



25th September 2023

Assessment of potential breeding habitat for Carnaby's Black-Cockatoo; Kellerberrin–Yelbeni and Doodlakine South Roads

Bamford Consulting Ecologists were contracted by Dylan Copeland on behalf of the Kellerberrin Shire Council to assess potential breeding habitat for Carnaby's Black-Cockatoo along two road verges where proposed road widening was anticipated to require removal of some trees:

1. Breeding habitat tree survey from SLK 0.00 to 4.20 along Kellerberrin–Yelbeni Road;
2. Breeding habitat tree survey from SLK 9.70 to 12.45 along Doodlakine South Road.

The survey was undertaken on 23rd August 2023 by Peter Smith and Sarah Smith who each have over 30 years' experience in ecological surveys, including many surveys specifically targeting black-cockatoo breeding trees and foraging signs throughout the South-West of Western Australia.

The section of road was traversed and all trees of an appropriate size (>300mm diameter at breast height as per guidance) were measured and assessed for value as Carnaby's Black Cockatoo nesting sites. Each tree of suitable size was assigned a rank with respect to potential nesting value for black-cockatoos based upon a system developed by Bamford Consulting Ecologists (see Table 1).

Both road verges had degraded native vegetation with heavy weed invasion of the understorey, but with trees still present. Observations on trees are presented in Appendix 1. There were 57 trees identified along Doodlakine South Road, and 40 along Kellerberrin-Yelbeni Road. The majority of trees were Salmon Gum *Eucalyptus salmonophloia*, with some Gimlet *Eucalyptus salubris* and Wheatbelt Wandoo *Eucalyptus capillosa*, and a small number of York Gum *Eucalyptus loxophleba*.

Of the trees along Doodlakine South Road, the majority (48) had no hollows (rank 5), while eight trees had small or otherwise unsuitable hollows (rank 4), and just one had hollows (3) possibly suitable for Carnaby's Black-Cockatoo (rank 3). These were checked with a pole camera and there was no sign of nesting activity. This tree was marked for possible removal.

Nests of several other bird species were recorded. There were no signs of actual nesting by Carnaby’s Black-Cockatoo.

Of the trees along Kellerberrin-Yelbeni Road, the majority (31) had no hollows (rank 5), while six trees had small or otherwise unsuitable hollows (rank 4), and three had hollows possibly suitable for Carnaby’s Black-Cockatoo (rank 3). These were checked with a pole camera and there was no sign of nesting activity. Nests of two other bird species were recorded. There were no signs of actual nesting by Carnaby’s Black-Cockatoo.

Table 1. Nest ranking system for potential black-cockatoo nest trees.

As per DCCEEW (2023) guidance, a potential nest-tree is any tree with a diameter at breast height >500 mm (or >300 mm for *Eucalyptus accedens*, *E. salmonophloia* and *E. wandoo*). Note that black-cockatoos favour vertical hollows for the nest chamber, but the hollow entrance may be vertical (a chimney hollow), have a side entrance or have a horizontal spout entrance.

Ranks	Description of tree and hollows/activity
1	Activity at hollow observed; adult (or immature) bird seen entering or emerging from hollow. Can also be used for a known breeding tree active in the previous 12 months (although this should be noted in the description). Note that activity at a hollow does not absolutely mean that breeding is occurring unless a young bird in hollow is observed.
2	Hollow of suitable size visible with chew marks around entrance. Record if chew-marks are recent or old.
3	Potentially suitable hollow visible but no chew marks present at entrance; or potentially suitable hollow suspected to be present - as suggested by structure of tree, such as large, vertical trunk broken off at a height of >8m; but note that hollow height is contextual. Carnaby’s Black-Cockatoo will breed in hollows <5m so in a Wheatbelt breeding site a lower criterion may be more appropriate.
4	Tree with large hollows or broken branches that might contain large hollows but hollows or potential hollows are not vertical or near-vertical; thus a tree with or likely to have hollows of sufficient size but not to have hollows of the angle preferred by Black-Cockatoos. Trees with low but otherwise suitable hollows can also be assigned a rank or 4, depending on the species of black-cockatoo likely to be present.
5	Tree lacking large hollows or broken branches that might have large hollows; a tree with more or less intact branches and a spreading crown.

