

**Purdon Planning Section 66 Deakin.
Ecological Value Assessment. December 2017.
Critique by Red Hill Regenerators**

General comments

The report is cursory in nature, erroneous in its application of assessment criteria, inadequate in its assessment of values and completely lacking in credibility.

The report contains no detailing of the species found on site, and mentions less than a dozen species. This is perhaps not surprising as the survey was conducted at an unsuitable time of the year and under adverse conditions, when most native wildlife would not be observable. The report refers to ACT mapping of endangered woodland on the site, but then ignores this, with the only explanation being an erroneous interpretation of woodland inclusion criteria.

The report fails to mention two nearby occurrences in similar habitat of the threatened Golden Sun Moth and Perunga Grasshopper and inexcusably missed the occurrence of the endangered Button Wrinklewort, adjacent to the proposed development site.

The report wrongly describes and maps the vegetation of the site.

The report also contains no assessment of the values that would be indirectly impacted by the proposal, and inadequately lists the potential indirect impacts that are likely to result.

Specific Comments

- It is odd that the report was based on a 'desktop assessment' that was only looking at the 'likely' vegetation with no explanation about what one might see as the need for a proper report at some future stage of the proposed development, for example an EIS. Not only was the site survey done in winter, it was done on just one day in winter. The author of the report seems to have credentials <http://www.anpc.asn.au/committee> so it is hard to understand why the author would make public a report in this state.
- The survey was undertaken in July 2017, during a dry winter and under heavy kangaroo grazing so that much of the diversity of the site would not be apparent. The poor timing for the survey was not explained in the report. As detailed below, this has led the report to its erroneous conclusions.
- The survey also mis-interpreted the presence of Snow Gum and Ribbon Gum near the boundary of the site as being planted rather than being indigenous to the site (this can be verified by aerial photo analysis). Contrary to the report statements, the indigenous nature of these trees indicate that the site is on the ecotone between grassland and Box-Gum

Woodland and hence adds a habitat type not found elsewhere on Red Hill. It is an important part of a wider highly significant patch. Being an ecotone area also opens the possibility of threatened predominately grassland species occurring on site including the Golden Sun Moth and Perunga Grasshopper. The Golden Sun Moth has been recorded about 300m down slope of Section 66 and Perunga has been recorded on Mt Davidson (the part of Red Hill Nature Reserve behind Garran). It should be assumed that these species occur on site until targeted surveys during times of the year when these species could be observed are undertaken, and there is adequate effort to confirm the presence of these species on the site or to conclude that they are unlikely to be there.

- It is unclear why the report claims that the preferred habitat of both the Golden Sun Moth and Perunga are not present on the site, when the habitat present is very similar to that of where both species have been observed both locally in the North Woden area and more widely across the ACT. Certainly, the key habitat elements for these species (particular native grasses and herbs) are present on site. Nor is there any mention of the close occurrence of these species to the site, despite this information being publicly available on the Government ACTMAPi website.
- The consultant (page 8) makes the erroneous conclusion that plantings over an understorey dominated by native species means that the vegetation cannot be considered as native and, because they only found five species in the most diverse 20m x 20m quadrat, it is not threatened woodland. However, in the same-sized quadrat on site, three significant non-grass species with a total of 15 non native grass species have been found – but this plot survey wasn't taken in the middle of winter, when the understorey had been grazed to a few millimetres. It is a major flaw that could be seen as dishonest to conduct such a survey at this time without acknowledging the limitation.
- It is perhaps therefore not surprising that Figure 1.1 bears little resemblance to the occurrence of native vegetation across the site.
- The report mentions but disregards the mapping of part of Section 66 by ACT Government ecologists (Maguire and Mulvaney 2011) who compiled a map of endangered Yellow Box – Blakeley's Red Gum woodland across the ACT. It is odd that the consultants instead refer to earlier 2004 and 2007 reports by Geoff Butler.
- The consultants also confuse what is required for the test of being part of the endangered ecological community under the ACT threatened species listing and that under the Commonwealth's Environment Protection Biodiversity Conservation Act. The ACT listing refers to a predominance of native species cover in the perennial understorey whereas the Commonwealth Act has several criteria relating to understorey diversity or large tree density. The consultants erroneously equate both listings to the Commonwealth test.

