



Volume: 02 Issue: 05 | Sep-Oct 2021 ISSN: [2660-4159](https://doi.org/10.26907/2660-4159)

www.cajmns.centralasianstudies.org/index.php

EATING QUAKVA UNDER CONDITIONS ZERAVSHAN RESERVE

G. U. Urunova¹, S. E.
Fundukchiev¹

EMAIL: urunova_gulruh@mail.ru

Received 20nd August 2021,
Accepted 18th September 2021,
Online 13th October 2021

¹Samarkand State University,
Samarkand, Uzbekistan

ABSTRACT: The article discusses the peculiarities of nesting life and nutrition of a typical representative of toucans on the banks of the night heron. The features of the reproductive cycle, the timing of nesting, egg production, the survival rate of eggs, the postembryonic development and growth of chicks, the diet of young and adult birds are considered, and the economic importance of the night heron is analyzed.

KEYWORDS: night heron, night activity, Zeravshan nature reserve, nutrition, ichthyophages, feeding a chick, fish.

INTRODUCTION

There is a fairly large number of bird species that feed on fish to one degree or another. Such birds are called fish-eating, or ichthyophages. It is now well known that many so-called fish-eating birds should be evaluated not only from the point of view of the interests of fisheries, but taking into account their importance in agriculture, since they exterminate harmful rodents and insects. Some of the "fish-eaters" are useful even for the fish industry: they exterminate frogs and weed fish, and also eat a large number of predatory insects in water bodies. Among these species is the night heron studied by us. The purpose of this work is to study its nutrition, since there is no information on the composition of the food of the common night heron in Uzbekistan, with the exception of the general instructions of M.M. Akhmedov (1950) on its feeding on aquatic invertebrates and fish.

The research was carried out in the Zeravshan Nature Reserve in 2000-2015. The material for the feeding of the night heron was obtained directly in the nesting colonies, as well as in the places of overnight stay and feeding of birds; in addition, belching of adult birds and chicks was used. In chicks in the nests, food was obtained by bandaging the neck. A total of 122 samples were collected for night heron nutrition. The amount of food received by chicks of different ages was determined by extracting a food lump retained

by bandaging the neck, and weighing it according to the method of in vivo study of the feeding of chicks developed on passerines [3, 6].

The number of feedings for chicks and adult birds during the nesting period was established by observing the activity of birds during daylight hours. The activity of the colony as a whole and of individual pairs was monitored. The observer through binoculars counted the number of birds of each species that flew out and returned to the colonies or to the places of overnight stay for each hour.

The number of heron in the last 10-20 years on the territory of the republic has sharply decreased. And on the territory of the reserve, it changes significantly from year to year. In 1976-1978. Several dozen pairs of birds (from 2 to 47 pairs) lived on the territory of the reserve. By 1979, the number of birds decreased slightly. Later, for a number of years, night herons completely ceased to be found here. Since the end of the 1980s, birds have again begun to be recorded in this area. In the first half of the 90s, a fairly high number of birds was established: in 1993-1994. - about 300 individuals, and in 1995-1997. - the number increased to 700 individuals [1]. In the past few years, there has been a downward trend in bird numbers again. The number of birds, which is relatively stable during the nesting period, sharply increases in late July - August, after the juveniles emerge, and especially in late August - early September, when birds flock to migratory flocks [7].

Like all herons, the night heron is unable to actively seek out food, but seizes only a visible prey; it is characterized by waiting and trapping prey. Relatively short legs do not allow the Night Heron to use shallow water for hunting, so it hunts either from the shore or from floating plants - chilim, water lilies, egg-pods, nymphaean, sometimes with a continuous carpet covering the water surface in kultuk and ilmen (July, August). However, the shortening of the legs is an advantage, as it allows the night owl to look out for prey from a closer distance, which is especially important at dusk and in the dark. The considerable length of the fingers and hence the relatively large footprint create the conditions under which the floating plants can withstand the load. These morpho-functional differences in the legs, as well as the eye, put the night heron almost out of competition with other herons in terms of foraging. Its "foraging" activity does not coincide with the activity of other herons either in time or in relation to forage biotopes [5, 11].

