

A.T. Serikbayeva^{1*}, T. Dauletaliyev², Zh.A. Iskakova¹, A.B. Slambayeva¹, B.N. Bekbota¹

¹Kazakh National Agrarian Research University, Almaty, Kazakhstan,
andiya.serikbayeva@kaznaru.edu.kz*, iskakova_zhan80@mail.ru, slambayeva.a@mail.ru,
b.bekbota@yandex.ru

²LLP "VIP Safari Service", Almaty, Kazakhstan, dauletaliyev92@mail.ru

HUNTING RESOURCES OF THE SOUTH OF KAZAKHSTAN

Abstract

The hunting fauna is an important component of the biological diversity of the southern regions of Kazakhstan. Being a part of natural resources, hunting animals are, on the one hand, an object of hunting and have recreational and economic value, and on the other hand, they are fully exposed to a complex of anthropogenic factors, of which agricultural production is especially relevant for the steppe zone. Today, the problem of preserving and objectively assessing the natural resource potential of individual regions of Kazakhstan is becoming especially relevant. In this regard, it is necessary to foresee all the environmental and economic costs associated with turnover of agricultural land and to identify contradictions associated with usage of hunting resources on agricultural land. Hunting resources, as part of the natural resource potential of the developed regions, are an objective indicator of the systemic ecological crisis of the steppe zone. In Kazakhstan, the steppe zone is an agrarian region, where the problems of biodiversity conservation, socio-economic and environmental optimization of land use and management of hunting use are especially acute. The purpose of this research work is to analyze regional hunting and resource potential, develop principles for optimizing the management of hunting activities in the southern region of Kazakhstan.

The article presents the results of the hunting activities analysis of Kyzylorda and Turkestan regions, which are part of South Kazakhstan. The data on fixed hunting grounds, the relative number of predatory mammals as potential hunting objects - wolves, foxes, corsacs, jackals, badgers and mustelids as hunting objects are given.

Key words: *Predatory mammals, hunting economy, hunting objects, subjects of hunting facilities, gamekeeper service, protection of lands, population regulation, hunting farms, hunting grounds*

Introduction

Hunting is an important part of wildlife management as it provides funding and is an effective means of controlling the biodiversity of carnivorous and herbivorous mammals. Public acceptance of hunting and hunting practices is an important human aspect of wildlife management. In the United States, a survey of residents using an online questionnaire about their views on hunting, hunters and hunting customs found that 80% of respondents agreed that hunting for food is acceptable, while only 37% agree that one can hunt for a trophy [1,2].

According to statistical studies for 2016–2020, the area for hunting in the Republic of Kazakhstan is many times larger than in all European countries. For example, the total area of agricultural land in Kazakhstan, according to the World Bank, is 216 million hectares, and the area assigned to hunting farms at the end of 2020, according to data from various sources, varies from 105.555 million hectares to 187.264 million hectares [3].

South of Kazakhstan: Kyzylorda, Turkestan oblasts are the regions with significant hunting resources, which allow for effective hunting management. Among the important objects of sports and amateur and commercial hunting, predatory species of mammals are jackal (*Canis aureus*), wolf (*Canis lupus*), corsac (*C. corsac*), fox (*Vulpes vulpes*), brown bear (*Ursus arctos*); stone marten (*Martes foina*), weasel (*Mustela nivalis*), ermine (*M. erminea*), steppe polecat (*M. eversmanni*), American mink (*Neovison vison*), badger (*Meles meles*), otter (*Lutra lutra*) from the Family

Mustelidae- Kuni; steppe cat (*Felis lybica*), sand cat (*F. margarita*), manul (*F. manul*), lynx (*Lynx lynx*), snow leopard (*Uncia uncia*) from the Felidae Family – Felidae. All these species belong to the order - predatory. Of these, the brown bear, stone marten, otter, dune cat, manul, lynx (Turkestan subspecies) and snow leopard are listed in the Red Book of the Republic of Kazakhstan [4, 5,6].