DCCEEW (2023). *Zanda latirostris* in Species Profile and Threats Database. [online]. Available from: Available from: <http://www.environment.gov.au/sprat>.

Appendix 1. Trees recorded along Doodlakine and Kelleberrin-Yelbeni roads, 23/08/23. Trees marked with blue spray (Doodlakine South Road only) were being considered for removal. Zone 50J.

Doodlakine South Road

Waypoint	Easting	Northing	Species	Spray colour	DBH	Status	Rank	Comments
2123	586080.3	6490954	<i>Eucalyptus salubris</i>	BLUE	650	ALIVE	5	
2124	586091.7	6491019	<i>Eucalyptus salubris</i>	NO SPRAY	750	ALIVE	5	
2125	586100.3	6491047	<i>Eucalyptus salmonophloia</i>	BLUE	700	ALIVE	5	Nankeen Kestrel nesting
2126	586111.8	6491045	<i>Eucalyptus salubris</i>	BLUE	550	ALIVE	5	Australian Ringneck interested in hollows
2127	586115.9	6491075	<i>Eucalyptus salubris</i>	BLUE	500	ALIVE	5	
2128	586121.4	6491146	<i>Eucalyptus salubris</i>	BLUE	500	DEAD	5	
2129	586162.6	6491333	<i>Eucalyptus salubris</i>	GREEN	600	ALIVE	5	
2130	586187.7	6491390	<i>Eucalyptus salmonophloia</i>	BLUE	550	ALIVE	5	
2131	586201.9	6491457	<i>Eucalyptus salmonophloia</i>	BLUE	600	ALIVE	5	Galah nesting
2132	586207	6491476	<i>Eucalyptus salmonophloia</i>	BLUE	650	ALIVE	5	
2133	586220.2	6491576	<i>Eucalyptus salmonophloia</i>	BLUE	500	ALIVE	5	
2134	586224.2	6491592	<i>Eucalyptus salmonophloia</i>	BLUE	600	ALIVE	5	
2135	586218.2	6491588	<i>Eucalyptus salmonophloia</i>	NO SPRAY	550	ALIVE	5	
2136	586241.4	6491617	<i>Eucalyptus salmonophloia</i>	NO SPRAY	750	ALIVE	5	
2137	586232	6491641	<i>Eucalyptus salubris</i>	BLUE	850	ALIVE	4	
2138	586239	6491677	<i>Eucalyptus salmonophloia</i>	GREEN	850	ALIVE	5	Galah nesting
2139	586250.8	6491720	<i>Eucalyptus salmonophloia</i>	BLUE	800	ALIVE	4	Australian Ringneck nesting
2140	586254	6491726	<i>Eucalyptus salmonophloia</i>	BLUE	650	ALIVE	5	
2141	586249.8	6491733	<i>Eucalyptus salmonophloia</i>	NO SPRAY	500	ALIVE	5	Yellow-throated Miner nesting
2142	586299.3	6491951	<i>Eucalyptus loxophleba</i>	BLUE	550	ALIVE	5	
2143	586317.3	6492021	<i>Eucalyptus capillosa</i>	BLUE	500	ALIVE	5	
2144	586321.8	6492031	<i>Eucalyptus capillosa</i>	BLUE	650	ALIVE	5	
2145	586374.4	6492189	<i>Eucalyptus salmonophloia</i>	BLUE	850	ALIVE	3	3 hollows inspected with pole camera. No nests seen

