

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Seventeenth meeting of the Conference of the Parties
Johannesburg (South Africa), 24 September – 5 October 2016

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

To transfer *Ninox novaeseelandiae undulata* from CITES Appendix I to CITES Appendix II, in accordance with provisions of Resolution Conf. 9.24 (Rev CoP 16), Annex 4 precautionary measure A1 and A2a(i).

B. Proponent

Australia

C. Supporting statement**1. Taxonomy**

- 1.1 Class: Aves
- 1.2 Order: Strigiformes
- 1.3 Family: Strigidae
- 1.4 Species: *Ninox novaeseelandiae undulata*
- 1.5 Scientific synonyms: none
- 1.6 Common names: Southern Boobook (Norfolk Island)
- 1.7 Code numbers:

2. Overview

As part of the ongoing periodic review of the Appendices, the Animals Committee recommended that the status of the southern boobook (Norfolk Island) be evaluated (AC25 Doc. 15.6). The species was selected for periodic review between CoP15 and CoP17 by the Animals Committee at AC 25 in accordance with Resolution 14.8 (Rev. CoP16) on Periodic Review of the Appendices. Notification went to the Parties in Notification 2011/038; Australia undertook to complete this review.

The Strigidae were listed on Appendix II on 26 February 1976. *N. n. undulata* was listed on CITES Appendix I on 4 February 1977. The CITES Trade Database shows no trade in this subspecies since then.

The phenological and genetically pure form of *N. n. undulata* is now extinct (Garnett & Crowley 2000; Olsen 1997). The last remaining female was last observed in 1996.

The population of boobook that currently occurs on Norfolk Island is likely to be a hybrid between *N. n. undulata* and the closely related subspecies *N. n. novaeseelandiae* (Norman et al. 1998; Olsen 1996). This population

was founded when the sole remaining member of the subspecies *N. n. undulata*, successfully cross-bred with one of two males of subspecies *N. n. novaeseelandiae* that were introduced to Norfolk Island in 1987 (Garnett et al. 2011; Olsen 1996, 1997). However, an assessment into the genetics of the population will be undertaken over the coming years to determine to what degree *N. n. undulata* is genetically represented in the current population.

Resolution 9.24 resolves that, when considering proposals to amend Appendix I and II, species that *are or may be affected by trade* should be included in Appendix I if they meet at least one of the biological criteria listed in Appendix I. A species "is or may be affected by trade" if:

- i) it is known to be in trade (using the definition of 'trade' in Article I of the Convention), and that trade has or may have a detrimental impact on the status of the species; or
- ii) it is suspected to be in trade, or there is demonstrable potential international demand for the species, that may be detrimental to its survival in the wild.

There is no evidence that international trade is a threat to the survival of this subspecies. In reference to Res. Conf 9.24 (Rev. CoP 16) Annex 4 (D), the species is unlikely to be affected by trade in the event of its rediscovery. Due to the intensive monitoring at the time of the extinction of the genetically pure species, rediscovery of pure subspecies representatives is unlikely.

Therefore, *N. n. undulata* would be eligible for transfer from Appendix I to Appendix II in accordance with Resolution 9.24 (Rev Cop16) Annex 4 A.1 and A.2(a)(i).

3. Species characteristics

3.1 Distribution

N. n. undulata was previously distributed on Norfolk Island, an Australian external territory located 1412 km directly east of mainland Australia and north west of New Zealand.

Genetically pure *N. n. undulata* are now believed to be extinct. The trend towards extinction was well documented, from prior to 1908 to the death of the last known remaining female in 1996.

3.2 Habitat

Little information is available on the habitat requirements of *N. n. undulata*. The genetically pure subspecies probably occurred across all of Norfolk Island. The original vegetation of the island mainly consisted of rainforest species, with emergent Norfolk Island Pines (*Araucaria heterophylla*), gullies filled with palms and ferns and, in many areas, a fairly open understorey of low trees and shrubs (Hoare 1974; Schodde et al. 1983). The birds also probably occurred in smaller numbers on Phillip Island, the original vegetation of which consisted of scrub, with scattered Norfolk Island Pines, some wetter forest in the deeper valleys, and extensive grasslands (Schodde et al. 1983).

