

A Laughing Kookaburra and a Blue-winged Kookaburra repeatedly inspecting a nest hollow and mating

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Abstract. An unsexed adult Laughing Kookaburra *Dacelo novaeguineae* and an adult male-plumaged Blue-winged Kookaburra *D. leachii* were observed and photographed as they repeatedly examined, and separately spent periods of time within, a potential nesting tree hollow on Magnetic Island, north Queensland, in August 2025. The Laughing Kookaburra repeatedly mated with the Blue-winged Kookaburra in an adjacent tree. Associated with them were at least another male and two female Blue-winged Kookaburras. This is the first record of individuals of the two Australian kookaburra species pair-bonding, inspecting a nest hollow and mating, implying at least the potential possibility for hybridisation between the species.

Introduction

The Laughing Kookaburra *Dacelo novaeguineae* and Blue-winged Kookaburra *D. leachii* geographically overlap extensively in Queensland, from its southern border northward through central and eastern Queensland to the tip of Cape York Peninsula. The “breeding biology of the two species of kookaburra is very similar” (Legge 2004, p. 59) but they have never been recorded or mooted to have interspecifically mated or hybridised (Parry 1972; Fry *et al.* 1992; Higgins 1999; Woodall 2001; Legge 2004; McCarthy 2006). On the contrary, they are recorded defending territory from each other with “behaviours typical of interactions with conspecifics”; one physical fight between the two species was witnessed, with other records of territorial interactions between the species cited (Scambler & Daly 2024, p. 16). Both species are cooperative breeders, offspring from a previous breeding season assisting adults in raising offspring of one or more subsequent seasons (Higgins 1999; Legge 2004). A study of Blue-winged Kookaburra nesting biology on Magnetic Island detailed nest sites, nestling provisioning and diet but no helpers at the nest were observed (Scambler & Daly 2023). We report and photographically document an apparently bonded pair of individuals of these two species examining a tree hollow and repeatedly mating and associating with several Blue-winged Kookaburras.

Methods

MA saw two kookaburras examining a tree hollow ~10 m high up in a Poplar Gum *Eucalyptus platyphylla* on Magnetic Island, off Townsville, north Queensland, on 21 August 2025. As the pair consisted of a Laughing and a Blue-winged Kookaburra, she spent some hours of each of 6 days observing and photographing the birds’ activities, and several additional Blue-winged Kookaburras, near this tree, aided by Nikon 10 x 42 binoculars and a Nikon D7500 camera with Tamron 150–600-mm zoom lens. Observations after 15 September were made by Jen and Rich Parry.

Observations

25 August, 1135–1150 h

A Laughing Kookaburra and a Blue-winged Kookaburra repeatedly perched together on the bough of a tree (subsequently the mating branch, Figure 1) immediately adjacent to the tree with the nest hollow. Both birds flew to and entered and left the nest hollow several times (Figure 2). They mated (Figure 3) six times in quick succession, the Blue-winged Kookaburra exposing its cloaca each time (Figure 4). As the Laughing Kookaburra



Figure 1. The adult male Blue-winged Kookaburra (left) and Laughing Kookaburra (right) on an oft-frequented perch in a tree adjacent to that of the potential nest tree. Photo: Mary-Anne Addington



Figure 2. The Laughing (left) and male-plumaged Blue-winged Kookaburra (right) repeatedly entered the nest hollow and mated nearby. Photos: Mary-Anne Addington



Figure 3. The Laughing Kookaburra mounted upon the adult male-plumaged Blue-winged Kookaburra at the point of their 'cloacal kiss'. Photo: Mary-Anne Addington



Figure 4. The Laughing Kookaburra about to dismount from the male Blue-winged Kookaburra after 'copulation', with the cloaca of the latter exposed. Photo: Mary-Anne Addington

mounted the Blue-winged Kookaburra, we assume the former to be male. Given that the Blue-winged Kookaburra was in adult male plumage, we assume it to be a male but cannot be certain (see Discussion).

