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ECOLOGY AND FAUNA OF THE SPECIES BELONGING TO THE SUBORDER LACERTILIA OF KASHKADARYA REGION

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Abstract:

This article provides informations about the ecology and fauna of the suborder lacertilia in the Kashkadarya region. Herpetofauna of Kashkadarya region has not been studied scientifically for several decades. Our data were collected in the spring and summer of 2018-2020 and in April-May 2021.

Keywords: Reptiles, lacertidae, geckonidae, agamidae, scincidae, anguidae, varanidae, fauna.

INTRODUCTION:

Kahkadarya region is located in the southern Uzbekistan, east and west borders are from 39o14'00 "N-66o52'45"E to 38o58'08"N-64o21'58"E and north and south borders are from 39o22'21"N-66o19'20 ”E to 38o01'46”N-66o22'02”E. The area is 28.57 thousand km2, of which 6.677 thousand km2 is arable land, 0.863641 thousand km2 is protected area. The average population density is 113 people / km2. The main part of the Kashkadarya region is the southern part of the Kyzylkum where are Sandikli desert and Karshi-Nishan steppes (including the lowlands of Guzar district) which covers an area of about 14.5 thousand km2, the about 5 thousand km2 are foothills and about 9.5 thousand km2 consists of mountainous areas[5]. Based on the above data, we are estimated that an average of 80% of the region's area is naturally preserved with excellent fauna and flora. In particular, the literature mentions the information about that 40 species of reptiles are found in the kashkadarya region[1,3].

The distribution and biological characters of reptiles species in the Kashkadarya region was studied by A.M Nikoliskiy in 1915-16, S.K Dalya in 1936, M.V Kaluzhina in 1951, O.P Bogdanov in 1950-60. Our research is of scientific interest, primarily in the fact that scientific research aimed at studying the Reptilia class in the Kashkadarya region was carried out for the last time by V.P Karpenko, X.S Salikhbayev, D.Y Kashkarov, M.M Ostapenko, A.A Petrova, A.Zakirov, N.A Pirnazarov in 1963-65. Then only places of residence of these species was mentioned on the common expeditions of the Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan[3].

MATERIALS AND METHODS:

Field observation and biostatistical analysis of the collected data were mainly used in the study of the Kashkadarya region. The following methods were used.

Selection of the study area: Our research was conducted at 11 points located in the selected ***38o52'15.121"N 64o38'36.361"E (250-300 m. above sea level), 39o25'50.281"N 65o26'39.539"E (250-300 m. above sea level), 38o40'27.2532"N 65o35'55.1832"E (350-450 m. above sea level), 38o33'35.4204"N 66o06'27.198"E (400-600 m. above sea level), 38o26'55.425"N 65o53'16.431"E (500-600 m. above sea level), 39o18'44.604"N 66o36'30.5784"E (600-750 m. above sea level), 38o37'07.307"N 66o33'56.996"E (800-1200 m. above sea level), 38o09'35.958"N 66o34'32.181"E (1000-1200 m. above sea level), 39o03'33.798"N 67o12'59.966"E (1800-2200 m. above sea level), 38o41'22.5168"N 67o11'06.6264"E (2100-2400 m. above sea level), 38o49'56.3412"N 67o14'03.904"E (3000-3400 m. above sea level)*** coordinates across the Kashkadarya region. The selection of these points took into account the biology and ecology of reptiles, the study of natural water bodies, artificial ecosystems, climate and relief effects in the study area, and then the selection of routes. The routes were 4-6 lines that traversed 8-10 km strip crossing the specified coordinates[2,4].

DETERMINING OF THE SPECIES:

Further, the captured reptiles are carried to the base camp, where they are measured and folidosis is done.

Folidosis is a method in which similar species of reptiles are determined by counting certain scales on their body and head. In this case, you must have a measuring tape, ruler, vernier caliper, felt-tip pen, pen and field diary on hand.

The last recorded all measurements: L - body length; Lcd-the tail length; Lcr-the length of the head; Scr-the width of the head; Hcr - head height; and also the results of reptile foliosis: Dors - dorsal transverse scales; Vent - ventral scales; An – anal.[2]

STUDY OF POPULATION DISTRIBUTION IN THE AREA:

During the study we studied areas from 120–150 km2 (average 135 km2) in each coordinate points. (a total area of 1444.3 km2) It is known that reptiles are spread ruggedly throughout the area. Traces left by individuals are used to study the distribution of the species in the area. for this we need to finding a specific species group (the area around several nests close to each other) and marking the location of the group as the center. we start to observate from the center that there are traces and other nearby nests, as well as traces around them (pieces of rubbish skin and other signs if traces cannot be found). The first area identified during the follow-up will be the active area of the population. Then peripheral area is determined. This area are place where are found individuals of the species or similar marks to this species's marks. And finally, the geographical and ecological boundaries are studied and the full range of the population is determined. During of observation, individuals of a population and its traits may not be present at all in a particular part of the full range, but they may be able to occupy that area in the past or in the future. This method of studying the distribution of species in the study area was calculated using the polygonal convex method[2,4].