2146	586376.7	6492212	<i>Eucalyptus salmonophloia</i>	NO SPRAY	700	ALIVE	5	Several hollows too small for CBC
2147	586437.5	6492371	<i>Eucalyptus salmonophloia</i>	BLUE	850	ALIVE	5	
2148	586413.9	6492477	<i>Eucalyptus salmonophloia</i>	NO SPRAY	1100	ALIVE	5	
2149	586427.6	6492481	<i>Eucalyptus salmonophloia</i>	BLUE	550	ALIVE	5	
2150	586411.3	6492520	<i>Eucalyptus salmonophloia</i>	GREEN	800	ALIVE	5	
2151	586421.4	6492563	<i>Eucalyptus salubris</i>	BLUE	600	ALIVE	5	
2152	586407.5	6492586	<i>Eucalyptus salmonophloia</i>	BLUE	750	ALIVE	5	
2153	586403.9	6492610	<i>Eucalyptus salmonophloia</i>	GREEN	500	ALIVE	5	Australian Ringneck interested in hollows
2154	586401.6	6492668	<i>Eucalyptus salubris</i>	BLUE	500	ALIVE	5	
2155	586399.3	6492676	<i>Eucalyptus salubris</i>	GREEN	600	ALIVE	5	
2156	586395.5	6492724	<i>Eucalyptus salubris</i>	NO SPRAY	500	ALIVE	4	
2157	586400.9	6492833	<i>Eucalyptus salmonophloia</i>	BLUE	850	ALIVE	5	
2158	586383.5	6492859	<i>Eucalyptus salmonophloia</i>	GREEN	850	ALIVE	4	
2159	586384.7	6492888	<i>Eucalyptus salmonophloia</i>	BLUE	800	ALIVE	5	
2160	586379.7	6492904	<i>Eucalyptus salmonophloia</i>	NO SPRAY	550	ALIVE	5	
2161	586381.6	6492919	<i>Eucalyptus salmonophloia</i>	BLUE	600	ALIVE	4	
2162	586382.5	6492920	<i>Eucalyptus salmonophloia</i>	BLUE	550	ALIVE	4	
2163	586379.9	6492961	<i>Eucalyptus salmonophloia</i>	BLUE	600	ALIVE	5	
2164	586375.1	6492966	<i>Eucalyptus salmonophloia</i>	NO SPRAY	550	ALIVE	5	
2165	586377.1	6492980	<i>Eucalyptus salmonophloia</i>	BLUE	700	ALIVE	5	
2166	586374.9	6492984	<i>Eucalyptus salmonophloia</i>	GREEN	650	ALIVE	5	
2167	586372.4	6493039	<i>Eucalyptus salmonophloia</i>	GREEN	500	ALIVE	5	
2168	586372.6	6493048	<i>Eucalyptus salmonophloia</i>	BLUE	650	DEAD	5	
2169	586369.5	6493091	<i>Eucalyptus salmonophloia</i>	BLUE	650	ALIVE	5	
2170	586365	6493121	<i>Eucalyptus loxophleba</i>	GREEN	550	DEAD	4	
2171	586359.6	6493199	<i>Eucalyptus loxophleba</i>	GREEN	750	ALIVE	5	
2172	586347.9	6493363	<i>Eucalyptus salmonophloia</i>	NO SPRAY	650	ALIVE	5	
2173	586340.5	6493407	<i>Eucalyptus salubris</i>	NO SPRAY	600	ALIVE	5	
2174	586340.5	6493417	<i>Eucalyptus salubris</i>	NO SPRAY	500	ALIVE	5	

2175	586338.1	6493438	<i>Eucalyptus salubris</i>	NO SPRAY	600	ALIVE	4	
2176	586337	6493469	<i>Eucalyptus salubris</i>	NO SPRAY	500	ALIVE	5	
2177	586345.5	6493494	<i>Eucalyptus salmonophloia</i>	BLUE	500	ALIVE	5	
2178	586346.1	6493502	<i>Eucalyptus salubris</i>	BLUE	650	ALIVE	5	
2179	586346.2	6493515	<i>Eucalyptus salmonophloia</i>	BLUE	500	ALIVE	5	

