



Reproduction and Age-Sex Structure of Midday Gerbils

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Abstract: The article shows the increase in natural and artificial biotopes in the Amudarya agro-landscape ecosystem in 2014-2019. At the end of the reproductive process, the total seasonal result averaged 15.8% of the number of pregnancies, 4.05% of the number of embryos, and 36.3% of the number of young. These figures do not differ much from the years before the Aral Sea ecological crisis. In general, the middayergerbil is said to be a species that lives in one place.

Keywords: agro-landscape ecosystem, in artificial biotopes, intensive, ecological crisis, embryo.

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This species is able to reproduce in the Amudarya agro-landscape ecosystem throughout the year in all hot seasons. However, according to our observations, the process of reproduction in natural habitats lasts from March to October. (Table 1), In artificial biotopes, the number of homologous mice increases significantly during the period of its ripening and harvesting in wheat fields (V-VI-VIII).

Table 1: Reproductive indicators of middayergerbils in 2014-2019

Months	number of pregnancies%	reproduced for the second time %	The average number of embryos	Number of young people in %
I-II	-	-	-	-
III	4,0	0	4,0	-
IV	14,0	0	4,9	5,1
V	29,1	6,1	4,6	22,3
VII	20,1	13,0	3,8	55,2
IX	26,1	14,2	3,0	40,4

X	1,0	0	4,0	58,5
XI	-	-	-	-
Average:	15,8	-	4,05	36,3

Reproductive activity in the number of middayerbils occurs in May, July and October (Table 1). A twofold increase in the number of developed adults is taken into account during these months. This is because the analysis shows that this condition is more common during the wheat harvest and in wheat fields and among mice from well-developed natural habitats of plants close to these fields. There is almost no difference in the average number of embryos per pregnant mouse.

At the end of the reproductive process, the total seasonal result averaged 15.8% of the number of pregnancies, 4.05% of the number of embryos, and 36.3% of the number of young.

These figures do not differ much from the years before the Aral Sea ecological crisis. Differences are not clearly visible due to data from well-conducted natural and artificial biotopes. Indeed, during the crisis, the reproduction of many natural biotopes is significantly reduced, as can be seen from the perennial population dynamics of this species, the number of biotopes.

In some habitable years, middayerbils were also encountered in February. According to G. A. Asenov (1968), in 1963 and 1964, the middayerbil was also found in March and November. The number of mice that reproduced for the second time was 5.7% in May and 13.0% in September. [1]

This suggests that the reproductive period and intensity of the middayerbils in the Amudarya agrolandscape ecosystem are similar to those of the Volga-Ural desert species, and that there is evidence that this species has a similarity in scale. (Lysitsin A. A., Demyashev, 1961, Demyashev 1962) The peak of the increase in the number of middayerbils in the North-West Caspian Sea occurs in April and August. (Pavlov, 1959). [2, 3, 4]

In the southern part of Kyrgyzstan (Fedenina, 1966), the increase in the number of middayerbils occurs in March-October, and the number of pregnant mice peaks in May, June, and August. [5]

According to G. A. Asenov (1968), the increase in the number of middayerbils in the Amudarya region lasts from February to November, and mainly in pregnant ones, there are two peaks: high in May, low in July, the first with 40.0%, the second with about 38%. [1]

The sex ratio of an adult middayerbils was 0.9: 1.0, 1: 1. In some years, it is also subject to seasonal changes. According to G. A. Asenov (1968), in the autumn and winter of 1960-1965, the majority of males in this relationship were shown. [1] This was also observed in our observations in 2014-2019, and the decline in males may also be related to the increase in male activity during the breeding season and the decrease in activity due to female offspring care (Rall 1939, Asenov 1968, Rudenchik 1962). [6, 1, 7]

The ratio of the number of young mice to the adult male in 1958-1964 was 1: 1 in XI-III months, 1: 1.2 in IV-VI, 1: 2-1.0 in IX-X, 2014-2019. years. The age and sexual similarity of the species in other regions indicate that the species is highly adaptable to different conditions.

It is a rare process for this species to live in the wild for 2-2.5 years and more than 3 years.

Middayerbils are nocturnal animals that live in the same biotope as house mice, and their feeding patterns are similar and their damage is inseparable. When we analyzed the reproduction of the mouse, we took into account the rate of reproduction from 3 to 9 embryos (Table 2).

Table 2: Breeding of middaygerbils in the territory of the lower Amudarya agro-landscape ecosystem in 2014-2019

Number of embryos	3	4	5	6	7	8	9	Average number of embryos
Number of pregnant mice	10	12	30	15	4	1	1	4,9
Number of pregnancies in%	13,7	16,4	41,1	20,5	5,5	1,4	1,4	
Total number of embryos	30	48	150	90	28	8	9	
Number of breeding ratios in %	22(30,1%)		45(61,6%)		6(8,4%)			

As can be seen from Table 2, the average number of adult mice in the lower Amudarya agro-landscape ecosystem is 61.6%, the number of low-breeding pregnancies is 30.1%, and the number of high-breeding mice is 8.4%, fertility is moderate.

When we compare this situation with the previous many years, we see that it is much lower. It is reasonable to assume that this is due to the fact that the ecological situation has changed dramatically in recent years, and its decline is due to the deterioration of the environment.

Younger sex ratios are also less likely to focus on changes that are in line with long-term norms. As for the mobility of this species, there is no doubt that it is a real night mouse. Observations made during the calculations in natural and artificial biotopes are also a proof of our opinion.

Seasonal observations for each type: before and after sunset in the spring in April-May at 17-18, 20, 24, in the early morning before and after sunrise in all observations allowed us to determine whether the midday gerbil's daily activity begins with a dark fall and stops before sunrise.

Similar activity throughout the day was observed in other subspecies (Kostin 1962, Fedvenina 1966, Asenov 1968). [8, 5, 1]

The midday gerbil moves around 5-10-20 meters from its nest during the night. Yu.V.Rudenchik (1962) [7] wrote that in the conditions of Karakalpakstan he was detained after 6-12 months at the place where the signs were given. It is also said that the length of a trail of a species, i.e. family members, reaches a total of 1 km, and so on. In general, the midday gerbil is a species that lives in one place. We also managed to find that midday gerbils fell into 10 wooden traps, which were permanently built under the Djida tree.

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