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BIOTECHNICAL MEASURES FOR THE REPRODUCTION OF STOCKS OF FOREST BIRDS LIVING IN THE SEMEY REGION

Annotation*: The article presents the results of research related to the decrease in the number of many species of wild birds due to the deterioration of environmental conditions in forest and steppe landscapes in recent years.*

Biotechnical measures or measures for the protection and improvement of the animal habitat are understood as a set of measures aimed at improving the living conditions of animals. It is also planned and implemented for the purpose of preserving or increasing the biodiversity of fauna. As biotechnical measures, we consider: preparation of artificial feeding grounds, work to protect natural breeding grounds; maintenance of breeding and feeding grounds in proper condition; prevention of factors that may harm or negatively affect the reproduction of a protected species; preservation of animal and bird habitats during forestry and agricultural work.

The main goal of the research is to organize and implement biotechnical work on the reproduction of forest bird stocks living in the Semey region.

The research was conducted in the Republican State Institution "Semey Ormany State Forest Nature Reserve" of the Forestry and Wildlife Committee of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan", the results of the research can be used in the direction of hunting.

Keywords: *forest birds, biotechnical measures, accounting, feeding, flutter ground*

Introduction

The organization of biotechnical measures gives a significant positive result on the reproduction of individuals of wild animals, the regulation of the population. On hunting grounds modified by human activity, a constant number of hunting animals can be preserved only with active biotechnology. Therefore, biotech is a work aimed at natural complexes in order to improve the living conditions of wild animals and minimize the impact of human activity on them [1]. Biotechnical measures or measures for the protection and improvement of the animal habitat are understood as a set of measures aimed at improving the living conditions of animals.

The main objectives of biotechnics are to preserve and increase the number of animals, eliminate the negative impact of existing factors related to their human activities and natural phenomena.The anthropogenic impact on the ecosystem of the Semey region is very significant. This has led to a reduction in the number of many animals. A decrease in nutrient reserves during cold weather is also the reason for a sharp change in the number of animals.

In accordance with the state program, in order to preserve and increase the number of wild animals, various biotechnical measures are carried out annually on the territory of the Republican State Institution «Semey Ormany State Forest Natural Reserve», such as fertilizing, population accounting, planting plants and shrubs, preserving their species necessary for feeding and sheltering animals. In order to protect flora and fauna, a team of group patrols is working to combat poaching. A census of forest birds is conducted every year. Comparative analysis of the results of the collected census work and planning of biotechnical and protective measures [3,4].

The main goal of the work is to organize and implement biotechnical works for the reproduction of forest bird stocks living in the Semey region.

Research methods

The research was conducted on the territory of the SFNR «Semey Ormany» in winter and spring of 2020-2022.

Forest birds (grouse, grey partridge, pheasant, stone partridge, quail) were considered as the object of research in the Semey region «Semey Ormany» State Forest Natural Reserve of the

Committee of Forestry and Wildlife of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan" of the Abay region.

To effectively carry out biotechnical measures, first of all, it is necessary to know the number of birds and their distribution in the valley.

In the course of our research work, we first determined the number of birds. In the Semey region, one of the most effective census methods is the route method. The route method is used in the census of all animals and birds, the census taker records a predetermined route and all animals encountered during movement [2].

At the initiative of the staff of the GLPR "Semey Ormany", a census was organized. The census group included experienced scribes, hunters, inspectors and students undergoing practical training. The length of individual routes depended on the most active time of the roosters in the spring and did not exceed 3-5 kilometers.

Each scribe was given binoculars, a pedometer, a watch, a pen and a notebook. The large-scale map shows routes and census areas.

In the Semipalatinsk regional branch of the SFNR «Semey Ormany», the census is conducted at the end of winter and in spring, in April-May during the breeding of forest birds. In addition, partridges and grouse often begin to gather in groups in the last months of autumn, at this time it is convenient to determine their numbers.

Since the detection distances are different for different bird species and vary from year to year, in different weather conditions, in different locations, etc., we took into account the detection distances for each encounter with a census bird. The use of census indicators was carried out taking into account the category of hunting grounds [5, 6].

The census was conducted not where there were many of them, but in the territories where these species live, taking into account the time of mandatory study and weather conditions. Therefore, we took into account that it is necessary to plan the calculation and routes, take into account the length of the route and determine the distance of departure. Only after that we started counting the birds. The received report data was recorded on a specially prepared report form, after which the received data was processed.

