Government of **Western Australia**
Department of **Environment and Conservation**

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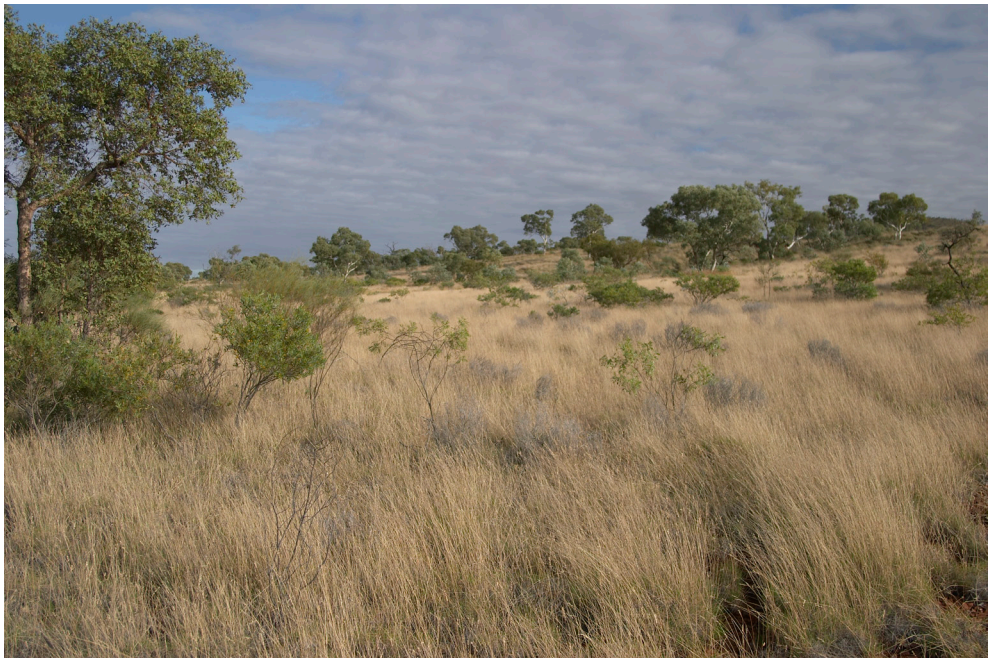
POTENTIAL SUITABILITY OF THE TUREE CREEK FLATS, KARIJINI NATIONAL PARK, FOR NIGHT PARROTS



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Introduction

As part of the Threatened Fauna Offset Plans for the Solomon (EPBC No 2010/5567) and Rail Duplication (EPBC No 2010/5513) projects for FMG, and for the Christmas Creek Water Management Project, it has been suggested that FMG should consider investing in management of the Turee Creek Flats area in Karijini National Park. It has been suggested that the area may be suitable for the Bilby, Northern Quoll and Night Parrot. The purpose of the current investigation was to determine whether the area was actually suitable for the Night Parrot.

Turee Creek Flats

The Turee Creek Flats is an area of around 25,000 ha and is a large basin at the headwaters of Turee Creek. The area is bounded by Rio Tinto's Central Pilbara Rail to the south, Mt Windell to the east, Dinner Hill to the north and Mt Howieson to the west. It is surrounded by upland areas on most sides which give way to gently sloping stony bajada plains covered by spinifex or Acacia shrublands. At the bottom of the catena there are alluvial and sandy colluvial plains dominated by mulga woodlands and Acacia shrublands. The Juna Downs Road traverses the eastern side of the area, and the old Hamersley – Mt Bruce Road traverses the northern edge of the area, providing good access from Karijini National Park operational headquarters.

The Night Parrot

The Night Parrot (*Pezoporus occidentalis*) is an endangered cryptic, ground-dwelling parrot historically recorded from throughout arid and semi-arid Australia (Higgins 1999; Garnett *et al*. 2011). Reviews of specimen labels, the literature and unpublished observations have shown that Night Parrots are associated with habitats dominated by *Triodia* and/or chenopods (including samphires) (Higgins 1999; Murphy *et al*. 2009; Murphy *et al*. in prep.). There is some evidence of an association with areas where these two habitat types are juxtaposed, although the evidence is inconclusive. A consistent, albeit unconfirmed record of Night Parrot sightings provides reasonably strong evidence for a population in the Pilbara region (Murphy *et al*. in prep.).

