Assessment of Significance for Major Mitchell's Cockatoo

Major Mitchells Cockatoo (eastern) (*Lophochora leadbeateri leadbeateri)* – Endangered (EPBC Act)

Distribution

The Major Mitchell's Cockatoo (*Lophochora leadbeateri*) (MMC) is found in arid and semi-arid inland landscapes, the species distribution occurs from south-western Queensland to north-west Victoria, through to most of South Australia, north into the south-west Northern Territory and across to the west coast between shark bay and about Jurien (OEH, 2023).

Habitat requirements

MMC is typically distributed across arid and semi-arid woodlands, dominated by mulga (*Acacia aneura*), mallee and box eucalyptus, slender cypress pine (*Callitris gracilis*) or belah (*Casuarina cristata*) (DCCEEW, 2023). The species requires freshwater sources, with trees and suitable nesting hollows.

The MMC has specific preference of nesting hollows close to wooded areas, using these areas for travel between feeding area and nesting or roosting sites. Fragmented landscapes, the vegetated corridors tend to be the preference for travel and well as roadside remnant vegetation patches (DCCEEW, 2023).

Survey Observations

The MMC has been sighted numerous times and identified as a resident within the Subject Land during the Bird Utilisation Surveys (BUS) and surveys undertaken for the development of the Biodiversity Development Assessment Report (BDAR) under the NSW Biodiversity Assessment Method (BAM) for the Proposed Action. Over the 24 month survey period, MMC was recorded 93 times during utilisation surveys and 114 times incidentally.

The large majority of the Development Corridor has been located within degraded and highly disturbed agricultural land which has been cleared over generations of farming and is mainly used for cereal cropping activities. There is a small portion of native vegetation which remains in the Subject Land. This native vegetation is considered potential breeding habitat for the MCC as there are higher condition area of Plant Community Type (PCT) PCT 170 Chenopod Mallee, PCT 16 Blackbox Woodland and PCT 58 Black Oak Woodland, which provide suitable habitat, including tree hollows, for the species. Furthermore, the species is known to potentially utilise small patches of vegetation as habitat, and NSW BioNet notes paddock trees with hollows greater than 10 centimetres in diameter can also be considered important habitat.

The direct impacts to the species from the Proposed Action would be the loss of approximately 32.78 ha of potential foraging and breeding habitat. Direct and indirect impacts would also include the loss of (or impacts within BAM prescribed 200m breeding habitat buffers) at least 24 trees considered suitable for the species' breeding in patches of suitable vegetation, and a further 45 scattered paddock trees that support one or more hollow**.**

The BBUS and BDAR surveys identified the MMC several times throughout the survey program, observations from Nature Advisory identified that MMC were investigating some of the hollow bearing trees within the Subject Land. As such potential breeding on site could not be excluded.*The *32.78 ha figure has been provided from Windlab's Ecology consultants Biosis from updated results from the*

preliminary BDAR which have refined the area of impact, the 32.78 ha has been reduced from the 40.00 ha from which was originally provided in the referral.

Surveys have also identified that the individuals have been noted investigating suitable nesting hollows within the eastern portion of the Subject Land. Based on the species nesting behavior (nests at least 1 km apart with no more than one pair every 30 square km) the Subject Land could be expected to support 5-6 breeding pairs.

During BUS the species was not observed to be flying at Rotor Swept Height (RSH) and is not expected to fly at RSH when transitioning between foraging areas, as such it is considered that this species is at low risk of ongoing operational impacts as a result of collision with operational turbines.

In order to assist in identify whether the Proposed Action has a significant impact to MCC as identified by DCCEEW. Windlab has used the Significant Impact Guidelines 1.1 – Matters of National Environmental Significant (2013) to further inform the assessment.

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

Lead to a long-term decrease in the size of a population

No. The Proposed Action is unlikely to lead to a long-term decrease in the size of the MMC population in Australia. It is expected that the Subject Land could support 5-6 breeding pairs of the species - a maximum of 12 individuals. The national population size is estimated (with low reliability) at ***15,000*** mature individuals in 2011 (DCCEEW, 2023). Therefore, the Subject Land represents a very small portion (0.08%) of the estimated national population.

