

Breeding of Lesser Flamingo *Phoeniconaias minor* in the Little Rann of Kachchh, Gujarat

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Introduction

The Lesser Flamingo (*Phoeniconaias minor*) is one of the two flamingo species which are resident in India. It is smaller and more pinkish than the Greater Flamingo (*Phoenicopterus roseus*) in breeding plumage. It inhabits coastal as well as inland wetlands (Tere 2005). The Lesser Flamingo is categorised as a 'Near Threatened' species as populations appear to be undergoing a moderately rapid decline, due to irregular breeding attempts (BirdLife International 2022). The Lesser Flamingo is seen in large numbers in Gujarat (Tere & Parasharya 2004).

It was earlier believed that the Lesser Flamingo did not breed within the Indian Territory (Ali 1945, 1954). However, a mixed colony of Lesser Flamingos was found nesting with Greater Flamingos at 'flamingo city' in the Great Rann of Kachchh, in the Kachchh Desert Sanctuary located in Great Rann of Kachchh in Gujarat (Ali 1974). This was the first breeding record of the Lesser Flamingo from India. Subsequently, the breeding of the Lesser Flamingo has been recorded in many locations in India (Tere 2005). Lesser Flamingos were recorded to nest in the Little Rann of Kachchh by Mundkur *et al.* (1989) and Vaishnav *et al.* (2005). A large number of adults and chicks have been reported from Little Rann of Kachchh earlier, near Zinzuwada, in 1998, when 30,000 adults and 20,000 chicks were seen (Singh *et al.* 1999). Further, it was noted that 70,000-80,000 chicks were recorded at Bela-Mowana, in the eastern part of the Great Rann of Kachchh (Parasharya *et al.* 2010). This area in the Great Rann of Kachchh is having similar habitat (and terrain) to the Little Rann of Kachchh. In November 2014, a large abandoned colony of flamingo nests was found between Vachhraj-byet and Mardek-byet in the Little Rann of Kachchh; there were more than 5,000 nests with unhatched eggs. It seemed that the nesting failed since the rann had dried up. So, the Lesser Flamingo is known to breed in Gujarat.

I explored the Wild Ass Sanctuary (Little Rann of Kachchh) during the monsoon of 2021, when the Lesser Flamingos were nesting in the sanctuary. The visits inside the sanctuary were

carried out from August to October. I present here the results of surveys in the Little Rann of Kachchh in the monsoon of 2021.

Observations

I visited the Little Rann of Kachchh on 31 July 2021, along with a team of the forest department personnel. On this day, we surveyed some areas in the eastern part of the Little Rann of Kachchh but did not find any flamingos. On 17 and 18 August 2021, Lesser Flamingos were recorded in the eastern parts of the rann but detailed counts were not done. Subsequently, two teams of forest department personnel were formed and we scanned the area in the eastern part of the rann. We found three nesting colonies; the first colony had about 250 nests and 50 eggs. The second colony had about 300 nests and 15 eggs. The third colony was very big, with about 10,000 Lesser Flamingos. We could not estimate the nests and eggs in this area as it was unapproachable due to the terrain, but we could see that nesting activity was being carried on – we could see nests with eggs. On 20 August 2021, a team of the forest department surveyed Pung-byet and Maharaja-byet areas in the north-eastern part of Little Rann of Kachchh and found a large congregation of Lesser Flamingos there but we could not confirm if these birds were nesting there at that time.

I revisited the previously seen nesting colonies on 22 August 2021 along with Nirav Bhatt. It was difficult to reach close to nesting colonies due to the muddy terrain. We saw three flocks of Lesser Flamingos with binoculars from a distance and counted a total of about 7,000 individuals. Nesting activity was not observed in the surveyed areas. We (Nirav Bhatt and I) surveyed the colonies on 5 September 2021 along with two teams of forest department personnel and found all the three previously visited colonies abandoned. It seemed that the nesting was unsuccessful as the eggs had not hatched. I could not ascertain the reasons for which these colonies were abandoned. There were about 500 nests in one colony and about 1,500 nests in the second. We could not approach the third colony to check the number of nests. A re-survey in the

	Colony 1	Colony 2	Colony 3	Colony 4
No. of nests	1,000	5,000	10,000	15,000
No. of nests where incubation was on-going	200	-	1000	-
No. of chicks with adults	500	1,000	-	-
No. of chicks without adults accompanying them	-	2,500	5,000 (in six flocks)	6,000

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part of the Little Rann around Maharaja-byet, and Vachhraj-byet, was made on 17 September 2021 but no nesting was found.

On 21 September 2021, I received information from the forest department staff and locals that flamingos were nesting near Koparni, in the Little Rann of Kachchh. The site was near the Jajam area in the Little Rann of Kachchh. Hence, the site was

visited on the same afternoon. We observed four nesting colonies. The details of these colonies are given in the table.

Photographs were taken to document the nesting of the flamingos in this area. The total area of the nesting of the four colonies was spread across approximately 10 sq. kms. The distance between colony 1 and colony 2 was 350 mts, between colony 2 and colony 3 was 550 mts, and between colony 3 and





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Lesser Flamingo.

During this visit, we found two new, very large colonies, spread across about 6 sq. km, in addition to the four successful nesting colonies seen earlier, with about 2000 and 5000 nests respectively. These were found to be without chicks or eggs and the nests looked similar to the earlier four colonies where successful nesting was observed. This meant there could be another additional nesting area than what has been reported in this study. It was also useful to note that the colonies seen in the Little Rann of Kachchh consisted only of Lesser Flamingos and no Greater Flamingos were seen in the colonies visited by us. It was observed that almost all the nests were in salt-pans made in the previous season and only about 400 nests were outside the salt-pans.