Factors that have adversely affected medium-sized arid-zone mammals (Burbidge and McKenzie 1989) may have been responsible for the decline of the Night Parrot (Blyth 1997). These include predation by feral cats and foxes, altered fire regimes, competition for food and degradation of habitat near water by stock or rabbits and reduced availability of water as a result of over-use by feral camels. Given the slow worsening of many of these threats, an expert committee recently assessed the species as suffering a continuing decline (Garnett *et al*. 2011).

Because of its cryptic nature, degree of rarity, and small number of confirmed sightings, there is very little known of the ecology of the Night Parrot. Nothing definite is known of its movements, but the species may be present in an area in wet seasons when seed is plentiful, and absent in dry seasons when no seed, or may move from *Triodia* in good seasons to samphire in dry seasons (Higgins 1999).

Site Inspection: Turee Creek Flats

Steve Berris (Ranger, Karijini National Park) and I inspected the study area on 29 February 2012. We traversed the eastern part of the area along the Juna Downs Road, and the northern edge via the old Hamersley – Mt Bruce Road.

The country was in excellent condition following recent rain, and there were at least four species of *Triodia* in various stages of setting seed, and several other grass species were also in seed. Some woody species were in flower, attracting woodswallows and honeyeaters. Consequently, we recorded 42 bird species on the Turee Creek Flats (Appendix 1). This is a high number for such an area.

Much of the area contains *Triodia* species, but most of these areas also contain shrubs (to about 2 metres) or mulga. Views across the area (Figure 1) show that these wooded areas are quite extensive. Much of this woody vegetation consists of *Acacia* shrubs, with scattered eucalypts including *E. gamophylla* and *E. leucophloia*, with scattered stands of mulga (Figure 2).

Most reports of Night Parrots are from *Triodia* grasslands or low chenopod shrublands, with trees or taller shrubs absent or scarce (Higgins 1999). Much of the Turee Creek Flats area is therefore not likely to be suitable for Night Parrots. However, it is possible that Night Parrots could use some of the more open patches at least in wet years when *Triodia* was seeding well. Some of these areas were relatively rich in grass species. For example, one site (Figure 3) had at least four species of *Triodia* in seed (at least three species in the photograph shown in Figure 3), and scattered individuals of other grasses such as *Themeda, Eulalia, Aristida* and *Eriachne*. Other places, as in Figure 4, had larger areas of *Triodia*, but nowhere were they very extensive.

The density, species richness and extent of grasses, including *Triodia*, certainly meant that there were ideal conditions for some granivores at the time of our visit. Indeed, there were unusually high densities of Diamond Doves and Little Button-quail, and we surmised that they had probably been breeding in the area. On the other hand, we were surprised to see no Spinifex Pigeons or Painted Finches during our inspection, and only moderate numbers of Zebra Finches, so presumably the area was not eminently suitable for all granivores. The diet of the Night Parrot is very poorly known, but it has been reported to feed on the seeds of grasses and herbs, particularly *Triodia* (Andrews 1883; Wilson 1937). The species might therefore be able to utilise the area in good seasons. Karijini also contains supplies of permanent water (to the south at Minthicoondunna Spring, to the east at Solly's Soak), which would presumably be of value to Night Parrots in poor seasons (Blyth 1997), but it is unclear as to whether there is likely to be a dry season food source within the park.

