

Shire of Serpentine Jarrahdale OCM item Viability of supply and installation of Wild Bird Water Feeders (SJ3760)

Information compiled by Francis Smit, Landcare SJ Inc.

Avian decline is global. WA species are not immune from the trend. Habitat loss and ecosystem imbalance (mining, forestry, agriculture, urbanisation), post-war increase in agricultural chemical use and climate change are drivers of avian population decline. There are a number of organisations and individuals working to support declining populations and to avoid extinction of certain species. In Western Australia there are considerable concerns for three species of forest black cockatoo: Carnaby's (*Calyptorhynchus latirostris*), Baudin's (*Calyptorhynchus baudinii*), and the Forest Red Tailed Black Cockatoo (*Calyptorhynchus banksii naso*) currently listed endangered and vulnerable under the EPBC Act

Birdlife Australia monitor general and migratory bird populations through large citizen science campaigns including the Great Backyard Bird Count and Shorebird Counts. Local SJ twitchers report over 60 bird species at Darling Downs 70 Acre Reserve and in Serpentine. Birdlife WA coordinate the Great Cocky Count, including 28 monitored roost sites in the Shire of Serpentine-Jarrahdale with regular populations of White and Red Tailed Black Cockatoos recorded at sites along the edge of the Darling Scarp and in Oakford. All three species are known to breed on the Darling Scarp near Scrivener Road, and all species forage within the Shire on both native and exotic food sources. Over the past decade, the Great Cocky Count has recorded an average 10% year on year decline in Carnaby's Black Cockatoo numbers. Baudin's numbers are considered critical.

Black Cockatoo flight patterns in SJ are presented in Appendix one: Black Cockatoo movement, monitored in Serpentine Jarrahdale since 2015.

Increasingly fragmented habitat and a drying climate have resulted in fewer permanent water points across the landscape. SJ's rapid urbanisation and development has resulted in significant landscape modification, impacting available water points. However, available sources are widely dispersed across the Shire, including natural, agricultural and equine. Providing supplementary water sources for birds and fauna is advocated by wildlife groups including Birdlife Australia, to support populations and connect wildlife corridors. Its also endorsed by Birdlife WA to support declining forest black cockatoo populations.

A number of LGAs and the DBCA have more recently installed supplementary water points such as bird baths, water stations and fountains to support Black Cockatoos and native birds in general. The Town of Victoria Park (ToVP) has designed, trialled and improved an innovative bird water station at up to ten locations over a four year period. Landcare SJ Board discussed the ToVP designed water station at its November 2021 meeting, and is awaiting the outcome of the Shire agenda item, before making further considerations.

ToVP water station features:

Set on concrete foundation, four metre pole, four water troughs and perches, mains connected (IBC model being developed), automatic refilling twice daily, low maintenance, and successful trial over four years.

Advantages:

- Attracts Black Cockatoo and other native bird species to water source
- Designed for less debris, less cleaning

- Four metre pole - less predation, human contact
- Easy operation - battery operated irrigation control valve for filling
- Enhance wildlife and urban forest corridor habitat
- Community engagement and capacity - birdwatching, recreation

Disadvantages:

- Connection costs to mains water
- Potential pest species migration
- Ongoing monitor and maintain (battery, perch replacement 3-5yrs?, cleaning, plumbing)

Water station placement varies with LGA - urban parks and in or adjacent to remnant bushland, with both amenity and environmental outcomes. Birdlife WA recommend placement in proximity to roost sites. Placement should be within or immediately adjacent to various canopy levels of vegetation. Wildlife and urban forest corridor enhancement would provide greatest environmental benefit.

Recommended locations for supplementary water stations are along the railway environmental corridor which supports adjacent floristically diverse bushland remnants, and being at the foothill for flight paths to forest black cockatoo roosts on the Darling Scarp:

1. Serpentine - Clem Kentish Reserve / township/railway precinct / Paul Robinson Reserve - Pony Club precinct;
2. Mundijong - Watkins Road Transfer station ; Paterson St from Mundijong Rd to Kiernan St, including Railway Park, Shire offices/oval/Landcare SJ;
3. Byford - Brickwood Reserve area (Briggs Park precinct);
4. Whitby entry (would complement Whitby entrance Black Cockatoo 2021-22 food revegetation project)

