



AMPHIBIA AND REPTILE FAUNA IN 'GAZELLE' SPECIALIZED WILDLIFE PRESERVE OF BUKHARA AND ITS ADJACENT TERRITORIES

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<https://doi.org/10.5281/zenodo.7559510>

ARTICLE INFO

Received: 12th January 2023

Accepted: 22th January 2023

Online: 23th January 2023

KEY WORDS

ABSTRACT

Article analyzes the territorial distribution and changes in the number of amphibians and reptiles in the spring, summer, and autumn seasons as well as diversity by biotopes in the Bukhara specialized preserve "Jeyran" and adjacent territories. Currently, special attention is being paid to the issue of protection and rational use of the amphibians and reptiles in territories which are considered an important component of biodiversity. One of the directions of the reforms carried out in our republic is the rational use of natural resources, the preservation of the gene pool of plants and animals for future generations. An increase in the scale of anthropogenic impact on natural landscapes in recent years requires to take natural components into account and to develop appropriate measures of protection. However, the actual issue of the day is that the species composition, abundance, biotopic distribution, reproduction, seasonality and duration have not been studied.

The object of the study. Data were obtained on the territorial distribution and abundance of amphibians and reptiles found in various habitats of Bukhara specialized preserve "Jeyran" and adjacent territories in the seasons of spring, summer, autumn.

The subject of the study. Bukhara specialized preserve "Gazelle" and adjacent territories are the places where you can determine the number, natural and economic importance of both amphibians and reptiles by studying the current state of them in various habitats.

Material and methodology. Clay soils, rocky desert, salt marshes and sand dunes make up most of the studied territory. Tamarix, Haloxylon persicum, Haloxylon aphyllum, Descurainia Sophia, Artemisia diffusa, Alhagi pseudalhagi, Ammodendron conollyioccur and similar plants in the desert [3;5]. In Bukhara specialized preserve "Jeyran" and the adjacent areas, we conducted observations of the fauna of both amphibians and reptiles in order to determine the species composition in the spring, summer, autumn seasons of 2021-2022. The territory on which the study was conducted was counted 24 times on land using stationary and route



counting methods. The results of counting the number of animals were extrapolated to an area of 10 hectares, and the density of the animal community was determined by the formula below :

$$D = \frac{n}{2 \cdot L \cdot W} ;$$

D is the density; n is the number of birds encountered; L is the height of the route; W is the width of the route, or the distance from the axis of the route to the border of the corridor along which the calculation is carried out. To account birds on the left and right sides of the route axis, the Formula is multiplied by 2, but the results of our calculations were obtained on one side of the route axis, based on the uniqueness of the lakes.[5;6;8].

Result and discussion. Based on the analysis of field materials collected in the spring, summer, autumn seasons 2021-2022, in the preserve " Gazelle "and the adjacent territories 3 orders of amphibians reptiles (anura, turtles, squamata orders) and 5 suborders (procoela, diplasiocoela, sauria, snakes, Cryptodira suborders) and 10 families (bufonidae, ranidae, agamidae, gekkonidae, lacertidae, varanidale, boidae, Colubridae, viperidae, testudinidae) and 22 species were identified [7; 4] (Table 1).

Table 1

Species composition and abundance of amphibians and reptiles of the Bukhara specialized preserve "Jeyran" and adjacent territories

	Order	Protection status	Spring	Summer	Autumn
Phylum. Chordata					
Subphylum. Craniata					
Group. Anamnia					
Superclass. Tetrapoda					
Class. Amphibia					
Subclass. Apsidospondyli					
Order. Anura					
Suborder. Procoela					
Family. Bufonidae					
1	Bufotes viridis		+	+	+
Suborder. Diplasiocoela					
Family. Ranidae					
2	Pelophylaxri ridibunda		+	+	+
Group. Amniota					
Class. Reptilia					
Order. Squamata					
Suborder. Sauria					
Family. Agamidae					
3	Phrynocephalus helioscopus		+	+	+
4	Phrynocephalus interscapularis		+	+	+
5	Phrynocephalus reticulatus		+	+	+



