SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 10 | October 2025 - Peer Reviewed Journal

UDC 504.75:598.2(575.172)

MATERIALS ON THE NESTING OF THE DESERT SHRIKE (LANIUS PALLIDIROSTRIS) IN USTYURT, KARAKALPAKSTAN

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ABSTRACT
This article presents the results of a 2020–2024 study of the reproduction biology and ecology of the Great Grey Shrike (Lanius pallidirostris) on the Ustyurt Plateau in Karakalpakstan. Observations were made of abundance, seasonal dynamics, nests, eggs, and chick development. The Great Grey Shrike (Lanius excubitor homeyeri) winters on the Ustyurt Plateau from October to February, while the Great Grey Shrike arrives in March and departs by the end of September. It nests in saxaul at a height of 70–240 cm. Eggs are laid in batches of 4–7, measuring 24–28 × 18–21 mm. Incubation lasts 13–15 days, and the chicks become flightable at 10–14 days, weighing up to 51 g. Chick development is uneven. The desert shrike feeds on insects and lizards, using the food supply around the nest, which helps control pest populations. These data highlight the importance of species conservation and sustainable habitat management.

KEY WORDS: *Desert Shrike, Nesting, Population Size, Reproductive Biology, Ustyurt, Karakalpakstan.*

The desert shrike is a subspecies of the shrike family (Lanidae). There are 20 subspecies of shrikes in the world [15; P. 728]. Of these, two subspecies are found in Ustyurt of Karakalpakstan - the great grey shrike (Lanius excubitor homeyeri) and the desert shrike (Lanius excubitor pallidirostris). According to the data of ornithologists who conducted observations in Karakalpakstan [1; P. 155, 3; 555 p., 18; P. 1-26, 8; 151-157, p. 11; P. 65-72, 4; P. 79-127, 14; 184 p., 6; [200-212-p.], and based on our observations, in the Ustyurt region of Karakalpakstan, the great grey shrike is considered a migratory and wintering bird, while the desert shrike is a migratory and breeding bird. These two subspecies differ from each other in appearance, relative wing length, white wing patches, and a white forehead stripe.

The research was conducted during 2020–2024 in all seasons in the northern and central parts of the Karakalpak section of the Ustyurt Plateau. Bird observations were carried out using optical instruments: a 15× binoculars by Baigish and a 60× spotting scope by Viking. Population size and seasonal dynamics were determined following the method of N.G. Chelintsev [16, pp. 5–14]. Reproductive biology and ecology of the birds were studied according to the methodologies of G.A. Novikov [9, p. 501] and A.S. Malchevsky and N.P. Kadochnikov [7, pp. 277–282]. Following I.I. Schmalhausen's method, nest construction, egg mass reduction during incubation, and chick growth were investigated [17, p. 32].

Some researchers [1, p. 155; 11, pp. 65–72] have noted the presence of the Great Grey Shrike in the lower reaches of the Amu Darya River in July–August and classified it as a wintering species. The desert shrike, in contrast, was recorded during the breeding period. The Great Grey Shrike was also observed in the lower Amu Darya region in summer and considered a wintering species.

According to our data, the Great Grey Shrike begins to arrive on the Ustyurt Plateau of Karakalpakstan for wintering in October, with the wintering period lasting until the end of February. We recorded this species on 12 October 2022 and 25 February 2023 in the Barsakelmes depression. The desert shrike starts arriving on the Ustyurt Plateau in March, with its departure continuing until the end of September.

According to A.K. Rustamov, during the breeding period on 10–11 May 1970, 11 pairs of desert shrikes were observed in the southern part of the Ustyurt Plateau [12, pp. 221–222]. E.A. Rustamov recorded 7 desert shrikes on 5 May 1989 in the central part of the Ustyurt, between Assake-Audan and Shakhpakhty [13, pp. 223–227]. V.V. Neruchev et al. observed an average of 6.2 desert shrikes over a 10 km stretch in the northern part of the Ustyurt [10, pp. 193–195]. Within the Shakhpakhty area, 7 desert shrikes were registered [13, pp. 223–227].

