

AMAMI JAY
Garrulus lidthi



Critical —
Endangered —
Vulnerable C1

This jay has a small population that is inferred to be declining, possibly as a result of increased levels of predation. It therefore qualifies as Vulnerable.

DISTRIBUTION The Amami, Lidth's or Purple Jay (see Remarks 1) is endemic to the Nansei Shoto islands in southern Japan, where it is recorded with certainty from three islands (Amami and two adjacent satellites to the south) and reported from a fourth, thus:

■ **JAPAN** *Amami-ooshima* island, a widespread resident throughout the twentieth century (e.g. Horii 1918, Kobayashi 1930, Hachisuka and Udagawa 1953, Kiyosu 1965, Bruce 1979, Ishida *et al.* 1990b, 1998, Ueta and Yamaguchi 1995, 1997; see Remarks 2);

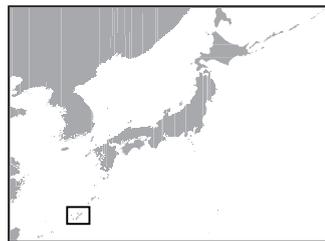
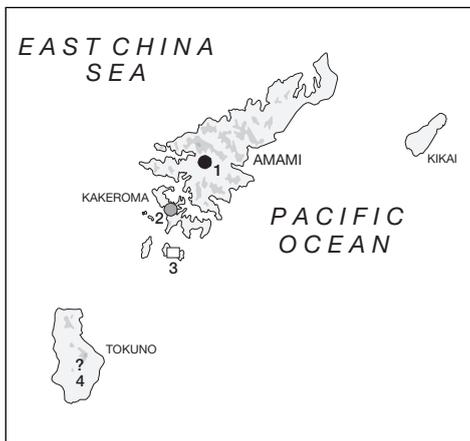
Kakeroma-jima island, where it was reported to be common in the 1970s (I. Funakawa and O. Toyama in Bruce 1979; also Ishida *et al.* 1990b);

Uke-shima island, undated (OSJ 2000).

A report from Tokuno-shima island, where the species was said to be common but confined to the central mountains in the 1920s (Kuroda 1925), was never confirmed and it is now presumed extinct there (Ishida *et al.* 1990b) or possibly even erroneously attributed in the first place (S. Hanawa in Brazil 1985b, 1991). Recent visits confirm that it is certainly not present on the island (K. Sugimura *in litt.* 2001).

A single bird of this species reported on Iriomote-jima in the Yaeyama islands (in Okinawa prefecture in the southern Nansei Shoto) in 1984 was assumed to have involved a captive individual which had been taken (illegally) and released there (Brazil 1991).

POPULATION Horii (1918) reported that this species had suffered a decline in numbers on Amami as a result of overhunting "years ago", but that its numbers appeared to have recovered by 1917, when it was "quite common". It was also described as "quite common" around Yamato-son and Sumiyo-son villages on Amami in March–April 1928 (Kobayashi 1930).



The distribution of Amami Jay *Garrulus lidthi*:

(1) Amami-ooshima; (2) Kakeroma-jima; (3) Uke-shima; (4) Tokuno-shima.

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

Bruce (1979) described it as “common and conspicuous” on Amami in April 1975, and it was reported to be “common” on Kakeroma-jima in the 1970s (I. Funakawa and O. Toyama in Bruce 1979). It was found to be the fifth commonest bird in secondary forest on Amami during a survey in 1984, when an average of 2.9 birds was seen per hour (Higuchi and Hanawa 1985). Its total population was estimated at c.5,800 birds in the 1970s (Nishida 1974 in Brazil 1991), and Brazil (1991) considered that there was “no reason to assume that it has changed markedly since then”, although it *is* reasonable to assume that forestry activities and possibly increased levels of predation (see Threats) have caused some reduction in its numbers.

ECOLOGY Habitat The Amami Jay is found in a variety of habitats from sea-level up into the hills, in subtropical evergreen broadleaf forest, coniferous forest, and shady woodland around cultivation and human habitations (Brazil 1985b, 1991). It shows a significant preference for mature evergreen forest, which in one study accounted for 93% of all observation time, probably related to the availability of food, as more acorns are produced by mature *Castanopsis cuspidata* (see Remarks 3) and there is less undergrowth in mature forest (Ueta and Yamaguchi 1995). Flocks, generally small, wander through the forest in winter (Brazil 1985b), but assemblies of up to 100 or more have been reported (Brazil 1991).

