

**CONSERVATION OF AGRICULTURAL LANDSCAPES AS THE HABITATS  
OF RARE WADERS AND OTHER BIRDS SPECIES IN THE TERRITORY  
OF PROSPECTIVE NATURE PARK «CRANE COUNTRY»**

© 2022. T.V. Sviridova\*, O.S. Grinchenko\*\*

\*A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences  
Russia, 119071, Moscow, Leninskiy Avenue 33. E-mail: t-sviridova@yandex.ru

\*\*Water Problems Institute of the Russian Academy of Sciences

Russia, 119333, Moscow, Gubkina Str. 3. E-mail: olga\_grinchenko@mail.ru

Received Month 02, 2022. Revised Month 02, 2022. Accepted Month 03, 2022

Two projects on conservation of rare waders in agricultural landscapes in the north of Moscow Region (Russia) were carried out with the support of the Rufford Foundation (RSGF) in 2012-2014 in an area known as the Homeland of the Crane – Important Bird Area, included also in a shadow list of Ramsar Sites. In 2020, during design of the regional Natural Park, monitoring of breeding waders was conducted within the same area where abundance and distribution estimates have been made in 2012. This area is a mosaic of various wetlands (raised sphagnum bogs, birch and black alder forests, willow swamps and oxbow lakes) alternating with agricultural lands such as floodplain meadows, hayfields, arable lands, pastures and abandoned lands. For highly developed Moscow Region it is a unique locality with still existing habitats suitable for Common Cranes *Grus grus* and many other rare birds, including declining and threatened breeding waders – Black-tailed Godwit *Limosa limosa*, Eurasian Curlew *Numenius arquata* and Great Snipe *Gallinago media*.

Plans to establish Nature Park in this area have been developed since the end of XX century. However, implementation of these plans has been suspended in the 2010s, and conservation community has made efforts to maintain the value of the area until establishment of Natural Park there. Special attention in these efforts was paid to conservation of rare breeding meadow waders. These efforts were successful as above-mentioned wader species along with other birds still breed in the area in relatively high numbers. In 2020 a project of Nature Park «Crane Country» with new extended boundaries was included in the recent official governmental «Scheme of development and localization of SPAs in Moscow Region». Almost half of an area of prospective Nature Park is represented by agricultural landscapes.

**Keywords:** rare bird, meadow waders, farmland, nature-friendly agriculture, Black-tailed Godwit, Eurasian Curlew, Great Snipe, Crane Homeland, Nature Park «Crane Country», ecological education.

**DOI:** 10.24412/2542-2006-2022-1-116-133

*The study area and the origin of work.* The projects «Conservation of waders in the agricultural landscapes (rare bird species and rehabilitation of agriculture)» and «Conservation of agricultural landscapes for protection of rare meadow waders» was carried out under support of Rufford Foundation in 2012-2014 in the north of the Moscow Region, in an area known as the «Crane Homeland». In 2020, during design of the regional Natural Park, monitoring of breeding waders was conducted within the same area where abundance and distribution estimates have been made in 2012.

It is an important bird area, included in a shadow list of Ramsar Sites. This territory is a mosaic of various wetlands alternating with agricultural lands such as floodplain meadows, hayfields, arable lands, pastures and fallows. Such mosaic landscape is favourable for many birds and other animals (Photo 1). In total, 247 bird species have been recorded in the «Crane Homeland», of which 63 are enlisted in the Red Data Book of the Moscow Region (2018) and 19 were included in the

Red Data Book of the Russian Federation (2001; Grinchenko et al., 2020). Many rare species have survived until now at the «Crane Homeland» also in habitats other than undisturbed and difficult to access forests and bogs. This level of species diversity is rarely observed in highly economically developed and densely populated Moscow Region (centre of the European Russia).



**Photo 1.** View of the study area (photo by I.S. Smetanin).

Since 1990s a system of Specially Protected Areas (SPAs) has covered at study area approximately 360 km<sup>2</sup>, however, a single reserve Apsarevsky Site) includes protected farmlands (50 km<sup>2</sup>) in the «Crane Homeland». Over 1,500 cranes form pre-migration assemblages there in August-September (Smirnova et al., 1999; Grinchenko et al., 2015). These farmlands is a unique locality with still existing habitats suitable for breeding of many other rare birds, including declining and threatened waders: Black-tailed Godwit (*Limosa limosa*), Eurasian Curlew (*Numenius arquata*) and Great Snipe (*Gallinago media*).

According to official governmental «Scheme of development and localization of SPAs in Moscow Region» (approved by the Moscow Regional Government on February 11, 2009) existing SPAs and all adjacent farmlands (~300-350 km<sup>2</sup>) are proposed for inclusion into regional Nature Park «Crane Country» with view of protecting rare birds, in particular waders. However, implementation of these plans has been suspended since 2011. Thus, urgent measures were undertaken by us during the last decade to prevent crash of wader population caused by negative effects of agricultural rehabilitation with main aim to conserve these populations regardless of the progress in the Nature Park establishment.

The main objectives of activities became: data collection on habitat dynamics of the rare breeding farmland wader species; research on distribution and habitat use by migrating waders; data collection on current and planned economic use of territories by various land users and landowners; introduction of nature-friendly methods and practices in the work of local agricultural enterprises. An important task was also the development of environmental education of local people.

All birds of present-day agricultural landscapes are strongly affected by type and intensity of agricultural exploitation (Butler et al., 2010; Mischenko et al., 2019; Sviridova et al., 2020a, b). During the last two decades an abandonment of farmlands in Central Russia was unfavourable for breeding waders of haylands and pastures, because these habitats have over-grown with high dense grass and shrubs (Mischenko et al., 2019; Grinchenko et al., 2020; Photo 2).



**Photo 2.** Afforestation of abandoned agricultural lands in late 1990s (left) and in the 2010s (right; photos by T.V. Sviridova).



**Photo 3.** Current polarization of agricultural lands (left; photo by I.S. Smetanin) and new drainage in the “Crane Homeland” (right; photo by T.V. Sviridova).

Since 2011 the process of agricultural rehabilitation in the “Crane Homeland” area led to simultaneous ploughing across vast areas of meadows and to initiation of new drainage activities, which led also to polarization of the agricultural lands (Photo 3). New threats to meadow waders, other than land abandonment, emerged with an appearance of new landowners, who had no appropriate information about biodiversity value of their lands.

### Materials and Methods

Our studies were carried out in the Taldom and Sergiev Posad districts, in Moscow Region. This territory, including the Dubna Lowland and the adjoining Taldom Upland, is part of the southern Upper Volga Lowland (N 56°40', E 37°40'). The study area was thoroughly described earlier (Kontorshchikov et al., 2014; Sviridova et al., 2016b).

