

# Research into the Nesting Biology of the Greater Flamingo (*Phoenicopterus roseus* Pallas, 1811) in Uzbekistan

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**Abstract:** *In recent years greater flamingo has become a much more frequent visitor of Lake Sudochoye in the northwestern part of Uzbekistan. The combination of conditions that have formed at Sudochoye proved favourable for the life and nesting biology of Ph. roseus, which is increasing its habitat. The bird has been observed in colonies at the lake.*

**Keywords:** biology, nest, flamingo, Sudochoye, Uzbekistan

## 1. Introduction

Greater flamingo (*Phoenicopterus roseus* Pallas, 1811) is one of the commonest species in the family Phoenicopteridae. It breeds in Africa, Europe – in South Spain and France, in the Rhone River delta (Camargue), and Asia – near the Suez Canal, in Israel, Turkey, Iran, South Afghanistan, Northwest India and Kazakhstan (on the shores of large saltwater lakes Tengiz, Shalkar-Teniz, Zhaman-Akkol, Ashitastysor and northeastern shore of the Caspian Sea (Stepanyan, 1990; Galushin et al, 1991).

A number of areas in Central Asia, such as the eastern shore of the Caspian Sea, the Mangyshlak peninsula, the lower and middle basins of the Emba River, Turan depression, southern and eastern shores of the Aral Sea and the Sarycheganak Bay in the Aral Sea, are important for passing flamingos. The Balkhash-Alakol depression, Western Tien Shan and Lake Issyk Kul play a secondary role in the migration of the birds flying to their wintering grounds in India and Pakistan (Andrusenko, 2007).

The principal wintering ground in Central Asia is the Turkmen shore of the Caspian Sea – the Krasnovodsk Reserve, Ostrova Osushnyye islands and Ufra peninsula. Flamingos also winter in India, Pakistan, Iran, Turkey, Syria, Egypt, Libya, Tunisia, Arabia, Sri Lanka, Cyprus, Afghanistan and some countries in East Africa, such as Kenya, Ethiopia and Sudan.

In Uzbekistan flamingos were registered on their migration at Salt Lake in the lower course of the Surkhandarya River, in the Zeravshan River valley near Samarkand, on the Akdarya River near the Chupanata Hills, at the Tudakul Reservoir and on the shores of Lakes Tuzkan and Dalverzin. Literary sources also report on encounters with the birds in the Aral Sea area in the mid-20<sup>th</sup> century (Maklenburtsev, 1987).

The goal of this work is to research into the nesting biology of greater flamingo in the territory of Uzbekistan.

## 2. Materials and Methods

This work is based on the results of field studies carried out in Karakalpakstan between 2007 and 2016. Most of the work within the research into the nesting biology of *Ph.roseus* was carried out on the shores of Lake Sudochoye with the use of conventional zoological and ecological research methods (Novikov, 1953; Naumov, 1963; Stepanyan, 1990; Vaurie, 1959).

## 3. Results and Discussion

On 23 May 2014 we observed a large breeding colony of greater flamingos at the western edge of Lake Sudochoye, on a small island in a shallow brackish lake (N43°38.702' E058°27.087') (Fig. 1). The colony was 100 m long and 20 m wide and consisted of 6,000-7,000 individuals, that is, around 1.4% of the global flamingo population. A total of 2,985 nests were discovered on the island. This is the first officially recorded colony in Uzbekistan, which is, probably, also the largest in the country. Of all the nests, 2,594 (86.9%) contained eggs, while 391 (13.1%) were empty. 2,570 nests (99.07%) had in them 1 egg, 23 (0.9%) – 2 eggs and only 1 nest (0.03%) contained 3 eggs.

The nests were made of clay and had the form of a bowl, with the base much greater in diameter than the tray in the top. The nests had no lining. The following nest dimensions were recorded (n = 17): total height – 8.2-51.4 cm, diameter at base – 37.6-54.3 cm, tray diameter – 17.1-287 cm, tray depth – 3.4-6.4 cm.



**Figure 1:** Flamingo breeding colony

The eggs were white and oval (fig. 2). The following egg dimensions were recorded (n = 28): 83.0-96.2x51.5-59.3 mm, average size – 89.4x55.3 mm; weight of newly laid eggs – 129.7-159.6 gr, average weight – 144.7 gr.

In the course of the study we discovered an injured adult flamingo lying in a swamp. The bird had the following dimensions: body length – 136.3 cm, wing length – 73.2 cm, wing span – 157.4 cm, tarsometatarsus length – 27.7 cm, distance between beak base and curve – 7.5 cm, distance between curve and beak tip – 7.5 cm, weight – 3.6 kg.

We carried out daily monitoring of the colony between 23 and 27 May 2014. From 5.00 a.m. to 8.45 a.m. and from

6.30 p.m. to 9.30 pm birds used to visit an area of land next to an open shoal, 40 km west of their breeding area (N43°30'54.2" E058°21'44.7") to feed, and then returned to their nests.

In order to see what happened to the flamingo colony at Lake Sudochoye later, the expedition visited the area again on 12-13 June 2014. We found all the nests empty. We discovered only shards of eggshells and traces of terrestrial predators (fox), but no remains of nestlings were seen anywhere. According to further observations, adult flamingos used to flow to the feeding place and back until 5 July 2014.



**Figure 2:** Flamingos' nests with eggs

On 15 August 2014 we observed 60-70 young flamingos, which together with adult individuals flew out of the reed beds of Lakes Karateren and Tayly. It means that flamingos' breeding at Lake Sudochoye was successful, which testifies to the expansion of the birds' breeding area on a global scale

and the increasing distribution of the greater flamingo in the territory of Uzbekistan.

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