

# Population changes of the White-tailed Eagle *Haliaeetus albicilla* in Hungary, with special attention to the lower Hungarian Danube-valley, 1987-2003

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## ABSTRACT

As a part of the White-tailed Eagle Conservation Programme of the Hungarian Ornithological and Nature Protection Society (MME) we have been carrying out investigations since 1987. The study area covers the whole of Hungary. The survey is carried out by members of the MME working in different regions. The Programme is co-ordinated by one of the authors. In order to map White-tailed Eagle nests the participants in the programme perform thorough field excursions all year round. From analysis of nesting data the distribution of the White-tailed Eagle population in Hungary and its trends can be determined. Preferred nesting habitats and wintering grounds can be outlined. We have determined the threat factors from the viewpoint of both nesting and wintering. The greatest threat as regards nesting is clearly forestry. Apart from this, high voltage electricity poles can be considered the most important negative factor. As a conclusion we can state that the population is stable and the number of breeding pairs is increasing.

## INTRODUCTION

The White-tailed Eagle *Haliaeetus albicilla* used to be a widespread breeding species in Hungary in the 19th. century. The population had been decreasing since around 1900. According to Lovassy, breeding was recorded only in river floodplains and Somogy (1927). The species first became protected in 1939 in Hungary (but still could be shot at fishponds with special licence). The White-tailed Eagle has been strictly protected in Hungary since 1954. In 1957 the population was around 25 pairs.

## NEGATIVE FACTORS IN THE PAST

Due to the extension of river control, development and agriculture, the deterioration and loss of habitat became significant. Because of the use of toxic chemicals in agriculture and game management many White-tailed Eagles were killed, and the collecting of eggs and young reduced productivity. In some cases the hunting of adult individuals was also recorded.

Human disturbance used to be a serious threat in some areas, as regards both breeding and feeding grounds. In the second half of the 20th. century the number of electrocutions increased considerably.

## POPULATION MINIMUM

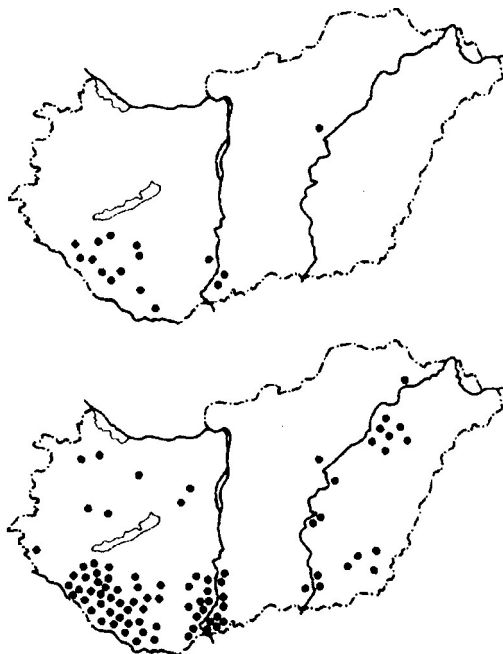
The crisis for the Hungarian White-tailed Eagle can be dated in the 1970s, when the number of breeding pairs was around 20 for the whole country. Realising this situation, the need arose for a national action plan to save the population of the species.

The White-tailed Eagle Protection Programme of the Hungarian Ornithological and Nature Protection Society (MME) was initiated by Somogy Provincial Association for Nature Conservation in 1987.

The main goals were conservation of the breeding population, the preservation of suitable habitats and, because significant wintering numbers of the species are present in certain areas, the protection of the wintering population.

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**Figure 1. Population improvement between 1987 and 2002**



