FLORA AND FAUNA GUARANTEE - SCIENTIFIC ADVISORY COMMITTEE

**PRELIMINARY RECOMMENDATION ON A NOMINATION FOR LISTING**

***Falco subniger*** G.R. Grey 1843 **-** Black Falcon

*Flora and Fauna Guarantee logo*

**Date of consideration:** 29 May, 5 July 2017 **File No.:** FF/54/3757

**Validity**: The nomination is for a valid item.

**Prescribed Information:** The prescribed information was provided.

**Name of the Nominator** is adequately provided.

**Name of the item** is adequately provided.

The nominated taxon is accepted by the Scientific Advisory Committee (SAC) as a valid taxon because it has been formally described and it is accepted as a valid taxon by Museum Victoria.

The following description of this bird of prey is based on Debus (2012).

The Black Falcon is Australia’s largest endemic falcon, similar in size to the Peregrine but with longer broader wings and a longer tail: the body is 45-56 cm (tail about half) and wingspan 97-115 cm. Females are larger than males (female 833 g, male 582 g). Adult plumage is variably dark brown to sooty-black and darkest in freshly-replaced plumage, flight feathers are slightly paler. The cere and eye-ring are pale grey, eyes brown and feet pale grey. Juveniles are usually darker, noticeably so against faded parents. Debus and Zuccon (2013) noted that “It is evident that laypeople, and some birders, still confuse dark Brown Falcons with Black Falcons: partly from inaccurate information and/or illustrations in the older, superseded field guides, but also through insufficient knowledge of identification features”.

Although reported as widely distributed through Australia, the Murray-Darling region is one of three important areas (the other two being in SA and NSW) identified in Blakers et al. (1984). The Black Falcon inhabits woodland, shrubland and grassland in the arid and semi-arid zones, especially wooded (eucalypt-dominated) watercourses; it also uses agricultural land with scattered remnant trees. The Black Falcon is often associated with streams or wetlands, visiting them in search of prey. It uses standing dead trees as lookout posts. Emison et al. (1987) noted that “Most Victorian records come from the lowlands and only occasionally from the foothills. These Falcons occur mainly over croplands, grasslands and wooded farmlands.” In agricultural landscapes the falcon nests in healthy, bird-rich riparian woodland remnants (Debus et al*.* 2005). Breeding habitat and nest sites consist of vacant stick nests in the tallest living trees available, typically in emergent eucalypts in the lower parts of open, flat to undulating landscapes, such as riparian woodland and the footslopes of valleys. Nest trees typically have dead or dead-topped tree(s) within ~100 m, used by the adults and fledglings as perches and food-transfer sites (Debus et al. 2005, Charley et al. 2014, Whelan et al. 2016, Debus et al. in press). Black Falcons are known to breed in southern Victoria (Whelan et al 2016). Hollands (1984) also mentions sightings in Victoria and commented “seems to fare well in Victoria” – and sightings at Werribee mentioned.

**Eligibility for listing as a taxon under the Flora and Fauna Guarantee**

The nominated item satisfies at least one criterion of the set of criteria prepared and maintained under Section 11 of the *Flora and Fauna Guarantee Act* 1988, and stated in Schedule 1 of the Flora and Fauna Guarantee Regulations 2011.

Based on the evidence that the Black Falcon has declined in range and abundance, and that the processes thought to be responsible still exist and are likely to continue, the SAC believes the nomination meets the following Flora and Fauna Guarantee listing criteria:

**Evidence that criteria are satisfied:**

**Criterion 1.1***The taxon is in a demonstrable state of decline which is likely to result in extinction*

*Evidence:*

The Black Falcon’s national index of abundance declined significantly by 38% in 20 years 1981–2001 (just over three generations), with declines greatest (30–50%) in south-eastern Australia (Barrett et al. 2003); this decline equates to 35% in three generations (a generation being 6 years for this species), which meets IUCN criteria for Vulnerable listing. Its index of abundance also declined by almost 50% in NSW over 20 years to 2006 (Cooper et al. 2014), and is believed to be in sufficient decline in South Australia to warrant Endangered listing there (Falkenberg 2016). With the expected loss of breeding and hunting territory due to urban and rural development, the Victorian population could be expected to suffer similar declines as in NSW and SA. Barrett et al. (2003) flagged the Black Falcon as among those grassland bird species showing a 30-50% national decline in the preceding 20 years (approximately 3 generations) with declines greatest in south-eastern Australia. And Barrett et al. (2007) report a 38% decline between 2 atlases. The decline was greatest (30-50%) in south-eastern Australia (Barrett et al. 2003), ie. the eastern sheep-wheat belt and Murray-Darling Basin.