The fauna according to the intended purpose is divided into the following categories [7, 8]:

- 1) Rare and endangered species of animals;
- 2) Species of animals that are objects of hunting;
- 3) Species of animals that are objects of fishing;
- 4) Species of animals used for other economic purposes (except for hunting and fishing);
- 5) Species of animals not used for economic purposes, but having ecological, cultural and other value;
- 6) Species of animals, the number of which is subject to regulation in order to protect public health, prevent diseases of agricultural and other domestic animals prevent damage to the environment and to agricultural activities.

The assignment of animal species to categories and their transfer from one category to another are carried out on the recommendation of the interdepartmental zoological commission on basis of biological justification in order to preserve the species diversity of the animal world, their protection, reproduction and sustainable use [7, 9, 10].

Over the past decades, the modernization of the hunting economy in Kazakhstan has been carried out. Inter-farm and intra-farm hunting management has been established in the new socio-economic conditions and in accordance with the current legislation of the Republic of Kazakhstan [8, c.16].

Methods and materials

Hunting activity in the region

The authors of the article used the materials of the Committee for Forestry and Wildlife of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan for 2020-2022, as well as literary sources [11-14]. The source materials of the research work are the results of our own field research in hunting farms of Kyzylorda and Turkestan regions. As is known, 16 main types of hunting grounds have been established in Kazakhstan, of which 9 are forest, and 7 are non-forest, which are represented in the hunting grounds of the studied region:

- | | |
|------------------------|------------------------|
| 1. Coniferous forest | 10. Arable land |
| 2. Deciduous forest | 11. Hayfields |
| 3. Mixed forest | 12. Pastures |
| 4. Floodplain forest | 13. Rocks |
| 5. Tugai forest | 14. Glaciers |
| 6. Fruit plantations | 15. Wetlands |
| 7. Haloxylon | 16. Other (cultivated) |
| 8. Shrubs of the earth | |
| 9. Juniper | |

For forested lands, as a rule, the predominance of the species is taken as the basis for distinguishing the type of hunting grounds, and for open lands, the position in the terrain and the composition of the grass cover [15].

The predominant species of forest land should be at least 80% of the total composition. Coniferous forests include lands with 30% deciduous species. And mixed forests include deciduous plantations, which include at least 30% of conifers.

The type of fruit plantations includes wild fruit plantations (apple, apricot, mountain ash, etc.), as well as cultivated orchards and vineyards. Shrubs, consisting of all types of shrub plants, excluding creeping juniper, which is typified as juniper, stand out separately as a type of hunting grounds.

Arable land includes plowed land cultivated for agricultural planting. And pastures include glades, open areas of steppes and deserts, and fragments of bushy mountain slopes. The hayfields include floodplain and upland areas that are used for haymaking.

In the type of reservoirs, rivers, lakes, reservoirs, channels used for irrigated agriculture are concentrated. Glaciers include snowfields, glaciers and areas covered with permanent snow cover of high mountains.

The type of hunting grounds - rocks - consists of scree, moraines, rock outcrops and very steep bare slopes, both in the upper and middle mountain belts. Other lands include roads, forest, ranger cordons, estates, settlements and estates, anthropogenically modified elements of the landscape [16].

Results and discussion

In general, 40% of the hunting grounds of the entire territory of Kazakhstan are fixed in the south of the republic, and in the Turkestan region same is for almost all of the hunting grounds. The largest number of business entities is registered in the Kyzylorda region, where they are represented by their various forms (Table 1).

Table 1- Information on hunting activities in the south of Kazakhstan (2020)

Indices	Kyzylorda region	Turkestan region
Total area of the reserve fund, mln. Ha	0,195	14,47
Fixed area of hunting grounds, %	7,94\35,5	6,55\17,1
The composition of the Jaeger service, pers.	181	123
Equipped with vehicles/snowmobiles), units	104/10	30/1
Funds allocated to finance hunting farms, million tenge	145,8	54,7
Remuneration of the huntsman service, million tenge	76,1	19,7
Financing the maintenance of rangers in hunting farms, million tenge	166,0	8,7
Receipt of payments for the use of wildlife, million tenge	24,7	4,6
Number of accepted hunters/foreigners, pers.	-	3352/0
Total hunters in the region, people	-	8055
Identified violations	5	0

