Report on the Floral Values of the Bushland in Harvey Townsite

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INTRODUCTION

Areas of the Ridge Hill Shelf still retaining natural vegetation are rare, since this geomorphic unit has been 98% cleared over it's geographical range. Only small remnants remain scattered between Midland and Harvey.

In a geographic sequence from North to South they are:

1) PERTH METROPOLITAN AREA
Talbot Road Reserve, Midland (Shire of Swan Reserve)
Bushmead Rifle Range (Commonwealth)
Ellis Brook, Gosnells (Shire of Gosnells Reserve)
Portion of Serpentine National Park (CALM)

2) PINJARRA AREA
Then there is a large gap, where most remnants are wetland complexes of Pinjarra Plain abupting the Shelf, ie: Waroona (CTRC 53) and Meelon Nature Reserve. Only Burnside Road Reserve, east of Pinjarra is an area of Ridge Hill Shelf. This is a sandy area similar to the Yarloop Reserves, but higher in the landscape.

3) SOUTHERN AREA (YARLOOP TO BUNBURY)

Bancell Road Reserve (?)
Yarloop Reserves (?CALM & ?)
Harvey Reserves (CALM & ?Shire)

The Harvey bushland will be compared and contrasted to the other remnants in the southern area.

LOCATION

This area is in the townsite of Harvey. It lies immediately south of the Mornington District Office of CALM, between the Harvey to Quindanning road, South Western Highway and Logue Road (Figure 1). The area comprises Town of Harvey, Lot 2, Reserve 21587, vested in the Executive Director of CALM of 54 hectares. Landforms are an eastern plateau of laterite, sloping steeply to the west with increasing overlays of sand. From near the Rifle Range a moderately sloping area of colluvial white sand continues to South Western Highway. An ephemeral creekline runs partially through the area.

VEGETATION PRESENT AND CONDITION

The lateritic plateau has an open woodland of Jarrah (*E. marginata* ssp. *marginata*) this merges downslope into a low open woodland of Ridge Hill Jarrah (*E. marginata* ssp. *elegantella*) and Mountain Marri (*E. haematoxylon*) where there is more sand overlying the laterite. The bottom sandy soils supprted a woodland of Marri (*E. calophylla*) over *Banksia* species, which dominate in areas. All of these vegeatation types are characteristic of the Ridge Hill Shelf.

The vegetation types are very interesting because of the juxtaposition of the two subspecies of Jarrah and the two closely related species of Marri. There are few areas of Ridge Hill Shelf vegetation left so comparisons are difficult, however, neither Yarloop nor Bancell Road have woodlands of Ridge Hill Jarrah or Mountain Marri. Mountain Marri is approaching the edges of it's range in this area, and is not found in any other Coastal Plain remnant north of Harvey, although it is present along the Darling Scarp to North Dandalup.

I am also not aware of another area where the transition between lateritic Jarrah communities and the sandy soils supporting Ridge Hill Jarrah communities are present. This is also true for the Marri woodlands.

The upper area has some disturbance present, from wood cutting, gravel and sand mining and tracks from these activities, but ids in general in excellent condition. The level and extent of disturbance greatly increases as one approaches the Rifle Range because of extensive sand mining. A boundary between the best vegetation and the disturbed areas could be set at the major sand loading ramp and pit.

FLORA

A list of vascular plant species recorded during two brief summer and austumn visits are given in table one. One hundered and sixty species were recorded from the area, mostly being shrubs and trees because of the timing of the survey visits.