- The report does not contain either a plant or animal species list and one is left to conclude that this is because only a very cursory inspection was performed. It talks about only 5 native plants being present within the most diverse 20m x 20m plot, which is in stark contrast to the 51 native species recorded by the Red Hill Regenerators within Lots 7 and 8 when they were surveyed on 29.12.2007 (see list at end of comments) or during a recent inspection when over 35 native species were recorded
- The consultant assesses the vegetation of Block 66 as if it was a separate vegetation patch, when it should be considered as a continuous part of a much larger patch across Red Hill although it is acknowledged that the Commonwealth hasn't always been consistent on this point. Nonetheless, it is bewildering why the fact that Section 66 lies across the edge of a very large woodland patch is not part of the analysis.
- The conclusion that the vegetation is not part of either the ACT- or EPBC-listed woodland community is not credible.
- Much of the vegetation present is critically endangered Yellow Box – Blakely's Red Gum Woodland. To qualify as part of the nationally endangered woodland, the woodland patch must be greater than 0.1 ha, have an understorey perennial cover made up by at least 50% native species, which contains at least 12 non-grass understorey species and at least one important species. The majority of the understorey on blocks 13, 7 and the southern half of block 8, mainly consists of eleven different native grass species. These blocks also support at least 26 non-grass native species in the understorey including five significant species. This woodland is part of a patch in the order of 400ha.
- The report records just six fauna species for the site, which is not plausible. It states that no fauna using tree hollows were observed (page16), but doesn't mention that the survey was undertaken outside the breeding season and that those undertaking the survey didn't look in the hollows, or undertake any bat recordings There are observations that at least the Gang Gang Cockatoo (a species listed as threatened in NSW), Sulphur Crested Cockatoos, Crimson Rosellas, Eastern Rosellas, Brush-tail Possums and Galahs are all using hollows on site. There are likely to be many more hollow-users on site.
- Recently, a pair of Gang-gang Cockatoos were observed feeding young raised in a hollow within a Red Gum in Section 66. See <http://canberra.naturemapr.org/Community/Sighting/3388632> The Gang-gang is listed as a vulnerable species in NSW and is of conservation interest in the ACT. There are very few known nesting trees in the ACT, and this is just the third confirmed nesting tree on Red Hill. The other two confirmed trees were in the near vicinity to Section 66, while Gang-gangs have been observed entering hollows in at least six further trees within 500m of Section 66. The Fenner School at the

Australian National University is seeking to employ a PhD student to undertake research on the population biology of the Gang-gang in the ACT region. Investigating nesting behaviour including that in the vicinity of Section 66 would be part of this research. Many of Australia's parrots have a colonial nesting behaviour where breeding is concentrated in particular favoured sites. Until this is confirmed by research or demonstrated otherwise, Red Hill woodland in the vicinity of Section 66 should be regarded as one such important breeding location.

- The tree and shrub plantings also add to the diversity of nectar, pollen and invertebrate food available in this part of Red Hill and are utilised by a range of honeyeaters and insectivorous birds.
- The report does suggest that the Little Eagle, which is listed as a vulnerable species in the ACT, may forage across the site. In 2017, a Little Eagle was observed on several occasions flying above Section 66 and hunting rabbits and medium-sized birds in the vicinity of Section 66 and the adjoining Red Hill Nature Reserve. As a pair of Little Eagles have been observed on Red Hill during the 2017 breeding season, it is probable that Section 66 is within the foraging habitat of a breeding pair of this threatened eagle. As pairs move between nests, even within one season, protecting foraging habitat is seen as crucial rather than just the protection of a nesting tree. It is wrong to claim, as the report does, "that the Little Eagle is unlikely to breed within the study area or adjacent areas."
- The consultants also apparently did not observe the population of Button Wrinklewort, growing on the open space land immediately adjacent to the development. While the origins of this population are from seed transplanted from elsewhere on the Hill, the plants of this nationally endangered daisy are now self-seeding and the population is of conservation value, and is certainly worthy of a mention and consideration.
- The report correctly states "the site is known to provide Woodland Connectivity (ACT Government - Environment Planning and Sustainable Development 2017). Block 7 has high to medium value for local woodland linkages, the site also lies at the end of a regional link running east west in the Nature Reserve." However, it then contradicts itself by stating that the site offers limited connectivity capability. Also, the fact that the site is part of one of the largest remnants of this vegetation type left anywhere in Australia is overlooked.
- While Kent Street may be a barrier to some species, research by CSIRO (see the several papers by the Doers) has found that most woodland species including butterflies, beetles, reptiles as well as birds and bats will cross a gap of up to 110m. This is contrary to claims made in the report.