Food It feeds mainly on acorns of *C. cuspidata*, but it has also been found to eat insects and reptiles such as grass lizard *Takydromus smaragdinus* and the habu (Okinawa pit-viper) *Trimeresurus flavoviridis* (Brazil 1985b, 1991, Ueta and Yamaguchi 1995). It is usually observed foraging among fallen leaves on the forest floor, or at the forest edge and on forest trails, and is seldom seen feeding in trees (Ueta and Yamaguchi 1995), although Bruce (1979) saw birds in April foraging at all levels in the forest and other habitats (including a grassy scrub patch, where a bird wove its way through the long grass and hopped into a bush to pick at the tops of grass stems), and cited other observers who reported them visiting cane fields at night and scavenging along the shoreline. Kiyosu (1965) watched a group of several birds cooperatively digging up sweet potato in a field. It caches food like other jays, and there have been recent observations of “acorn harvesting” and hoarding by the species in the autumn, with a peak of activity in early to mid-November (Goodwin 1976, Ishida *et al.* 1990a, 1998, Khan and Ishida *ms.*).

Breeding Breeding takes place from late January or early February until May, when 3–4 eggs (exceptionally as many as 5–7) are laid, and the chicks fledge in mid- to late March (Kiyosu 1965, Ueta and Yamaguchi 1995, Khan and Ishida *ms.*). The nests are usually on the lower branches of trees or in tree-holes generally 1–5 m up (Brazil 1991), but sometimes on the ground (Kobayashi 1930, Ueta and Yamaguchi 1995), on buildings (Ishida *et al.* 1990b) or in hollows in cliffs (Brazil 1991); a recent case of use of a nest-box set within forest has been recorded (Ishida *et al.* 1998). Helpers at the nest appear to be usual (Ishida *et al.* 1998). Territories are said to be a mere 150–300 m² (Bruce 1979) or 250–350 m² (Khan and Ishida *ms.*) around the nest site—presumably meaning 150–300 × 150–300 m, etc.

THREATS The Amami Jay is one of five threatened members of the suite of seven bird species that are entirely restricted to the “Nansei Shoto Endemic Bird Area”, threats and conservation measures in which are profiled by Stattersfield *et al.* (1998).

Habitat loss Forest trees were not heavily utilised on Amami before 1954, and even in 1971 an official report indicated that 84% of the 720 km² island were “still fairly well forested” (Bruce 1975b); but large areas of mature forest have been clear-cut in the last few decades and replaced by young secondary growth, although this logging is only economically feasible through national and provincial government subsidy (Sugimura 1988; see Remarks 4 under Ryukyu Woodcock *Scelopax mira*). The Amami Jay, while equally common in secondary as in old forest both in summer and in winter, is rare in logged forest, although in the mid-1980s

logged areas were not large at any one time, so that the effects of logging on its total population may not have been very great (Sugimura 1988). If the species ever existed on Tokuno-shima its extinction there might be attributable to habitat loss and fragmentation following substantial government subsidised sugarcane farming, but as the Ryukyu Woodcock still reportedly survives in good numbers this explanation may not be enough (K. Sugimura *in litt.* 2001).

Hunting This species was kept as a cagebird in Japan in the Edo Era (seventeenth to nineteenth centuries), and more than 8,000 were killed and exported to Europe and America for the feather trade between 1909 and 1928 (Kuroda 1925, Higuchi *et al.* 1986), although on the testimony of Horii (1918; see Population) most of this exploitation may have taken place in the years immediately after 1909.

Increased levels of predation The chicks or eggs in five out of seven nests of this species studied by Ueta and Yamaguchi (1995) were predated by Large-billed Crow *Corvus macrorhynchos* or unidentified mammals. The numbers of Large-billed Crows on Amami have recently increased, probably because of increased garbage disposal on the island (Ueta and Yamaguchi 1995). All the mammalian predators were probably introduced by man, including the Javan mongoose *Herpestes javanicus* (or *H. edwardsi*), which was introduced for snake control and it is now found around Naze City (but heading into the mature forest: see Measures Proposed under Ryukyu Woodcock), and feral dogs and feral cats (Abe 1994, Ishida *et al.* 1994). The mongoose has been reported to prey on young Amami Jays (Handa 1990).

