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A preliminary overview of monitoring for raptors in Belarus

Predhodni pregled monitoringa populacij ptic roparic v Belorusiji

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In total, 29 diurnal raptor species and 13 owl species have been registered in Belarus. Of these, 20 and 10 species, respectively, are regular breeders in the country. Nine birds of prey and six owl species have been monitored during the past 40 years with variable degrees of intensity. Now, at the beginning of 2012, monitoring of seven diurnal raptor (Osprey *Pandion haliaetus*, Golden Eagle *Aquila chrysaetos*, Marsh Harrier *Circus aeruginosus*, Greater Spotted Eagle *A. clanga*, Lesser Spotted Eagle *A. pomarina*, White-tailed Eagle *Haliaetus albicilla*, Kestrel *Falco tinnunculus*) and four owl species (Tawny Owl *Strix aluco*, Tengmalm's Owl *Aegolius funereus*, Great Grey Owl *Strix nebulosa*, Pygmy Owl *Glaucidium passerinum*) is about to be continued at the same level. The population of the globally threatened Greater Spotted Eagle is in the process of most careful monitoring in comparison with other species. The main users of the data obtained through monitoring are the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus, the Institute of Zoology (National Academy of Sciences), administration of the Strictly Protected Areas and NGO APB - BirdLife Belarus. Since 2006, monitoring of certain raptors has been included into a scheme of the National System of Environmental Monitoring in the Republic of Belarus. This national monitoring programme was fully funded during 5 years (2006–2010). Owing to the economic crisis and lack of sufficient financial support for research, this programme has eventually been reduced to monitoring of the Greater Spotted Eagle only. All other monitoring studies carried out in 2011 were only partial, as personal initiatives by some dedicated ornithologists on voluntary basis.

Key words: raptor monitoring, birds of prey, owls, Belarus
Ključne besede: monitoring ptic roparic, ujede, sove, Belorusija

1. Introduction

Belarus is the country in which fairly large populations of some rare and threatened European raptor species, i.e., Greater Spotted Eagle *Aquila clanga*, Lesser Spotted Eagle *A. pomarina*, Short-toed Eagle *Circaetus gallicus*, Hen Harrier *Circus cyaneus*, can still be found due to the presence of a large number of natural mires and swampy forest tracts. In total, 29 diurnal raptor species and 13 owl species have been registered in the country. Of these, 20 and 10 species, respectively, are regular breeders (Nikiforov *et al.* 1997).

Development and strengthening of monitoring studies will allow to respond efficiently to emerging threats in order to promptly prevent decline of raptor population or degradation of their habitats.

2. Main players

Bulk of the work on raptor monitoring was conducted by scientists from the National Academy of Sciences, university professors, staff members of national parks and several amateur ornithologists, members of NGO "Akhova ptushak Bat'kaushchini" (APB - BirdLife Belarus). In total, not more than 10 persons participated in birds of prey and owls monitoring in Belarus during each field season.

Main targets of birds of prey and owl monitoring

are as follows: (1) to obtain scientific data on the contemporary population status and numbers of birds of prey and owl species, (2) to make management decisions for environmental purposes, (3) to revise and update the Belarusian Red Data Book and Action Plans for protection of threatened birds of prey and owl species.

The main users of the data obtained from this monitoring are the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus, the Institute of Zoology (National Academy of Sciences), administration of the Strictly Protected Areas and NGO APB - BirdLife Belarus.

3. National coverage

First targeted studies of birds of prey were carried out in the mid-20th century in Belovezhskaya Pushcha in western Belarus (Golodushko 1965). Then, from the beginning of the 1980s, most of such studies shifted to Poozer'e (northern Belarus) (Tishechkin & Ivanovski 1992, Ivanovsky & Tishechkin 1993, Ivanovski 2012). Since the mid-1990s, monitoring of forest birds of prey has been also carried out in one study plot in Minsk Region (central Belarus) (Vorob'ev & Mindlin 1994). Monitoring of Montagu's Harrier *C. pygargus* has been initiated in the Grodno region (western Belarus) during the same period (Vintchevski & Yasevitch 1998), the same as monitoring of Marsh Harrier *C. aeruginosus* populations in the Minsk region.

