

The Decline of the Little Owl *Athene noctua* in Switzerland

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Man, by slowly mastering nature, has changed the conditions of the other living beings populating the planet. By destroying the forests and cultivating the land, he caused new biotopes to be colonised by some species that expanded together with the first human settlements. This might be one of the simple explanations allowing us to understand the world distribution of the Little Owl *Athene noctua* (Fig. 1).



Fig. 1 World distribution of *Athene noctua* (from Burton *et al.* 1973).

As a part of the Turkmenian-Mediterranean fauna (Yeatman 1976), this species of southern origin expanded naturally over the whole of Europe (except the northern countries), North Africa and Asia (Géroudet 1965). Absent from the United Kingdom, it was successfully introduced there in the last century (Sharrock 1976).

Start of a population decline

a) **In Europe**, the decrease of Little Owl numbers in central Europe began in many countries from 1950. In Belgium, the population decreased, for example, from 12,000 to 4,000 pairs between 1950 and 1972 (Kesteloot 1977).

b) **In Switzerland**, the decrease first appeared on the Plateau (Fig. 2, A & B). In the area of Puplinge (GE), in 1952, the population was estimated at 200 pairs, with a maximum density of 16-20 pairs/km² (Géroudet & Doebeli in Glutz von Blotzheim *et al.* 1962); in 1983, there were only about 50 pairs in the entire "canton" (Géroudet *et al.* 1983). South of the lake of Neuchâtel, between Missy (VD) and Lully (FR), there were at least 40 to 50 pairs in 1955 (G. Banderet, T. Blanc & Ch. Henninger, pers. comm.). Today, there are none left.

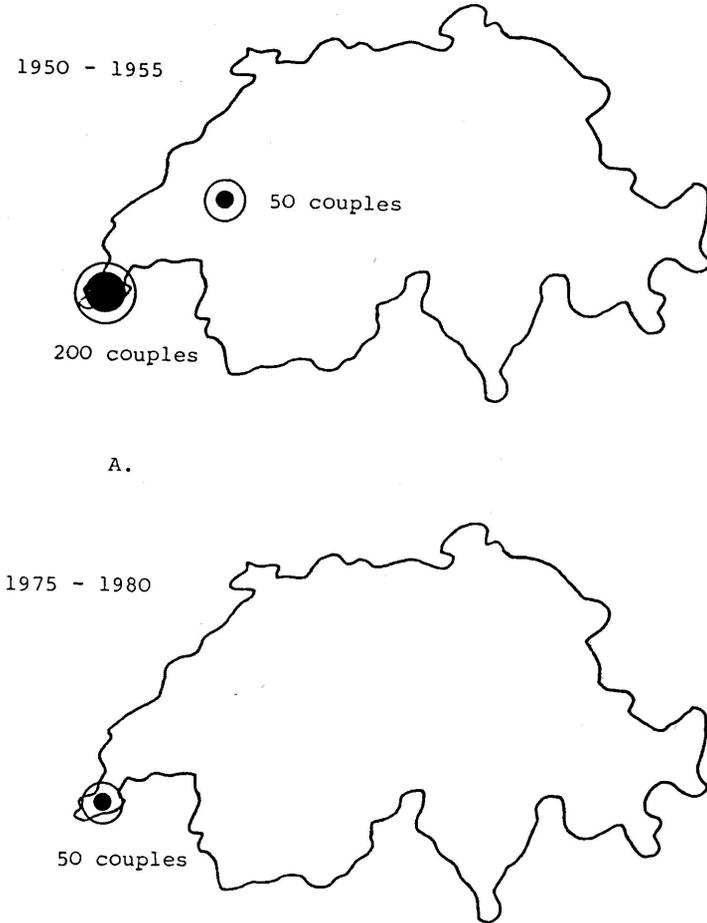


Fig. 2 Evolution of two populations of *Athene noctua* on the Swiss Plateau.

