

Saving the Second Eaglet of a pair of Golden Eagles *Aquila chrysaetos*

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SUMMARY

The total breeding population of the Golden Eagle in Eastern Slovakia is estimated at up to 40 pairs and seems to be stable. The authors have investigated 71 occupied nests in 20 territories in the course of an eight-year period (1984-1991). Not less than 27 nests with two eggs were recorded in which more than 20 second young hatched. Only in two cases did both eaglets fledge without human intervention. Because of the very low number of eaglets reared, it was decided to take steps to save the second young. Nineteen eaglets, mainly second young, were temporarily removed and later returned to the parents' nest or, more often, to nests where incubation had failed or the first young had perished. During the period of captivity, an old handicapped female Golden Eagle was used as adoptive mother to brood and feed the chicks so as to diminish imprinting on human beings. More than 50% of these eaglets fledged successfully.

INTRODUCTION

The Golden Eagle in eastern Slovakia, which forms part of the north-eastern extension of the east Carpathian population of this species, is estimated according to surveys of the last seven years to number a maximum of 40 pairs. The eyries are situated in suitable mountain and forest areas. Due to more frequent disturbing influences the eagles usually alternate between 2 and 7 nests, most of them on old firs, with only a few on rock faces.

During the study period no decrease in the number of occupied territories was found. Some pairs however, have successfully reared only one or two young within the last seven years. The mortality rate due to direct persecution, electrocution on high voltage wiring and other adverse factors is higher than the natural rate of reproduction.

We have been engaged in observing Golden Eagles since 1978. Sporadic at

the beginning, our efforts to promote breeding success have been systematic since 1984. Without the positive influence of man we have found that the average rate of reproduction is less than 0.3 young per pair per year. Since 1978 only two pairs have been observed which reared both eaglets without human intervention, despite the fact that in over 56% of cases two eggs were laid and in more than 20 cases (28%) both hatched.

In the first case, of a pair nesting on a rocky ledge of Čergoské pohorie (Čergov Mountains) two chicks each weighing 850g were found on May, 1984, which bore no sign of injuries. Both were ringed and reared successfully. During the control on June 22, 1984, they were observed already out of the nest. In this case we have reason to suppose that the female eagle began incubation only after having laid the second egg. One important feature is the fact that in this case the nest was built on a rocky ledge 1.2m wide and 2.5m long, which provided the weaker offspring with the opportunity to escape to a safe distance.

In the second case, two feathered offspring were found on July 1, 1989, in a tree eyrie in Levočské pohorie (Levoča Mountains). According to their plumage the older offspring was a male, while the younger and stronger one was a female. With this pair, observed for over ten years, the younger offspring has in other years repeatedly been found injured or dead.

RESULTS

The results of observations and management of Golden Eagles over the years 1984 - 1991 are shown in Table 1.

Table 1. Results of observations and management of Golden Eagles over the years 1984-1991.

	<i>Number</i>	<i>Percent</i>
Occupied nests	71	100
Nests with eggs	108	
Clutches of two eggs	40	56
Number of young	65	
Number of second young	20	28
Temporarily removed young	7	
Reared young altogether	39	
Increase in young per pair	0.55	

Rescue of the second offspring can have a considerable influence on the rate of reproduction if a reliable methodology has been involved. From the data obtained from weighing offspring both in eyries and in captivity, we have worked out their growth rate (Table 2). With the help of this diagram we are able to estimate within 1-2 days the date of the eaglet's hatching (up to the age of three weeks). The hatching dates of individual pairs are the same in different years, although the difference between pairs can be more than three weeks (Table 3). We have also noticed shifts in hatching dates when one of an observed pair has a change of mate. Despite the considerable variations in weather during the period of courtship flights, no shifts in egg laying and hatching were observed.