The numbers of Northern Lapwing (*Vanellus vanellus*), Black-tailed Godwit, Eurasian Curlew, Common Redshank (*Tringa totanus*) and Marsh Sandpiper (*T. stagnatilis*) were estimated annually at two model plots: in the Apsarevsky Site of the “Crane Homeland” nature reserve (~48 km<sup>2</sup>), and in the floodplain of the Dubna River near Nushpoly village (~5 km<sup>2</sup>; Sviridova, 2014; Sviridova et al., 2016b). In 2020 during the field works, aimed to design the territory of the future Nature Park,

breeding waders were monitored in the agricultural area (about 350 km<sup>2</sup>), the same one that was studied in 2012, during the projects, supported by the Rufford Foundation. Censuses of breeding waders were made by mapping the locations of territorial pairs (Bibby et al., 1993). The bulk of work was performed in the same period (2<sup>nd</sup> half of April-May) in different years, without specially searching for the nests of all pairs.

Great Snipes were studied in May-June, in an area of about 180 km<sup>2</sup>, where all lekking sites was found. To assess the number dynamics of Great Snipes at leks absolute counts were carried out: flushed birds were counted during rapid walk of researchers through the lekking arena (Sviridova et al., 2018; Bazhanova et al., 2019).

Along with bird censuses, we mapped the location and current state of different habitats (Sviridova, 2014). We used GPS and maps of regional land management (scale 1:20000), as well as available Landsat satellite imageries. The spatial distribution of waders and the dynamics of agricultural habitats were analyzed in the GIS MapInfo 8.5.

In addition to collecting and processing data, an environmental management of agricultural lands and educational ecological activities for the local people were undertaken.

The bird species names are given according to the “List of Birds of the Russian Federation” (Koblik et al., 2006).

### Results and discussion

There are several rare wader species in the «Crane Homeland» area which preferred to settle in 1990s mostly on meadows and fields with perennial grasses (Photo. 4; Sviridova et al., 2016a). Three of them (Black-tailed Godwit, Eurasian Curlew and Great Snipe) are globally decreasing and threatened (IUCN, 2021). Common Redshank and Marsh Sandpiper are included in the Red Data Book of the Moscow Region (2018).

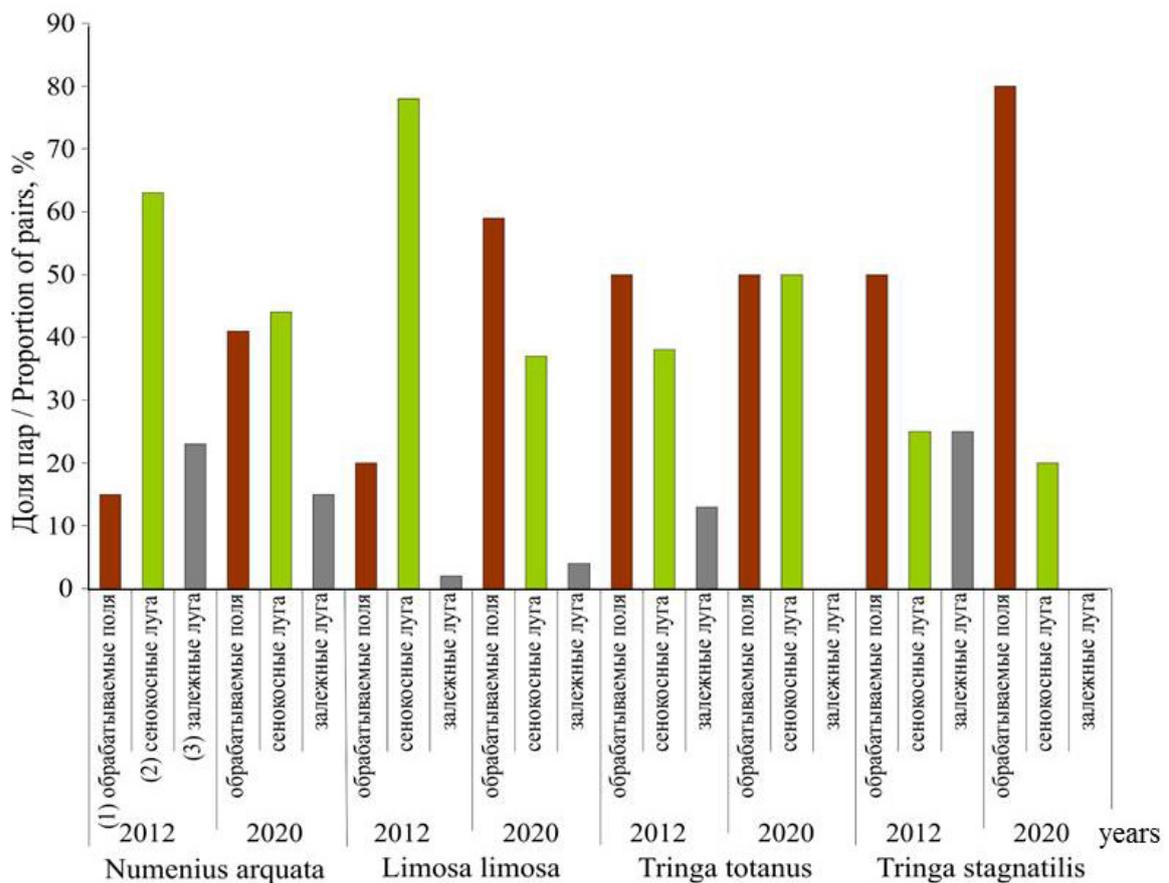


**Photo 4.** Meadow waders of the «Crane Homeland» area. Black-tailed Godwit *Limosa limosa* (1), Eurasian Curlew *Numenius arquata* (2), Great Snipe *Gallinago media* (3), Common Redshank *Tringa totanus* (4), Marsh Sandpiper *Tringa stagnatilis* (5), Northern Lapwing *Vanellus vanellus* (6; Photo 1-2, 4-6 by I.V. Bartashov, 3 by V.V. Zabugin, background photo by M.N. Ivanov).

In addition, in 2012-2014 on two model plots within surveyed area we analysed dynamics of numbers of the Northern Lapwing, a common farmland wader (more details on this species see in Sviridova et al., 2016a).

*Monitoring of numbers and state of habitats of focal wader species.* According to the data gathered in 2012 and 2020, the breeding population of Common Redshank and Marsh Sandpiper has been very low but stable during the last decade – 8-10 and 4-5 pairs, respectively. Certain decrease occurred in numbers of Eurasian Curlews – from 51 in 2012 to 31-38 pairs in 2020 and Black-tailed Godwits – from 46-51 in 2012 to 27-28 pairs in 2020. However, this tendency was probably caused by abnormal weather in season 2020 and needs further monitoring for confirmation. Also abandonment of vast farmland areas and decline of these two species across European breeding range could contribute to the decline observed in 2020.

As in 2012, waders showed strong preference for cultivated versus abandoned lands (Fig. 1), and 85-100% of pairs of the Eurasian Curlew, Black-tailed Godwit, Common Redshank and Marsh Sandpiper inhabited arable lands and hayfields. However, a degree of agricultural polarization increased in 2020 in comparison with 2012. On the one hand we now observe vast abandoned lands of low suitability for breeding of typical meadow species; on the other hand, we increasingly observe intensively cultivated fields (Photo 5). In such conditions, breeding waders continued to show strong preference for cultivated against abandoned lands and the proportion of pairs settled in arable lands increased compared to 2012 in the three species – Eurasian Curlew, Black-tailed Godwit and Marsh Sandpiper (Fig. 1).

