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The Present Status of the Osprey *Pandion haliaetus* in Poland

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ABSTRACT

Data are presented concerning the numbers and productivity parameters of the Osprey *Pandion haliaetus* in Poland for the period 1985-1991. Almost the whole breeding population is concentrated in the northern part of Poland in Mazurian Lakeland and on the borderland of Wielkopolska & Pomerania. Only 50 - 60 pairs nest there. Nest success reached 78% and productivity 1.41 fledged young per occupied breeding site.

INTRODUCTION

The Osprey was quite a common species in the 19th century in Poland (Taczanowski 1882). Since then, due to human persecution, as in the rest of Europe, its population fell drastically. In many areas, especially in the south, the species is extinct. Only a few pairs survived on lakelands in northern Poland. The Committee for the Protection of Eagles (CPE) was founded in Poland in 1981. Detailed research of the status of the rarer birds of prey has been a main aim of the CPE (Król 1983), its most important achievement being the introduction of new methods of nest protection for ten rarer species, the Osprey among them. The nest tree and a surrounding zone 200m in diameter have been protected. Also in the breeding period (1st February-31st July) forestry activities in a surrounding zone 500m in diameter have been forbidden. This was introduced in 1984 by the Ministry of Forestry following a demand by the CPE.

METHODS

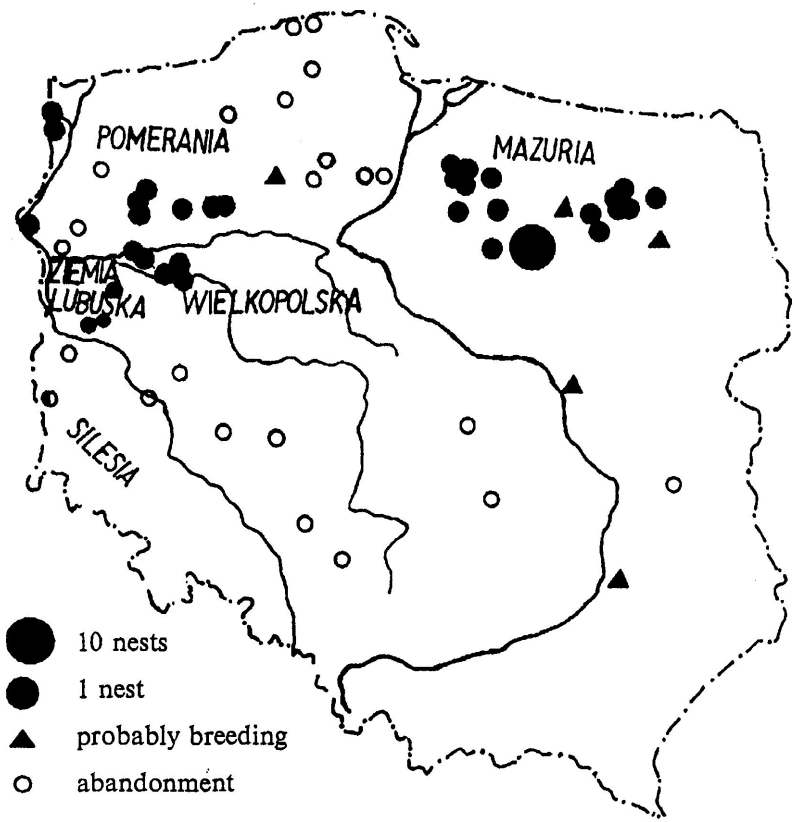
The CPE members verified in the field information received from foresters and birdwatchers. Data from old literature, particularly Tischler (1941) and Schalow (1919) were helpful. Surveys were conducted mainly on Mazuria (NE Poland), Pomerania (NW Poland), Wielkopolska & Ziemia Lubuska (W Poland). Special attention was paid to forested islands on lakes.

Each nest was controlled at least twice during the season according to requirements set by Postupalsky (1974). The first control was made in April/ May. Its aim was to check Ospreys on territory and possibly find the nest. The number of fledged young was recorded during the second control. All controls were made from the ground, without climbing up to the nests.