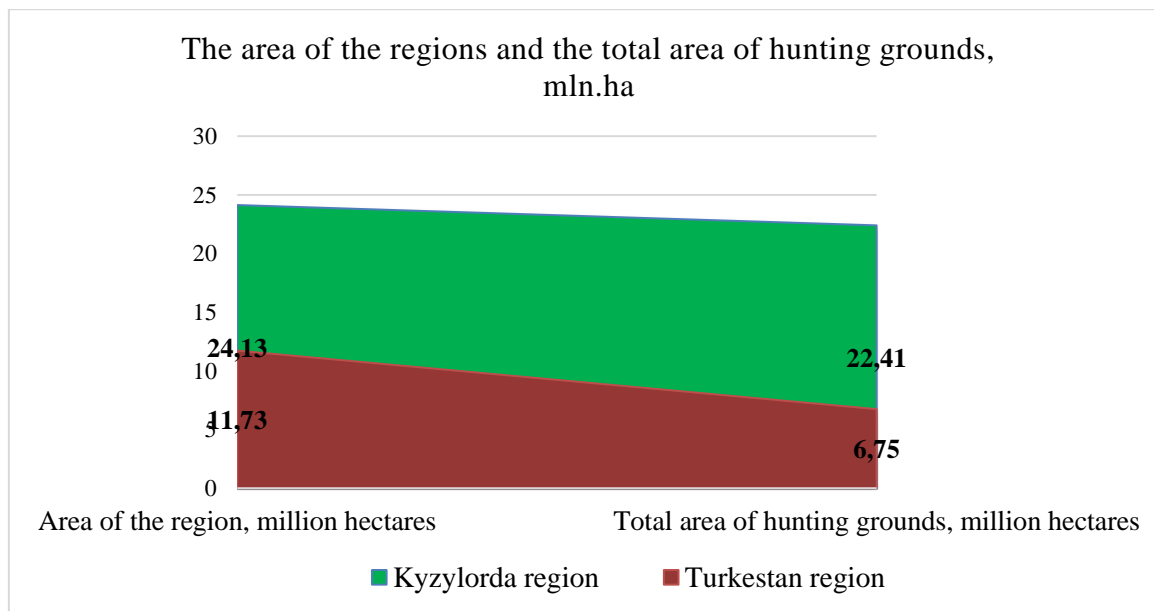


Figure 1 - The area of the regions and the total area of hunting grounds, million hectares

According to Fig.1, the total area of the Kyzylorda region is 55% larger, and, accordingly, the total area allocated for hunting activities is also 50% larger compared to the Turkestan region.

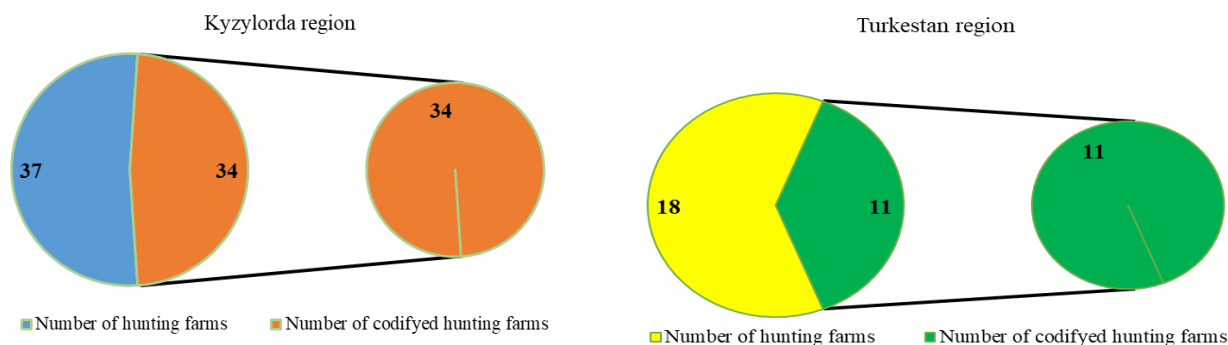


Figure 2 - Number of hunting farms in Kyzylorda and Turketan regions

The number of hunting farms in the Trukestan region is 18, of which 11 farms are fixed, that is, 62% of the total. As for the Kyzylorda region, the number of hunting farms is 37, of which 34 hunting farms are fixed, and account for 89%.