Significant Flora

Species commented on are in bold face in Table 3
Of particular interest were the Proteaceae. The records of *Hakea amplexicaulis*, *Isopogon sphaerocephalus* and *Persoonia longifolia* were new for the Swan Coastal Plain. These are normally species of the plateau Jarrah forests, and penetrate the sandy soils of the plain here because of the close proximinity of the laterite. Similarly for *Stylidium amoemum* and *Pimelea sylvestris*.
Species normally found along the Darling Scarp and Ridge Hill Shelf include *Lomandra brittanii*, *Eucalyptus haematoxylon*, *Eucalyptus marginata* ssp. *elegantella* and *Xanthorrhoea acanthostachya*.
The record of *Anarthria prolifera* is very interesting as this is a species of the southern forests and heathlands rarely recorded in a few wetlands on the Swan Coastal Plain and near the end of its range.

These species clearly indicate the transitional nature of the flora of the area, comprising both plateau and coastal plain species. This is of course a defining feature of the Ridge Hill Shelf.

Comparisons of Flora of the Three Remnants

Table 1 Harvey/Yarloop Reserves

Total Flora	Shared	Yarloop Only	Harvey Only
202	131	39	32

The Harvey and Yarloop areas share 65% of their flora.

Table 2 Harvey/Bancell Road Reserves

Total Flora	Shared	Bancell Rd. Only	Harvey Only
206	100	44	63

The Harvey and Bancell Road areas share 49% of their flora.

These areas despite their proximity contain very different species assemblages. Yarloop lacks any lateritic soil, and the associated species. Bancell Road has a shallow lateritic soil, over a granite derived clay with many more wetland or heavy soil species than at either Yarloop or Harvey whose flora is dominated by species occurring on well drained soils. All areas are complimentary rather than replacements. Further collecting during spring will almost certainly enhance these differences, as the herbaceous flora is also influenced by the same factors.

CONCLUSIONS

The Harvey Townsite reserves are clearly a remnant of the Ridge Hill Shelf. They are a southern expression of this geomorphic unit. Although the Harvey reserves show similarities to the remnants at

Yarloop and Bancell Road, they are significantly different in vegetation types and species composition. In addition several vegetation communities and plant species are currently only recorded from the Harvey Reserves for the Swan Coastal Plain.

This area also uniquely preserves the transition between the Darling Plateau laterites and the colluvial sands of the Ridge Hill Shelf.

The area is a significant remnant of the Ridge Hill Shelf, and one of the largest areas of this geomorphic unit still vegetated, hence it posses very high conservation values.

Table One: Vascular Plants Recorded from The Harvey and Yarloop Townsite Reserves

Yarloop Reserves	Harvey	Bancell Rd
Aizoaceae		
Macarthuria apetala		
Amaranthaceae		
	Ptilotus manglesii	*
		Alternanthera nodiflora
Anthericaceae		
Arthropodium capillipes	*	*
Caesia micrantha	*	*
Caesia occidentalis	*	*
Chaemascilla corymbosa	*	*
Laxmannia sessiliflora	*	
		Laxmannia ramosa
Thysanotus ? manglesianus	*	
	Thysanotus multiflorus	*
Thysanotus sparteus	*	*
Tricoryne elatior	*	*
Tricoryne tenella	*	*
Apiaceae		
Homalosciadium homalocarpum	*	*
Hydroctyle callicarpa		
Pentapeltis peltigera	*	*
Trachymene pilosa	*	*
	Xanthosia ciliata	*
Xanthosia huegelii	*	*
Asteraceae		
*Hypochaeris glabra	*	*
Lagenifera huegelii	*	*
	Olearia paucidentata	
		Podolepis gracilis
	Podotheca angustifolia	
		Trichocline spathulata
Campanulaceae		
Wahlenbergia preissii	*	*
Casuarinaceae		
Allocasuarina fraseriana		
Allocasuarina humilis		*
		Allocasuarina huegeliana
Caesalpiniaceae		
Labichea punctata	*	*
Colchicaceae		
Burchardia umbellata	*	*