Table 2. Weight gains of Golden Eagle young

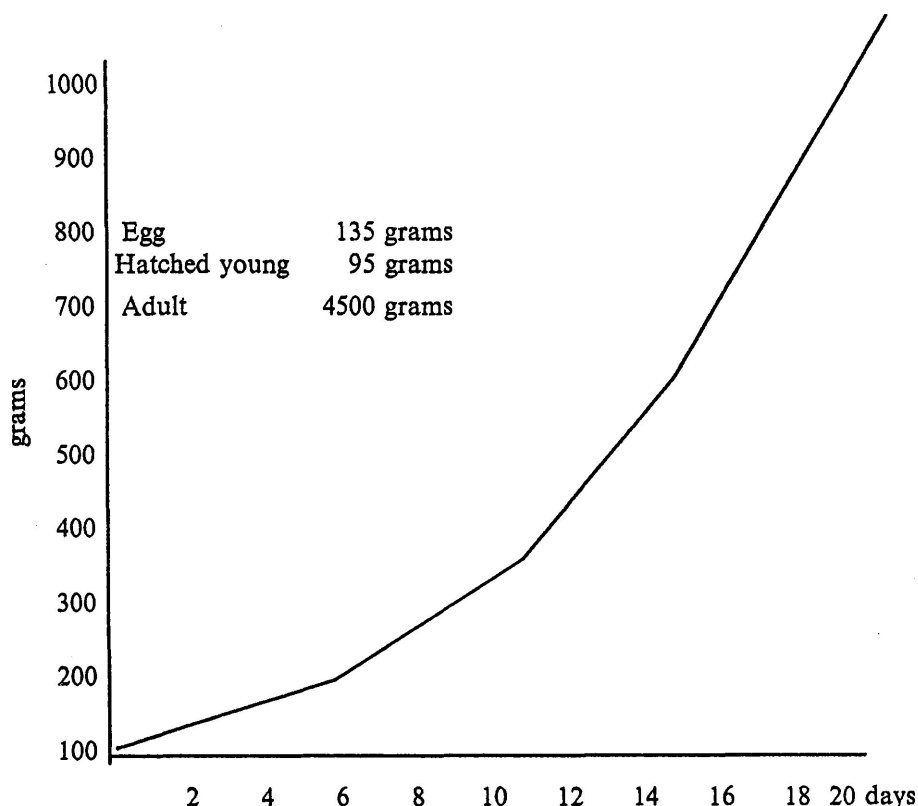


Table 3. Dates of hatching of young in individual pairs.

<i>Locality</i>		1984	1985	1986	1987	1988	1989
Čergov	1st	4.5	4.5	4.5	0	0	2.5
Mountains	2nd	5.5	9.5	7.5	0	X	4.5
Slovak	1st	16.5	10.5	8.5	11.5	10.5	27.4*
Ore Mountain	2nd	21.5	12.5	16.5	X	X	X

* - exchange of female

0 - unsuccessful incubation

X - clutch of one egg

Since the age of 10 days (300g) of the first eaglet a serious risk of injury to the second chick arises. At later checks of the eyrie the second offspring has been repeatedly found dead.

Disturbance during incubation can cause either desertion or chilling of the eggs. Therefore the following rules have to be observed when preserving the second chick:

1. the exact location of the occupied nest has to be ascertained in March from observation of the birds' flights with nest material.
2. the expected laying date is always confirmed by observation from a suitable distance of food being brought to the nest.
3. the first check on the eyrie should be carried out when the older eaglet is 7-10 days old, in good weather and in the morning.
4. we aim at the least possible imprinting of offspring upon a human being. We accordingly use a handicapped adult female eagle for the temporary care of chicks in captivity and exchange eaglets in eyries at two-week intervals.
5. the chicks are preferably placed in the nests of eagles in which incubation has failed as soon as possible after this discovery, whilst the parents' bond to the eyrie is still strong,
6. in case of replacing the young in the original nest, this can be done about 10-14 days before the expected date of fledging.
7. during each check of a nest with small young the returns of the adult female eagle to the eyrie are observed from a safe distance.

Since 1978, 19 eaglets have been temporarily taken from their nests. The results are shown in Table 4.

Table 4. Fate of second young temporarily removed from nests (1978-1991).

	Number	Percent
Unsuccessful attempts		47.4
Death due to injury	2	
Robbed by man	1	
Death caused by unfavourable weather	1	
Killed by marten, goshawk	2	
Death due to fall from nest (fear ?)	1	
Cause of death unknown	1	
Successfully reared		52.6
Reared in native nest	5	
Reared in adoptive nest	5	
Together	19	100.0

Further activities aimed at promoting successful breeding include:

- temporary or permanent suspension of forestry activities and building of forest roads (in an area of about 200m round the nest)
- artificial strengthening of nests
- dismantling of unsuitable nests
- installation of bases for nests on suitable trees
- monitoring of endangered nests (direct observation or with the help of electronic signalling)
- confiscation of illegally captured eagles and their return to the wild after rehabilitation
- lectures to hunters' associations, schools, etc.

These activities are performed in co-operation with the State Nature Conservation, with the permission of the Ministry of Culture and Slovak Life Environment Commission.

Due to the ever-increasing number and frequency of negative factors threatening the Golden Eagle population in eastern Slovakia, we regard an active approach towards their protection as very important for maintaining a stable population.

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