26 August, 0800–0830, 1315–1415 h

The Laughing Kookaburra entered the tree hollow and remained within for 5 minutes. A male-plumaged Blue-winged Kookaburra then entered the hollow for 7 minutes



Figure 5. A female Blue-winged Kookaburra departs from the nest hollow. Photo: Mary-Anne Addington

and left. At 1405 h, a female Blue-winged Kookaburra was on the mating branch when a Sulphur-crested Cockatoo *Cacatua galerita* flew into the tree with the nest hollow and was chased away by two Blue-winged Kookaburras. At 1410 h, a female Blue-winged Kookaburra flew to, and put her head into, the hollow for 5 seconds and left.

27 August, 0700–0900 h

The presumed male Laughing Kookaburra entered the hollow for 3 minutes and shortly thereafter three calling Blue-winged Kookaburras flew from adjacent trees to a eucalypt near the nest tree. The Laughing Kookaburra flew to them, but they chased it to another tree, where it and another female Blue-winged Kookaburra remained. At 0841 h, a male and a female Blue-winged Kookaburra flew separately to the rim of the tree hollow, looked in briefly and left, chortling loudly as they typically did. At 0900 h, a female Blue-winged Kookaburra entered the hollow for 3 minutes and flew off (Figure 5) as the Laughing Kookaburra perched in an adjacent tree.

28 August, 0653–0710, 0735–0916, 1410–1645 h

At 0653 h, the Laughing Kookaburra and a female Blue-winged Kookaburra were on the mating branch; the latter then flew to the rim of the hollow, perched briefly and then

departed. At 0655 h, the Laughing Kookaburra flew to and entered the hollow, leaving 5 minutes later to rejoin the female Blue-winged Kookaburra in flying off to join a male and a female Blue-winged Kookaburra. The Laughing Kookaburra often associated with three or four Blue-winged Kookaburras. It chased away two Sulphur-crested Cockatoos. At 0800 h, a male Blue-winged Kookaburra was on the mating branch and the Laughing Kookaburra perched close by. The Blue-winged Kookaburra flew to the rim of the hollow briefly, then joined a female Blue-winged Kookaburra on the mating branch, and the Laughing Kookaburra joined them. The female Blue-winged Kookaburra flew to the rim of the hollow for c. 10 seconds and the male Blue-winged Kookaburra then went into the hollow for 10 seconds. The Laughing Kookaburra caught an insect, called, and flew to the rim of the hollow and back to its perch with the insect. The two Blue-winged Kookaburras had left the area but one returned and the Laughing Kookaburra called and flew to it and, although not seen, might have given it the insect before sitting on the same branch. At 0848 h, the Laughing Kookaburra entered the nest hollow and stayed there for 12 minutes, during which time a Blue-winged Kookaburra was on the mating branch. At 0900 h, the Laughing Kookaburra left the hollow. At 0915 h, a Blue-winged Kookaburra entered the hollow for 1 minute. At 1615 h, the Laughing Kookaburra was on the mating branch with a male Blue-winged Kookaburra as another male Blue-winged Kookaburra joined them. Twice, one Blue-winged Kookaburra flew to the rim of the hollow but did not fully enter, staying only 5 seconds. The Laughing Kookaburra flew away. At 1643 h, a male Blue-winged Kookaburra entered the hollow for 1 minute, during which a female Blue-winged Kookaburra flew to the hollow briefly but did not enter.

29 August, 0715–1000 h

The Laughing Kookaburra arrived at the mating branch at 0729 h and flew to and entered the hollow for 6 minutes. A male Blue-winged Kookaburra arrived at the mating branch, flew to land on the rim of the hollow and flew back to the mating branch. It then flew back to and entered the hollow for c. 2 minutes and then flew off. The Laughing Kookaburra flew to the rim of the hollow at c. 0915 h but did not enter and then sat on the mating branch, to be joined by a male Blue-winged Kookaburra. The Laughing Kookaburra entered the hollow at 0934 h for 8 minutes and a male Blue-winged Kookaburra flew to the hollow's entrance but did not enter and returned to the mating branch to join another male Blue-winged Kookaburra.