RESULTS OBTAINED AND THEIR DISCUSSION

Animals of seven groups were found in the food of the night heron in the Zeravshan Nature Reserve, although only six groups are found constantly from year to year: mollusks, aquatic and terrestrial invertebrates, fish, amphibians and reptiles (table 1).

Table 1. The ratio of ecological groups of food in the diet of night heron (in % of the number of copies)

№	Feed group	2004	2005
1.	Molluscs	1,2	0,7
2.	Aquatic invertebrates	9,0	9,1
3.	Terrestrial invertebrates	5,9	7,2
4.	Pisces	62,2	66,7
5.	Amphibians	20,1	15,2
6.	Reptiles	1,6	0,7
7.	Mammals	-	0,4

A wide range of food is typical for the feeding of the night heron in different points of the range, however, the importance of each group is not the same. So, in the area of the lake. Balaton (Hungary) aquatic and terrestrial invertebrates make up 68.5% of all food, amphibians (salamanders, newts, frogs) - 17.2%, and fish - only slightly more than 10% [4], which is probably due to the great diversity the terrestrial fauna of the area. Even reptiles not found elsewhere have been found here. The food of the subspecies

(*Nycticorax nycticorax* L.), Inhabiting the New World, consists of the same four groups - aquatic and terrestrial invertebrates, fish and amphibians [8]. The peculiar natural conditions of the Zeravshan Nature Reserve, where shallow waters predominate, provide the night heron with food in the form of a variety of aquatic animals. The main food for night heron is fish, which makes up 62.2 - 66.7%. The second place is occupied by amphibians - from 15.2 to 20.1%, the third - by aquatic insects - from 9.0 to 9.1%. Terrestrial invertebrates are rarely found in the food of the night heron, as well as reptiles and mollusks (Table 1.)

At first, the chicks are fed with regurgitated, semi-overcooked food. According to K.A. Vorobyov (1936) in the Volga delta, chicks are fed by fish, frogs and water rats, and according to V. B. Dubinin (1940) and by larvae of water lovers and other large insects. In Bessarabia, the night heron eats fish, aquatic insects and seeds of various aquatic plants. According to NN Somov (1897), in the Kharkov region the night heron willingly visits the muddy shores of reservoirs at night, where cattle are watered, and where there is manure [6]. The "spectrum" of food for night heron in the Volga delta includes 53 species. The most diverse are fish (14 species), aquatic insects (17 species) and terrestrial invertebrates (11 species). On the wintering grounds of the Linkoran coast, the food of the night heron is dominated by fish of the Cyprinidae family (79%) and aquatic beetles of the Bytiscidae family (Macrodrytes et al. 21%) [8, 10].

Both parents are involved in feeding the chicks. We carried out observations of the intensity of feeding of night heron chicks. Since it is a nocturnal bird, we were able to track the forage arrivals from 4 to 22 hours (Fig. 1). As can be seen from the figure, the common night heron is most active at dawn - from 3 to 6 o'clock and at sunset from 18 to 21 o'clock. And from 7 a.m. to 6 p.m. bird activity drops very much, and at some hours they drop to zero.