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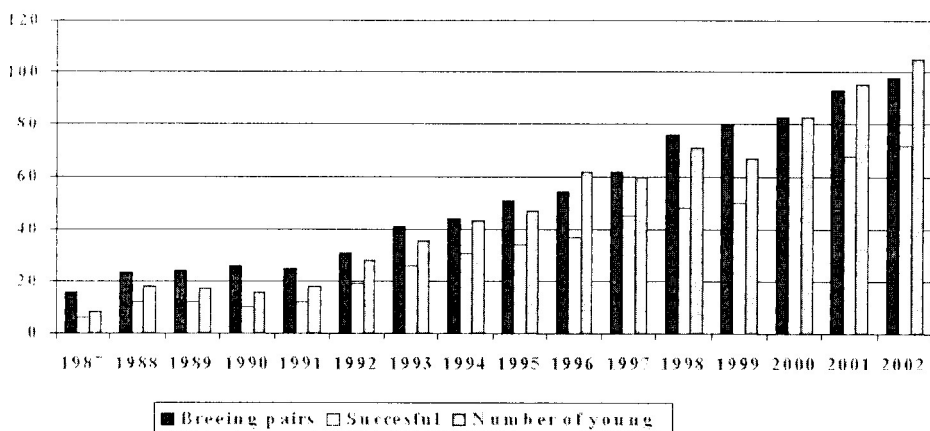
Thanks to protection activities and the significant decrease of threatening factors, the population of the White-tailed Eagle has been increasing since the programme first began.

## PROTECTIVE MEASURES

At the start of the organized programme the country was divided into regions and there is someone responsible for the regional co-ordination in every area.

Nest mapping of White-tailed Eagles was also begun, and has been carried out since then continuously. At each recorded nest we perform two controls in every breeding season: to check nest occupation in early spring, and to control breeding success in May or June, when we also determine the number of young.

**Figure 2. White-tailed Eagle population and breeding success in Hungary, 1987-2002.**



One of the most important tasks of the regional co-ordinators is negotiation with authorities, which includes forestry and national parks.

In some areas occupation by White-tailed Eagles was impossible in suitable habitats, because of the lack of nest-supporting trees. A trial was started to install artificial nests in these places, and was completed with success: the eagles usually accepted them. Another important protection activity is monitoring at feeding places. White-tailed Eagles are frequent visitors at artificial fishponds, of which there are many in different parts of the country.

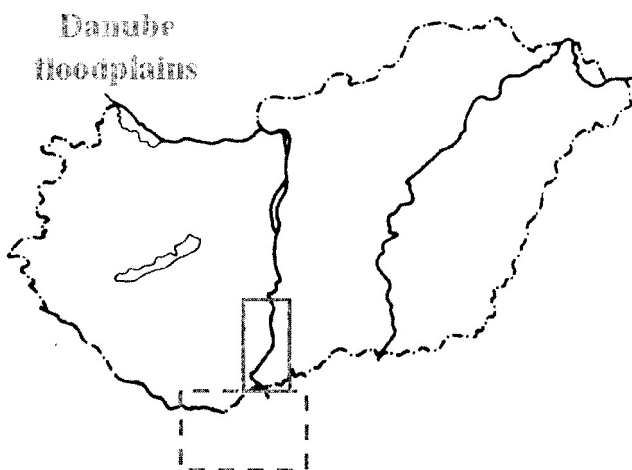
Wintering of White-tailed Eagles is recorded in significant numbers in some areas of Hungary, several being of outstanding importance (Biharugra fishponds, Hortobágy, Danube valley). Counting of wintering populations is carried out regularly in these areas. The origin of these birds is not known, and further investigations have to be made to determine where they come from.

As electric poles kill large numbers of raptors and storks every year, MME has started a programme, supported by the Hungarian Government and electricity providers, to insulate electric poles. This was a most important step from the viewpoint of White-tailed Eagle protection as well.

## THE LOWER DANUBE VALLEY

One of the most important breeding areas of the White-tailed Eagle in Hungary is the lower Danube valley. One-fifth of the total population of the country breeds along this 75km long reach of the river, and the habitat continues across the Hungarian border into Serbia and Croatia. The floodplain is 3-12km wide here, in the Gemenc and Béda-Karapanca regions of the Danube-Drava National Park. We have discovered 50 White-tailed Eagles' nests during 16 years of monitoring activity. We determined 18 breeding territories in the area in 2002, 90% of them in the protected area (national park), and there are two pairs on agricultural land. The distance between neighbouring occupied nests varies from 600m to 5km.

