

## Is the Timor Southern Boobook a separate species?

Following the Biological Species Concept (König *et al.* 1999), a full species is a reproductive community that has evolved different patterns of behaviour from members of another reproductive community. The line separating the two species is not always clear; two species can look alike and even live in the same place, but researchers can discriminate owl species by their calls, their territorial songs. An owl's call is said to be similar to a DNA fingerprint. The call is inherited and, unlike the calls of some other birds such as songbirds, it has little geographic variation in dialect, so the call tends to be similar across the owl's range.

Olsen *et al.* (2002) used a simple statistical procedure to analyse calls of the Southern Boobook *Ninox novaeseelandiae*, Sumba Boobook *N. rudolfi*, and newly discovered Little Sumba Hawk-Owl *N. sumbaensis* to strengthen their case that the last is a separate species. If owl vocalisations are of taxonomic value (König *et al.* 1999), analysis of Australasian species should show differences and similarities and indicate conspecifics versus separate species. Below, measurements from Southern Boobooks on Timor (*N. n. fusca*) are compared with Southern Boobooks *N. n. boobook* recorded in Canberra. They both have a two-note call, but with different call properties. The Timor Boobook has a lower dominant frequency and shorter note duration, and a much higher call rate, more like the Barking Owl *N. connivens* (and is, interestingly, also grey-brown like a Barking Owl, not warm brown like a Boobook). Here we suggest, based on call properties, that Southern Boobooks on Timor are a separate species to those on the Australian mainland.

Call properties: dominant frequency, call duration and call rate for two owls, Southern Boobook on Timor and in Canberra taken from audio recordings (after Olsen *et al.* 2002).

Site	Dom. freq. 1 (Hz)	Duration 1st note (ms)	Dom. freq. 2 (Hz)	Duration 2nd note (ms)	Call duration (ms)	Call rate (calls/min)
Timor	555.6	211	526.4	206	536	30.0
Canberra	806.7	295	649.7	250	682	18.0

Published sonagrams of the Timor Boobook (in King & Yong 2001) and Southern Boobook (e.g. in Olsen *et al.* 2002), when compared directly, illustrate these differences. If the Timor Boobook is a separate species, as indeed described by Vieillot in 1817 as *Strix fusca*, it would become *Ninox fusca*.

King, B. & Yong, D. (2001). An unknown scops owl, *Otus* sp., from Sumba, Indonesia. *Bulletin of the British Ornithologists Club* **121**: 91–93.

König, C., Weick, F. & Becking, J.-H. (1999). *Owls. A Guide to the Owls of the World*, Pica Press, Sussex.

Olsen, J., Wink, M., Sauer-Gürth, H. & Trost, S. (2002). A new *Ninox* owl from Sumba, Indonesia. *Emu* **102**: 223–231.

*Jerry Olsen and Stephen Debus*