

Advice to the Minister for the Environment and Heritage from the Threatened Species Scientific Committee (TSSC) on Amendments to the list of Threatened Species under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

1. Scientific name, common name (where appropriate), major taxon group

Ducula whartoni (Christmas Island Imperial-Pigeon)

2. Description

The Christmas Island Imperial-Pigeon is a large, heavy, grey-black pigeon.

This Imperial-Pigeon is found mainly on the inland plateau of Christmas Island in rainforest and, to some extent, in secondary regrowth dominated by the introduced Japanese Cherry *Muntingia calabura*. It may also be found in the settled areas of the island. It nests in the top of rainforest trees and other dense vegetation, and feeds in the canopy on fruits, as well as buds and leaves.

3. National Context

This species of Imperial-Pigeon is endemic to Christmas Island. It is not listed as threatened under any State or Territory legislation, nor is it currently listed under the EPBC Act.

4. How judged by TSSC in relation to the EPBC Act criteria.

TSSC judges the species not to be eligible for listing under the EPBC Act. The justification against the criteria is as follows:

Criterion 1 – It has undergone, is suspected to have undergone or is likely to undergo in the immediate future a very severe, severe or substantial reduction in numbers.

While there has been no recorded decline in the numbers of Christmas Island Imperial-Pigeons, their preferred forest habitat was subject to clearing for phosphate mining up until 1987. Introduced Japanese Cherry was widely used in the rehabilitation of disused quarries and other disturbed areas on the island, and is also found on the sides of roads, providing an abundant and reliable source of food for the Imperial-Pigeon. Prior to 1977, the roadside profusion of Japanese Cherry increased the susceptibility of Imperial-Pigeons to hunting by bringing the birds within reach, making them more visible and their presence more predictable. Hunting has been illegal since 1977 although some poaching may continue.

The spread of Yellow Crazy Ants (hereafter called Crazy Ants) has been identified as a possible threat to the Christmas Island Imperial-Pigeon. Crazy Ants are an aggressive invasive species that were accidentally introduced to Christmas Island between 1915 and 1934 and are now widespread throughout the rainforest and settled areas on the island. They can build up into colonies with extremely high numbers called supercolonies. Before recent abatement programs, Crazy Ant supercolonies had formed in 24.4% of island's rainforest. However, despite some anecdotal reports of attacks on a small number of birds and the possibility of some disturbance of nesting sites by Crazy Ants, there is no quantitative evidence of any direct effect on the Christmas Island Imperial-Pigeon population by Crazy Ants.

Possible indirect effects of Crazy Ant invasion may be due to the removal of the keystone forest species, Red Land Crab (*Gecarcoidea natalis*), and the impact caused by the mutualistic relationship between Crazy Ants and scale insects. In areas of forest where Crazy Ants have eliminated Red Crabs, it was found that the seeds that were previously consumed by the crabs had germinated, and the forest structure had altered, with dense layers of seedlings covering the forest floor. This may result in a possible long-term alteration of forest structure and composition.

The impact caused by the mutualistic relationship between Crazy Ants and scale insects may also have an indirect effect on the Christmas Island Imperial-Pigeon. Infestations of scale insects associated with Crazy Ants, have detrimental effects on the health of the canopy and may also lead to long-term decline in the habitat.

Crazy Ants appear to have no direct effect on this species although it may be possible that the long term effects on the Crazy Ant on the island's ecosystem processes could have an effect in the future. At this stage, there are insufficient quantitative data to show any reduction in the population. Therefore it is **not eligible for listing** under this criterion.

Criterion 2 – Its geographic distribution is precarious for the survival of the species and is very restricted, restricted or limited.

This Imperial-Pigeon is endemic to Christmas Island. While the preferred habitat of the Imperial-Pigeon is the forest on the plateau area of the island, it does occur throughout the island, an area of approximately 135 km².

While the subspecies has a restricted distribution, there has been no observed or projected decline. Therefore the Christmas Island Imperial-Pigeon is **not eligible for listing** under this criterion.

Criterion 3 – The estimated total number of mature individuals is limited to a particular degree and: (a) evidence suggests that the number will continue to decline at a particular rate; or (b) the number is likely to continue to decline and its geographic distribution is precarious for its survival.

The total population of the Christmas Island Imperial-Pigeon was originally estimated to be 20-200 (Van Tets 1975). However, field research showed the Imperial-Pigeon to be far more common than the original estimate (Stokes 1988). The final estimate of population size is 1000 breeding birds (Garnett and Crowley 2000).

Although the Christmas Island Imperial-Pigeon has a restricted distribution and low numbers, there are currently no direct threats to its survival. It may be possible that the long term effects on the Crazy Ant on the island's ecosystem processes could have an effect on this species, but at this stage there are insufficient quantitative data to show any decline. Therefore it is **not eligible for listing** under this criterion.

Criterion 4 – The estimated total number of mature individuals is extremely low, very low or low.

The Christmas Island Imperial-Pigeon has an estimated population of 1,000 breeding birds. The subspecies is **not eligible for listing** under this criterion.

Criterion 5 - Probability of extinction in the wild

There are no quantitative data available against this criterion. Therefore this species is **not eligible** for listing under this criterion.

5. CONCLUSION

The Christmas Island Imperial-Pigeon is endemic to Christmas Island. The species occurs in the rainforest and, to some extent, in secondary regrowth dominated by the introduced Japanese Cherry *Muntingia calabura*. The Christmas Island Imperial-Pigeon has an estimated population of 1,000 birds. Crazy Ants do not appear to be a threat to this species. There is no quantitative evidence that the species has undergone any declines in population or to suspect it is likely to do so in the future.

This species is not eligible for listing under the EPBC Act.

6. Recommendation

TSSC recommends that the species *Ducula whartoni* (Christmas Island Imperial-Pigeon) is **not eligible** for inclusion in the list referred to in section 178 of the EPBC Act.

Associate Professor Robert J.S. Beeton

Chair

Threatened Species Scientific Committee

Publications used to assess the nomination

Crome, F. (1978) *Report on the Christmas Island Imperial-Pigeon*. Report to the Australian National Parks & Wildlife Service, Canberra.

Davis, N. (2002) *The Invasive Yellow Crazy Ant (Anoplolepis gracilipes) on Christmas Island, Indian Ocean: Impacts on the Frugivorous Bird Fauna*. Honours thesis, Monash University.

Higgins, P.J. & Davies, S.J.J.F. (Eds). 1996. *Handbook of Australian, New Zealand and Antarctic Birds. Volume 3. Snipe to Pigeons*. Melbourne: Oxford University Press.

Stokes, T. (1988) *A review of the birds of Christmas Island, Indian Ocean*. Australian National Parks & Wildlife Service Occasional Paper 16.

Van Tets (1975) *A report on the conservation of resident birds on Christmas Island*. XII Bulletin of the ICBP.