

extent and nature of the conservation measures needed should be concentrated on protecting whole ecosystems, namely pro-

moting the maintenance of traditional agricultural practices.

## **Distribution and population trend of Montagu's Harrier *Circus pygargus* in Poland**

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Poland holds one of the most important populations of Montagu's Harrier in Europe: According to the recent estimates, the population size of 1200-1500 breeding pairs is the fourth largest (after Russia, Spain and France). Moreover, in the recent decade there is a marked increase of numbers in many parts of the country, mainly in northern and central Poland. This increase is connected with three main factors:

– increase of fallow land area after collapsing of state farms

– increase of crops breeding population  
– general increase of raptor population – “birds of prey come back” after the pesticide era.

On the other hand in some traditional breeding strongholds like Biebrza or Chelm Marshes, a significant decrease was noted in the recent decade. It is connected with changes of land use within and in the environs of marshes as well as with a strong increase of mammalian predators – foxes, raccoons etc.

## **Experiences with a program of wing-tagging adult Montagu's Harriers**

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Protecting Montagu's Harrier since 1982 I began to ring the birds in 1989. In spite of our increasing efforts in protection I have noticed that the birds disappeared, that means there have been fluctuations which cannot be explained.

In 1996, together with Alain Leroux I began a program for wing-tagging of the adults in order to study more exactly the faithfulness to nesting areas of the breeding birds in an area of 80 000 hectares (1 ha

= 2.47 acres). These site studies since 1986 have shown large fluctuations (from 50-10 breeding pairs), varying from year to year. The capture of 50 adults and the individual marking have allowed us to prove some characteristics of the species: 15% of the captured birds have already been ringed and provide us with their dates – date and place of their hatching. Thus we have learned that almost none of “our” young come back to the area (1%), but that birds

hatched in a distance of more than 100 km up to 300 km come to breed here. We found out other characteristics only after 6 years of marking: infidelity among the pairs

seems to be the rule, the species (but not the individuals) is faithful to "micro sites" (some areas within hundreds of hectares).

## Evaluation and protection of the Montagu's Harrier in France

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The situation of Montagu's Harrier in Western Europe and particularly in France is alarming. Approximately three quarters of the pairs in France breed in cereals (between 50 and 95% according to the regions, LEROUX, not published).

The original natural habitats of the species: heath, marsh lands, and plains have become rare and/or have been transformed by agriculture. The harriers, like all species tied to agricultural areas in the plains, are decreasing under the impact of intensified agriculture (DONALD 2001, MILLON et al., in prep.).

This intensifying has two sorts of negative effects:

- A direct effect by destruction of the nests by reaping the temporary prairies (lucerne, cultivated grass) and above all the reaping of the cultures (wheat, barley and rape to a smaller extent);
- An indirect effect by the reduction of natural prairies (not cultivated) and of the population of *Microtus arvalis*, main prey of Montagu's Harrier in the west and in the majority of the agricultural plains in France, as well as other prey: big insects and small birds.

The different ways of evaluation

The annual united efforts of protection of the nests (mission FIR/LPO) are not enough to provide a tendency (transparency MILLON 90s).

Since 1995 five groups have been observing in a standardized way, each in an area of 100-600 km<sup>2</sup>, five populations fluctuating between 10 and 100 breeding pairs every year. (MAP France: d17, d79, d33, d49, d52). The young are ringed before leaving the nest and a part of the breeding adults is marked in the scope of a scientific program on the species' population.

In ten other sectors (particularly in the Marais Poitevin) operations of comparable importance take place for 30 to 60 breeding pairs each year, but the areas, the teams and the coordinators differ in the course of the years; thus the evaluation is less reliable. For several years the nests have been saved and the young ringed (Vendée, Lorraine, Massif Central, etc.).

Finally, in the scope of a current national research on breeding raptors in France (2000-2002), more than 1000 squares of 25 km<sup>2</sup> distributed accidentally on the whole national territory will provide a controlled quantitative sampling: the basic scientific facts necessary for the future tracing of the populations.

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Artikel/Article: [Experiences with a program of wing-tagging adult Montagus Harriers 212-213](#)