PHOTOGRAPHIC STUDIES OF SOME LESS FAMILIAR BIRDS

LXXXIV. EAGLE OWL

Photographed by KURT ELLSTRÖM and ENAR SJÖBERG
(Plates 65-68)

Text by KAI CURRY-LINDAHL

The Eagle Owl (Bubo bubo) was formerly distributed over most of Europe, though there is no evidence of its ever having bred in Great Britain and Holland during historical times. To-day, however, it has greatly diminished in numbers and is still decreasing in most countries of western and central Europe.

In Norway the species is found sparsely in the southern parts, but in the north it is rare, though it has been recorded breeding in several places north of 69°N. in the county of Tromsø (Barth, 1953; Munthe Kaas-Lund, 1955). During the major part of the 19th century this owl was common throughout the whole of Sweden, but towards the end of the century the decrease started. Nowadays the Eagle Owl is totally extinct in several provinces of southern and central Sweden, where it was quite common only 30 years ago. A census, carried out during the years 1943-1948, indicated that there were at least 291 breeding pairs in Sweden, but of these 84.5% were in the northern forests of the country (Curry-Lindahl, 1950). Similarly in Finland the species has markedly decreased, though it is still distributed over almost the whole country, particularly in the north; Merikallio (1955) estimated its numbers to be about 300 pairs. In Denmark this bird has not bred since 1891 (Jespersen, 1946) and has probably been extinct since 1803 (Hvass, 1947). In Belgium, where in 1928 several pairs were breeding in the south-eastern parts (van Havre, 1928), there has been no record of an Eagle Owl since 1937 (d’Artet, 1948). In 1953 the population in Germany was estimated at about 65 pairs (März, 1953); four years later, Mebs (1957) gave a figure of about 70 pairs, of which more than half were breeding within the boundaries of the province of Bavaria. About ten years ago the species still existed in small numbers in various mountain zones of France (Curry-Lindahl, 1950); and, according to N. Mayaud (in litt.), the Spanish race (B. b. hispanus) is also to be found in French territory, in the eastern parts of the Pyrenees, while B. b. bubo occurs in the western part of the same mountains. At the end of the 1940’s the numbers of breeding Eagle Owls in Switzerland and Austria were estimated to be at least 10 pairs and about 50 pairs respectively (Curry-Lindahl, 1950). From Italy it is reported still to occur rarely in the Alps and Apennines (Caterini and Ugolini, 1953).
All these figures show a pronounced decline of the species in western Europe. In the eastern countries of the continent, however, its status is more satisfactory. Nevertheless, the population is decreasing there as well, although the process seems to be much slower than in western Europe. This is probably due to the existence in eastern Europe of relatively large undisturbed areas, where Eagle Owls may find protection. A survey of the species' occurrence in eastern Europe is given in another paper (Curry-Lindahl, 1950).

The principal cause of the decrease of the Eagle Owl in Sweden has been, and still is, the relentless hunting of these birds throughout the centuries: every year many eggs have been destroyed by hunters or taken by collectors, many nestlings have been caught or killed, and the adults have been shot or constantly disturbed. This severe treatment is to some extent explained by the fact that this owl has always been considered, by hunters and game-keepers, to be a very destructive bird as far as game animals are concerned. The juveniles, however, are captured for other reasons; they are reared in captivity and sold as living decoys to be used in the hunting of crows and raptorial birds. A further reason for the disappearance of the Eagle Owl is the transformation of its biotopes as a result of advancing cultivation. Though the species seems to tolerate human neighbours and can accustom itself to the fact that the forests of its breeding territories are being cultivated and changed, it cannot stand disturbance during the breeding-season. If the bird is frequently disturbed near its nest, it abandons eggs and nestlings.

The Eagle Owl in Sweden is a bird of wooded mountains, rocky woods, and cliffs in the archipelagoes. In other parts of Europe there are examples of quite different habitats. As a rule, every breeding pair alternates between two, three or four nesting-places in its territory. In southern Sweden this owl has a full clutch at the end of March or at the beginning of April; and it is about a month later in northern Lapland. The Swedish Eagle Owls generally lay three eggs, but very often one of the youngsters dies and only two juveniles grow up. The numbers of eggs or nestlings in the various Swedish clutches and broods known to the author are given below. Many sources of error (incomplete clutches, disappearance of nestlings, and so on) may, however, be involved in these figures.

<table>
<thead>
<tr>
<th>Numbers of eggs or nestlings</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of clutches</td>
<td>7</td>
<td>56</td>
<td>41</td>
<td>12</td>
<td>0</td>
<td>3</td>
</tr>
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The incubation period is 35 days, and the female starts to sit regularly once two eggs have been laid, as we have observed at Skansen, the Zoological Garden of Stockholm.

In Sweden the species is sedentary and, except for the general trend towards a gradual decrease, no occasional or regular
fluctuations in the population are known to occur there, though observed in many other kinds of raptorial birds. In Russia, however, variations in numbers of *B. bubo* have been noted; these according to H. Johansen (in litt.), correspond to fluctuations among the animals that form the prey of the Eagle Owl. In Canada a near relative, the Great Horned Owl (*B. virginianus*), shows an extraordinarily regular 10-year periodicity (Speirs, 1939).

A Swedish investigation (Curry-Lindahl, 1950) into the food of *B. bubo* shows clearly that small rodents form the main part with 42%. First among the recorded food items comes the Brown Rat (*Rattus norvegicus*) with 86 specimens, then the Hooded Crow (*Corvus corone cornix*) with 45, the vole-rat *Arvicolaterrestris* with 38 and so on. It is remarkable that Brown Rats are caught by Eagle Owls with such frequency, because these rodents in general occur only around human settlements. In fact, in northern Sweden such a prey must be hunted regularly in the close vicinity of buildings. It is true that *Rattus norvegicus* may extend its range away from the proximity of buildings during the summer, but such movements probably occur only in southern Sweden. The food of the Eagle Owl, according to the Swedish figures, consists of 55% mammals, 33% birds, 11% fishes, and 1% reptiles and amphibians. Insects and crustaceans, though also sometimes taken by this owl, were not taken into account in the Swedish samples.

