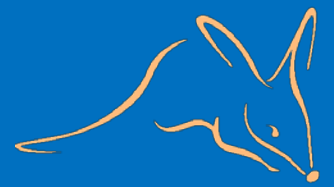




Threatened Flora Survey, Paruna Wildlife Sanctuary Fenceline, 2017

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Note: all photographs in the report were taken by Fay Lewis (AWC).

SUMMARY

Australian Wildlife Conservancy (AWC) has submitted a Development Application to the City of Swan for a feral predator-proof fence and internal tracks on Paruna Wildlife Sanctuary. As part of the application, an assessment of threatened flora and threatened ecological communities along the route of the proposed fence and tracks was made. No threatened ecological communities occur on Paruna. A field survey was carried out to identify any threatened plants that could be affected. No threatened (Declared Rare Flora) were found.

Background

Paruna Wildlife Sanctuary, owned and managed by Australian Wildlife Conservancy (AWC), was established in 1998 following the acquisition of several adjoining properties. The properties had been developed for grazing to varying degrees, so that parts of Paruna were thoroughly cleared, parts parkland cleared, parts had been fenced and grazed with little clearing, and other parts were essentially intact. In addition, timber had been harvested from several areas by either clear-felling or selective logging, and the trees that regenerated are now semi-mature.

After acquisition, a feral predator-proof fence was constructed along the southern boundary of the sanctuary, separating it from the neighbouring farmland. However, the other boundaries remained open to incursion from feral cats, foxes, pigs, goats, sheep and rabbits. Despite intensive feral animal control programs, Paruna's wildlife and habitats continue to be threatened by these introduced species. The range of habitats on Paruna mean it has the potential to become a valuable site for reintroducing several threatened and locally extinct wildlife species, but AWC's experience has shown that reintroductions are likely to fail unless feral species, in particular foxes and cats, are completely excluded. To achieve this, AWC plans to fully enclose most of the sanctuary within feral predator-proof fencing. The protected area would be approximately 1,400 ha and require 11.2 km of new fence.

The fenceline would consist of a cleared zone 11 m wide with the fence running along its centre. The width is necessary to provide a firebreak, to provide access for fence and maintenance and fire management, and to reduce the risk of falling branches damaging the fence. For much of its planned route, the fence follows existing tracks, but it would be necessary to remove vegetation to achieve the required cleared width. In addition, the Development Application submitted to the City of Swan proposed new tracks be established within the fenced area to provide improved access for fire management purposes (see Figure 1 and Figure 2).

A survey was carried out along the routes of the new fenceline and tracks to assess whether the project would affect any threatened plant species. This report describes the survey and its results.