- Given that elsewhere on the western side of Red hill a minimum fire asset protection zone of 30m has been established, it is uncertain whether the Emergency Services Agency would accept the 10m wide zone proposed in this report.
- The mitigation section talks about some indirect impacts, but nowhere in the report is there a documentation or assessment of the conservation values that would be indirectly impacted by the proposal.
- The examination of indirect impacts is inadequate. For example, it does not consider what would be the recreation and user impacts from having 550 units border the Red Hill Nature reserve.
- The report does not mention that the units will be located partially over and downslope of toxic, permeable and leaky industrial, building and household tips, that asbestos is currently exposed on the surface and that a creek flows from the vicinity of the tip past the proposed development. What remediation work would be required in Red Hill Reserve to make it safe for children and adults in the residential development to play in and utilise the neighbouring reserve?

Native Plants recorded in 20m X 20m plots, 14/12/2017 within Section 66, Deakin ACT.

Plot 1 centred on 149.096397 E and -35.327092 S

Plot 2 centred on 149.098402 E and -35.327028 S

Latin Name	Common name	Plot 1	Plot2	Important species
<i>Acacia ehinata</i>	Sheep's Burr		R	
<i>Acaena ovina</i>	Sheep's Burr		1	
<i>Aristida ramosa</i>	Purple Wire Grass		1	
<i>Asperula conferta</i>	Common Woodruff		1	Yes
<i>Austrodanthonia</i> sp.	Wallaby Grasses	2	2	
<i>Austrostipa bigeniculata</i>	Tall Corkscrew Grass	1	1	
<i>Austrostipa scabra</i>	Corkscrew Grass	2	2	
<i>Bothriochloa macra</i>	Redleg Grass	2	2	
<i>Bracteantha viscosa</i>	Sticky Everlasting		R	
<i>Calotis lappulacea</i>	Yellow Burr-daisy	1		Yes
<i>Chamaesyce drummondii</i>	Caustic Weed	+		
<i>Chloris truncata</i>	Windmill Grass	1		
<i>Chrysocephalum apiculatum</i>	Yellow Buttons	1	2	Yes
<i>Cymbonoyus</i> sp.	Bears Ears	+		
<i>Einandia nutans</i>	Climbing Saltbush	R		
<i>Elymus scaber</i>	Wheatgrass	1		
<i>Erodium crinitum</i>	Blue Storksbill	+	R	
<i>Eucalyptus blakelyi</i>	Blakley's Red Gum		2	
<i>Eucalyptus melliodora</i>	Yellow Box		1	
<i>Euchiton sphaericus</i>	Star Cudweed	+	R	
<i>Geranium</i> sp	Native Geranium		R	
<i>Glycine tabacina</i>	Native Soybean		+	Yes
<i>Goodenia pinnatifida</i>		1	1	Yes
<i>Helichrysum luteoalbum</i>	Jersey cudweed	1	R	
<i>Juncus filicaulis</i>	Pinrush		R	
<i>Lomandra bracteata</i>	Small Matrush	+		
<i>Lomandra filiformis</i>	Wattle Mat-rush		1	
<i>Lomandra multiflora</i>	Many-flowered Mat-rush		+	
<i>Microlaena stipoides</i>	Weeping Grass	2	2	
<i>Oxalis perennans</i>	Grassland Wood Sorrel	1	1	
<i>Panicum effusum</i>	Hairy Panic	2	1	
<i>Poa sieberiana</i>	Poa Tussock		2	
<i>Rumex brownii</i>	Swamp Dock		1	
<i>Senecio quadridentatus</i>	Cotton Fireweed	R	R	
<i>Tricoryne elatior</i>	Yellow Rush Lily	+	+	Yes
<i>Vittadinia muelleri</i>	Narrow-leaf New Holland Daisy	1	1	
<i>Wahlenbergia communis</i>	Tufted Bluebell	1	1	
<i>Wahlenbergia luteola</i>	Yellowish Bluebell	R		
<i>Wahlenbergia stricta</i>	Tall Bluebell	+	+	
<i>Zornia dyctiocarpa</i>	Zornia	1		Yes

Weeds Recorded in 20m x 20m Plots, 14/12/2017 within Section 66, Deakin ACT.

