

# Japanese Night Heron Mizogoi (Jpn) *Gorsachius gosisagi*

## Morphology and classification

**Classification:** Pelecaniformes Ardeidae

Total length: ca. 490mm      Tail length: 92-116mm  
 Culmen length: 34-41mm      Tarsus length: 64-73mm  
 Weight: 470-530g

The measurements after Kiyosu (1978), del. Hoyo et al. (1992), Uchida (1996), and Dunning Jr. (2008).

### Appearance:

Adult Japanese Night Herons are bright chestnut red on the head and dark brown on the back, in the wings and tail (Photo 1). They are cream from the throat to the belly with black vertical stripes, which are longer on the throat in particular. There is no difference in plumage color between male and female. Juveniles are darker on the upperpart with many fine black flecks on the head and in the wings, but some young birds have fine white spots in the wings (Photo 2).



Photo 1. Adult Japanese Night Heron. Though some say the plumage color is quiet, I admire the beauty. [Takehiro Fujiwara]

### Vocalization:

Japanese Night Herons make a low "Boh, Boh" call continuously from several to more than 100 times in a bout. The calling bouts are repeated with a pause between them. The call also sounds like "Pooh, Pooh" from a distance. They usually call just after sunset and about two hours before sunrise. Although they call primarily one or two weeks before nesting, they are occasionally heard to call in a stopover site while on migration. They sometimes call about a week after their chicks have hatched as well.



Photo 2. Head of a young Japanese Night Heron. It is covered with flecks and the bill is distinctly short.

## Distribution and Habitat

### Distribution:

Japanese Night Herons breed up to 1000 m in the forests of Honshu, Shikoku and Kyushu (the main islands of Japan). Although one breeding record was reported from Taiwan in the past (BirdLife International 2001), the breeding distribution is mainly separated from that of closely related Malayan Night Herons *Gorsachius melanolophus*. The observations of this species in Hokkaido (the northernmost main island) suggest a possibility of their breeding there as well, but specific studies are needed to confirm it.

### Habitat:

Japanese Night Herons generally use a broad-leaved forest and a mixed forest with coniferous and broad-leaved trees as a breeding ground. They are frequently observed in a deciduous broad-leaved forest, such as *Quercus serrata* in particular. They usually nest and forage along a mountain stream, probably because food supplies, such as earthworms and freshwater crabs are abundant in the soil along a stream, which is thick and wet.

## Life history



### Breeding system:

Japanese Night Herons start to breed in early April right after their arrival at the breeding ground. But the arrival times apparently vary between individuals, and some of them begin to breed in June. Since the pairs that failed the first breeding attempt generally move to another site to nest again, some pairs fledge their chicks in late August (Komiya & Sugita 1975). They are normally monogamous and both sexes incubate their eggs and feed their chicks.

### Nest:

It was reported that Japanese Night Herons built a nest primarily in Japanese cedar and cypress before the World War II (Kawaguchi 1937, Yamashina 1941). In recent years, however, they have frequently used as a nest tree broad-leaved trees, such as *Quercus serrata*, *Zelkova serrata* and cherry trees. In some areas, on the other hand, they prefer to nest in pine trees (Kurahara 1991). They build a dish-shaped nest with a diameter of 40-50 cm at a fork of the horizontal branches at a height of 5-15 m above the ground (Photo 3). They do not form a breeding colony but nest separately in a forest. The nest is usually blocked from view by the canopy when looking at it from above, but it is easy to see from the ground because there is some space below it (Yamashina 1941). There are a large quantity of feces with cream colored uric acid below the nest.

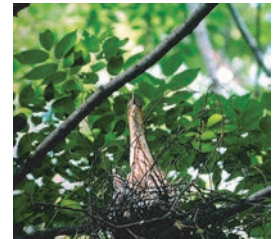


Photo 3. A Japanese Night Heron parent showing a "bittern posture" to protect the nestlings against enemies.

### Egg:

The clutch size of Japanese Night Herons is 3-5 eggs. The egg is white and its size is 43- 49 mm by 35- 38 mm (Yamashina 1941).

### Incubation and nestling periods:

The incubation and nestling periods are 20-27 and 34-37 days respectively. Since they usually start to incubate when they lay the first egg, the chicks do not hatch at the same time, which is responsible for the difference in body size between the chicks.

