

Threatened Birds of Asia:

The BirdLife International Red Data Book

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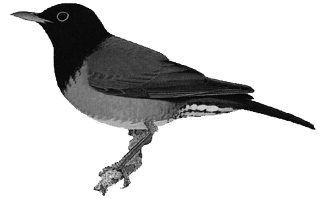
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IZU THRUSH

Turdus celanops

Critical —
Endangered —
Vulnerable A1c,e; A2c,e; C1



This thrush has a small, rapidly declining population as a result of high levels of nest predation, probably compounded by habitat loss. It therefore qualifies as Vulnerable.

DISTRIBUTION The Izu Thrush is endemic to Japan, where it breeds on the Izu islands and in the northern Nansei Shoto islands. Most of its population is resident on the Izu islands between O-shima in the north and Aoga-shima in the south, but a few birds move to adjacent parts of Honshu during the winter. There are also records of small numbers on the northern Nansei Shoto islands (Osumi-shoto and Tokara-retto), where there appears to be a small, isolated breeding population to which the name *Turdus celanops yakushimensis* has been applied (Ogawa 1905 in Austin and Kuroda 1953).

■ **JAPAN** Records (by island and prefecture) are as follows:

Honshu ■ **Saitama** unspecified locality, undated (OSJ 2000); ■ **Chiba** unspecified locality, undated (OSJ 2000); ■ **Tokyo** Jimba, Ongata-mura, **Hachioji-shi**, Minamitama-gun, male collected, undated (Fujimura 1948; also Austin and Kuroda 1953); ■ **Kanagawa** **Kamakura**, “irregularly recorded” between 1986 and 1991 (WBSJ Kanagawa Chapter 1992); **Manazuru** (Manatsuru-machi), Ashigarashimo-gun, “irregularly recorded” between 1986 and 1991 (WBSJ Kanagawa Chapter 1992); ■ **Nagano** unspecified locality, undated (OSJ 2000); ■ **Shizuoka** Tajima-mura, **Tagata-gun**, male collected, undated (Fujimura 1948); Mt Katayama, **Shizuoka-shi** (Abe-kun), November 1906 (two juvenile males in YIO); **Hamamatsu-shi**, at Hirosawa, February 1980, and at Kawawa-cho, April 1980 (WBSJ Totomi Chapter database); **Sanaru-ko** park, Hamamatsu-shi, February 1993 (WBSJ Totomi Chapter database); **Shimoda**, Izu peninsula, December 1926 (male in YIO); **Tsumeki-saki** (Tsumekizaki), Shimoda-shi, February 1996 (WBSJ Totomi Chapter database); **Omaezaki** lighthouse, Haibara-gun, one collected, undated (Fujimura 1948); ■ **Mie** **Shima-gun**, one collected, January 1939 (Hachisuka 1950); ■ **Wakayama** unspecified locality, undated (OSJ 2000);

O-shima island, January 1897, November 1921, March 1923, January 1951 (Kiyosu 1965, two specimens in YIO), singing adults, immature birds and three nests found, mountainsides above 400 m, 1983–1992 (Mochizuki 1993), but “certainly rare” on this island (J. T. Moyer *in litt.* 1996);

To-shima island, March–June 1923, February–March 1929, April 1934 (Yamashina 1942, Kiyosu 1965, male in YIO), nests or nestlings found, May–June 1970–1973 (Higuchi 1973a);

Nii-jima island, December 1927, January 1934 (Kiyosu 1965, 18 specimens in YIO and ZMAK), observed and considered likely to be breeding, May–June 1970–1973 (Higuchi 1973a);

Shikine-jima island, one collected, January 1934 (Yamashina 1942), observed and considered likely to be breeding, May–June 1970–1973 (Higuchi 1973a);

Kozu-shima island, January 1934 (Yamashina 1942, seven specimens in MCZ and YIO), observed and considered likely to be breeding, May–June 1970–1973 (Higuchi 1973a);

Miyake-jima island, collected, May 1887 (Stejneger 1887 in Brazil 1991), March 1907, November 1911, February 1918, December 1927, January and May–June 1934, February 1938, May 1947, April 1954 (Yamashina 1942, Kiyosu 1965, 28 specimens in AMNH, MCZ,

