

OBSERVATION ON SOME COLONIES OF GREY HERON IN LUBLIN REGION (SOUTHEAST POLAND)

Ignacy Kitowski, Rafal Krawczyk

Abstract. During the breeding seasons in 1998 and 2002 14 colonies of Grey Heron with 541 and 622 breeding pairs respectively were visited in Lublin region (SE Poland). In 1998 three colony with 213 nests (39.4 % of known pairs) were protected in reserves. In 2002 only the one colony with 110 nests (17.7 % of known pairs) was protected by law. In 1998 14 colonies of Grey Heron amounting: 38.6 ± 31.1 nests. In 2002 these heronries consisting 44.0 ± 35.9 nests. Herons nested together with Cormorants. In some heronries pairs of Ravens which fledged juveniles were found.

Key words: Grey Heron, *Ardea cinerea*, southeast Poland, colony size, human disturbance.

Address: I. Kitowski, Dept. of Nature Conservation, Institute of Biology, Maria Curie-Skłodowska University, Akademicka 19, PL-20-033 Lublin, Poland; e-mail: kitowign@biotop.umcs.lublin.pl.

Наблюдения за некоторыми колониями серой цапли в Люблинском регионе (Юго-Восточная Польша). - И. Китовский, Р. Кравчик. - Беркут. 14 (1). 2005. - В гнездовые сезоны 1998 и 2002 гг. были обследованы 14 колоний серой цапли, в которых гнездились соответственно 541 и 622 пары. В 1998 г. три колонии с 213 гнездами (39,4 % известных пар) находились на охраняемых природных территориях, в 2002 г. – только одна колония со 110 гнездами (17,7 % пар). В 1998 г. средний размер колонии был $38,6 \pm 31,1$ гнезд, в 2002 г. – $44,0 \pm 35,9$ гнезд. Цапли гнездились вместе с большими бакланами. В некоторых колониях были обнаружены пары воронов с оперившимися птенцами.

Introduction

The protection of colonial piscivorous birds such Grey Herons (*Ardea cinerea*) for many years have caused numerous controversy among naturalist and fish pond managers in Poland. The former are for necessary protection of birds, particularly their places of colonial breeding, whereas the latter see mostly economic aspects foraging Grey Herons in fish ponds. Polish law allows for their shooting on fish ponds. It promote a reduction of the population size this Heron. This paper presents the status of some colonies of Grey Heron in Lublin region (SE Poland).

Study area and methods

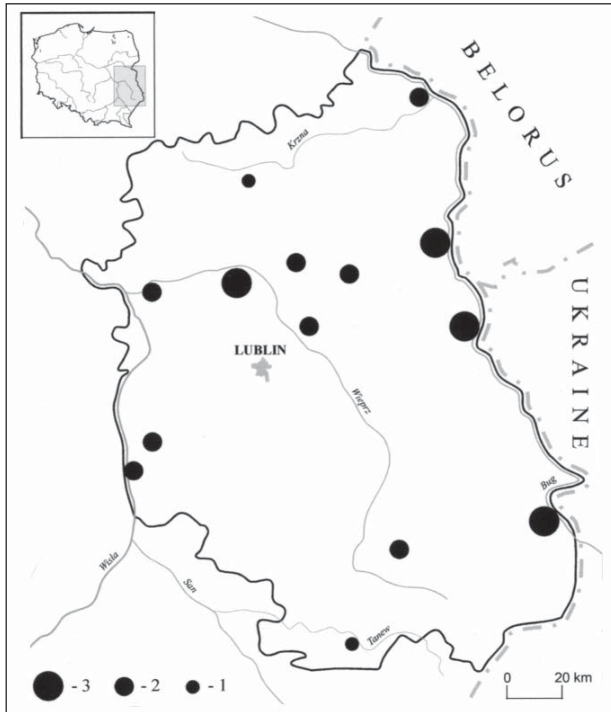
The study comprised the area of southeast Poland, Lublin region of 25 114.5 km² (Figure) This area is inhabited by 2.23 millions (88.8 ind./km²). It is typical agricultural region (farm lands constitute 68.7 % of its area) relatively poor in waters (1.5 % of the area), except the Leczna – Włodawa Lakeland. Mead-