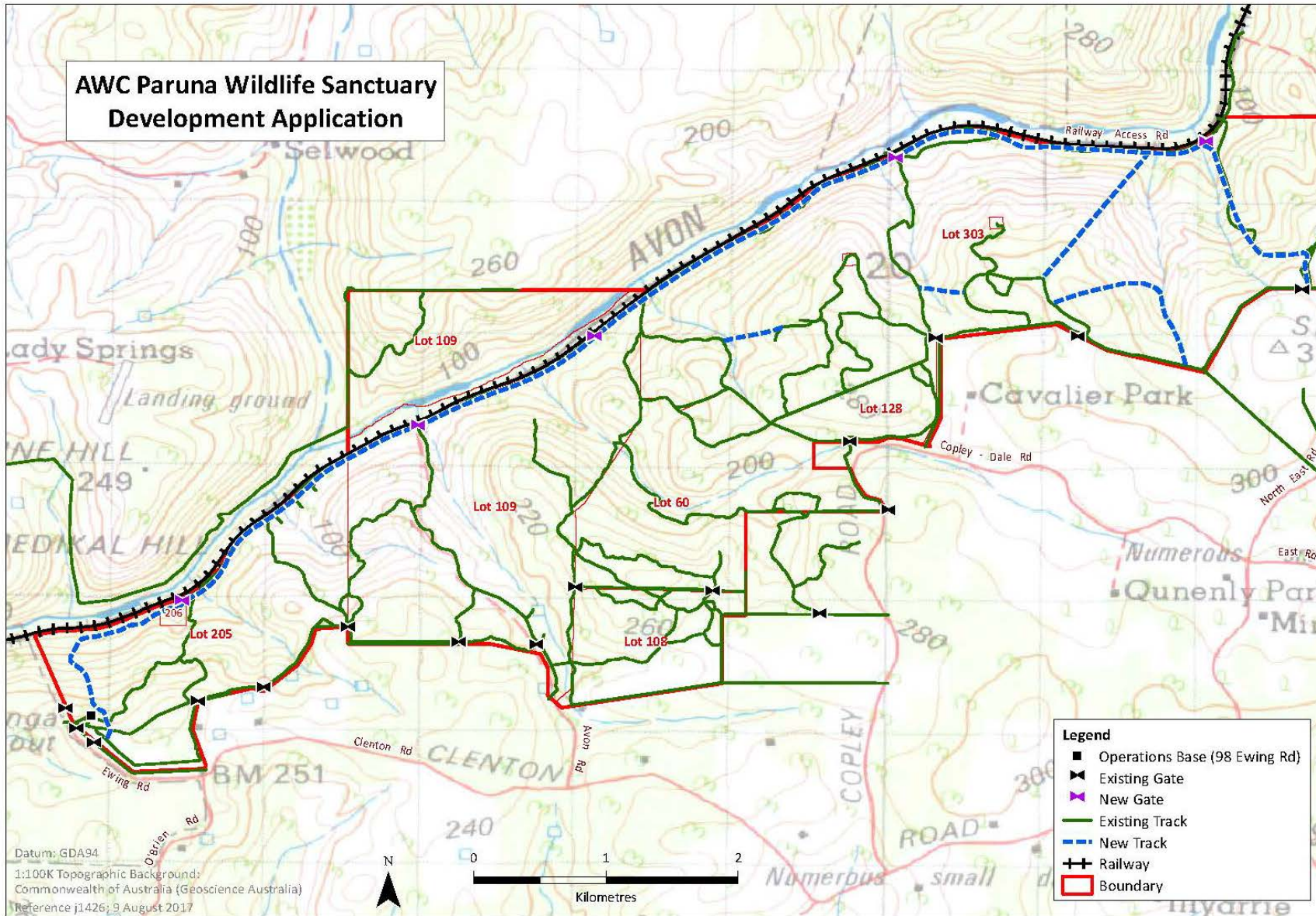


Figure 1: Map submitted to City of Swan in AWC's Development Application. Note that routes of new fenceline and proposed tracks are distinguished in Figure 2.

