

The Corncrake (*Crex crex*) in Russia (European Part)

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1. Introduction

In the long history of ornithological science in Russia very little attention was paid to the study of the corncrake. The breeding range of the species is large in Russia, and it was considered everywhere, except in periphery zones, as a quite common species with favourable conservation status, and thus as not deserving special surveys. Since the 1950s in different parts of European Russia the decline of the species became noticeable, and was mostly due to the introduction of haying machinery and earlier mowing (BALDAEV 1973, MALCHEVSKY & PUKINSKY 1983, PTUSHENKO & INOZEMTSEV 1968). However, special surveys were not made, and restricted quantitative data obtained during occasional counts (mainly in the day-light) were insufficient for estimating the regional species numbers and trends.

2. Development of knowledge about the corncrake in Russia

In the past there were no special corncrake studies in Russia. At the end of the 1980s some aspects of the corncrake's ecology were studied by Vasily Grabovsky (GRABOVSKY 1993). Since 1994 the corncrake project is in progress in European Russia by the Russian Bird Conservation Union (RBCU). The pilot phase (1994) and large-scaled phases (1995 and 1996) of the project "Corncrake Survey of Central European Russia" were carried out with the support of the RSPB. These phases were aimed at evaluating total species population size and revealing the main corncrake IBAs and habitats. In 1997-1998, the main task was the determination of agricultural and grazing influence on corncrake key areas in European Russia (also with RSPB financial support) (SUKHANOVA 1997).

3. Distribution and important areas of corncrake population

Corncrake in European Russia is a very widespread and common species, but within this vast region it is distributed unevenly. The "core" part of its breeding range, where large numbers and population densities of birds are found, (calculated for the whole area which is suitable for breeding including fields) includes the forest zone. This part of the range is characterised by the complex peculiarities which are favourable for corncrake: a rather low portion of arable land in the total land balance, a significant portion of wet hay meadows and pastures, high landscape mosaic, a well developed pattern of drainage ditches, and relatively large areas which are seldom used for agriculture or are used irregularly. Grazing impact is relatively low in this area, thus corncrakes successfully populate pastures. Perennial crops (ley) are only occasionally cultivated before haying, and thus resemble natural meadows in many ways. Both flooded and dry meadows are characterised by large diversity of grasses and herbs. Noticeable areas are patchily overgrown with shrub thickets.

In the forest-steppe districts a completely different situation is found: the portion of arable land increases, while the portion of hay meadows simultaneously decrease. Landscape is noticeably less mosaic - vast areas of monocultures start to prevail. As the forest-steppe area has larger human population density together with many cattle, the impact on hay meadows and pastures is larger as well. Consequently hay meadows and pastures become less favourable for corncrake, and are characterised by lower species population density.

In the steppe zone, where most areas are arid arable lands, corncrake is a quite rare bird with sporadic distribution.

In the Northern taiga subzone corncrake numbers are also relatively small. Farmland here occupies little area and is concentrated mostly in the river valleys and near human settlements. As most of farmland here consists of wet hay meadows and pastures, corncrake population density is large.

Our surveys have shown that most important corncrake habitats in Russia (and globally) are vast flooded meadows in the wide flood-plains of large rivers within the forest zone. Besides optimal habitat features these areas are favourable for corncrake because of late haying as they remain wet for a long period in summer which makes it difficult for the movement of agricultural machinery.

In 1995 and 1996 the objectives of the corn-

crake project included identification of areas important for corncrake within the frame of "Important Bird Areas" Programme in Europe.

When selecting corncrake IBAs we did not use for this purpose the threshold of 20 breeding pairs suggested by BirdLife International. This criteria is unacceptable for Russia where corncrake breeding concentrations of such size are recorded very often. As corncrake IBAs in European Russia we suggested the areas where species populations are stable enough from year to year and include usually not less than 100 calling corncrake males. Lesser concentration areas were proposed only in cases when the whole complex of breeding birds was of great interest. In total, nine corncrake IBAs were proposed for six regions (Table 1).

Table 1: Some corncrake IBAs in European Russia.