### Migration:

Japanese Night Herons are assumed to winter primarily in the Philippines, but they spend the winter in the other countries of Southeast Asia as well. During the migration season, they are also observed in Korea, southern China and Russia (BirdLife International 2001). They seem to arrive at the breeding grounds from March to June and leave them from September to November. Since Japanese Night Herons are observed by ones or twos in the stopover sites, it is likely that they migrate singly or in a breeding pair. It was reported, however, that more than 150 herons which were assumed to be Japanese Night Herons migrated in a mixed flock of more than 1,000 herons including Black-crowned Night Herons *Nycticorax nycticorax* and Gray Herons *Ardea cinerea* (Enomoto 1927). Since details of their migration including the wintering grounds and migration routes are unknown for lack of information, further studies are required.

## Topics of ecology, behavior and conservation

### ● Are Night Herons nocturnal?

Although Japanese Night Herons are occasionally observed in parks and farmland, they are forest dwellers. They usually forage on a forest floor and do not fly above the canopy very often. They spend hours on the ground and sometimes stand still for 30 minutes or so, which makes it extremely difficult to detect them. Since they call frequently at night, however, their presence is easy to notice.

Since they are rarely observed during the day and frequently heard at night and, on top of that, their English name is "Night Heron", it is no wonder that they are thought "nocturnal". In fact, some literature describe them as such. But are they really so?

As a matter of fact, however, there is no report about the nighttime feeding of Japanese Night Herons in a scientific paper. On the other hand, many field observations show that they forage during the day. In addition, it was recently reported that a captive bird foraged during the day (Kawana 2009). It is an obvious fact that they call at night, but only this fact is not sufficient to assert them to be "nocturnal". Taking an objective view of the findings obtained until now, it may be said that they do nothing but call at night, and are active during the day. Yamashina (1941) reported that they left their nest site around sunset to forage for food in the vicinity of a mountain stream and rested in a forest during the day. My observations showed that when the nestling period progressed, the parent birds stayed in the nest in turn during the day, but both of them sometimes left the nest at night. Dr. Yamashina probably reported on their behavior at this breeding stage.

Some bird guides describe that Japanese Night Herons also forage during the day on gloomy days, such as on rainy and cloudy days. When you see Japanese Night Herons foraging during the day, you might think their daytime foraging is an exception if you have the fixed notion that they are "nocturnal". At least, however, my observations showed that they foraged in the daytime every day. Since they are active and relatively easy to observe in the breeding period which coincides with the rainy season, it is no wonder that they are frequently observed to forage in the daytime on a rainy day. Contrary to popular belief, I am convinced that Japanese Night Herons are diurnal. I must be careful not to let this assumption interfere with my future study of the species.

● Japanese Night Herons do not necessarily like fish

It is probably because Japanese people are familiar with fishing herons such as Black-crowned Night Herons and egrets that they tend to associate herons with fish catching behavior. However, the diet of Japanese Night Herons consists primarily of freshwater crabs, land snails and insects as well as soil animals such as earthworms (Fig. 1, Kawakami et al. 2005). Japanese Night Herons have a distinctly shorter and thicker bill than other herons. It is assumed that piscivorous birds generally have a long bill so as to catch elusive fish quickly from a distance. On the other hand, the bill of Japanese Night Herons is morphologically suitable to capture soil animals, not fish. Some bird guides count fish as one of the food items of Japanese Night Herons, but they would rarely, if ever, capture fish.

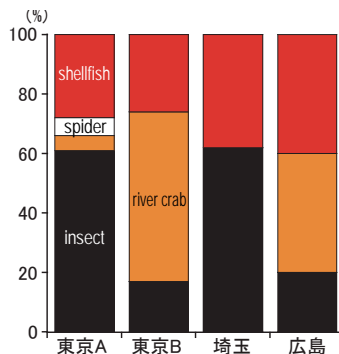


Fig. 1. Result of pellet analysis in four nests. Earthworms, the staple food of Japanese Night Herons, were not detected by pellet analysis due to their digestibility. Most of the shellfish were land snails. Modified from (Kawakami et al. 2005).

