

## **SHIRE OF DENMARK**

### **STRUCTURAL PLANT COMMUNITY SURVEY, MT HALLOWELL AND WILSON INLET FORESHORE RESERVES, SHIRE OF DENMARK, WESTERN AUSTRALIA**



November 2012

**Structural Plant Community Survey, Mt Hallowell and Wilson Inlet  
Foreshore Reserves, Shire of Denmark, Western Australia**

Report prepared for Shire of Denmark, South Coast Highway, Denmark WA 6333.  
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Cover photo: Wilson Inlet and Nullaki Peninsula from Mt Hallowell survey site 21

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## Introduction

The Shire of Denmark holds natural lands reserves for a variety of purposes, including the conservation of flora and fauna. The Shire is known for its progressive approach to the conservation of nature, evident by the existence and management of its conservation and recreation reserve system.

This survey was commissioned by the Shire of Denmark, and project managed by the Wilson Inlet Catchment Council. Its aim was to undertake structural plant community surveys in representative vegetation types in Mt Hallowell and Wilson Inlet Foreshore Reserves West. Its objective was to establish survey sites that could be used to monitor change in vegetation and flora composition and structure over time to guide management. The survey was conducted during spring (November) 2011, and autumn (May) 2012, and a community workshop to explain the survey and visit some sites was held in November 2012.

The Mt Hallowell Reserve is an A Class reserve vested in the Shire of Denmark for the Purpose Conservation and Recreation, with an area of 532 ha; it surrounds Mt Hallowell and is around 10 km southwest of Denmark townsite. Wilson Inlet Foreshore Reserves comprise a range of reserves predominantly vested in the Shire of Denmark for the purposes of Camping, Foreshore Protection, Parklands, Recreation and Roads. They cover approximately 113.5 ha, lying to the southeast and south of Denmark town on the northern and western shores of Wilson Inlet, with the section known as Wilson Inlet Foreshore Reserves West the subject of this survey.

The climate of the Denmark area is mild Mediterranean, with warm dry summers and cool wet winters. The annual average total rainfall is 1000 millimetres, with July the wettest month on average and January the driest (Shire of Denmark 2008a, 2008b).

Mt Hallowell and Wilson Inlet Foreshore Reserves are underlain by the Albany Fraser Granite and Gneiss Orogen. The igneous rocks of this formation commonly exposed in several places, including prominently as Mt Hallowell (Myers and Hocking 1998).

The vegetation of Mt Hallowell and Wilson Inlet Foreshore Reserves comprises eucalypt forests and woodlands, Allocasuarina, myrtaceous and proteaceous shrublands and heaths. Its flora is rich within a range of communities from tall karri and yellow tingle forest, to sedgelands and heaths in winter wet swamps and sandplains. The structural and compositional attributes of this vegetation and flora that is the subject of the survey reported herein.

The vegetation of the northern perimeter of Mt Hallowell Reserve had been burnt during a fuel reduction resource protection burn in April 2012. The fire has affected some sites located along the northern edge of the reserve, and this was noted during the May 2012 survey.

No Declared Rare or Priority Flora was recorded by the survey.

## Methods

The desktop survey of database searches for flora found in Wilson Inlet and Mt Hallowell, was undertaken prior to and after the field survey. This included DEC Florabase records for Mt Hallowell and Wilson Inlet (DEC 2012) (Appendix 1; Appendix 2). In addition, excellent and detailed information regarding flora and vegetation was obtained from the Mt Hallowell Reserve Management Plan Appendix 2: Vegetation Types, and Appendix 3 Mt Hallowell Reserve Flora List (Shire of Denmark 2008a); and the Wilson Inlet Foreshore Management Plan Appendix 2: Foreshore Reserves Flora Lists, and Appendix 3: Environmental Weeds (Shire of Denmark 2008b).

The Mt Hallowell Vegetation Composition Map (Shire of Denmark 2010), Wilson Inlet Foreshore Reserves Map (Shire of Denmark 2011a), and the Wilson Inlet Foreshore Fringing Vegetation Survey Transects Map (Shire of Denmark 2011b) provided a sound basis for the selection of representative sites. Wilson Inlet foreshore Reserves surveyed are those known as Wilson Inlet Foreshore Reserves West, reserves to the east of here were not surveyed in line with discussions with the project manager.

The plant structural community survey method was discussed with Project Manager Elissa Stewart, where the methods and scope were honed to ensure that the survey covered vegetation communities mapped by previous work as representative sites, the survey method would be repeatable, and that the sites were relatively easily accessible for future use.

