

Japanese Wagtail Seguro-Sekirei (Jpn) *Motacilla grandis*

Morphology and classification

Classification: Passeriformes Motacillidae

| | | |
|----------------|-----------------|-----------------|
| Total length: | 211mm | |
| Max wingspan: | ♂ 96.8 ± 2.0 mm | ♀ 92.7 ± 2.0 mm |
| Tail length: | ♂ 98.7 ± 2.8 mm | ♀ 94.8 ± 2.5 mm |
| Culmen length: | ♂ 19.1 ± 0.6 mm | ♀ 18.1 ± 0.5 mm |
| Tarsus length: | ♂ 26.4 ± 0.9 mm | ♀ 25.0 ± 0.8 mm |
| Weight: | ♂ 31.2 ± 2.3 g | ♀ 28.0 ± 1.5 g |

The total length after Enomoto (1941). Others based on the individuals captured in Utsunomiya City (mean ± SD).

Appearance:

Adult male and female are the same in color except on the back. Head, chest, legs and bill are black, while the belly is white. The back of a male is black but that of a female is gray-tinged black. Japanese Wagtails have a small white patch under the base of a bill and eyebrows which are connected on the forehead. Juveniles have gray plumage with the abdomen paler and eyebrows indistinct. This species molts once a year.



Photo 1. Male Japanese Wagtail.

Vocalization:

Call is Jee or Jijee. Song sounds like Pyijui, Jui-jui-jui-jui, Ji-ji-ji and Giji-ji-ji-ji (Figure 1). The species calls “jui-jui” or “Jijijui” repeatedly in a territorial dispute.

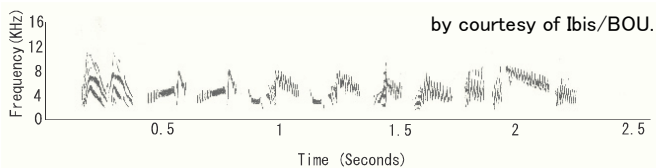


Fig. 1. Sonogram of a Japanese Wagtail song (Higuchi & Hirano 1989).

Distribution and Habitat

Distribution:

Japanese Wagtails are an endemic species to Japan. They breed in Hokkaido, Honshu, Shikoku, Kyushu, Sado Island and Oki Island. However, they are winter visitors in Tsushima Island, Yakushima Island, the Izu Islands, Amami Oshima Island and the Korean Peninsula (Ornithological Society of Japan 2000).

Habitat:

Japanese Wagtails are residents in most regions of Japan, where both sexes hold their territories throughout the year. In Honshu (the main island of Japan), they occur in rivers, lakes, rice paddies and residential areas from the lowlands to the mountains. However, they prefer rivers with well-developed gravel sandbars.



Photo 2. River with well-developed gravel sandbar which is a favorable habitat for Japanese Wagtails (The Kinu River, Utsunomiya).

Breeding system:

Japanese Wagtails are normally monogamous, but on rare occasions bigamous (Hirano 1981, 1989, Ohsako & Yamagishi 1989). Around late January, the male begins to sing on a stone, driftwood and at the end of a branch. His singing frequency reaches its peak in late February. Nest building starts in late February at the earliest. The first egg-laying occurs from mid-March to late March. Some of the pairs breed twice a year. Although females roost in the nest while incubating and nestling, both females and males roost in the reed bed within their territory in other periods.

Both sexes hold their territory even in winter. Singing and territorial disputes become active again around October. The territorial disputes occur mainly at the waterside. The male performs a ritualized fighting with another male, and the female with another female (Hirano 1981). When a stream dries up due to drought and a favorable foraging site emerges, the site attracts a large number of Japanese Wagtails, which feed in a temporal flock. During the non-breeding season, Japanese Wagtails roost in a group in the reed bed of a river or roadside trees.



Photo 3. Communal roost of Japanese Wagtails.

Nest:

Japanese Wagtails build a nest under the fallen grass or trees of a riverbed and the gaps in a bridge girder or a building. The female mainly brings nest materials and the male sometimes does. Dried grass is used as exterior nest materials and soft materials, such as feathers and animal hair are used for the inner lining. The species also uses as nest materials cigarette filters and the cotton of a bed pad abandoned in a riverbed.



Photo 4. Eggs in a nest

Clutch size and reproductive performance:

Japanese Wagtails usually lay 4 - 6 eggs with an egg a day. The incubation period is 13 to 14 days. Both sexes brood eggs, but the female incubates during the night. The male and female rear chicks together. The young fledge about 14 days after hatching. The fledglings are fed by the parents for about 3 weeks. The study in the Kinugawa River, Utsunomiya showed that the breeding success rate was very low in the pairs nesting on the ground of the riverbed (Hirano unpublished data).

Diet:

In addition to the adults and larvae of aquatic insects, such as caddisflies, mayflies, dragonflies and midges, Japanese Wagtails capture small fish. They catch the larvae in the water while walking along the waterside. They also fly-catch flying insects.

