

Appendix B Additional information Fauna Memorandum (Black Cockatoo and Black Striped Minnow) Bayswater to Ellenbrook rail alignment



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30th June 2020

METRONET Bayswater to Ellenbrook rail alignment

Additional information: fauna

Black-Cockatoos

Presence in Whiteman Park and surrounds

As part of quarterly bird censusing since 1991, and monthly bird-banding since November 2017, Black-Cockatoos have been included in both systematic and opportunistic observations at Whiteman Park. The Forest Red-tailed, Carnaby's and Baudin's Black-Cockatoos are all now present regularly.

Carnaby's Black-Cockatoo is most abundant in summer and autumn, with occasional flocks of several hundred birds feeding in the Banksia Woodlands of the centre and north of the Park. These have been a feature of the Park since surveys began.

The Forest Red-tailed Black-Cockatoo only appeared regularly in the Park in about 2010 as part of a general movement of the species onto the Coastal Plain. Previously it had been associated mostly with the forests of the Escarpment. In recent years, the species appears to be more or less resident. It is usually observed in small flocks (two to about 15 birds) and is mainly around the Village and along Bennett Brook where there are abundant Marri.

Baudin's Black-Cockatoo was not recorded regularly in Whiteman Park until about 2018, although it had probably been overlooked for a year or two before that as it can be difficult to detect (the call is distinctive if heard clearly and it leaves characteristic foraging signs on Marri fruit). It does seem to have moved into the area in recent years but Johnstone and Storr (1998) state that it does visit the eastern Swan Coastal Plain in the Perth area between March and September. Recent records (M. Bamford), such as 17th April 2020, are of small flocks around the Village and along Bennett Brook where there are abundant Marri. The record on 17th April 2020 included a mixed flock of Baudin's and Carnaby's Black-Cockatoos along Bennett Brook immediately west of Whiteman Village at sunrise. This suggests the species had both been roosting in Whiteman Park. Foraging signs of Baudin's on Marri fruit are as abundant and widespread as foraging signs of the Red-tails.

Roosting sites

Roosting sites for Black-Cockatoos in Whiteman Park have been documented as part of the Great Cocky Count. Surveys take place in autumn as that is when Carnaby's Black-Cockatoo uses roosts on the Coastal Plain most consistently (they were the original target species of the program). Black-Cockatoo roosts were not surveyed comprehensively in 2020 (due to a Covid-19 restriction) but pre-dawn (17th April) and post-sunset (27th May) observations confirmed black-cockatoo activity just west of the Village consistent with movement around a roost site.

Roost sites are used with some fidelity in that the same location will be used over weeks and in successive years, but there is also variation with a roost not being used every year, or even being used inconsistently in one year. While roosts tend to be in trees that are tall in the local context and can be near water (but often are not), there seems to be an almost 'cultural' aspect to roost site selection, with birds returning to the same group of large trees in an area with abundant large trees.

Because of the roosting behaviour of black-cockatoos, it is not really possible to identify potential roost trees on the basis of size and distance to water. It is also not possible to identify roost trees on the basis of one or two evenings of observations in one year, even if this is carried out in autumn. Fortunately, the Great Cocky Count has been carried out almost annually for over 10 years, and thus it is likely that all roost sites in the region of the project area have been identified, including sites that may not be used regularly. As no roost sites have been found in the Development Envelope it is very unlikely that birds roost in the Development Envelope. No roost site survey has been carried out targeting the Development Envelope. Should a roost survey be undertaken, it is recommended to take place in autumn (March/April) before disturbance is to take place, so that roosting activity close to the time of disturbance is documented. Three survey events at three nights apart (ie three nights between each event) are suggested in order to allow for short term variation in roosting activity. The nearest known roosting sites should be targeted, and personnel also need to be located at vantage points along the alignment to detect movements of birds within the Development Envelope. The Great Cocky Count procedure is to have personnel deployed at least half an hour before sunset and for people to remain in position until it gets dark (20-30 minute after sunset).

Breeding

While large trees have been identified in the project area, Tony Kirkby considered that there were no actual nests among these trees due to the lack of suitable hollows. He has said, however, that breeding of the Forest Red-tailed Black-Cockatoo in the general area is likely (T. Kirkby pers. comm.). The nearest currently documented nests of the Forest Red-tailed Black-Cockatoo are probably along Toodyay Road 15km to the east (Red Hill; M. Bamford unpubl. data). Several Carnaby's Black-Cockatoos nest in Joondalup so are also known to nest on the Coastal Plain. The nearest Baudin's Black-Cockatoo nests are in Bungendore Park south-east of Armadale (about 45km south-east); breeding by this species further north, and particularly on the coastal plain, is considered unlikely (T. Kirkby. pers. comm).

Black-striped and Mud Minnows

Both the Black-striped Minnow *Galaxiella nigrostriata* and the Mud Minnow *Galaxiella munda* occur in wetlands north of Perth on the eastern Coastal Plain. Both are also of conservation significance: the Black-striped Minnow is listed as Endangered under the EPBC Act and as Schedule 2 (endangered) under the WA Biodiversity Conservation Act, while the Mud Minnow is listed as Schedule 3 (vulnerable) WA Biodiversity Conservation Act.

Both species live in seasonal wetlands; the Black-striped Minnow in paperbark swamps and the Mud Minnow usually in streams. A related species in eastern Australia survives dry conditions by following water down in the burrows of freshwater crayfish (Allan *et al.* 2002), and this also seems likely for these two species (M. Bamford pers. obs.). North of Perth, the Black-striped Minnow is known only from one wetland in Melaleuca Park (EPP 173), about 12km north of Whiteman Park (Morgan *et al.* 1998). The Mud Minnow occurs in Lennard Brook c. 70km to the north (Morgan *et al.* 1998) which is part of a complex of brooks and wetlands in the upper reaches of Chandala Brook and Gingin Brook; Chandala Brook becomes

Ellen Brook and joins the Swan/Avon System. There are records of the Mud Minnow in Lake Chandala and in artificial wetlands (that are linked to Chandala Brook) at the Tronox processing plant, about 45km north of Whiteman Park (M. Bamford unpubl. data). The two species are similar in appearance outside the breeding season and reports of the Black-striped Minnow in Ellen Brook are probably the Mud Minnow.

Both species have very fragmented modern distributions suggesting that they have disappeared due to wetland destruction and modification in recent years. Their biology makes them vulnerable to change if they are commensal with freshwater crayfish, and observations on a population at Kemerton, north of Bunbury, found that fish died out from wetlands if the wetland was dry at the surface for over about five months (M. Bamford pers. obs.). Both species may have occurred in Whiteman Park as there are suitable wetlands, including seasonal sections of Bennett Brook for the Mud Minnow, but they have not been found in several fish and other aquatic surveys (eg. Bamford *et al.* 1998), so it is likely they have died out during periods when water levels were altered and as a result of wetland clearing. While almost certainly extinct in Whiteman Park, checking for their presence would be quick and simple as they are quite conspicuous when water levels are high in late winter and early spring. Locations to check would be the upper reaches of Bennett Brook (Mud Minnow) and two seasonal wetlands (Black-striped Minnow) near the Drumpellier Drive entrance of Whiteman Park (UFI 8678 and UFI 8679). Of these, only UFI 8678 lies within the Development Envelope. Interestingly, Bamford *et al.* (1998) suggested that at least the Black-striped Minnow could be a candidate for reintroduction into seasonal wetlands in Whiteman Park.

References

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