According to our data, the occurrence of the desert shrike in the northern and central parts of the Karakalpak Ustyurt is related to the presence of saxaul trees suitable for nesting. In an area of 10 km2 with favorable conditions, there were, on average, 3.8

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individuals in spring, 6.6 in summer, and 1.1 in autumn (Fig. 1). In winter, the great grey shrike migrates to Ustyurt for the winter. The population of this species during the winter period averages 1.8 individuals.

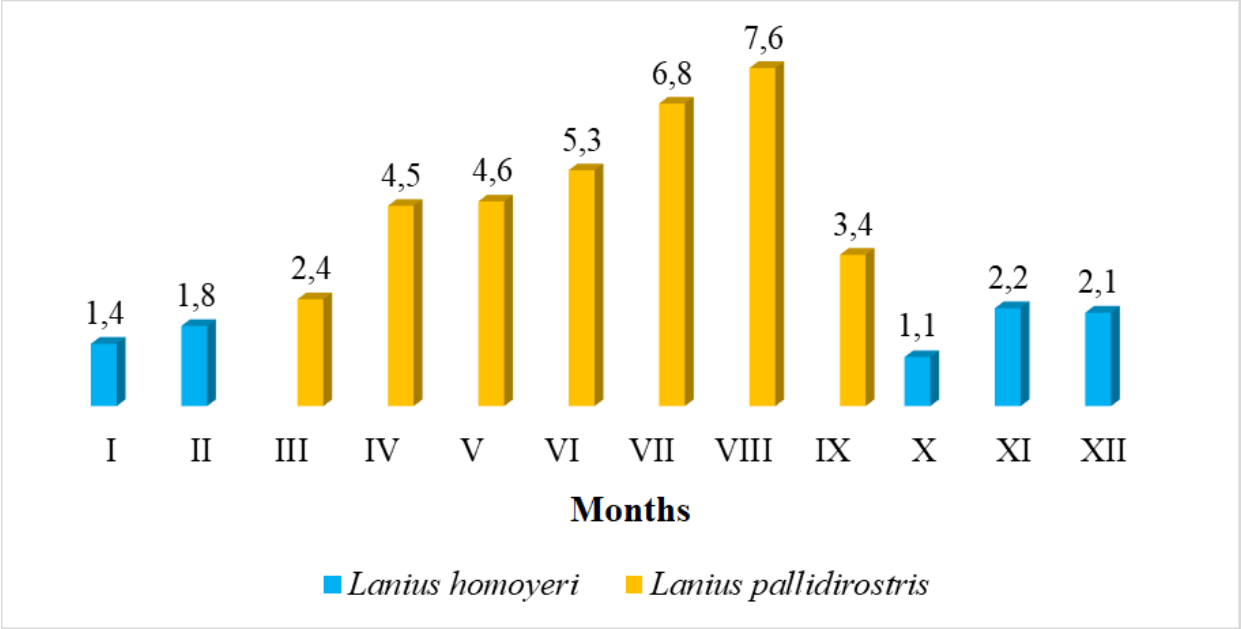


Figure 1. Average annual number of shrikes (per 10 km^2)

On the Ustyurt Plateau, in areas where saxaul grows well, the desert shrike nests [1; 155-p.]. The nest diameter is 120-140 mm, the nest tray is 60 mm, and the nest wall thickness is 50-60 mm. According to Zh. Lakhanov, the nest height is 125 mm, the diameter is 147 mm, the tray depth is 66.5 mm, and its diameter is 90 mm [5; 158-b.].

In studies conducted by ornithologists in the Ustyurt Plateau of Karakalpakstan, the nesting season of the desert shrike falls at different times. For example, V.P. Kostin recorded 7 nests in May [4; pp. 79-127]. In studies conducted in 1961 in Ustyurt by Mambetzhumev and Abdireymov, in June 3 nests with 5-6 eggs were found, in one nest there were 6 chicks of different body lengths (40.4; 37.8; 37.5; 37.0; 34.0 and 33.7 mm) and weights (2.32; 2.15; 2.1; 2.02; 1.65 and 15 g) [6; pp. 200-2012].

