

The loss of Barn Owl *Tyto alba* breeding and roost sites in County Cork: a contributory factor in the species' decline

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The Barn Owl *Tyto alba* has undergone serious decline in Britain over the latter half of the twentieth century (Shawyer 1994) and it has been generally assumed that a similar situation pertains to the island of Ireland. The extent of the decline in Ireland is unknown but local declines have been noticed since the 1950s (Hutchinson 1989). The second *Breeding Atlas* (Gibbons *et al.* 1993), despite less than satisfactory coverage over much of Ireland, clearly shows a substantial contraction in range when compared to the original *Breeding Atlas* (Sharrock 1976). In the years 1991-95, David Cooke and the author carried out a random survey of Barn Owls in County Cork and early on we became aware that a major decline had occurred based on evidence received from landowners about former occupation at many sites. Since 2003, we have been monitoring most of the sites found in the 1990s and the decline would appear to be continuing. Other observers in County Cork have also noticed this continuing trend (C. Saich, pers. comm.).

The causes of decline relate largely to changing agricultural practices over the last fifty years i.e. the transformation from extensively based systems to increasingly intensive practices has brought about major changes to the Irish landscape. Farms no longer contain grain stores for horses and modern grain silos are largely rodent proof. Large areas of prey-supporting marginal land have been reclaimed and many kilometres of hedgerows have been removed. The changeover from hay to silage and a reduction in the amount of arable land have also led to depletion in prey numbers. The use of ever more powerful rodenticides has been identified as a cause of decline for the species in Britain. In addition, increased road traffic has resulted in higher road fatalities. The renovation of old buildings has long been a problem for the species in Britain and this relatively new phenomenon to Ireland has become a significant cause of decline in County Cork especially over the past twelve years.

The period since we first began to look at the Barn Owl population and the present has coincided with an extraordinary boom in the Irish economy. An increase in

wealth coupled with a huge demand for property has led to increasing pressure on old dwellings in rural areas and unfortunately for the Barn Owl (already in decline due to the reasons referred to above), many nest sites and roosts have and are being lost to development. The extent of this loss is all encompassing, ranging from small cottages to farmhouses to large mansions and the problem is countywide from Castletownbere in the west to Youghal in the east. Since 1995, no fewer than fourteen sites (most of which were regular breeding sites) have been lost through renovation, repair or demolition. The list includes five mansions, three schools, two farmhouses, one church, one mill, one cottage and one farm building. I am unaware of any new breeding sites in the vicinities of any of the above sites, which suggests that many local extinctions may have taken place, but this would require more thorough investigation. Many other ruined or dilapidated buildings (some of which undoubtedly held owls unknown to us) have also been renovated in recent years and even if owls were not present, their potential use as nest sites have been lost.

The great majority of known nest sites in County Cork are in buildings (not always ruins) and tree nests are rare, in common with findings in Britain where trees are the most frequent choice in the drier east and buildings predominate in the wetter west (Shawyer 1994). Ruined mansions are particularly important to the Barn Owl in County Cork as they usually provide long term, secure breeding sites and often contain a choice of nest sites. Furthermore, these sites are usually large enough to provide separate roost sites for the male and female of the pair (essential to breeding success), which is often not the case in smaller buildings.

The loss of ruined mansions as breeding sites (and at least one other such building is scheduled for renovation shortly) is a particularly worrying development as increasingly fewer alternatives are available to the species over large parts of the county. These buildings are often in use for many generations and a ruined mansion may well serve as the nucleus of a population in a given area as other sites are used and disused over the years. Decades of neglect and exposure to the weather take their toll on such structures and to add to the problems facing the Barn Owl some buildings (including several castles) are nearing a state of collapse.

I have estimated the current population in County Cork at somewhere in the region of forty to sixty pairs (though probably closer to the lower figure), (Nagle 2005). This compares to our earlier population estimate of sixty to ninety pairs in the mid 1990s. Any further substantial reduction in breeding sites is likely to have serious implications for the Barn Owl in what appears to

be a stronghold of the species in Ireland (J. Lusby, pers. comm.).

The widespread provision of nestboxes at undisturbed locations in areas of suitable habitat adjacent to core populations is one obvious form of remedial action and while it is encouraging to note that provision of nestboxes for Barn Owls (and other species) is included in the new Rural Environment Protection Scheme (REPS 4) as an optional measure, it is vital that such schemes (along with habitat improvement) receive more active encouragement in coming years. The re-enforcement of breeding sites in buildings that are in an advanced state of decay is also recommended. Finally, the protection of existing breeding sites, especially those in castles, by installing gates would safeguard many of the remaining sites from disturbance.

References

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Comparing the success of Hen Harrier *Circus cyaneus* tree nests and ground nests in the Antrim Hills, 1990-2006

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[†]This paper is dedicated to the memory of my co-author, who sadly died on 28 January 2007, before publication of this paper [see appendix]

Introduction

Persistence of tree nesting by some of the Hen Harrier population in the Antrim Hills (Scott *et al.* 1991, 1992, 1994, Scott 2000) begs the question as to whether it is a more successful strategy than ground nesting. Because

the mechanism at play is likely to be one of the young becoming imprinting on Sitka Spruce *Picea sitchensis* canopy as a nesting habitat, then the rate of production of young has an important bearing on whether tree nesting continues or spreads. In this paper we draw together and compare all the available data on tree and ground nest success in the Antrim Hills, gathered since tree nesting was first discovered to have taken place in 1990, with the aim of reaching a conclusion as to the relative success of the two nesting strategies.

Methods

Monitoring was carried under licence from the Department of Environment Northern Ireland. Due to the precarious position of some nests, difficulties of access, and the sensitivity of nest sites of this protected raptor, very few trees were climbed for inspection of nests. Data on clutch size, number of young hatched, and number of young fledged at tree nests were therefore largely based on evidence gathered from below – combinations of numbers of young observed and failed eggs left in the nest, or numbers of eggshells on the ground. Data on ground nests, gathered in the usual direct manner, are therefore more reliable as to clutch size and number of young hatched. The accuracy of the counts of number of young fledged is, however, considered to be comparable at both ground and tree nests due to intensity of monitoring at that stage. Over the total period of study 1990-2006, 20 young were rescued from the ground by tree nests and were successfully rehabilitated (if required) and released back into the wild. As these would have died without intervention, they are excluded from the numbers of (naturally) fledged young used for comparison purposes. No incidents of persecution were detected at tree nests. However, the success of several ground nests was prejudiced by some appalling incidents of persecution. Data from those nests is therefore excluded from the comparison of nest success at the affected stage for each concerned.

Results

The full dataset of nest tree nest histories is given in Table 1. Tree nests were an average of 9.83 m above ground; mean clutch size was 3.11 and mean fledged brood size was 1.51.

By coincidence, an almost equal sample of ground nests was found and monitored over a similar period. Ground nests had a mean of 4.05 eggs; brood size at hatching averaged 3.00 nestlings and 2.29 young fledged per nest (Table 2).

Discussion