

Amami Woodcock Amami-yamashigi (Jpn) *Scolopax mira*

Morphology and classification

Classification: Charadriiformes Scolopacidae

Total length: Approximately 36cm
 Wing length: 190-220mm Tail length: 70-90mm
 Culmen length: 73-83mm Tarsus length: 44-52mm
 Weight: 400-500g

Measurement values are by the author on 250 banded individual birds.

Appearance:

Male and female have the same plumage. They are brown overall with four lateral bands from the top of head to the nape, a superciliary and a malar stripe, which are all dark brown. The wing upperpart is noticeably dark, with orange-brown patterns at the edge of the flight feathers, greater wing coverts and tail feathers. They are less tinged with red than closely related Eurasian woodcocks *Scolopax rusticola*. The bill and legs are greyish pink (Prater et al. 1997).



Photo 1. Amami Woodcock
 [Photo by Kazunori Kawaguchi]

Vocalization:

Amami Woodcocks utter a nasal "Gwe-e" call when they fly off. In the breeding season the male calls in a hoarse voice that sounds like "Vu-vu" or "Geee" while flying. Juveniles call wheedlingly like "Chee-Chee".

Distribution and Habitat

Distribution:

Amami Woodcocks are distributed on the Amami Islands, Okinawa Island and the Kerama Islands. The population is greater on Amami Oshima, Kakeroma and Tokunoshima islands, where they breed as a resident bird. The breeding status is unknown in areas other than these three islands.

Habitat:

They rest in the forest of hills and the bush of lowlands during the daytime, and forage for food in an open area, such as forest trails and agricultural land mainly at night. They also inhabit coastal shelterbelts or cutovers.

Life history



Breeding system:

They seem to be polygamous or promiscuous, but the breeding system has not been confirmed.

Nest:

They build a simple nest of fallen leaves and grass on a forest floor that is covered with ferns in the mountains or the bushes along a stream in the lowlands.

Eggs:

The clutch size of Amami Woodcocks on Amami Oshima Island studied since 2006 is usually three eggs, with the range of 2 to 4. The egg is slightly mottled on a brown ground.

Incubation and nestling periods:

The female seems to exclusively carry out incubation and chick-rearing. According to the observation of the two nests in Amami Oshima Island, the eggs hatched between 20 and 30 days after they were found. Since the incubation period of Eurasian Woodcocks is between 21 to 24 days (Cramp 1983), the incubation periods of both species are assumed to be similar. The chicks of Amami Woodcocks, which are precocial, walk about following their mother immediately after hatching. The young grow up to an adult size in about one month, when they become independent.

Migration:

Some of the Amami Woodcocks that breed in Amami Oshima Island and other areas may migrate south in the winter. But this theory has not been confirmed.

Studies using transmitters and colored rings frequently showed that some individuals left their breeding sites after August. The juveniles have a strong tendency to move to an area away from the natal site.

Topics of ecology, behavior and conservation

● Use of various habitats

Two female Amami Woodcocks were attached with transmitters in central Amami Oshima Island in 2005 and tracked for one year. The females spent the winter in the secondary forest of evergreen broad-leaved trees at an elevation of 100-150 m and came down to the foot of the hill in the spring to breed (egg-laying, incubation and chick-rearing) (Fig. 1). After they finished raising the chicks, they stayed in the agricultural fields of sugar cane and vegetables in the lowlands from summer to autumn. They went back to the forested hill again in late autumn or early winter. The home range of these females was limited to 5-15 ha each both in the breeding and non-breeding seasons.

Since the tracked birds were both females, it is not clear at present whether these seasonal movements are true of the males. However, the observation of banded birds showed that the males were more frequently detected in the forest trails of hills from March to May when the females started to breed. Since the display flights of males are frequently observed over the forest trails of hills, there is a possibility that the males, in contrast, do not move down to the foot of hills even in the breeding season.

The study site is a forested hill-dotted plain with a variety of habitats available for the species, such as a secondary forest and agricultural land. Female Amami Woodcocks appear to use these diverse habitats at will. However, they also occur deep in hill forests with no flat land. It is not yet clear whether individuals inhabiting these habitats move seasonally. The results of automobile censuses showed, on the other hand, that Amami Woodcocks were detected more frequently in the trails of hill forests than in the low-

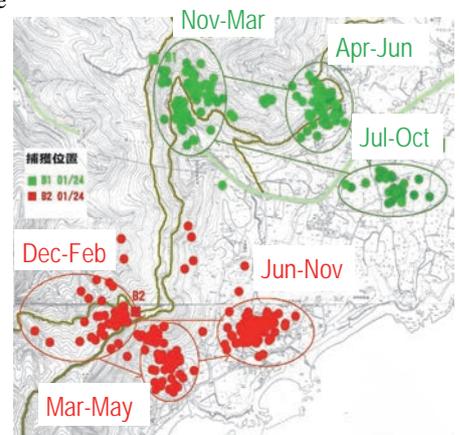


Fig. 1. Seasonal movements of the two Amami Woodcocks attached with transmitters. Partially modified from the Ministry of the Environment (2005).

lands on Amami Oshima Island, but the reverse was the case on Tokunoshima Island.

