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LONG-TERM CHANGES IN BIRDS OF PREY POPULATIONS WITHIN EUROPEAN RUSSIA AND NEIGHBOURING COUNTRIES

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ABSTRACT This survey covers approximately 5 mln km² of the former USSR up to the Ural. A rough estimation of raptor populations indicated was based on a direct census of breeding pairs within large sample areas of 100–200 km², with subsequent expert calculations for the whole territory. A total of 36 raptor species are recorded breeding in the area, the abundant being Buzzard *Buteo buteo* and Sparrowhawk *Accipiter nisus*, the rarest being Bonelli's Eagle *Hieraaetus fasciatus* and Lanner Falcon *Falco biarmicus*.

Populations of Goshawk *Accipiter gentilis* and Marsh Harrier *Circus aeruginosus* are markedly increasing. On the other hand, 8 species have markedly decreasing populations and breeding ranges, amongst which Black Kite *Milvus migrans*, Pallid Harrier *Circus macrourus* and Tawny Eagle *Aquila rapax*. Populations of the other species are more or less stable.

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INTRODUCTION

The European part of Russia (up to the Ural mountains) covers some 4 mln km², including 1.3 mln km² of forests which are major nesting habitats for many species of raptors. If some neighbouring countries (Ukraine, Moldova, Belarus, Lithuania, Latvia and Estonia in the west, Georgia, Armenia and Azerbaijan in the south as well as the extreme north-western part of Kazakhstan (up to the Ural river) in the south-east are considered together with the above territory of European Russia, a region of 5.4 mln km² is formed, including 1.5 mln km² of forests. This is in fact the north-eastern part of the Western Palearctic.

METHODS

Estimation of numbers

Principal difficulties for a precise ornithological survey of such a huge territory are obvious. An

approximate estimation of raptor populations could be calculated when extrapolating the results of fragmentary surveys of rather large (as a rule 100–200 km² or more) and representative sample areas. The number of breeding pairs per sample area varies widely from species to species (between 5–10 to 50–70). Some samples represent long-term monitoring stations with yearly or periodic censuses of all raptor species within the same area.

Study areas

Study areas are unevenly distributed over the vast territory under consideration. In the European Part of Russia birds of prey are thoroughly studied in the following regions: Kola peninsula, north-west of the Ural mountains and Perm, Petersburg (former Leningrad) and Pskov, Upper Volga (Tver, Kostroma, Vologda as well as the Darwin reserve), Middle Volga river (Kazan, east of Saratov city), Central (Moscow and neighbouring regions), Middle Oka river (Oka reserve), Upper Don river (Lipetsk, Kursk,

Voronezh), south-east Bashkiria, (west of the southern Ural mountains), Middle Ural river (Orenburg), Lower Volga river (Astrakhan), Lower Don river (Rostov) and the North Caucasus. In the neighbouring countries the best raptor studies are performed in Estonia, Latvia, Lithuania, northern Belarus, east, central and southern Ukraine and Georgia.

Methods of sampling

Methods of birds of prey censuses are traditional, simple and time-consuming, i.e. direct counting (mostly with mapping) of breeding pairs. Then the primary results are extrapolated to larger areas, weighting for the percentages of the various types of habitats. So the final figures calculated in such a manner (usually called expert estimation) always give but a rough indication of the size of raptor populations in the study area. To emphasize the evidently imperfect values of the extrapolations, table 1 presents only basic estimations without a special statistical analysis. The specific figures of population size of raptor species in table 1 are preliminary and open for further corrections.

As for trends of population changes over the last 20–30 years, they are well-marked for many species of birds of prey. These tendencies are also shown in the table 1.

RESULTS

In the territory of European Russia 34 species of birds of prey are recorded breeding. Three more species live south of its Caucasian border: the Shikra (*Accipiter badius*) inhabits southern Azerbaijan, the Lanner (*Falco biarmicus*) and Bonelli's Eagle (*Hieraaetus fasciatus*) are recorded as probably nesting south of the Caucasus mountains. In the past one more species, i.e. the Pallas' Sea Eagle (*Haliaeetus leucoryphus*) had been formally included in the list of European raptors as a questionable breeder. However there were no indications of its nesting there in the twentieth century.

