BTO Research Report No. 141

Effects of the M6 Motorway Widening on Gailey Heronry

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July 1994

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Published in June 1997 by the British Trust for Ornithology
The Nunnery, Thetford, Norfolk IP24 2PU, U.K.

ISBN 0-903793-76-8

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1. Introduction

This report assesses the impacts of widening of the M6 motorway and the consequent loss of woodland on the Grey Heron colony of Gailey Lower Reservoir. Data from the Heronries Census has been used to put the Gailey population into a national context. In addition local volunteers involved in studying the Heronry have provided information on the behaviour of the herons. The possible effects of the loss of woodland and their implications for Gailey Heronry are discussed. This report consists entirely of a review of existing information and has not involved a site visit specifically for this study.

2. Background

The Grey Heron is the only species of heron which regularly breeds in and is widely distributed throughout Britain (Gibbons *et al* 1993). Herons are among the most conspicuous and well-known of wetland bird species in Britain. They frequent all types of freshwater habitats including streams, rivers, lakes and marshland, and are also found on coasts and estuaries. Fish are the main prey item of herons but they also feed on amphibians, small mammals, worms, insects and small birds, and they will fly over distances of up to twenty miles to reach good feeding areas. The dependence on fish as a staple of their diet means that herons are particularly vulnerable to cold weather, when freezing conditions reduce the accessibility of prey in inland waters and lead to increased mortality (Marchant *et al* 1990). The national population trend of herons is punctuated by population crashes which follow severe winters.

One of the most distinctive features of heron behaviour is their habit of breeding in large colonies. These colonies average from ten to thirty nests which are built in the top of tall deciduous and coniferous trees. The males return in February and overhaul the previous year's nests in preparation for the females' arrival. Once the chicks have fledged they leave the colony but generally remain within a 100km radius. If a brood fails before early May a heron pair will often lay a second clutch, which means that there may be young in the nest until late June or early July.

3. Gailey Heronry

3.1 Background

The heronry on a small island in Gailey Lower Reservoir, Staffordshire, has been monitored annually since 1960, providing an impressive quantity of breeding and population data that is unusual for a single colony. The first ten years' of data were summarised by Minton (1971) and annual nest counts since 1964 have been submitted to the Heronries Census organised by the BTO. Gailey Reservoirs have an entry in the Ornithological Sites Register, compiled by the BTO during the late 1960s and 1970s, in which a "strong heronry" on the lower pool island is mentioned. The creation of artificial nesting platforms and the planting of pines on the island is also recorded.

3.2 Population Trend

Figure 1 illustrates both the national Grey Heron population trend and that of the Gailey population from 1960. There was a crash in the national heron population, following the severe 1962/63 winter, which also affected the Gailey Heronry which declined from 50 breeding pairs in 1961 to 22 pairs in 1963. Since the crash, the national population has slowly recovered its former numbers and has maintained an upward trend. The Gailey Heronry population showed a recovery in numbers during the first few years after the crash but then declined from the late 1960s to the mid 1970s. This decline was in contrast to the national upward trend and local sources have suggested that it may have been related to the commencement of sailing on Gailey Reservoir and a resultant increase in disturbance levels at the Heronry. However, this has not been the subject of detailed investigation.
A slight upturn in the population trend preceded a major change of habit in 1979 as the majority of the colony chose to nest in conifers located in Fullmoor Wood, to the north of the reservoir. This site in Fullmoor Wood was recorded for three years for the Heronries Census. In 1978 two pairs of herons nested there which may have come from the Gailey colony. The following year seventeen pairs nested in Fullmoor Wood while only two nested at Gailey. In 1980 the herons abandoned the site in Fullmoor Wood and returned to the Gailey Heronry where nineteen pairs nested. The abandonment of their traditional breeding site by the Gailey herons in 1979 may have been related to the draining of the reservoir in this year, although it is not clear whether disturbance caused the move.

Since 1981, the trend of the Gailey population has followed that of the national population in increasing, but at a greater rate of increase. Numbers of herons breeding on the island have been expanding since 1988, to a record level of 57 pairs in 1994. Those involved with monitoring the Heronry believe that it may now have reached saturation point which could lead to the establishment of another colony nearby, possibly at the site used in Fullmoor Wood in 1979. The suitability of this site as a heronry is in some doubt however. Local sources have reported high levels of chick mortality when herons nested there in 1979. The conifers are now bigger and it is not certain whether they would provide a long-term site for a second colony.

3.3 Effects of M6 Widening

Motorway widening will cause the loss of 0.8ha of woodland and scrub from the western edge of Gailey Lower Reservoir. In addition, works associated with the A5 will remove a

230m strip of fringing vegetation from the southern side of the reservoir. There will be some compensation for the loss of woodland by planting locally native woodland species on the new road banks but overall there will be a decrease in woodland area. The new planting will take many years to become suitable for heron nests and even then may not be selected as a breeding site, since the herons currently use only the island in the reservoir.

The loss of woodland and fringing vegetation could have two potential impacts on the Heronry:

a) loss of feeding habitat along the reservoir margins.
b) increased amount of wind in the breeding colony, leading to increased risk of wind throw of nesting trees and damage to nests.

The herons have not been observed to use the reservoir area for feeding to any great extent (local sources). They prefer to feed in adjoining fields and streams, and also local gardens, where they find their favoured prey items. Herons will fly to good feeding areas, as mentioned in Section 2, and are not restricted to those areas close to the breeding colony. The loss of feeding habitat at the reservoir margins would be unlikely to have a significant effect on the feeding habits of the Gailey herons, as observed to date.