**Criterion 1.2** *The taxon is significantly prone to future threats which are likely to result in extinction*

*Evidence:*

The main threats and hazards to this species in the agricultural zone of south-eastern Australia are human-related, e.g. loss of tall riparian/floodplain eucalypts, and loss of nests and nest trees to storms (through exposure of isolated trees in cleared landscapes). A major threat to the Black Falcon is suspected to be clearing of habitat and degradation of habitat by overgrazing, with likely effects on the Falcon’s foraging habitat, nest sites and food supply (Debus 2015). Over 80% of temperate woodlands in Australia have been cleared, and the process is continuing (Olsen et al. 2005; Johnson et al. 2007), and native grasslands are being increasingly cultivated (Baker-Gabb 1998). Loss of breeding populations of Black Falcons after destruction of their riparian nest trees has been documented in South Australia (Olsen 1994). The Black Falcon is limited to prebuilt stick nests in trees (Debus and Olsen 2011, Olsen 2014) and competition for and interference at nests by overabundant and increasing corvids and Sulphur-crested Cockatoos. Other threats include collisions with wires, fences, vehicles etc. (Debus and Tsang 2011, Charley et al*.* 2014, Debus 2014, Zuccon 2014, Debus et al. submitted, Whelan et al. 2016), and threats to food supply. Black Falcons take prey depending on local abundance including wide variety of birds and insects, rats, rabbits (Charley et al. 2014, Debus etal. 2005). Most of its former native mammalian prey species are extinct (‘critical weight range’ terrestrial mammals of rabbit size or smaller, e.g. large rodents (van Dyck and Strahan 2008)). Rabbits were formerly a high proportion of the Falcon’s diet by biomass in arid areas, but following the spread of rabbit calicivirus disease and consequent decline in rabbit numbers, the Falcon is likely to be increasingly dependent on native prey, especially birds (Marchant & Higgins 1993, Falkenberg et al. 2000, Sharp et al. 2002, Debus et al. 2005). Low numbers of rabbits is likely to continue with continued use of viruses to contain rabbit populations. Key avian prey species (terrestrial grassland birds, require ground cover, often of native grasses, and are sensitive to livestock grazing pressure (Marchant and Higgins 1993), or are hollow-dependent (e.g. parrots)). There is considerable literature concerning the potential impact of the anticoagulants, including pindone, on raptors and other predatory birds (Twigg et al. 1999, Erickson and Urban 2004, Laakso et al. 2010, Rattner et al. 2014). The anticoagulant Pindone has been suggested as the cause of the decline of Little Eagles near Canberra (Olsen et al. 2013). There is also some evidence of raptor (including Black Falcons) mortality from collisions with wind farm turbines (Lloyd 2014) and finally, that birdwatcher attention (e.g. visibly stalking them, approaching a nest closely, flushing them) may affect the breeding behavior susceptible to disturbance

**Sub-criterion 1.1.2** *The reproduction or recruitment of the taxon has seriously declined or is not occurring.*

*Evidence*

The Black Falcon’s fledging productivity and recruitment in the sheep-wheat belt are now low: 25% nest success and 0.25 young fledged per attempt in 2015–16 (*n* = 4) and 0.5–0.6 young per attempt (40% nest success) in 2004–2016 (*n* = 10), with at least one juvenile, perhaps up to three (of five or six fledged), failing to reach independence, in NSW (Debus et al. in press); fledglings are often road-killed (Debus and Zuccon 2013, Charley et al. 2014). In southern Victoria in 2014–15, one pair raised a brood of two fledglings in both years, but two pairs failed in 2016 (Whelan et al. 2016, D. Whelan pers. comm.), giving 50% nest success and 1.0 young per attempt (*n* = 4 pair-years). These productivity figures are lower than for South Australia in the 1970s (average brood size 2.5 fledglings: Debus and Olsen 2011), and much lower than for the Peregrine Falcon *Falco peregrinus* and Brown Falcon *F. berigora* in south-eastern Australia (see data in Debus 2012). There are breeding records from the grassland of the Werribee Plains where the birds are recorded regularly if infrequently (Emison et al.1987, Hewish et al. 2006). Nesting in central and southern Victoria is now extremely rare if it occurs at all (no records 1973-2002) (Emison et al.1987, Marchant and Higgins 1993, Barrett et al.2003, Hewish et al. 2006).