Of the 34 assigned hunting farms in the Kyzylorda region (Table 1), the largest are Daut 157958 ha, Zhetysay 123365 ha, Zhanakorgan 103442 ha, Terenozek 83162 ha and Sarybulak 82296 ha. The rest are 2-3 times smaller in area. Most hunting farms are located in the tugai and wetlands of the Syrdarya River. And two large ones (Daut and Zhetysay) in the north-east of the region on the rubble-clay valley of the river. Sarysu. In addition, there are also specially protected natural areas (SPNAs) in the region, such as the Barsa-Kelmes natural reserve and the Torangyl zoological reserve, which are also inhabited by ungulate mammals.

In the Turkestan region, 11 out of 18 designated hunting farms are fixed. Compared to other regions of the region, local farms are generally not large: from 2,000 to 12,000 hectares. There are only two large ones: Balykshy 30,000 ha and Arys 11,100 ha. Most of the farms occupy the river valley. Syr Darya in the tugai and wetlands and only a few regions in the north-west in the rubble-clay desert Betpakdala along the river basin. Sarysu. There are also 4 protected areas in the region. These are the Sairam-Ugam National Park, the Karatau and Aksu-Zhabagly Nature Reserves and the Syrdarya-Turkestan Regional Natural Park, which are home to both mountain and desert species of ungulates.

In accordance with the "Rules of hunting management in the Republic of Kazakhstan", the norms for assigning a protected area to 1 ranger should not exceed 30,000 hectares. However, in the Kyzylorda and especially the Turkestan regions of the region, on average, each huntsman accounts for from 43,646 to 52,245 hectares.

An intensive hunting economy of a commercial or sports direction should organically combine on its territory production work on accounting, reproduction, exploitation and protection of all types of hunting animals. Works on the registration of animals and their protection are an integral part of the annual production cycle in a hunting enterprise. This must be taken into account in the economic analysis of the enterprise and the calculation of the cost of certain types of hunting products.

It is necessary to create an infrastructure corresponding to the international standard and start conducting intro-hunting in the Kyzylorda and Turkestan regions. This requires the development of a program of tours, the definition of hunting objects, as well as advertising, both on the Internet and at international hunting exhibitions.

Relative numbers of predatory mammals

Reporting materials of hunting entities on the actual number of wild animals - objects of hunting of the fauna of Kazakhstan cannot be highly reliable and regular, these numbers are often contradictory and fragmentary. A system of state registration of the main types of hunting animals has been introduced in the republic with the participation of representatives of official state structures in registration activities. The main task of which is to control the dynamics of the abundance of animal

populations, identify any changes and provide complete data on the state of abundance for making decisions on the allocation of limits and quotas for the extraction of hunting products.

In the region under study, a relative accounting of all types of predatory animals was carried out. Comparison of accounting data for the last 3 years generally shows an uneven growth in the number of animals (Figures 3 and 4). In general, the high number of wolves, foxes, jackals and badgers throughout the south of Kazakhstan draws attention. The number of felids, at least the most noticeable steppe cat, is not taken into account.

