

Observations on breeding of the Shaheen Falcon

Falco peregrinus peregrinator in Gujarat

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Introduction

The Shaheen Falcon (*Falco peregrinus peregrinator*) is a powerful falcon with blackish upperparts, rufous underparts and white throat. It is also known as the Black Shaheen or the Indian Shaheen. It often shows a complete black hood, covering most of the cheeks. Juveniles are similar to adults in plumage but show prominent streaking on underparts and rufous fringes to the upperwings. In adults, sexes are similar but female is larger than the male (photo 1 and photo 2).

Shaheen (*F. p. babylonicus*) is rare, and seen in Gujarat and mainly in the NW India; it is also a winter migrant (Ganpule 2016, Bhatt & Ganpule 2017). The Shaheen Falcon is the only resident subspecies of the Peregrine Falcon which is known to breed in the Indian Subcontinent (Naoroji 2006). This bird usually prefers rocky mountains, hills or other such habitats but during winters, they are also known to migrate locally (Naoroji 2006, Mori & Joshi 2007).



Photo 1a



Photo 2a



Photo 1b



Photo 2b

Adult female perched on Euphorbia and rock. Note that the female is bigger and more powerful-looking than the male. The reverse sexual dimorphism shown by this falcon can be seen in these photos.

Adult male perched on Euphorbia and on a rock. See photo 2a & 2b in which the female is also perched on the same perches. Compare structure and size of male with female. The male is smaller and has a slimmer build.

Three subspecies of Peregrine Falcon are found in India. The most common and widespread subspecies of India is the Tundra Peregrine Falcon (*F. p. calidus*), which is a common winter visitor in Gujarat (Ganpule 2016). The Red-naped

In Gujarat, Shaheen Falcons have been reported from various locations throughout the state, but most of the sightings were from hills or rocky mountain habitat. For Gujarat, it is an uncommon to rare resident in the hilly and forested areas of Saurashtra and also in the forest areas from North to South

Shaheen Falcon....

Gujarat (Mori & Joshi 2017); the authors speculated that the Shaheen Falcon could be breeding in the Girnar, Pavagadh and Jessore Hills. The reproductive season of Shaheen Falcon is from December to April, and the nest is usually on high cliff ledges or in cavities (Naoraji 2006). The nests of the Shaheen Falcon have also been recorded on man-made structures such as buildings and transmission or mobile phone towers in India (Pande *et al.* 2009, Pande *et al.* 2017).

I present herewith various observations on the breeding of Shaheen Falcons in Gujarat. All the observations were in the hills or rocky mountain habitat. There have been no reports of breeding of the Shaheen Falcon on man-made structures in Gujarat so far and I did not encounter any breeding pair nesting on man-made structures. Although the Shaheen Falcon is widespread, there is very little information about the nesting of this falcon in the state. The reasons for insufficient breeding data of this falcon could be attributed to many factors such as the following:

It is very difficult to find an active nest or an eyrie in vast habitats of hills or rocky mountains

Upon finding a nest, the visibility of the nest from an accessible vantage point is usually very limited

As the nesting happens on the top or upper cliffs, mountains ledges or in crevices in vertical cliffs, it is very cumbersome to trek to the top of the hills or mountains on a regular basis to monitor the breeding activities

Even though the birds look very bright and colourful, in the rocky mountains or on out-crops, they are extremely camouflaged and very difficult to find when perched

The activity time of a breeding pair is limited as the birds spend most of the time either perched or flying high up. Even when seen flying, they travel large distances with ease and it is not possible for observers to follow the bird's movements

Observations

My observations on the breeding of these birds are from the Girnar Hills, Pavagadh Hills, rocky outcrops in three different locations of Jessore and Palanpur outskirts and also from Mt. Abu. In my recent visit, I was able to observe a pair of Shaheen Falcons in the Idar Hills too, which is also an apt habitat for the breeding of the Shaheen Falcon but, there have been no earlier reports of this falcon from the location and I could not confirm whether it was breeding there.

Precise nest locations and dates of the photographs have been intentionally withheld owing to the probable disturbance which may be caused to breeding birds and considering the

rarity of these falcons while also looking at the various threats to the nesting birds. Utmost care was taken to ensure that the nesting birds were not disturbed, following the protocols in Barve *et al.* (2020). The distance from the observation point to the nest was more than 100 mts and all the photographs of nestlings were taken maintaining significant distance and using a Canon 600 mm lens and a 1.4x Teleconverter with a 45 MP camera; all the photographs given here are full cropped images. I did not attempt to find out the clutch size or brood size at hatching because the observed nest was in a steep valley and sampling the nest contents would have required invasive and potentially unethical techniques – see Barve *et al.* (2020) for details on conducting research on nesting birds.



The chick, aged 12-14 days old. Note emerging pin feathers on wing. Overall covered with white down.

All Photos: Nirav Bhatt

A pair was observed mating in mid-February. In May-end, a nest with one small chick, of about 12-14 days age (photo 3), was observed in the nest – this day was noted as day 0. The chick was aged based on its size and the down feathers seen but it is possible that the aging could be one –two days in error. The chick was almost fully white, with a few dark wing feathers emerging (emerging pin feathers). The chick would sit motionlessly for most of the time. It became active only when the parents would come to feed it. The nest location was such that the nest cavity or crevice in the ledge was deep and the visibility from my vantage point was limited. Therefore, once the chick went deeper inside the nest, its activities could not be monitored.