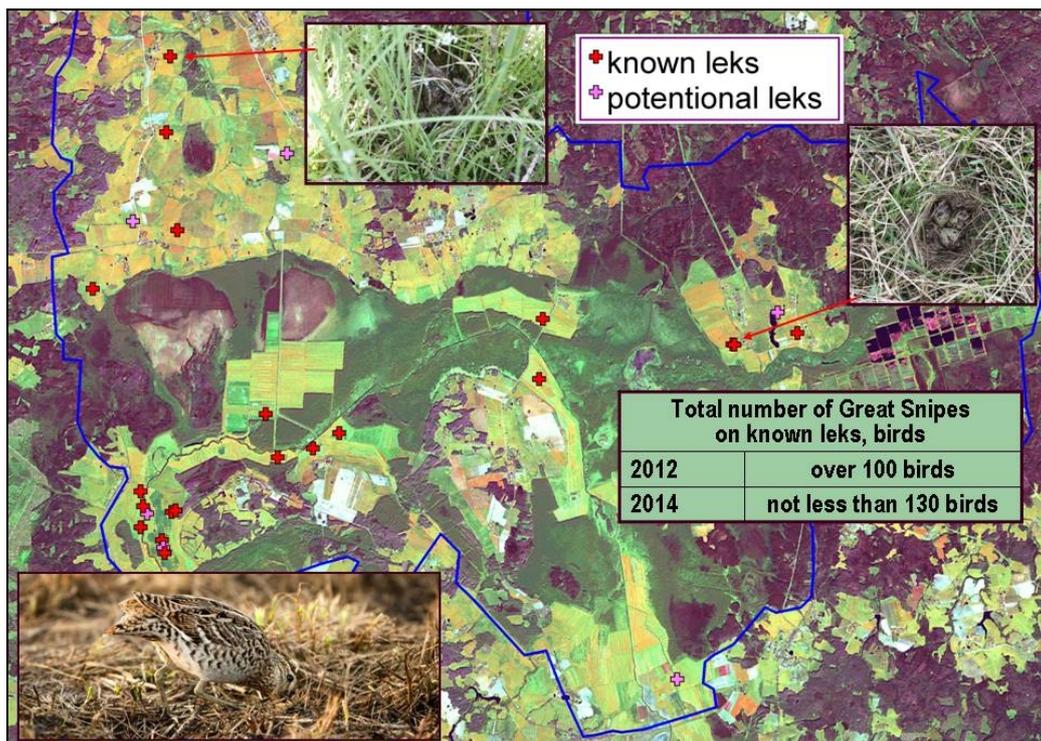


**Fig. 1.** Proportion of waders inhabiting different kinds of agricultural lands in the north of Moscow Region: 1 – cultivated arable land (ARBL), 2 – hay land, 3 – abandoned grassland (ABND).

Although rare waders can nest on arable fields nest survival is extremely low there because of ploughing or depredation. Thus, in 2011-2013 the Black-tailed Godwits and Eurasian Curlews bred in newly ploughed 500 ha as well as Northern Lapwings; however, for all species the nesting success in that period was mostly low. In 2012 the first nests of all species were destroyed during ploughing and sowing of potatoes or rape on this 500 ha area of farmland. Only half of Northern Lapwings made re-nesting attempts after loss of clutches due to agricultural operations, while rare waders usually did not make re-nesting attempts in either year (Sviridova et al., 2016a). We did not analyze nest survival in 2014-2020, but it is a priori clear that situation on arable lands is the same in most years.

In 2014 a support by Rufford Foundation allowed to start more regular monitoring of Great Snipe population in the north of Moscow Region. In total, 100-130 individuals of Great Snipe on several leks were counted in the study area in 2012 and 2014 (Fig. 2; Sviridova et al., 2016b). In 2012 assessment showed that 80% of Great Snipes gathered on floodplain meadows, while in 2020 about 40% of Great Snipes were counted in floodplain meadows and 60% in watershed. Reasons for this redistribution still need to be studied.

The study of Great Snipes was continued in 2015-2020 and its results were reported in several recent publications (Sviridova et al., 2018; Bazhanova et al., 2021). However, we still have to undertake more focused research of this species which ecology, distribution and numbers of breeding population in the area remain in many parts unclear.

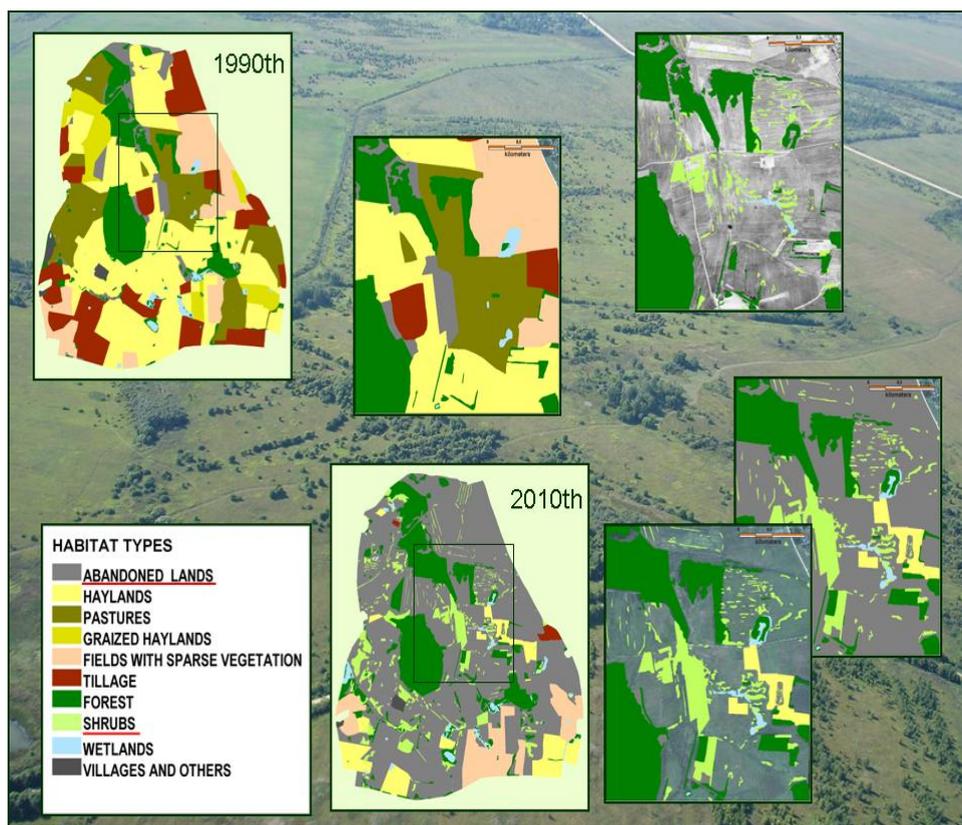


**Fig. 2.** Locations of the Great Snipe leks found in 2012 and 2014 (Photos by V.V. Zabugin).

Activities in a framework of the RSGF project in 2012-2014 were not limited to assessment of breeding waders' populations and monitoring of wader numbers on permanent study plots. They also included data collection on habitat dynamics (Photo 5; Fig. 3), agricultural rehabilitation in the area, distribution and habitat use by migrating waders and other aspects of wader conservation and environmental education in the «Crane Homeland». The data on waders and agriculture were digitized and compiled into GIS database (Fig. 3).