The Vegetation Mapping of Mt Hallowell (Shire of Denmark 2010), and the Wilson Inlet Foreshore Management Plan Vegetation Communities map (Shire of Denmark 2008b) were used to select sites representative of the range of vegetation communities. These areas were reviewed, rationalised, ground-truthed and representative survey sites placed within. Mt Hallowell Reserve contains 26 sites, and Wilson Inlet Foreshore Reserves 28 sites.

The focus of the survey was to record plant community structure and composition as a benchmark set of sites by which to measure change over time. The Perth Bushland Plant Community survey method (Keighery 1994) was adapted and used to record the detailed plant structural community information (Appendix 3; Appendix 4). A relevé survey method was applied, where an approximate 10m x 10m area is selected among the typical vegetation community. The dominant and characterising flora is recorded according to height/structure classes, as well as site characteristics including GPS location, description, topography, underlying soil and litter, disturbance and other critical information. The relevé method is not a thorough search for all taxa present, as would be the case in a typical resource development survey. Rather, the relevé survey efficiently describes the characterising flora such that changes in composition and structure can be measured. This method was used as it provides an efficient multi-dimensional measure of a plant structural community at a given point in time, and is able to be relatively easily replicated to monitor changes in plant community structure and composition over time.

The plant community structure relevé sites were accessed via the track network and by walking further to locate the most accessible representative sites. The sites were located, surveyed and recorded by GPS waypoint. Survey sites were not marked on site, leading to some difficulty in relocating some sites (see constraints and recommendations). Plant material was collected for referencing comparison at the Denmark Environment Centre Herbarium, and by other methods including DEC's FloraBase. Material collected sufficient for identification as leaves, flowers, fruits etc, was placed into a field herbarium of manila folders using 50 mm wide clear tape (Appendix 5 example). This method allows rapid collection, ease of transport, stable long-term storage and efficient identification.

The field survey of selected representative plant communities was undertaken during Spring 2011 and Autumn 2012. Over 5 days from Tuesday November 22 to Saturday November 26 2011, and over 5 days from Monday May 7 to Friday May 11 2012. The weather during the survey period in November 2011 was hot and humid, with the temperature on Thursday November 24 reaching 39 degrees. The weather during the survey period in May 2012 was cool and often wet with frontal showers occurring throughout the week.

The survey was undertaken with the excellent support of Wilson Inlet Catchment Council Coordinator Elissa Stewart. Flora identification was greatly assisted by Denmark Environment centre coordinator Di Harwood and volunteers Bob Fenwick and Marc Parre, whose expertise provided valuable information on the flora of the reserves.

A community workshop was held on November 15 2012 to explain the survey objectives and methods to interested community members. Fourteen community members participated, which included a visit to a selection of survey sites where methods and vegetation communities were discussed (Figure 3).

Photographs of the plant structural community recording sites were taken using a Nikon D70S digital SLR camera.

Coordinates were recorded using a Garmin GPS unit GPS76, on UTM Grid 1984 and downloaded using Mac GPSPPro.

Elissa Stewart of the Wilson Inlet Catchment Council supplied the extensive background information, and the maps for this report (Figure 1; Figure 2).

Plant specimen collection was undertaken under DEC Scientific or Other Prescribed Purposes Licence No. SL009622.