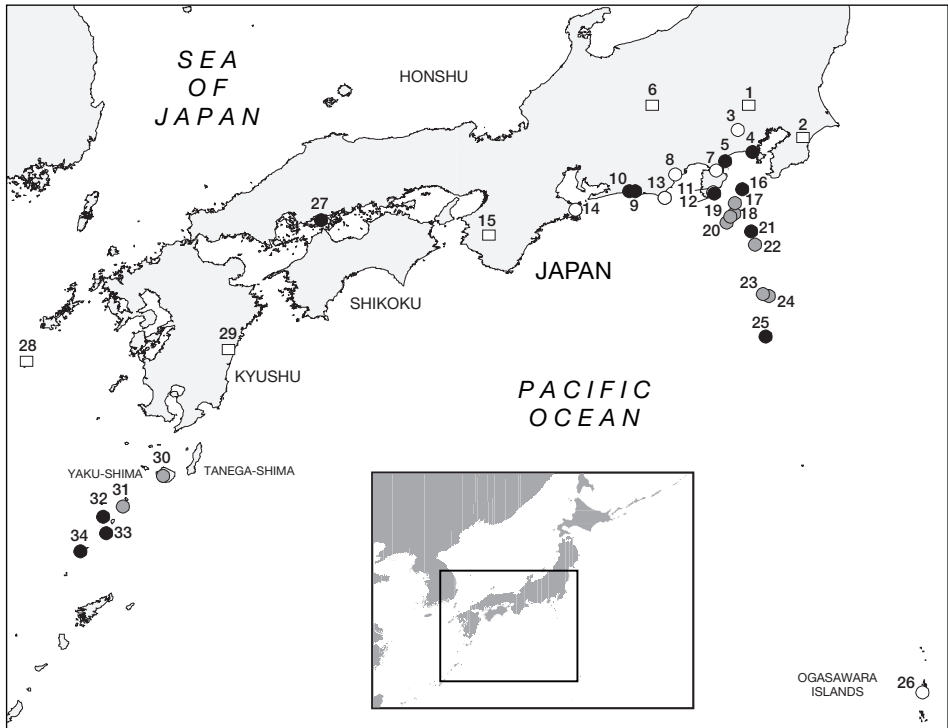
YIO, ZMAK and ZMB), “common” resident, April–May 1953 (Moyer 1957), nests or nestlings found, May–June 1970–1973 (Higuchi 1973a), the species occurring at its highest density on this island (Brazil 1991), and present into 2000 (J. T. Moyer *in litt.* 2000);

Mikura-jima island, May 1934, August 1937 (Kiyosu 1965, nine specimens in YIO and MCZ), with nests or nestlings found, May–June 1970–1973 (Higuchi 1973a);

Hachijo-kojima island, observed and considered likely to be breeding, May–June 1970–1973 (Higuchi 1973a);

Hachijo-jima island (home of the putative race *kurodai*: Momiyama 1923 in Austin and Kuroda 1953), April 1889, May and November 1890 (nine specimens in BMNH), April 1894 and April 1896 (three clutches in NMS), March and September 1895 (eight specimens in SMF and ZMB), March 1895, October and December 1946 (four specimens in AMNH), October 1903, January 1922, December 1928, January–February 1930 (Momiyama 1923 in Austin and Kuroda 1953, Kiyosu 1965, 12 specimens in YIO), February 1924, May 1947 (two specimens in MCZ), at Mitsune, November 1949 (male in AMNH), with nests or nestlings found, May–June 1970–1973 (Higuchi 1973a);

Aoga-shima island, April–May 1905 (two clutches in NMS), May 1947 (Kiyosu 1965, five specimens in MCZ), nests or nestlings found, May–June 1970–1973 (Higuchi 1973a), “common” at the edge of the forests, undated (Yane 1998);



The distribution of Izu Thrush *Turdus celanops*: (1) Saitama; (2) Chiba; (3) Hachioji-shi; (4) Kamakura; (5) Manazuru; (6) Nagano; (7) Tagata-gun; (8) Shizuoka-shi; (9) Hamamatsu-shi; (10) Sanaru-ko; (11) Shimoda; (12) Tsumeki-saki; (13) Omaezaki; (14) Shima-gun; (15) Wakayama; (16) O-shima; (17) To-shima; (18) Nii-jima; (19) Shikine-jima; (20) Kozu-shima; (21) Miyake-jima; (22) Mikura-jima; (23) Hachijo-kojima; (24) Hachijo-jima; (25) Aoga-shima; (26) Ogasawara Islands; (27) Higashino; (28) Danjo islands; (29) Miyazaki; (30) Yaku-shima; (31) Nakano-shima; (32) Taira-jima; (33) Akuseki-jima; (34) Takara-jima.