RESULTS

In the period 1985-1991 42 breeding pairs and 5 probably breeding were recorded. The majority of pairs nested in two clusters, with only a few pairs outside of them. The distribution of breeding sites is presented in Figure 1. Some of the historically known breeding areas in the south of Poland are also indicated. More details concerning the pattern of extinction of the Osprey are

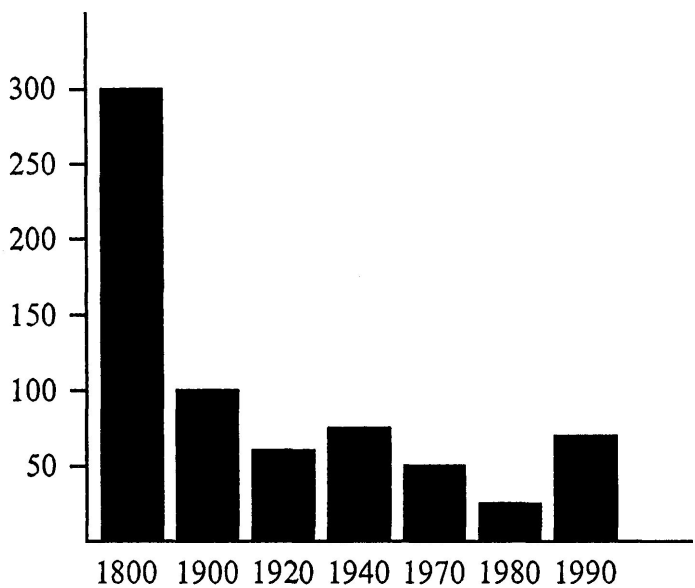
Figure 1. Distribution of breeding sites of the Osprey in Poland.



to be found in a paper by Król & Mizera (1992).

It is difficult to state with absolute certainty whether the present number is really higher than in the early 1980s, when only 20-30 pairs were recorded, or whether this is due to increased activity of birdwatchers in the field. Older data were based only on estimation (Tomiałojć 1972). The present evaluation is 50-60 pairs, certainly less than 100, based on more intensive field activity by CPE members. Simultaneously, on the same areas, nests of the White-tailed Sea Eagle *Haliaeetus albicilla* were located: 155 pairs were recorded at the nest and 47 further occupied territories were under observation (Mizera & Szymkiewicz 1991). Nests of the Osprey are always situated at the top of the tree, which makes them easy to find, in contrast to the nests of Sea Eagles which are hidden below the crown, often in the middle of a stand of trees. In spite of this, very few Osprey nests were found. The difference in the number of Sea Eagle and Osprey nests located during our survey reveals a real difference in the number of breeding pairs of both species. However the central part of Pomerania was not so thoroughly controlled to date. In the period 1932-1937 Banzhaf (1938) reported 8 pairs of Osprey in this area. Later only single pairs were recorded there (Bednorz 1983; Tomiałojć 1963; Wołk 1964) and now

Figure 2. Population size of Osprey breeding in Poland in 1800-1900. (data from Król & Mizera 1992 and new information).



(1990-1991) these territories are abandoned.

The hypothetical course of changes in the Osprey population (data from Król & Mizera 1992 and new information) are shown in Figure 2.

Seventy-five nests were finally recorded, the majority (85%) on common pine *Pinus silvestris*. Ospreys in Poland nest almost exclusively in the traditional way on trees. No nest was found on electricity pylons, which is to-day a common way of nesting in Germany (Hemke 1983; Ruhle 1985). Only three nests were found on roofs of disused fire-control towers and two nests on artificial platforms, one of them close to Szczecin (Karczmarczyk 1982) and the second in Mazuria. More details are shown in Table 1.

The age of 25 pines with nests was estimated from available forestry documentation. The average age was as high as 147 years and, if two atypical cases of 50-year-old trees (dead, standing in a marsh) are not taken into consideration, then the average age would reach 155 years. Old trees in Polish forests are rare because, according to economic programmes, pine trees are clear felled after they reach 100-120 years of age. Perhaps this is one of the reasons causing the low population of Ospreys in Poland.

Table 1. Position of Osprey nests in Poland.

Tree species	NW & W Poland	NE Poland	Σ	%
Pinus silvestris	24	40	64	85.3
(live)	(19)	(39)	(58)	
(dead)	(5)	(1)	(6)	
Picea excelsa	4	0	4	5.3
(live)	(1)		(1)	
(dead)	(3)		(3)	
Quercus sp.	1	0	1	1.3
Alnus sp.	1	0	1	1.3
Fire control tower	3	0	3	4.0
Artificial platforms (on *P.sivestris*)	1	1	2	2.7
Total	34	41	75	100

Only a few pairs - six - are nesting in nature reserves and national parks.

In Table 2 the distance of nests from water-bodies is shown. Only half of the nests were located at a distance of up to 200m. The rest were deep in stands of trees even as far as 7 km away. Such locations are more difficult to find.

Table 2. Distance of Osprey nests from nearest water.