Research results

The increase in bird numbers in 2020 is due to the fact that winter is not as dense and harsh as before. The winter months of 2021 were harsh, with the first frost coming in November. In February, heavy snowfall and the establishment of stormy weather made it difficult for the birds to find food. Heavy snowstorms also raged throughout February, thickening the snow cover. In addition, the impact of predators is also contained. For example, when the number of rodents in the region decreases, some predators feed on birds, their eggs and chicks. And in the course of our research, we found that in those years the number of jackals and foxes increased, as well as the lack of food increased.

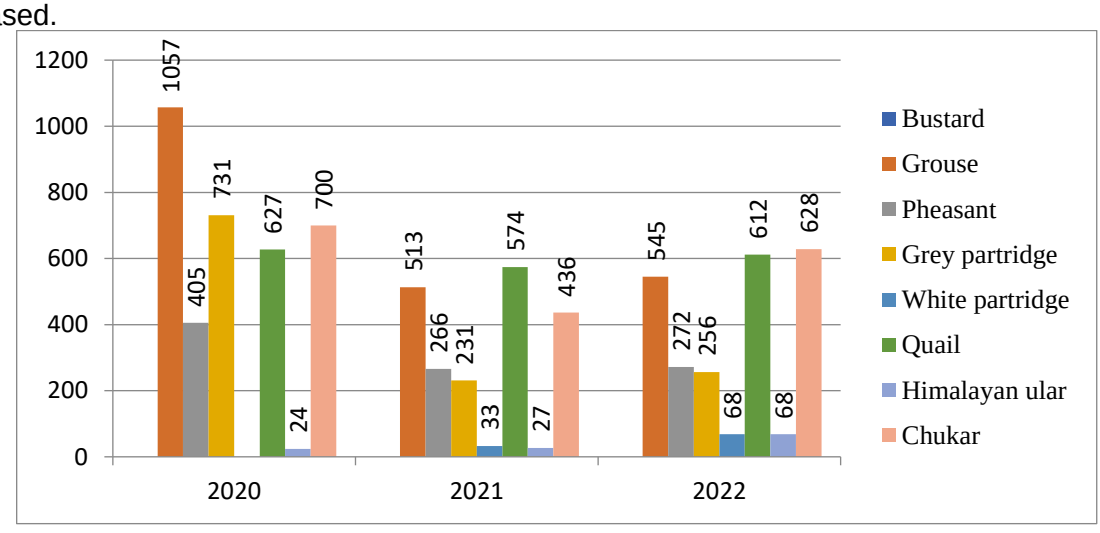

Figure 1 - Dynamics of the number of forest birds in the Semipalatinsk branch of the SFNR «Semey Ormany»

For this reason, populations of grey partridges, grouse, pheasants, and quails were subject

to migration and had a low spring census rate, as well as the influence of other poachers.

As shown in Figure 1, over the past two years (2021, 2022), the number of forest birds has decreased compared to 2020. The spring biotechnical events held in 2020 have brought their positive results.

Based on the results of the autumn census of employees of the Semey Ormany State Forest Nature Reserve in 2022, we noticed that the indicators have changed compared to the previous year 2021, i.e. as a result of the autumn census we conducted, the number of grey partridges, grouse, partridges, pheasants and quails increased compared to the indicators of the spring census. We believe that this is due to the organization of protective measures.

According to this information received, in late February-early March, we laid grain crops (crushed corn, wheat, barley, etc.) as additional feed at the sites of additional feeding of birds. On average, about 50-60 grams of feed per day is consumed per 1 bird. And as a mineral feed, feed flour and crushed chalk are put. This measure will help the birds to ease the frosty winter days and hard times. Especially great help for birds is provided by the time of spring breeding, when natural food is reduced [8].

In the state institution of the Semey Ormany State Forest Natural Reserve, these birds are given the following compound feeds: 35% wheat, 10% millet, 20% corn groats, 25% seeds of various herbs, 10% legumes (Table.1). For 100 heads of poultry, 5-6 kilograms of the mixture are given. Basically, these types of food are sown in the spring and harvested in the summer. Then it prepares for these biotechnical measures. In spring, when the snow begins to melt and the ground becomes visible, when the first grass grows, additional fertilizing stops.