Plot 1 centred on 149.096397 E and -35.327092 S

Plot 2 centred on 149.098402 E and -35.327028 S

Latin Name	Common name	Plot1	Plot 2
<i>Acetosella vulgaris</i>	Sheep Sorrel	+	1
<i>Aira sp.</i>	Hair Grass	1	1
<i>Bromus sp</i>	Brome Grass	1	1
<i>Centaurium erythrea</i>	Pink Stars	R	R
<i>Chondrilla juncea</i>	Skeleton Weed	R	
<i>Conyza sp.</i>	Conzya	1	R
<i>Eleusine tristachya</i>	Goose Grass	+	
<i>Eragrostis curvula</i>	African Lovegrass	3	
<i>Festuca elatior</i>	Fescue		1
<i>Hirschfeldia incana</i>	Mustard Weed	R	R
<i>Hypericum perforatum</i>	St John's Wort	R	1
<i>Hypochoeris radiata</i>	Cat's ear	1	1
<i>Paronychia brasiliiana</i>	Barzilian Whitlow	1	1
<i>Petrorrhagia nanteilii</i>	Poliferous Pink		+
<i>Phalarus aquatica</i>	Phalarus		1
<i>Plantago lanceolata</i>	Plantain	1	1
<i>Prunus cerisifera</i>	Cherry Plum		R
<i>Rosa rubiginosa</i>	Briar Rose		R
<i>Salvia verbenaca</i>	Wild Sage	+	+
<i>Sonchus asper</i>	Rough Sow-thistle	R	O
<i>Sonchus oleraceus</i>	Common Sow-thistle	O	O
<i>Tolpis umbellate</i>	Yellow Hawkweed	R	R
<i>Tragopogon porrifolius</i>	Salsify		O
<i>Trifolium arvense</i>	Hairs Foot Clover	R	O
<i>Trifolium campestre</i>	Hop Clover		R
<i>Ulmus chinensis</i>	Chinese Elm		R
<i>Verbascum thapsus</i>	Mullein	R	O
<i>Vulpia sp.</i>	Rats Tail Fescue	O	O

R = < 3 plants in plot (Rare)

+ = 4 -15 plants in plot

1 = >15 plants but < 5% ground cover

2 = 5 -25% groundcover

3 = 25 -50% groundcover

Op/c is occasional patches and clumps generally greater than 5% cover but not co- or sub-dominant

CD co-dominant

O occasional plants less than 5% cover

D dominant

Ip/c Intermittent patches and clumps or co-dominant

F Frequent

I Intermittent greater than 5% or sub-dominant

Rp/c Rare patches and clumps, less than 3 clumps of a maximum of 10 plants per clump

