

# Azure-winged Magpie *Onaga* (Jpn) *Cyanopica cyana*

## Morphology and classification

**Classification:** Passeriformes Corvidae

Total length: 366.8mm (319-390) Wing length: 130.7mm (122-141)  
 Tail length: 214.8mm (192-240) Culmen length: 25.7mm (24-30)  
 Tarsus length: 33.3mm (32-35) Weight: 83.4g (69-96)

Measurements by Kuzu (1942).

### Appearance:

Azure-winged Magpies are similar in plumage coloration in males and females. Males are slightly larger than females in body size. They are gray on the upperpart and white or light gray on the underpart (Photo 1). The head is black. The wing and tail are pale blue or bluish gray. The flight feathers are black in the inner vane and pale blue in the outer one. The primary flight feathers are white from the middle to the tip in the outer vane. There is a long white patch of about 2 cm at the tip of the central rectrix. The bill and feet are black. The iris is dark brown. The tail feathers of juveniles are characteristically short in the center (Photo 2), with white edge band of about several millimeters. The greater wing coverts and alula are also white at the tip. The molting of juvenile plumage in autumn varies relative to the hatching dates. In the tail feathers, juveniles usually molt 0-4 pairs (usually 1-3 pairs in adults) from the center, but birds which hatched in late August do not molt their tail feathers and alula at all (Harada 1993). Therefore, the white edge of the tail feathers makes it possible to distinguish juveniles from adults. In addition, juveniles do not molt the primary wing covert either, which is more tinged with gray.



Photo. 1. Azure-winged Magpie. [Hiroshi Uchida]



Photo. 2. Juvenile tail feathers

### Vocalization:

Azure-winged Magpies call "Gurr", "Gay" and "Geh-i" in a thick and hoarse voice or "Koo-i" and "Kuiee, kooi-kui" in a clear voice. They also whisper "Pyu-i", "Pyu-i, kich-kich-kich" and "Ryui, ryui".

## Distribution and Habitat

### Distribution:

Azure-winged Magpies are separately distributed in the Iberian Peninsula, westernmost Europe and in the Far East (Japan, the Korean Peninsula, northeastern China and the Amur valley). In Japan, they are presently distributed from central to northern Honshu (from Fukui, Gifu and Aichi to Aomori Prefectures) (the Ministry of the Environment 2004). However, they lived in northern Kyushu (the southernmost main island of Japan) until the 1960s. They were also recorded to occur in Shimane, Hyogo, Wakayama and Ehime Prefs, southwestern Japan (Hosono 1972). The distribution of Azure-winged Magpies is fluid as is shown by their rapid range expansion in Nagano Pref., central Japan (Hosono 1969).

### Habitat:

They do not occur in a continuously extended forest but in an open habitat scattered with groves and shrubs and riparian woodlands. In addition, they are found in residential quarters and urban green spaces and parks as well as in an artificially modified habitat, such as holiday cottage areas of highlands, farmland and villages in the ravine of a mountain.

### Flock:

Azure-winged Magpies live in a flock in the breeding and non-breeding seasons, holding their flock territory throughout the year (Hosono 1989). In breeding period they roost in a flock except for females incubating eggs and nestlings. In Nagano Pref., for instance, the mean flock and home range sizes were 23 birds (9-45) and 21.8 ha (11-48), respectively in Kawanakajima (Hosono 1968), 28.7 birds and 135.1ha (103-243) in Ina, and 16.7 birds and 287.6 ha (130-376) in Nobeyama (Imanishi 2003). In Saitama Pref., on the other hand, they were 24 birds (17-31, n = 16) and 13.4ha (6.2-24.8, n = 11) respectively in Tokorozawa, where Azure-winged Magpies are assumed to occur in the highest density. They also roost in a flock, but more than one flock occasionally roosted together in the same site. They use as a roost site a dense thicket of bamboo, a coniferous wood and a broad-leaved deciduous wood. A coniferous wood and a thicket of bamboo were used with higher frequency in winter, but a broad-leaved deciduous wood was preferred in summer.

There is a dominance hierarchy in a flock, with males above females and adults higher than subadults under one year of age in rank. Of fledglings males remain in their natal flock, but females mostly leave the flock. When males lost their partner, they generally remain in their own flock. When females lost their partner, however, some of them leave their flock to find a new mate. It is not uncommon for pairs to leave their own flock and join another flock (Harada & Yamagishi 1992).

### Breeding system:

They are basically monogamous breeders (Hosono 1966, 1971), but rarely breed in polygamy temporarily (in the early nest-building period). They maintain their pair-bond until they lose their partner (Harada & Yamagishi 1992).

### Nest:

Azure-winged Magpies usually breed in the backyard of a house and at the edge of a grove around it, but they also nest in a park and roadside trees. They use as a nest tree various species of evergreen broad-leaved trees, broad-leaved deciduous trees and conifers. They build a nest at the fork of branches and on a branch with dense young twigs at a height of 1-13m above the ground. The nest size is 30 by 25cm and 13cm in depth with an inner cup 11cm across and 6cm deep (Kakizawa & Kogaito 1999). Males and females build a nest together, using tree branches for the exterior, laying mud in the center of the base and surrounding it with mosses. In addition, they pile up mosses, bark, grass roots and dead leaves in the shape of a bowl, and lay bark and fine grass roots in the inner cup (Hosono 1966, 1971).

The pair of magpies occasionally build a nest singly, but they tend to nest in a loose colony. The distance between nests in a flock is mostly 5-35m, with a range of 3-150m. There was no relationship between breeding success and nest distance (Fig. 1). It is also known that they nest in the breeding territory of Japanese Sparrowhawks *Accipiter gularis* (Ueta 2001).