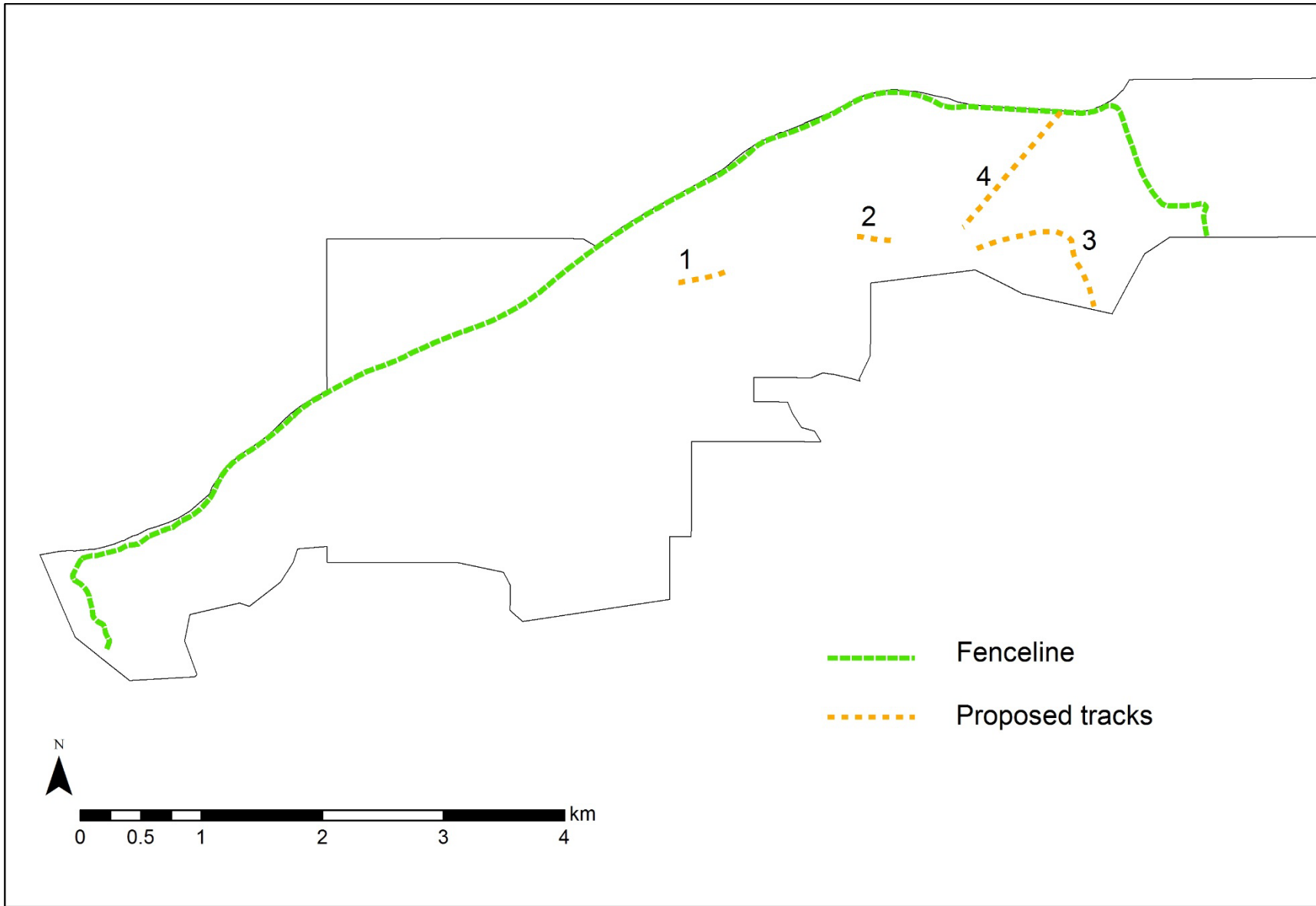


Figure 2: Routes of fenceline and tracks proposed in Development Application

Survey objectives

The objective of the survey was to identify any threatened plants or threatened ecological communities that could be impacted by the proposed clearing and record their locations.

In this report, the term 'threatened plant' refers to any native plant species that is specially protected under the Wildlife Conservation Act 1950, listed under Schedules 1, 2 and 3 of the Wildlife Conservation (Rare Flora) Notice (which may also be referred to as Declared Rare Flora) or on the Federal Government's EPBC list. 'Threatened ecological community' refers to communities appearing on the *List of Threatened Ecological Communities (TECs) endorsed by the Western Australian Minister for Environment* or the Federal Government's EPBC list.

An examination of the location, landforms and vegetation communities present on Paruna showed that they do not fit the criteria for any threatened ecological communities. Therefore, the survey concentrated on identifying threatened flora.