According to our data, the nesting season for the desert shrike in the Ustyurt region of Karakalpakstan begins in the second ten days of April and continues until the end of June. Nests discovered during our research were built in saxaul and located 70-240 cm above ground level. The nest is constructed from small saxaul and wormwood branches. The interior is lined with small herbaceous twigs. The nest height is 120 mm, the diameter is 145 mm, the depth of the nest box is 70 mm, and the diameter is 85 mm. The eggs are pale greenish, with pale brown spots. The spots are denser at the blunt end of the egg. (Fig. 2).



Figure 2. Desert Shrike eggs (2021)

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The eggs of the Desert Shrike (n=9) measure 24.6-28.7 x 18.6-21.1 mm and weigh 4.17-5.7 g. After laying the third egg, females begin incubating the eggs in the nest. The incubation period lasts 13-15 days. The hatched chicks begin to fly after 10-11 days. The total nesting period is 32-33 days [6; 200-2012-p.].

According to our data, the Desert Shrike lays 4-7 eggs per nest. Of the 11 nests we examined, 4 nests contained 4 eggs, 2 nests contained 5 eggs, 3 nests contained 6 eggs, and 2 nests contained 7 eggs. The eggs (n=58) are 24-25.6 x 18-18.6 mm in size and weigh 3.8-4.0 g. The chicks hatch with their eyes and ears closed. They are featherless and weigh 7-9 g (n=6) (Fig. 3).



Figure 3. Desert Shrike chicks (2024)

Nestlings grow rapidly. Their eyes open at 3–4 days, and by 5–6 days approximately half of the body is covered with emerging feather shafts, including the development of tail feathers. By day 10, the body is fully feathered, and features characteristic of adult birds begin to form. Nestlings fledge on day 14 (Table 1).

Table 1
Body part measurements of desert shrike chicks (n=6) during the breeding season

№	Age of the chick, in days	Weight grams	Length of individual body parts (mm)			
			beak	elbow	wings	tail
1	1	7	6	14	21	-
2	6	31	10	29	40	9
3	10	43	11	34	65	17
4	13	51	12	34	71	22

In nestlings, the beak and elbow grow more slowly than other body parts, while the rest of the organs develop at a faster rate. During the breeding period, nestling body mass increases from 7 to 51 g, i.e., by 7.28 times. On 6 June 2021, four desert shrike nests were recorded in the Churuk section of the “Saiga” Complex Landscape Reserve. One of the nests contained four nestlings aged approximately 4–5 days. Primary feather buds (tubes) were observed on the bodies of the nestlings, with variations in the sizes of different body parts. Body length ranged from 80 to 100 mm, body mass from 19.2 to 27.8 g, beak length from 7 to 8 mm, elbow length from 20 to 25 mm, wing length from 20 to 23 mm, and tail length from 1 to 5 mm. The variability in morphological parameters and body mass indicates asynchronous hatching from the eggs.

Literature sources indicate that on the Ustyurt Plateau, the desert shrike feeds on lizards, dark beetles, and locusts [4, pp. 79–127; 6, pp. 200–212]. The shrikes impale their food on the branches of shrubs around the nest, which is why they are also called "zhulans." In our observations, we recorded desert shrikes impaling dark beetles, locusts, phalangs, fast-moving lizards, and agamid lizards on branches around the nest.

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Studies of the breeding biology and ecology of the desert shrike (Lanius pallidirostris) on the Ustyurt Plateau (2020–2024) revealed that the species nests in saxaul at a height of 70–240 cm, with the breeding season extending from April to late September. The clutch consists of 4–7 eggs, incubation lasts 13–15 days, and the chicks become flightable on the 10–14th day, with weight increasing from 7 to 51 g. The birds were found to utilize food reserves (insects and lizards) around the nest, providing natural pest control. These findings highlight the need for species conservation and sustainable habitat management to maintain the region's biodiversity.

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