

Aerial diving display, with calling, by Black Falcon *Falco subniger*

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Summary. This note describes a variant of high-aerial agility display-flight, with calling, by a solitary Black Falcon *Falco subniger*. The soaring Falcon repeatedly dived and ascended, with rapid wing-beats, in an oblique figure-8 pattern, in apparent advertisement. The display was observed in the non-breeding season, in an area where no previous breeding has been recorded. The Black Falcon's aerial displays are similar to those of the Peregrine Falcon *F. peregrinus*, and particularly to those of the 'great' or 'desert' falcons (subgenus *Hierofalco*).

The aerial courtship and advertisement displays of the Black Falcon *Falco subniger* have been described in a rather fragmentary fashion to date. Wheeler (1963) described a high-aerial soaring and diving display, by a solitary Black Falcon in a wintering area, that reads essentially like the V-flight display described for the Peregrine Falcon *F. peregrinus* (Marchant & Higgins 1993). Hollands (1984) described high-aerial mutual soaring, and laboured flight and aerobatics by the male, in a courting Black Falcon pair. Baker-Gabb (1989) described mutual soaring followed by low aerobatics in a courting pair. Debus *et al.* (2005) described several aerial manoeuvres by an advertising or courting male: low aerobatics and exaggerated flight, and high-aerial conspicuous carrying of food. Finally, Debus & Tsang (2011) described horizontal figure-8 advertisement flight by a male around the nest-site. Other sources (reviewed by Marchant & Higgins) have described mutual aerobatics, with calling, by courting pairs.

This note describes a variation of the foregoing displays. On 10 April 2011, at ~1340 h, I observed a single Black Falcon in display-flight high over Bacchus Marsh, Victoria (37°41'S, 144°26'E), for ~3 minutes. The bird's flight and call immediately set it apart from the locally common and familiar Brown Falcons *F. berigora* and their vocal aerial displays, and its greater agility was as in previous experience of the Black Falcon (e.g. Whelan 1992). The bird's flight was acrobatic with fast wing-beats and diving, before climbing and repeating, in an inclined figure-8 pattern (at ~50° to the horizontal). The solid dark-brown colour, straight trailing edges to the wings, long tail, and flat to slightly drooped (rather than raised) wings when soaring, as well as the silhouette, excluded the Brown Falcon.

The Black Falcon was soaring and diving at 150–200 m above ground, calling as it did so. A second Falcon was not seen, though may have been present but beyond view. The call sounded (to human ears) identical to the Black Falcon sound-track in Plowright (2002, consulted later), which is apparently the display call described

by Hollands (1984, p. 201) as a 'short, clear, high-pitched and far-carrying call', and by Morcombe (2000, p. 94) as a 'loud, high, sharp, scratchy *eeik...eeik* every 3–5 seconds'. This distinctive call is different from any uttered by the Brown Falcon (DJW pers. obs.; also see Marchant & Higgins 1993).

The date and location are of interest, being the non-breeding season and probably a non-breeding area, although in dry seasons the surrounding landscape can resemble typical Black Falcon breeding habitat farther north and inland. The nearest breeding record is for the Wimmera Plains ~150 km to the north-west (Barrett *et al.* 2003), on the inland side of the Great Dividing Range.

The Western Treatment Plant at Werribee (~40 km south-east of Bacchus Marsh) appears to be an over-summering dispersal area for the Black Falcon, including at least one instance of a pair of Falcons (P. M^cDonald in Debus & Olsen 2011). There are several recent records of the Black Falcon for Werribee and other parts of coastal and near-coastal southern Victoria, some supported by photographs (e.g. *Bird Observer* **860**, 25), most notably three Falcons briefly interacting in March 2012 (Birdline Victoria archive: <http://bioacoustics.cse.unsw.edu.au/birding-aus/> retrieved 8 August 2012). However, any suggestion of a family party or of breeding in the area is unwarranted, as juveniles would have been independent for several months, and individuals may have moved long distances by then (e.g. Debus *et al.* 2005; Debus & Olsen 2011).

It is unclear why a solitary Black Falcon should perform a vocal aerial display in autumn, but it may have been advertisement of occupancy or social status, or to attract a mate. Autumn display behaviour in falcons is little remarked upon in the literature, but sometimes occurs in the Australian Hobby *Falco longipennis* and Brown Falcon in their breeding territories (S. Debus pers. comm.). Such autumn aerial displays might signal territory ownership.

The Black Falcon's display behaviour thus includes low- and high-aerial, unilateral and mutual agility display-flights, including V-flight and figure-8 flight, sometimes with calling. However, display and certain other behaviour ascribed to the Black Falcon by Bedgood (1979) may be referable to the Brown Falcon (see Debus & Olsen 2011; Debus & Tsang 2011). The Black Falcon's aerial displays are similar to those of the Peregrine Falcon, and especially to those of the former's closest genetic relatives ('great' or 'desert' falcons, subgenus *Hierofalco*), the Lanner Falcon *Falco biarmicus*, Laggar Falcon *F. jugger* and Gyrfalcon *F. rusticolus* (compare Marchant & Higgins 1993; Ferguson-Lees & Christie 2001; Potapov & Sale 2005).

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