**Figure. 3.: The lower Hungarian Danube floodplains**

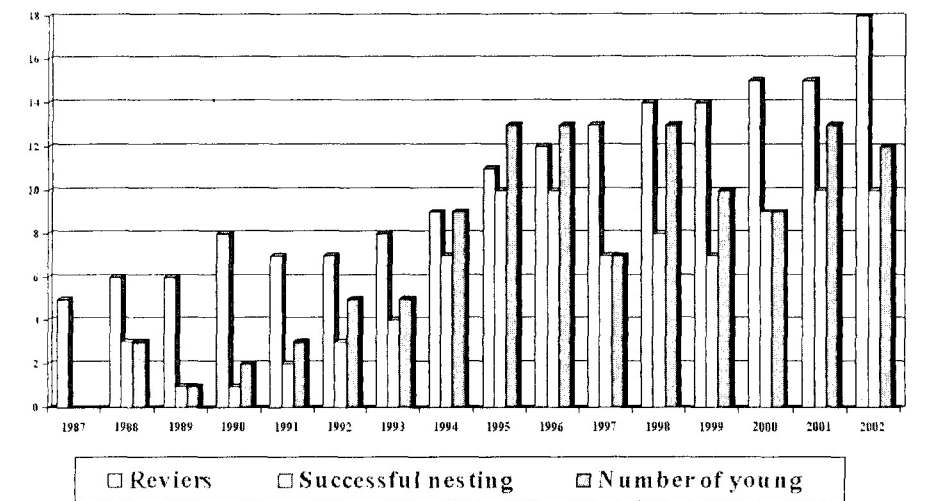


The area has long been known as a main breeding ground for the species. In 1878, when Prince Rudolph was here on a special eagle-hunting tour, he shot 14 White-tailed Eagles on the reach. In his memoirs he wrote that the most frequent raptor here used to be the White-tailed Eagle but, similarly to the countrywide trend, the number of breeding pairs decreased and there were only nine pairs in the area in 1955 (Böröczky 1955). Up to the mid-1970s a further decrease was evident, the minimum population recorded being 4-5 breeding pairs (Halmos 1977).

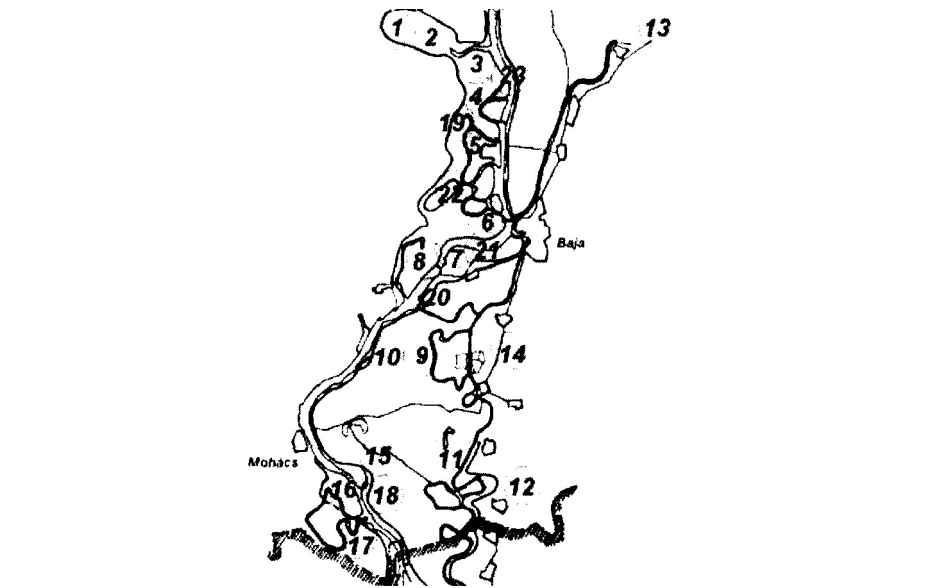
The first important protection measure was the declaration of Gemenc as a Landscape Protection Area in 1977. From this date nature protection started to strengthen in the region. The Danube valley between the neck of the Sió channel and the southern border of Hungary became part of the Danube-Drava National Park in 1996. Gemenc and Béda-Karapanca were designated as Ramsar sites in 1997.

Systematic monitoring of the White-tailed Eagle population has been carried out since 1986. In 1987 we joined the national MME White-tailed Eagle Protection Programme. Another important date in the protection of the species is 2001, when we initiated a new international regional action plan between Hungary, Serbia and Croatia.