After 7 days, a repeat observation of the nest was done and the chick (now aged about 19-21 days) (photo 4) was seen growing up rapidly with primary feathers and tail retrices developing more than what was seen earlier. During this time,



Photo 4a



Photo 4b

The chick, aged 19-21 days, with blackish wing feathers growing and with few blackish feathers on mantle. Otherwise covered in white down. The tail, showing emerging blackish feathers with pale rufous tips, is visible in the second photo.

the chick was a little more active and it had started more movements inside the nest. It was seen flapping its wings a few times but it remained seated for most of the times. After 18 days, a repeat observation of the nest was done and the chick (now 30-32 days old) (photo 5) was seen to be almost ready for fledging. All the flight and tail feathers had developed while few underwing coverts were in the developing stage. During this time, the chick was fairly active. It rested for some time and it kept flapping its wings at regular intervals (photo 6). The chick would call upon seeing the adult birds. Except for a few whitish down feathers on the head, all juvenile-type feathers had grown and the tail showed rufous barring with pale rufous tips (photo 7)

After 28 days of the observation, I expected that the now fledged chick would be seen flying with adults but as I reached



Photo 5

The young bird, aged 30-32 days, with almost fully developed juvenile plumage.

All Photos: Nirav Bhatt



Photo 6

The young bird, flapping its wings. Few underwing-covert feathers not yet grown and hint of whitish down feathers on crown.



Photo 7

The young bird, flapping its wings. Note rufous edges to upperwings and the tail with rufous barring and pale rufous tips.



Photo 8

Adult male with bat kill.



Photo 9

Adult with Little Swift kill.

the location, it was extremely foggy and the climate was very cloudy. We could not see the young or the adult birds. I did not visit this location again.

There were many interesting observations made by me during the monitoring of this particular nest. In the initial stages of nesting, the adults would stay near the nesting area and chased off any other raptors, including the Indian Vulture (*Gyps indicus*), from the nesting ledge. Very few prey deliveries were observed during the nesting period as there was significant fog in early morning; there was practically no visibility of the nest from the vantage point. This was the situation almost throughout the nest observation period. The adult bird was once seen hunting a bat species (photo 8) and once with a Little Swift (*Apus affinis*) (photo 9). Besides the Indian Vultures, which were also nesting in nearby ledges, the other raptors seen near the nesting area were Black-winged Kites (*Elanus caeruleus*), White-eyed Buzzard (*Butastur teesa*),

Shikra (*Accipiter badius*) and Oriental Honey Buzzard (*Pernis ptilorhynchus*).

Discussion

The data presented here is one of the very few long duration nesting observations of the Shaheen Falcon in Gujarat, where one chick fledged. There were more nesting observations from other parts of Gujarat, most of which were post fledgling, which are reported below:

Nest	Date	Observations
Nest 1	May-end 2017	two young seen flying with adults
Nest 2	June 2018	two young seen flying with adults
Nest 3	May-end 2019	two young seen flying with adults
Nest 4	June 2021	one young seen perched and flying with adults
Nest 5	June 2021	two young seen perched and flying with adults
Nest 6	June-end 2022	one freshly fledged bird in nest

In six nesting observations I made in different parts of the state in the last few years, there were two fledged young on four occasions while there was only one fledged bird on two occasions. Based on my observations, it seems that the fledging period for this falcon is about 30-35 days and it is likely that the young remain with the parents for some more time. According to Naoroji (2006), the fledging period for this falcon is not known and the corresponding role of the sexes is also not known. This study thus provides a rough estimate on the fledging period in this falcon.

It was a very thrilling experience to see the activities in the nesting territory once the chicks are fledged. The young would continuously keep calling and would follow the adults. The adults would respond back with calls. Often, there were some aerial food transfers and very fast flights. There were only limited prey deliveries which were observed by me as most of the observations I made were brief. All the prey items which were given to the chicks were unidentified bird species while the identified species were Rock Pigeon (*Columba livia*), Rose-ringed Parakeet (*Psittacula krameri*) and some swift/martin species.

Although this is not a detailed study on the breeding biology of the species, this study gives an idea about the expected productivity and the status of this Peregrine Falcon subspecies

in the state. A detailed study on the breeding biology of the Shaheen Falcon from multiple locations in Gujarat could provide significant insight into the breeding requirements and the reasons behind the success or failure of nesting.

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Observations of a nest of an Indian Paradise-Flycatcher *Terpsiphone paradisi*

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The Balaram-Ambaji Wildlife Sanctuary is located near Palanpur, in northern Gujarat and is an excellent place for bird watching. I frequently visit this sanctuary, in different seasons, and have noted many species of birds. In the monsoon season of 2022, I was fortunate to find a nest of an Indian Paradise-Flycatcher (*Terpsiphone paradisi*). I monitored this nest and present here my observations on the nesting of this species.



Photo: Kailash Jani

Observations

On 10 July 2022, at around 07:00 hrs, I was visiting the sanctuary as per my routine. On that day, I saw a male white morph Indian Paradise-Flycatcher on a nest. The nesting site was at 24° 16' 1.1994" N, 72° 31' 33.5994" E. The male was incubating the eggs. It made short flights but always came

back quickly to the nest to incubate the eggs. The female was present near the nest and was keeping a watch on the nest. It was seen perched on nearby branches but was always seen near the nest. Incubation was mainly done by the male. I observed the nest till 12:00 hrs and returned back.

On 14 July 2022, at around 11:00 hrs, I reached the nesting site but it was raining. The male was sitting in the nest and I thought that hatching had not taken place. But, as soon as it stopped raining, the male started feeding the chicks. I observed that there were two chicks inside the nest. As it was raining intermittently, the male and female used to cover the chicks by spreading their wings, probably providing warmth and protecting them from the rain. I observed the nest till 15:00 hrs and then returned back.

On 16 July 2022, it was not raining and I could see that the chicks had grown slightly. I could clearly see the chicks and



Photo: Kailash Jani