ows and forests are 13.5 % and 22.0 % region area respectively (Anonymus, 2001). Almost the whole SE Poland is in the Vistula river catchment area of the Bug, Wieprz, San tributaries. In the east SE Poland borders upon Ukraine. In 1998 and 2002 from mean March to mean July 3–4 controls of chosen heron colonies were conducted. Where heron nests were located on deciduous trees most controls were conducted in early spring before full development of leaves. The results were compared to previous faunistic studies of other authors (Błażejowski et al., 1972; Gromadzki, Wieloch, 1979; Cieślak, 1982; Buczek, Buczek, 1988; Marut, 1988; Wiącek, 1989; Profus et al., 1992; Kot, 1997; Luczycka-Popiel et al., 1998; Gromadzki, Wieloch, msc) (Table).

Results

Distribution and size of studied heronries in Lublin region

In 1998 fourteen colonies of Grey Heron amounting on average: 38.6 ± 31.1 nests,



Distribution of colonies of the Grey Heron in the Lublin region in 2002. 1 – >10 nests, 2 – 10–79 nests, 3 – 80–110 nests.

Распространение колоний серой цапли в Люблинском регионе в 2002 г. 1 – >10 гнезд, 2 – 10–79 гнезд, 3 – 80–110 гнезд.

range: 8–101 nests, were controlled (Table). Median of nest number in colonies was $M_d = 24$. Heronries ($n = 14$) consisting 44.0 ± 35.9 nests, range: 1–110 nests, were controlled in 2002. Median value of nest number was $M_d = 27$. In total in 1998 studied population in considered heronries numbered 541 breeding pairs and 622 pairs in 2002 (Table, Figure).

No differences were shown median value of the number of nest falling to one herony between the mentioned years of studies (Mann-Whitney U test: $Z = -0.502$, $n_1 = 14$, $n_2 = 14$, $n. s.$). Changes of pairs numbers only were compared for 8 colonies which did not change their localisation between 1998 and 2002. The differences were also insignificant (Wilcoxon test for matched pairs: $T = 11$, $n. s.$).

Basic role in the distribution of studied he-

ronries in southeast Poland is played by the Bug river valley. There, in four colonies Kosmow (near Hrubieszow), Stulno and Dolhobrody (near Wlodawa), Neple and then Starzynka (near Biala Podlaska) 288 pair (53.2%) nested in 1998. In 2002 these colonies included 313 (50.3%) breeding pairs known from southeast Poland (Figure, Table).

Most studied colonies were established in trees forest or coppices (Table). In heronries close: Chodlik (near Opole Lubelskie), Olszewica (near Radzyn Podlaski), Wolka Michowska (near Lubartow) herons nested on pines (*Pinus sylvestris*). Close Dolhobrody herons nested only common alders (*Alnus glutinosa*). In colony close Kolonia Lukowa (near Bilgoraj) all 8 nests were located on the one big willow (*Salix sp.*) growing in wide meadows. Another localisation of nest was also shown. On fish ponds near Siemien (near Parczew) almost half of the pairs nested in reedbeds (*Phragmites australis*)

on bushes of willows, whereas the rest in black alders in 2000. The other colony was located on bushes of willows on fish ponds of Sosnowica (near Parczew). Herons in a colony near village Starzynka nested also in bushes of willows growing in overflown arms of Krzna river. Nests of a colony on Piskory Lake (near Pulawy) were located in reedbeds (Table).

In 1998 in Sosnowica fish ponds herons nested together with cormorants (*Phalacrocorax carbo*). In 2002 in pairs of Ravens (*Corvus corax*) which fledged 4 and 3 juveniles respectively nested in Dolhobrody and Wolka Michowska heronries. In 2002, two nests of herons were only found in Olszewica heronry. One nest was occupied by Hobby (*Falco subbuteo*). Nesting pairs of Ravens were noted close colonies: Kosmow, Chodlik and Stulno



Studied Grey Heron colonies in Lublin region in 1998–2002

Обследованные колонии серой цапли в Люблинском регионе в 1998–2002 гг.

