

Fauna impact assessment of the proposed clearing of vegetation adjacent to Emu Beach Holiday Park, 8 Medcalf Pde, Albany.

Prepared for the City of Albany by Sandra Gilfillan, May 2021

1. Proposed clearing

The proposed clearing covers two areas on the eastern boundary of the Emu Beach Holiday Park adjacent to Firth St, Emu Point (see Figure 3.). Area 1 is 0.107 ha and Area 2 is 0.215 ha (total area is 0.322 ha).

The site is to be parkland cleared consisting of removal of mid-storey and ground cover, and a percentage of the trees (Peppermint (*Agonis flexuosa*)) forming the upper storey.

2. Assessment of habitat for conservation listed fauna species

2.1 Vegetation type and condition

Area 1

Area 1 consists of Peppermint Low Forest/*Lepidosperma gladiatum* Sedgeland which occurs in swales behind fore dunes (ARVS unit (Sandiford and Barrett 2010)). The *Lepidosperma gladiatum* sedge layer is present, covering a large percentage of the site, along with a small cover of the sedge *Desmocladius flexuosus*, however Kikuyu is invading this layer. Some native species occur sparsely in the shrub layer (*Rhagodia baccata*, *Hibbertia cuneiformis*, *Hardenbergia comptoniana* and *Pimelea clavata*), however the shrub layer has a large percentage of weed species (Common Grouse (vine) (*Senecio angulate*), loquat (*Eriobotrya japonica*), (*Pelargonium* sp.) and Bridal creeper (*Asparagus asparagoides*) (Figure 1)). Rabbit diggings are moderately numerous, causing disturbance to the moss ground covering.

The tree canopy layer of Peppermints provides an almost continuous connected canopy, both within the site and with the canopy in the adjacent intact vegetation to the east.

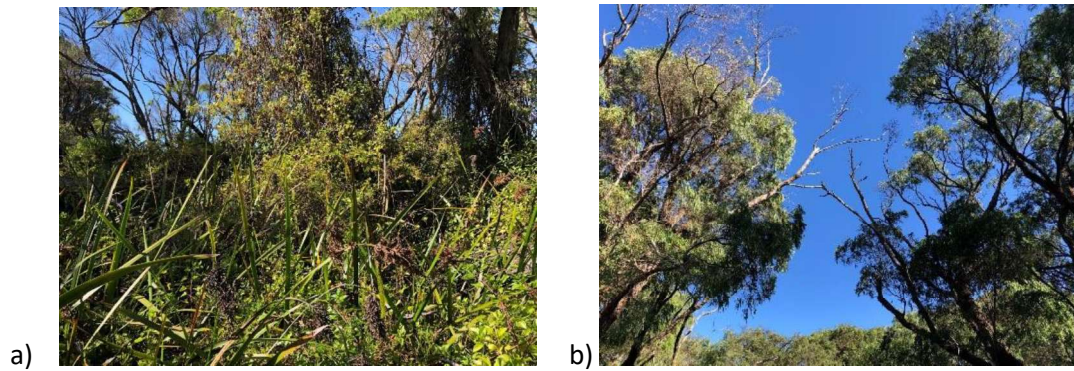


Figure 1: Mid and ground layer vegetation of weeds and some natives; b) largely connected tree canopy with small gaps.

Area 2

Area 2 also comprises Peppermint Low Forest/*Lepidosperma gladiatum* Sedgeland. The upper storey of Peppermint is largely intact; however the mid, lower and ground layers are highly infested with weeds, mostly of the species also seen in Area 1 (plus Arum lily (*Zantedeschia aethiopica*)). The vine (*Senecio angulate*) is very prolific and is growing high up the trunks and into the canopies of some of the Peppermint trees.

A few native species are present in low numbers (*Spyridum globulosum* and *Rhagodia baccata*).





Figure 2: Area 2 a) Mid-storey largely comprising weed species. b) Peppermint trees forming an almost continuous canopy in the eastern part of Area 2. c) the vine (*Senecio angulata*) growing high up into a Peppermint tree. d) ground cover of mostly weeds but with the occasional sedge (*Desmocladus flexuosus*)

2.2 Habitat for conservation significant species on the site

The habitat within Area 1 and 2 was assessed to be suitable for two conservation significant fauna species:

1. Western Ringtail Possum (*Pseudocheirus occidentalis*) (CR – State and EPBC Act listing)

The presence of Western Ringtail Possums (WRP) was assessed in Area 1 and 2 by spotlighting on one night (12/03/21) and two day searches (28/03/21 and 08/07/21) to look for WRP dreys.

Two WRPs were spotlighted, however this was possibly the same individual. One possible drey was observed within Area 1 in thick vines (*Senecio angulata*) that cover some of the Peppermint trees (Figure 2). No dreys were observed in Area 2. The thickness of the vines made it difficult observe dreys.

WRP are known to shelter on the ground in thick sedge layers (Van Helden et al. 2018), thus the presence of sedges may provide refuge sites in addition to dreys.



Figure 2: Area 1: location of possum sightings, possible drey and trees to be retained. Trees in Area 1 are marked with a red circle which approximates the diameter of an average tree canopy on the site (2.5 m). Area 2: location of the area of almost continuous canopy cover.

2. Southern Brown Bandicoot (Quenda) (*Isoodon obesulus* subsp. *fusciventer*) (P4 -State listing only).

The presence of Quenda in Area 1 and 2 was assessed by the spotlighting on one night (12/03/21) and in Area 1 and 2 by a day search for characteristic diggings (28/03/21 and 08/07/21).