I should add here that it is very challenging to access many areas of the rann at the time of nesting and our team had to make extreme efforts to survey the entire area. The visits were made in two tractors, which would wade through the flooded, vast, open areas with mud patches. After a certain point, even the tractors could not be taken ahead. Then, our enthusiastic team members would walk in the mud for kilometres in the scorching heat of September, which was extremely tiring. But, the observations of small chicks of the flamingos were indeed worth the entire effort.

colony 4 was 1800 mts. After this visit, the area was again not approachable because of heavy rain and to avoid disturbing the breeding birds, further visits were not conducted.

On 17 October 2021, this area was visited again and the four nesting colonies seen previously were observed. About 4000 abandoned nests were found with new eggs; these nests were empty earlier as the chicks from these nests had already hatched when we had seen this colony in our previous visit. We could not confirm if the same birds had used these nests or new pairs had nested here. Also, we could not be sure if the nests were re-used or constructed again at the same place. This needs further study and if nests were re-used, then it will be an interesting observation regarding the breeding of the

Record of ringed Lesser Flamingo



All Photos: Nirav Bhatt

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We found one tagged adult Lesser Flamingo with yellow ring with "AXD" written in black. A silver ring on the other leg was not readable. I contacted Dr. Suresh Kumar from WII and Dr. Madhumita Panigrahi from BNHS for details of this tagged individual and came to know that this bird was ringed at Ratnal Lake in Bhachau Taluka of Kachchh District on 3 April 2019 in its sub-adult stage. The sighting of the ringed bird in the nesting colony was a very interesting for us and suggests that the flamingos come to nearby nesting grounds for breeding.

Discussion



A total of about 30,000 nests and about 15,000 chicks were directly observed in different colonies in the Little Rann of Kachchh in 2021. The observation of about 15,000 chicks in the rann is very important in terms of the habitat ecology that supports such huge nesting. It also suggests that when the monsoon rains are good and the habitat and conditions are suitable, the Lesser Flamingos breed in the Little Rann of Kachchh in large numbers. There is evidence that flamingos converge from different sites of Gujarat (and maybe elsewhere) to breed in the ranns (Tere & Parasharya 2005, Parasharya & Tere 2006). The observation of a bird tagged in Kachchh and seen here during the breeding season further supports the same. This sighting of the tagged flamingo was after 903 days. It was in its breeding plumage and was probably breeding here. It weighed 1770 grams at the time of capture.

In Lesser Flamingos, breeding is very irregular and dependent on suitable conditions which vary considerably from year to year (Tere 2005, del Hoyo *et al.* 2020). Vaishnav *et al.* (2005) found a colony of Lesser Flamingos in 1985 with 10,000 nests about 10 km north of Koprani Village, near Pung-byet. During the current survey, the breeding colonies were recorded very near to the same site. The preference for nesting on the bunds and within the salt pans in this area has been recorded earlier by Parasharya & Tere (2006) and our surveys have further confirmed this observation.

The level of water is a very important or even a critical factor for the successful nesting of the Lesser Flamingos (Childress *et al.* 2008). If there is less rainfall, then the nesting is abandoned while excess rainfall often results in the washing away of nests from a particular location. In the earlier failed nesting observed in November 2014, the drying up of the rann could have been the main reason for the abandonment of the nests. Based on our surveys of the breeding of the Lesser Flamingos in this area, the following suggestions may be worked upon:

A 100 meter x 1 meter bund (made of mud), of about 2.5 ft height, may be prepared in about 1 hectare area in different parts of the rann. Since nesting was observed mainly in salt-pans, and the flamingos used the bunds made in the salt pans



for nesting, these bunds may be helpful in providing suitable nesting sites. These bunds can provide elevated ground (above the water level) when the area is flooded by the monsoon rains.

A camera, with time-lapse monitoring with only few pictures per day from a high vantage point, may be installed from the time of the first nesting observation. This will help in understanding the reasons for nesting success/failure especially because of the fluctuating water-levels.

Surveys with boats or tractors, should be conducted in different parts of the Little Rann of Kachchh. This will help in knowing the number of sites used for nesting by the flamingos. It is likely that there could be more areas in which these birds are nesting in the rann.

Making of elevated mud bunds for nesting could be useful in providing nesting sites for the flamingos. Washing away of nests due to the flooding of the Rupen River in the Little Rann of Kachchh has been recorded in the monsoon of 2003 and 2005 (Parasharya & Tere 2006). Elevated bunds could prevent the destruction of nests due to flooding. It should be noted that time lapse cameras often require regular monitoring,

which may not be possible in this case as the nesting areas are often unapproachable. Surveys and breeding studies can disturb the breeding birds and due care should be taken to avoid any disturbance; Lesser Flamingos are sensitive to disturbance during the nesting period (Parasharya & Tere 2006).

It is pertinent to note that many areas of the rann are not approachable due to the terrain and the flooding of the rann in the monsoon season. It is also surprising that the flamingos do not use the *byets* inside the rann, which are elevated and become islands during the monsoon, for nesting. A more detailed survey is required to know the habitat preferences of the flamingos for breeding in the rann. Regular monitoring of nesting of Lesser Flamingos may help in providing more information on the breeding biology of this species in the Little Rann of Kachchh area, which is one of the most important nesting sites for the species in the country. If there is good rainfall and the habitat / conditions become suitable each year with the efforts and actions of the forest department, the nesting of this threatened species can be expected every year in this area. A detailed study of factors affecting the nest site selection, nest building, nesting success/failure, may be done to know more about the breeding of this species in the Little Rann of Kachchh.

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