Following European settlement, it was known to occur mainly around gullies in the foothills of Mount Pitt (Hull 1909; Olsen et al. 1989), where it inhabited a mosaic of remnant native forest and weed-infested forest, mainly within Norfolk Island National Park (Olsen 1997; Schodde et al. 1983). It also occasionally ventured into plantations of exotic Eucalyptus trees and suburban areas (Olsen et al. 1989; Olsen 1997).

The hybrid population now breeds within Norfolk Island National Park (Olsen 1997) and, therefore, is presumed to occupy the same habitat that was used by the genetically pure birds. These habitats have been extensively modified by weed invasion, selective logging, ongoing forest deterioration and past grazing (Olsen 2006 pers. comm.).

3.3 Biological characteristics

The Southern Boobook (Norfolk Island) can breed at two or three years of age. The life expectancy is unknown, but the last genetically-pure female was at least 12 years old, and probably more than 20 years old when last observed (Olsen 1997). The oldest hybrid bird was 18 years of age in 2006 (Olsen 2006 pers. comm.).

Genetically pure birds were known to nest in large tree hollows (Olsen 1997). Hybrids lay a single clutch

between late September and early October. Clutches consisted of two, or occasionally three, white eggs. The eggs were incubated by the female for a period of about 31 days, mainly by the female. They were fed by the female initially (on food provided by the male) and later by both parents. The nestling period lasts for about 35 days. The nestlings fledged early in December and remain close to their parents for some months after departing the nest.

3.4 Morphological characteristics

Prior to hybridisation, the Southern Boobook (Norfolk Island) individuals were about 30—35 cm in height (Higgins 1999). The last genetically pure female had a wingspan of 65 cm and a mass of 213 g (Olsen et al. 1989). There are no published measurements for adult hybrids, but unsexed young from the first two hybrid broods weighed 179—195 g at about four to four and a half weeks of age (Olsen et al. 1994).

Prior to hybridisation, the Southern Boobook (Norfolk Island) was dark reddish-brown, with a dark facial mask, white brow, and many white and buff spots, especially on the underparts. It had a blue-grey bill, cream or yellow irides, and orange-buff legs and feet (Hermes 1985; Higgins 1999; Olsen and Hicks 1989; Olsen et al. 1989). The plumages of the sexes were similar, but females may have had more spotting on the crown and shoulders than males. Females also were slightly larger than males, although the small differences in measurements between the sexes were probably difficult to distinguish in the field (Hermes 1985; Higgins 1999; Olsen 1997). Newly-fledged juveniles could be separated from the adults on the basis of their soft, downy, whitish plumage (Higgins 1999). There is no published description of adult hybrids, but hybrid offspring seem to be more similar in appearance to subspecies *N. n. novaeseelandiae* than *N. n. undulata* (Olsen 1996).

3.5 Role of the species in its ecosystem

While the specific role of *N. n. undulata* on Norfolk Island has not been reported, the Strigidae are typically high-order predators within an ecosystem. Prey remains recorded in nest boxes and pellets contained insects, small birds, and remains of introduced rats (Olsen 2006, pers. comm.).

4 Status and trends

4.1 Habitat trends

The main cause of the decline and subsequent extinction of *N. n. undulata* was habitat loss, particularly the loss of trees bearing suitable nesting hollows (Garnett et al. 2011). Norfolk Island has been extensively cleared for agriculture, leaving only around 25% of formerly occurring native forest. Woody weeds have replaced previously forested areas, likely making it unsuitable for *N. n. undulata* (Olsen 1996; Turner et al. 1975).

4.2 Population size

A hybrid population (with introduced *N. n. novaeseelandiae*) exists in its former range.