RESULTS:

During our research, we identified 37 species of reptiles in Kashkadarya region. 7 species are in need of protection listed in the Red Data Book of the Republic of Uzbekistan, 2 species are on the TMXI red list and 1 species is on the CITES red list. 23 of these species belong to the suborder of li.... and 2 species, Eremias nigrocellata (Nikolsky, 1896, 2 (VU: R)) and Varanus griseus ssp. Caspius are included in the Red Data Book of the Republic of Uzbekistan. Varanus griseus ssp. Caspius (Eichwald, 1831) is a rare declining species listed as first on the CITES red list[1,3].

During the research, a statistical analysis of 23 species of suborder Lacertilia (Sauria) in Kashkadarya region was divided into 6 families and the following results were obtained.

Members of the family ***Agamidae*** 7 species (226 individuals), members of the family ***Geckonidae*** 4 species (104 individuals), members of the family ***Lacertidae*** 6 species (192 individuals), members of the family ***Scincidae*** 4 species (73 individuals), 1 species (58 individuals) from the family ***Anguidae*** and 1 species (21 individuals) from the family ***Varanidae*** were identified. (Table 1)

Conclusion: In conclusion, our research in Kashkadarya region identified 23 species of lacertilia suborder and they belong to 6 families, 11 genus and studied their ecology and fauna. We have studied only 5% of the total land area of the region, which is 1444.3 km2. I think there are still some unexplored species in this area. It should also be noted that today there is a clear decline in the fauna of reptiles due to land development, increasing industrial waste and other similar reasons.

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Table 1
Representatives of the suborder of lacertilia of Kashkadarya region and the number of specimens encountered

№	Species	38°15.121"N 64o38'36.361"E (250-300 m. above sea level)..144.2kv.km	39o25'50.281"N 65o26'39.539"E (250-...	38o40'27.2532"N 65o35'55.1832"E (350-450 m. above sea	38o33'35.4204"N 66o06'27.198"E (400-600 m. above sea	38o26'55.425"N 65o53'16.431"E (500-600 m. above sea	39o18'44.604"N 66o36'30.5784"E (600-750 m. above sea	38o37'07.307"N 66o33'56.996"E (800-1200 m. above sea	38o09'35.958"N 66o34'32.181"E (1000-1200 m. above sea	39o03'33.798"N 67o12'59.966"E (1800-2200 m. above sea	38o41'22.5168"N 67o11'06.6264"E (2100-2400 m. above	38o49'56.3412"N 67o14'03.904"E (3000-3400 m. above sea	Umumiy uchratilgan individlar soni 1444,3 kv.km
1	***Phrynocephalus helioscopus (Pallas, 1771)***	5	4	7	8	7	7	4	5	5	-	-	52
2	***Phrynocephalus interscapularis (Lichtenstein, 1856)***	4	5	6	6	4	7	4	4	-	-	-	40
3	***Phrynocephalus mystaceus (Pallas, 1776)***	4	3	4	4	2	3	3	4	-	-	-	27
4	***Laudakia (Stellio) himalayanus (Steindachner, 1867)***	-	-	-	-	-	-	-	2	3	3	2	10
5	***Laudakia (Stellio) lehmanni (Nikolsky, 1896)***	3	4	5	3	3	2	5	6	-	-	-	31
6	***Laudakia (Stellio) chernovi (Rzepakovsky,1981)***	-	-	-	-	-	3	5	3	6	-	-	17
7	***Trapelus sanguinolentus (Pallas, 1814)***	6	6	7	8	5	6	6	5	-	-	-	49
8	***Pseudopus apodus (Pallas, 1775)***	5	5	6	7	7	6	8	6	5	3	-	58
9	***Crossobamon eversmanni (Wiegmann, 1834)***	2	3	2	4	3	1	2	-	-	-	-	17
10	***Cyrtopodion caspius (Eichwald, 1831)***	4	4	3	2	3	2	2	3	-	-	-	23
11	***Cyrtopodion fedtschenkoi (Strauch, 1887)***	-	-	-	-	3	2	3	5	7	4	3	27
12	***Teratoscincus scincus (Schlegel, 1858)***	4	5	3	6	7	5	5	2	-	-	-	37
13	***Eremias nigrocellata Nikolsky, 1896.***	-	-	-	-	-	-	-	7	-	-	-	7
14	***Eremias arguta (Pallas, 1773)***	-	-	4	2	3	2	5	3	2	-	-	21
15	***Eremias grammica (Lichtenstein, 1823)***	6	5	5	6	7	4	-	-	-	-	-	33
16	***Eremias intermedia (Strauch,***	5	5	6	7	5	6	7	4	-	-	-	45

	1976)												
17	***Eremias lineolata (Nikolsky, 1896)***	5	5	6	5	6	6	6	3	2	-	-	44
18	***Eremias velox (Pallas, 1771)***	5	5	5	6	6	6	5	4	-	-	-	42
19	***Ablepharus deserti (Strauch, 1868)***	3	4	-	4	3	3	-	4	-	-	-	21
20	***Asymblepharus alaicus (Elpatjewsky, 1901)***	-	-	-	-	-	-	2	4	3	2	3	14
21	***Ablepharus pannonicus (Lichtenstein, 1823)***	-	-	-	-	-	-	-	2	4	2	3	11
22	***Eumeces schneideri (Daudin, 1802)***	-	-	3	2	4	5	6	4	3	-	-	27
23	***Varanus griseus (Daudin, 1803)***	1	3	3	2	3	3	4	2	-	-	-	21