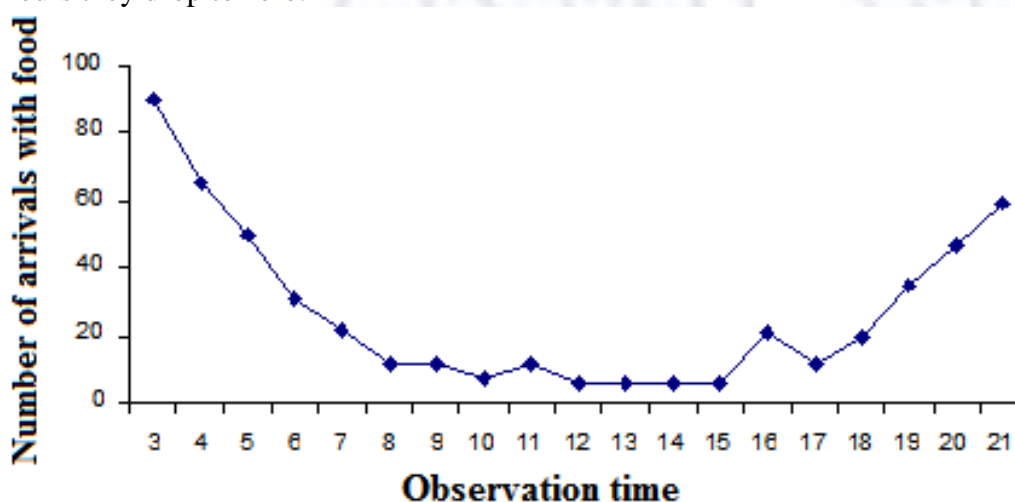


Fig. 1. Intensity of feeding of night heron chicks

In the food of the night heron, 19 food items were noted (Table 2). The most diverse are fish (6 species), aquatic insects (5 species) and terrestrial invertebrates (4 species). The most permanent complex of animals includes 10 species: carp, goldfish, swine carp, khramulya, char, lake frog, bears, water lovers, dragonflies, diving beetles. With a wide variety of forages, three fish species dominated (carp, goldfish, swine carp) and marsh frog. Herons feed mainly on juveniles. Of the fishes with a high growth rate (carp), only underyearlings are found in the diet of the night heron, and of the slow-growing (fast-growing, char) or those of small size, mature individuals are often found. The predominance of certain age groups in the diet of birds is determined not only by the morphological characteristics of each species and age of fish, but also by the characteristics of the behavior of these fish, as well as their concentrations in water bodies accessible to birds.

Table 2. Species composition of night heron feed

№	Type of feed	2004 (57 samples)		2005 (65 samples)	
		Number of meetings	%	Number of meetings	%
1.	Bystryanka	21	8,3	26	9,4
2.	Temple	10	3,9	14	5,1
3.	Marinka	10	3,9	13	4,7
4.	Char	5	2,0	7	2,5
5.	Serebryan. Crucian carp	34	13,4	36	13,0
6.	Carp	78	30,7	88	31,9
7.	Lake frog	51	20,0	42	15,2
8.	Water snake	4	1,5	2	0,7
9.	Leeches	3	1,2	5	1,8
10.	Swimmers	4	1,5	3	1,1
11.	Water lover	5	2,0	6	2,2
12.	Dragonflies	6	2,4	5	1,8
13.	Medvedki	5	2,0	7	2,5
14.	Weevils	5	2,0	4	1,5
15.	Ground beetles	3	1,2	4	1,5
16.	Plunger beetle	5	2,0	6	2,2
17.	Spiders	2	0,8	5	1,8
18.	House mouse	-	-	1	0,4
19.	Molluscs	3	1,2	2	0,7
		254		276	

Seasonal changes in the nutrition of the night heron are associated with the nature of the flood and the course of phenological phenomena in water bodies with shallow depths and with a change in the concentration of the inhabitants of these water bodies. So, in spring, upon arrival, the night herons feed mainly on frogs, which accumulate in mass along the banks. Fish also make up a significant part of the spring diet. As the territory of the reserve is flooded, night herons first switch to feeding on terrestrial animals fleeing the arriving water on non-flooded coastal areas - bears, weevils, ground beetles, etc. In July, night herons are caught in large numbers. In isolated shallow water bodies, night herons hunt tadpoles and small frogs. In the same reservoirs, birds exterminate aquatic insects of waterlovers, dragonflies, etc. In August and before departure, fish predominate in the feeding of the night herons.