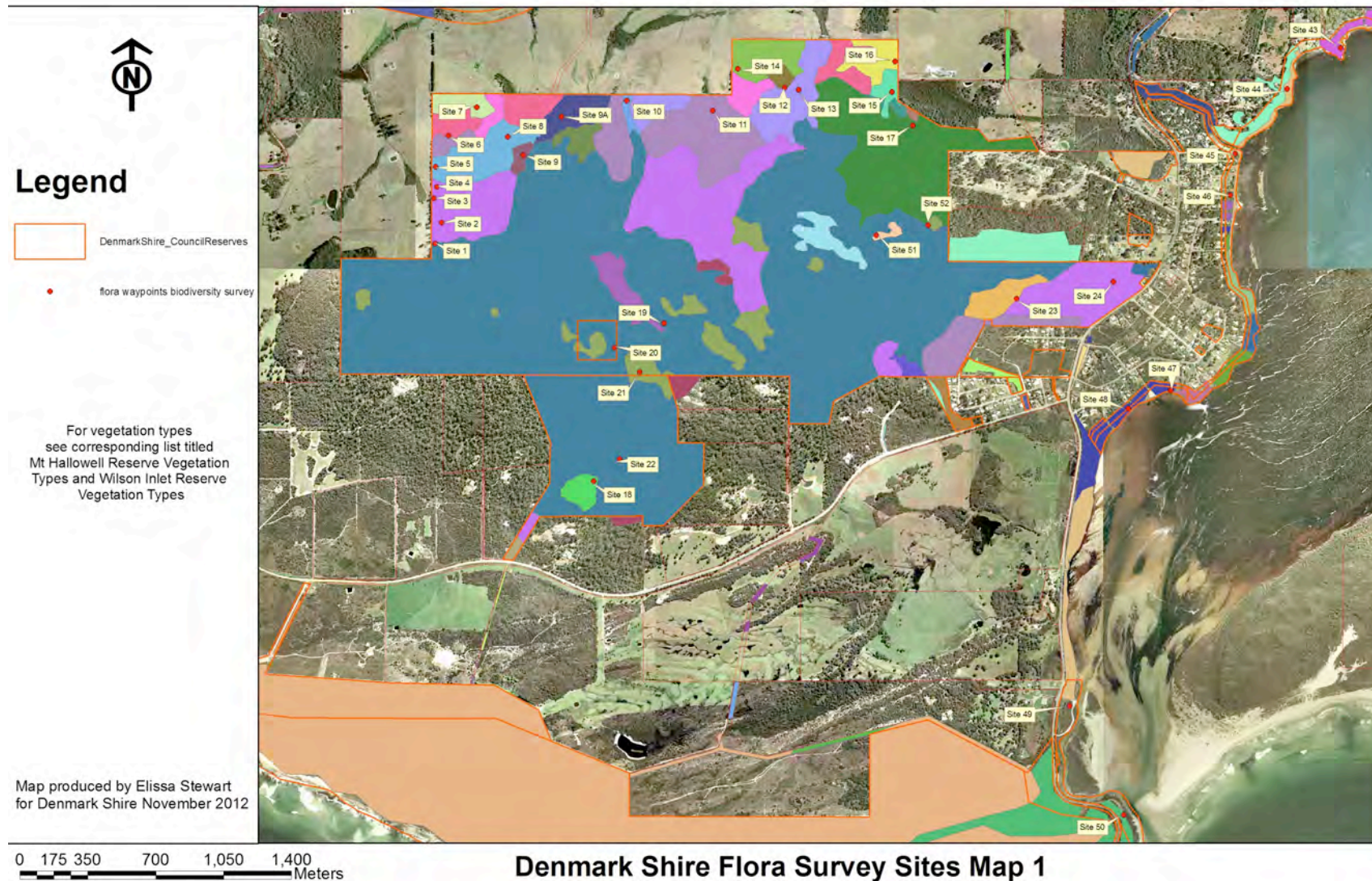


Figure 1. Denmark Flora Survey Map 1. Mt Hallowell Reserve, and Wilson Inlet south vegetation communities and plant structural community survey site locations

For vegetation type legend, refer to Mt Hallowell Reserve Management Plan (Shire of Denmark 2008a)