○ Historical (pre-1950) ● Fairly recent (1950–1979) ● Recent (1980–present) □ Undated

Ogasawara islands one collected on “Ogasawara”, March 1922 (male in ZMH; see Remarks 1);

Shikoku ■ *Ehime Higashino*, Matsuyama-shi, January 1981 (Ishihara 1982);

Kyushu ■ *Nagasaki Danjo islands*, undated (WBSJ 1978 in Kawaji *et al.* 1989); ■ *Miyazaki* unspecified locality, undated (OSJ 2000);

Yaku-shima island at Mt Miyanoura-dake, September–October 1904, September 1911 (Ogawa 1905 in Austin and Kuroda 1953, seven specimens in AMNH, MCZ and YIO), three, 1,600–1,850 m, May–June 1950 (Shirai 1956 in Kawaji *et al.* 1989, Takano 1981);

Nakano-shima island, Tokara islands, 4–6 pairs breeding (two nests found), 80–180 m, May–June 1988 (Kawaji *et al.* 1989), May 1994 (*Birder* 94/7);

Taira-jima island, Tokara islands, undated (Kawaji *et al.* 1987 in Kawaji *et al.* 1989), one, May 1997 (*Birder* 97/7);

Akuseki-jima island, Tokara islands, one, July 1995 (*Birder* 95/9);

Takara-jima island, Tokara islands, male, March 1993 (*Birder* 93/6), March (unspecified year) (Anezaki 1999).

POPULATION Austin and Kuroda (1953) described this species as “fairly common” on the Izu islands, and “plentiful and tame” on Miyake-jima, Mikura-jima and the smaller southern islands, especially on Aoga-shima where it was “not hunted and bothered”, but it was “scarce and very wild” on the northern islands and those garrisoned in the 1940s. It was a “common” resident on Miyake-jima, where 23 were counted on a “typical day” (Moyer 1957). During roadside transect counts conducted in June 1973, this species was found at densities of 5.7 and 3.8 birds per km on To-shima, 0.7 birds per km on Nii-jima, 2.5 birds per km on Kozu-shima, 10.0 and 13.0 birds per km on Miyake-jima, 7.3 birds per km on Mikura-jima, 2.5 and 1.7 birds per km on Hachijo-jima and 12.5 and 13.8 birds per km on Aoga-shima (Higuchi 1973a). Given that the total area of the Izu islands is only c.300 km² (J. T. Moyer *in litt.* 1996, Stattersfield *et al.* 1998), it is unlikely that the population of this species ever exceeded more than a few thousand individuals. Reproductive success has decreased since Siberian weasels *Mustela sibirica* were introduced to the Izu islands (Takagi and Higuchi 1992), and the recent eruptions (see Threats) cannot have improved the situation on Miyake-jima, where the species is (or was) at its highest density (see figures above, also Brazil 1991).

The situation in the Nansei Shoto cannot yet be gauged. There appear to have been no records from the largest known island, Yaku-shima, since 1950 (but it is not known if this reflects lack of birds or lack of birders), while all other records are of very few birds in the past two decades.

ECOLOGY Habitat This species is solitary or occurs in small flocks of 2–3 birds (Uchida 1949). It inhabits deciduous woodlands, and feeds along roadsides, in tilled fields, and in yards and gardens when undisturbed (Austin and Kuroda 1953). It prefers forests with a well-developed canopy and a sparse shrub-layer, and it often avoids deciduous forests with a dense understorey of bamboo *Pleioblastus chino* (Uchida 1949, Takagi and Higuchi 1992). It occurs in a variety of habitats on Miyake-jima, but is judged to be particularly abundant in camellia forests (Moyer 1957). On Nakano-shima in the Tokara islands its habitats were similar to those on the Izu islands, but on Yaku-shima it was reported to inhabit the juniper–rhododendron association in the upper mixed-forest zone (Brazil 1991).