In Amami Oshima Island, the hill forest represents more than 80% of the total island area, while Tokunoshima Island, in contrast, is predominated by the farmland with a deep hill forest in the middle. This may mean that the species only lives in the major habitat of its range: hill forests in Amami Oshima Island and the agricultural land in Tokunoshima Island. A woodcock is called "Yama-shigi (mountain or woodland shorebird)" in Japanese, but it also uses lowlands.

● Differences in appearance between Eurasian Woodcock and Amami Woodcock

The morphological characteristics of Amami Woodcocks are usually described in a field guide as follows. Compared to Eurasian Woodcocks, 1) Amami Woodcocks have a less pointed head, 2) the eyes are located in the more central region of the face, 3) the first two lateral bars of the nape are finer, 4) the eye-stripe runs parallel to the malar stripe and 5) the plumage is less tinged with red. It is true that some Amami Woodcocks have all of these distinguishing features, but both species vary greatly from one bird to the other, which occasionally makes it difficult to distinguish between the two species from the appearance (Photo 2). In fact, Amami Woodcocks are distinctly larger and have longer and thicker legs than Eurasian Woodcocks, which results in a striking difference in posture between the species. Eurasian Woodcocks stand bending forward with their heels barely visible, while Amami Woodcocks stand more upright with their chest high and the heels are clearly visible. In addition, Amami Woodcocks appear to fly off more clumsily from the ground and their flight distance is usually shorter.



Photo 2: Heads of Eurasian (top) and Amami Woodcocks (bottom)

● Impacts of exotic species and forest road on Amami Woodcocks

The result of automobile censuses in Amami Oshima Island indicated that Amami Woodcocks were not detected in most of the areas introduced carnivores occurred (Figure 2). Mongooses *Herpestes auropunctatus* were introduced to control habu snakes *Trimeresurus flavoviridis* in the 1980s to Amami Oshima Island, which was originally free of large carnivores. There is no doubt that this mammal which has increased explosively in the middle part of the island poses a major threat to Amami Woodcocks.

The mongoose control program of the Ministry of the Environment has had some effect, inhibiting the population growth of mongooses as well as arresting their range expansion in recent years. Instead of mongooses, however, feral cats have begun to present a threat to Amami Woodcocks. Since feral cats are nocturnal, their activity period overlaps with that of Amami Woodcocks. Feral cats are observed to lurk in a forest roadside gutter to attack

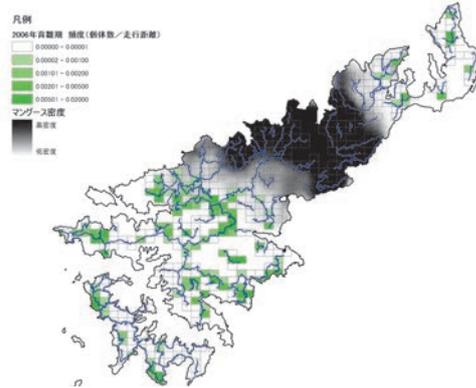


Fig. 2. Relationship between the distribution of Amami Woodcocks (green) and that of mongooses (black). From the Ministry of the Environment (2006).

Amami Woodcocks. The control of feral cats will become a major issue in the future for the conservation of rare wildlife of the Amami Islands including Amami Woodcocks.

The issue of a forest road should be also taken up for the wildlife conservation of the islands. Large-scale deforestation has recently become reduced as forestry declines. Forests are recovering and habitat conditions are improving. But the forest road construction still continues and pavement works also increase. These roads will allow feral cats and dogs easy access to the forest interior with virgin woodlots which has not been exposed to introduced animals. In addition, paved roads will enable automobiles to move in the forest interior at high speed. As a result, a considerable number of Amami Woodcocks are killed every year due to automobile accidents. Paving roads generally has a harmful effect on wildlife, but it poses a specially serious threat to Amami Woodcocks foraging along open forest roads.

Literature

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Not much is known yet on the birds in the Amami Islands. Since there is no professional local research institutes, I thought I could make some contribution as an amateur researcher. Ransacking what brains I have, I have investigated the Amami Woodcock in my spare time. I feel extremely elated, when any one of the mysteries are solved. torikaih@nifty.com