

*Hunting and habitat destruction have reduced Trinidad's only endemic bird species to two small populations in the primary forests of the Northern and Southern Ranges; key site conservation and more public awareness are both urgently needed.*

**DISTRIBUTION** The Trinidad Piping-guan (see Remarks 1) is endemic to the island of Trinidad, Trinidad and Tobago. According to hunters interviewed in the 1980s, the species was widely distributed through the island 30-40 years ago (James and Hislop 1988), although by the 1930s it was believed to occur only in the north and south (Belcher and Smooker 1934-1937), a situation also judged true in the 1950s (Junge and Mees 1958). Certainly today the known population centres exist only in the Northern Range at Madamas, Aripo, Cumaca/Platanal, Hollis Dam, Salibia/Matura and Grand Riviere, and in the Southern Range in the Trinity Hills (some other former localities are under Threats); probably the main centre for the species is the eastern half of the Northern Range (James and Hislop 1988; also R. P. ffrench in litt. 1981).

**POPULATION** Two small, well separated populations now survive. The species was evidently once abundant, since in the last century birds were easily tamed and often kept like poultry (Léotaud 1866), but Chapman (1894) noted that hunting was rendering it "a rare bird", and Belcher and Smooker (1934-1937) referred to its "extreme rarity". Howbeit, according to hunters interviewed in the 1980s, large numbers existed 30-40 years ago on the island (James and Hislop 1988), but the bird was already thought of as rare by the 1950s (Junge and Mees 1958). Although historically reported to be gregarious, moving about in flocks of 12-15 (in one doubted report, 50: ffrench 1992), there were no such records in the 1980s, the highest number together being five, although nine were recorded on one day at a particular locality (James and Hislop 1988). Some 250 km<sup>2</sup> of habitat still existed in the early 1970s (see King 1978-1979), but around 1980 one rough estimate was of only 100 birds remaining (L. Calderon *per* R. Sutton verbally 1981).

**ECOLOGY** The Trinidad Piping-guan inhabits remote primary forests (typically vine- and epiphyte-rich closed-canopy tracts with sparse ground cover) where there is minimal human disturbance; areas preferred are hilly (400-900 m) with steep ridges, deep valleys and abundant watercourses, the vegetation being lower montane rainforest in the north and semi-evergreen seasonal forest in the south (Léotaud 1866, Beard 1946, James and Hislop 1988). Principal tree associations in the north are serette-débassee *Byrsonima spicata*-*Licania biglandulosa*, crappo-guatecare *Carapa guianensis*-*Eschweilera subglandulosa* and pois-doux-redwood *Inga macrophylla*-*Guarea guarea*, while in the south the habitat is characterized by acurel-moussara *Trichilia smithii*-*Brosimum alicastrum* (James and Hislop 1988). Birds are arboreal, moving in small parties through trees 20-40 m up, although in the recent past in (presumably now cleared) lowland forest areas the species could be found on the forest floor or in the lower branches of trees; over much of the day the birds stay hidden and seemingly inactive in dense tangles high in the trees, and records during the rainy season (May-December) are relatively few, for reasons unknown (James and Hislop 1988). The distribution of the species appears to be closely linked to the distribution and availability of certain preferred food-trees, birds moving over large areas in the Northern Range in search of fruit; there have been records from coffee plantations adjacent to primary forest (James and Hislop 1988).

Feeding tends to occur most often in the evening, 16h00-20h00, i.e. extending for an hour or two after dark (verified by continued dropping fruit, which abruptly ceases), although it is occasionally noted in the morning; birds chiefly take fruit and seeds of forest trees, including *Ocotea*, *Pouteria*, *Bursera*, *Didymopanax*, *Erythroxylum* and, in second growth, *Lantana*, occasionally also cultivated crops (ffrench 1992, James and Hislop 1988). Léotaud (1866) also mentioned young leaves. Hunters reported that when birds were observed on the ground they were scratching the forest floor in search of insects; others have reported drinking from streams and forest epiphytes (James and Hislop 1988).

The sparse breeding information suggests a protracted season: mating was reported in March and apparent mating behaviour in April; developing eggs were in a bird found dead in January; two chicks were seen in March, and small (juvenile) birds in November, January, February and May (James and Hislop 1988). Reports indicated that the nest is stick platform "placed quite near the ground within a tangle of vegetation" (Belcher and Smooker 1934-1937), that the clutch-size is two and that nests may be

predated by snakes (James and Hislop 1988). Not only does feeding persist into darkness but birds also become active (with noisy flights) as early as 03h00, apparently as a form of display, since flight in the daytime is relatively silent (James and Hislop 1988).

**THREATS** Principal causes of the great decline in the species appear to be habitat destruction and illegal hunting, the latter perhaps more critical in recent years.

