

# Breeding biology, behaviour and foraging ecology of the Black Falcon *Falco subniger* near Tamworth, New South Wales

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The breeding biology and behaviour of the Black Falcon *Falco subniger* were studied in the Tamworth district (northern inland New South Wales) through 146 hours of observation over 47 days in 2015 (one pair, pre-laying to early incubation) and 261 hours of observation over 69 days in 2016 (four pairs, pre-laying to fledging, with checks through the post-fledging period). Pellets were collected from under vacated nests. Aerial displays (e.g. agility, V-dives, ‘undulatory roll,’ ‘high winnowing’), nest-site selection and occupation, courtship and mating are described. Adopted stick nests were high in tall or emergent riparian or paddock eucalypts; nearest-neighbour distances averaged 10.25 km (range 9–12 km). Eggs were laid in July, and the incubation period appeared to be  $34 \pm 1$  days at one nest. Males took a minor share of incubation (1–3% of daylight) and brooding of hatchlings (1%). Interspecific conflict or nest-site defence was strongest against corvids in the pre-laying phase, and against Wedge-tailed Eagles *Aquila audax* during the nestling phase. Feeding rates and estimated biomass provision were 0.09–0.26 item/h and ~4–28 g/h at nests that failed during the incubation or hatchling phase, and 0.19 item/h and ~23 g/h to a single nestling that fledged, albeit underweight. Nest failure appeared to be related to cold, wet weather and poor hunting success around hatching time. Breeding productivity was 0.25 young per attempt in 2015–16, and 0.5–0.6 young per attempt for 10 nests since 2004, with up to half of fledglings failing to reach independence. The observed breeding diet was 98% birds and 2% rodents, although insects appeared in pellets. Hunting success on birds was 36% of observed attacks. Demographic and ecological research on this species is required. As the threatened and declining Black Falcon faces human-related impacts in the sheep-wheat belt, some possible management strategies are suggested (e.g. artificial nests).