Locality and region	Geographical position	Total open area (km ²)	Number of calling Corncrake males			
			1995		1996	
			min	max	min	max
1. Dedinovo flood-plain of the Oka river (Moscow region)	55° 10'N 39° 18'E	102	400	450	550	600
2. Faustovo flood-plain of the Moskva river (Moscow region)	55° 19'N 38° 36'E	90	150	200	320	380
3. Shilovsky Island (Ryazan' region)	54° 21'N 40° 50'E	81	450	550	450	550
4. Solotcha flood-plain of the Oka river (Ryazan' region)	54° 48'N 39° 50'E	46	100	300	280	300
5. Pokrov flood-plain of the Klyaz'ma river (Vladimir region)	55° 58'N 39° 30'E	13.5	119	119	68	68
6. Meadows in the Chernukhino area (Vologda region)	60° 03'N 40° 06'E	5.2	54	54	66	66
7. Msta flood-plain (Novgorod region)	58° 45'N 33° 19'E	12.7	135	140	100	100
8. Polomet' (Novgorod region)	58° 03'N 32° 42'E	9.4	65	70	25	30
9. Eastern coast of the Courish Bay (Kaliningrad region)	55° 05'N 21° 11'E	61	60	120	70	120

4. Size and development of national corncrake population

4.1. Size of national corncrake population

Expert estimate of corncrake numbers in European Russia (10,000-100,000 pairs, TOMIALOJC 1994) is a very approximate guess (scale: 0) and has no quantitative background. Results of the large-scale project on the surveys of corncrakes enabled estimates of real species numbers throughout its whole breeding range in European Russia: it ranges from 1,000,000 (min.) to 1,540,000 (max.) calling males (scale: 2). It is obvious that there is even underestimation as single counts were made and it turned out to be impossible to calculate the numbers of birds which inhabit forest clearings. Probably not less than 1,000,000 calling males (scale: 0) in the Asian part of Russia (MISCHENKO 1996, MISCHENKO et al. 1997).

4.2. Development of population

a. National population trend

There are no comparable data for the last 10, 25 and 50 years, but from the 1950s to 1970s in different parts of European Russia number a decline of the species number really took place (see paragraph 1). In recent years population is quite stable, in some regions there is a low increase.

b. Is data more accurate or have things really changed?

The total corncrake number in European Russia in comparison with the expert estimate (see paragraph 4.1.) is obviously not the result of population increase, but of more precise data; the figures which were used before this project were based only on rough estimates not having good census data to back it up. In recent years the situation has really changed in comparison with the 1950s-1970s.

c. Examples of population trend in restricted areas

In 1994 repeated surveys of corncrake calling males were carried out in the breeding season in restricted areas of the three regions in Central Russia. In all these places surveys were done before (tables 2-5) (MISCHENKO et al. 1994). Since one of the main tasks of the pilot project in 1994 was the determination of corncrake population trends in the pilot areas on the basis of comparison with the data of the previous surveys, we could not use unified techniques, but stuck to the techniques used in these areas before. In all pilot areas (Tables 2-5) the survey of calling males was carried out in early morning or late evening hours. When using data from repeated surveys in the tables, we presented the highest figures for density (or numbers) from several surveys.

Table 2: Population trend of corncrake males in the Kharovskiy District of Vologda Region.

Year	Plot No. 1			Plot No. 2		
	n	S (km) ²	density per km ²	n	S (km) ²	density per km ²
1970 - 1976 (average)	11	2.0	5.5	2	1.4	1.4
1994	17	3.7	4.6	5	2.1	2.4

Table 3: Population trend of corncrake males in Manturovskiy District of Kostroma Region.

Year	Plot No. 1			Plot No. 2		
	n	S (km) ²	density per km ²	n	S (km) ²	density per km ²
1982	17	5.42	3.1	-	-	-
1983	14	5.42	2.6	-	-	-
1985	8	5.42	1.5	28	36.0	0.8
1994	13	5.42	2.4	54	36.0	1.5