Distance	NW & W Poland	NE Poland	Σ	%
On island (= 0m)	8	2	10	13
Dead tree in the water (=0m)	0	2	2	3
Up to 20m	4	3	7	9
21 to 200m	6	9	15	20
201 to 1000m	3	15	18	24
1 to 3km	8	10	18	24
Over 3km	5	0	5	7
Total	34	41	75	100

Ospreys are much attached to their territories, some of which are occupied for tens of years, e.g. one site on Lake KŁosowskie (Wielkopolska) has been occupied since at least 1848 (Bönigk 1850). Ten out of territories mentioned by Tischler (1941) are still active today. Another pair nested regularly between 1946 and 1990 (L. CzekaŁa pers.comm.) or perhaps from even earlier (Schalow 1919). Another nest mentioned by Schalow (1919) is still occupied today. However in Mazuria only half out of 25 territories were occupied every year or with a short break (1-2 years). Five territories in the period 1985-1991 were occupied only once.

Data on reproduction rates are shown in Table 3. Data covering 1976-1984 are based on information from Król and Mizera (1992). The number of fledged young per occupied nest (Postupalsky 1974) gives the best characteristic of the population status. Productivity ranged from 1.10 to 1.89, on average 1.41. It was higher than that recorded in 1976-1984, thanks to legal regulations introduced in 1984 protecting radii of 200 & 500m around a nest, but the difference is not statistically significant.

Some results of fledged young in the same nests observed over a considerable number of breeding seasons were as follows:

1, 0, 0, 1, 0, ?, 0, 1, ?, ?, 2, 2, 3, 1, 1, 0, in 1976-1991, Wielkopolska.

2, 3, 0, 0, -, -, 3, 0, -, -, 0, ?, ?, 2, 2 in 1977-1991, Mazuria.

Factors causing brood losses usually remain unknown. In eight cases nests with eggs or nestlings were blown down by strong winds; one brood located on a tower was destroyed by a man. For the remainder the exact reasons are unknown. It is probable that in some cases disturbance by tourists, forestry activities or photographers is to be blamed, but the majority of losses probably occurred naturally i.e. through predators (Pine Martin *Martens martens*, Eagle Owl *Bubo bubo*) or lack of food. In same cases an insufficient food supply might have some importance. One pair in Wielkopolska failed in their breeding attempts for five years in spite of freedom from disturbance as the nest was on an island in a nature reserve. Only after some fish-ponds were constructed in 1985 in the area (the only ponds within a radius of 50km) did they begin to breed successfully, with respectively: 3, 2, 3, 2, 1, 1, and 2 young in 1985-1991.

Competition for a nest was recorded in two cases with Raven *Corvus corax*, twice with White-tailed Sea Eagles, once with White Stork *Ciconia ciconia* (T.Foksowicz, pers.comm.), obliging Ospreys returning from their winter quarters to build new nests. Also old Osprey nests were occupied twice by Hobby *Falco subbuteo* and once each by Red Kite *Milvus milvus* and Black Kite *Milvus migrans*. On the other hand, in one case Ospreys took over an old White-tailed Sea Eagle's nest built at the top of a pine tree.

DISCUSSION

In the period 1985-1991 a minimum of 42 breeding pairs was recorded plus 5 pairs without known nest location. Based on scant information concerning the status in the central part of Pomerania, our estimates range from 50 to 60 nesting pairs in the whole of Poland; certainly the total population is less than 100 pairs. A simultaneous survey on the Sea Eagle provided data on 202 pairs (Mizera & Szymkiewicz 1991). If one takes into consideration that the Osprey's tree-top nest is easier to find than that of the Sea Eagle, then one has to accept that a figure of 50-60 pairs reflects the true Osprey status.

The population trend is not known because of lack of comparable exact data from previous years. The number of Ospreys undoubtedly decreased in Mazuria, where in the area of Iława 5-6 pairs nested in the early 1980s whereas in 1990 only 2-3 pairs remained. The small population on the borderland of Wielkopolska and Pomerania seems to be stable. Almost all territories

Table 3. Productivity of the Osprey in Poland.

	1976-84+	1985	1986	1987	1988	1989	1990	1991	1985-1991
No. of occupied breeding sites with known outcome	52	9	18	22	16	14	20	21	120
No. of nests with fledged young	35	7	12	18	11	11	16	19	94
No. of non-productive occupied nests	17	2	6	4	5	3	4	2	26
Nest success (%)	67	78	67	82	69	79	80	90	78
No. of fledged young	64	17	20	36	24	16	22	34	169
No. of young per productive nesting	1.83	2.43	1.67	2.0	2.18	1.45	1.38	1.79	1.80
No. of young per occupied breeding site	1.23	1.89	1.11	1.64	1.50	1.14	1.10	1.62	1.41

+ - data by Król & Mizera 1992

occupied in the period 1975-1984 were also used every year up to 1991.