Kellerberrin-Yelbeni Road

Waypoint	Easting	Northing	Species	Spray colour	DBH	Status	Rank	Comments
2180	565475.3	6509252	<i>Eucalyptus salmonophloia</i>	NO SPRAY	1600	ALIVE	5	
2181	565482.5	6509085	<i>Eucalyptus loxophleba</i>	NO SPRAY	550	ALIVE	5	
2182	565481.4	6508968	<i>Eucalyptus loxophleba</i>	NO SPRAY	500	ALIVE	5	
2183	565480	6508946	<i>Eucalyptus loxophleba</i>	NO SPRAY	500	ALIVE	5	
2184	565467.4	6508926	<i>Eucalyptus loxophleba</i>	NO SPRAY	650	ALIVE	5	
2185	565466.7	6508550	<i>Eucalyptus salmonophloia</i>	White X	650	DEAD	4	
2186	565464.8	6508518	<i>Eucalyptus salmonophloia</i>	NO SPRAY	750	ALIVE	5	
2187	565465.1	6508516	<i>Eucalyptus salmonophloia</i>	NO SPRAY	600	ALIVE	5	
2188	565466.3	6508514	<i>Eucalyptus salmonophloia</i>	NO SPRAY	700	ALIVE	5	
2189	565467.2	6508511	<i>Eucalyptus salmonophloia</i>	NO SPRAY	550	ALIVE	5	
2190	565488.1	6508464	<i>Eucalyptus salmonophloia</i>	NO SPRAY	650	ALIVE	5	
2191	565521	6508376	<i>Eucalyptus salmonophloia</i>	NO SPRAY	1100	ALIVE	4	
2192	565541.5	6508341	<i>Eucalyptus salmonophloia</i>	NO SPRAY	600	ALIVE	5	Galah nesting
2193	565550.9	6508325	<i>Eucalyptus capillosa</i>	NO SPRAY	650	ALIVE	5	
2194	565562.2	6508306	<i>Eucalyptus capillosa</i>	NO SPRAY	750	ALIVE	5	
2195	565571.1	6508292	<i>Eucalyptus salubris</i>	NO SPRAY	700	ALIVE	5	
2196	565581.4	6508274	<i>Eucalyptus capillosa</i>	NO SPRAY	450	ALIVE	5	
2197	565593.8	6508254	<i>Eucalyptus salmonophloia</i>	NO SPRAY	600	ALIVE	5	
2198	565591.2	6508252	<i>Eucalyptus salmonophloia</i>	NO SPRAY	550	ALIVE	5	
2190	565597.1	6508244	<i>Eucalyptus salmonophloia</i>	NO SPRAY	650	ALIVE	5	
2200	565604.6	6508236	<i>Eucalyptus capillosa</i>	NO SPRAY	550	ALIVE	5	
2201	565639	6508180	<i>Eucalyptus capillosa</i>	NO SPRAY	650	ALIVE	5	

2202	565647.6	6508165	<i>Eucalyptus salmonophloia</i>	NO SPRAY	550	ALIVE	5	
2203	565655.3	6508157	<i>Eucalyptus salmonophloia</i>	NO SPRAY	550	ALIVE	5	
2204	565681	6508134	<i>Eucalyptus salmonophloia</i>	NO SPRAY	700	ALIVE	4	
2205	565685.3	6508101	<i>Eucalyptus salmonophloia</i>	NO SPRAY	550	ALIVE	5	
2206	565694.9	6508084	<i>Eucalyptus salmonophloia</i>	NO SPRAY	1100	ALIVE	3	Corella nesting
2207	565738.7	6508018	<i>Eucalyptus loxophleba</i>	NO SPRAY	750	ALIVE	4	good vertical spout, unoccupied
2208	565940.4	6507682	<i>Eucalyptus capillosa</i>	NO SPRAY	700	ALIVE	5	
2209	565945.5	6507675	<i>Eucalyptus capillosa</i>	NO SPRAY	1000	ALIVE	3	good spout
2210	566113.2	6507561	<i>Eucalyptus capillosa</i>	NO SPRAY	800	ALIVE	5	
2211	566123.9	6507562	<i>Eucalyptus capillosa</i>	NO SPRAY	450	ALIVE	4	
2212	566142	6507563	<i>Eucalyptus capillosa</i>	NO SPRAY	500	ALIVE	5	
2213	566244.3	6507558	<i>Eucalyptus capillosa</i>	NO SPRAY	450	ALIVE	5	
2214	566258.1	6507562	<i>Eucalyptus capillosa</i>	NO SPRAY	550	ALIVE	4	
2215	566294.5	6507562	<i>Eucalyptus salmonophloia</i>	NO SPRAY	500	ALIVE	5	
2216	566362.6	6507560	<i>Eucalyptus capillosa</i>	NO SPRAY	500	ALIVE	5	
2217	566669.1	6507561	<i>Eucalyptus loxophleba</i>	NO SPRAY	750	ALIVE	4	
2218	566689.5	6507559	<i>Eucalyptus loxophleba</i>	NO SPRAY	500	ALIVE	5	
2219	567189.9	6507553	<i>Eucalyptus loxophleba</i>	NO SPRAY	800	ALIVE	5	Bees in small spout

