

SHORT NOTE

First and second breeding of Australian wood duck (*Chenonetta jubata*) in New Zealand

WILLIE A. COOK

Eden Road, Hope, R.D. 1 Richmond, Nelson 7081, New Zealand

DON COOPER

1/26 William Street, Richmond, Nelson 7020, New Zealand

PHILIPPA and JOHN FOES-LAMB

25 Maisey Road, Redwood Valley, Nelson 7081, New Zealand

JOAN GDANITZ and GEOFF DAVIES

157 Stringer Road, RD 1 Richmond, Nelson 7081, New Zealand

CHARMAINE and PETER FIELD

26B Bishopdale Avenue, Bishopdale, Nelson 7011, New Zealand

DAVID S. MELVILLE

1261 Dovedale Road, RD 2 Wakefield, Nelson 7096, New Zealand

The Australian wood duck (*Chenonetta jubata*, hereafter wood duck) is widely distributed across much of Australia (Fullagar 2005), but is a rare vagrant to New Zealand with only 5 accepted records by 2010, 4 of which related to birds shot by hunters (OSNZ Checklist Committee 2010). Subsequently, there have been a further 4 accepted records of live, single birds (Miskelly *et al.* 2011, 2013; Frost 2013). Here we report the first and second breeding records of this species in New Zealand.

On 5 December 2014, P & JF-L observed 4 wood ducks together with wild mallard (*Anas platyrhynchos*) and domesticated Khaki Campbell

and Pekin ducks on their pond at Maisey Road, Redwood Valley, Tasman District (41.28916 S 173.08418 E). The wood ducks associated with the mallards and were subsequently seen periodically, usually in the morning and/or evening, both on the pond and grazing on a grassy slope above the pond. P & JF-L identified them as Australian wood ducks after consulting Robertson (1985). The identity of the birds was confirmed by DC on 19 January 2015 when he was able to video-record them. This record was accepted by the OSNZ Records Appraisal Committee (Miskelly, *in prep.*).

The occurrence of 4 wood ducks together was highly unusual, as all previous New Zealand records were singletons. Ageing and sexing wood ducks is not straightforward since juveniles and

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Correspondence: william23@slingshot.co.nz



Fig. 1. Australian wood duck pair with 4 ducklings, Tasman, New Zealand, 11 October 2015. (Photo: Willie Cook).

some adult males in eclipse plumage resemble females; furthermore the extent of moult may vary with environmental conditions (Marchant & Higgins 1990; Fullagar 2005). The 4 birds seen in December 2014 and January 2015 comprised 3 males and 1 female, although it is possible that the latter could have been a juvenile. However, even if this wood duck was in juvenile plumage, the fact that it was fully fledged means we could not rule out that it had arrived as a vagrant in New Zealand, rather than being locally reared.

Wood ducks are highly dispersive in ephemeral wetland habitats in Australia, with post-breeding family groups gathering in flocks in better watered areas by May, but in dry years as early as February (Marchant & Higgins 1990). Thus, the appearance of the birds in Tasman in December does not fit with the usual timing of post-breeding dispersal of wood ducks in Australia. However, there has been a prolonged drought in eastern Australia (Bureau of Meteorology 2014) which could have resulted in changed movement patterns. Additionally it is not known how long the birds may have been present in New Zealand before being observed by us.

The wood ducks were not seen in February 2015, but on 5 and 8 March a pair was seen on a pond at Westdale Road, c. 1 km from the original site. The next record was on 9 July 2015 when 1 adult male wood duck was shot flying over a stream on the edge of Waimea Estuary – the specimen is now in the national collection at Te Papa. Subsequently, a pair was seen at Westdale Road on 19 July 2015.