The Osprey abandoned South Poland. In the 19th century it nested in the SE part of Poland in relatively large numbers (Taczanowski 1882). At present only two occupied territories are known (M.Cieślak & P.Kozłowski, pers.comm.) but without a nest being located. In Silesia currently the Osprey is absent (Grabiński 1991). There are no Ospreys even on a huge group of fish-ponds in Barycz valley (7,500ha) where only in 1958 an attempted breeding was recorded (Mrugasiewicz & Witkowski 1962). In a neighbouring region (Brandenburg, Germany) Ospreys are common and the number of breeding pairs is constantly increasing (Feiler 1983; Ruhle 1985 & pers. comm.).

The situation in Mazuria is ± stable, however in some places the Osprey has decreased. The biggest number of nests is recorded between Osztynek and Szczytno (*ca.* 12 pairs) and in the area of Mikołajki (5 pairs). Other pairs are scattered all around. In comparison to the data by Tischler (1941) the biggest decline, from seven pairs to one, was recorded in Pisz Forest and from 12 pairs to just five in the Susz area. In the northern part of Mazuria no breeding pair was found to coincide with old data from Tischler (1941). Even on the huge Lake Śniardwy the Osprey isn't breeding; the last pair was aparently shot there in 1923 (Tischler 1941).

Interestingly there are no known nests in Augustów Forest, an area seemingly rich in lakes. This is close to the Lithuanian border, where in recent years a constant population growth has been recorded, from 1-2 to 20-30 pairs (Drobelis 1990 & pers. comm.; Sablevicius 1991). The introduction of protected zones around active nests in 1984 contributed significantly to the reduction of disturbance and subsequently increased breeding success. In the years 1976-1984 the success rate was 67% (Król & Mizera 1992), and for 1985-1991 this value increased up to 78%. For comparison the data from Pomerania (Banzhaf 1938) give a figure of 93% for 1932-1937, but this must be treated with some caution because Banzhaf recorded unusual numbers of quadruplets, hardly ever observed again.

Productivity (number of fledged young per occupied nest) was 1.41 for 1985-1991, compared with 1.35 for 1976-1991. This low rate comes from the small number of young reared, not from the loss of whole broods. The mean of young reared per nest is 1.80, excluding total failures. Quadruplets were not recorded in our study. Triplets are rare, and many pairs rear just one chick. It must be said that all observations were made from the ground, which might result in an underestimation. From Banzhaf's (1938) data from Pomerania the value was much higher - 2.11 fledged young per occupied nest. Quadruplets were recorded on a number of occasions, as to which we have our reservations.

Low productivity of the Polish Osprey population may be attributed to decreased availability of food, reducing the whole population. On the other hand in a stable and numerous Finnish population (1,000 pairs) productivity is similar to that recorded by our survey - 1.37 (Saurola 1986). Also there is a prominent case in Scotland where, with a productivity of 1.44 young, the population rapidly expanded from just one to over 80 pairs (Dennis 1991, 1992).

Higher productivity than in Poland had been recorded in Brandenburg - 1.93 (Feiler 1983) and Mecklenburg - 1.96-2.09 (Klafs 1987; Meyburg & Meyburg 1987), in both cases with an observed population growth. In Lausitz region growth from three pairs in 1970 to 12 in 1983 and 19 in 1991 had been recorded (Ruhle 1985 & pers. comm.). Also in Lithuania and in Byelorussia there is a constant growth (Drobelis 1990; Sablevicius 1991; Tishechkin & Ivanovsky 1990). So the current status of the Polish population differs from those recorded in the neighbouring countries. Lack of population growth can probably be attributed to local factors such as poaching, especially on the fishponds, lack of food and possibly competition with the rapidly increasing White-tailed Sea Eagle population. There is a lack of data concerning contamination with heavy metals and DDT residues but both factors are probably not currently so important. Sea Eagles hunting on Pomeranian lakes are contaminated to an insignificant degree compared with others from the Baltic Sea coast (Falandysz *et al.* 1988) and their productivity is high (Mizera 1990). To preserve the current status and to ensure its future growth, building of nest platforms is planned, at first in recently abandoned ranges, especially if large trees remain on which Ospreys nested in the past.

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