Cyperaceae		
		Cyathochaeta avenacea
Lepidosperma angustatum		*
Lepidosperma leptostachyum		*
Lepidosperma ?tenue	*	*
		Lepidosperma scabrum
Lepidosperma squamatum	*	
Mesomelaena graciliceps	*	
Mesomelaena tetragona	*	*
		Tetraria australiense
Tetraria capillaris	*	*
Tetraria octandra	*	*
	Trichostularia neesii	
Dasypogonaceae		
Calectasia cyanea	*	
Dasypogon bromeliifolius		*
		Kingia australis
	Lomandra brittanii	*
Lomandra caespitosa	*	
Lomandra hermaphrodita		
Lomandra preissii		*
Lomandra purpurea	*	
Lomandra sonderi		
Lomandra sericea	*	*
Lomandra suaveolens		
Dilleniaceae		
Hibbertia acerosa	*	*
Hibbertia amplexicaulis	*	
	Hibbertia cunninghamii	*
Hibbertia huegelii		
Hibbertia ?montana	*	
Hibbertia hypericoides	*	*
	Hibbertia racemosa	
	Hibbertia vaginata	
Droseraceae		
Drosera erythrorhiza	*	*
Drosera stolonifera	*	
Epacridaceae		
Astroloma ciliata	*	*
Astroloma pallidum	*	
Constephium pendulum	*	
Constephium preissii	*	
	Lysinema ciliatum	*
Styphelia tenuiflora	*	*
Euphorbiaceae		
Phyllanthus calycinus	*	*
Stachystemon vermicularis	*	*
Goodeniaceae		
Dampiera linearis	*	*
Goodenia caerulea	*	*
Lechenaultia biloba		*

Lechenaultia floribunda		*
Sacaevola calliptera		
Scaevola phelbopetala	*	*
Scaevola repens	*	*
Haemodoraceae		
Anigozanthos manglesii	*	
Conostylis aculeata	*	
Conostylis juncea		
Conostylis setigera	*	*
Haemodorum laxum	*	*
Haemodorum loratum		
Haemodorum spicatum	*	
Phelocarya ciliatum	*	
Phelbocarya filifolia		
Iridaceae		
*Freesia hybrid		
Patersonia juncea	*	
Patersonia occidentalis	*	*
		Patersonia rudis
*Romulea rosea	*	*
		*Watsonia bulbillifera
Juncaceae		
Juncus bufonius		
Lamiaceae		
Hemiandra pungens	*	
Lauraceae		
Cassytha micrantha		
	Cassytha flava	
	Cassytha pomiformis	
Cassytha racemosa		
Lobeliaceae		
Lobelia tenuior	*	*
Loganiaceae		
Logania serpyllifolia	*	
Mitrasacme paradoxa	*	
Loranthaceae		
Nuytsia floribunda	*	*
Mimosaceae		
Acacia drewiana		*
	Acacia extensa	*
Acacia huegelii	*	*
Acacia lasiocarpha		
Acacia latericola	*	
	Acacia nervosa	
		Acacia paradoxa
Acacia preissiana		*
Acacia pulchella		*
Acacia saligna	*	*
Acacia sessilis		*
Acacia stenoptera	*	*

		Acacia teretifolia
Myrtaceae		
	Baeckea camphorosmae	*
Eucalyptus calophylla	*	*
	Eucalyptus haematoxylon	
Eucalyptus marginata	*	*
		Hypocalymma angustifolia
	Hypocalymma robustum	
Kunzea ericifolia	*	
		Kunzea recurva
*Leptospermum laevigatum	*	
Melaleuca ?scabra	*	*
Melaleuca thymoides	*	
Scholtzia ciliata		
Orchidaceae		
Caladenia discoidea		
Caladenia flava	*	
Cryptostylis ovata		
Lyperanthus nigricans	*	
*Monadenia bracteata		*
Prasophyllum parvifolium		
Pterostylis vittata		
Pterostylis recurva		
Thelymitra crinita	*	
Orobanchaceae		
Orobanche minor	*	*
Papilionaceae		
Bossiaea eriocarpa	*	*
Bossiaea sp (229)	*	*
*Cytissus prolifera		
Daviesia divaricata	*	*
Daviesia inflata		*
Daviesia physodes	*	*
Daviesia preissii	*	
		Daviesia rhombifolia
Gompholobium tomentosuum	*	*
Gompholobium confertum		
Gompholobium knightianum	*	*
Gompholobium marginatum	*	*
Gompholobium ovatum		
Gompholobium polymorphum	*	*
Gompholobium preissii	*	
Gompholobium shutleworthii		
Hovea chorizemifolia	*	
Hovea trisperma	*	*
	Jacksonia furcellata	
	Jacksonia sternbergiana	*
Kennedia coccinea		
Kennedia prostrata	*	*
Nemcia capitatum	*	*
*Trifolium angustifolia		*
Trifolium campestre		*
Pittosporaceae		