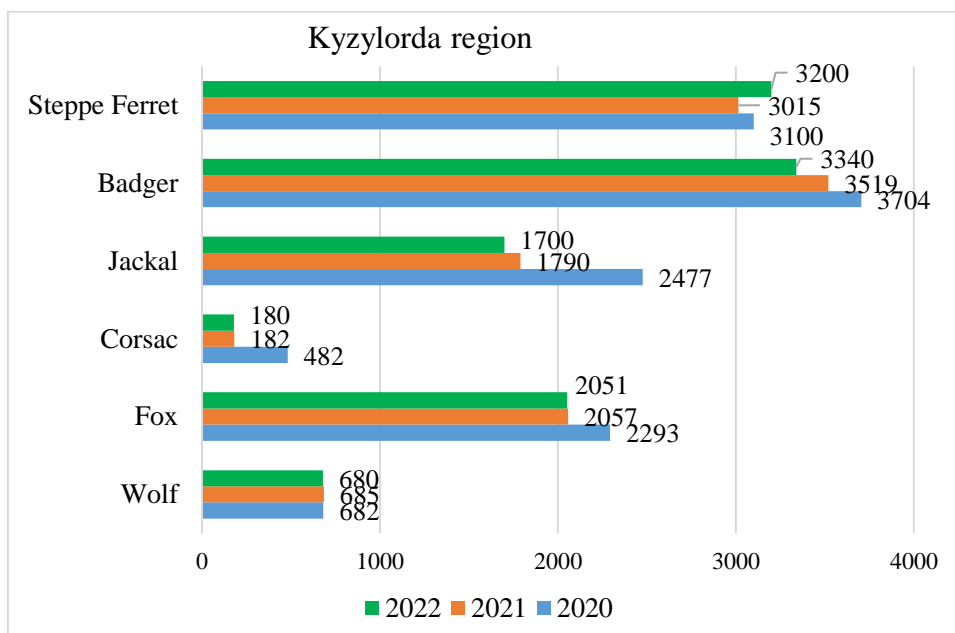


Figure 3 – Dynamics of predatory mammals’ population in Kyzylorda region for 2020-2022. (ex.)

The number of wolves in the Kyzylorda region for 3 years remains at the same level, thanks to the timely conduct of biotechnical measures (Fig. 3). The number of foxes, jackals and badgers provides objective prerequisites for an increase in their prey in the near future.

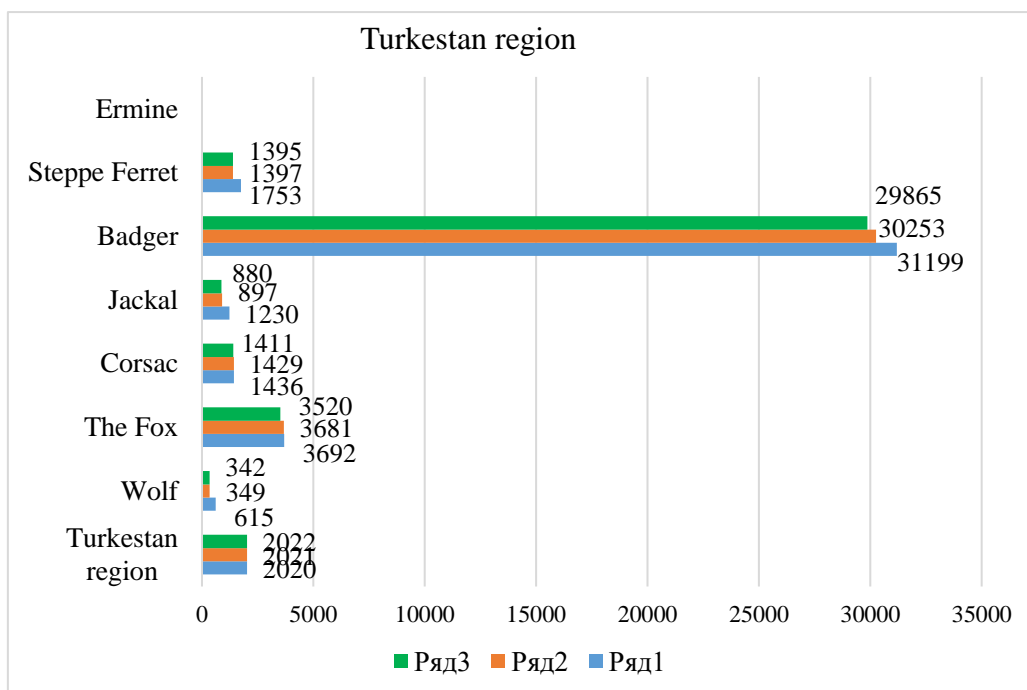


Figure 4 – Dynamics of predatory mammals’ population in Turkestan region for 2020-2022.

According to Fig. 4, in the Turkestan region, there is a clear underestimation of fur species, for example, the steppe polecat, as well as the ermine. Therefore, the trend of their numbers remains unclear, which does not yet make it possible to develop a comprehensive program for the conservation of fur. The level of resources of the wolf, fox, jackal and badger gives objective prerequisites for an increase in their prey in the short term. They are a valuable fur raw material, medicinal fat (badger, wolf), as well as a unique hunting trophy (wolf) for European hunters. International tourist hunting for wolves in winter can bring tangible income for hunting farms throughout the region.