In the summer months, due to the development of life on water bodies, the food of the night heron is more diverse. The abundance of food in shallow-water areas in the form of larval and imaginal forms of aquatic beetles and dragonflies, juveniles of fish, tadpoles of the marsh frog provide food for adult birds feeding chicks and fledglings during this period (within a radius of 2-3 km from the colony).

Along with juvenile fish, night herons destroy a lot of their enemies - aquatic insects and frogs .. Among aquatic insects, these include the imaginal and larval forms of the Dytiscidae and Hydrophilidae families, which destroy from 5 to 50 fish larvae and fry per day (Safonov, 1951). Many aquatic insects, except for fry, eat fish eggs or compete with them, having a similar food spectrum (for example, the larvae of dragonflies of the family Aeschnidae).

Destroying such useful animals as ground beetles, spiders, the night heron causes some damage to the national economy. However, the damage they bring is repaid several times by the extermination of insects harmful to agriculture and, especially, bears, weevils, etc., as well as rodents.

Based on the above, we can say that the night heron deserves not only protection, but also attraction to the forest plantations of these places.

CONCLUSIONS

The common night heron is a bird that arrives and nests in the Zarafshan valley. It has been established that the most active night heron time lasts from 3:00 to 7:00 at dawn and from 18:00 to 21:00 in the evening. It was revealed that the diet of young and adult birds includes goldfish, fastfish, snort, frogs, water snake, as well as terrestrial invertebrates (weevils, spiders).

REFERENCES:

- [1]. Isakov Yu. A., Vorobiev KA Review of wintering and migration of birds in the South Caspian. // Proceedings of the All-Union Ornithological Reserve Hasan-Kuli. - 1940. - issue. 1. - P. 3-159.
- [2]. Malchevsky AS, Kadochnikov NP Methods of in vivo study of nutrition of nesting chicks of insectivorous birds // Russian ornithological journal. - 2005. - V. 14. - No. 301. - P. 907-914.
- [3]. Mitropol'skiy O.V. Heron // Birds of Central Asia. Almaty, 2007. Vol. 1.- P. 81-87.
- [4]. Safonov AG Insects-pests of pond fish farming // Zool. zhurn. - 1951. - V. 30. - No. 6. - P. 545-549.
- [5]. Skokova NN Nutrition of gray, great and small egrets in the Volga delta in connection with their fishery value // Fish-eating birds and their importance in fisheries. - 1965. - P. 53-124.
- [6]. Spangenberg EP Some new information about the wintering of birds on the Lankaran coast of the Caspian Sea // Russian Ornithological Journal. - 2012. - V. 21. - No. 738.
- [7]. Fundukchiev S. E. Materials on the nesting ecology of the night heron *Nycticorax Nycticorax* L // Man-Nature-Society: Theory and practice of life safety, ecology and valeology. - 2019. - No. 5. - P. 123-127.
- [8]. Rezanov AG About feeding behavior of the night heron *Nycticoraxnycticorax* // Russian ornithological journal. - 2012. - V. 21. - No. 791. - P. 2131-2137.
- [9]. Shtyrkalo Ya. E., Gorban IM *Kvakva nycticoraxnycticorax* in the Carpathian region // Russian ornithological journal. - 2017. - V. 26. - No. 1509. - P. 4244-4245.
- [10]. Rusanov GM Study of birds in the Astrakhan state reserve for a century of its existence // Russian ornithological journal. - 2020. - V. 29. - No. 1918. - P. 1965-1985.
- [11]. Gozhko A. A., Rezyapova E. A. The state of the population of stork birds in the Crimean forestry enterprise of the Slavyansky district of the Krasnodar Territory in 2015 // Russian ornithological journal. - 2016. - V. 25. - No. 1303. - P. 2334-2338.