

Recent changes in the habits of the Kittiwake

By *J. C. Coulson*

Department of Zoology, Durham University

and *A. Macdonald*

INTRODUCTION

KITTIWAKES (*Rissa tridactyla*) are relatively specialised gulls; not only are they adapted to nesting on small rock ledges on precipitous cliff faces (see Cullen 1957), but they are probably the most oceanic of the gulls outside the breeding season, the majority spending the winter over a large area of the North Atlantic and North Pacific Oceans without ever coming to land. Because of these habits, the species does not often come into contact with man. Apart from feeding on the waste from sea-going ships and particularly fishing vessels, it has not, until recently, been associated with civilisation in the way that many other species of gulls will follow the plough, feed on refuse dumps and take food from the hand.

In the last sixty years, however, the Kittiwake has increased considerably as a breeding bird in the British Isles, particularly in England

continued ...

and Wales, and with this increase there has been a marked change in the type of cliff used for nesting. Recently formed colonies are noticeably lower than the old-established ones and this trend has resulted in the use of cliffs only a few feet high, as well as of window ledges on buildings and even of flat ground (Coulson in press). This has tended to bring the Kittiwake into closer contact with human habitation. Some of the more recent colonies—for example, at Dunbar in East Lothian and at Lowestoft in Suffolk—are very close to, or even actually in, harbours.

In recent years, we have noticed several other changes in the habits of the Kittiwake on the east coast of Great Britain and this paper presents a summary of these observations.

PENETRATION UP THE RIVER TYNE

The River Tyne is tidal for about twenty miles of its length (the upper part only at spring tides and therefore only slightly brackish). Its banks are industrialised and include a wide belt of dense population (Fig. 1). Since it is permissible to put untreated sewage direct into tidal waters, the tidal reaches, particularly from Newcastle upon Tyne to the mouth of the river, are heavily polluted. This part therefore supports a very limited animal population and, in particular, very few fish. Pollution is usually stated to be the sole reason for the decline of the river as a breeding area for Sea Trout (*Salmo trutta*) and Salmon (*S. salar*).

The Kittiwake was not recorded on the Tyne at Newcastle until a single bird was noted in 1951 (Temperley 1952). In the last ten years, however, the position has changed considerably and by 1961 the species could be seen almost daily between February and June within sight of the Tyne Bridge. A.M. has made counts since 1952, usually once a week, of the gulls present on a stretch of almost a mile below the Tyne Bridge, while J.C.C. has independently recorded Kittiwakes since 1958 on the same part of the river. Table 1 shows the seasonal distribution of records between 1952 and 1960. The first Kittiwakes appear at Newcastle at about the same time as they return to the breeding colonies near the river mouth, namely early February. The peak numbers occur just before the majority of the breeding birds start laying (mid-May) and there is then a marked decline during the time most of them are incubating eggs or taking care of young. The last are seen at Newcastle in the middle of July, although many remain at the colonies until the end of September.

The average number of Kittiwakes recorded at each visit between 15th February and 6th June is shown in Table 2 for each year from 1952 to 1960. These particular dates select the season when the birds occur most frequently on the river. While there is no evidence of a

CHANGES IN KITTIWAKE HABITS

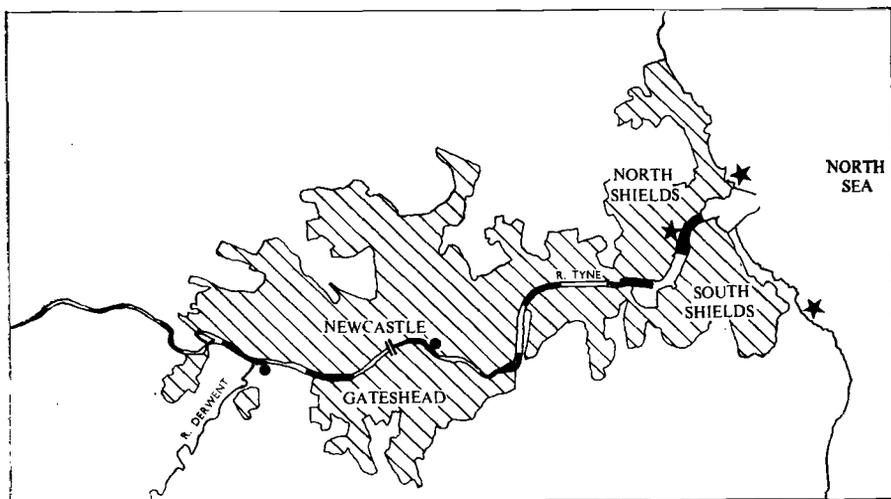


FIG. 1. The tidal reaches of the Tyne, showing the local breeding colonies of the Kittiwake (*Rissa tridactyla*) (★) and the known resting places of this species along the river (●). Alternate one-mile lengths of the river are shown dark to give a scale and the major built-up areas are shaded. The Tyne Bridge is marked under the S of NEWCASTLE

smooth, progressive increase each year, there has been a marked tendency for more to be present in recent years and this is clearly seen from the three-year averages. As already mentioned, it is now uncommon to visit the river between February and early June without seeing at least one Kittiwake.