To estimate number dynamics for recent years (1995-1997), we conducted repeated counts on the Dedinovo flood-plain (Moscow Region) and in the Zavidovo Reserve (Tver' Region). Repeated counts were made on the same plots as in the previous years, in night hours. Table 6 shows that in the Dedinovo flood-plain total corncrake numbers and density in 1997 were lower than in 1996 and 1995. The situation in the Zavidovo Reserve was vice versa: Corncrake numbers were slightly higher in 1997, than in 1995 (we did not survey this area in 1996). These differences between two areas could be caused by their different wet conditions. Absence of spring flood on the Oka River flood-plain caused abnormal soil aridity in May and in early June. On the contrary, meadows in the Zavidovo reserve are situated not far from Ivan'kovo Reservoir, where in Spring and Summer 1997 the water was artificially kept at a high level, that provided a wetter habitat. Differences in the wetness certainly affected food availability and abundance.

d. Estimate on future national population (trend) in 5 years (10 years)

Obviously there will be no corncrake reduction in the next five years. Our prognosis is that the total population in European Russia will be probably be stable, with a tendency to increase in North-West districts. It is not possible to make a prognosis for ten years. Total estimates for all of European Russia would not be possible as it is very difficult and expensive. But continuation of monitoring in different places (see paragraph 4.2.c) is possible with BirdLife or RSPB support.

e. Reasons for population trend

Recent stability or even low increases in the corncrake populations numbers in Russia are explained by the extensive agriculture with late hay-mowing. Due to the crisis in agriculture, the input of pesticides and fertilisers now is very low; considerable areas of meadows are not mowed before late August.

Table 4: Population trend of corncrake males in the Lyubytinskiy District of Novgorod Region.

Year	Dry meadows			Flood-plain meadows		
	n	Route length km	density per km ²	n	Route length km	density per km ²
1984	8	6.0	7.0	9	6.0	12.0
1994	1	2.8	1.1	4	3.3	2.4

Table 5: Population trend of corncrake males in the Lotoshinskiy District of Moscow Region.

Year	Plot No. 1			Plot No. 2		
	n	S (km) ²	density per km ²	n	S (km) ²	density per km ²
1987	5	2.2	2.3	4	1.5	2.7
1988	7	1.8	3.9	5	1.5	3.3
1994	4	2.0	2.0	9	1.9	4.8

Table 6: Recent population trend of corncrake males in two restricted areas.

	1995			1996			1997		
	n	S (km) ²	density	n	S (km) ²	density	n	S (km) ²	density
Zavidovo reserve	99	21.1	4.7	-	-	-	108	21.1	5.1
Dedinovo flood-plain	156	16.7	9.3	233	16.7	13.9	140	16.7	8.4

5. Threats to the corncrake population

The main threat is the mechanisation of hay and silage mowing. It is not too serious for the Russian corncrake population on the whole now. The main influence of this factor on the corncrake population is in the forest-steppe and steppe zones. But in many areas agriculture could switch to modern technology in the next decade. This could bring about significant reductions in corncrake numbers, as has occurred in Western European countries.

6. Conservation status

In most parts of Russia the corncrake is a quarry species. But hunting of this species is unpopular and it is not an essential factor, influencing the number.

In some regions where numbers are not high, the corncrake is protected under local law: it is included in the Red Data Books of the Republic of Karelia and Arkhangelsk Region and regional lists of rare animals of some regions. It is included in the Appendix of the Russian Red Data Book as a species requiring control, but not special protection.

7. Conservation projects

No conservation measures have been undertaken specifically for corncrakes although the species is protected within strict nature reserves (zapovedniks), local or temporary reserves (zakazniks) and national parks along with other bird species. In the past there were no corncrake conservation projects in Russia.

8. Ongoing or planned conservation or study projects

Ongoing project, 1994-1998 (see paragraph 2), is not only scientific, but also conservational. During this project new corncrake IBAs were found and included in the national IBA List. Special recommendations for agricultural managers

and workers for the species protection will be prepared on the results of the project.

The corncrake was selected as "Bird of the Year 1996". It was organised for and carried on the campaign to attract public attention to conservation of corncrakes and their habitats in Russia.

For European Russia a project is planned for transmitters for short-distance telemetry. The main task of this project is to reveal "survival habitats" (mainly in IBAs) where the corncrake's broods normally concentrate and survive during the hay-moving process, and to prepare special recommendations for the protection of such habitats. Also corncrake surveys in the Asian part of Russia are planned. Both projects should be carried out by RBCU.

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