
Eramurra Solar Salt Project

Night Parrot Sampling Program

2024

Report to:

Leichhardt Salt Pty. Ltd

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Adaptive NRM

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1. Summary

A desktop assessment was conducted in March 2024 to determine whether Night Parrots (*Pezoporus occidentalis*) are likely to occur within the project envelope for the Eramurra Solar Salt Project. This assessment concluded there was extensive potential foraging habitat within the project area, but only very limited roosting habitat in the form of long unburnt *Triodia* with the complex structure required to support Night Parrots. As the presence of multiple patches of potential roosting habitat at the landscape scale is a feature at sites where Night Parrots are known to occur, it is unlikely that Night Parrots occur at the site, or that the project area represents important habitat for the Night Parrot at the landscape scale.

To confirm that Night Parrots do not currently reside in the small area of potential roosting habitat identified within the project area, a limited program of acoustic surveys is proposed. This program will determine with a high level of confidence whether Night Parrots do exist within this small area of roosting habitat at the time the surveys are conducted. If birds are not detected, given the apparent absence of suitable roosting habitat at the landscape scale, it is unlikely the project area represents critical habitat for the species.

2. Foundations of survey methodology

The design of the sampling program outlined here is informed by the results of research into Night Parrot detection from western Queensland (Leseberg *et al.* 2022) and supported by preliminary research from Western Australia (Parna Ngururrpa Aboriginal Corporation *et al.* in review). Two key assumptions provide the foundation of this methodology.

Firstly, Night Parrots require long unburnt *Triodia* for roosting. At locations where the birds are known to occur in western Queensland, and central and northern Western Australia, Night Parrots establish long-term stable roost sites in long unburnt *Triodia* (Murphy *et al.* 2017, Jackett *et al.* 2017, N. Leseberg unpubl. data) and may occupy these sites for extended periods of up to several years (S. Murphy, N. Leseberg unpubl. data).

Secondly, because Night Parrots are predictably vocal, if occupying a long-term stable roost site, they can be reliably detected at any time of year using autonomous recording units (ARUs) (Leseberg *et al.* 2019, Leseberg *et al.* 2022). This research has determined how ARUs should be programmed and spaced within potential habitat to maximise the probability of detecting Night Parrots if they are present.

A survey program such as this can only determine whether Night Parrots are occupying the survey area at the time the surveys are conducted. If Night Parrots are not detected it is reasonable to conclude that they do not occupy the site at the time of the survey. This does not mean that Night Parrots may not occupy that site at some point in the future. However, the contemporary absence of Night Parrots, coupled with the general absence of suitable habitat within the wider landscape would suggest that the area of interest is not important to the persistence of Night Parrots at the landscape scale.

3. Survey points and schedule

Areas of ‘Potential Roosting Habitat’ within the project area were initially identified using satellite imagery to search for areas of long unburnt *Triodia*, which have a distinctive visual signature (Fig. 1). Site photos and drone footage from within these areas were then examined and defined as ‘Habitat unsuitable’ or ‘Habitat potentially suitable’. Most areas of potentially suitable *Triodia* were judged to be unsuitable, however one area of potentially suitable roosting habitat was identified on the southeastern boundary of the project area.