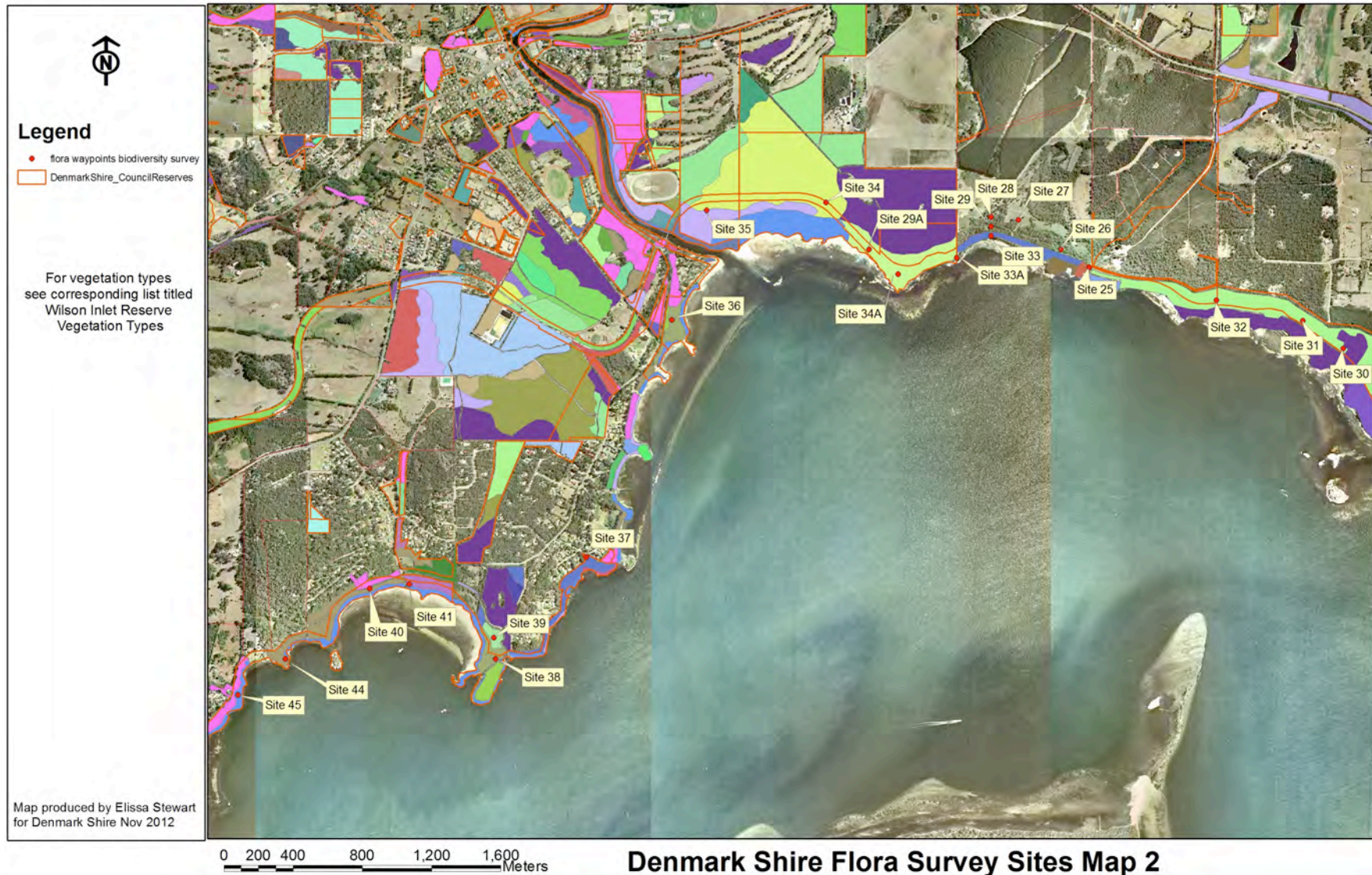


Figure 2. Denmark Flora Survey Map 2. Wilson Inlet Foreshore Reserves West vegetation and plant structural community survey site locations

For vegetation type legend, refer to Wilson Inlet Foreshore Reserves Management Plan (Shire of Denmark 2008b)





Figure 3. Community workshop field visit November 15 2012. Inspecting survey site 23, Mt Hallowell Reserve

## Results

### ***Desk top survey***

A database search of Flora records known from Mt Hallowell and Wilson Inlet was obtained from the Department of Conservation and Land Management's Florabase (Appendix 1; appendix 2) (WA Herbarium 1998 -). This showed 172 taxa of vascular flora, algae and lichens to be present in the area, 149 from Wilson Inlet and 23 at Mt Hallowell. It is clear from these records that the contribution by the late Brenda Hammersley to the knowledge of the areas flora was quite significant, as she was the collector of many of the specimens, several of which were diminutive and cryptic taxa.

The most complete record of flora was obtained from the comprehensive lists from the Mt Hallowell Reserve Management Plan (Shire of Denmark 2008a) and the Wilson Inlet Foreshore Management Plan (Shire of Denmark 2008b). This high quality information by the Shire of Denmark was of excellent assistance to this survey and demonstrates the Denmark Community's interest and sophistication in understanding and managing its natural environment. In addition, a list compiled by residents of Minsterly Place (Appendix 6) provides a fine record of the flora of the Wilson Inlet Foreshore Reserve between sites 45 and 47. Appendix 6 provides the list only, with the original work providing a flowering calendar in spreadsheet form (Anon. 2012).

### ***Field survey***

No Flora gazetted as Declared Rare Flora under the *Wildlife Conservation Act 1950* was recorded. No species of Priority Flora were recorded.

### **Mt Hallowell Reserve**

The field survey of Mt Hallowell Reserve investigated plant community structure and composition at 26 sites in 17 vegetation community types (Figure 1; Table 1). The survey recorded 132 taxa representing 34 families (Table 3).

The survey site locations were designed to reflect the range of vegetation community types identified by the Mt Hallowell Management Plan (Shire of Denmark 2008a). Thirty vegetation community types are identified (Figure 1), and the survey planning and ground assessment rationalised the 30 types to 17 representative types where survey sites were placed. This was done as boundaries for some were not always clear (in the case of some forest types), and the monadnock (granite exposure) units contained very similar flora to adjacent forest types. In addition, given the extent and terrain the reserve and the density of vegetation, the survey sites were placed to allow efficient access for implementation and follow up monitoring where possible.

Table 1 shows some vegetation community types to have been sampled more than once (karri forest; karri marri forest; jarrah marri forest; yate karri forest; jarrah marri woodland). This is because sites were selected from the broad types shown on vegetation maps, and individual survey points within the mapped areas are reflected in the table, which in some cases differ to the broad mapped units.