Localities	Previous data ¹	Colony size and trees number	
		1998	2002
Chodlik, district Opole Lubelskie	–	53 nests, 43 trees	45 nests, 24 trees
Dolhobrody, district Wlodawa	1984 – 30 nests 1989 – 25 nests	101 nests, 53 trees	90 nests, 55 trees
Olszewnica, district Radzyn Podlaski	1970 ² – 78 nests	12 nests, 7 trees	1 nest, 1 tree
Nepie, reserve “Czapli Stog” district Biala Podlaska	1996 – 40 nests	93 nests, 39 trees	colony left in 2001 for Starzynka site
Starzynka, district Biala Podlaska	–	–	22 nest on bushes of willows
Nieciecz, reserve “Czapliniec kolo Golebia”, district Pulawy:	1983 – 85 nests 1984 – 80 nests 1987 – 78 nests 1991 – 37 nests 2000 – 22 nests	53 nests, 15 trees	colony left in 2000
Nieciecz, Lake Piskory, district Pulawy	1983 – 3–4 nests in reedbeds	16 nests in reedbeds	27 nests in reedbeds
Nieszawa, sand island on Vistula river, district Krasnik	–	–	15 nests, 11 trees
Kosmow, district Hrubieszow	1980 – 100 nests 1984 – 100 nests 1988 – 70 nests 1989 – 20 nests 1995 – 3 nests	27 nests, 18 trees	91 nests, 57 trees
Rozkopaczew, district Lubartow: “Mytycze” lake	1985 – 50 nests	11 nests, 8 trees	26 nests on bushes of willows and alders
Fish ponds near Siemien district Parczew	1985 – 4 nests	21 nests, 12 trees	27 nests on bushes of willows and birches
Kolonia Lukowa, district Bilgoraj	1980 ³ – 17 nests 1981 – 14 nests 1987– 5 nests 1997 – 5 nests	8 nests, 1 trees	8 nests, 1 trees
Fish ponds near Sosnowica, district Parczew	1979 – 6 nests 1985 – 20 nests	11 nests on small willows	27 nests on small willows
Stulno, district Wlodawa “Maloziemce” reserve	1969 – 20 nests 1979 – 60 nests 1984 – 50 nests 1987 – 50 nests 1989 – 50 nests	67 nests, 21 trees	110 nests, 38 trees
Topornica, district Zamosc	1986 – 9 nests 1987 – 20 nests	47 nests, 19 trees	40 nests, 14 trees
Wolka Michowska, district Lubartow	–	21 nests, 19 trees	93 nests, 60 trees
Total	–	541 nests	622 nests

Comments. ¹sources of previous data are given in “methods” of the paper; ²data from “Czapliniec” reserve; ³data from the period when a colony was located close Osuchy village.



(1998) and natural reserve "Czapliniec kolo Golebia" (2000).

Conservation problems

In 1998 three of studied colonies (213 nests) were protected as reserves (Table). They constituted of colonies 21.4 % and 39.4 % of number of known nests. In 2002 only one (7.1%) of the known colonies with only 17,7 % nests was protected as reserve.

The reserve "Czapliniec kolo Golebia" existing from 1987 harboured 78 pairs in the year of its establishment (Marut, 1988). In following years the number of pairs decreased (Table), which was accompanied by accumulation of nests in single trees. In 1998 51% of 53 occupied nests were located in 4 trees. Herons left the colony in 2000, when nested 22 pairs there. The "Czapli Stog" reserve close Neple (near Biala Podlaska) established also in 1987, harboured in 1998 93 nests (Table). In 2001, herons left the reserve forming a colony in small willows in a mudded valley of Krzna river close Starzynka (Table). The reason of abandoning the reserve was human disturbance.