During 1995–1999, the project "Raptors of Belarus: Entering into New Century" has been carried out in Belarus with APB - BirdLife Belarus as the main beneficiary. Many new breeding sites of rare raptors were discovered in Belarus during the implementation of this project. In the majority of cases, researchers were not associated with permanent study plots and attempted to collect representative samples of data by finding a maximal number of nests. As a result, data such as regional lists of birds of prey species, breeding biology and reproductive indices were well known for most of raptor species by the end of the 20th century. At the same time, there was a lack of data on such important monitoring components as population numbers and densities of birds of prey within specific study plots (Tishechkin *et al.* 2000).

Monitoring of birds of prey species in the Chernobyl nuclear accident zone (south-eastern Belarus) begun in 1998 within the framework of the Institute of Zoology (National Academy of Sciences).

During 1999–2002, special counts of birds of prey were carried out within the APB - BirdLife Belarus project on Greater and Lesser Spotted Eagles status in Belarus, which was supported by the Royal Society for the Protection of Birds (RSPB). Although the counts covered the entire area of Belarus, they were concentrated in the southern part of the country. 92 plots were studied with a total area of about 9,000 km^2. Data collected during these studies have allowed us to estimate population numbers of most birds of prey species for the whole area of Belarus (Dombrovski & Ivanovski 2005a).

The owls are less studied in Belarus. By the end of the 20th century, Ural Owl *Strix uralensis*, Eagle Owl *Bubo bubo* and Great Grey Owl *S. nebulosa* were intensively but relatively short-term monitored within local areas in different parts of the country (Tishechkin & Gritschik 1994, Tishechkin *et al.* 1997, Tishechkin & Ivanovsky 1998 & 2003, Gritschik & Tishechkin 2002). At the beginning of the 21st century, regular monitoring of four owl species was initiated locally in south-western Belarus (Great Grey Owl) as well as in northern and central Belarus (Tengmalm's Owl *Aegolius funereus*, Pygmy Owl Glaucidium *passerinum* and Tawny Owl *S. aluco*) (Shamovich & Shamovich 2005, Abramchuk 2009). Nearly all these studies were carried out on private initiative of amateur or professional ornithologists belonging to different organisations.

Since 2006, raptor monitoring has been included into a scheme of the National System of Environmental Monitoring in the Republic of Belarus. A sector of Monitoring and Cadastre was established in the Belarusian National Academy of Sciences in 2006 in order to coordinate wildlife monitoring in our country. Within this project, model species were selected, study methods and approaches for different species selected and monitoring initiated. The Greater Spotted Eagle, Lesser Spotted Eagle, Golden Eagle *A. chrysaetos*, White-tailed Eagle *Haliaetus albicilla*, Buzzard *Buteo buteo* and Eagle Owl were defined as species to be monitored. The monitoring scheme includes assessment of numbers, breeding success and several environmental parameters (as for the Greater Spotted Eagles, for example, we also annually count small mammals and record groundwater levels within their breeding sites).

This national monitoring programme was fully funded during five years (2006–2010). Due to the economic crisis and lack of sufficient financial support for research, the programme was eventually reduced to monitoring of the Greater Spotted Eagle only (as a globally threatened species) at four permanent study plots in Pripyat Polesie (southern Belarus). All other monitoring studies carried out in 2011 were only partial, as personal initiatives by some dedicated ornithologists on voluntary basis.