The hybrid population consisted of 17 birds in 1996 (Olsen 1997), and is known to be larger now, given that the population increased slowly but steadily from 1986 to 1996 (the years for which population estimates are available), and that by December 2006, a total of 52 hybrid nestlings had been banded as part of the population monitoring program (Garnett et al. 2011).

4.3 Population structure

Unknown

4.4 Population trends

The decline of the population was well documented, from prior to 1908. The last known genetically pure female of *N. n. undulata* was last recorded in 1996.

4.5 Geographic trends

N. n undulata was endemic to Norfolk Island. It is likely that it occurred across much of the island. The birds also probably occurred in smaller numbers on the adjacent Phillip Island (Schodde et al 1983). Following European settlement, the population was recorded around the foothills of Mount Pitt (Hull 1909; Olsen et al. 1989), mainly within Norfolk Island National Park (Olsen 1997; Schodde et al. 1983).

5 Threats

The primary cause of the decline and extinction of the genetically-pure Southern Boobook (Norfolk Island) was habitat loss, and in particular, the loss of trees bearing hollows suitable for nesting (Garnett et al. 2011). Seventy-five percent of the native forest that formerly occurred on Norfolk Island has been cleared (Olsen 1996; Turner et al. 1975), and woody weeds have invaded much of the remaining forest, which possibly altered the structure of the forest sufficiently enough to make it unsuitable for the subspecies.

Predation by the feral cat (*Felis catus*) has been identified as a threat to the boobook owl (Olsen 1997, Hill 2002, Cogger 2004, Commonwealth of Australia 2005), although the actual impact on *N. n. undulata* during its decline is not known.

6 Utilization and trade

6.1 National utilization

None.

6.2 Legal trade

None.

6.3 Parts and derivatives in trade

None.

6.4 Illegal trade

Unlikely.

6.5 Actual or potential trade impacts

There has been no trade in this taxon. Commercial trade is very unlikely; some trade for scientific purposes may arise in remaining preserved specimens.

7 Legal Instruments

7.1 National

N. n undulata is listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). However, as the remaining island population is a hybrid one, the subspecies was exempted from requiring a recovery plan under the EPBC Act. Recovery actions are included in the *Norfolk Island Region Threatened Species Recovery Plan* for practical purposes.

7.2 International

N. n undulata is listed on CITES Appendix I. Permits would be required for import and export and no commercial trade is allowed.

N. novaeseelandiae is listed as Least Concern on the IUCN Red List.

8 Species Management

8.1 Management measures

An assessment into the genetics of the population will be undertaken over the coming years to determine if the current population still hold genes from the original population and to what degree. The outcome of

this study could have implications for management of the taxon.

8.2 Population monitoring

The remaining hybrid population is subject to intensive monitoring.

8.3 Control measures

8.3.1 International

N. n undulata is listed on CITES Appendix I.

8.3.2 Domestic

N. n undulata is listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

8.4 Captive breeding and artificial propagation

None

8.5 Habitat conservation

The habitat of the remaining hybrid population is subject to the *Norfolk Island Region Threatened Species Recovery Plan*, which includes actions to improve the condition and extent of native vegetation and vegetation remnant, and to reduce the impact of existing weeds on biodiversity.

8.6 Safeguards

A hybrid population (with introduced *N. n. novaeseelandiae*) is managed.

9 Information on similar species

The Southern Boobook (Norfolk Island) is phenotypically similar to other subspecies of *N. novaeseelandiae*, found in New Zealand and Tasmania.

10 Consultation

The Australian CITES Scientific and Management Authorities are grateful for the input of Abi Smith from the Norfolk Island National Park, part of Parks Australia.

11 Additional Remarks

The Southern Boobook (Norfolk Island) *Ninox novaeseelandiae undulata* does not meet the criteria for a CITES Appendix I listing, as it is not threatened by trade. Remaining Norfolk Island Boobook are a hybrid *N. n undulata* x *N. n. novaeseelandiae*. Australia proposes to transfer the subspecies to Appendix II in accordance with the precautionary measures outlined in Res Conf 9.24 (Rev CoP16) Annex 4.

12 References

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