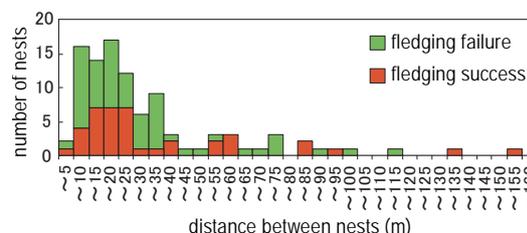


Fig. 1. Nest distance to the nearest neighbor and reproductive success.

### Egg:

The clutch size was most commonly 5-7 eggs with the mean 5.8 eggs (range; 3-8 eggs). The egg is 26.4 by 19.8mm in size and 5.1g in weight (Hosono 1966). The outer shell is scattered with dark brown and gray flecks primarily at the blunt end on a pale brown or pale greenish gray ground.



Photo 3. Egg of Azure-winged Magpie.

## Life history

1 2 3 4 5 6 7 8 9 10 11

non-breeding season breeding season

**Incubation and nestling periods:**

Azure-winged Magpies are sexually mature by one year. Birds which fledged in the previous year represent 21% of breeding males and 18% of breeding females (Harada & Yamagishi 1992). They generally breed once a year, but 14% of the breeding pairs bred twice a year. The breeding starts from late April to early May, and the last nestlings fledge in mid-September. The egg-laying period is from mid-May to mid-August and reaches its peak from late May to early June. Females lay eggs everyday. The incubation period is 15 days and nestlings fledge 17-18 days after hatching (Hosono 1966, 1971). Females incubate eggs and nestlings, while males feed incubating females. Both the male and female feed the nestlings. Fledglings are provided with food by the parent birds for about one and a half months. The brood size was 4.8 birds on average one or two days after hatching, and 4.2 birds (2-7) on average 15 days after hatching. The clutch and brood sizes decrease as the egg-laying becomes late.

**Breeding success:**

The breeding success varies depending on the region, year and flock. In Tokorozawa, near Tokyo nestlings fledged in 31% of the nests where eggs were laid (n = 99). The circumstantial evidence showed that nest predators were Large-billed Crows (*Corvus macrorhynchos*), Japanese rat snake (*Elaphe climacophora*) and cats. Carrion Crows (*C. corone*) were also suspected as a predator. In Nagano Pref., on the other hand, Azure-winged Magpies were reported to be highly frequently parasitized by Common Cuckoos (*Cuculus canorus*) (Nakamura 1990, Yamagishi & Fujioka 1986).

**Diet and foraging behavior**

The study of 408 Azure-winged Magpie stomach contents conducted throughout the year in Chiba and Saitama Prefs. showed that the diet of Azure-winged Magpies consisted of insects (imagos of coleoptera and larvae of lepidoptera), spiders, amphibians (frogs) and the fruits and seeds of plants (oriental elm, mulberry, multiflora rose, picrasma wood, wild grape, *Eurya japonica*, Japanese beauty-berry, *Paederia scandens* and elder) (Kuzu, 1942).

In the breeding period, they mostly feed in the upper layer of a tree, but feed on the ground in the non-breeding season. In Tokorozawa, Saitama Pref., for instance, more than 50% of the feeding was on the ground from December to April, with the proportion exceeding 70% from January to March (Fig. 2). They chiefly ate fallen fruits or seeds on the ground in winter. They occasionally cached fruits under the fallen leaves on the ground. They often scavenge for scraps, fruits and meat in the garbage as well. Azure-winged Magpies live in residential areas probably because food scraps are readily available to them. They also prey on other bird eggs and scavenge for animal carcasses. They are hated by farmers because they do not hesitate to eat fruits in the orchards or backyards, such as persimmons, pears, apples, cherries and strawberries. They may be destroyed as a pest species.

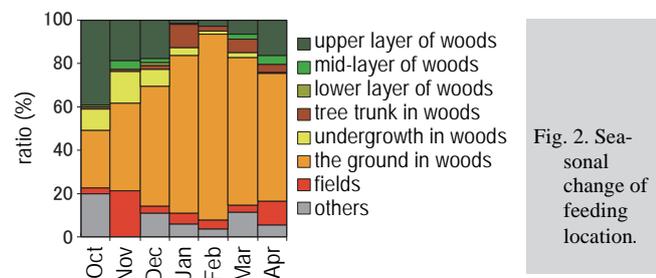


Fig. 2. Seasonal change of feeding location.

**Topics of ecology, behavior and conservation****● Helpers**

Azure-winged Magpies are known to have helpers which assist breeding pairs in raising their nestlings. Helpers carry out tasks,

such as nest material delivery, nest building, the feeding of incubating females, nestlings and fledglings, the disposal of nestling fecal sacs and the mobbing of predators.

Helpers are single or breeding males in Azure-winged Magpies (Yamagishi 1986, Harada & Yamagishi 1992). Single male helpers are birds which were born in the previous year and remained in their natal flock without finding a female partner. They help their parents or brothers with their breeding, or other pairs in their own flock when they have no parents or brothers to help. Once they have found their own partner, however, they stop helping. Fledglings rarely become a helper in the year they were born. Single male helpers are mostly birds that fledged late in the breeding period.

Breeding male helpers are one year old or more and assist breeding pairs in their own flock after they have finished their own breeding whether their breeding is successful or failed. However, they usually help their own father or son. Males which are still raising their own young, single adults and mated females may also help other breeding pairs in their flock (Komeda et al. 1987).

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I studied Azure-winged magpies in Tokorozawa, Saitama Pref. and Azumino, Nagano Pref.. Now I work for an environmental consultant company. I have stopped my bird study since I started to work for the company, but I have wanted to resume the study because I have had some free time these days. I wish to express my gratitude to the Japan Bird Research Association which has given me a chance to sum up the results of my study.