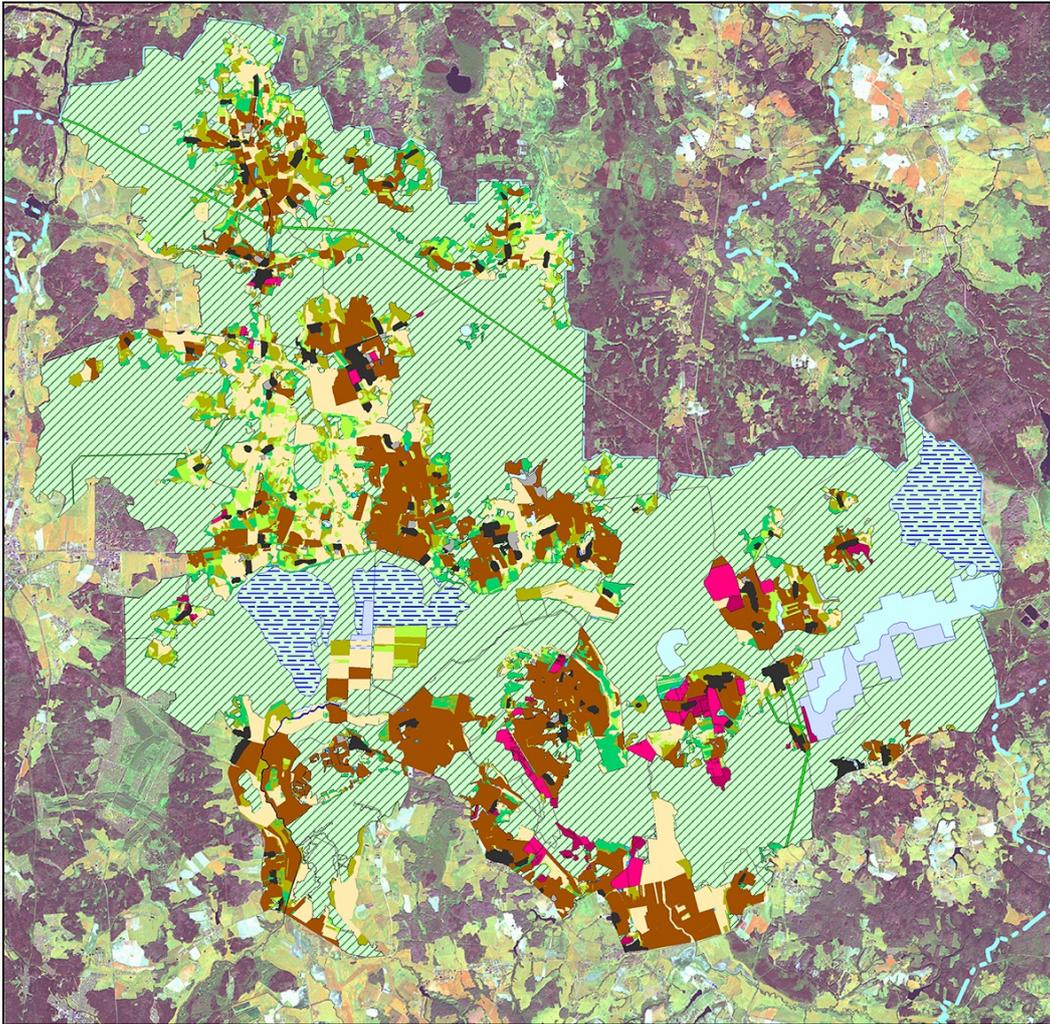


**Photo 5.** Grasslands moderately used for agriculture in 1990s (hayland, pastures) were then significantly overgrown by forest (left) or converted to vast arable lands (right) by 2020s (photos by T.V. Sviridova).



**Fig. 3.** The mapping and GIS analysis of habitat dynamics.

We have continued to implement all these activities, among which in particular should be mentioned preparation in 2020 of a map of current conditions of agricultural lands within the area of prospective Nature Park (Fig. 4).



**Fig. 4.** Current state of agricultural lands on the territory of prospective Natural Park “Crane Country” (prepared by T.V. Sviridova). *Legend:* 1-3 – farmlands, afforested to various degree, 4 – abandoned lands without trees/shrubs, 5 – cultivated farmlands, 1a-5b – villages, agricultural buildings, etc., 6 – forests, 7 – water bodies, 8 – former peat mining areas, 9 – large areas of forested and open bogs.

### Implemented Conservation Measures

*Negotiations with land users on the problem of meadow conservation.* In 2012-2014 we used the data on waders and current agriculture to develop the first maps of hot-spots in agricultural landscapes in the «Crane Homeland». These maps highlighted identified conflicts between agriculture and breeding waders. After that, the agreements were achieved with 4 landusers aiming to decrease total areas of ploughed meadows or to recultivate grasslands on parts of these lands. Two of these agreements allowed us to prevent drastic changes of Eurasian Curlew nesting habitats on lands of these enterprises already in 2012.

Most land-holders of farmlands were informed in the course of personal communications about needs of conservation of rare meadow waders in the «Crane Homeland» already in 2012-2014 (Photo 6). However, during two recent decades a problem of frequent change of landowners of farmlands within the prospective territory of the Nature Park have emerged. Therefore, negotiations with agricultural enterprises and farmers on solutions for identified problems have turned into continuous process which needs to be carried out almost annually.



**Photo 6.** Negotiations with director of agricultural enterprise (left; photo by O.S. Grinchenko) and nest of Eurasian Curlew which was detected, marked and saved by local agronomist during spring sowing (right; photo by T.V. Sviridova).

Thus, in the end of 2020 large area of the most valuable farmland in the «Crane Homeland» reserve was acquired by new landowner. Now this is a new principal landowner, holding 70% of lands in already existing farmland reserve (Apsarevsky Site). This landowner aimed to develop animal husbandry, which is the most suitable activity for this natural site. However, most of these lands belong to abandoned grassland or young forests, so the owner initiated deforestation and plowing of vast territories. In 2021, we basically agreed with him that a gradual rather than rapid plowing of his grasslands needs to be implemented. In the nearest years it is necessary also to negotiate with this landowner on sowing of perennial late-mown grasses on fields, which are most suitable for breeding meadow waders.

In the part of the reserve, where lands are rented by another agricultural enterprise, only arable fields are present. In 2020-2021 we started to work with this owner on protection of nests of rare waders from plowing and other destructive agricultural operations (Photo 6). This activity has already become a common practice on valuable farmland in Europe, but in Russia farmers are not familiar with it and they usually do not want to undertake necessary measures.