**Table 1. Vegetation community types as surveyed in Mt Hallowell Reserve**

Site	Vegetation community type	Site	Vegetation community type
001	Karri forest	013	Jarrah, sheoak woodland
002	Karri, marri forest	014	Paperbark, callistemon shrubland
003	Karri, marri forest	015	Revegetation, gravel pit
004	Jarrah, marri forest	016	Jarrah, sheoak forest
005	Jarrah, marri forest	017	Jarrah, marri woodland
006	Beaufortia, taxandria shrubland	018	Yate, karri forest
007	Jarrah woodland	019	Karri oak forest
008	Sheoak woodland	020	Yate, karri forest
009	Taxandria shrubland	021	Agonis granite shrubland
009A	Jarrah, marri woodland	022	Karri forest
010	Sedgeland, emergent blackbutt	023	Jarrah, karri, marri forest
011	Jarrah, marri forest	024	Karri, marri forest
012	Sheoak, banksia, marri woodland	052	Peppermint tall shrubland

**Wilson Inlet Foreshore Reserves**

The field survey of Wilson Inlet Foreshore Reserves investigated plant community structure and composition at 28 sites in 25 vegetation community types (Figure 2; Table 2). The survey recorded 159 taxa representing 46 families (Table 3).

The November surveys included four sites that were later found not to occur in the Foreshore Reserve system (sites 26, 27, 28, and 39). Three of these sites (26, 27 and 28) were substituted with new sites (29A, 33A and 34A) by the May 2012 survey to ensure coverage along this section of the reserve. Site 39 was retained, as it is a unique community.

The survey sites for the Wilson Inlet Foreshore Reserves were identified by ground reconnaissance due to its easy access, with guidance from the vegetation community map in the Wilson Inlet Foreshore Management Plan (Shire of Denmark 2008b). Some vegetation community types were been sampled more than once, as shown in table 2, this was done to cover the very linear nature of the reserve layout, and to cover differences in condition between some vegetation communities.

The reserve area between sites 46 and 47 was not surveyed due to access difficulty (see constraints and recommendations).

**Table 2. Vegetation community types surveyed in Wilson Inlet Foreshore Reserves**

<b>Site</b>	<b>Vegetation community type</b>	<b>Site</b>	<b>Vegetation community type</b>
025	Marri, peppermint woodland	036	Yate, karri forest
026	Peppermint, wattie forest	037	Marri, jarrah, peppermint forest
027	Bracken fern thicket	038	Yate, marri woodland
028	Woody weed forest	039	Sedge and emergent shrub on granite
029	Marri, peppermint, jarrah woodland	040	Karri forest
029A	Wattie forest	041	Wattie, paperbark low forest
030	Marri, peppermint woodland	044	Karri, marri forest
031	Sheoak, jarrah woodland	045	Marri, peppermint low open woodland
032	Peppermint, marri woodland	046	Paperbark woodland
033	Peppermint woodland	047	Blackbutt woodland
033A	Paperbark, peppermint woodland	048	Melaleuca low woodland
034	Blackbutt, paperbark woodland	049	Paperbark woodland
034A	Paperbark, banksia, marri woodland	050	Sedgeland with emergent paperbark
035	Beaufortia shrubland	051	Peppermint shrubland

**Table 3. Flora by Family Recorded at Mt Hallowell and Wilson Inlet Foreshore Reserves**

Family	Taxon (* = weed sp.)	Mt Hallowell sites Nov 2011	Mt Hallowell sites May 2012	Wilson Inlet sites Nov 2011	Wilson Inlet sites May 2012
Anarthriaceae	Anarthria prolifera	6, 8, 9, 9A, 11, 12, 14, 16, 17, 18, 23,	8, 9, 9A, 11, 12, 13, 15, 17, 23,	31, 35, 37,	35, 37
	Anarthria scabra	6, 8, 9, 9A, 12, 13, 14, 15, 16,	9, 9A, 12, 13, 15, 16,	25, 31, 33, 34,	25, 31, 34,
	Lyginia imberbis	7, 9, 15,	9, 15,		
Apiaceae	Xanthosia rotundifolius	7, 11, 14, 16, 17, 19,	5, 11, 17, 19,	37,	37,
	Platysace pendula			48,	
Araliaceae	Hydrocotyle sp.			26	26
Asparagaceae	*Asparagus aethiopicus			47, 48,	48,
	Thysanotus tenellus	11,			
	Thysanotus sp.	10, 13,			
Asteraceae	*Conyza sp.			28,	28, 46, 48
	*Cotula sp			46, 50	50
	*Genus sp.?			28,	28
Boryaceae	Borya sp.	21,	21,	39	39
Casuarinaceae	Allocasuarina decussata	1, 2, 3, 4, 19, 24,	1, 2, 3, 4, 19, 24,		
	Allocasuarina fraseriana	7, 8, 12, 13, 16,	7, 8, 11, 12, 13, 15, 16,	31, 33,	31, 33b,
	Allocasuarina humilis				
Celastraceae	Tripterococcus sp.	6			
Chenopodiaceae	*Chenopodium album			46, 48	46, 48
	Rhagodia baccata			48, 51	48, 51
	Genus? sp.?				41
Cyperaceae	Baumea juncea				33b,
	Cyathochaeta sp.	16,			
	Evandra aristata	6, 10,	10,		34,
	Ficinia nodosa			41, 48, 49, 50,	34b, 41, 46, 48, 49,