**Figure 4.: Population changes of the White-tailed Eagle in the lower Danube-valley, 1987-2002.**



**Figure 5.: Territories in the lower Danube valley in 2002.**



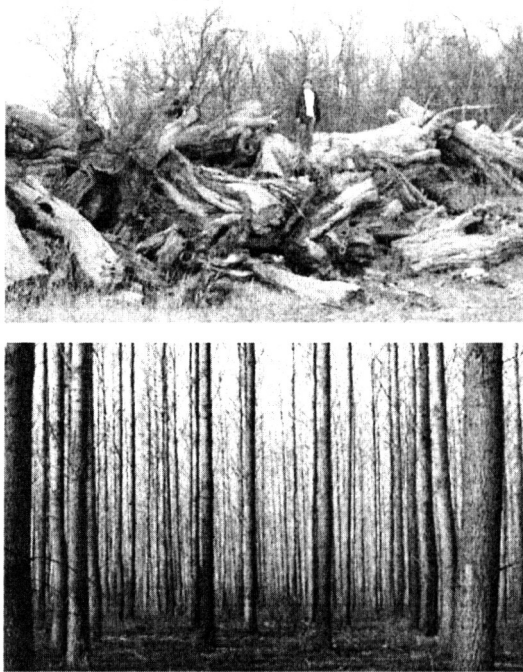
In the lower Danube valley not only nesting, but wintering of White-tailed Eagles is also important. Wintering numbers reach 60-80 individuals. Their presence depends greatly on the water regime of the river Danube, the weather and the presence of ducks and geese. In general we do not know where these wintering eagles come from, apart from a few wing-tagged individuals that were identified in the 1980s and originated from (former) Yugoslavia (Ham *et al.*1990). The observation of these individuals shows the importance of international co-operation in this region (Kopacki Rit – Croatia, Gornje Podunavlje – Serbia and Montenegro).

## CURRENT THREATS

During the protection activities carried out by the White-tailed Eagle protection programme since 1987, the most frequent threat to the species was forestry. Felling of trees and other works related to forest management are carried out in the near proximity of the nests, often during the breeding season. It should be stressed that this problem exists even in protected areas and national parks. The proportion of old forests is decreasing and the structure and tree species of new plantations (usually poplar hybrids) is not suitable for nesting.

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**Figure 6. Forestry as a threat - a cut-down old forest and a hybrid poplar plantation**



**Figure 7. Electrocutation**



Despite the insulation of electric poles, which can be carried out only gradually and relatively slowly, electrocution is still a big threat, and it will only be possible to eliminate this problem with continuous work.

The number of cases of poisoning has much decreased, but some individuals are still killed in this way.

There are two main sources of disturbance during the breeding season. One is human, i.e. tourists, hunters and other people. The second source of disturbance is Saker Falcons *Falco cherrug*, which often occupy the nests built by White-tailed Eagles in some areas; for example in the lower Danube valley this has been recorded in seven out of 18 territories.

### IMPORTANT FUTURE TASKS

The most important task is evidently continuous monitoring, in order to follow changes in the breeding population, productivity, threats and the success of protection activities.

Protection of known and newly colonized habitats must also be a priority issue. This also applies to wetland restoration.

International co-ordination in the Carpathian basin, with the emphasis on border regions with Slovakia, Romania, Serbia and Croatia, is of major importance.

Feeding in winter can be a good way to keep the wintering eagles in the protected zone, where they are less disturbed and less exposed to electrocution, poisoning and other threats than in agricultural areas.

**Figure 8. Winter feeding**



### CONCLUSION

There has been a significant upward trend in population numbers of the White-tailed Eagle in Hungary in general, as well as in our special study area, the lower Danube valley. Monitoring activity has also been increasing throughout the country, co-ordinated by the MME White-tailed Eagle Protection Programme.

A significant decrease of threatening factors has also played an important role in the stabilization of the population in Hungary.

Conservation activities have become stronger in both governmental and NG organizations in the past 15 years. The White-tailed Eagle is strictly protected by law

The species has good prospects in Hungary.

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*Photos:* Deme Tamás (8), Kalocsa Béla (6,7)

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