There were no further sightings of wood ducks until mid-September 2015 when a single male was seen regularly at the Westdale Road and the Maisey Road sites. On 26 September 2015, a pair and a single male were seen at different sites at Westdale Road. Then, on 11 October 2015 WAC photographed a pair of wood ducks and 4 ducklings at the Westdale Road site (Fig. 1). The ducklings were thought to be about 1 week old

(Murray Williams, *in litt.*). Three ducklings were present on 12 and 17 October, but only a single one remained on 23 and 27 October, and on 29 October the adults were alone. The cause(s) of duckling loss are unknown but avian predators, including white-faced heron (*Ardea novaehollandiae*), Australasian harrier (*Circus approximans*) and pukeko (*Porphyrio melanotus*) are present at Westdale Road. Herons are known to prey on young wood ducks in Australia (Kingsford 1989a). This is the first record of wood ducks breeding in New Zealand.

On 18 November 2015, a female wood duck was seen at a property on Stringer Road, c. 2 km from Maisey Road (JG & GD), and on 30 November a pair with 5 ducklings about 1 week old were photographed (Fig. 2). Frith (1982) noted the incubation period as 28 days, but provided no detailed evidence (Marchant & Higgins 1990), however Briggs (1991) reported it to be 34 days and Fullagar (2005) gives it as 32–34 days. Replacement clutches may occur if the first is lost (Marchant & Higgins 1990) but even at 28 days there is insufficient time for the Stringer Road ducklings to be the result of re-nesting by the Westdale Road pair, thus it appears that at least 2 pairs of wood ducks nested in Tasman District in 2015.

A single male was seen at the Westdale Road site in late November 2015. There were no further sightings until 3 March 2016 when 6 fledged birds were present at Westdale Road and 7 were subsequently recorded on 5, 9 and 13 March 2016. Peter Fullagar (*in litt.*) viewed photographs of these birds, and confirmed the group probably comprised an adult pair and 5 first year birds (4 females and a male). It seems likely that the March 2016 group is comprised of birds fledged locally; however only 4 fledged from the Stringer Road site.

The only previous observations of live wood ducks in New Zealand (as opposed to birds shot by hunters) relate to a single male on the Snares and single birds reported in Nelson (male) and at 2 sites

Fig 2. Australian wood duck pair with 5 ducklings, Tasman, New Zealand, 30 November 2015. (Photo: Geoff Davies).



in Christchurch (Frost 2013; Colin Miskelly, *in litt.*). The Snares bird, recorded between 1982 and 1985, was 'often seen in company with a mallard hen' (Miskelly *et al.* 2001), although there is no evidence that breeding was attempted. Wood duck have been recorded hybridising with Egyptian goose (*Alopochen aegyptiaca*), upland goose (*Chloephaga picata*) and Carolina duck (*Aix sponsa*; (Marchant & Higgins 1990; McCarthy 2006).

Kingsford (1989b) found that wood ducks are predominantly grazers during the breeding season, principally taking grass and legumes. Our limited observations suggest that grazing is also the most common foraging behaviour of wood ducks in the Tasman district, although 1 male that associated with domestic mallards at Maisey Road was feeding on wheat grain. Timing of breeding in Australia is closely linked with seasonal grass growth so that broods hatch when good quality grass is plentiful (Kingsford 1989a). In the Waimea plains, Tasman District rainfall occurs throughout the year, but most falls in winter and spring – total annual rainfall is, however, quite variable, ranging from about 600 mm per year to over 1400 mm (Chappell *et al.* 2015).

The area where the wood ducks were recorded is largely rural 'lifestyle block' with scattered residential buildings in relatively large sections, with ponds developed for amenity and storm water control, as well as some for irrigation. Ponds are generally small; that at the Westdale Road site being about 0.3 ha. Kingsford (1992) noted that wood ducks occupied farm dams in New South Wales, Australia and that numbers

of birds had increased as more farm dams were constructed. There may be an increase in potential sites for wood ducks in the Tasman area in future since planning guidelines for the coastal zone include favouring clustered development and using 'riparian planting areas, ponds and wetland opportunities as buffer and open space areas' (Tasman District Council 2009), however the provision of mown, and possibly irrigated, grass areas may be important in providing suitable grazing conditions. Thus, the habitat in the area would appear suitable for wood ducks. It will be interesting to see whether a population of wood ducks becomes established in Tasman District, where they potentially could become an 'ecological replacement' for the formerly widespread, but now extinct, Finsch's duck (*Chenonetta [Euryanas] finschi*; Worthy & Holdaway 2002).

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