				50
	<i>Gahnia trifida</i>		32,	32,
	<i>Juncus kraussii</i>		46, 48, 49, 50	46, 48, 49, 50
	<i>Juncus</i> sp.		48,	
	<i>Lepidosperma effusum</i>	1, 2, 19, 20, 21, 24, 52,	1, 2, 19, 20, 21, 24,	37, 40, 44,
	<i>Lepidosperma gladiatum</i>		41. 51	51
	<i>Lepidosperma gracile</i>	3,	2, 3, 4, 12,	
	<i>Lepidosperma squamatum</i>		36,	36,
	<i>Lepidosperma</i> sp. 44	9A,	9A	
	<i>Lepidosperma</i> sp. 61/67	17, 21,	17, 21,	
	<i>Lepidosperma</i> sp. medium revolute		4,	
	<i>Lepidosperma</i> sp. 64/70 glossy	18	18	29, 30, 38, 40, 44, 51
	<i>Lepidosperma</i> sp.		8	33
	<i>Lepidosperma</i> sp. tall fine gracile?		25	25
	<i>Lepidosperma</i> sp. 82 tall narrow sharp		45	45
	<i>Lepidosperma</i> sp. terete no heads		31	30, 31, 35
	<i>Lepidosperma</i> sp. narrow		39	39,
	<i>Mesomelaena tetragona</i>	10,	31	
	<i>Schoenus</i> sp.	5,		
	<i>Sedge</i> sp. no heads		1, 5,	
Dasypogonaceae	<i>Dasypogon bromeliifolius</i>	6, 7, 8, 9A, 12, 13, 16,	3, 4, 7, 8, 9A, 12, 13,	31, 33, 35,
	<i>Kingia australis</i>	9A,	9A,	
Dennstaedtiaceae	<i>Pteridium esculentum</i>	1, 2, 9, 13, 22, 23, 24,	1, 9, 13, 19, 22, 23, 24	25, 26, 27, 29, 30, 32, 33, 37, 40, 41,
				26, 27, 29b, 30, 33b, 34b, 37, 40, 41, 44,

				44, 47,	47
Dilleniaceae	<i>Hibbertia cuneiformis</i>	1, 2, 3, 4, 18,	1, 2,	27, 28, 29, 51	27, 28,
	<i>Hibbertia furfuraceae</i>	9A, 16, 20, 21, 23, 24,	3, 4, 5, 9A, 11, 20, 23, 24, 52,	36, 37, 38, 40, 44,	36, 37, 40, 44, 51
Droseraceae	<i>Drosera</i> sp.				32
Elaeocarpaceae	<i>Tremandra stelligera</i>	2, 18, 22, 52,	2, 4, 18, 21, 22, 52	32, 36, 40, 47,	32, 40, 44, 47
Ericaceae	<i>Leucopogon capitellatus</i>	52,			29b,
	<i>Leucopogon elatior</i>			30	30
	<i>Leucopogon parviflorus</i>			51	51
	<i>Leucopogon propinquus</i>			25, 27, 31, 33,	25, 27, 31, 33b,
	<i>Leucopogon racemosulus</i>	2, 3	2, 3, 4, 13,		32,
	<i>Leucopogon revolutus</i>	18, 20, 21, 23,	12, 18, 20, 21, 52	29, 36, 38, 44, 45, 47,	38, 44, 45, 47, 50
	<i>Leucopogon verticillatus</i>	1, 2, 17, 19, 23, 24,	1, 2, 4, 5, 11, 17, 19, 20, 23, 24, 52,		33b,
	<i>Leucopogon</i> sp.	7,			35
	<i>Leucopogon</i> sp.		5, 13,		
	<i>Monotoca tamariscina</i>	4, 9, 9A,	4, 8, 9, 9A,	32, 37,	32, 37,
<i>Sphenotoma gracile</i>					
Fabaceae	<i>Acacia browniana</i>	15, 17,	15, 17,		
	<i>Acacia hastulata</i>	9A, 10,	9A, 10,		34,
	<i>Acacia litorea</i>			51	51
	<i>Acacia myrtifolia</i>	7,	7,		
	<i>Acacia pentadenia</i>	1, 2, 3, 4, 5, 11, 18, 19, 23, 24,	2, 3, 4, 5, 11, 18, 19, 23, 24,	44,	44,
	<i>Acacia pulchella</i>			45,	45
	<i>Acacia urophylla</i>	52,	52,		
	<i>Aotus intermedia</i>	9,	9,	33, 34, 35,	34, 35,
	<i>Bossiaea linophylla</i>	9, 9A, 10, 11, 17,	17,	36, 37, 38, 44,	36, 37, 38, 44,
	<i>Bossiaea</i> sp.	13,			
<i>Callistachys lanceolata</i>			25, 26, 27, 29, 30,	25, 26, 27, 29b, 30,	