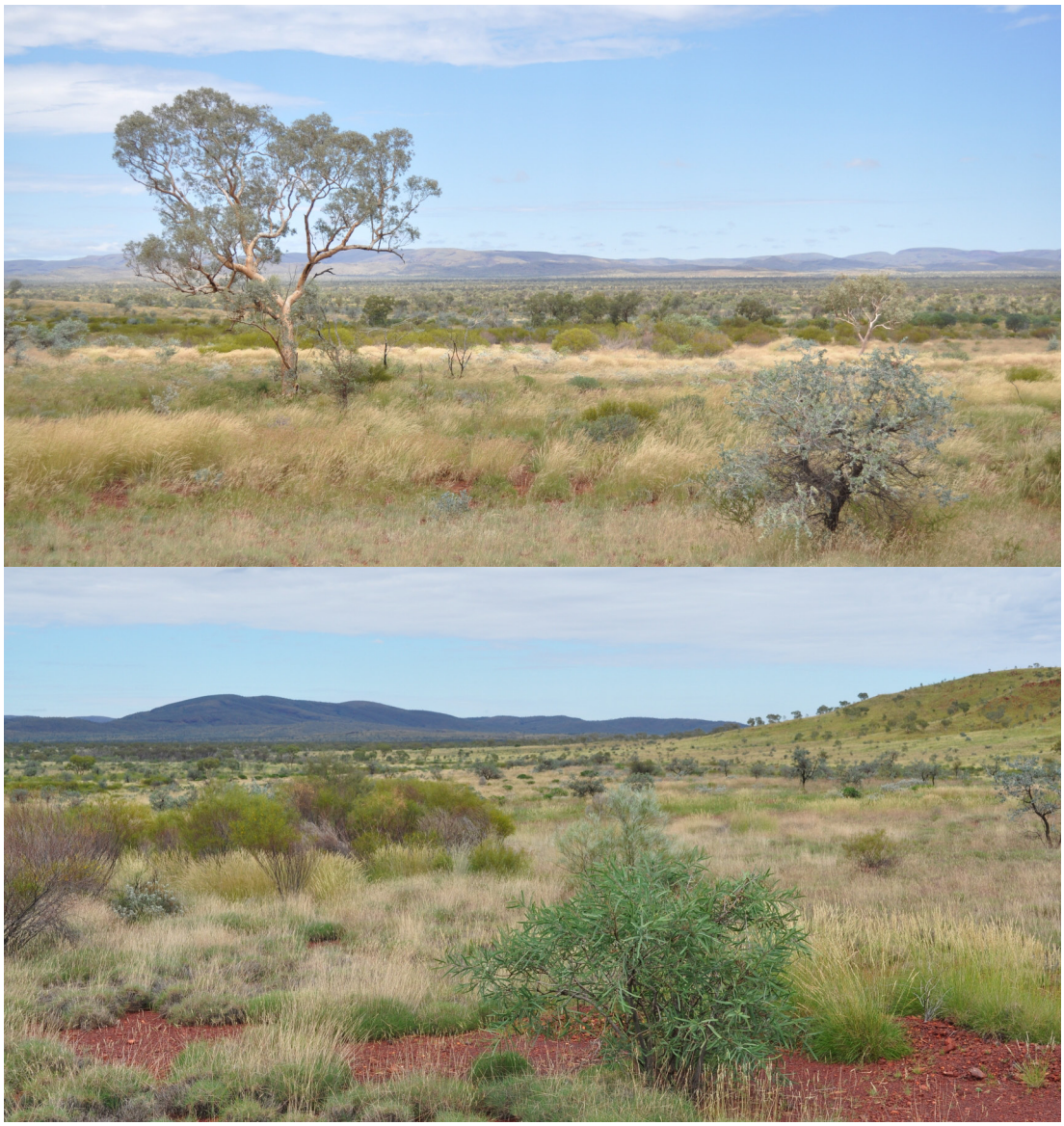

Figure 1. View across Turee Creek Flats from the north (top) and from the west (bottom). Note extensive belts of shrubs and small trees.

