

This large ground-dwelling frugivore, only known in recent decades from a few forest patches in Alagoas, north-east Brazil, is now probably extinct in the wild owing to habitat loss and hunting, and its only chance of survival lies in a private captive population that numbered 11 in 1984.

DISTRIBUTION The Alagoas Curassow, here separated from the Razor-billed Curassow *Mitu tuberosa* (see Remarks 1), is known only from the north-eastern Brazilian coast, having first been encountered in the early seventeenth century in Pernambuco (Marcgrave 1648) and rediscovered in October 1951 in São Miguel dos Campos, Alagoas, when an adult female was collected (Pinto 1952, 1954a, Sick 1985). A report of its occurrence in northern Bahia (Burmeister 1856) has been much repeated (Pinto 1952, 1964, 1978, Vaurie 1968, Delacour and Amadon 1973) but is unreliable (Coimbra-Filho 1970). In recent decades, at any rate, the species has almost certainly been restricted to Alagoas (Pinto 1952), where by December 1970 the largest relict forests (then 8,500 ha) were to be found in São Miguel dos Campos (Coimbra-Filho 1971), and it still survived there more recently (Sick 1985), being restricted to the few forests in São Miguel dos Campos, Roteiro, Barra de São Miguel, Pilar and Marechal Deodoro (Teixeira 1986). At present, however, this bird is extinct or virtually so in the wild (D. M. Teixeira *in litt.* 1987: see Population); there is an unconfirmed report of one being shot at São Miguel dos Campos around 1988, apparently in an area of 800 ha of lowland forest which is all that now remains of such habitat in the state (D. Willis verbally 1992; see Threats, Measures Proposed).

POPULATION The plight of this curassow and its near extinction have been widely recognized ever since its rediscovery in 1951 for, despite then having been fairly easily found in the region (a hunter reported killing many), a rapid recent decline to a situation of “extreme rarity” was evident (Pinto 1952, 1954a). In the following decade it was presumed to have become extinct (Vaurie 1968), the date for this being fixed at around 1960 (Coimbra-Filho 1970), but evidence gathered during fieldwork in Alagoas showed that it was “still extant, though extremely reduced”, that “no more than about 20 were left in São Miguel dos Campos forests”, and that it “may be extinct before long, perhaps 2-3 years” (Coimbra-Filho 1971). It was again regarded as “possibly extinct” in following years (Delacour and Amadon 1973, King 1978-1979) but was acknowledged to be still found in Alagoas in the late 1970s (see next paragraph), albeit in “very reduced numbers” (Sick and Teixeira 1979, LPG). In the 1980s it remained “imminently threatened with extinction” (Sick 1985), its situation being “especially desperate” and the population calculated to be “probably less than 60 individuals” (Teixeira 1986), which certainly appears to represent an overestimate, even if the captive population was included (see below). Efforts made between 1983 and 1985 to capture birds for an official captive breeding programme were unsuccessful, but an “old, hard-fleshed” individual was hunted in 1984 near São Miguel dos Campos (A. G. M. Coelho *in litt.* 1986). One bird said to have been sighted in early 1987 (R. A. Mittermeier *per* R. Wirth *in litt.* 1987) was killed shortly afterwards in a disastrous attempt to capture it for the bird trade (D. M. Teixeira verbally 1987); this may be a version of the 1988 report mentioned in the last sentence under Distribution.

A captive population has been kept since 1977 by a private bird-fancier (P. Nardelli) in Rio de Janeiro, who obtained the original stock in the late 1970s both from a local bird-keeper and from the wild in Alagoas (Sick 1980, LPG). In June 1979 four birds, tentatively sexed as one male and three females, were kept in this aviary (Sick 1980), and in early 1984 at least 10 adult-sized birds and a chick were apparently living there (Sick 1986). These are the only birds known on earth.

ECOLOGY The Alagoas Curassow is or was confined to lowland forest (Teixeira 1986) and the specimen collected at the time of the species's rediscovery was on a trail inside primary forest near the mouth of the rio São Miguel; the ground at the collecting site was covered with fruits of a big tree known regionally as “castelo” (*Phyllanthus*: Pinto 1954a), which were reportedly sought as food by a variety of mammals and birds such as deer, pacas, agoutis, curassows, tinamous, doves and toucans; the specimen's stomach and oesophagus were full of such fruits (Pinto 1952). The bird was also reported to be fond of “mangabeira” fruits (Coimbra-Filho 1971).

