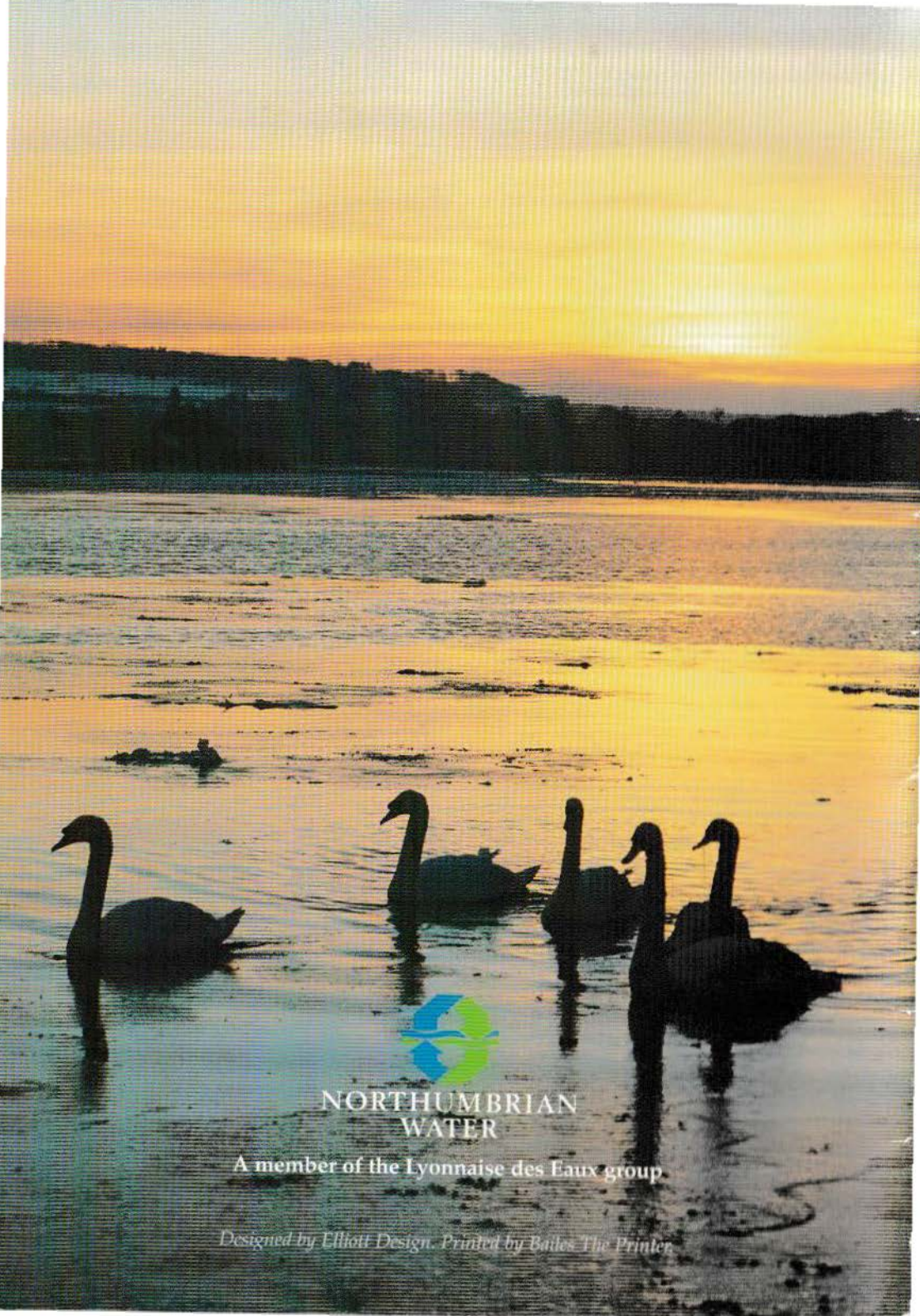
Typically as the tide rises birds drift upstream, abandoning their feeding grounds on the estuary mudflats at Calot Shad as the water depth becomes too great for them to reach the bottom. One favourite roost site is on the banks of the Slake or further upstream at New Water Haugh. Birds that move upstream can also take advantage of further feeding opportunities where the tidal influence is not so great.

Others remain in and around the dock as the water rises and they can be observed sleeping or preening over the high-water period.

Catching and measuring a sample of birds each month has allowed monitoring of the condition and weights of individual birds throughout the year. Typically, adult males at some 10 - 12 kgms are 1-2 kgms heavier than adult females, with first year males and females also showing a marked difference, reflecting their age and sex. However, whilst the weights of these classes of birds differ they remain remarkably constant across the year with little evidence of any particular periods of starvation or low weights. Indeed, comparison with another wintering herd of swans at Montrose Basin in the east of Scotland shows the Berwick birds to be some 0.5 kgms heavier.

WHAT ATTRACTS THE SWANS TO BERWICK AND THE TWEED ESTUARY





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