Reduce the area of occupancy of the species

No. The species area of occupancy is estimated to be 225,000 km^2 (DCCEEW 2023). Proposed Action will lead to the loss of ***32.78 ha*** of Major Mitchells Cockatoo (*Lophochroa leadbeateri)* potential breeding habitat. The species occurs across a large range across Australia and the Proposed Action will lead to loss of potential breeding habitat on a local scale. As such it is not considered likely that the Proposed Action will reduce the area of occupancy for the species.

Fragment an existing population into two or more populations

No. The Proposed Action is not anticipated to increase fragmentation within the population's distribution. The Subject Land has undergone significant disturbance through agricultural practices over the last 100 years and contains patches of remanent vegetation which have largely been avoided through the Proposed Actions design development. In addition to the Subject Land being highly fragmented the surrounding landscape is highly fragmented and includes a variety of uses including utility scale solar farms, agricultural land including cereal cropping and orchids, and the Yanga National Park.

Parts of the surrounding landscape contain native vegetation which may act as a nature corridor. Although these exist in the landscape, they exist alongside road corridors and are typically linear in shape and are fragmented. The most notable example is a linear strip of vegetation within the Yanga Way road easement directly west of the site, extending from the Wakool River in the south to the Yanga National Park in the north. This vegetation corridor is wholly outside of the project area and has been avoided by all project infrastructure with a minimum 1 km setback.

Adversely affect habitat critical to the survival of a species

Yes. The Conservation Advice for MMC describes habitat critical to the survival of the eastern Major Mitchell's Cockatoo consisting of:

- Arid and semi-arid woodlands dominated by mulga (*Acacia aneura*), mallee and box eucalypts, slender cypress pine (*Callitris gracilis*) or belah (*Casuarina cristata*).
- Known habitat containing suitable attributes, including potential habitat for the subspecies, especially where there are large mature trees with suitable hollows; and
- Surrounding matrix of these areas for the role of providing movement corridors for dispersal across the landscape (DCCEEW, 2023).

No Critical Habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of Critical Habitat.

The potential breeding habitat within the Development Footprint is considered to support areas that conform to the attributes listed in the Conservation Advice (DCCEEW, 2023) as habitat critical to the survival of a species. Although there have been extensive efforts made to reduce and minimise impacts to biodiversity, the Proposed Action would likely have a residual impact to MMC critical habitat. The Proposed Action would impact **32.78 ha** of critical habitat for the MCC, in applying a conservative approach and the Precautionary Principal it is considered this is habitat critical to the survival and may be adversely affected.

Disrupt the breeding cycle of a population

Potential. The Subject Land supports potential breeding habitat for the MMC, surveys could not exclude breeding activity in the Subject Land, and it is expected that the Subject Land could support 5-6 breeding pairs. The Proposed Action is expected to lead to impacts to at least 24 hollow bearing trees suitable for breeding within and **32.78 ha** of potential breeding habitat. Furthermore it is expected that 45 scattered paddock trees supporting one or more hollow, providing (lower quality) potential breeding habitat, will also be directly impacted. This is considered to have potential impacts to the breeding cycle of breeding pairs utilising habitat in the Subject Land, and the local population more broadly.

Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

No. The Proposed Action will impact upon **32.78 ha** of potential breeding habitat, however the localised nature of this impact, and the large area of occupancy of this species, mean it is unlikely that the Proposed Action would modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline. The Subject Land is a highly modified environment which has been fragmented previously by land clearing and has been used for continual agricultural practices. While there are patches of remnant vegetation throughout the Subject Land, where possible the Project has implemented design measures to avoid native vegetation where possible.

Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat

No. The Project Area is already located within a highly modified environmental, dominated in land used for cropping agricultural activities. As a part of the construction and operation management of

the Proposed Action a Weed and Pest Management Plan will be implemented to prevent spread of invasive species.

Introduce disease that may cause the species to decline, or

No. The Proposed Action is not likely to introduce Psittacine Beak and Feather Disease, or any other diseases Major Mitchell's Cockatoos are susceptible to. In addition to this the Proposed Action will implement several controls and management plans including a Bird and Bat Adaptive Management Plan, Biodiversity Management Plan and a Weed and Pest Management Plan. Considering the nature of the Proposed Action and the management plans which will be implemented it is considered unlikely the Proposed Action would introduce disease that may cause the species to decline.

Interfere with the recovery of the species.

Potential. Currently there is no recovery plan for the species, however the Conservation Advice outlines conservation and recovery actions for the species, which include:

- Arrest the current decline and achieve a stable or increasing population trend.
- Increase nesting habitat availability within the subspecies' range, and improve connectivity of woodland habitat.

