

3 December 2020

Eren Reid
Native Vegetation Solutions
36 Hannan Street
Kalgoorlie, WA 6430

Re: Targeted Malleefowl search for CPS 8857-1

Dear Eren

Terrestrial Ecosystems is pleased to provide the results of a targeted vertebrate fauna survey for the area proposed for clearing under CPS 8857-1 ('project area'). The combined areas searched were approximately ~25ha with the project areas ~56km north of Esperance.

Malleefowl

Malleefowl (*Leipoa ocellata*) are listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999)*, the *Western Australian Biodiversity Conservation Act 2016 (BC Act 2016)* and the IUCN.

Malleefowl are large, ground-dwelling birds that rarely fly unless alarmed or are perching for the night. Historically, Malleefowl have been found in mallee regions of southern Australia from approximately the 26th parallel of latitude southwards. Prior to vegetation clearing for agriculture, Malleefowl were abundant in the WA Wheatbelt. Vegetation clearing for agriculture also opened adjacent bushland to predators, and in the south-west of WA, Malleefowl often now only persist in large isolated remnant patches of native vegetation.

Sheep and other herbivores (e.g. goats, kangaroos) grazing in remnant vegetation removes or thins the undergrowth, and they also compete with Malleefowl for herbaceous foods and can cause changes to the structure and floristic diversity of foraging habitats (Benshemesh 2007), all of which have contributed to the decline of this species.

Malleefowl build distinctive nests that comprise a large mound of soil/rock covering a central core of leaf litter. These nest mounds range in diameter but can span more than five metres and may be up to one metre high. Malleefowl are generally monogamous and once breeding commences, then they pair for life. Malleefowl and their eggs are vulnerable to predation by foxes, and newly hatched chicks are vulnerable to foxes, cats and raptors (Priddel and Wheeler 1990, Benshemesh and Burton 1999, Benshemesh 2007, Lewis and Hines 2014). The presence of nest mounds provides an indication of the presence of Malleefowl in the area.

Johnstone and Storr (1998) described the preferred habitat for Malleefowl as shrubs and thickest of mallee *Eucalyptus* spp., *Melaleuca lanceolata* and *Acacia linophylla* and any other dense litter-forming shrublands.

The National Recovery Plan for Malleefowl (Benshemesh 2007) lists vegetation clearing, habitat fragmentation and isolation, sheep grazing, predation by foxes, and to a lesser extent cats, raptors and wild dogs, and bushfires and climate change as the primary threats to the survival of this species. Conservation and preservation strategies are focussed on habitat protection, in particular use of conservation reserves (e.g. Australian Wildlife Conservancy's reserve at Mt Gibson, and Bush Heritages reserves at Eurardy and Charles Darwin and throughout the south-coast), improved fire management, fencing to contain sheep or exclude them from remnant vegetation in agricultural lands, habitat regeneration and improved connectivity, reducing goats and predator control (Benshemesh 2007).

Field survey

Dr Scott Thompson, with support from Eren Reid, searched and assessed all habitat in the project area for Malleefowl and other species of conservation significance. The assessment was completed on foot and at transect intervals to ensure that all areas are covered.

The field assessment was completed on 2-3 November 2020 across eight separate areas. The areas (Figure 1) have been labelled A-H, and descriptions of the available habitat and potential for utilisation by conservation significant fauna including Malleefowl are provided below.

Area A

Area A is a small, fragmented area of vegetation that has been historically cleared and the extant vegetation is predominantly laying on the ground and provides limited habitat for any fauna (Plates 1 and 2; Figures 1 and 2). There are no Malleefowl mounds and the habitat is not suitable for Malleefowl.



Plate 1 – Area A



Plate 2 – Area A

Areas B, C and D

Areas B, C and D are all small, highly fragmented patches of degraded bushland (Plates 3-8; Figures 1 and 3). The habitat is primary open mallee and shrubland with very limited undergrowth and leaf litter. The areas have been degraded further by rabbits and kangaroos. There are no Malleefowl mounds and the habitat is not suitable for Malleefowl.



Plate 3 – Area B



Plate 4 – Area B



Plate 5 – Area C



Plate 6 – Area C



Plate 7 – Area D



Plate 8 – Area D

Area E

Area E is linked via Areas F and H to a minor east-west habitat corridor (Plates 9-12; Figures 1 and 4). The corridor extends westward into a chain of salt lakes and eastward into another north-south habitat corridor. Area E vegetation is largely intact, however it has had a number of parallel north-south tracks in the area, and a track parallel to the main road cutting through the area. These tracks have fragmented the area but not to the extent that fauna will be unable to use the linkage.