				32, 33, 41, 47, 48,	32, 41, 47, 48
	Chorizema cordatum	4			
	Chorizema illicifolia	23,	23,		
	Eutaxia myrtifolia	21,	21,	39, 45,	39, 45,
	Gastrolobium bilobum			25, 38,	25, 38
	Gompholobium polymorphum	9A,			
	Hardenbergia comptoniana	24, 52,	18,	32, 36, 37, 38,	34b, 36, 37,
	Hovea chorizemifolia		19,		
	Hovea trisperma	1, 19, 20, 21, 23,	5, 19, 20, 23,	25, 28, 37,	25, 28, 37,
	Jacksonia horrida	7, 11,	7, 11,		
	Kennedia coccinea	19			
	Kennedia sp.			44	
	Paraserianthes lophostemon	22,	22,		
	*Psoralea pinnata			27,	27,
	Pultenaea reticula	6, 12, 13,	12, 13, 16		
	Sphaerolobium vimineum	6, 14,		35,	
	* Trifolium sp.			28,	28,
	Genus ? twining sp.	9			
Frankeniaceae	Frankenia sp.				41
Goodeniaceae	Dampiera alata			48,	
	Dampiera linearis	9, 13,	9,	32, 34,	34,
	Dampiera sp.				31
	Scaevola sp.				50
Haemodoraceae	Anigozanthos flavidus	15,		26, 27, 37, 41,	26, 27, 33b, 47
	Conostylis pusilla			31,	
Hemerocallidaceae	Dianella sp.			25,	25,
	Johnsonia lupulina	10,	21,	33,	
	Stypandra glauca	5, 21,		39,	39
Hypoxidaceae	Hypoxis occidentalis			35,	
Iridaceae	Patersonia occidentalis	4, 5, 16, 17, 18,	5, 11, 17,	45,	45



	<i>Patersonia</i> sp. small			39	
	* <i>Watsonia</i> sp.			28, 46, 48,	28, 46, 48
Lauraceae	<i>Cassytha glabella</i>	1, 6, 9A, 18, 23,	9A, 12, 23, 52	44,	34,
Loganiaceae	<i>Logania serpyllifolia</i>				40
Lyndsaeeaceae	<i>Lyndsaea linearis</i>	4, 11,	4, 5, 13,	31,	31
Malvaceae	<i>Alyogyne</i> sp.			38	
	<i>Lasiopetalum floribundum</i>	23, 24,	3, 23, 24,		
	<i>Thomasia paniculata</i>			38,	
Myrtaceae	<i>Agonis flexuosa</i>	18, 52,	18, 24, 52	25, 26, 27, 28, 29, 30, 32, 33, 35, 36, 37, 38, 40, 44, 45, 51	25, 26, 27, 28, 30, 32, 33b, 34b, 36, 37, 38, 40, 44, 45, 51
	<i>Agonis hypericifolia</i>	8, 11, 16, 17,	8, 11, 16, 17,	31,	31,
	<i>Agonis</i> x sp. Mt Hallowell	7, 9A, 15	7, 9A,		
	<i>Astartea fascicularis</i>	15,	15,	34, 35,	35,
	<i>Astartea</i> sp.	6	5,	26,	26,
	<i>Callistemon glauca</i>	14,	14,		
	<i>Corymbia calophylla</i>	1, 2, 3, 4, 5, 9A, 11, 12, 13, 17, 19, 23, 24, 52,	1, 2, 3, 4, 5, 9A, 11, 12, 13, 15, 17, 19, 20, 23, 24, 52,	25, 28, 29, 30, 32, 37, 38, 39, 44, 45,	25, 28, 30, 32, 34b, 37, 38, 39, 44, 45,
	<i>Beaufortia sparsa</i>	6,	6,	35,	35
	<i>Darwinia citriodora</i>			25, 39, 45,	25, 39, 45
	* <i>Eucalyptus cladocalyx</i>	15	15,		
	<i>Eucalyptus cornuta</i>	18, 20, 21,	18, 20, 21,	36, 38,	36, 38,
	<i>Eucalyptus diversicolour</i>	1, 2, 3, 18, 19, 20, 22, 23, 24,	1, 2, 3, 4, 18, 19, 20, 22, 23, 24,	36, 37, 40, 44,	36, 37, 40, 44,
	* <i>Eucalyptus globulus</i>			28,	28
	<i>Eucalyptus guilfoylei</i>			37,	37,
<i>Eucalyptus marginata</i>	3, 4, 5, 6, 7, 8, 9, 9A, 10, 11, 13, 16, 17, 23,	3, 4, 5, 6, 7, 8, 9, 9A, 11, 12, 13, 16, 17, 23,	25, 29, 31, 33, 37,	25, 31, 37,	