30 August, 0750–0935 h

At 0750 h, the Laughing Kookaburra entered the hollow for 5 seconds, then sat on the mating branch with a male Blue-winged Kookaburra for 2 minutes and flew away. An unsexed Blue-winged Kookaburra entered the hollow at 0835 h, stayed for 1 minute and flew to a branch. At 0900 h, twice, a male Blue-winged Kookaburra flew to the rim of the hollow for c. 2 seconds but did not enter. The Laughing Kookaburra entered the hollow at 0902 h for 6 minutes. Two Pied Currawongs *Strepera gracula* appeared, and three Blue-winged Kookaburras chased them away. At 0917 h,

the Laughing Kookaburra was on the mating branch and flew to the rim of the hollow, twice, but did not enter. At 0921 h, the Laughing Kookaburra was on the mating branch, and it and a Blue-winged Kookaburra separately flew to the rim of the hollow without entering, followed by a Blue-winged Kookaburra that entered the hollow for 1 minute. The Laughing Kookaburra was then on the mating branch with a male Blue-winged Kookaburra, and the Laughing Kookaburra mated (three times, c. 8 seconds apart) with that Blue-winged Kookaburra, each mounting lasting c. 5–6 seconds; both then flew off.

15 September, 1121 h

The Laughing Kookaburra took a piece of meat and flew to a perch and called and a Blue-winged Kookaburra flew to it and the Laughing Kookaburra passed the meat to it. Activity at and about the nest tree then diminished until it ended in mid October, with no nesting taking place.

Photographs were examined but no hybrid individuals were identified from the birds' plumage characters.

Discussion

In examining our photographs for signs of hybrid individuals we were confused by the painted colour plate of the Blue-winged Kookaburra in the *Handbook of the Birds of the World* (Woodall 2001), which shows the Queensland subspecies to have only a finely streaked, and thus predominantly white, head when Queensland birds are actually significantly less white and more heavily streaked — as in Higgins (1999) and photographs by CBF (Frith & Frith 1985, 1995). Although two female Blue-winged Kookaburras were part of the group observed, the Laughing Kookaburra was seen to mate only with a male-plumaged Blue-winged Kookaburra, but it is possible that it might have mated with a female Blue-winged Kookaburra unobserved. It is also possible that the Blue-winged Kookaburra observed to mate with the Laughing Kookaburra was aberrantly plumaged or a particularly old female, as some old female birds acquire adult male plumage characters (e.g. Frith & Frith 1993). Another consideration is that a study of deceased birds of five Australian species, including Laughing Kookaburras, compared the reproductive organs present plus the body measurements on one hand, and their genetic makeup (DNA) on the other. It found that in 3–5% of the birds, the DNA revealed that they were one sex, but the anatomy identified them as being the opposite sex (Hall *et al.* 2025). Perhaps more likely is that the Laughing Kookaburra was a male in a homosexual relationship with a male Blue-winged Kookaburra. Other anomalous kookaburra copulations are (a) "Copulation once seen between breeding female and male auxiliary (her son), and once attempted copulation seen between two males (S. Legge)" (in Higgins 1999, p. 1129) and (b) after the breeding season, a 1-year-old male Blue-winged Kookaburra mounted the female assumed to be his mother (Higgins 1999). It has also been observed of Laughing Kookaburras "Moreover, copulations sometimes occur between same-sex birds", suggesting that "in some contexts copulations have some kind of social signalling or bonding functions and are not designed to result in a fertilisation." (Legge 2004, p. 55).

The Pied Kingfisher *Ceryle rudis* of Africa is, like kookaburras, a cooperative breeder and homosexual couples do occasionally pair-bond and copulate (Bagemihl 1999). Among the ~90 kingfisher species, only two interspecific hybrids are recorded, both from single museum specimens, and two others mooted but unconfirmed; none involve kookaburras (see McCarthy 2006 for details). Despite their extensive range overlap across central and eastern Queensland, no instance of pair-bonding, mating, or hybridisation between a Laughing Kookaburra and a Blue-winged Kookaburra is recorded (Fry *et al.* 1992; Higgins 1999; Woodall 2001; McCarthy 2006). Museum specimens of kookaburras from Queensland might be examined for individuals resulting from hybridisation between the two species as these could have been undetected.

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