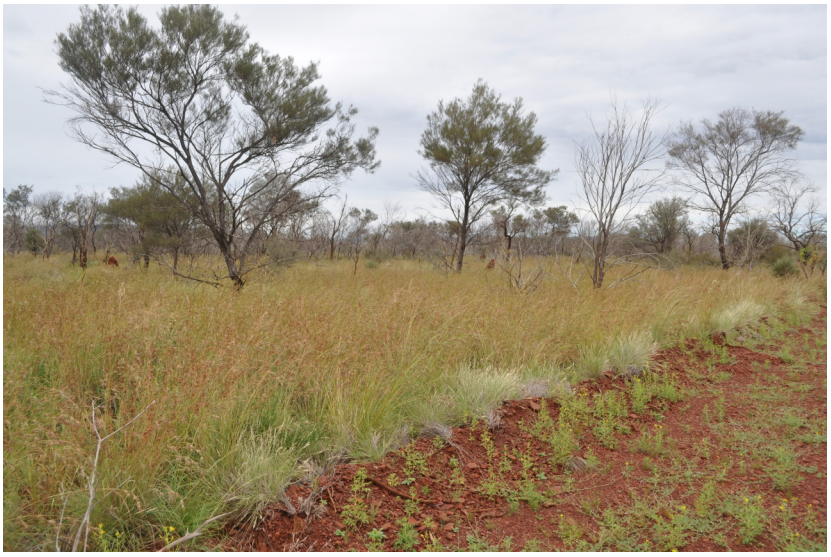

Figure 2. A mulga stand on the Juna Downs Road, with dense *Themeda triandra* grass layer.

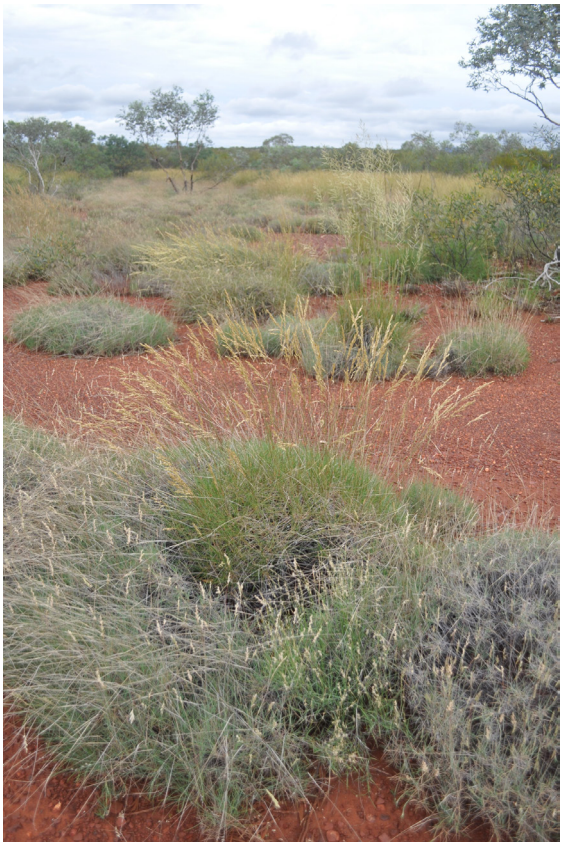

Figure 3. Small patch of grasses amongst banks of shrubs. There are at least three species of *Triodia* in this photo: one small, greyish species (*T. wiseana*) and one medium height greenish species in the foreground (probably *T. basedowii*), and a species with very tall seed-heads in the medium distance (*T. melvillei*). Elsewhere at this site was one other *Triodia* species and scattered individuals of other grass species.

