

THE STATUS OF THE GOLDEN EAGLE (*AQUILA CHRYSAETOS*) IN POLAND

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ABSTRACT.—The Golden Eagle (*Aquila chrysaetos*) is a very rare breeding species in Poland and it is included in the Polish Red Data Book. At the end of twentieth century, only 30–35 pairs were nesting in the country. It has had protected species status for several decades and its nests have also been protected since 1984. All types of human disturbance are forbidden within a radius of 200 m of nests throughout the whole year and all forestry activity is forbidden within a radius of 500 m of nests between 1 February and 31 August. This report presents the results of the activities of Eagle Conservation Committee (KOO) members.

KEY WORDS: *Golden Eagle; Aquila chrysaetos; Poland; Carpathian Mountains; repopulation.*

El estado de el águila real (*Aquila chrysaetos*) en Polonia

RESÚMEN.—El águila real (*Aquila chrysaetos*) es una especie reproductiva muy rara en Polonia y esta incluida en el Libro Rojo polaco. Al final del siglo veinte, únicamente 30–35 parejas estaban anidando en el país. Esta ha tenido estatus de especie protegida por algunas décadas y sus nidos además han sido protegidos desde 1984. Todos los tipos de disturbios humanos están prohibidos dentro de un radio de 200 m de los nidos a través de todo el año y toda actividad forestal esta prohibida en un radio de 500 m de los nidos entre el 1 de febrero y el 31 de agosto. Este reporte presenta los resultados de las actividades de los miembros del Comité de Conservación del Aguila (KOO).

[Traducción de César Márquez y Victor Vanegas]

HISTORICAL DISTRIBUTION IN POLAND

Information on the early distribution of the Golden Eagle comes from excavations where eagle bones have been found in old human settlements from the Stone Age, Iron Age, and Middle Ages (Wyrost 1994). Until the 19th century, the Golden Eagle most likely inhabited the whole country of Poland. As a result of human persecution, its numbers decreased dramatically and by the middle of the 19th century, there were estimated to be only 50 pairs remaining (Król 1992). It gradually became extinct in various parts of Poland. For example, the last Golden Eagles in southwestern Poland in Silesia were recorded in 1845 in the Karkonosze Mountains (Martini 1926), the Kurpiowski Forest in 1859 (Taczanowski 1860), the Gorzowskie District of western Poland in 1874 (Schalow 1919), the Mazurian Lakes region of northeastern Poland in 1882 (Tischler 1941), and the Pomeranian Region in 1887 (Neithammer 1938). By the end of the 19th century, nesting sites remained only in the Carpathian Mountains, where up to dozen pairs nested (Król 1992).

At the beginning of the 20th century, all information about breeding of this species came from the area of the Carpathians. However, in the 1930s and 1940s, Golden Eagles were recorded in north-eastern Poland (Tischler 1941). In the 1950s and 1960s, the Polish population of Golden Eagles was estimated to be between 20–30 pairs, half of which inhabited northeastern Poland (Król 1992). In the 1970s, a few new sites were recorded, including a breeding site in the Kozieniecki Forest in central Poland (Cieślak and Piasecki 1981), and probably new breeding sites in the Barycz Valley, Niepolomicki Forest, and Gorzowskie District (Tomiałojć 1990). In the late 1970s and early 1980s, eagles abandoned some of these areas, mainly in north-eastern Poland where they disappeared in the Carpathian Mountains (Tomiałojć 1990, Król 1992). By the mid-1980s, probably only 10 pairs continued to breed in Poland (Tomiałojć 1990).

Surveys conducted by the Eagle Conservation Committee (KOO) in the late 1980s provided new information on locations of single nesting pairs in northeastern and eastern Poland. At that time, the total number of Golden Eagles in Poland was es-

Table 1. Number of distribution of breeding Golden Eagles (*Aquila chrysaetos*) in Poland at the end of the 1990s (Komitet Ochrony Orłow 1993, 1994, 1995, 1996, Adamski et al. 1999).