Survey methodology

A list of threatened species that might be in the vicinity of the proposed clearing activity was derived from:

- EPBC Act Protected Matters Report for Paruna and surrounding areas dated 28 February 2017
- Naturemap search for Paruna and surrounding areas dated 28 February 2017
- Previous AWC records for Paruna.

The Paruna plant database has no substantiated records of threatened flora having been found on the property. The Naturemap search of Paruna and its surrounds listed only one threatened species, *Diplolaena andrewsii*, which is not EPBC-listed. The EPBC search for Paruna and its surrounds identified one additional species known to occur within the vicinity (*Thelymitra dedmaniarum*), and 11 others that were likely or might occur in the area. The likelihoods of each species occurring along the proposed clearing routes were assessed based on the landscape positions the species had been recorded in according to their Florabase descriptions (<https://florabase.dpaw.wa.gov.au>). For instance, species found in wetlands on the Coastal Plain were classed as unlikely as the routes to be surveyed were neither on the Coastal Plain nor passed through wetlands. On this basis, five threatened species were classed as possibly occurring on Paruna (Table 1).

Table 1: Threatened plant species possibly present on Paruna.

Species	EPBC Category	WA class
<i>Acacia anomala</i>	Vulnerable	Threatened Flora (Declared Rare Flora - Extant)
<i>Diplolaena andrewsii</i>		Threatened Flora (Declared Rare Flora - Extant)
<i>Grevillea flexuosa</i>	Vulnerable	Threatened Flora (Declared Rare Flora - Extant)
<i>Thelymitra dedmaniarum</i>	Endangered	Threatened Flora (Declared Rare Flora - Extant)
<i>Thelymitra stellata</i>	Endangered	Threatened Flora (Declared Rare Flora - Extant)

The survey was carried out in September and October 2017, the time of year when annual species are likely to be alive and when many plants are readily identified because they are flowering or seeding. The survey consisted of walking the route of the fenceline twice, once in each direction. Vegetation within about 20 m of either side of the proposed fence was inspected. Along many stretches, a wider zone was surveyed in case the route had to be diverted around rocks, drainage lines, etc. A GPS was used to record locations of observations.

It was found that there were existing tracks close to the proposed routes of tracks 2 and 3 (Figure 3), and these would require little or no widening, so tracks 2 and 3 were no longer needed and would

not be cleared. However, as a precaution, the bordering vegetation of the two existing tracks (labelled 2A and 3A in Figure 3) was inspected for threatened flora in October 2017. The need for proposed tracks 1 and 4 (Figure 3) was reconsidered by AWC and it was decided that neither would be required and so they would not be developed. Therefore, their routes were not surveyed for threatened flora.