Pronaya fraseri	*	*
Phormiaceae		
Agrostocrinum scabrum	*	*
Dianella revoluta	*	
Stypandra glauca	*	
Poaceae		
		Amphipogon laguroides
Amphipogon turbinatus	*	*
		*Avena barbata
*Briza maxima	*	*
*Cynodon dactylon	*	*
Danthonia occidentalis	*	*
*Eragrostis curvula	*	*
Neurachne alopecuroidea	*	*
	Poa drummondiana	
	*Pennisetum clandestinum	
	*Stenotraphum secundatum	
Stipa campylachne	*	*
Stipa flavescens		
Tetrarrhena laevis	*	*
Polygalaceae		
Comesperma calymega	*	*
Comesperma virgatum	*	
Polygonaceae		
		Polygonum prostratum
Proteaceae		
Adenanthos meisneri	*	
Banksia attenuata	*	
Banksia grandis	*	*
Conospermum stoechadis		
		Dryandra armata
Dryandra bipinnatifida	*	*
Dryandra nivea	*	*
		Grevillea pilulifera
Grevillea quercifolia		*
Grevillea wilsonii	*	*
	Hakea amplexicaulis	*
Hakea cyclocarpa	*	*
	Hakea prostrata	*
Hakea ruscifolia	*	*
Hakea stenocarpa	*	*
		Isopogon asper
		Isopogon dubius
	Isopogon sphaerocephalus	
Persoonia elliptica	*	*
	Persoonia longifolia	
Persoonia saccata	*	
Petrophile linearis	*	
	Petrophile striata	*
Stirlingia latifolia	*	*
	Synaphaea petiolaris	*
Xylomelon occidentale		*

Restionaceae		
	Anarthria prolifera	
Hypolaena exsulca	*	*
Loxocarya fasiculata	*	*
Loxocarya flexuosa	*	*
Lyginia barbata	*	
Restio microcodon		
Rhamnaceae		
		Trymalium ledifolium
Rubiaceae		
Opercularia apiciflora	*	
Opercularia hispidula		
Opercularia vaginata		*
Rutaceae		
Eriostemon spicatus	*	
Sapindaceae		
		Dodonea aptera
Stackhousiaceae		
Stackhousia pubescens	*	
Tripterococcus brunonis	*	
Stylidiaceae		
Levenhookia pusilla		*
	Stylidium amoemum	
Stylidium brunonianum	*	*
Stylidium piliferum	*	*
Stylidium schoenoides	*	
Thymeleaceae		
	Pimelea sylvestris	
Pimelea suaveolens	*	*
		Pimelea sulphurea
Tremandraceae		
Tetratheca hirsuta	*	
Violaceae		
Hybanthus floribundus	*	*
Xanthorrhoeaceae		
	Xanthorrhoea acanthostachya	*
Xanthorrhoea gracilis	*	*
Xanthorrhoea preissii	*	*
Zamiaceae		
Macrozamia riedlei	*	*