Good results of heron protection are noted in "Maloziemce" reserve established in 1988. In comparison with the late 1960s number of pairs has increased there 4,5 times (Table). The successful situation of the colony results from foraging herons on the Bug river valley, which reduces there susceptibility to shooting by hunters and workers of fish ponds. In early 1990s a project of the reserve "Jeziro Mytycze" (Rozkopaczew, near Lubartow) was worked out, the purpose of which was to protect a colony of Grey Heron. However, this area is still waiting to be submitted to area protection. In 1985, 50 pairs nested there (Marut, 1988). In the vicinity of the lake in mean 1980s, pellets of Eagle Owl (*Bubo bubo*) were found (B. Lorens, pers. comm.). One of the nests of herons could have been occupied by this owl. The colony close to Chodlik undergoes periodically a relatively strong human pressure due to "archaeological picnics" taking place there every year (Dzierba, 1999).

Discussion

The studies point to the fact of a considerable decrease of the number of Grey Heron colonies in comparison with the 1970s and 1980s. This suggests that the process of increasing number of Grey Heron colonies in south Poland in the 1980s reported by Tomialojc (1990) has been inhibited at least in the southeast part of Poland. The Grey Heron population in southeast Poland estimated at about 25 colonies with about 500 pairs in the 1970s and 1980s (Marut, 1988; Gromadzki, Wieloch, msc) have lost 40 % of the colonies, increasing simultaneously the number of nests by about 30 %. The results of the studies is also finding disappearance of small size colonies (>20 nest) located in fields, meadows and small fish ponds known from the 1960s in the Lublin Upland, Roztocze and Chelmskie Hills (Blażejewski et al., 1972; Marut, 1988; Gromadzki, Wieloch, 1979; Gromadzki, Wieloch, msc).

This process has also involved partially the known colonies from 1960s and 1970s related to Wieprz river such: Dworzyska (near Krasnystaw) on the Wieprz river in 1960s, which numbered ca. 150 nests. By the end of the 1980s and 1990s its existence was not confirmed. Another colony related to the Wieprz river located close to Torun (near Krasnystaw) in middle of the 1960s, numbered ca. 100 nests (Marut, 1988). Due to logging the number of nests was decreasing for years. Only 5 nests were there in 1995, and in 1998 the presence of the heronry was not confirmed. The mentioned processes have caused that heronries are functioning at present only on the cortex area of Lublin Upland (Figure).

The disappearance of the colony in the reserve area "Czapliniec kolo Golebia" (see Table) is the effect of permanent impact of supersonic military jets from airfields in Deblin (Pulawy district). By flushing herons, these birds increased their susceptibility of their broods to predators (Kitowski, 2001). Resining of tree and enriching soils with nitrogen compounds from heron's droppings (Ligeza, Misztal, 2000) deteriorated the condition of trees.



Small size heronries disappeared also from Polesie which is area rich in habitats favourable for nesting and foraging (Dyrcz et al. 1973; Gromadzki, Wieloch, 1979; Wiacek, 1989). In the south Podlasie herons were protected by "Czapliniec" reserve established in 1973 near village Olszewnica (near Radzyn Podlaski) in which 78 nests were in 1970. In the late 1970s birds left the reserve moving to private farmers forests in the south far from Olszewica (Cieslak 1982), but the trees were cut also there, this caused subsequent translocation of birds this time near the northern outskirts of village Olszewica, where 12 pairs nested in 1998. Described above disappearance process of heronries was accompanied by retention of the population at traditionally occupied sites this concerns particularly the colonies close to the Bug river: Dolhobrody, Stulno, and Kosmow. They generated the formation of small ephemeral heronries (Marczakowski, Stachyra, 1999).

Disappearance of colonies or drastic decrease of their number concerned above all their related to fish ponds sites, which resulted from shooting foraging birds on ponds as well as intentional destruction of nests. Colonies related to river valleys, however remain in better condition. Of basic significance for Grey Heron protection in SE Poland will be to submit the colonies (as reserves) to law protection, which live in the Bug river: in Dolhobrody and Starzynka. Cases of nesting of other birds in heronries were found. This phenomenon was known from earlier studies in Poland about nesting White Storks (*Ciconia ciconia*) and Cormorants in heron's colonies (Błażejowski et al. 1972; Przybysz et al., 1988; Golawski, Kasprzykowski, 1996).

Studies also pointed increase of the number of herons pairs in some studied colonies between 1998 and 2002. This may be a prognosis of positive trends for the studied populations which will be observed in future.

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