Table 1 - Types of complementary foods for forest birds and their number in the SFNR «Semey Ormany» in 2021-2022.

Season	Wheat, kg	Millet, kg	Corn groats, kg	Barley, kg	Bread powder, kg	Oats, kg	Legume groats, kg	Other feeds, kg
summer	35	41	5	3	20	4	-	12
winter	48	7	51	3	3	2	3	3

Often grouse and partridges find it difficult to find pebbles (pebbles) necessary for digestion in winter. After all, the sands sown in autumn were covered with snow. Therefore, coarse-grained sand and gravel were sprinkled on the bottom of trees in places of additional feeding. About 25 kg. In particular, birds visit these rocks in abundance in late February or early March.

In addition, artificial fluttering grounds are created for birds, which are often necessary during rainy periods. They are made by mixing ash and sand, and also covered with a canopy on top [7, 9].

Figure 2 - Preparation of oatmeal for forest birds

Grouse and grey partridges are afraid of all structures, so it is not easy to accustom them to additional feeding. Feeding grounds for these forest birds are placed in places where these birds were previously noticed. Grey partridges and grouse feed only in certain places, on hillsides, tall grasses and low shrubs. From spring to autumn, they look for food in the grass and shrubs growing in ravines, burrows and recesses of fields. They feed on plant grains and hide from predators there.

If they see food in places where they don't go, they often don't eat it. Therefore, in order to feed these birds, it is necessary to first identify their grazing areas and place feeders, paddles and shelters for feeding next to this territory [6].

It is often difficult for grouse and partridges to find pebbles (pebbles) necessary for digestion in winter. After all, the sands sown in autumn were covered with snow. Therefore, coarse-grained sands and gravel were sprinkled on the bottom of the trees in places of additional fertilization. About 25 kg. In particular, birds visit these stones in abundance in late February or early March. Pebbles are usually placed on the outskirts of forests, meadows, and trails. Pebbles are organized based on the calculation: one pebble per 1000 hectares of characteristic lands.

Figure 3 - Tents and pebbles for forest birds

Pheasant feeders should be placed under a canopy or dense shrubbery and under a canopy. Feeders of various types are used for feeding pheasants. Feeders (feeders) are especially convenient (Figure 3).

In winter and spring, pheasants need to be fed with mineral fertilizers. It is recommended to add bone meal, crushed chalk, and eggshells to the mineral fertilizer.

In winter, pheasants often need vitamin supplementation, so at this time it is useful to give them some «greens» (young sprouts of cereals) or add multivitamins or vitamin supplements to poultry feeds.

Near the feeders, you need to make a pebble from coarse river sand or small gravel. This type of biotechnical measures reduces the mortality of pheasants from poachers who shoot birds on roadsides in autumn and winter.

Excessive accumulation of birds should not be allowed, it is better to place about two or three feeding grounds, and feeding grounds evenly over the entire area of the field.

Among the biotechnical measures, artificial stones (pebbles) and a flutter had the greatest impact to increase the populations of forest birds in the fields and did not require much effort to organize.

In addition, it is important to remember how to protect birds from poachers. With systematic feeding in equally well-selected places, animals master artificial "canteens" well and remember them for a long time [10].

Discussion of scientific results

Thus, in order to stabilize the number of forest birds found in the Semey region, the biotechnical measures we have developed are effective, that is, methods of additional fertilization, installation of artificial flutters, pebbles.

In March 2022, during a biotechnical event for forest birds, 5 flutterers and 1 pebble were installed on an average of 1000 hectares. 7-8 kg bags of feed were taken to each feed tent. The location of feeding grounds in good places makes it possible to reduce the conditions for reducing the number of forest birds in this region.

From the results of the census of the last three years, as shown in the first diagram, it can be seen that 2020 was the most favorable year for forest birds. In winter, the snow cover is moderate,

there have been no frosts for a long time, the population of partridges and grouse has been constantly growing. Due to the harsh winters of 2021, as well as due to predators and stray dogs, the number of grouse, pheasants, grey partridges, etc. It shrank in the Semipalatinsk region and moved to neighboring areas.