*Education.* Educational activity is one of the most important parts of any conservation activities undertaken in the “Crane Homeland”, including conservation initiatives on farmland birds, not just rare waders. We use educational posters and nice colour stickers for promotion of sustainable agriculture in negotiations with farmers and workers of enterprises. In particular, educational booklet dedicated to the problem of conservation of meadow waders and to practical ways of mitigating adverse impacts of agriculture on rare waders was published with the support of Rufford Foundation in 2012 and is still helpful to us in negotiations with new landowners.

We are also regularly working with schoolchildren from local communities on various aspects of «love to nature and birds». One of the most notable events is a folklore and ecological celebration «The Sowing of the Crane Field», based on an old Russian tradition to leave an unharvested strip of grain in the fields for the animals to feed on. Every May children from the schools of the Taldom district participate in sowing of a field, reserved for cranes. This field is never mowed, and Eurasian Cranes feed there, when their pre-migratory assembly starts to form in the autumn. In the autumn, the annual «Crane Festival» takes place in the reserve, an eco-educational excursion program for children and adults. Both events are celebrated for over 20 years, conducted by our own team, with the help of the Culture Committee and Department of Education of the Taldom district (Photo 7).

This work has started to bring real results. For example, a participant of the «Sowing of the Crane Field» festival in 2021 happened to be a kid of agronomist, who saved 3 nests of Eurasian Curlew on arable fields in 2021 (Photo 6).



**Photo 7.** «Sowing of the Crane Field» campaign-2021 and Crane Festival-2020.  
Photos by O.S. Grinchenko.

*Efforts to establish Nature Park «Crane Country».* In parallel to wader studies and other above-mentioned activities, our team continued to lobby the establishment of a Nature Park in the north of Moscow Region during all the last years. Eventually, in 2019-2020 the Ministry of Ecology and Natural Resources of Moscow Region financed the work on projecting this Park. In 2019-2020 our team in close cooperation with Nature Conservation Fund «Verkhovye» (Russia, Moscow) prepared scientific background of the Nature Park «Crane Country» (Grinchenko et al., 2020).

Among others items, our work included new field survey in 2020 with view of current assessment of nature biodiversity at the territory of prospective Nature Park. New assessment of biodiversity of rare waders on agricultural lands was a part of this survey. This allowed us to compare the data on waders in 2020 and 2012 (Fig. 1). Data on spatial distribution of rare waders in 2012-2014 and 2020 along with the assessment of current condition of agricultural lands made it possible to develop appropriate zonation of farmlands in the area of prospective Nature Park (Grinchenko et al., 2020; Fig. 5).

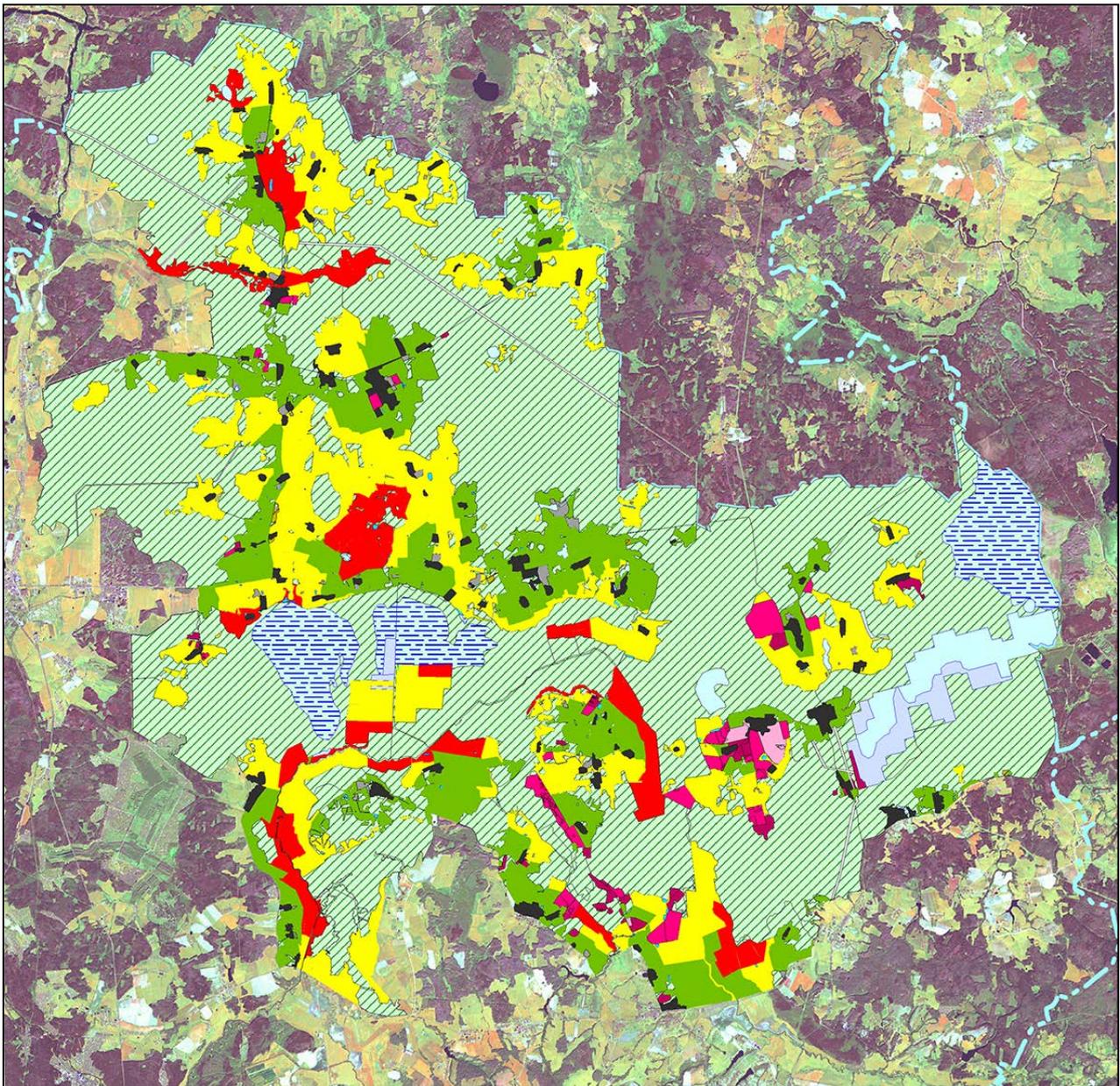
Our research in 2020 allowed to expand boundaries of the prospective Nature Park New boundaries were included in an updated «Scheme of development and localization of SPAs in Moscow Region», which was approved by Moscow Regional Government on August 16, 2021 (Fig. 6).

### Conclusions

1. Waders are one of the most vulnerable groups of birds of the agricultural landscapes. The main threat to their existence is the destruction of meadow habitats with moderate agricultural use.

2. Currently agricultural lands are polarized in the «Crane Homeland» reserve, which is unfavorable for the sustainable existence of breeding populations of rare wader species, as birds prefer to nest in cultivated fields rather than abandoned meadows. However, because the implementation of intense agricultural technologies in recent years, it reduces their reproduction success.