F Frequent

Native Plants recorded on Lots 7 + 8, Section 66, Deakin ACT. 29/12/07

% of sites plant recorded in

Latin Name	Common name	Lot 7	Lot 8	Sign. Rating	ACT, UM & UL n=269	Monaro n=217	South West Slopes n = 185
<i>Acacia dealbata</i>	Silver Wattle		R	1	52.42	29.72	39.46
<i>Acacia mearnsii</i>	Green Wattle	R		3	8.02	23.42	42.16
<i>Acacia rubida</i>	Redleaf Wattle	R	R	3	1.42	13.01	1.08
<i>Acaena ovina</i>	Sheep's Burr	R	O	2	81.60	70.26	65.41
<i>Aristida ramosa</i>	Purple Wire Grass		Rp/c	1	49.81	15.09	45.96
<i>Asperula conferta</i>	Common Woodruff		Rp/c	3	48.70	73.11	55.68
<i>Austrostipa bigeniculata</i>		Op/c	Op/c	1			
<i>Austrostipa scabra</i>	Corkscrew Grass	I	O	1			
<i>Bothriochloa macra</i>	Redleg Grass	Op/c	I	1	37.55	48.58	33.51
<i>Bracteantha viscosa</i>	Sticky Everlasting	Rp/c	O	4	4.25	11.15	3.78
<i>Calotis lappulacea</i>	Yellow Burr-daisy	R		5	3.35	1.42	0.54
<i>Carex inversa</i>	Knob Sedge		Rp/c	1	82.16	33.02	51.35
<i>Cassinia longifolia</i>	Cauliflower Bush	R					
<i>Cheilanthes sieberi</i>	Rock Fern	O	O	3			
<i>Chenopodium pumilo</i>	Small Crumbweed	R	O				
<i>Chloris truncata</i>	Windmill Grass	O	O				
<i>Chrysocephalum apiculatum</i>	Yellow Buttons	Op/c	Op/c	1	62.85	80.19	81.08
<i>Clematis microphylla</i>	Small-leaved Clematis	R		5	2.23	4.25	1.62
<i>Convolvulus erubescens</i>	Australian Bindweed	O	O	3	26.39	61.32	33.51
<i>Cynodon dactylon</i>	Cooch Grass	Op/c	Op/c				
<i>Danthonia caespitosa</i>	Ringed Wallaby Grass						
<i>Danthonia carphoides</i>	Short Wallaby Grass			1			
<i>Danthonia linkii</i>	A Wallaby Grass			1			
<i>Desmodium varians</i>	Slender Tick Trefoil	R		4	23.05	27.83	20.54
<i>Einandia nutans</i>		R	O	3	16.36	33.02	16.22
<i>Elymus scaber</i>	Wheatgrass	O	O	2	65.80	79.72	67.03
<i>Erodium crinitum</i>	Blue Storksbill	O	O				
<i>Eryngium rostratum</i>	Blue Devil	R	O				
<i>Eucalyptus blakelyi</i>	Blakley's Red Gum	O	O				
<i>Eucalyptus melliodora</i>	Yellow Box	R	R				
<i>Geranium solanderi</i>	Native Geranium		O	1	60.59	63.68	36.76
<i>Gnaphalium involucreatum</i>	Star Cudweed	O	O	1	55.76	52.36	71.89
<i>Goodenia pinnatifida</i>		O	O				
<i>Grevillea juniperina</i>		R					
<i>Juncus filicaulis</i>	Pinrush		R	1			
<i>Lepidium pseudohyssopifolium</i>	Peppercress	O	O				
<i>Lomandra filiformis</i>	Wattle Mat-rush	O	O	3	78.44	18.40	58.92
<i>Lomandra multiflora</i>	Many-flowered Mat-rush	R		3	37.17	6.60	33.51
<i>Microlaena stipoides</i>	Weeping Grass	Op/c	Op/c	2	62.83	25.00	75.68
<i>Oxalis perennans</i>	Grassland Wood Sorrel	O	O	2	57.25	57.55	62.70
<i>Panicum effusum</i>	Hairy Panic	O	O	1	30.48	34.91	36.22
<i>Poa sieberiana</i>	Poa Tussock		O	1	70.63	86.79	68.11
<i>Pseudo-gnaphalium lutea</i>	Jersey Cudweed	O	R				
<i>Rumex brownii</i>	Swamp Dock	R	O	2	70.26	38.21	52.43
<i>Senecio quadridentatus</i>	Cotton Fireweed	O	O	1	34.94	12.74	21.62

<i>Themeda australis</i>	Kangaroo Grass	Rp/c		1	81.41	79.25	89.19
<i>Tricoryne elatior</i>	Yellow Rush Lily	R	R				
<i>Vittadinia cuneata</i>	Fuzzy New Holland Daisy	O	O	4	12.64	33.49	15.68
<i>Vittadinia muelleri</i>	Narrow-leaf New Holland Daisy	O	O	3	37.17	64.15	41.08
<i>Wahlenbergia communis</i>	Tufted Bluebell	O	O	2			
<i>Wahlenbergia stricta</i>	Tall Bluebell	O	O	2			

Weeds Recorded on lots 7 and 8, Section 66, Deakin ACT.