Topics of ecology, behavior and conservation

● Strange partial albinism

Partial albinism occasionally occurs in many bird species, but it tends to develop on the head in Japanese Wagtails. Interestingly, it is reported that the head plumage patterns by partial albinism in Japanese Wagtails are strikingly similar to those of some White Wagtail sub-species (Higuchi Hirano, 1983, Uchida 1995). For example, the heads of some albinistic Japanese Wagtails are exactly like those of *Motacilla alba lugens*, *M. a. leucopsis*, and *M. a.*

Life history



alboides distributed in Southeast Asia. The study at a communal roost of Japanese Wagtails showed that partial albinos accounted for 1.6% of a total of 730 birds (Uchida 1995).

However, the calls of the partial albinos were those of Japanese Wagtails and their mates were also Japanese wagtails. In addition, no inter-specific pairs were observed in a large number of Japanese Wagtails during the breeding season in Utsunomiya, Tochigi Pref.. Therefore, Higuchi and Hirano (1983) assumed that partially albinistic wagtails were Japanese Wagtails, and neither partially melanistic White Wagtails nor hybrids of Japanese and White Wagtails. They maintained that the similarity between the head albinistic patterns of Japanese Wagtails and the head plumage patterns of White Wagtails implied the close affinity between the two species. In addition, Uchida (1995) suspected that the ancestors of Japanese Wagtails had the feather coloration similar to that of modern White Wagtails.

Since some Japanese Wagtails are remarkably similar to White Wagtails, it is necessary to distinguish between the two species in the field based on not only plumage and appearance but also specific characteristics, such as calls and display postures.



Photo 5. Partial albino of Japanese Wagtails (White Wagtail type).

● Interesting worlds of Japanese and White Wagtails

In the 1970s White Wagtails *Motacilla alba lugens* gradually expanded the breeding distribution in Japan, and therefore the breeding range greatly overlapped with that Japanese Wagtails. This White Wagtail subspecies began to breed around 1975 even in Utsunomiya, Tochigi Pref. which is located inland. Our study of the relationship between Japanese and White Wagtails in Utsunomiya in the early 1980s showed that White Wagtails bred in industrial parks, built-up areas and rivers in the vicinity of these areas where the population density of Japanese Wagtails was low (Higuchi & Hirano 1981, Hirano 1985). In the Tagawa River flowing through the town where the two species were similar in density of population, however, they had overlapping territories.

On the other hand, these two sympatric wagtails were slightly different in habitat preference, feeding habit and social behavior. Although the territories of the two species extensively overlapped, the areas with frequent use tended to be distinctly separate between them. A river was central to the home range of Japanese Wagtails, which spent most of the time along a river, defending their territories vigorously, while White Wagtails used a river as part of the range for a short period of time, thus not so intent on territory defense (Fig. 2). In addition, the feeding site and methods were also different between the two species. Japanese Wagtails foraged mainly on the ground and sometimes in the water. White Wagtails, on the other hand, primarily foraged in a dry place and frequently adopted a flycatching method (Higuchi & Hirano 1983). Japanese Wagtails started breeding almost one month earlier than White Wagtails. It was assumed that these differences in reliance on rivers, foraging methods and breeding periods between the two species contributed to their sympatric coexistence

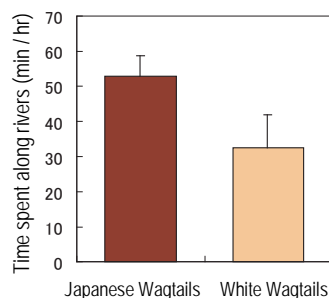


Fig. 2. The time spent by Japanese and White Wagtails along rivers. Based on Higuchi & Hirano 1983.

(Higuchi & Hirano 1989).

Twenty years have passed since then and the breeding range of White Wagtails has expanded further in Tochigi Prefecture. Now they commonly breed in the waterside and even in cities, such as Utsunomiya from lowlands to mountains. It seems that they have markedly increased in number. So I studied the distribution of three species of wagtails in the same area of Utsunomiya as in 1985 during the breeding season of 2004. The results showed that White Wagtails commonly occurred in large rivers and paddy fields where few had been observed in the previous study (Hirano submitted) and that the range of Japanese Wagtails, on the other hand, did not change greatly. This indicated that White Wagtails did not displace Japanese Wagtails through interspecific competition. Since White Wagtails have remarkably increased in number, it is interesting to know whether the mechanism of coexistence of the two species remains the same as before.

Literature

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Author

Toshiaki HIRANO Japan Bird Research Association



When I came upon the familiar numbers of leg bands in my old field note book, I was reminded of the moments with those birds as if it was yesterday. Twenty years have passed since then and wagtails have changed dramatically in Utsunomiya, Tochigi Prefecture. I am concerned about how Japanese Wagtails are getting along where White Wagtails dominate.
k-grandis@helen.ocn.ne.jp