3. The obtained data on the dynamics of the numbers and distribution of rare waders, breeding in agricultural lands, and the assessment of the current state of agricultural lands, made it possible to develop zoning of the territory of the future Nature Park, as well as to increase its area by including newly identified habitats of rare species.



**Fig. 5.** Zonation of farmland in the area of prospective Nature Park «Crane Country». *Legend:* 1 – key zone, most valuable for conservation of biodiversity, 2 – buffer zone, which supports a significant part of rare protected, game and other species of fauna of the park, 3 – peripheral zone, primarily important for birds using it on migrations, 1a-5b – villages, agricultural buildings, lands planned for building of country houses, etc., 6 – forests, 7 – water bodies, 8 – former peat mining areas, 9 – large areas of forested and open bogs.

4. Negotiations with land users on the problem of meadow conservation, protection of rare bird species and implementation of nature-friendly methods of agriculture, as well as ecological education of the local residents, allows to preserve the avifauna of the agricultural landscapes of the «Crane Homeland» reserve, until the state Nature Park «Crane Country» will be established.



**Fig. 6.** Nature Park territories in officially approved «Scheme of development and localization of SPAs in Moscow Region» in 2009 (left) and 2021 (right). Entire area of prospective nature Park is shown with cross-hatching.

*Acknowledgements.* We would like to thank our colleagues, who helped us collect data on the rare species of waders of the “Crane Homeland”, and those, who organized and conducted the eco-education events. Special thanks to all nature photographers, who provided excellent photos for use in educational part of our work.

*Funding.* Field works and eco-educational events in 2012-2014 were conducted with the financial support of The Rufford Foundation, UK.

The materials were analyzed and the text, written by T.V. Sviridova, are part of the «Fundamental Problems of Wildlife Protection and Rational use of Bioresources» of A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences, State Registration No. AAAA-A18-118042490055-7, State Order No. 0089-2021-0010.

The materials were analyzed and the text, written by O.S. Grinchenko, are part of the State Order of the Ministry of Education and Science, «Fundamental Problems of Wildlife Protection and Rational Use of Bioresources» (No. 0089-2021-0010), as well as «Research of Geocological Processes in Hydrological Systems of Land, Formation of the Quality of Surface and Ground Waters, Problems of Water Resources Management and Water Use under Conditions of Climate Change and Anthropogenic Impacts» (No. FMWZ-2022-0002) of the State Order of the Water Problems Institute of the Russian Academy of Sciences.

## REFERENCES

1. Bazhanova AA, Sviridova TV, Solovyov SM. Activity and population dynamics of great snipes on leks of the northern Moscow region [Aktivnost' i dinamika chislennosti dupeley na tokakh severnogo Podmoskov'ya]. *Ornithology*. 2019;43:74-88.
2. Grinchenko OS, Volkov SV, Sviridova TV. Changes in the breeding number, migration phenology and structure of autumn congregation of the common Crane under the

## REFERENCES

1. Бажанова А.А., Свиридова Т.В., Соловьёв С.М. 2019. Активность и динамика численности дупелей на токах северного Подмосковья // Орнитология. Т. 43. С. 74-88.
2. Гринченко О.С., Волков С.В., Свиридова Т.В. 2015. Изменение гнездовой численности, фенологии миграции и структуры осеннего скопления серого журавля под

- influence of weather and anthropogenic factors [*Izmeneniye gnezdovoy sovokupnosti, fenologii i struktury osennego skopleniya serogo zhuravlya pri vzniknovenii pogodno-klimaticheskikh i antropogennykh faktorov*]. *Cranes of Eurasia (Biology, Distribution, Captive Breeding)* [*Zhuravli Yevrazii (biologiya, rasprostraneniye, razvedeniye)*]. Moscow, Nizhny Tsasuchey, 2015;5:212-225 (In Russian).
3. Koblik EA, Redkin YaA, Arkhipov VYu. List of birds of the Russian Federation [*Spisok ptits Rossiyskoy Federatsii*]. Moscow: Tovarishestvo nauchnykh izdaniy KMK, 2006:256.
  4. Kontorshchikov VV, Grinchenko OS, Sviridova TV, Volkov SV, Sharikov AV, Khromov AA, Zubakin VA, Koltsov DB, Konovalova T V, Smirnova EV, Ivanov MN, Makarov AV, Sevryugin AV. Birds of the "Crane Homeland" and environs: distribution and abundance [Ptitsy Zhuravlinoy Rodiny i okrestnostey: rasprostraneniye i chislennost']. *Herald of the Crane Homeland [Vestnik Zhuravlinoy Rodiny]*. Moscow, 2014;2:76-77.
  5. Red Data Book of the Moscow Region, 3<sup>rd</sup> ed. [*Krasnaya kniga Moskovskoy oblasti. 3-ye izd., pererab. i dop.*]. Moscow Region: Verkhovye, 2018: 809 (In Russian). Available at <https://mep.mosreg.ru/download/document/1966403> (Date of Access 10/11/2021).
  6. Red Data Book of the Russian Federation (Animals) [*Krasnaya kniga Rossiyskoy Federatsii (zhivotnyye)*]. Moscow: AST, Astrel, 2001: 864 (In Russian).
  7. Sviridova TV. Peculiarities of nesting of waders on arable land near Moscow in 1980-2000 [Osobennosti gnezdovaniya kulikov na pakhotnykh ugod'yakh Podmoskov'ya v 1980-2000 gg.]. *Ecology*. 2014;4:287-293.
  8. Sviridova TV, Koltsov DB, Grinchenko OS, Volkov SV. Waders under ecological-agricultural management, collapse, and rehabilitation of agriculture in Moscow Region [*Kuliki v usloviyakh ekologo-sel'skokhozyaystvennogo upravleniya, spada i vrozozhdeniya razvitiya khozyaystva v Podmoskov'ye*] *Proc. of the X Anniversary Conference of the Working Group on Waders* влиянием погодно-климатических и антропогенных факторов // Журавли Евразии (биология, распространение, разведение). Вып. 5. М.-Нижний Цасучей. С. 212-225.
  3. Коблик Е.А., Редькин Я.А., Архипов В.Ю. 2006. Список птиц Российской Федерации. М.: Товарищество научных изданий КМК. 256 с.
  4. Конторщиков В.В., Гринченко О.С., Свиридова Т.В., Волков С.В., Шариков А.В., Хромов А.А., Зубакин В.А., Кольцов Д.Б., Коновалова Т.В., Смирнова Е.В., Иванов М.Н., Макаров А.В., Севрюгин А.В. 2014. Птицы Журавлиной Родины и окрестностей: распространение и численность // Вестник Журавлиной Родины. Т. 2. М. С. 76-77.
  5. Красная книга Московской области. 2018. 3-е изд., перераб. и доп. Московская область: Верховье. 809 с. [Электронный ресурс <https://mep.mosreg.ru/download/document/1966403> (дата обращения 10.11.2021)].
  6. Красная книга Российской Федерации (животные). 2001. М.: АСТ, Астрель. 864 с.
  7. Свиридова Т.В. 2014. Особенности гнездования куликов на пахотных угодьях Подмосковья в 1980-2000 гг. // Экология. № 4. С. 287-293.
  8. Свиридова Т.В., Кольцов Д.Б., Гринченко О.С., Волков С.В. 2016а. Кулики в условиях эколого-сельскохозяйственного менеджмента, спада и возрождения сельского хозяйства в Подмосковье // Вопросы экологии, миграции и охраны куликов Северной Евразии: материалы 10-й юбилейной конференции Рабочей группы по куликам Северной Евразии, 3-6 февраля 2016 г. Иваново: Ивановский государственный университет. С. 327-334.
  9. Свиридова Т.В., Кольцов Д.Б., Гринченко О.С., Зубакин В.А., Конторщиков В.В., Волков С.В. 2016б.

