

SHORT COMMUNICATION

Reintroduction of red-billed curassow *Crax blumenbachii* to Guapiaçu Ecological Reserve, Brazil

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SUMMARY: Fifty-three captive-bred, sub-adult red-billed curassow *Crax blumenbachii* were reintroduced to the Guapiaçu Ecological Reserve, Brazil, from 2006 to 2008. Post-reintroduction movements were monitored for 25 months, but little information on breeding was collected during this period as few of the birds had reached sexual maturity. However, in the period 2009-2014, six observations of probable breeding were made. This positive outcome will help inform the feasibility of further reintroductions.

BACKGROUND: The red-billed curassow *Crax blumenbachii* is a species endemic to the south-eastern portion of the Brazilian Atlantic Rainforest, where, due to severe hunting and habitat loss, natural populations persist in fewer than 10 remnant forests in Espírito Santo and Bahia state. This species has already been reintroduced in three areas of Minas Gerais state during the 1990's and the seventh generation has been observed in one area (R. Azeredo, unpublished data).

ACTION: From August 2006 to October 2008, 53 captive-bred sub-adult red-billed curassow (< 30 months-old), provided by Crax Brasil breeding centre, were reintroduced to the private Guapiaçu Ecological Reserve. The reserve consists of about 7,500 ha of Atlantic Rainforest in Rio de Janeiro state, Brazil. All released individuals were fitted with a backpack radio transmitter with a battery life of about two years (Bernardo *et al.* 2011a). These enabled information to be collected on survival (Bernardo *et al.* 2011b), home range, social interactions and habitat use (Bernardo *et al.* 2011c). Little information on breeding was collected then as most of the birds had not reached sexual maturity. However, from 12 birds from a group of 20 released in 2006, four pairs were observed until October 2008. The paired birds were about 3 km from the nearest other pair (Bernardo *et al.* 2011c) and during the breeding season all four males were booming (producing a loud deep sound that is believed to be sexually attractive to females). The breeding season in the study area generally starts in August and ends by March.

To assist monitoring of the reintroduced birds, inhabitants from communities near the study area, including park rangers, attended training at local schools and churches. They were taught to record ring numbers, locations and to distinguishing the sexes. This information was useful not only during radio telemetry (especially when tags had detached or if the signal became lost, Bernardo *et al.* 2011b), but also after the study period. By 2010, all reintroduced birds had reached sexual maturity but were carrying tags with dead batteries.

CONSEQUENCES & DISCUSSION: From 2009 to 2014, six observations of evidence of probable breeding were recorded by the authors, park rangers and local people and involved seven individual birds (Table 1). Two reintroduction success criteria cited by Seddon (1999) were recorded for this reintroduced population, i.e. high survival probability of the released generation (Bernardo *et al.* 2011b) and breeding by the released generation (Table 1). As the nearest population of red-billed curassow is about 600 km from the reintroduction area, it is considered that the observed birds are very unlikely to be immigrants from that population. It also seems a reasonable conclusion that breeding by the first wild-born generation occurred from this reintroduction since a young male seen in April 2012 had reached sexual maturity. This was indicated by the knob developed on the bill and booming in December 2013. This positive outcome will help inform the feasibility of further reintroductions in Rio de Janeiro state.

Table 1. Evidence of probable breeding of reintroduced red-billed curassows in the Guapiaçu Ecological Reserve.

Date and breeding behaviour observed
January 2009: Nest construction by a male reintroduced in 2006.
February 2009: Two copulations by a male reintroduced in 2006 (above) and female reintroduced in 2008, which had been a pair since July 2008.
April 2012: Young male without rings or tags, i.e. evidence of the first wild-born generation.
October 2013: Booming of an adult male reintroduced in 2007 that had been in the same area since 2008.
October 2013: Ringed adult female with two chicks during the 2013-2014 breeding season, i.e. evidence of the first wild-born generation.
December 2013: Adult male booming without rings or tags, same individual reported in April 2012 and in same area.

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