GEOGRAPHICAL REGION	NUMBER			SOURCE
	OCCUPIED TERRITORIES	PROBABLE OCCUPIED TERRITORIES	SINGLE OBSERVATIONS	
Mazury Lake District	1	0	2	M. Mellin, H. Hut, M. Stajszczyk, pers. comm.
Chelminsko-Dobrzynskie Lake District	0	0	1	L. Kleinschmidt, R. Krupa, S. Guentel, T. Rafalski, pers. comm.
Koszalin Seacoast	1	0	1	K. Wypychowski, B. Kotlarz, pers. comm.
North Podlaska Plain	1	1	0	J. Skoczynska, E. Pugacewicz, pers. comm.
Radom Plain	0	0	1	Furmanek and Osojca (1996)
Silesian Plain	0	0	1	H. Koscielny, pers. comm.
Carpathians	22	3	4	Stój et al. (1997)
Total	25	4	10	
Estimated numbers			30-35	

estimated to be 15 pairs (Król 1992). In the first half of the 1990s, the breeding population continued to decline and only 5-10 pairs were recorded (Tucker et al. 1994).

PRESENT DISTRIBUTION AND NUMBERS IN POLAND

The information on breeding by Golden Eagles in Poland in the Carpathians led to the creation of a new program in 1993 called "Protection of Eagles and Other Rare Species of Birds of Prey" that was conducted by KOO. The program was established to estimate the distribution and number of breeding pairs in the Golden Eagle population, to assess the condition of breeding populations by describing breeding parameters, and to find nests and implement protection zones around them.

Pairs of eagles and nests were found in various ranges of the Carpathians including the Tatras, Pieniny Mountains, Low Beskidy Mountains, Sadecki Mountains, Bieszczady Mountains, Sanocko-Turczanskie Mountains, and Przemyskie Plateau (Table 1). One pair was also found in the Biebrza River valley in northeastern Poland. The most significant finding of the program was a new breeding pair found on the Baltic coast in the Slovinski National Park which had not supported breeding Golden Eagles for over 100 yr (Chrzanowski 1992). The distribution of pairs was irregular and restricted to areas with low human populations, extensive agriculture, and pristine or nearly-pristine ecosystems.

At present, the Golden Eagle is most abundant in the Carpathians where about 85% of the Polish population is concentrated. The size of the Carpathian population is estimated at 22-25 pairs (22 occupied and 3 probably occupied territories) with a density of 0.33-0.38 pairs/100 km². If observations of eagles not exhibiting territorial behavior are included, the Carpathians may hold 25-30 pairs giving an average population density of 0.38-0.45 pairs/100 km².

Apart from the Carpathians, 3-4 pairs (3 occupied territories and 1 probably occupied territory) were found in the northern and northeastern parts of Poland, in extensive wet meadows and marshes in river valleys located close to old forests. Both hunting and breeding areas are located in remote areas with low human pressure.

The size of the Polish Golden Eagle population is now estimated at 30-35 pairs (Stój et al. 1997). This is the highest number found in the last 50 yr. Based on data from Król (1992), it appears that this increase in the breeding population has occurred in various parts of the Carpathians including the Bieszczady Mountains where the population, previously estimated at 4-7 pairs, increased by 75% and in the Beskid Niski Mountains where the population increased from one to six breeding pairs.

In contrast, there has been a marked decrease

in the population in northeastern Poland. In the 1950s and 1960s, over half of the Polish population of Golden Eagles inhabited this region but, today, only 10–15% exists in the region. The decline has probably been caused by human disturbance resulting from an increase in the human population density and a change in the management of open areas.

Breeding success of the Golden Eagle in Poland is relatively high enabling the population to maintain its numbers. About 47% ($N = 51$) of nests produce young. This productivity is similar to that of eagle populations in other European countries and higher than that found in Czech Republic, Slovakia, and the Alps (Kornan 1995, Kornan et al. 1995, 1996). In Poland, the average number of nestlings per breeding pair is 0.55 ($N = 28$), which should also be sufficient to maintain the population size. The number of fledglings per successful brood is 1.17, which is also rather high in comparison to other countries in Europe (Dennis et al. 1984, Bezzel and Fünfstück 1994, Kropil and Majda 1996, Randla and Tammur 1996, Zocchi and Pannella 1996). As many as 20% of pairs produce 2 fledglings when there is no human interference.

DANGERS TO THE POPULATION

Threats to the Golden Eagle population in Poland include illegal hunting and killing of eagles for taxidermy, loss of hunting areas, harassment of eagles in their hunting areas and breeding sites, loss of suitable nesting areas, vertical structures in the landscape such as electric power lines, and pesticide and heavy metal contamination.

Despite these dangers, the overall condition of the Polish population of Golden Eagles in the Carpathians is good considering its high productivity and abundant food supply (Cramp and Simmons 1980).

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