Conclusion

It can be seen from the census results of the last three years that 2020 was the most comfortable year for forest birds. In addition, due to the harsh winter of 2021, as well as predatory animals and stray dogs, the population of grouse and grey partridges decreased in the Semipalatinsk region and migrated to neighboring areas. But, considering the results of the last census, we noticed that the biotechnical measures taken in 2022 had a positive impact, i.e. compared with the indicator of 2021, in 2022 the population of forest birds (black grouse, grey partridge, pheasant, quail) increased by 101 heads.

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СЕМЕЙ ӨҢІРІНДЕ МЕКЕНДЕЙТІН ОРМАН ҚҰСТАРЫНЫҢ ҚОРЫН МОЛАЙТУ ҮШІН ЖҮРГІЗІЛЕТІН БИОТЕХНИКАЛЫҚ ШАРАЛАР

Аннотация: *Мақалада соңғы жылдардағы орман және дала ландшафттарында экологиялық жағдайдың нашарлауының салдарынан көптеген жабайы құстардың түрлерінің саны азайюна байланысты зерттеу нәтижелері берілген.*

Биотехникалық іс-шаралар немесе жануарлардың тіршілік ету ортасын қорғау және жақсарту жөніндегі іс-шаралар деп жануарлардың тіршілік ету жағдайларын жақсартуға бағытталған шаралар жиынтығы түсініледі. Сондай-ақ, бұл фауналық биоәртүрлілікті сақтау немесе ұлғайту мақсатында жоспарланады және орындалады. Биотехникалық шаралар ретінде мыналарды қарастырамыз: азықтандырудың жасанды орындарын дайындау, табиғи көбею орындарын қорғау жұмыстары; көбею және азықтандыру

орындарын талапқа сай етіп ұстау; қорғауға алынған түрдің көбеюіне зиянын немесе кері әсерін тигізетін факторлардың алдын алу; орман шаруашылық және ауыл шаруашылық жұмыстарын жүргізу кезінде аңдар мен құстардың мекендейтін аймақтарын сақтау.

Ғылыми жұмыстың негізгі мақсаты – Семей өңірінде мекендейтін орман құстарының қорын молайту үшін биотехникалық жұмыстарын ұйымдастыру және жүзеге асыру.

Зерттеу жұмыстары «Қазақстан Республикасы экология, геология және табиғи ресурстар министрлігі орман шаруашылығы және жануарлар дүниесі комитетінің «Семей орманы» мемлекеттік орман табиғи резерваты» Республикалық мемлекеттік мекемесіңңде жүргізілді, зерттеу жұмыстың нәтижелерін аңшылық шаруашылық бағытында пайдалануға болады.

Түйін сөздер: *орман құстары, биотехникалық шаралар, есепке алу, қосымша азықтандыру, порхалища*

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БИОТЕХНИЧЕСКИЕ МЕРОПРИЯТИЯ ПО УВЕЛЕЧЕНИЮ ЧИСЛЕННОСТИБОРОВОЙ ДИЧИ, ОБИТАЮЩИХ В СЕМЕЙСКОМ РЕГИОНЕ

Аннотация: *В статье представлены результаты исследований, связанных с уменьшением численности многих видов диких птиц за последние годы из-за ухудшения экологических условий в лесных и степных ландшафтах.*

Под биотехническими мероприятиями или мероприятиями по охране и улучшению среды обитания диких животных понимается совокупность мероприятий, направленных на улучшение их условий обитания. Это также планируется и выполняется с целью сохранения или увеличения биоразнообразия фауны. В качестве биотехнических мер, мы рассматриваем: подготовку искусственных мест кормления, работу по защите естественных мест размножения; содержание мест размножения и кормления в надлежащем состоянии; предотвращение факторов, которые могут нанести вред или отрицательно повлиять на воспроизводство охраняемого вида; сохранение зон обитания животных и птиц при проведении лесохозяйственных и сельскохозяйственных работ.

Основная цель научной работы-организация и осуществление биотехнических работ по воспроизводству запасов лесных птиц, обитающих в Семейском регионе.

Исследования проводились в Республиканском государственном учреждении «Государственный лесной природный резерват» Семей орманы» Комитета лесного хозяйства и животного мира Министерства экологии, геологии и природных ресурсов Республики Казахстан", результаты исследований можно использовать в охотничьем хозяйственном направлении.

Ключевые слова: *лесные птицы, биотехнические мероприятия, учет, подкормка, порхалища*

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