From 1952 to 1956 only adults were seen (137 in all), but in 1957 two out of 63 were immatures, in 1958 one out of 79, in 1959 seven out of 83 and in 1960 ten out of 96. The percentages of what are mainly one-year-old birds has thus risen from 3% in 1957 to as high as 12% in 1959 and 10% in 1960. There is thus some evidence that an increasing number of immature Kittiwakes are also penetrating far upstream, although the habit apparently originated amongst adults.

On two occasions, J.C.C. also made a survey of the distribution of Kittiwakes upstream from Newcastle. A single bird was seen at the tidal limits near Wylam, and groups of 15 and at least 20 at the mouth of the River Derwent, a tributary of the Tyne (Fig. 1).

Food

Undoubtedly the majority of Kittiwakes seen in the river are searching for food. Both at Newcastle and at South Shields (about two miles from the river mouth), they take very small particles from the water's

TABLE 1—SEASONAL NUMBERS OF KITTIWAKES (*Rissa tridactyla*) ON THE RIVER TYNE AT NEWCASTLE, 1952-60

All counts were made on a 0.9 mile stretch below the Tyne Bridge (Fig. 1) and are summarised here in fortnightly periods. Note that no Kittiwakes were seen before 1st February or after 18th July, in spite of a total of 59 visits at other times of the year

	1952	1953	1954	1955	1956	1957	1958	1959	1960							
No. of visits	13	15	11	16	17	18	14	16	13	15	15	15	31			
Mean no. of birds	0.0	1.6	2.4	3.6	4.0	4.1	3.7	4.4	5.6	4.9	4.9	1.1	1.2	0.5	0.0	0.0
	Up to 31 Jan	1 Feb-14 Feb	15 Feb-28 Feb	1 Mar-14 Mar	15 Mar-28 Mar	29 Mar-11 Apr	12 Apr-25 Apr	26 Apr-9 May	10 May-23 May	24 May-6 Jun	7 Jun-20 Jun	21 Jun-4 Jul	5 Jul-18 Jul	19 Jul-1 Aug	From 2 Aug	

TABLE 2—ANNUAL NUMBERS OF KITTIWAKES (*Rissa tridactyla*) ON THE RIVER TYNE AT NEWCASTLE, 1952-60

All counts were made on a 0.9 mile stretch below the Tyne Bridge (Fig. 1), but only those for the peak period from 15th February to 6th June (Table 1) are included here. Note that the three-year averages, both of numbers and percentage observations, show a marked tendency to increase

	1952	1953	1954	1955	1956	1957	1958	1959	1960
No. of visits	5	6	2	9	11	14	24	26	23
Mean no. of birds per visit	1.0	4.0	4.0	4.3	3.2	3.0	5.7	7.1	6.1
		2.8			3.4			6.2	
% visits with birds present		60%			71%			86%	

CHANGES IN KITTIWAKE HABITS

surface without alighting; some also swim buoyantly and pick up tiny floating morsels after the manner of phalaropes. The river is so heavily polluted that there is little possibility that they are collecting living animal food, and it seems more likely that they are feeding on sewage. This is also suggested by their tendency to accumulate at sewer outfalls and by their habit of following the North Shields-South Shields ferries to feed on materials forced to the surface by the turbulence produced by the twin propellers. It seems significant that this latter type of feeding occurs almost exclusively when the tide is low or on the ebb, for that is when most of the sewage passes downstream.

In the last few hundred yards of the Derwent, which is fresh water, Kittiwakes were feeding almost exclusively on fish taken from just below the surface. We have not been able to identify these, but it was observed that several were over six inches long. Although Common Gulls (*Larus canus*) were as numerous there as the Kittiwakes and were also trying to obtain the same food, it was noticeable that the latter had much greater success.

Resting sites

Kittiwakes have been found resting at two riverside sites near Newcastle (Fig. 1). One is a building about a mile downstream from the Tyne Bridge; we have no evidence of breeding attempts, but more birds occur each year and the site would appear to be suitable for nesting. The other is a wooden quay near the mouth of the Derwent; there is no possibility of nesting taking place there.

It is assumed that the Kittiwakes which occur on the Tyne are mostly from the colonies near the mouth of the river (Fig. 1). All the sixty pairs which breed on the riverside warehouse at North Shields are colour-ringed, however, and since only two colour-ringed Kittiwakes have been seen on the river at Newcastle, it is clear that these are not the birds involved. The colony beside the north pier at Tynemouth consists of only about twenty breeding pairs, but that at Marsden (three miles to the south) contains some 3,000 pairs and probably most of the birds entering the river come from there. However, two Kittiwakes ringed on the Farne Islands have been recovered in the Tyne and so it is likely that some other colonies are involved.