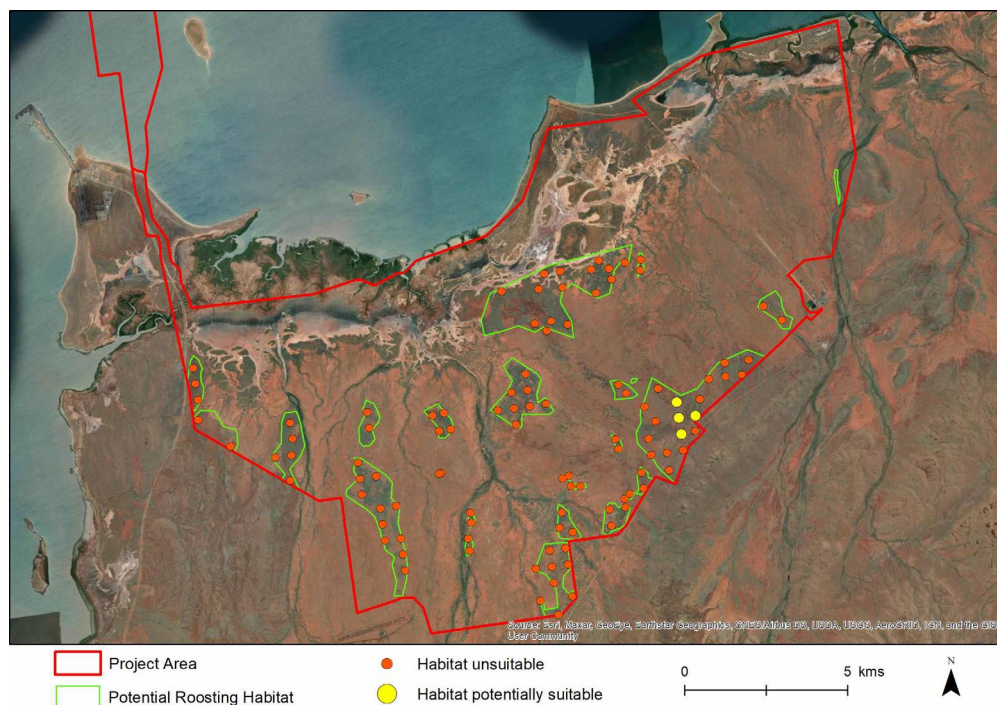


Fig. 1. Green polygons denote areas of potentially suitable long unburnt *Triodia* identified from satellite imagery. Site photos and drone footage from within these areas were then examined and classified as ‘unsuitable’ or ‘potentially suitable’.

Night Parrot calls can be detected by a Song Meter 4 (SM4), or equivalent ARU, to a distance of approximately 200 m (Leseberg *et al.* 2022). As Night Parrots will move around a long-term stable roost site while calling, spacing ARUs approximately 500-600 m apart will ensure birds are detected if roosting at a site. Figure 2 depicts the approximate placement of the ARUs to survey the area of potentially suitable roosting habitat, while Table 1 gives approximate locations for the ARUs to be deployed.