The loss of trees from the south-western corner of the reservoir will increase the exposure of the Gailey Heronry to the prevailing south-westerly wind. As mentioned previously, herons tend to nest in tall trees and these are at risk of wind throw. Carter (1992) stated that the loss of trees along the western edge of Moss Wood on Merseyside was likely to lead to an increase in wind damage of the tall trees in the Wood used by herons for nesting. The fetch across Gailey Reservoir from the south-western corner to the island is 400m and it is likely that the effects of the loss of woodland will be dissipated over this distance. The Heronry is located sufficiently far from the western side of the reservoir that increased exposure to the prevailing wind is unlikely to increase the risk of wind throw of nesting trees.

3.4 Recent Developments

Since being commissioned to study the effects of motorway widening on Gailey Heronry, a number of pine trees on the island have been felled, with the consequent loss of fifteen to seventeen heron nests. This action was carried out by the British Waterways Board, in an attempt to protect fish stocks in the reservoir by removing suitable roosting habitat for cormorants on the island. The loss of nesting trees will obviously have a major impact on the Heronry and could result in a second colony being established next year, potentially in Fullmoor Wood, which has been used by the Gailey herons in the past (Section 3.2).

3.5 Conclusions

This review indicates that the widening of the M6 is unlikely to have an impact on the Gailey Heronry. This heronry will continue to be monitored as part of the BTO's Heronries Census. It is anticipated that the Heronries Census will also monitor a second colony, should one be established by the Gailey herons in the vicinity.

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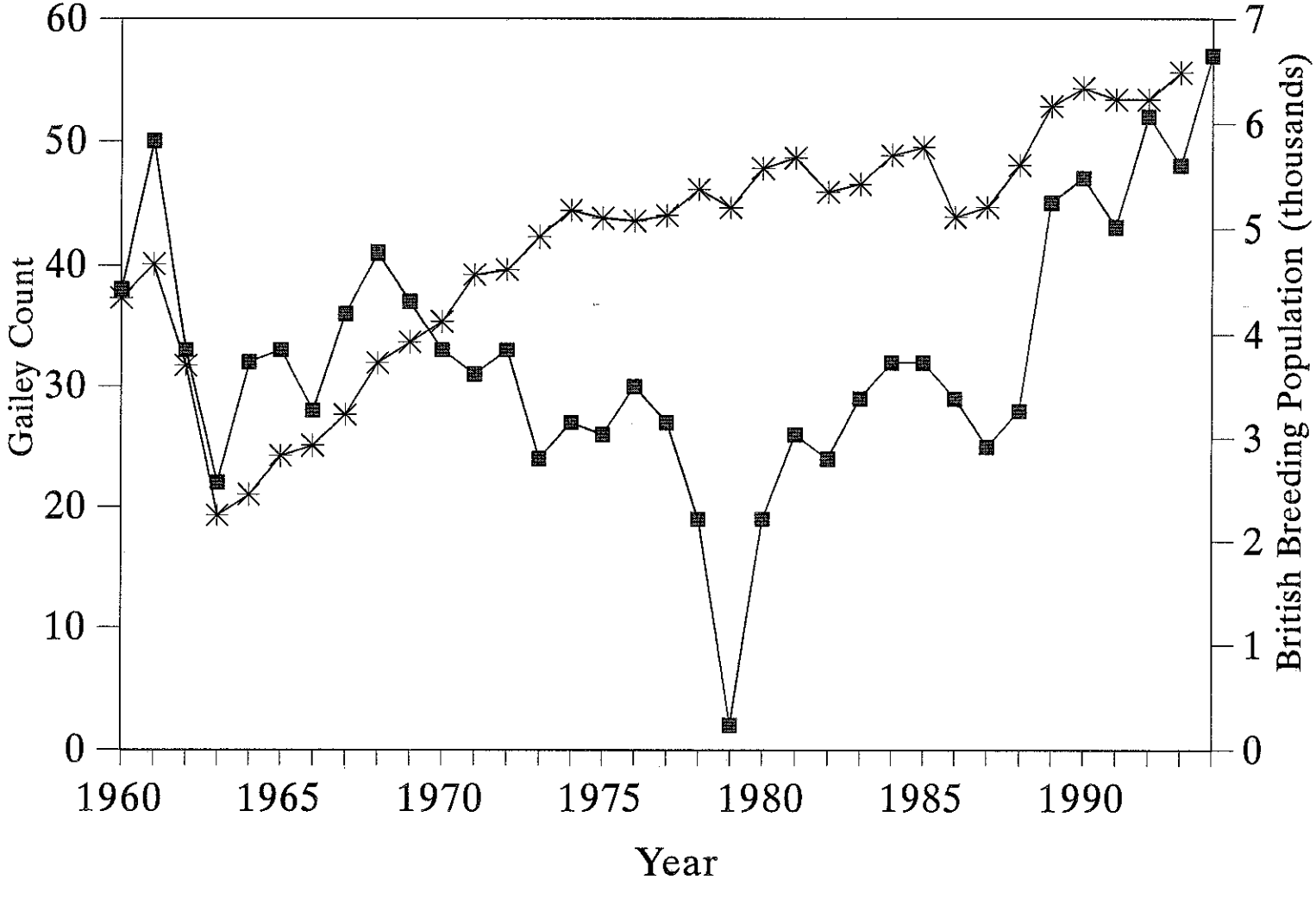
Acknowledgements

We are grateful to local sources of information and advice on Gailey Heronry, namely Peter Dedicoat (BTO Regional Representative for Staffordshire South), Bert Coleman and Frank Gribble (BTO Regional Representative for Staffordshire Central). Thanks are also due to Dr Steve Carter of BTO for providing data from the Heronries Census and reference material for this report.

Figure 1. Number of pairs of herons at Gailey in relation to the national trend



Note: 17 pairs of herons nested in Fullmoor Wood in 1979