

Grey-faced Buzzard Sashiba (Jpn) *Butastur indicus*

Morphology and classification

Classification: Galliformes Phasianidae

Total length:	♂ 381-431mm (n=20)	♀ 400-415mm (6)
Wing length:	♂ 290-330mm (20)	♀ 313-355mm (6)
Tail length:	♂ 181-216mm (20)	♀ 195-201mm (6)
Culmen length:	♂ 19-29mm (20)	♀ 21-28mm (6)
Tarsus length:	♂ 56-66mm (19)	♀ 51-68mm (6)
Weight:	♂ 390-500g (20)	♀ 430-575g (5)

Measurements are of adult birds in Chiba and Okinawa Prefectures by Azuma. The weight is of the breeders in Chiba Pref.. The English name is after Del Hoyo et al (1994).

Appearance:

Males and females are similar in plumage coloration. Adult birds are reddish brown on the upperpart. The face is gray and a bold streak runs vertically in the middle of the throat. The chest is brown or dark brown with brown or dark brown lateral bars on the abdomen. The tail is ashy brown with four dark brown horizontal bars. The iris is bright yellow. Juveniles are less reddish on the upperpart with dark brown vertical stripes from the throat to the abdomen. The face and eye is brown with a buff-colored distinct supercilium. Dark-morph birds which are dark brown all over are infrequent. The wings look narrow and pointed in flight. The flight feathers are thin and look transparent against a bright sky. Grey-faced Buzzards are thinner than similar looking Northern Goshawks (*Accipiter gentilis*) and Common Buzzards (*Buteo buteo*). They fly linearly, flapping the wings intermittently.



Photo 1. Grey-faced Buzzard parent with its nestlings [Hiroshi Uchida]

Vocalization:

Males and females frequently call "Pic-qeee" or "Kim-mee" with the accent on the first syllable in the breeding grounds, but they occasionally call like this in the wintering grounds and stopover sites as well. The alarm call is the same.

Distribution and Habitat

Distribution:

Grey-faced Buzzards breed in Japan as well as the Russian Far East (the southern part of the Amur region and the Ussuri region) and China (from the Northeast region to Hebei Province). In Japan, however, they are not confirmed to breed in Hokkaido (northernmost main island) and Okinawa Prefecture (southernmost prefecture), with only sporadic breeding reported from Aomori Pref. (northernmost prefecture of Honshu). They winter in the Nansei Islands of Japan, Taiwan, southern China, Myanmar (Burma), Indo-China, the Malay Peninsula, the Philippines, Borneo, Sulawesi (Celebes), the Moluccas Islands and New Guinea.

Habitat:

More than 90% of the breeding grounds in Japan were located in foothills and plateaux with woods and rice fields at an elevation of less than 500m (asl). Of the rice fields 90% was what is called "Yatsuda (a rice field at the bottom of a hill)" (Azuma 2004). In short, their typical breeding habitat is a "Satoyama (hilly countryside)" with Yatsuda. They breed in a riparian wood and woodland adjacent to a marsh or occasionally in the mountains. Grey-faced Buzzards wintering in Japan use a Satoyama with Yatsuda in Iriomote Island and farmland with meadows, cane fields and shelterbelts in Ishigaki and Miyako Islands (southernmost island groups).

Life history



Breeding system:

Most Gray-faced Buzzards are a monogamous breeder (Kojima 1987), but there is a rare report of polyandrous breeding that a female bred with two males (Maezawa 1990).

Nest:

Gray-faced Buzzards use as a nest tree conifers, such as Japanese red pines (*Pinus densiflora*) and *Cryptomeria* and broad leaved trees, such as *Quercus acutissima*, *q. serrata* and *Castanopsis sieboldii*, but Japanese red pines by far predominate among the nest trees. They build a nest with twigs at the base of a lateral branch and a fork in a tree. The nest is usually one size larger than that of Large-billed Crows (*Corvus machrorhynchos*). The same nest is sometimes used every year. Though Gray-faced Buzzards generally build a nest in the woods on a slope facing an open habitat such as rice fields, they occasionally build it in a riparian forest and the woods of flatland as well.

Egg:

They lay eggs from late April to early May. The most common clutch size is three eggs, with a range of 2-4 eggs (Kojima 1987).

Incubation and nestling periods:

Females mostly incubate eggs and nestlings. Males relieve females briefly a few times a day. Eggs hatch from late May to early June about a month after they were laid. Nestlings fledge from late June to early July about 35 days after hatching. Fledglings are fed by the parent birds around the nest for about two weeks, and then become independent, starting to move a long distance (Nonaka & Nagano 2006).

Migration:

Grey-faced Buzzards arrive in the breeding grounds of Japan from late March to early April. It is assumed that males arrive in the breeding grounds a little ahead of females and wait for them, defending the territory. After females arrive, courtship feeding, copulation and nest building are carried out. Gray-faced Buzzards set out on their autumn migration and head south in flocks from late September to mid-October. A kettle of several dozen to several hundred birds is observed at stopover sites.

Diet and foraging behavior

They perch on a tree or a utility pole adjacent to an open habitat, such as rice fields, cropland and clearings, and swoop down to capture by feet small animals occurring in a Satoyama, such as mammals (*Microtus montebelli* and *Urotrichus talpoides*), birds (*Passer montanus* and *Emberiza cioides*), reptiles (*Elaphe quadrivirgata* and *Takydromus tachydromoides*), amphibians (*Rana esculenta* and *R. japonica*), crustaceans (*Procambarus clarkii* and *Geothelphusa dehaani*) and young of insects (*Locusta migratoria*, *Graptopsaltria nigrofuscata* and *Antheraea yamamai*).