- of Northern Eurasia “Problems of Ecology, Migration, and Conservation of Waders in Northern Eurasia”, February 3-6, 2016 [Materialy 10-oy yubileynoy konferentsii Rabochey gruppy po kulikam Severnoy Yevrazii “Voprosy ekologii, nablyudeniya i okhrany kulikov Severnoy Yevrazii”]. Ivanovo: Ivanovo State University, 2016a:327-334 (In Russian, with a vast English summary).
9. Sviridova TV, Kol'tsov DB, Grinchenko OS, Zubakin VA, Kontorshchikov VV, Volkov SV. Great snipe (*Gallinago media*) in the north-east of the Moscow Region in 1980-2014 [Dupel' (*Gallinago media*) na severo-proizvodstve Podmoskov'ya v 1980-2014 gg.]. Proc. of the X Anniversary Conference of the Working Group on Waders of Northern Eurasia “Problems of Ecology, Migration, and Conservation of Waders in Northern Eurasia”, February 3-6, 2016 [Materialy 10-oy yubileynoy konferentsii Rabochey gruppy po kulikam Severnoy Yevrazii “Voprosy ekologii, nablyudeniya i okhrany kulikov Severnoy Yevrazii”]. Ivanovo: Ivanovo State University, 2016b:334-341 (In Russian, with a vast English summary).
  10. Scheme of development and layout of specially protected natural areas in the Moscow region [Skhema razvitiya i razmeshcheniya OOPT v Moskovskoy oblasti]. Decree No. 106/5 of the Moscow Region Government, 11/02/2009 [Postanovleniye pravitel'stva Moskovskoy oblasti ot 11.02.2009, № 106/5]. 2020. Available at <https://docs.cntd.ru/document/895204165?marker=6500IL> (Date of Access 10/11/2021).
  11. Web-fund of legal and normative-technical documents [Elektronnyy fond pravovykh i normativno-tekhnicheskikh dokumentov]. 2022. Available at <https://docs.cntd.ru/document/819045155> (Date of Access 10/02/2022).
  12. Bazhanova A, Sviridova T, Karelin D. Feeding conditions in breeding areas and selection of lekking sites by Great Snipe *Gallinago media* in Moscow Region, Russia. *Ornis Fennica*. 2021;98:88-96. Available at <https://www.ornisfennica.org/pdf/latest/21Bazhaanova.pdf> (Date of Access 10/11/2021).
  13. Bibby CJ, Burgess ND, Hill DA. Bird Census Дупель (*Gallinago media*) на северо-востоке Подмосковья в 1980-2014 гг. // Вопросы экологии, миграции и охраны куликов Северной Евразии: материалы 10-й юбилейной конференции Рабочей группы по куликам Северной Евразии, 3-6 февраля 2016 г. Иваново: Ивановский государственный университет. С. 334-341.
  10. Схема развития и размещения ООПТ в Московской области. 2020. Постановление правительства Московской области от 11.02.2009, № 106/5 [Электронный ресурс <https://docs.cntd.ru/document/895204165?marker=6500IL> (дата обращения 10.11.2021)].
  11. Электронный фонд правовых и нормативно-технических документов. 2022 [Электронный ресурс <https://docs.cntd.ru/document/819045155> (дата обращения 10.02.2022)].
  12. Bazhanova A., Sviridova T., Karelin D. 2021. Feeding conditions in breeding areas and selection of lekking sites by Great Snipe *Gallinago media* in Moscow Region, Russia // *Ornis Fennica*. Vol. 98. P. 88-96 [Электронный ресурс <https://www.ornisfennica.org/pdf/latest/21Bazhaanova.pdf> (дата обращения 10.11.2021)].
  13. Bibby C.J., Burgess N.D., Hill D.A. 1993. Bird Census Techniques. 3<sup>rd</sup> printing Academic Press Limited. 258 p.
  14. Butler S.J., Boccacio L., Gregory R.D., Norris K. 2010. Quantifying the impact of land-use change to European farmland bird populations // *Agriculture, Ecosystems & Environment*. Vol. 137. P. 348-357.
  15. Grinchenko O.S., Sviridova T.V., Kontorshchikov V.V. 2020. Long-term dynamics of ecosystems in the north of Moscow Region (rationale for creation of the “Crane Country” Nature Park) // *Ecosystems: Ecology and Dynamics*. Vol. 4. No. 1. P. 138-169 [Электронный ресурс [ECOSYSTEMS: ECOLOGY AND DYNAMICS, 2022, Vol. 6, No. 1](https://en.ecosystemsdynamic.ru/wp-</a></li>
</ol>
</div>
<div data-bbox=)