Conclusions

The task of hunting management is to develop regional hunting management systems that provide an increase and enlargement in the yield of hunting products. They are constantly changing in connection with the emergence of new knowledge, techniques and technologies, with changes in socio-economic conditions and different rates of development of the regional economy. In recent years, there has been a deteriorating situation with monitoring the production of hunting fur animals and hunting bird species. In the absence of a system of state orders and state purchases of furs, the market demand decrease for fur trade raw materials sharply reduced the interest of hunters in production of fur-bearing game animals.

As is known, there is a direct relationship between the efficiency of using hunting resources and efficiency of using hunting grounds: the higher is efficiency and complexity of using hunting resources, the higher is efficiency of using hunting grounds. At present, there is a tendency of underdevelopment in the fixed lands of the south of Kazakhstan of stocks of many objects of commercial hunting, not only predatory, but also fur-bearing species of rodents - gray, red marmots, muskrats. Therefore, the efficiency of the use of hunting resources needs to be strengthened in the near future.

In order for the hunting industry to really become one of the most important clusters of the diversified economy of Kazakhstan, the implementation of several of the most pressing goals is required. The top-priority of them is the completion of the process of securing hunting farms from the reserve fund, since at present more than half of them do not yet have hunting users. The total number of assigned hunting grounds should thus more than double. Further, the number of employees of the gamekeeper service is not yet sufficient for the effective protection of hunting resources, the implementation of the entire complex of biotechnical and hunting management measures in full. The number of certified full-time hunting managers, chief hunting industry specialists, both in regional and in economic structures, should increase.

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А.Т. Серикбаева^{1*}, Т. Даулеталиев², Ж.А. Искакова², А.Б. Сламбаева¹, Б.Н. Бекбота¹

¹Қазақ ұлттық аграрлық зерттеу университеті, Алматы, Қазақстан, andiya.serikbayeva@kaznaru.edu.kz*, iskakova_zhan80@mail.ru, slambayeva.a@mail.ru, b.bekbota@yandex.ru

² ЖШС "VIP Safari Service", Алматы, Қазақстан, dauletaliyev92@mail.ru

ҚАЗАҚСТАННЫҢ ОҢТҮСТІГІНДЕГІ АҢШЫЛЫҚ РЕСУРСТАРЫ

Аңдатпа

Аңшылық фауна Қазақстанның оңтүстік өңірлерінің биологиялық әртүрлілігінің маңызды құрамдас бөлігі болып табылады. Аңшылық жануарлар табиғи ресурстардың бір бөлігі бола отырып, бір жағынан аң аулау объектісі болып табылады, яғни рекреациялық және экономикалық құндылыққа ие. Екінші жағынан олар антропогендік факторлар кешенінің толық әсеріне ұшырайды. Олардың ішінде ауылшаруашылық өндірісі дала аймағы үшін ерекше өзекті болып табылады. Бүгінде Қазақстанның жекелеген өңірлерінің табиғи-ресурстық әлеуетін сақтау және объективті бағалау мәселесі ерекше өзекті болып отыр. Осыған байланысты ауыл шаруашылығы алқаптарының айналымына байланысты барлық экологиялық-экономикалық шығындарды көздеу және ауыл шаруашылығы жерлерінде аңшылық ресурстарды пайдалануға байланысты қайшылықтарды анықтау қажет. Аңшылық ресурстар игерілген өңірлердің табиғи-ресурстық әлеуетінің бөлігі ретінде дала аймағының жүйелі экологиялық дағдарысының объективті индикаторы болып табылады. Қазақстанда дала аймағы - бұл биоалуантүрлілікті сақтау, жерді пайдалануды әлеуметтік-экономикалық және экологиялық оңтайландыру және аңшылықты пайдалануды басқару мәселелері ерекше өткір тұрған аграрлық өңір. Зерттеу жұмысының мақсаты өңірлік аңшылық - ресурстық әлеуетті талдау және Қазақстанның оңтүстік өңірінің аңшылық шаруашылық қызметін басқаруды оңтайландыру қағидаттарын әзірлеу болып табылады.