Table 1: Status of raptor and owl monitoring in Belarus during past 40 years

Tabela 1: Status monitoringa ujed in sov v Belorusiji v zadnjih 40 letih

Species / Vrsta	No. of controlled pairs / Št. spremljanih parov	% national population/ nacionalne populacije	Locality of monitoring in Belarus / Lokacija monitoringa v Belorusiji	Researchers/ Raziskovalci	Duration of monitoring/ Trajanje monitoringa
White-tailed Eagle *Haliaeetus albicilla*	6	6	Chernobyl zone (south-east)	V. Yurko	2006–
Marsh Harrier *Circus aeruginosus*	10–50	0.4	Centre	A. Vintchevski	1990–
Montagu's Harrier *Circus pygargus*	13–36	0.6	West	D. Vintchevski	1993–2010
Buzzard *Buteo buteo*	55–105	0.4	Centre, South	V. Dombrovski	2006–2010
Lesser Spotted Eagle *Aquila pomarina*	9 20 11	1	Centre South North	G. Mindlin V. Dombrovski V. Ivanovski	1991– 2000– 2000–
Greater Spotted Eagle *Aquila clanga*	30–70	29	Centre, South	V. Dombrovski	1999–
Golden Eagle *Aquila chrysaetos*	4	89	North	V. Ivanovski	1982–
Osprey *Pandion haliaetus*	10–30	17	North	A. Tishechkin V. Ivanovski	1976–
Kestrel *Falco tinnunculus*	38–65	3	Urban population in two western towns	D. Vintchevski A. Minich A. Kivachuk D. Tabunov	2005–
Eagle Owl *Bubo bubo*	9–11	5	South	A. Tishechkin V. Gritchik G. Mindlin V. Vorob'ev	1991–1996
	13		South	V. Dombrovski	2006–2010
Pygmy Owl *Glaucidium passerinum*	7 20	2	Centre North	G. Mindlin D. Shamovich	2003– 2004–2009
Tawny Owl *Strix aluco*	10–23	0.3	Centre	D. Pisanenko G. Mindlin	1995–
	7		North	D. Shamovich	1999–2004
Ural Owl *Strix uralensis*	18–40	2	North	A. Tishechkin V. Ivanovski D. Shamovich	1986–2009
Great Grey Owl *Strix nebulosa*	5–7	6	South	A. Tishechkin V. Gritchik G. Mindlin V. Vorob'ev	1992–1996
	2–5		South-West	A. Abramchuk	2000–
Tengmalm's Owl *Aegolius funereus*	12	0.3	Centre	G. Mindlin	2000–

4. Key species and issues

Nine birds of prey and six owl species have been monitored in Belarus during the past 40 years with variable degrees of intensity (Table 1). Now, at the beginning of 2012, monitoring of seven diurnal raptor and four owl species is about to be continued at the same level. As the Table 1 shows, basically, we are dealing with several rare species included into the Red Data Book of the Republic of Belarus. Only two species (Marsh Harrier and Tawny Owl) are widely distributed and common locally. Such attention to

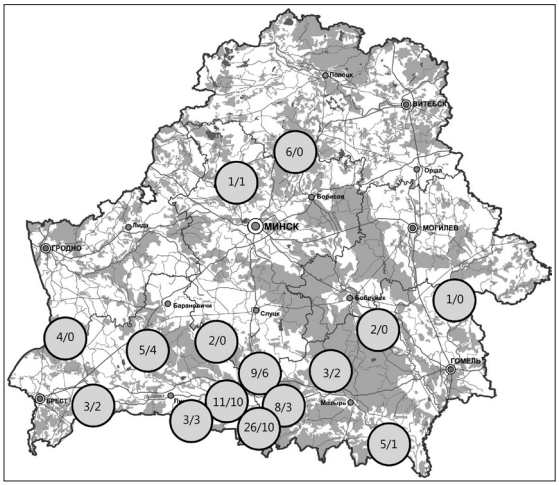

Figure 1: Actual distribution and number of known Greater Spotted Eagle *Aquila clanga* pairs (first number) and number of regularly monitored pairs of this species (second number) at separate monitoring plots in Belarus

Slika 1: Dejanska razširjenost in število znanih parov velikega klinkača *Aquila clanga* (prva številka) in število parov te vrste, deležnih rednega monitoringa (druga številka) na različnih ploskvah, določenih za monitoring vrste v Belorusiji

monitoring of rare species is associated with a priority of environmental conservation for ornithological research in Belarus.

From the global point of view, the most important Belarusian raptor to be monitored is the Greater Spotted Eagle. The key European population (150–200 breeding pairs) of this species inhabits southern Belarus (Dombrovski & Ivanovski 2005b). As can be seen from the Table 1 and Figure 1, the population of the Greater Spotted Eagle is undergoing most careful monitoring comparing to other species. This is thanks to the implementation of several projects by APB - BirdLife Belarus (funded in different years by the RSPB, British Ornithologists' Union, Club 300 Sweden, BirdLife International and Frankfurt Zoological Society), which were aimed at the identification and protection of the Greater Spotted Eagle nests.