General evolution in the Helvetic population

Based on information from ornithologists interested in this species, we believe that the Helvetian population must formerly have been close to 800 pairs. To-day, 35 years later, there are only 150 pairs left on the whole territory. This decrease is shown in Fig. 3 and is based on estimates given by birdwatchers. In some cases, the figures express a general impression and do not stem from accurate counts. But as no serious census was effected at that time, we must take them into account, even if they are approximate. In our view, the maximum decrease took place between 1955 and 1965 (half of the population). From 1972 to 1976, the Little Owl continued to decrease locally, but mainly in the centre and east of the Plateau (Fig. 4A). In 1980 (Fig. 4B) a complete census of the whole Swiss territory below 700m enabled us to confirm that only 10 small populations were left, totalling at least 185 breeding pairs (Juillard 1980). In 1985, through a census conducted on the 10 populations located in 1980, we counted only 150 pairs and in 1986 only 120.

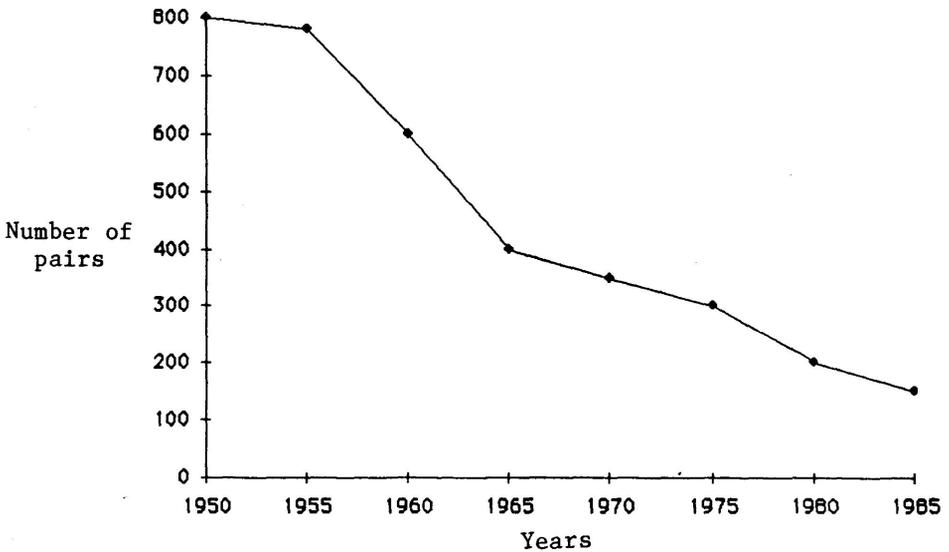


Fig. 3 Evolution of the Swiss population of *Athene noctua* from 1950 to 1985.

Causes of the decline

These fall into three main categories:

a) Destruction of the favourable biotopes

In Switzerland, between 1950 and 1980, several millions of fruit trees have been felled, mainly during eradication campaigns organised by the State. These measures, aiming at the restructuring of Swiss orchards in order to obtain better management and an optimum market of the crops, have been catastrophic for the whole avifauna. Other species than the Little Owl, such as Wryneck *Jynx torquilla*, Woodchat Shrike *Lanius senator* and Hoopoe *Upupa epops*, have similarly regressed alarmingly. The biotopes have diminished as well as the number of natural holes which are essential for nesting. The worst is that the destruction of the traditional Swiss orchard still continues year after year, due to an increasing urbanisation and ever more intensive agricultural methods, which poison and deplete the food of these species.

b) The low productivity of breeding pairs

The Little Owl is no longer able nowadays to produce enough young to compensate mortality. According to Exo and Hennes (1980), one pair should produce an average of 2.35 young per year in order to secure the continuation of the species. Actually, this level of 2.35 is no longer reached in any Central European country because a number of negative factors affect the breeding biology (Juillard 1984). More studies need to be done, however, to discover, amongst other things, the factors increasing the sterility rate of these birds.