Though some individuals may specialize on certain prey, the species in general shows a wide range of food selection. There is a recorded case in Germany of an Eagle Owl killing a Roe Deer (*Capreolus capreolus*), whose weight was 13 kilograms (approximately 28.6 lbs.) (Meise, 1936). This is the largest recorded prey known to the author. At the other end of the scale there is an interesting case of unusual specialization in Switzerland, where 2,397 bones of the European Frog (*Rana temporaria*) were found in pellets from an Eagle Owl's territory (Géroudet and Robert, 1940). Generally speaking, however, the dominance of small rodents in the food of the Eagle Owl in Sweden corresponds very closely to similar investigations which have been carried out in other European countries (Moltoni, 1939; Uttendorfer, 1939, 1952; Burnier and Hainard, 1948; Hagen, 1952; März, 1953).

Incidentally, the Eagle Owl that appears in the flash-photographs (plates 65-68) taken by Messrs. Ellström and Sjöberg was typical in that it fed its offspring chiefly with Brown Rats. This particular nest was situated on a rocky shelf of a mountain in the forests of Hälsingland, a province of central Sweden.

Apart from giving an indication of the characteristic size of the Eagle Owl, largest of all European owls, these plates bring out some of the distinguishing features of this species. The ear-tufts on the broad and heavy head are visible on plates 66-68, in spite of the fact that they are not raised in any of them. The broadly streaked tawny-buff breast is well shown in every case, and plates
67 and 68 illustrate the mottled black and tawny upper-parts. Only colour photographs, however, can do full justice to the burning, orange eyes of this owl. Plate 65 shows the female alighting on the nest rock at 10.10 p.m. and one can see how the large head is characteristic even in flight. In spite of its size the bird flies noiselessly through the thick forests. Sometimes, however, the wings produce a rustling sound when the bird sweeps in with feathers touching the branches of an old, spreading Norway Spruce (Picea abies).

It is very difficult to sex Eagle Owls. Males are in general smaller than females, but this does not always hold good. Similarly, the whitish upper throat may be larger in the male than in the female, but this is also an uncertain character. The voice is much too variable in both sexes to give any help outside the breeding-season.

Even in autumn Eagle Owls may be heard calling at dusk, although regular calling does not start before February and March (in Sweden). In fact, I have heard B. bubo calling in every month of the year, as is also the case with the Tawny Owl (Strix aluco). The male Eagle Owl has several favourite perches, from which he calls. The display ceremony preceding mating is seldom seen, but the sexual activities may be interpreted by the series of loud, different announcements of what is going on.

The voice of the Eagle Owl is well developed and variable, and is not a simple affair to describe. There are many more sound expressions of this species recorded in my note-books than there is place to analyse in a short article of this kind. It is also a difficult task to interpret and understand the meaning and the psychological background of the Eagle Owl’s rich vocabulary in different situations. Here lies an open field of research for ethologists!

REFERENCES


FEMALE EAGLE OWL (Bubo bubo) ARRIVING AT NEST ROCK: HÅLSINGLAND, SWEDEN, 25TH MAY 1954

This was taken at 10.10 p.m., as the female landed at the nest, bringing her feet forward and braking with her wings. Though it is the largest of all European owls, weighing from 4\frac{1}{2} to 7 lbs.—between \frac{1}{2} and 2\frac{1}{2} times as much as the average Buzzard (Buteo buteo)—it flies as softly and silently as the others do. Note here the heavy head, the broad wings, and the thickly feathered tarsus and toes. This shows a typical Swedish habitat—a rocky promontary in the extensive spruce forests (see page 487).
Here one can see this bird’s beautifully patterned under-parts—tawny buff, boldly streaked on the breast, more narrowly so on the belly, each feather also marked with fine wavy bars (see page 488). The tree immediately on the right of the bird is that which shows on the extreme left of plate 65, so that the nest, a typical scrape in the lee of a boulder, is only a couple of yards from the edge of the crag. The bare scrape is usually on the ground, on a ledge or in a crevice, but sometimes in the old nest of a bird of prey.
FEMALE EAGLE OWL (Bubo bubo) BY NEST: HÄLSINGLAND, SWEDEN, 14TH MAY 1954
The wavy bars on the flank feathers show well here, as do the mottled black and tawny upper-parts. The facial disc is not complete in this species because the feathers over the eyes are normal and not radiating. The big ear-tufts are not raised in any of these plates, but are visible here and in plates 66 and 68. When they are raised, they and the dark line over each eye give the bird a fierce and frowning expression, but at other times it has quite a gentle, though almost catlike countenance. A white egg and a buffish-white youngster are visible on the left.
FEMALE EAGLE OWL (Bubo bubo) AND YOUNG: HäLSINGLAND, Sweden, 2ND June 1954

Again note the mottled upper-parts, streaked breast, ear-tufts and feathered foot. The young are now over three weeks old—they leave the nest at about 5 weeks, but do not fly until later. Up to 6 eggs may be laid, but usually only three, and even then one of the chicks often dies. Eagle Owls have been known to kill animals ranging from Roe Deer (Capreolus capreolus) and Capercaillie (Tetrao urogallus) to voles and frogs, but in Sweden Brown Rats (Rattus norvegicus) form over half the prey, as they did at this nest (see page 488).