The Proposed Action would lead to the loss of 32.78 ha of potential foraging and breeding habitat for the species, including at least 24 suitable breeding trees, and direct impacts to a further 45 scattered paddock trees supporting one or more hollow, providing further potential (lower quality) breeding habitat, this is consider to have the potential to interfere with the recovery of local population of the species, and therefore species as a whole.

Conclusion

The Proposed Action will impact upon 32.78 ha of MMC foraging and potential breeding habitat considered to confirm to the DCCEEW (2023) requirements for habitat critical to the survival of the species. This also includes the loss of at least 24 suitable breeding trees within intact patches of vegetation, and a further 45 scattered paddock trees supporting one or more hollow, providing further potential (lower quality) breeding habitat for the species. As a result of these impacts, the Proposed Action is also considered to have the potential to disrupt the breeding cycle of the local population. The removal of potential breeding resources is considered to have the potential to interfere with the recovery of the local population, and possibly the species more broadly. Ongoing operational impacts associated with collision with turbine blades are not considered likely as the species is not commonly recorded at RSH, however habitat sterilisaiton and more broad-scale avoidance of operational wind farms is possible.

The above impacts will be assessed further in the Proposed Action's BDAR, however based on the current level of understanding of impacts to MMC, and based on consideration of the above eight factors, the Proposed Actions is considered to have the potential for significant impacts to MMC.

Assessment of Significance for Fork-tailed Swift

Fork-tailed Swift (*Apus pacificus*) – Migratory (EPBC Act)

The Fork-tailed Swift (*Apus pacificus*) is listed as migratory under the EPBC Act, and under the bilateral migratory bird agreements Australia has with Japan (JAMBA), China (CAMBA) and the Republic of Korea (ROKAMBA).

Distribution

The Fork-tailed Swift (*Apus pacificus*) is a regular non-breeding migrant from Asia. It occurs over all states and territories of Australia. Within NSW, few populations of the species have been found west of the Great Divide.

Habitat Requirements

According to the DCCEEW Sprat profile, "The Fork-tailed Swift is almost exclusively aerial, flying from less then 1m to at least 300m above ground and probably much higher."

Survey Observations

There was one (1) sighting of Fork-tailed Swift across project area.

An Action is likely to have a significant impact on a migratory species if there is a real chance or possibility that is will:

Substantially modify (including fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for migratory species

Potential. The Proposed Action is unlikely to impact areas of important habitat. Within Australia the species is considered to be predominately aerial, the nature of the Proposed Action as a wind farm development may alter the airspace above the Project Area, therefore this species may be at risk of blade strike if in the area, or avoidance of potential habitats currently present once the wind farm becomes operational.

Result in invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or

No. The Proposed Action will not lead to invasive species that are harmful to the Fork-tailed Swift. The Proposed Action will implement several controls including a Pest and Weed Management Plan.

Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

Potential/Unlikely. Bird Utilisation Surveys for the Proposed Action resulted in one (1) sighting of the species within the Project Area. In addition to this the species does not breed in Australia (breeds in eastern Asia). Due to it flying to height of up to 300m, the species is considered to be at risk of blade strike, or avoidance of the area and operation wind turbines, therefore it is possible the species migration activity could be disrupted. However Windlab's ecological consultant Nature Advisory have advised collision is likely to be infrequent due to the irregularity of its occurrence, and the small numbers possibly affected do not represent a significant proportion of the total population of this species.

Conclusion

There is potential that there may be direct or indirect impacts to the Fork-tailed Swift due to the potential for the species to fly into the air space being occupied by the turbine's rotor swept area. However, collision is likely to be infrequent, and large-scale disruption to movement pathways is not expected, due to the irregularity of the species' occurrence, and the small numbers possibly affected do not represent a significant proportion of the total population of this species.

Whilst there is potential for impact to this listed migratory species, the impacts are not considered likely to be significant in accordance with *Significant Impact Guidelines 1.1.*

References

Department of the Environment. (2013). *Matters of National Environmental Significance: Significant impact guidelines 1.1*. Australian Government. https://www.dcceew.gov.au/sites/default/files/documents/nes-guidelines_1.pdf

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Department of Climate Change, Energy, the Environment and Water. *Species Profile and Threats Database - Apus pacificus — Fork-tailed Swift.* Australian Government https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=678