

Ecology and Protection of the Little Owl *Athene noctua* in France

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Concerned about the evident decline of the Little Owl in western Europe outside the Mediterranean region and the almost total lack of any studies on this species in France, five Regional Parks joined forces to develop a programme aimed chiefly at investigating the habitat and breeding biology of this bird of prey. This study, lasting three years, is being financed by the Ministry of the Environment (Service de la Recherche des Etudes et du Traitement de l'Information) and began in 1986. Involved in this work are the Parcs Naturels Régionaux of Brotonne in Normandy, Montagne de Reims in Champagne, Lorraine, Plaine de la Scarpe et de l'Escaut in the North and Vosges du Nord in Alsace-Lorraine.

During the first year, the owl's distribution, density and habitat were studied. To analyse the distribution and density, the method used was location of the males by their calls (Petzold & Raus 1973; Exo & Hennes 1978) combined with search for signs of the birds' presence (droppings, feathers, pellets).

The number of nesting pairs located were: 49 in Normandy (in an area of 117 km²), 10 in Champagne (140 km²), 2 in Lorraine (300 km²), 17 in Alsace-Lorraine (437 km²) and 34 in the North (72 km²).

The distribution is uneven and disjunct, appearing as a series of islands with stronger concentrations locally (4 pairs in 1 km² in Normandy and 6 in the North). Densities are low throughout, those in the eastern regions being below the European average of 0.3-1.5 pairs per km² (Glutz & Bauer 1980). In the case of Lorraine, the term "density" can hardly be applied.

Habitat study has taken the form of a more general cartographic approach and analysis in depth of the biotopes, based on quantification of a number of factors linked to the Little Owl's ecology.

The principal facts to emerge are:

- the Little Owl inhabits the neighbourhood of villages in eastern France.
- The owl is absent from major areas of monoculture.
- The owl has a clear preference for meadows, copses with dense undergrowth and orchards, and prefers a mixed environment.
- The owl is absent from too densely wooded areas.

A more local analysis of the biotopes revealed:

- a close relationship between the Little Owl and human habitation with, in the North, birds subsisting in an industrial zone composed of mining villages, pitheads and slag heaps. The neighbourhood of habitations seems to offer a refuge when the immediate surroundings are transformed into wide expanses of inhospitable cultivation.
- A relationship between the owl and traditional agriculture. The bird in fact inhabits the traditional meadow-orchards and humid grasslands with groves of pollarded willows.

- Owls are absent from areas well provided with natural cavities, indicating that the presence of suitable roosting and breeding sites is not the only governing parameter for this bird. Counts made in Champagne and Alsace show nevertheless that there are twice as many cavities in willows as in fruit trees, and this relative abundance of natural cavities in willows may reflect the higher densities found in the North and in Normandy.

This programme has gone some way towards revealing the causes for the decline of the species in the study areas and has resulted in proposals for conservation measures to be adopted by the Regional Parks in their management policies.

Stemming from this first stage in the study programme (Genot *et al.* 1986), a number of factors adverse to the Little Owl have become evident:

- intensified cultivation
- the urbanisation of rural areas
- the extension of road-building
- disturbance
- climatic conditions
- the reduced number of cavities
- pesticide contamination.

This last factor has been demonstrated by analyses carried out on carcasses by the Laboratoire Central d'Hygiène Alimentaire of the Ministry of Agriculture (Genot *et al.* 1987, in press).

The second stage of the programme is aimed at closer study of the Little Owl's habitat, its diet and breeding biology, in order to determine more precisely the limiting factors outlined above.

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