TAKING BREAD

Kittiwakes have for many years had the opportunity of taking bread (and probably have done so) from the waste thrown overboard from ships crossing the Atlantic. In recent years, J.C.C. has observed Kittiwakes regularly taking bread at Dunbar, East Lothian, and at South Shields, Co. Durham. At Dunbar, where there is a colony

BRITISH BIRDS

nesting on a low cliff on the harbour side, they readily leave their ledges to pick up bread thrown into the harbour or on to the quay-side. This may have developed from the habit of scavenging on the fishing boats lying in the harbour and taking fish from boxes on the boats or the quay. These Kittiwakes will also take small fish ("sprats") which are caught by children in the harbour and thrown down on the quay below the colony.

At South Shields, Kittiwakes can be seen on a freshwater lake, in a park just behind the beach. Originally they came to this lake solely to bathe, but within the last five years some have started to take bread thrown to other birds such as Black-headed Gulls (*Larus ridibundus*), Mute Swans (*Cygnus olor*) and Moorhens (*Gallinula chloropus*). It seems likely that the habit has developed from copying the Black-headed Gulls, but as yet only a minority of the Kittiwakes visiting the lake appear to do it.

OCCURRING IN TOWNS

Kittiwakes normally avoid flying over land except when going to bathe in fresh water or, in the high Arctic, when travelling to and from inland breeding cliffs. These birds now regularly fly over the centre of North Shields to a small reservoir in the middle of the town about a mile and a half from the coast. This reservoir has steep banks, the tops of which are covered with long grass and bushes, and, apart from a small projection in the water, there is no suitable place for them to stand after bathing. They therefore fly to a church near-by and alight on the tower parapet to preen. Thus, during the spring and summer, it is possible from one of the main streets in North Shields to see Kittiwakes standing on a church tower.

DISCUSSION

Although the Kittiwake can be considered a specialised gull, this has not resulted in a lack of adaptability. In recent years it has started to nest on flat ground (Salomonsen 1941) and has shown a change in the type of cliff used for colonies (Coulson in press), while the present paper has demonstrated that the species is now penetrating inland and also exploiting new food materials.

It may be valuable to consider some of the possible effects of these changes in habits. During the last hundred years there has been a considerable increase in the occurrences of several species of gull inland in this country. It is possible that the Kittiwake may be beginning to show the same trend. While this bird probably depends more on fish for its food than the other gulls, there is now a tendency for it to feed with greater frequency on such materials as sewage and bread. In addition, it is probably for the first time feeding regularly

CHANGES IN KITTIWAKE HABITS

on fish caught in freshwater. These changes may spread during the next few years and the Kittiwake may occur more commonly on fresh water during the breeding season.

Linked with these developments is the possibility that the Kittiwake may start to breed inland. There has been a colony on the River Tyne at North Shields, some two miles from the sea, since 1949. The formation of a new colony is usually heralded by a number of individuals using the site for some years as a resting place. Resting sites are already in use at Newcastle, some ten miles from the river mouth, and in the centre of North Shields. Kittiwakes have nested on window ledges of buildings in Great Britain since 1935 and they have recently started to breed on sloping roofs in the Lofoten Islands off the coast of Norway (Wagner 1958); such habits must greatly increase the number of possible nesting sites available for the species.

This discussion is obviously speculative, but it is considered important to draw attention to these changes so that, if they extend to other areas, the spread can be recorded in detail.

SUMMARY

Since 1951, Kittiwakes (*Rissa tridactyla*) have occurred regularly on the River Tyne at Newcastle, ten miles from the river mouth. They are present from February until mid-July and systematic counts have shown that the numbers are increasing. Food appears to be the cause of this new habit and the birds tend to congregate at sewer outfalls or where ferries make the water turbulent. Further upstream from Newcastle, Kittiwakes have been seen to take fish from fresh water in the River Derwent, a tributary of the Tyne. Kittiwakes have also been recorded taking bread from human beings at Dunbar and South Shields, and standing on the top of a church tower in the centre of North Shields well away from the sea. It is suggested that these new habits could produce a marked change in the ecology and breeding distribution of the species.

ACKNOWLEDGEMENTS

We should like to thank Dr. L. Davies for critically reading the manuscript and making several helpful suggestions.

REFERENCES

- COULSON, J. C. (in press): "The Kittiwake enquiry, 1959". *Bird Study*.
CULLEN, E. (1957): "Adaptations in the Kittiwake to cliff-nesting". *Ibis*, 99: 275-302.
SALOMONSEN, F. (1941): "The Kittiwake [*Rissa t. tridactyla* (L.)] breeding in Denmark". *Dansk Orn. Foren. Tidsskr.*, 35: 159-179.
TEMPERLEY, G. W. (1952): "Ornithological report for Northumberland and Durham for 1951". *Naturalist*, 1952: 109-129.
WAGNER, G. (1958): "Die Brutvögel von Röst (Lofoten)". *Sterna*, 3: 59-72.