

The role of nest-site provisioning in increasing lesser kestrel *Falco naumanni* numbers in Castro Verde Special Protection Area, southern Portugal

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SUMMARY

After the provisioning of artificial nest-sites (nest boxes, clay pots, 'breeding walls', 'breeding towers' and nest-cavities) for lesser kestrel *Falco naumanni* in the Castro Verde Special Protection Area in southern Portugal, artificial nests of all types were rapidly colonized and the occupation rate exhibited a positive trend over time. The spectacular growth of the Portuguese lesser kestrel population can be explained by the increase in numbers in Castro Verde, suggesting that providing nest sites is an effective measure in the conservation of this threatened species in Portugal in localities where suitable foraging habitat is present.

BACKGROUND

The lesser kestrel *Falco naumanni* is one of the most endangered bird species in Europe, having undergone a dramatic decline across its breeding range over the last four decades (Tucker & Heath 1994). Franco *et al.* (2005) showed that as in France and Greece, but contrary to studies in Spain and Turkey, nest-site availability is a limiting factor for Portuguese lesser kestrel populations. The authors carried out a large-scale survey of existing buildings that might potentially be used for nesting throughout the range of the lesser kestrel in Portugal, which suggested that 85% of sites lacked suitable nest cavities. Therefore, their recommendations were to provide more suitable cavities and/or nest-boxes in existing colonies and unoccupied buildings, especially in areas where the surrounding habitat was suitable and protected, such as in Special Protection Areas (SPAs) created for the conservation of priority bird species.

ACTION

Study area: The lesser kestrel nest site provision experiment was undertaken at Castro

Verde SPA and surrounding areas (southern Portugal) under the implementation of a LIFE-Nature Project for lesser kestrel conservation (LIFE2002/NAT/P/8481). In these areas, which support 80% of the Portuguese lesser kestrel population (Alcazar & Henriques 2006), the birds breed mainly in cavities in walls and under roofs of abandoned farmhouses and other unoccupied old buildings. However, many of these buildings are at risk of imminent collapse.

Provisioning of artificial nests: From 2003 to 2006, over 450 artificial nest-sites were provided with the aim of bolstering the Portuguese lesser kestrel population as a whole, and re-establishing them in unoccupied areas with suitable surrounding habitat. Several types of nest-sites were provided including nest boxes (84), clay pots (82) and also larger scale 'breeding walls' (3) and 'modified breeding towers' (2) with nest-cavities also installed (ranging from 24 to 87 dependent upon site) (Henriques *et al.* 2006). New nest-sites were provided in existing colonies but also in unoccupied areas, where suitable foraging habitat was available. Some examples of the artificial nest-sites provided are shown in Figure 1.



Figure 1. A selection of the artificial nest sites provided in Castro Verde SPA for lesser kestrels: a nest tower (top left); a clay pot (top right); a breeding wall (bottom left); and an open nest box, with four lesser kestrel chicks, (bottom right).

Monitoring: During each breeding season (2003-2006), the Portuguese lesser kestrel population was monitored and occupation of new nest sites was recorded.

CONSEQUENCES

Artificial nest occupation: Each year a higher number of artificial nests were occupied by breeding lesser kestrels (Fig. 2) and the percentage of the Castro Verde population nesting in artificial nest-sites reached 33% in 2006. Furthermore, between 2001 and 2004 the Portuguese lesser kestrel population increased by 60% (from 289 to 461 pairs), becoming stable after that, following the population trend observed in the Castro Verde SPA (Fig. 3).

Conclusions: In addition to earlier studies (Franco *et al.* 2005), lack of nesting sites was

again shown to be a limiting factor for lesser kestrel distribution across Portugal. After the provisioning of new nest-sites in the Castro Verde SPA, the artificial nests of all types were rapidly colonized and the occupation rate exhibited a positive trend over time. The spectacular growth of the Portuguese lesser kestrel population can be explained by the increase in numbers in the Castro Verde SPA. This suggests that providing artificial nest sites is an effective measure in the conservation of this threatened species in Portugal in localities where suitable foraging habitat is present.

Natural nests were sometimes abandoned in favour of the ones provided. This suggests that some of the artificial nest sites might be of higher quality than natural nest sites, affording better protection against potential predators and inclement weather, and reducing inter-specific competition for previously limited, nest-sites.

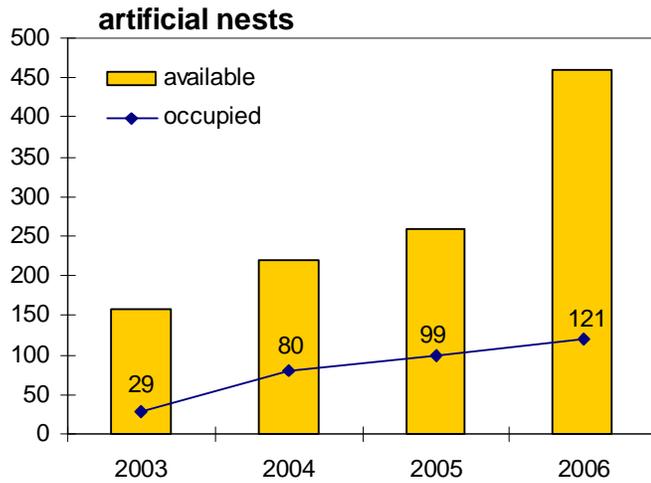


Figure 2. Availability and occupation rate of artificial nest sites by lesser kestrels in Castro Verde SPA and adjacent areas during the four year LIFE-Nature Project period, 2003-2006.

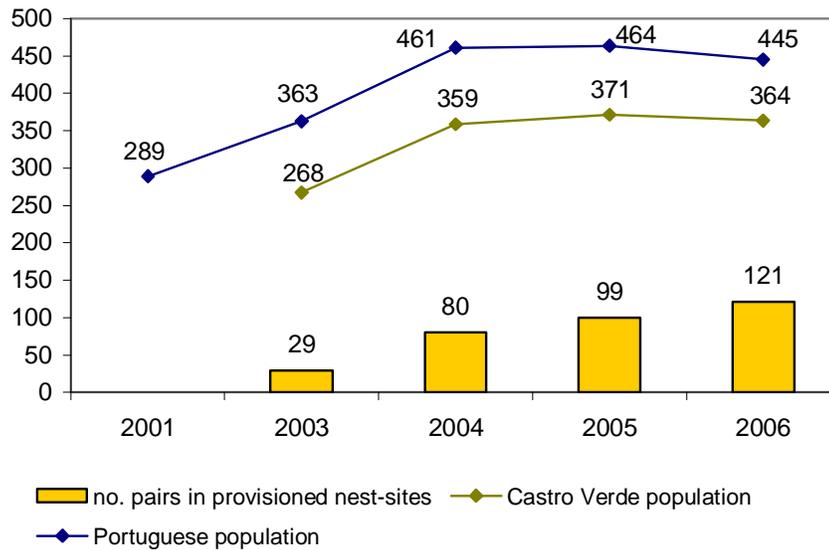


Figure 3. Demographic growth and number of lesser kestrel pairs using artificial nest sites provided during the LIFE-Nature Project in Castro Verde SPA and adjacent areas, 2001-2006.

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