● The day Japanese Night Herons will become extinct

It is suggested that Japanese Night Herons have been declining across the country since the mid-20th century (Kawakami & Higuchi 2003). For instance, one pair nested along each mountain stream around 1950 in Kunado, Yamanashi Prefecture, central Japan, but almost no Japanese Night Herons nested in this area around 1990 (Hyuga 1949, 1993). The frequency in the observation of this species has recently decreased drastically in other areas, such as Miyakejima Island of the Izu Islands as well. It is reported that many species of summer residents have had a tendency to decline since the late 20th century, which is assumed to result from the deforestation in their wintering grounds

of Southeast Asia. In the Philippines, the major wintering ground of Japanese Night Herons, the forest was dramatically reduced in the latter half of the 20th century, which is probably responsible for their population decline. In Japan, on the other hand, a high proportion of broad-leaved forests were replaced with plantations of Japanese cedar and cypress in this period. I consider that the reduction of their suitable breeding habitat also played a role in their population decline.

● Is a thousand herons true?

The population of Japanese Night Herons have not been thoroughly studied yet. Although some authors estimate the population of Japanese Night Herons at less than 1,000 birds, no scientific evidence is shown for the estimation. Assuming that 1,000 birds (or 500 pairs) are engaged in breeding and that the forest area below 1,000 m (asl.) amounts to 200,000 km<sup>2</sup> in Honshu, Kyushu and Shikoku (the major breeding grounds of Japan), the breeding density is one pair per 400 km<sup>2</sup> (20 km by 20 km). It is true that Japanese Night Herons are on the decline and therefore their population density is extremely low, but this estimation is probably too conservative, judging from my personal study experience. Rarity may accelerate conservation efforts, but the underestimation of a population carries a risk on the other hand. If further studies reveal that the actual number of the species is not an estimated 1,000 birds but 10,000 birds, it looks as if the population has increased by a factor of ten. Therefore, population underestimation is not recommended.

Literature

BirdLife International. 2001. Threatened birds of Asia: the BirdLife International Red Data Book Part A. BirdLife International, Cambridge.  
del Hoyo J., Elliott A. & Sargatal J. 1992. Handbook of the Birds of the World, Volume 1. Lynx Editions, Barcelona.  
Dunning J.B. Jr. 2008. Avian Body Masses. CRC Press, Boca Raton.  
Enomoto Y. 1927. Migratory herons. Wildlife Collection Report 3 (5):13-15. [J]  
Hyuga F. 1949. Observation of Japanese Night Herons. Yacho 14(9):19-22. [J]  
Hyuga F. 1993. Joy to host summer bird, now. In: Endo K. (ed.) The song of summer birds now. Sanseido, Tokyo. [J]  
Kawaguchi M. 1937. Ecological notes on Japanese birds. Sorin Shobo, Tokyo. [J]  
Kawakami K., Uchida H. & Fujita M. 2005. Diet of the Japanese Night Heron *Gorsachius gossagii* in Japan. Ornithol. Sci. 4:173-177.  
Kawakami K. & Higuchi H. 2003. Population trend estimation of three threatened bird species in Japanese rural forests: Japanese Night Heron *Gorsachius gossagii*, Goshawk *Accipiter gentilis* and Grey-faced Buzzard *Butastur indicus*. J. Yamashina Inst. Ornithol. 35:19-29.  
Kawana K. 2009. Foraging behavior of Japanese Night Herons in captivity in the non-breeding season. J. Yamashina Inst. Ornithol. 41:62-64. [J+E]  
Kiyosu Y. 1978. Great pictorial guide to Japanese Birds III. Kodansha, Tokyo. [J]  
Komiya T & Sugita H. 1975. Observation of breeding Japanese Night Herons in the wild. Animals and Zoos 24:24. [J]  
Kurahara K. 1991. Birds in the Watarase River. Yamaibo-sha, Ashikaga. [J]  
Uchida H. 1996. Japanese Night Herons. In Higuchi H. et al. (eds.) The encyclopedia of animals in Japan. Birds 1. Heibonsha, Tokyo. [J]  
Yamashina Y. 1941. Birds of Japan and its ecology, the second volume. Iwanami Shoten, Tokyo. [J]

Languages of literature cited other than English: [J] in Japanese, [J+E] in Japanese with English summary.

Author

Kazuto KAWAKAMI Forestry and Forest Products Research Institute



Ten years have passed since I started to study Japanese Night Herons. I am getting obsessed with the idea that they bear a striking resemblance to "Kyoro-chan", a bird character of Chocoball produced by Morinaga & Company Ltd. I would like Morinaga to make a box of chocolate balls featuring Japanese Night Herons as well.

kazzto@ffpri.affrc.go.jp