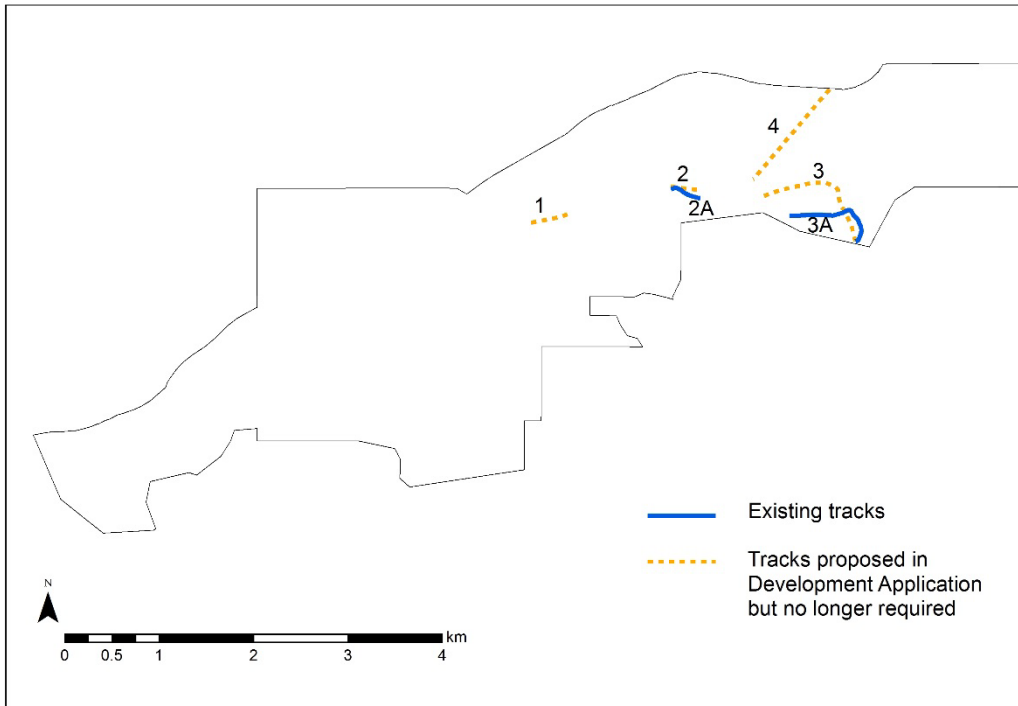


Figure 3: Existing tracks and tracks that were proposed but no longer considered necessary

Survey results

No threatened flora species were found along or close to the route of the proposed fence. As noted previously, no threatened ecological communities occur on Paruna.

One *Acacia oincinophylla* subsp. *oincinophylla* shrub was found on the edge of an existing track (Figure 4). It is listed as Priority 3 under WA legislation. Its location (-31.692368S, 116.111762N) is shown in Figure 5. No other plants of the species were found after thorough searches nearby.



Figure 4: The one *Acacia oncinophylla* shrub identified during the survey

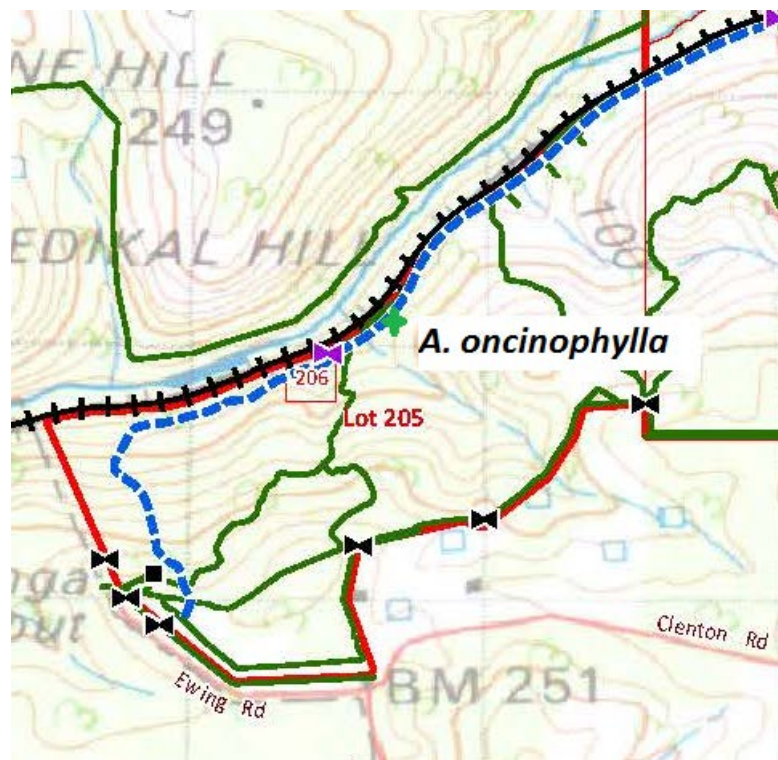


Figure 5: Location of the *Acacia oncinophylla* shrub (green cross) identified during the survey

Surveyor

Dr Fay Lewis carried out the survey. Having produced a detailed vegetation map of the sanctuary, she is particularly familiar with the flora of the area.