**Sub-criterion 1.2.2** *The threat is currently operating and is expected to operate at a level in the future which is likely to result in the extinction of the taxon.*

*Evidence:*

Following from criterion 1.2 above, these threats can be expected to increase with the ongoing attrition of mature trees in rural landscapes, the increase in corvids and cockatoos (e.g. Barrett et al. 2003), the use of high-tensile barbed-wire fences on farms, a likely increase in vehicular traffic volume with an increasing human population, and a likely increase in storms with climate change**.**

**Sub-criterion 1.2.3** *The reproduction or recruitment of the taxon has seriously declined or is not occurring.*

*Evidence:*

Clearing and degradation of riparian woodlands leads to loss of nest trees from key Falcon breeding areas. Loss of breeding populations of Black Falcons, after destruction of their riparian nest trees, has been documented in South Australia (Olsen 1994). The Black Falcon like other ‘great’ falcons appears prone to interspecific conflict with corvids over stick nests e.g. the Gyrfalcon *Falco rusticolis* and the Northern Raven *Corvus corax* (Potapov and Sale 2005). Similarly it appears to usually lose such contests with large corvids which may be a factor in its decline in the sheep-wheat belt in the face of increasingly superabundant ravens and apparently increasingly severe storms which destroy stick nests (Debus and Tsang 2011, Debus and Zuccon 2013, Bauer 2016). Black Falcons breeding success in in agricultural belt appears to be poor (Debus 2015): two occupied nests in central Victoria (the only ones known to be monitored) failed in 2013 (D. Gemmell, A. Zuccon pers. comm. in Charley et al. 2014).

The data presented on distribution and abundance are the result of reasonable surveys and provide clear evidence that the taxon is rare in terms of abundance and distribution.

**Additional Information**

* In 2009, the national population of Black Falcons was estimated to number 1,000-10,000 individuals, roughly equating to 670-6,700 mature individuals, although the data quality is listed as “poor” (Birdlife International 2017).
* **The main effect of clearing, and degradation of riparian woodlands, may be the loss of nest trees from key Falcon breeding areas. Loss of breeding populations of Black Falcons, after destruction of their riparian nest trees, has been documented in South Australia (Olsen 1994).**
* The species was nominated for listing under the EPBC Act in 2010 but further consideration has been deferred. The EPBC Act website indicates the Black Falcon was ‘… not prioritised for assessment due to data deficiency’ (EPBC status as at July 2017) and ‘The species is distributed over a very wide area and existing data to demonstrate population trends across its range are inadequate.’ (Department of Environment and Energy 2017)
* The Black Falcon has recently been classified as ‘Vulnerable’ in NSW (NSW Scientific Committee 2013).

**Documentation**

The published information provided to the SAC has been assessed. Based on the available evidence, the SAC believes that the data presented are not the subject of scientific dispute and the inferences drawn are reasonable and well supported.

**SAC's Preliminary Recommendation**

The SAC concludes that on the evidence available the nominated item is eligible for listing in accordance with Section 11(1) of the Act because criteria 1.1 and 1.2 and subcriteria 1.1.2, 1.2.2 and 1.2.3 of the Flora and Fauna Guarantee Regulations 2011 have been satisfied.

The Scientific Advisory Committee therefore makes a preliminary recommendation that the nominated item be supported for listing under the *Flora and Fauna Guarantee Act* 1988.

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**Endorsement by the Convenor of the Scientific Advisory Committee** **Date**

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**Prof Emeritus Barbara Evans,**

**Convenor**