6	<i>Phrynocephalus mystaceus</i>		+	+	+
7	<i>Trapelus agilis</i>		+	+	+
Family. Gekkonidae					
8	<i>Crossobamon eversmanni</i>		+	+	+
9	<i>Tenuidactylus fedtschenkoi</i>		+	+	+
Family. Lacertidae					
10	<i>Eremias velox</i>		+	+	+
11	<i>Eremias lineolata</i>		+	+	
12	<i>Eremias intermedia</i>		+	+	
13	<i>Eremias grammica</i>		+	+	+
Family. Varanidae					
14	<i>Varanus griseus</i>	UzRDB CITES I	+	+	
Suborder. Ophidia					
Family. Boidae					
15	<i>Eryx tataricus</i>	UzRDB CITES II	+	+	+
16	<i>Eryx miliaris</i>	UzRDB CITES II	+		
Family. Colubridae					
17	<i>Platyceps karelinii</i>		+	+	+
18	<i>Lytorhynchus ridgewayi</i>	UzRDB	+	+	+
19	<i>Psammophis lineolatus</i>		+	+	+
20	<i>Natrix tessellata</i>		+	+	+
Family. Viperidae					
21	<i>Echis carinatus</i>		+	+	+
Order. Testudines					
Family. Testudinidae					
Suborder. Cryptodira					
22	<i>Agrionemys horsfieldi</i>	UzRDB, RL, CITES II	+	+	+

Note: UzRDB – species (subspecies) listed in the Red Book of the Republic of Uzbekistan (2019)

RL-species (subspecies) listed in the red list of the International Union for Conservation of Nature and Natural Resources (IUCN) (2004)

CITES I, CITES II-species (subspecies) included in the annexes of the Convention on International Trade in Endangered Species of Wild Fauna and Flora.[1;2]. Of the fauna of amphibians and reptiles found in spring, summer and autumn in the Bukhara specialized nursery “Jeyran” and adjacent territories, 4 species are listed in the Red Book of the Republic of Uzbekistan, 1 species -in the IUCN red List, 4 species -in Appendices I and II of CITES [1;2].(Table 1)



From the orders of amphibians and reptiles found in the preserve and adjacent territories, the leading one is the Saurian (lizards), which includes 16 species. The proportion of other representatives is smaller, which can be seen in Table 2.

In table 2

The spectrum of order and families of amphibians and reptiles living in the Bukhara specialized preserve “Jeyran” and adjacent areas.

Suborders	Number of families	%	Number of species	%
Procoela	1	10	1	4,54
Diplasiocoela	1	10	1	4,54
<i>Sauria</i>	4	40	12	54,55
<i>Ophidia</i>	3	30	7	31,82
Cryptodira	1	10	1	4,54

According to the obtained results, out of 22 species of amphibians and reptiles identified in the Bukhara specialized nursery “Gazelle” and adjacent territories, lizards (12 species) make up the largest percentage (54.55%), Ophidia (31, 82%) with 7 species, Procoela (4.54%) with only one species, while diplasiocoela includes 1 species (4.54%) and Cryptodira also includes 1 species (4.54%) (Table 2). The high abundance and frequency of reproduction of amphibian and reptile fauna in late spring and early summer is directly related to abiotic factors such as temperature comfort, the availability of sufficient forage resources, and the availability of the necessary opportunities for reproduction. A decrease in the number of amphibians and reptiles, starting from the end of the summer season, leads to a reduction in the autumn season until the end of October. Such seasonal changes, mainly related to climate, cause hibernation of both amphibians and reptiles. During our observations in April-October, 2022 in the preserve on the Bukhara-Karshi highway at a distance of 14 km, as a result of a collision with cars, a *Varanus griseus*, 2 Central Asian desert turtles-*agrionemys horsfieldi*, 1 *eremias velox*, 2 steppe agamas-*Trapelus Agilis*, 1 *pelophylaxri ridibundam* died. Table-3.

Types of amphibians and reptiles killed as a result of road accidents on the Bukhara-Karaulbazar-Karshi highway (April-October 2022).

Table 3

Species	Number of species	Recorded place	Recorded time
<i>Pelophylaxri ridibunda</i>	1	‘Gazelle’ preserve	2.08.22
<i>Trapelus agilis</i>	2	‘Gazelle’ preserve	8.05.22
<i>Eremias velox</i>	1	‘Gazelle’ preserve	9.05.21
<i>Varanus griseus</i>	1	‘Gazelle’ preserve	12.06.22
<i>Agrionemys horsfieldi</i>	2	‘Gazelle’ preserve	10.04.22

We recorded similar cases in our observations carried out in 2004-2007 in Sarmushsay in Navoi region (Turaev 2007) and in 2012-2019 on the Bukhara-Gazli highway.

Conclusion. The State Cadastre of Wildlife Objects is a systematized and qualitative report which consists of information on the diversity, classification, degree of study of animals and other information that is necessary for the protection of wildlife, its sustainable usage. We



also consider it appropriate to pay attention to the following recommendations, which are applied in a number of protected areas of our republic in order to prevent collisions of animals with vehicles:

- paying attention to the installation of concrete fences (barriers) along road and railway networks in animal protection zones;
- the introduction of special “transition corridors” - tunnels for the passage of animals under highways and railways crossing the protected area;
- establishment of speed limits for vehicles in places where animals congregate..

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