MEASURES TAKEN Legislation The Amami Jay was designated as a Natural Monument in 1971 (Kato *et al.* 1995) and as a "Special Bird" in 1972 (Environment Agency of Japan 1976). It was protected as a National Endangered Species in 1993 and it is on the national Red List of Japan, which means that its conservation importance is recognised and it can be used as a reference species in environmental impact assessments for development projects (Environment Agency of Japan *in litt.* 1999).

Protected areas Yuwangatake (3.2 km² including 1.03 km² of Special Protection Area) on Amami was established as a National Wildlife Protection Area mainly for the conservation of the Amami Jay and Amami Thrush *Zoothera major* (Environment Agency of Japan *in litt.* 1999). More recently, Kinsakubaru (3.0 km²) and Kanengotake (1.6 km²) have also been established as Prefectural Wildlife Protection Areas for these two species (SC).

MEASURES PROPOSED Habitat protection The preservation of the remaining areas of mature forest on Amami-ooshima is vital for the conservation of this species (and for Ryukyu Woodcock and Amami Thrush) (Ueta and Yamaguchi 1995), and the maintenance and enhancement of areas of forest and woodland on the island is important if its numbers are to be maintained or increased; the equivalent section under Amami Thrush has further recommendations. As a means of promoting general environmental conservation through the particular appeal of so beautiful a bird as the Amami Jay, Brazil (1985b) suggested that a sanctuary be established for the species with the provision of a manned observation centre, and alluded to a recent proposal along these lines by the mayor of Naze City; it is possible that Yuwangatake (see above) was the result.

Management: nest-boxes Placing nest-boxes in natural forest (presumably when still regenerating after logging) may be beneficial by providing artificial cavities in habitat otherwise less favourable to breeding (Ishida *et al.* 1998). It may also provide the species with a useful defence against predation by crows (see Threats).

Control of introduced predators Control of human introduced predators is important for the survival of this species (and for several other threatened endemic species) (Ueta and Yamaguchi 1995). Further comments on this issue are made in the equivalent section under Ryukyu Woodcock.

Research The status of the population of this species on Amami should continue to be monitored, and detailed long-term ecological studies, using ringed birds, should be carried out to determine a precise life-history profile. Surveys are urgently needed on Kakeromajima, where it was reported to be common in the 1970s, in order to develop appropriate conservation measures there. A survey of the mountains of Tokuno-shima could investigate what factors might have caused its extinction (such fieldwork could ride on the back of a detailed review of the status of the island's population of Ryukyu Woodcock).

Local awareness Just as the Okinawa Rail *Gallirallus okinawae* has been adopted by commercial interests on Okinawa and could be used to promote greater environmental interest, so on Amami the colourful and characterful Amami Jay could serve in the same way. An education programme concerned with the conservation of the forests on Amami could adopt this species as a flagship, emphasising its uniqueness and extreme vulnerability. Moreover, the biological values of Amami (see Remarks 1) merit the strongest promotion among local and national politicians.

REMARKS (1) The Amami Jay is a beautiful and highly distinctive species whose closest relative is regarded as the Lanceolated Jay *Garrulus lanceolatus* of the western Himalayas (Goodwin 1976), although in some aspects of coloration and pattern it shows at least superficial affinities to the American genera *Cyanocitta* and *Cyanocorax*. Endemic to Amami and a few satellites, it is potentially a conservation flagship species with a significant constituency of threatened endemic forms for which to stand, some shared with Okinawa and/or the wider Nansei Shoto (see Remarks 5 under Okinawa Rail), but some also exclusively found on Amami, most notably the Amami Thrush (see relevant account), Amami rabbit *Pentalagus furnessi* (an ancient offshoot of the rabbits, occupying its own genus) and the otton frog *Babina subaspera* (Brazil 2001). (2) If, as indicated under Ecology, this species is mainly restricted to mature forest, then its distribution (or at least the distribution of reproductively active birds) on the island will be very similar to that of the Amami rabbit, focusing south and west of Naze City in an area of approximately 200 km² (see Figure 3 in Sugimura *et al.* 2000). Nevertheless, true mature forest is only considered to cover 10% of the land surface of Amami (Sugimura *et al.* 2000), i.e. 70–80 km² in total (depending on the various values given for the island's size; see Remarks 4 under Ryukyu Woodcock). (3) This tree is commonly referred to as *Castanopsis sieboldii* and less often as *Quercus cuspidata* (e.g. by Brazil 1991).