*Habitat destruction* Heavy timber extraction or the total conversion of forests to commercial timber plantations has taken place in many areas of the Southern Range (e.g. at Casthill, Moruga and Guyaguare) (James and Hislop 1988). Similar disturbance and loss has occurred in the Northern Range, particularly in the foothills, at such sites as Valencia, Matura, Rampanalgas, Cumana and Toco, where hunters' reports indicated a former abundance of the piping-guan, and significant threats to forest remain at Aripo, Cumaca/Platanal, Madamas, Matura/Salibia and Grand Riviere (James and Hislop 1988). Access roads for agriculture and tourism (and always accompanied by squatters) are likely to result in further declines in the species: one such road is being built into Cumaca, close to a known area, while another is planned to run from Blanchisseuse to Matelot and could affect populations at Madamas and Grande Riviere (James and Hislop 1988).

*Hunting* Because its flesh is "tender and tasty" (Léotaud 1866) and "deservedly esteemed" (Chapman 1894), persecution has long affected the species adversely, although Belcher and Smooker (1934-1937), while accepting its rarity, wrote of "its one-time popularity as a table bird" as if this was no longer so. However, evidence gathered in the 1980s suggests that up to 20 years ago the species was shot often simply for sport, although since then hunting has been for subsistence (James and Hislop 1988). The pressure appears to have been high, with up to 10 birds reported shot "in one sitting", chiefly in the Southern Range from Casthill to Guyaguare (James and Hislop 1988). As with the Ring-tailed Pigeon *Columba caribaea* (see relevant account), hunters reported birds being attracted to columns of smoke at camps in the forest, and that shooting of one bird did not disturb the flock so that others could then be picked off (James and Hislop 1988). Hunting continues and, even though the meat is not prized (despite the nineteenth-century accolades), the species is used by bushmeat poachers whilst hunting the more profitable mammals of remote forests (James and Hislop 1988). Lack of reports in recent years from some of the more easily accessible areas of the Northern Range, where ecological conditions for the species appear ideal, suggests that hunting pressure there is too high for populations to replace themselves (James and Hislop 1988).

**MEASURES TAKEN** The Trinidad Piping-guan has never been listed as a gamebird, and the present Conservation of Wildlife Act, in force since 1963, has listed it as a protected species (James and Hislop 1988). Its preferred habitat falls mainly within forest reserves or state forests (some of which are surrounded by extensive tracts of private land, largely abandoned cocoa, coffee and citrus estates), but these provide no special protection to wildlife since forestry practices predominate, entry is unrestricted, and both illegal logging and squatting are commonplace (James and Hislop 1988).

*Conservation education* The government's Wildlife Section mounted public awareness campaigns about the species throughout the 1980s, involving the publication of popular articles, the distribution of posters to schools, lectures to school children and hunters' groups (with field trips for the former), and a free television "advertisement" for a few months in 1985, this last proving to be the single most effective instrument of popular enlightenment (James and Hislop 1988). The Point-à-Pierre Wildfowl Trust contributed to this work by producing calendars with and postcards of the species (James and Hislop 1988).

**MEASURES PROPOSED** Proposals for a system of national parks and other protected areas have been in place since 1980 without implementation, but in any case (from the standpoint of piping-guan conservation) now need modification (on a phased-in basis as more is learnt of the species), although some known key areas in both the Northern and Southern Ranges should receive immediate attention (James and Hislop 1988; see Remarks 2). Further research (lasting at least one year) on the ecology of the species is needed, and this can only be done with the support and participation of an international conservation group (James and Hislop 1988). Similar outside support is needed to assist the Wildlife Section in its awareness campaigns targeting rural communities, hunters, land-use managers and politicians, and in its efforts to enforce existing laws concerning hunting, squatting and logging (James and Hislop 1988).

Elevation to specific status (see Remarks 1) renders the Trinidad Piping-guan the only bird species endemic to the country, and as such it might be adopted as the national bird (with the White-tailed Sabrewing *Campylopterus curvipennis* – see relevant account – as Tobago's emblem).

**REMARKS** (1) Reinstatement of this bird as a full species (as was formerly judged by Chapman 1894 and Hellmayr 1906a) has only been recent, and remains somewhat tentative, the new arrangement proposing specific status for the Blue-throated Piping-guan *Pipile cumanensis* and for the Red-throated Piping-guan *P. cujubi* (Sibley and Monroe 1990). It is clear, however, that *P. pipile* and *P. cumanensis* are very closely related (see, e.g., Vaurie 1967a). (2) Efforts to establish protected areas in the Northern Range should, as far as possible, attempt to address the little-known threatened endemic race *aripoensis* of the Scaled Antpitta *Grallaria guatimalensis* (see King 1978-1979, French 1992).