THREATS The extinction of this curassow was forecast as long ago as its rediscovery, owing to hunting and the imminent cutting of its last forest refuges (Pinto 1952). Destruction of habitat duly proceeded and the bird was ceaselessly hunted, although already extremely scarce and difficult to find in 1970 (Coimbra-

Filho 1971) but, despite claims, no intervention was known to have been made (Coimbra-Filho 1974, King 1978-1979) other than some legal gestures (see Measures Taken), so that it became “extremely threatened” both by the expansion of sugarcane plantations and by poaching (Sick and Teixeira 1979). The sugarcane problem intensified in the late 1970s through a government programme (Proalcool) designed to supply the country's need for fuel alcohol (LPG). Despite the warning that “extinction will soon occur if the last survivors are not preserved in a forest reserve” (Sick 1972, 1983), the situation was allowed to deteriorate to the point where “there does not seem to be a single relict of lowland forest whose quality and size justify a reserve” (Teixeira 1986), particularly after demand for sugarcane forced up land prices there, one hectare of forest costing US\$500 in the middle 1980s (Sick 1985). Ironically, however, there appears to have been a reasonably extensive area of lowland forest at São Miguel dos Campos that survived into the late 1980s, but which was cleared over a very short period (six months), leaving a mere 800 ha (D. Willis verbally 1992). Populations of the species may have been affected also by pesticides drifting from nearby cane fields into the birds' last forest refuges (Teixeira 1986).

MEASURES TAKEN This bird (as *Mitu mitu mitu*) is listed on Appendix I of CITES and protected under Brazilian law (Bernardes *et al.* 1990). Attempts were made to establish a captive breeding programme involving IBDF (now IBAMA) and UFPE, but these failed (A. G. M. Coelho *in litt.* 1986). Some birds have been reared in captivity since 1977 (see Population), but it is not at all clear how successful this private programme has been.

MEASURES PROPOSED Although it has been suggested that a detailed population survey of this curassow should be undertaken (Coimbra-Filho 1971) and that areas in Alagoas must be selected that can be protected as reserves for the reintroduction in the wild of captive-bred birds (Sick 1972, 1980, 1983) it has become apparent that almost no sites exist (see Threats) and that the “reconstruction of an acceptable area through the unification of a number of existing [forest] fragments [in] a slow process of reforestation... will run into many obstacles” (Teixeira 1986). Nevertheless, the area of some 800 ha at São Miguel dos Campos may possibly hold a few birds (D. Willis verbally 1992; see Remarks 2), and is in any case important for certain other threatened species (see Remarks 3); it therefore merits urgent investigation and protection.

Captive breeding It thus seems that the species will survive, at least in the short term, only by captive breeding (Sick 1985), which may not be difficult (*contra* Sick 1983) to judge from the good reproductive potential of its close relative, the Razor-billed Curassow, in captivity (Coimbra-Filho 1971). However, adequate management of the existing captive stock is an urgent need (and this would include public accountability through the involvement of the appropriate government and international institutions, and a full recovery plan drawn up under the aegis of CBSG). It is an extraordinary circumstance that the entire population of a species protected under national law should be held by a private bird-fancier, and even more remarkable that the agencies responsible for implementing that law have apparently developed no formal agreement for the birds' management and propagation.

REMARKS (1) The case for regarding the Alagoas Curassow as specifically distinct from the Razor-billed Curassow *Mitu tuberosa* (Pinto 1952, 1954a, *contra* Pinto and de Camargo 1957, Coimbra-Filho 1970, Sick 1980) is accepted here. The lumping of the genus *Mitu* with *Crax* has been proposed (Delacour and Amadon 1973, see also King 1978-1979) but this “lacks a reasonable basis, for both live side by side, while as a rule congeneric species of this family replace each other geographically” (Sick 1985). At the time of the rediscovery of this bird in Alagoas, there still supposedly survived there a species of *Crax*, which was the “*Mitu poranga*” (Pinto 1952), almost certainly a subspecies of the Bare-faced Curassow *Crax fasciolata* (Pinto 1952, Sick 1969), described from the same area (Marcgrave 1648). (2) D. Willis (*in litt.* 1992) has pointed out that the Amazonian relative Razor-billed Curassow lives at a density of four pairs per hundred hectares, so that a forest of 800 ha could conceivably be managed so as to hold 32 pairs. (3) The same forests in Alagoas held also the threatened Pernambuco Solitary Tinamou *Tinamus solitarius pernambucensis*, Marcgrave's Bearded Bellbird *Procnias averano averano* (Coimbra-Filho 1971, Teixeira 1986), Red-browed Amazon *Amazona rhodocorytha* and endemic subspecies of the White-shouldered Antshrike *Thamnophilus aethiops* and Dusky Antbird *Cercomacra tyrannina* (Teixeira 1986).