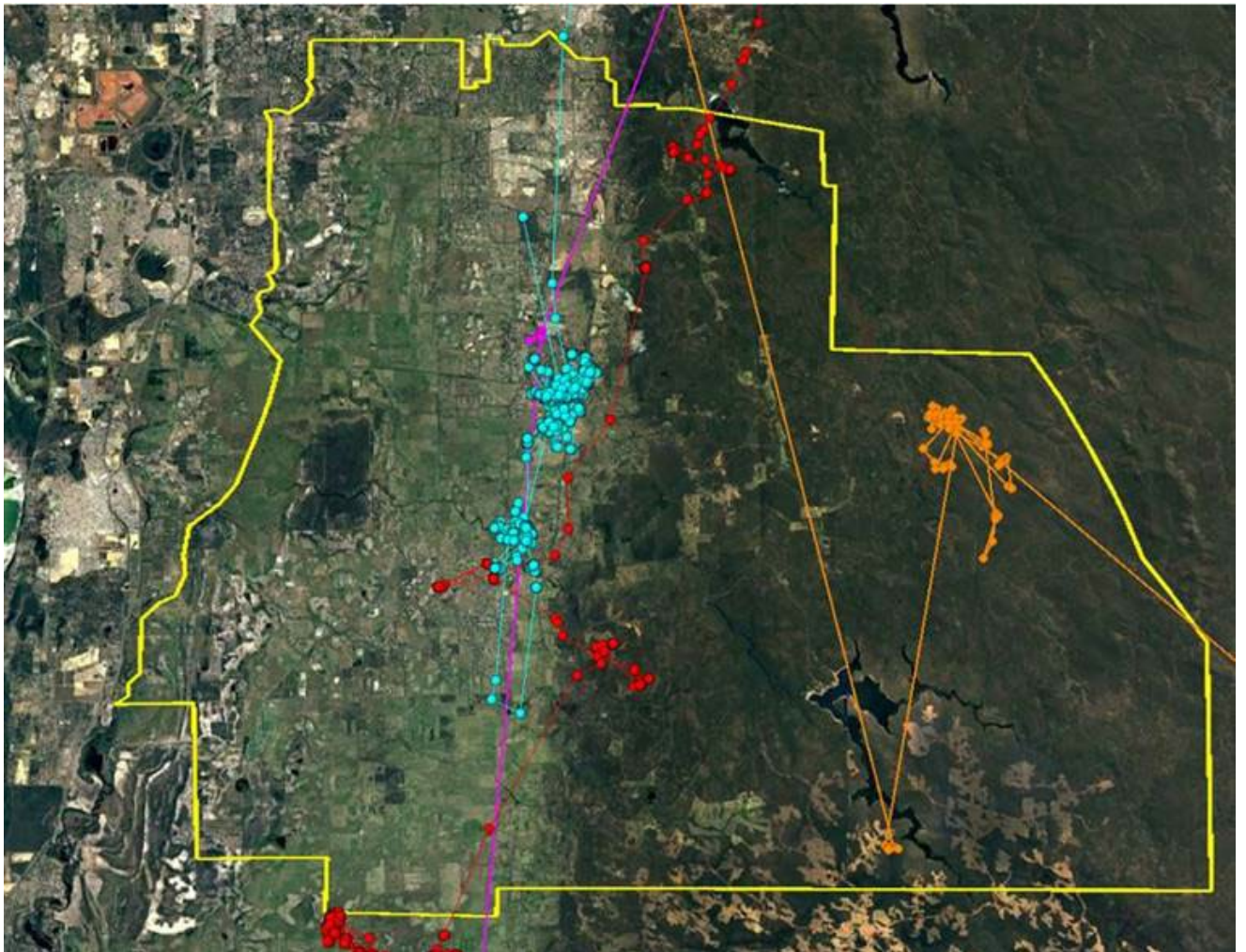
Other sites for consideration:

- Oakford – tbd;
- Jarrahdale – township;
- Keysbrook - Cnr SW Highway and Elliott Rd;
- Darling Downs 70 Acre Reserve;
- Keirnan Rd Sporting Complex.