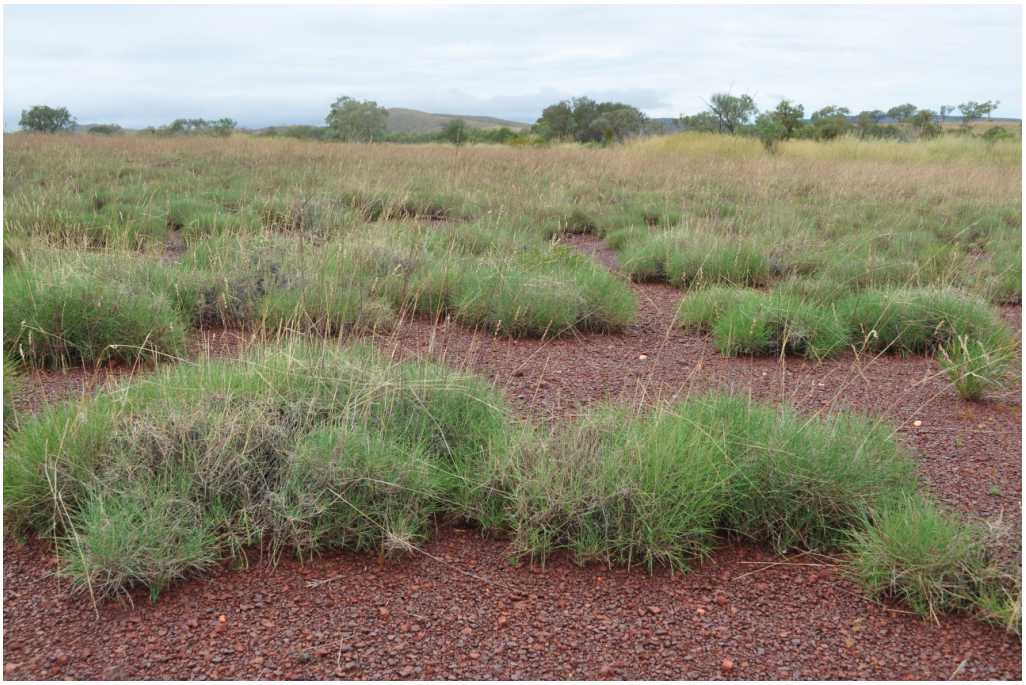

Figure 4. Small grassland of *Triodia wiseana*.

Conclusion

It is possible that the Turee Creek Flats could provide limited areas of habitat suitable for Night Parrots in seasons when *Triodia* was seeding well. However, it probably doesn't provide for year round habitation by Night Parrots.

Acknowledgements

All the staff I met at Karijini were welcoming, friendly and helpful, making the logistics of field work enjoyable. In particular, Jo Shalders provided essential support, Mel Berris was helpful in facilitating communications, and it was a pleasure to be in the field with Steve Berris. Thanks also to Stephen van Leeuwen for advice on plant identifications and locations of water sources.

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Appendix 1. Birds seen on the Turee Creek Flats on 29 February 2012.
Observers: A.H. Burbidge and S. Berris.

Common Name	Scientific Name
Black-shouldered Kite	*Elanus axillaris*
Square-tailed Kite	*Lophoictinia isura*
Spotted Harrier	*Circus assimilis*
Brown Goshawk	*Accipiter fasciatus*
Brown Falcon	*Falco berigora*
Australian Hobby	*Falco longipennis*
Nankeen Kestrel	*Falco cenchroides*
Australian Bustard	*Ardeotis australis*
Little Button-quail	*Turnix velox*
Common Bronzewing	*Phaps chalcoptera*
Crested Pigeon	*Ocyphaps lophotes*
Diamond Dove	*Geopelia cuneata*
Galah	*Eolophus roseicapillus*
Australian Ringneck	*Barnardius zonarius*
Budgerigar	*Melopsittacus undulatus*
Pallid Cuckoo	*Cacomantis pallidus*
Red-backed Kingfisher	*Todiramphus pyrrhopygius*
White-winged Fairy-wren	*Malurus leucopterus*
Weebill	*Smicrornis brevirostris*
Spiny-cheeked Honeyeater	*Acanthagenys rufogularis*
Yellow-throated Miner	*Manorina flavigula*
Singing Honeyeater	*Lichenostomus virescens*
Grey-headed Honeyeater	*Lichenostomus keartlandi*
Brown Honeyeater	*Lichmera indistincta*
White-fronted Honeyeater	*Purnella albifrons*
Black Honeyeater	*Sugomel niger*
Pied Honeyeater	*Certhionyx variegatus*
Crimson Chat	*Epthianura tricolor*
Hooded Robin	*Melanodryas cucullata*
Grey-crowned Babbler	*Pomatostomus temporalis*
Crested Bellbird	*Oreoica gutturalis*
Rufous Whistler	*Pachycephala rufiventris*
Willie Wagtail	*Rhipidura leucophrys*
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*
White-winged Triller	*Lalage sueurii*
Masked Woodswallow	*Artamus personatus*
Black-faced Woodswallow	*Artamus cinereus*
Australian Magpie	*Cracticus tibicen*
Torresian Crow	*Corvus orru*
Zebra Finch	*Taeniopygia guttata*
Spinifexbird	*Eremiornis carteri*
Rufous Songlark	*Cincloramphus mathewsi*