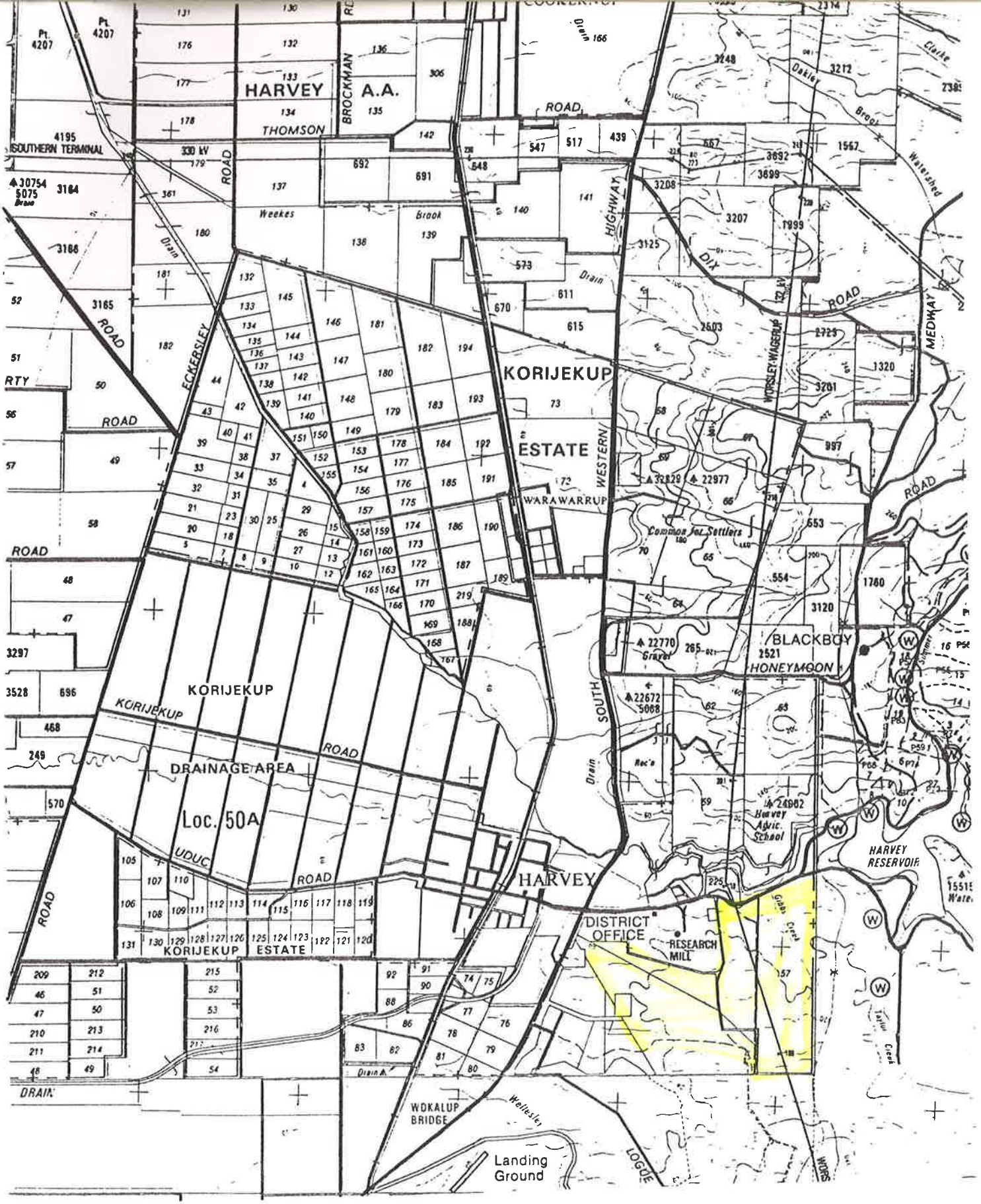

Figure 1 Location of Harvey Townsite Reserves