Мақалада Оңтүстік Қазақстанның бір бөлігі болып табылатын Қызылорда және Түркістан облыстарының аңшылық шаруашылық қызметін талдау нәтижелері келтірілген. Бекітілген аңшылық шаруашылықтары туралы ақпаратпен қамтылған. Жыртқыш сүтқоректілердің салыстырмалы саны анықталып, аң аулау нысаны болып табылатын – қасқыр, түлкі, қарсақ, шибөрі, борсық және суырлардың санын реттеу жолдары ұсынылған.

Кілт сөздер: жыртқыш сүтқоректілер, аңшылық шаруашылығы, аң аулау нысандары, аңшылық шаруашылығы субъектілері, қорық қызметі, жерлерді қорғау, санын реттеу, аңшылық шаруашылықтар, аңшылық алқаптар.

А.Т. Серикбаева^{1*}, Т. Даулеталиев², Ж.А. Искакова², А.Б. Сламбаева¹, Б.Н. Бекбота¹

¹Казахский национальный аграрный исследовательский университет, Алматы, Казахстан, andiya.serikbayeva@kaznaru.edu.kz*, iskakova_zhan80@mail.ru, slambayeva.a@mail.ru, b.bekbota@yandex.ru

² ТОО "VIP Safari Service", Алматы, Казахстан, dauletaliyev92@mail.ru

ОХОТНИЧЬИ РЕСУРСЫ ЮГА КАЗАХСТАНА

Аннотация

Охотничья фауна является важной составляющей биологического разнообразия южных регионов Казахстана. Являясь частью природных ресурсов охотничьи животные представляют с одной стороны объект охоты и имеют рекреационную и хозяйственную ценность, а с другой - подвергаются в полном объеме воздействию комплекса антропогенных факторов, из которых для степной зоны особенно актуальным является сельскохозяйственное производство. Сегодня становится особо актуальной проблема сохранения и объективной оценки природно-ресурсного потенциала отдельных регионов Казахстана. В этой связи необходимо предусмотреть все эколого-экономические издержки, связанные с оборотом сельскохозяйственных угодий и выявить противоречия, связанные с использованием охотничьих ресурсов на сельскохозяйственных землях. Охотничьи ресурсы, как часть природно-ресурсного потенциала освоенных регионов, являются объективным индикатором системного экологического кризиса степной зоны. В Казахстане степная зона - это аграрный регион, где особенно остро стоят проблемы сохранения биоразнообразия, социально-экономической и экологической оптимизации землепользования и управления охотпользованием. Целью исследовательской работы является анализ регионального охотничье-ресурсного потенциала и разработка принципов оптимизации управления охотхозяйственной деятельностью Южного региона Казахстана.

В статье приведены результаты анализа охотхозяйственной деятельности Кызылординской и Туркестанской областей являющиеся частью Южного Казахстана. Приведены данные о закрепленных охотхозяйствах, относительная численность хищных млекопитающих, как потенциальных объектов охоты – волка, лисицы, корсака, шакала, барсука и кунных как объекта охоты.

Ключевые слова: Хищные млекопитающие, охотничье хозяйство, объекты охоты, субъекты охотничьих хозяйств, егерская служба, охрана угодий, регулирование численности, охотничьи хозяйства, охотничьи угодья

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Д.А. Досманбетов^{1,2}, Б.Б. Есімбек², Р.С. Ахметов¹, К.Т. Абаева², Ж.К. Рақымбеков^{1,2}*

¹«Ә.Н. Бөкейхан атындағы ҚазОШАҒЗИ» Алматы филиалы, Алматы қ., Қазақстан daniyar_d.a.a@mail.ru*, ars_28@mail.ru, zhandos.1977@mail.ru

²«Қазақ ұлттық аграрлық зерттеу университеті» КеАҚ, Алматы қ., Қазақстан Esimbek96@bk.ru, abaeva1961@mail.ru

ҚАРА СЕКСЕУІЛ ОРМАН ЕКПЕЛЕРІНЕ ФЕНОЛОГИЯЛЫҚ БАҚЫЛАУ ЖҮРГІЗУДІҢ НӘТИЖЕЛЕРІ

Аңдатпа

Бұл мақалада қара сексеуіл көшеттеріне фенологиялық бақылау жүргізу нәтижелері