- Techniques. 3rd printing Academic Press Limited, 1993:258.
14. Butler SJ, Boccacio L, Gregory RD, Norris K. Quantifying the impact of land-use change to European farmland bird populations. *Agriculture, Ecosystems & Environment*. 2010;137:348-357.
  15. Grinchenko OS, Sviridova TV, Kontorshchikov VV. Long-term dynamics of ecosystems in the north of Moscow Region (rationale for creation of the "Crane Country" Nature Park). *Ecosystems: Ecology and Dynamics*. 2020;4 (1):138-169. Available at <https://en.ecosystemsdynamic.ru/wp-content/uploads/2020/04/4-Grinchenko-articel-engl.pdf> (Date of Access 10/11/2021).
  16. IUCN. The IUCN Red List of Threatened Species. Version 2021-1. 2021. Available at <https://www.iucnredlist.org> (Date of Access 10/11/2021).
  17. Mischenko AL, Sukhanova OV, Amosov PN, Melnikov VN. Meadow Birds under Waning Traditional Pasture Animal Husbandry. *Biology Bulletin*. 2019;46 (10):1431-1441.
  18. Smirnova EV, Aksenova AB, Sviridova TV, Konovalova TV, Grinchenko OS, Zubakin VA. The staging area of the Common Crane in the light of landscape and land use history in the Moscow region. *Proc. of the III European Crane Workshop 1996 and Actual Papers*. Halle-Wittenberg, 1999:169-171.
  19. Sviridova TV, Soloviev MYu, Bazhanova AA, Soloviev SM. Influence of the Vegetation Structure on the Numbers of Great Snipes (*Gallinago media*) (Scolopacidae, Aves) at Leks. *Biology Bulletin*. 2018;45 (10):1308-1315.
  20. Sviridova TV, Malovichko LV, Grishanov GV, Vengerov PD. Breeding conditions for birds in the nowadays farmlands of European Russia: the impact of agriculture intensification and polarization. Part I: Habitats. *Biology Bulletin*. 2020a;47 (10):1260-1267.
  21. Sviridova TV, Malovichko LV, Grishanov GV, Vengerov PD. Breeding conditions for birds in the nowadays farmlands of European Russia: the impact of agriculture intensification and polarization. Part II: Birds. *Biology Bulletin*. 2020b;47 (10):1425-1436.
  - content/uploads/2020/04/4-Grinchenko-articel-engl.pdf (дата обращения 10.11.2021)].
  16. IUCN. 2021. The IUCN Red List of Threatened Species. Version 2021-1. [Электронный ресурс <https://www.iucnredlist.org> (дата обращения 10.11.2021)].
  17. Mischenko A.L., Sukhanova O.V., Amosov P.N., Melnikov V.N. 2019. Meadow Birds under Waning Traditional Pasture Animal Husbandry // *Biology Bulletin*. V. 46. Iss. 10. P. 1431-1441.
  18. Smirnova E.V., Aksenova A.B., Sviridova T.V., Konovalova T.V., Grinchenko O.S., Zubakin V.A. 1999. The staging area of the Common Crane in the light of landscape and land use history in the Moscow region // *Proceedings of the III European Crane Workshop 1996 and Actual Papers*. Halle-Wittenberg. P. 169-171.
  19. Sviridova T.V., Soloviev M.Yu., Bazhanova A.A., Soloviev S.M. 2018. Influence of the Vegetation Structure on the Numbers of Great Snipes (*Gallinago media*) (Scolopacidae, Aves) at Leks // *Biology Bulletin*. Vol. 45. Iss. 10. P. 1308-1315.
  20. Sviridova T.V., Malovichko L.V., Grishanov G.V., Vengerov P.D. 2020a. Breeding conditions for birds in the nowadays farmlands of European Russia: the impact of agriculture intensification and polarization. Part I: Habitats // *Biology Bulletin*. Vol. 47. Iss. 10. P. 1260-1267.
  21. Sviridova T.V., Malovichko L.V., Grishanov G.V., Vengerov P.D. 2020b. Breeding conditions for birds in the nowadays farmlands of European Russia: the impact of agriculture intensification and polarization. Part II: Birds // *Biology Bulletin*. Vol. 47. Iss. 10. P. 1425-1436.

УДК 598.243.1/3:591.524

## СОХРАНЕНИЕ СЕЛЬСКОХОЗЯЙСТВЕННЫХ ЛАНДШАФТОВ КАК МЕСТООБИТАНИЙ РЕДКИХ КУЛИКОВ И ДРУГИХ ВИДОВ ПТИЦ НА ТЕРРИТОРИИ ПРОЕКТИРУЕМОГО ПРИРОДНОГО ПАРКА «ЖУРАВЛИНЫЙ КРАЙ»

© 2022 г. Т.В. Свиридова\*, О.С. Гринченко\*\*

\*Институт проблем экологии и эволюции им А.Н. Северцова РАН  
Россия, 119071, г. Москва, Ленинский проспект, д. 33. E-mail: t-sviridova@yandex.ru

\*\*Институт водных проблем РАН  
Россия, 119333, г. Москва, ул. Губкина, д. 3. E-mail: olga\_grinchenko@mail.ru

Поступила в редакцию 20.02.2022. После доработки 28.02.2022. Принята к публикации 01.03.2022.

В 2012-2014 гг. на севере Московской области при поддержке Фонда Раффорда (The Rufford Foundation) реализованы два проекта по сохранению редких куликов в сельскохозяйственных ландшафтах. В 2020 г. во время работы по проектированию регионального природного парка мониторинг гнездящихся куликов проведён на той же территории, для которой оценки численности и распространения делали в 2012 г. Этот район известен как «Журавлиная родина» – ключевая орнитологическая территория международного значения, включенная также в теневой список Рамсарских угодий. Территория представляет собой мозаичный ландшафт, состоящий из различных водно-болотных угодий (сфагновых болот, берёзовых и черноольховых лесов, заболоченных ивняков и старичных озёр), чередующихся с сельскохозяйственными землями (пойменные луга, сенокосы, пашни, пастбища и залежи). Для Подмосковья, значительно преобразованного хозяйственной деятельностью, это – уникальная местность с сохранившимися местообитаниями серых журавлей (*Grus grus*) и многих других редких видов птиц, в том числе исчезающих и находящихся под угрозой исчезновения куликов: большого веретенника (*Limosa limosa*), большого кроншнепа (*Numenius arquata*) и дупеля (*Gallinago media*).

Планы по созданию природного парка на этой территории разрабатывались с конца XX века. Однако их осуществление приостановилось в 2010-х гг., и до создания природного парка природоохранное сообщество прилагало усилия для сохранения ценности этой территории. Особое внимание уделялось сохранению редких куликов, гнездящихся в этих местах. Работа была успешна, редкие виды куликов и других птиц сельскохозяйственных ландшафтов продолжают гнездиться и имеют относительно высокую численность. В 2020 г. проект создания государственного природного парка «Журавлиный край» был включен в последнюю редакцию «Схемы развития и размещения ООПТ в Московской области» с новыми расширенными границами. Почти половину площади парка «Журавлиный край» составляют сельскохозяйственные ландшафты.

**Ключевые слова:** редкие птицы, луговые кулики, сельскохозяйственные угодья, природосберегающее сельское хозяйство, большой веретенник, большой кроншнеп, дупель, Журавлиная родина, природный парк «Журавлиный край», экологическое образование.

**Благодарности.** Авторы выражают благодарность своим коллегам, участвовавшим в сборе данных по редким видам куликов, обитающих в «Журавлиной родине», и всем тем, кто занимался организацией и проведением экологпросветительских мероприятий. Особую благодарность мы выражаем всем фотографам-натуралистам, предоставившим отличные снимки для образовательной работы.

**Финансирование.** Полевые научные исследования и экопросветительская работа в 2012-2014 гг. проводились при финансовой поддержке Фонда Раффорда (The Rufford Foundation, UK).

Анализ материалов и написание статьи Т.В. Свиридовой выполнены в рамках темы «Фундаментальные проблемы охраны живой природы и рационального использования биоресурсов» ИПЭЭ РАН, номер госрегистрации ЕГИСУ НИОКТР АААА-А18-118042490055-7, номер госзадания 0089-2021-0010. Анализ материалов и написание статьи О.С. Гринченко выполнены в рамках государственного задания Минобрнауки по теме 0089-2021-0010 «Фундаментальные проблемы охраны живой природы и рационального использования биоресурсов», а также в рамках темы № FMWZ-2022-0002 «Исследования геоэкологических процессов в гидрологических системах суши, формирования качества поверхностных и подземных вод, проблем управления водными ресурсами и водопользованием в условиях изменений климата и антропогенных воздействий» Государственного задания ИВП РАН.

**DOI: 10.24412/2542-2006-2022-1-116-133**