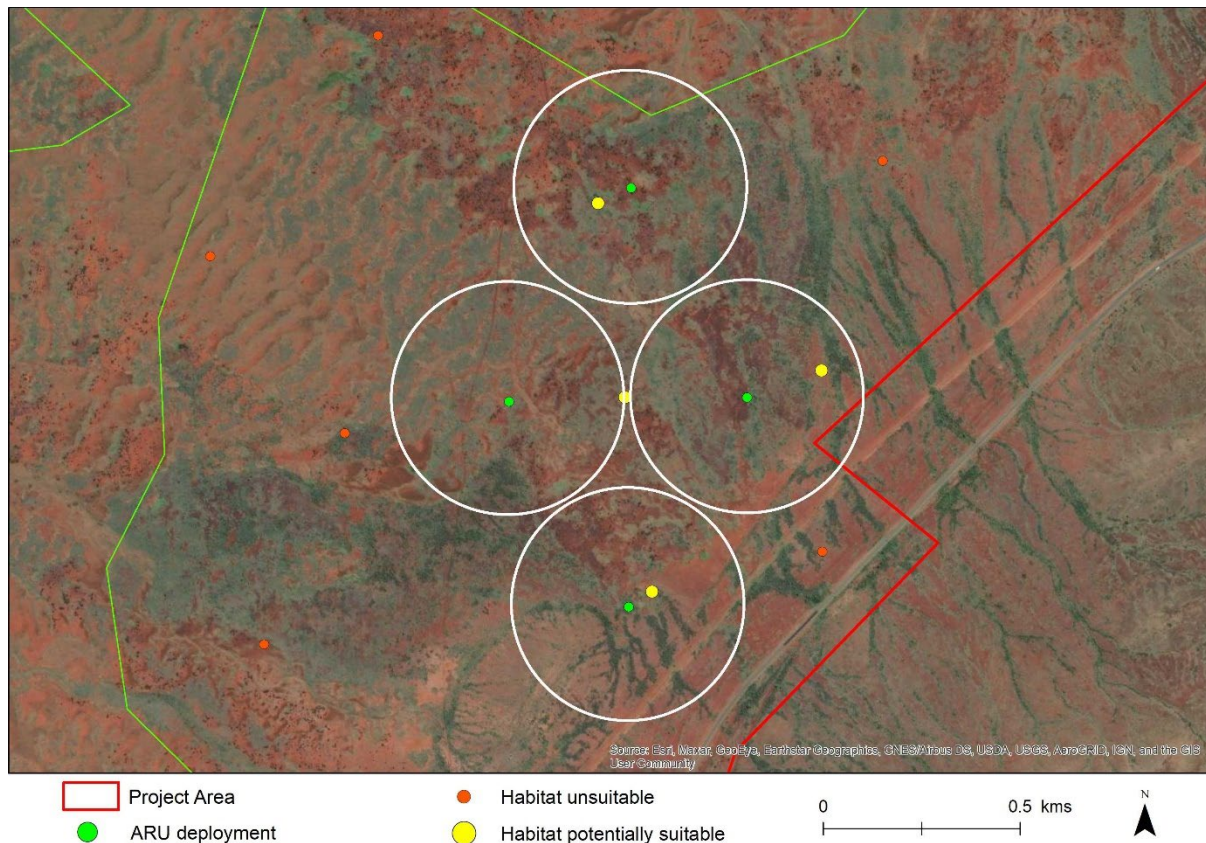


Fig. 2. Approximate placement locations for ARUs within the area identified as holding potentially suitable roosting habitat. The white rings indicate the approximate detection radius of the ARUs.

Table 1. Locations for deployment of ARUs within area of potentially suitable roosting habitat.

Site	Lat	Long
NP01	- 20.928	116.371
NP02	- 20.932	116.368
NP03	- 20.933	116.373
NP04	- 20.937	116.370

ARUs do not need to be deployed at the exact locations given in Table 1. They should be sited as closely as possible to those points, while ensuring they are positioned to achieve the best possible recordings. They should be in the open if possible and clear of any vegetation that may interfere with recordings, particularly if conditions are windy. To maximise probability of detection, ARUs should be set to record from 25 minutes after sunset until 25 minutes before sunrise. This also increases the probability of detecting any birds which may be passing through the area but not roosting at the site during the survey period. If, as in this case, the aim is detection of birds at a single site rather than at the landscape scale, ARUs only need to record for around 5-6 non-windy nights. A total deployment of two weeks will incorporate enough redundancy achieve this.

4. Conclusion

It is important to reinforce the context of this sampling program. The purpose of this limited survey program is to determine whether Night Parrots are currently roosting within the small area of potentially suitable roosting habitat identified on the southeastern boundary of the project area. This survey will not support conclusions around the presence of Night Parrots in the wider landscape, including whether or not Night Parrots may use this area of potential roosting habitat in the future, or whether Night Parrots use the areas of extensive potential foraging habitat in the project area.

However, it must be noted that this is the only area of potentially suitable habitat that was identified within the project area, and that patches of suitable roosting habitat within the wider landscape appear limited. As a feature of sites where Night Parrots are known to occur is multiple patches of suitable habitat at the landscape scale, it seems likely that if Night Parrots are not detected during these surveys, it is unlikely they occur in the wider landscape, or that the habitat within the project area is critical for the species at the landscape scale.

5. References

Jackett, N.A., Greatwich, B.R., Swann, G., and Boyle, A. (2017) A nesting record and vocalisations of the Night Parrot *Pezoporus occidentalis* from the East Murchison, Western Australia. *Australian Field Ornithology*, **34**, 144-150.

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