

The occurrence of the Barn Owl *Tyto alba* in sacred buildings in central-eastern Poland

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1. Introduction

The occurrence of Barn Owl *Tyto alba* is strongly connected with the presence of buildings with suitable apertures for nesting or roosting (de Bruijn 1994, Sawyer 1994). In Poland this species breeds mainly in tall sacred buildings (Kopij 1990, Kitowski 1999). The main reason for the Barn Owl population decline is loss of suitable breeding sites. In recent years this process has accelerated because attics and towers have been renovated, reducing Barn Owl access (Kitowski 1999). The aims of this study were to determine changes in Barn Owl numbers in sacred buildings and to specify nest site selection preferences.

2. Methods and study area

A total of 95 sites were surveyed in 1989-1992 and 120 in 2000 (95 were the same

in both these periods). Freestanding belfries and church towers and attics were searched (a total of 113 sacred buildings in 1989-1992 and 152 in 2000). A breeding site was defined as a building where birds or fresh pellets had been observed. The sacred buildings that underwent control surveys were in small towns and villages in farmland of the Mazovia Lowland, an area where arable lands and meadows (68%) were the predominant habitat; woods comprised 22% and built-up areas 8%.

3. Results and discussion

The Barn Owl only occasionally occupies belfries, and so changes in numbers were analysed only for church sites (Tab. 1). In the first study period, the Barn Owl occupied 53 churches (59%) out of the 90 surveyed. In 2000, only 36 churches (31%) were occupied out of 115 surveyed. The number of churches with apertures suit-

Tab. 1. Preferences of the Barn Owl in occupation of sacred buildings in central-eastern Poland.

Years	1989-1992				2000			
	Sacred Buildings		Breeding sites		Sacred Buildings		Breeding sites	
	N	%	N	%	N	%	N	%
Sacred building types								
Brick churches	77	68.1	47	85.5	99	65.1	32	80.0
Wooden churches	13	11.6	6	10.9	16	10.5	4	10.0
Belfries	23	20.3	2	3.6	37	24.4	4	10.0
Totals	113	100.0	55	100.0	152	100.0	40	100.0

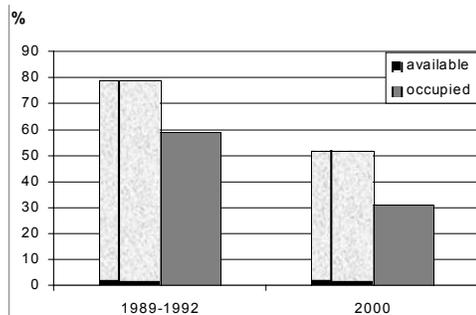


Fig. 1. Proportion of available and occupied Barn Owl breeding sites in central-eastern Poland.

able for Barn Owl decreased significantly during the study period: 79% were available in 1989-1992, but only 52% were available in 2000 (Fig. 1). In 10 years, this species had disappeared from 31 churches (of the 53 occupied in 1989-1992), a decline of 58.5%. In 23 of the 31 cases (74.2%), the reason was that the aperture openings had been blocked up. When apertures were made in five churches, Barn Owls appeared in all of them. Of the 90 churches surveyed in both periods, 40 remained available to the Barn Owl throughout. Over the 10-year period, the Barn Owl remained in 20 churches, abandoned 8, colonised 4, and failed to occupy 8 (Fig. 2).

In both periods the Barn Owl preferred brick churches, but clearly avoided free-standing belfries (Tab. 1). The low occupation rate of wooden churches and free-standing belfries probably was due to the low height of these buildings and to the concomitant reduced security. A decrease in Barn Owl numbers has been observed in most of Europe (Heath *et al.* 2000). Across Europe, the main threats to the Barn Owl are the decreasing areas of grasslands (preferred hunting habitat) as result of agriculture intensification, urban-

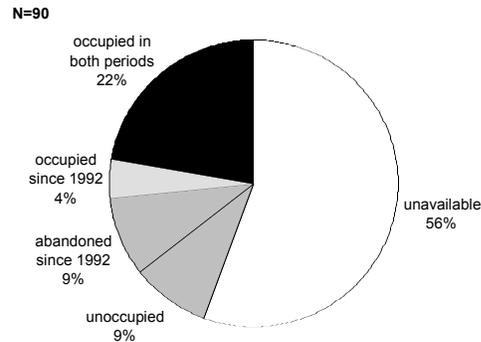


Fig. 2. Barn Owl's choice of breeding sites in sacred buildings in central-eastern Poland.

isation and transport development (Colvin *et al.* 1984, Colvin 1986, Newton *et al.* 1991, Bunn *et al.* 1992, de Bruijn 1994, Shawyer 1994). In central-eastern Poland, the main factor responsible for the disappearance of the Barn Owl from churches is the sealing of building aperture openings in order to eliminate breeding Jackdaw *Corvus monedula*. To afford safe breeding sites for the Barn Owl, it is necessary to re-open the apertures in churches and to erect nest boxes in suitable habitat that contains adequate year-round food for the species.

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