29/12/07

Latin Name	Common name	Lot 7	Lot 8
<i>Acacia baileyana</i>	Cootamundra Wattle	R	O
<i>Acetosella vulgaris</i>	Sheep Sorrel		Op/c
<i>Aira sp.</i>	Hair Grass	O	
<i>Arctotheca calendula</i>	Cape Weed	O	
<i>Avena sp.</i>	Wild Oats	O	O
<i>Bromus molliformis</i>	Brome Grass	R	O
<i>Celtis australis</i>	Nettle Tree	R	O
<i>Centaurium erythrea</i>	Pink Stars	R	O
<i>Chondrilla juncea</i>	Skeleton Weed	R	O
<i>Cirsium vulgare</i>	Spear Thistle		O
<i>Conyza sp.</i>	Conzya	R	
<i>Cotoneaster pannosus</i>	Cotoneaster	R	O
<i>Crataegus monogyna</i>	Hawthorn		O
<i>Cynosurus echinatus</i>	Haresfoot		O
<i>Dactylis glomerata</i>	Cocksfoot		Op/c
<i>Echium plantagineum</i>	Patersons Curse	R	O
<i>Eleusine tristachya</i>	Goose Grass	Op/c	O
<i>Eragrostis curvula</i>	African Lovegrass	Op/c	Op/c
<i>Festuca elatior</i>	Fescue		Op/c
<i>Foeniculum vulgare</i>	Fennel		Rp/c
<i>Hakea eriantha</i>		R	
<i>Hirschfeldia incana</i>	Mustard Weed	O	O
<i>Hypericum perforatum</i>	St John's Wort	O	O
<i>Hypochoeris radiata</i>	Cat's ear	O	O
<i>Marrubium vulgare</i>	Horehound		Rp/c
<i>Medicago sativa</i>	Lucerne	R	
<i>Modiola caroliniana</i>	Marshmallow Plant	R	O
<i>Nassella neesiana</i>	Chilean Needle Grass	Op/c	I
<i>Olea europea</i>	African Olive		R
<i>Onopordum acanthium</i>	Scotch Thistle		R
<i>Orobanche minor</i>	Lesser Broomrape		O
<i>Paspalum dilatatum</i>	Paspalum Grass	O	Op/c
<i>Petrorhagia nanteilii</i>	Poliferous Pink	R	O
<i>Phalaris aquatica</i>	Phalaris	Op/c	Op/c
<i>Pistachio chinensis</i>	Chinese Pistachio	R	O
<i>Plantago lanceolata</i>	Plantain	Op/c	Op/c
<i>Polygonum aviculare</i>	Wireweed	R	
<i>Poterium polygamum</i>	Sheeps Burnett		O
<i>Prunus cerisifera</i>	Cherry Plum		R
<i>Prunus laurocerasus</i>	Cherry laurel	R	
<i>Prunus persica</i>	Peach	R	
<i>Pyracantha angustifolia</i>	Firethorn		R
<i>Pyracantha fortuneana</i>	Firethorn	R	R
<i>Pyrus sp.</i>	Manchurian Pear		R

<i>Rosa rubiginosa</i>	Briar Rose	R	
<i>Rumex crispus</i>	Curled Dock		O
<i>Salvia verbenaca</i>	Wild Sage		O
<i>Silybum marianum</i>	Variogated Thistle		Rp/c
<i>Sonchus asper</i>	Rough Sow-thistle	R	O
<i>Sonchus oleraceus</i>	Common Sow-thistle	O	O
<i>Tolpis umbellate</i>	Yellow Hawkweed	R	R
<i>Tragopogon porrifolius</i>	Salsify		O
<i>Trifolium arvense</i>	Hairs Foot Clover	R	O
<i>Trifolium campestre</i>	Hop Clover		R
<i>Ulmus chinensis</i>	Chinese Elm		R
<i>Verbascum thapsus</i>	Mullein	R	O
<i>Vulpia sp.</i>	Rats Tail Fescue	O	O

p/c = patches and clumps

R = < 3 plants in plot (Rare)

+ = 4 -15 plants in plot

1 = >15 plants but < 5% ground cover

2 = 5 -25% groundcover

3 = 25 -50% groundcover

Op/c is occasional patches and clumps generally greater than 5% cover but not co- or sub-dominant

CD co-dominant

O occasional plants less than 5% cover

D dominant

Ip/c Intermittent patches and clumps or co-dominant

F Frequent

I Intermittent greater than 5% or sub-dominant

Rp/c Rare patches and clumps, less than 3 clumps of a maximum of 10 plants per clump