Food It feeds on fruits, seeds and invertebrates; in summer mainly on invertebrates (Uchida 1949, Austin and Kuroda 1953). In laurel forests, the number of thrushes foraging on the ground was highest in March and July, when their main food, lepidopteran caterpillars, were scarce in the tree canopy, but in April and May they foraged more in the trees for caterpillars (Takagi and Higuchi 1992). The main food of the nestlings was found to be earthworms (64.2% of their diet), insects (13.6%) and centipedes (9.9%) (Yamamoto *et al.* 1996).

Breeding On Miyake-jima the breeding season extends from March to June, rarely continuing until August, and most pairs probably only rear one brood each year (Sugizaki 1968). Of 167 nests found in 1963–1965, the normal clutch-size was 3–4 (rarely five) eggs, and clutch-size appeared to be related to the mean temperature in April, with a larger mean clutch-size in warmer years (Sugizaki 1968). Nests are built on low branches, c.2–6 m above the ground, or on the ground (Uchida 1949, Moyer 1957, Kawaji *et al.* 1989).

Migration This species is mainly resident on the Izu islands (Kiyosu 1965), but outside the breeding season some move to O-shima (where it only rarely breeds) (Kuroda 1980) and to Honshu and Shikoku (Austin and Kuroda 1953; see Distribution). The record from an Ogasawara island is presumably further evidence of the species's dispersive powers (see Remarks 1). The population in the northern Nansei Shoto may or may not be resident; records there span March–October (see Distribution).

THREATS The Izu Thrush is one of two threatened bird species that are restricted to the “Izu Islands Endemic Bird Area”, threats and conservation measures in which are profiled by Stattersfield *et al.* (1998).

Habitat loss This species is presumably being affected by habitat loss in the Izu islands, for example on Miyake-jima, where much natural forest has been replaced with the fast-growing softwood *Cryptomeria japonica* for timber production (J. T. Moyer *in litt.* 1996). Road construction and developments for tourism on Miyake-jima and large-scale road construction on Mikura-jima are also damaging natural habitats (J. T. Moyer *in litt.* 1996). Much of the natural forest has been destroyed on O-shima (Brazil 1991). The Tokyo prefecture government (which has authority over the Izu islands) is planning to construct either a camp ground or a marine park at Toga Point on Miyake-jima, which could destroy some forest, and on Mikura-jima there is a long-term plan to relocate the village, or build a new village, at Nango in the south of the island (J. T. Moyer *in litt.* 1996).

Hunting This species was formerly hunted on the Izu islands, and it was described as “very wild” on the northern islands and those garrisoned in the 1940s (Austin and Kuroda 1953), presumably because of the hunting factor at the time. However, hunting is not believed to be a current problem.

Introduced predator The introduction of the Siberian weasel to Miyake-jima in the 1970s appears to have caused a significant decline in the numbers of Izu Thrushes (Hasegawa 1986). The initial introductions of weasels (which were apparently all males) in 1976–1977 did not cause a serious decline: surveys in 1978–1980 found 24.4, 33.4 and 28.8 thrushes per km of transect respectively, similar to the results of a survey in 1973, which found 23.4 per km; studies of breeding in 1978–1980 found success rates of 71–78% (of chicks fledged), also similar to the 85% success rate found in 1973 (Takagi and Higuchi 1992). However, after more weasels (including some females) were released in 1982, their population increased rapidly and the breeding success and numbers of Izu Thrushes began to decline: surveys in 1990 and 1991 only found 6.7 and 11.1 birds per km, and a study in 1991 found that breeding success had fallen to only 7.3% (of chicks fledged); of the 25 nests found, the eggs were taken from eight, the nestlings were taken from 14 and only three nests produce fledged young, and there was evidence that nests were predated by weasels (Takagi and Higuchi 1992).