Breeding males of Grey-faced Buzzards spent about 90% of the daytime perching on a tree or a utility pole to hunt prey. They were perched at one place for about ten minutes on average and changed the perching spots about 60 times a day. The distance between perching spots was several to several dozen meters and more than 90% of the perching spots were located within 500m from the nest (Azuma 2004). In short, they adopted a search-and-ambush hunting method to reduce the flight cost for hunting and food transfer. In a "Satoyama" with "Yatsuda", Gray-faced Buzzards prey primarily on frogs around rice fields from their arrival at the breeding

grounds to the early nestling period. From the middle to late nestling period, however, they gradually move their foraging sites to coppices (Fig. 1), which increases the proportion of insects in their diet. They change their feeding sites to forage for seasonally most available prey.

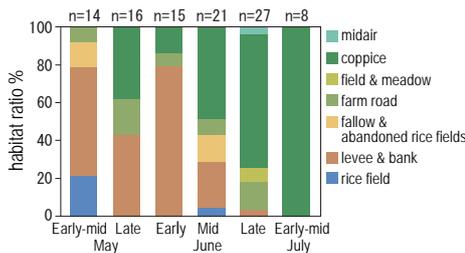


Fig. 1. Seasonal change of feeding sites of Gray-faced Buzzards in Satoyama of Chiba Pref.. Modified from Azuma (2004).

Topics of ecology, behavior and conservation

● Factors regulating the northernmost limits of the breeding range

It is assumed that the northernmost range of breeding Gray-faced Buzzards is in Iwate and Akita Prefectures in Japan. In Akita Pref. in the Japan Sea side, however, they breed in Noshiro at a higher latitude (40°1' N) than Morioka (39°4' N) of Iwate Pref. in the Pacific Ocean side where they are not confirmed to breed. This is probably because the cold northeast monsoon called "Yamase" decreases temperatures in early summer in Iwate Pref., which in turn delays the emergence of, or reduces the supplies of prey animals, such as amphibians, reptiles and insects. Research showed that the population of a dominant frog species (*Rana porosa*) in Yatsuda of Iwate Pref. was significantly larger in the Hanamaki region (39°2' N) where Gray-faced Buzzards bred in a relatively high density than in the Morioka area where they were not confirmed to breed (Fig. 2; Kumagai et al. 2006). In-depth ecological studies of northernmost breeding Gray-faced Buzzards are needed in the future to determine their breeding requirements as well as the limiting factors of their breeding distribution.

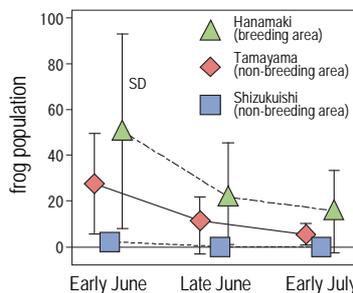


Fig. 2. Seasonal change of the mean population of frog (*Rana porosa*) in Satoyama of Iwate Pref. The error bar = SD

● To prevent further decline

Long-term counts of migrating Gray-faced Buzzards in some of their stopover sites show that they have been declining rapidly in Japan. The population decline can be attributed to development in the breeding grounds of Japan as well as deforestation and poaching in the wintering grounds of Southeast Asia. It is assumed to be important to Gray-faced Buzzards that their breeding grounds have a valley landscape and the boundary between a rice field and woodland is long per area (Matsuura et al. 2005, Momose et al. 2005). This type of environment is usually used as Yatsuda in Japan, but Yatsuda tends to be consolidated or abandoned because it is low in rice productivity. Both consolidation and abandonment reduce the supplies of Gray-faced Buzzard prey animals, such as frogs and snakes and deteriorate their feeding habitat, which in turn makes Yatsuda unsuitable for their breeding. In Saitama Pref., central Japan, on the other hand, Gray-faced Buzzards have been displaced from their breeding grounds by Northern Goshawks (Hiroshi Uchida pers. comm.), which suggests the necessity of

understanding the relationship between the competing sympatric species.

Grey-faced Buzzards were designated as a "Vulnerable" species in December 2006 in Japan. Few concrete protective measures have been taken, however, partly because about 90% of the breeding grounds are privately owned and 75% are not legally protected for wildlife. A basic plan for "Creating a wood Grey-faced Buzzards can live" by Toyota City of Aichi Pref. (Ohata et al. 2006) is remarkable. In the Toyota Natural Observation Woods which contain a Satoyama landscape with Yatsuda, Toyota City has taken the initiative in creating the habitat of frogs Gray-faced Buzzards prey on and maintaining their foraging grounds by weeding and water management of private fallow rice fields. The conservation of birds of prey with a large home range, such as Grey-faced Buzzards would be promoted by the active involvement of local and regional governments in maintaining an entire local ecosystem including private land in various regions of Japan.

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

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I have resumed the ecological study of Grey-faced Buzzards in Iwate Pref. that is the northern limit of their breeding habitat. This time not alone but together with my students. I would like to make use of the study of Grey-faced Buzzards breeding in their northernmost range to conserve their habitat as well as to determine the limiting factors of their breeding. azuma@iwate-u.ac.jp