Assessment and searching of Area E recorded no Malleefowl mounds. Although largely intact, the area is too small to sustain a viable breeding Malleefowl mound due to the ready access to predators (i.e. foxes and cats), however, the linkage may be suitable for movement of general fauna through the region.



Plate 9 – Area E



Plate 10 – Area E



Plate 11 – Area E



Plate 12 – Area E

Area F

Area F is linked via Areas E and H to a minor east-west habitat corridor (Figures 1 and 4). The corridor extends westward into a chain of salt lakes and eastward into another north-south habitat corridor. Area F has been historically cleared and the vegetation is predominantly laying on the ground and provides limited habitat for any fauna (Plates 13 and 14). Assessment and searching of the area recorded no Malleefowl mounds and the habitat is no longer suitable for Malleefowl.



Plate 13 – Area F



Plate 14 – Area F

Area G

Area G is a small, fragmented area of vegetation surrounding a constructed dam (Plates 15-16; Figures 1 and 4; note that the available habitat is much smaller than the aerial imagery) due to vegetation clearing. Area G is a very narrow strip of vegetation and insufficient to sustain a viable fauna assemblage. It is primarily used by kangaroos and rabbits or others fauna accessing the dam. There are no Malleefowl mounds in this area and the habitat is not suitable for Malleefowl.



Plate 15 – Area G



Plate 16– Area G

Area H

Area H is linked via Areas E and F to a minor east-west habitat corridor (Figures 1 and 4). The corridor extends westward into a chain of salt lakes and eastward into another north-south habitat corridor. Area H has a 30m wide area of existing cleared vegetation along the northern boundary and some intermittent north-south parallel tracks that cut through this area (Plates 17-20). These intermittent tracks and clearing along the northern boundary have fragmented the area but not to the extent that fauna will be unable to use the linkage. The habitat fragment is still of sufficient quality and extent that it could support a fauna assemblage and act as a linkage between other remnant bushland areas. The assessment and searching of the area recorded no Malleefowl mounds.



Plate 17. Area H



Plate 18. Area H



Plate 19. Area H



Plate 20. Area H

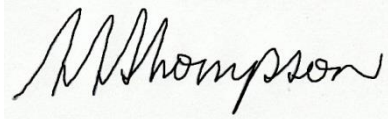
Summary

Terrestrial Ecosystems recommends that no further clearing occurs in Area H. Retaining Area H will maintain the east-west and north south linkages for vertebrate fauna in the region.

The habitat in Areas A, B, C, D, F and G provide limited fauna habitat value. Other than the broader issue of clearing remnant habitat in the region, there are no site-specific issues regarding further clearing in these areas. Area E provides some fauna habitat value and were possible should be retained, however, the east-west link is still functional even if it is cleared.

Please do not hesitate in contacting the undersigned (0407 385 239), if you require any further information regarding this letter.

Yours sincerely

A handwritten signature in black ink, appearing to read 'S Thompson', written on a light-colored rectangular background.

Dr Scott Thompson
Partner and Principal Zoologist

References

- Benshemesh, J. 2007. National Recovery Plan for Malleefowl. South Australia.
- Benshemesh, J., and P. Burton. 1999. Fox predation on Malleefowl three years after the spread of RCD in Victoria. Unpublished report for Parks Victoria and Department of Natural Resources and Environment, Mildura.
- Johnstone, R. E., and G. M. Storr. 1998. Handbook of Western Australian Birds. Volume I - Non-Passerines (Emu to Dollarbird). Western Australian Museum, Perth.
- Lewis, M., and M. Hines. 2014. Malleefowl activity at nesting sites increase fox and other feral animal visitation rates. Pages 242-247 Proceedings of the 5th National Malleefowl Forum 2014.
- Priddel, D., and R. Wheeler. 1990. Survival of Malleefowl *Leipoa ocellata* chicks in the absence of ground-dwelling predators. Emu **90**:81-87.

Figure 1. Project area for assessment



Figure 2. Area A



Figure 3. Areas B, C and D



Figure 4. Area E, F, G, H