Rough sizes of the populations of 37 raptor species as well as their estimated trend are indicated in table 1.

Table 1. Number of breeding pairs and population trends of raptor populations in European Russia and neighbouring countries (preliminary expert estimation).

Species		Europ. Russia	NE part of the Western Palearctic	Trends	Included in Red Data Book Russia
Osprey	<i>Pandion haliaetus</i>	3,000	4,000	S +	*
Honey Buzzard	<i>Pernis apivorus</i>	100,000	120,000	S +	
Red Kite	<i>Milvus milvus</i>	10?	70	? -	(*)
Black Kite	<i>Milvus migrans</i>	60,000	80,000	- S	
Hen Harrier	<i>Circus cyaneus</i>	15,000	20,000	- -	
Pallid Harrier	<i>Circus macrourus</i>	2,000	5,000	- -	(*)
Montagu's Harrier	<i>Circus pygargus</i>	25,000	40,000	+ S	
Marsh Harrier	<i>Circus aeruginosus</i>	30,000	50,000	+ +	
Goshawk	<i>Accipiter gentilis</i>	70,000	100,000	+ +	
Sparrowhawk	<i>Accipiter nisus</i>	160,000	200,000	+ S	
Levant Sparrowhawk	<i>Accipiter brevipes</i>	3,000	5,000	S -	*
Shikra	<i>Accipiter badius</i>	-	100?	?	
Rough-legged Buzzard	<i>Buteo lagopus</i>	100,000	100,000	S F	
Long-legged Buzzard	<i>Buteo rufinus</i>	1,000	2,000	- S	*
Common Buzzard	<i>Buteo buteo</i>	400,000	500,000	+ S	
Short-toed Eagle	<i>Circus gallicus</i>	1,000	1,500	S -	*
Booted Eagle	<i>Hieraaetus pennatus</i>	300	800	S -	
Bonelli's Eagle	<i>Hieraaetus fasciatus</i>	-	1?	?	
Greater Spotted Eagle	<i>Aquila clanga</i>	800	1,000	- -	(*)
Lesser Spotted Eagle	<i>Aquila pomarina</i>	50	3,500	S +	(*)
Steppe Eagle	<i>Aquila rapax</i>	20,000	30,000	- -	*
Imperial Eagle	<i>Aquila heliaca</i>	300	500	- S	*
Golden Eagle	<i>Aquila chrysaetos</i>	300	400	S -	*
White-tailed Sea Eagle	<i>Haliaeetus albicilla</i>	1,000	1,200	+ S	*
Egyptian Vulture	<i>Neophron percnopterus</i>	50	200	S -	*
Lammergeier	<i>Gypaetus barbatus</i>	30	150	S -	*
Black Vulture	<i>Aegypius monachus</i>	50	150	S -	*
Gryphon Vulture	<i>Gyps fulvus</i>	300	700	S -	*
Gyr Falcon	<i>Falco rusticolus</i>	50	50	- S	*
Saker Falcon	<i>Falco cherrug</i>	100	250	- S	*
Lanner Falcon	<i>Falco biarmicus</i>	-	5	?	
Peregrine Falcon	<i>Falco peregrinus</i>	700	800	S -	*
Hobby	<i>Falco subbuteo</i>	70,000	100,000	+ S	
Merlin	<i>Falco columbarius</i>	30,000	31,000	S -	
Red-footed Falcon	<i>Falco vespertinus</i>	20,000	40,000	- -	
Kestrel	<i>Falco tinnunculus</i>	60,000	100,000	- -	
Lesser Kestrel	<i>Falco naumanni</i>	100?	2,000	- -	(*)

Legend: S = total stability
S + = generally stable with local increases
S - = generally stable with local decreases
S F = generally stable with local fluctuations
+ + = total increase
+ S = general increase with some local stability
- - = total decline
- S = general decline with some local stability
? = trends unknown, size questionable

* = included in the Red Data Book of Russia
(*) = added to the draft list of the 2nd edition