Main negative factors impacting the raptor species' populations and breeding habitats in Belarus are as follows: direct destruction of natural habitats as a result of drainage, habitat degradation caused by disruptions in the hydrological regime, canalization of rivers, loss of biotopes suitable for nesting as a result of overexploitation of forests, environmentally unbalanced economic activities, arable farming on drained fen mires, allotment of summer house plots in river floodplains and on wetlands potentially suitable for rare birds of prey, poaching, disturbance in the breeding season, no management units in some of the protected areas, no protection status of some of the habitats, lack of awareness of the value of fen mires and wet alder forests for conservation of the globally important biodiversity among local people, loss of genetic purity of the Greater Spotted Eagle populations as a result of hybridization with Lesser Spotted Eagle (Dombrovski 2012).

Monitoring has never been carried out for nine birds of prey species from 18 regularly breeding ones in Belarus. Moreover, populations of two such species (Short-toed Eagle and Hen Harrier) represent significant numbers for our region. Four species from 10 breeding owl species have also never been covered by monitoring.

5. Strengths, weaknesses and future priorities

The lack of an integrated scheme for raptors is among the main weaknesses of birds of prey monitoring in Belarus. Almost all monitoring plots are located in several regions (southern and northern Belarus). There are no monitoring plots in eastern Belarus, while monitoring plots in central parts of the country are distinctly insufficient. For many species we can control only very small, non-representative parts of national populations (Table 1), or monitoring plots do not cover all typical habitats. There is practically no monitoring of threats for raptors in Belarus.

So, weaknesses of birds of prey monitoring in Belarus are as follows: (1) small numbers of professional and amateur ornithologists who would be ready and qualified to do this job, (2) low living standards of people do not allow us to carry out monitoring without a financial support even by volunteers, (3) insufficient amount of funding targeted to monitoring studies.

Ceasing of monitoring for several species is closely associated with either lack of financial support (Buzzard, Eagle Owl), or with changing of interests and/or research priorities of qualified ornithologists (Montagu's Harrier, Osprey *Pandion haliaetus*, Ural Owl).

The priorities for strengthening raptor monitoring in Belarus are as follows: (1) to establish a working group for monitoring birds of prey and owls in Belarus in order to exchange the experience and to coordinate the activities, (2) to involve new participants, (3) to search for funding the monitoring of key raptor species in key areas, (4) to initiate or re-establish monitoring for the Osprey, Ural Owl, Eagle Owl, Short-toed Eagle and Hen Harrier, (5) to expand the

network of monitoring plots for Lesser Spotted Eagle, White-tailed Eagle, Grey Great Owl and Pygmy Owl.

6. Povzetek

V Belorusiji je bilo doslej zabeleženih 29 vrst ujed in 13 vrst sov. Od teh jih 20 oziroma 10 tudi gnezdi. V zadnjih 40 letih je bilo devet vrst ujed in šest vrst sov deležnih različno intenzivnega monitoringa. V začetku leta 2012 se je na približno isti ravni nadaljeval monitoring sedmih vrst ujed (ribji orel *Pandion haliaetus*, planinski orel *Aquila chrysaetos*, rjavi lunj *Circus aeruginosus*, veliki klinkač *A. clanga*, mali klinkač *A. pomarina*, belorepec *Haliaeetus albicilla*, postovka *Falco tinnunculus*) in štirih vrst sov (lesna sova *Strix aluco*, koconogi čuk *Aegolius funereus*, bradata sova *Strix nebulosa*, mali skovik *Glaucidium passerinum*). Populacija globalno ogroženega velikega klinkača je v procesu najtemeljitejšega monitoringa v primerjavi z drugimi vrstami. Glavni uporabniki podatkov, pridobljenih z monitoringom, so Ministrstvo za naravne vire in varstvo okolja Republike Belorusije, Inštitut za zoologijo (nacionalna Akademija znanosti), administracija strogo zavarovanih območij in nevladna organizacija APB - BirdLife Belorusija. Od leta 2006 je monitoring nekaterih vrst vključen v shemo Nacionalnega sistema za okoljski monitoring Republike Belorusije. Ta nacionalni programme monitoringa je bil v celoti financiran v letih 2006–2010, zaradi gospodarske krize in pomanjkanja zadostne finančne pomoči pa je bil pozneje skrčen na monitoring zgolj velikega klinkača. Vse druge študije v okviru monitoringa v letu 2011 so bile le delne, in sicer kot osebne pobude nekaterih pticam roparicam posvečenih ornitologov na prostovoljni osnovi.

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