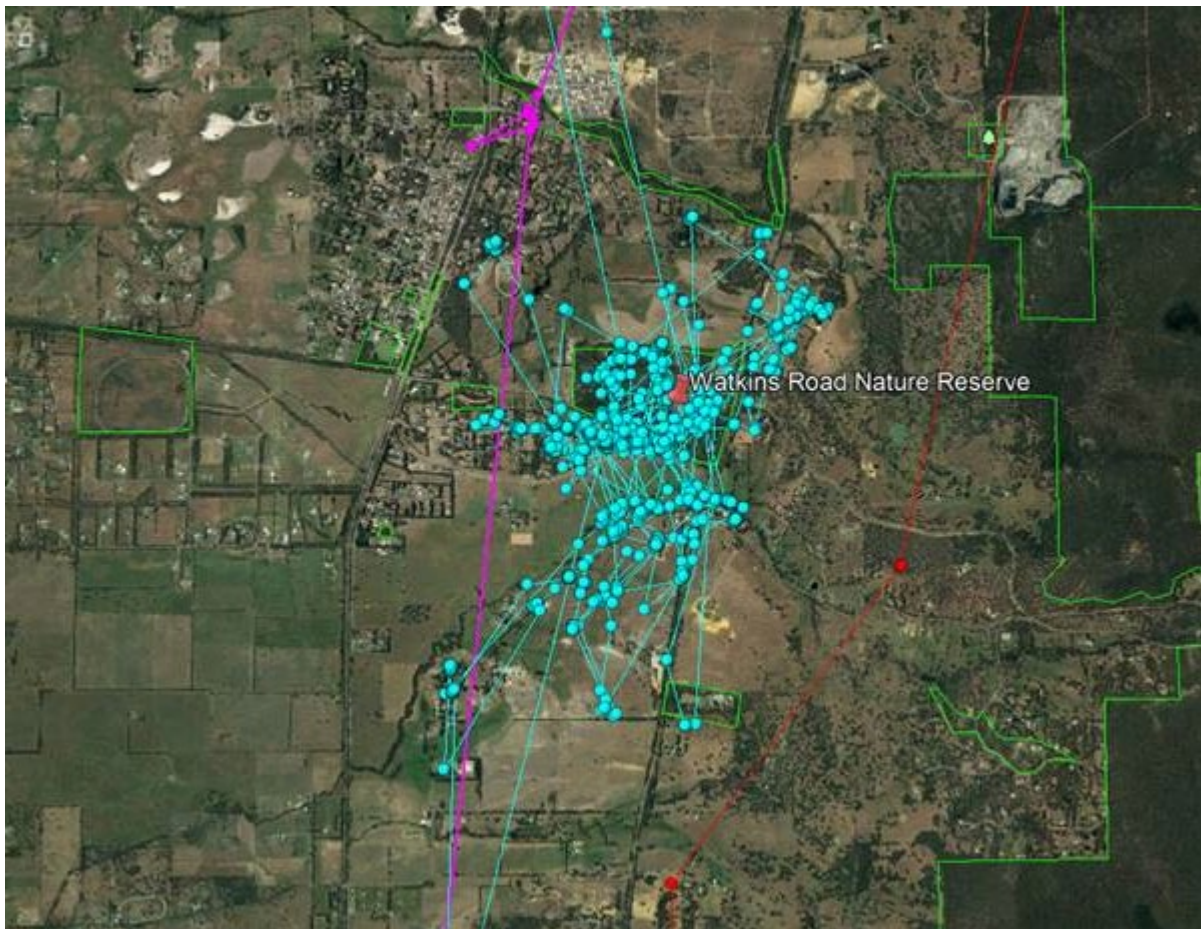
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Appendix one: Black Cockatoo movement, monitored in Serpentine Jarrahdale since 2015.

Through our deployments of GPS and satellite transmitters on black cockatoos since 2015, we have managed to capture some data on flock movements within the Shire of Serpentine-Jarrahdale. The figure below includes the rough LGA boundary (yellow) and data from three Baudin's (purple, blue, orange) and one forest red-tailed black cockatoo (red) and their respective flocks.



Our data suggest the existence of a transit corridor for Baudin's and FRTBC as they move from non-breeding areas in the north of their range to breeding areas in the south, passing along the foothills of the Darling Scarp through the centre of the Serpentine-Jarrahdale LGA in the latter months of the year. This can be seen in the rough route taken by the blue, red and purple tracks. This same strip along the foothills is also a place of temporary residence for some flocks, with the blue movement track indicating the bird and its flock arrived here in September and remained in an area between Serpentine and Mundijong until at least January. We believe a watering station would be well utilised along this corridor, and would benefit both resident and transient flocks.



The figure above highlights one area of particularly heavy use centred around the Watkins Road Nature Reserve in Mundijong. If there is access to mains water supply here (which the Vic Park watering stations require for their automated flushing and refilling) we suggest that this could be a good site. Our data show heavy use of this site for both roosting and foraging and a watering station here would certainly be well utilised.

Another consideration for placement is the public utility these watering stations provide in terms of bird watching opportunities and improving the natural amenity of public spaces. Selecting a well utilised public space that also intersects with bird use will provide the best value for the community and perhaps assist in raising awareness and interest in black cockatoos and other birdlife using the stations. I scoured our data and Great Cocky Count roost locations looking for other sites with bird use close to public spaces but these were not common – the birds tend to predominantly use remnant vegetation on private properties in this area. There is a GCC roost location near Mundijong Oval only 1.1km from the Watkins Road NR – the roost doesn't have a history of strong use during the GCC but may still be used at other times of year since the GCC is always held in April. This could be a good location if you were interested in more public visibility and might encourage more use of the Mundijong oval roost.

Looking slightly further south in Serpentine, again most of the bird activity is centred around vegetation on private property. There are a few public spaces in the vicinity of this activity that may be good options, including Serpentine Primary School, Memorial Gardens Rec Centre and Spencer Park.



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