Predation by Large-billed Crows *Corvus macrorhynchos*, which have increased greatly on Miyake-jima and on the other Izu islands as a result of raw garbage becoming available, is also a serious threat, since just prior to leaving the nest young Izu Thrushes are quite noisy when they feed, and both crows and weasels are attracted to the sound (J. T. Moyer *in litt.* 1996). During a survey in 1992, a total of 22 nests were found, all containing eggs; the eggs hatched in all nests, but no nestlings survived, as 19 nests were destroyed by crows, one by weasels (at night), one by a domestic cat and one by an unknown predator, while of six nests

found in 1996, five were destroyed by crows and chicks fledged successfully from the sixth (J. T. Moyer *in litt.* 1996).

Eruptions on Miyake-jima (Information in this paragraph is taken entirely from J. T. Moyer *in litt.* 2000). Various volcanic eruptions occurred on Miyake-jima in 2000, the most powerful (on a scale not recorded on the island for 2,500 years) in late August. The entire island was covered in a very fine, very heavy ash, and foliage-dwelling insects suffered very high mortality. Moreover, August was very dry, and any rain or dew was immediately absorbed into the ash, compounding the situation. Whereas the Izu Leaf-warbler *Phylloscopus ijimae* and Styan's Grasshopper Warbler *Locustella pleskei* suffered badly as a consequence (see relevant accounts), the Izu Thrush seemed to survive much better, with no great decrease in population size, probably because it could forage under damaged trees, showed little or no territoriality, and may even have moved to adjacent islands. Nevertheless, reproductive output in 2000 was probably zero, and in October the main crater began emitting deadly gases which, on still days, covered the island and proved toxic to both animals and plants; so the fate of the population of the species on the island at that stage remained seriously in doubt.

MEASURES TAKEN Legislation The Izu Thrush is on the Red List of Japan, which means that its conservation importance is recognised and it can be used as a reference species in Environmental Impact Assessment for development projects (Environment Agency of Japan *in litt.* 1999).

Protected areas It has been recorded in or near to the following protected areas (all information taken from the Environment Agency of Japan's list of prefectural protection areas): in Shizuoka, Sanaru-ko Protection Area (1 km²); in the Izu islands, Nii-jima Protection Area (108 km², including a "special protection area" of 2 km²), Miyake-jima Oyama Protection Area (3 km², established for the protection of this species and the Izu Leaf-warbler); in the Nansei Shoto, To-shima Protection Area in Kagoshima prefecture (84 km²). Although the entire Izu Archipelago has been declared as a national park by the national government, and several valuable places have been designated as "special protected areas", there are no rangers in the entire park and loss and modification of habitats continues on many islands; however, the Miyake-jima Nature Centre protects a small sanctuary on that island (J. T. Moyer *in litt.* 1996).

MEASURES PROPOSED Habitat protection Although this species can be found in a variety of habitat types, the maintenance and enhancement of areas of suitable forest and woodland (well shaded with sparse undergrowth) on the Izu islands is important if its numbers are to be maintained or increased. New developments on these islands should be carefully planned to minimise their negative effects on the habitats of this and other endemic species. The infrastructure and manpower of the national park on the Izu islands needs to be strengthened, to help enforce habitat conservation measures there.

Control of predators Control of predators is likely to be important for the survival of this species, including the introduced Siberian weasel and the Large-billed Crow. The complete removal of the weasel from Miyake-jima would presumably be difficult and costly given the large population that is now established there, but it may be possible to control its numbers in some parts of the island. Efforts should be made to prevent the spread of weasels to other Izu islands. New controls on the dumping of garbage should be introduced throughout the islands to reduce the numbers of Large-billed Crows, and this measure may also help to reduce the numbers of weasels (if they feed on rodents which typically concentrate at refuse). However, direct action against crows may be necessary.

Research The population of this species should be monitored throughout its breeding range, particularly to determine the impact of introduced predators on its numbers on Miyake-

jima. More extensive studies in the islands of southern Japan is required (Brazil 1991), especially with respect to numbers and distribution (including a new survey of Yaku-shima and a survey of the adjacent and equally large Tanega-shima, from which the species has never been reported), plus ecology, migratory/resident status and the validity of the subspecies *T. c. yakushimensis* (Y. Shigeta *in litt.* 1999) (clearly such work could be twinned with similar such studies urged for the Izu Leaf-warbler) .

REMARKS (1) This record presumably refers to a long-distance dispersal from the Izu islands unless it is a case of mislabelling. The fact that some birds certainly do leave the Izus in winter encourages the retention of this record as genuine.