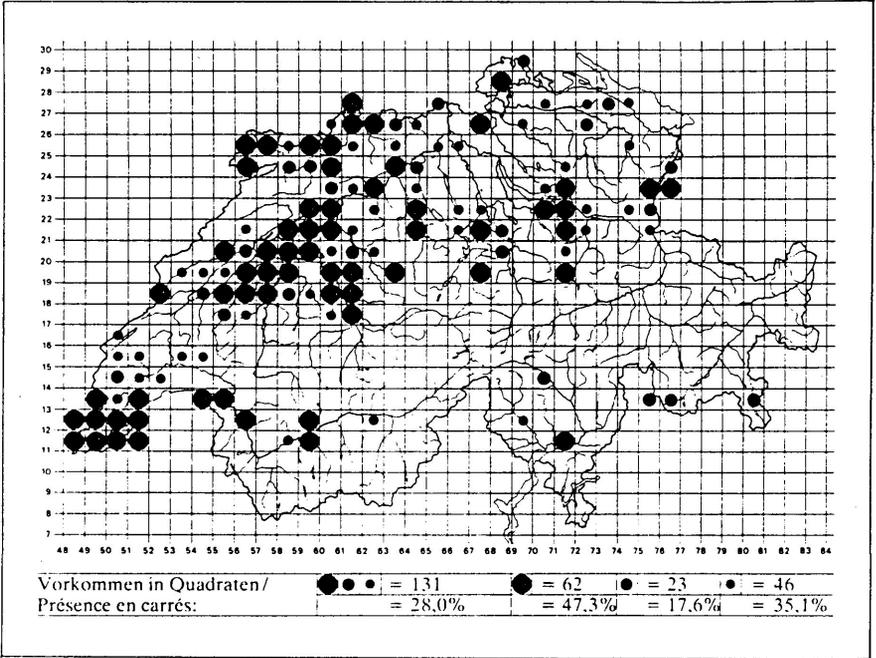
c) Disturbances

Nowadays, every human being needs periodically to leave the big cities, so disturbances increase, the quiet necessary for reproduction is largely destroyed and the animals retreat in search of better conditions as the humans move forward.

Conclusion

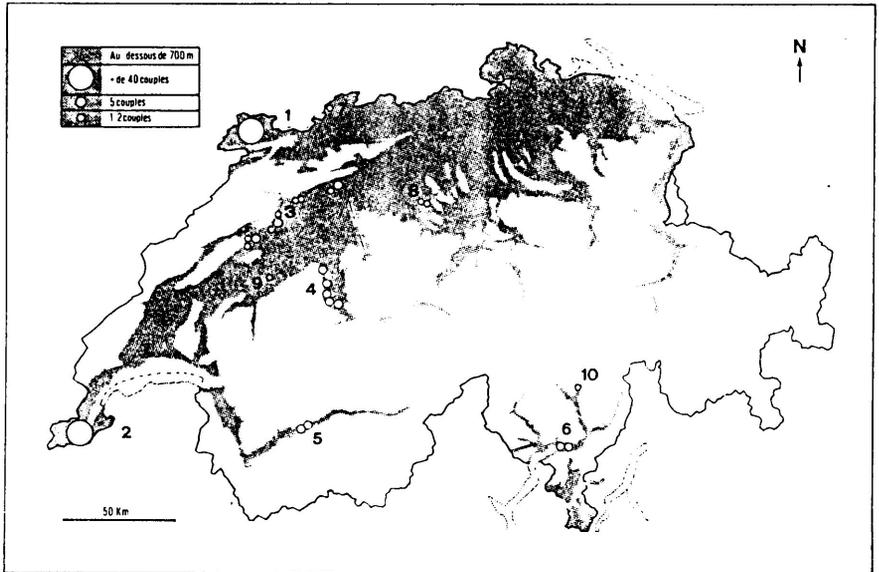
The decrease of the Little Owl population in Switzerland, as in other Central European countries, is dramatic. Important conservation measures have to be taken, otherwise this little predator runs the risk of disappearing in the next few years. Together with its extinction, it will be a part of ourselves which will disappear.

A.



1972 - 1976

B.



1980

Fig 4 General situation of the Swiss population of *Athene noctua* between 1972-1976 (A) and in 1980 (B). We can see a great decrease on the Plateau. (from Juillard 1984).

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