Thick sedge layer is suitable habitat for Quenda, and Quenda are known to occur in vegetation behind the dunes along Middleton Beach (SG pers. obs). No Quenda were seen during spotlighting and no diggings were observed. However, the area is infested with rabbits (17 individuals were spotlighted within 400 m along the edge of the remnant bush and the caravan park by Sandra Maciejewski on the 12/03/21, before a Calicivirus release) and their diggings make Quenda diggings hard to detect. The high number of rabbits may exclude Quenda from this site.

3. Significant impact assessment on relevant conservation listed fauna species.

1. Western Ringtail Possum

At least one, possibly two WRP was observed currently using the site (Area 1 and 2 and habitat in between). The densities of possums in this specific area have not been determined, but around Albany high densities of WRPs (1-4 individuals /ha) occur in Jarrah, Marri, Sheoak and Peppermint forest or woodland (Biota 2018a and b; 2019: Gilfillan and Comer 2018: Van Helden et al. 2018).

The site is contiguous with a large remnant stretching to Middleton beach and Mt Clarence. This larger area of remnant vegetation should be considered core habitat for WRP (Rathbone and Gilfillan 2018) and as such the area to be cleared is therefore part of a core area of habitat for WRP.

Impacts of parkland clearing of this site will therefore:

- Reduce crown connectivity, decreasing the ability of possums to move through the canopy. Figure 2 shows that retaining only the trees currently marked will likely result in a reduction in canopy connectivity by approximately 70% and create gaps wider than currently occur.
- Remove food and shelter trees and shelter sites within the ground layer.

2. Southern Brown Bandicoot (Quenda)

It was not confirmed that Quenda are using the site, however they are known to occur in close proximity. The recent release of the Calicivirus in the area will hopefully reduce rabbit numbers (a spotlight on the 31st March, after the Calicivirus release, along the same route walked by Sandra Maciejewski on the 12/03/21 recorded only 6 rabbits, a reduction of 11 from the pre-release numbers). Lower rabbit numbers may reduce competition for shelter and allow Quenda to use the site in the near future.

Impacts of parkland clearing of this site on Quenda will therefore:

- Remove or decrease food supply (bulbs, invertebrates).
- Remove shelter opportunities in the ground layer.

3. Recommendation on how to reduce the impact of the work on fauna present or likely to be present.

1. Western Ringtail Possum

The Significant Impact Guidelines for WRP on the Swan Coastal plain (DEWHA 2009) state that the following measures may assist in mitigating impacts on the WRP:

1. *retain and improve remnant habitat patches, including corridors*
2. *retain peppermint trees with a diameter at breast height of greater than ten cm, while also avoiding: – soil disturbance within three meters of the trunk – heavy branch pruning, which may affect connectivity of the canopy, and – filling around the base of trees*
3. *avoid creating breaks of six metres or more in existing canopy cover*
4. *use landscape plantings as a means of creating or improving connectivity. For example: – plant and nurture new peppermint trees (and sedge understorey) to replace any that must be removed – plant and nurture additional peppermint trees (and plant sedge understorey) to fill in gaps or enhance existing habitat*
5. *where solid fences are required, construct to a height of 180–240 cm to allow possums to move around with less risk of dog attack*

2. Southern Brown Bandicoot (Quenda)

Retaining some thick ground cover (in particular sedges) will allow Quenda, if present, to find shelter and provide food resources.

3. Recommendation on whether the proposed works require a referral under the EPBC Act (1999).

The area to be cleared (Area 1 and 2) should be considered part of core habitat for WRP (Rathbone and Gilfillan (2018). According to Significant Impact Guidelines for WRP on the Swan Coastal plain (DEWHA 2009); *There is a real chance or possibility of a significant impact on the species if the action will result in one or more of the following in **core** habitat;*

- *clearing in a remnant habitat patch that is greater than 0.5 hectares in size.*
- *clearing of more than 50% of a remnant habitat patch that is between 0.1 and 0.5 hectares in size.*

As the total area to be cleared is 0.322 ha, only 50% should be cleared to avoid significant impacts on WRPs. If one of the options for mitigating the impact listed below are employed, with the aim of retaining this percentage, the proposed clearing would **not** need to be referred under the EPBC Act (1999) with respect to WRP impacts.

Options for mitigation of impact:

1. Retain 50% of canopy cover, and 50% of sedge understorey.

As the native vegetation understory (including sedge's) in the additional area is very sparse and highly infested with weeds the retention of 50% of sedge under-storey will need to be largely addressed the first clearing proposal area. It should be noted that although infested with weeds, this understory still likely forms refuge habitat for Western Ringtail Possums.

2. Retain canopy and sedge layer connectivity such that one continuous connected route occurs through the area irrespective of % retained (this could be attained by retaining trees that form the connected route or by strategic re-planting of Peppermints and understorey in the old depot site).
3. As canopy connectivity in the Area 2 is high in the area marked as black hatch, and low in the remaining area (Figure 3), it is recommended that tree removal should occur in the area outside of the black hatched area as a priority.
4. Retain 25% of canopy cover, and 25% of sedge understorey but augment habitat by planting Peppermint trees and sedge understorey in a nearby site (for example the old caravan park depot).

Note: As the area of clearing is small and therefore the loss of area of habitat is low with respect to the area required for an individual Ringtail, the loss of connectivity will likely be the main impact on Ringtails. Therefore, maintenance of connectivity wherever possible is the preferable option.

4. References

- Biota (2018a). A Regional Survey of the Western Ringtail Possum. Unpublished Report for Main Roads Western Australia, Biota Environmental Sciences.
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Sandiford, EM, Barrett S (2010) Albany Regional Vegetation Survey, Extent Type and Status. Report for the Department of Environment and Conservation, Western Australia.

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