	* Eucalyptus occidentalis	15,	15,		
	Eucalyptus patens	10,	10,	34, 47,	29b, 34, 47
	Homalospermum firmum	6,	6,		
	Hypocalymma cordifolium				29b,
	Hypocalymma strictum	12, 13,	12,13,		31,
	Kunzea recurva	15,	15,	39,	39,
	Melaleuca cuticularis	15,	15,	46, 49, 50,	33b, 46, 49, 50
	Melaleuca densa			41	41
	Melaleuca preissiana	14,	14,	34,	34,
	Melaleuca lateritia		14,		
	Melaleuca raphiophylla			36, 39, 41, 46,	36, 39, 41, 46,
	Melaleuca viminea			39,	39, 41, 48
	Taxandria juniperina	10,		26, 30, 34, 41, 48,	26, 29b, 30, 34, 41,
	Taxandria linearifolia	9, 10, 15,	9, 10, 15,	32, 39,	32, 39,
	Taxandria marginata	21,	21,		
	Taxandria parviceps	5, 6, 9, 9A, 11, 12, 13, 14, 16,	5, 6, 8, 9, 9A, 10, 11, 12, 13, 14, 15, 16,	30, 31, 33, 34, 35, 41, 46,	30, 31, 34, 35, 46
	Taxandria parviceps long narrow leaves	8,			
	Taxandria juniperina x parviceps		10,		
	Taxandria linearifolia x parviceps	10, 14,	10, 14,		35,
Orchidaceae	Cryptostylis ovata				44
	Cryptostylis sp.			27	27
	Eriochilus dilitatus			44	39
Oxalidaceae	*Oxalis pes-caprae			47	
Pinaceae	Pinus sp.			28,	28
Pittosporaceae	Billardiera heterophylla		2, 4,		31, 51
	Billardiera sp.	10, 20, 22, 24, 52,	20, 22, 24,	33, 40, 41,	40, 44
	Billardiera villifolia	2,	1, 2,		

Poaceae	*Briza minor	52	52		
	*Briza maxima			28,	28,
	*Bromus sp.			36,	36
	* Cynodon dactylon				33b, 41, 46, 48, 49
	Neurachne alopecuroidea			39	
	*Phalaris aquatica			27, 36, 41, 46, 47, 48, 49,	26, 27, 28, 36, 47, 49
	Poa poiformis	18, 19, 20,	18, 19, 20, 52	38, 51	36, 38, 51
	Rytidosperma caespitosa				39
	Sporobolus virginicus			50	50
	Tetrarrhena laevis	1, 2, 5, 10, 11, 20, 22, 23, 24,	2, 4, 20, 22, 23, 24,	30, 37,	
	Genus sp? NM 7	2, 4			
	*Grass weed sp. 1			46	50
	*Grass weed sp. 2			46	
Podocarpaceae	Podocarpus drouynianus	17,	17,	28, 29, 31, 33,	28, 31,
Polygalaceae	Comesperma virgatum			34,	
Polygonaceae	Muehlenbeckia adpressa				51
Primulaceae	*Anagallis arvensis			28,	28
Proteaceae	Adenanthos obovatus	6, 7, 8, 12, 13, 15, 16,	7, 8, 12, 13, 15,	31, 35,	31, 35,
	Banksia grandis	4, 9A, 11, 17,	4, 5, 9A, 11, 16, 17,	31, 32,	31,
	Banksia illicifolia	8, 12, 13,	8, 12, 13,		
	Banksia littoralis	10,			
	Banksia quercifolia	6,			
	Banksia seminuda			25, 26, 32, 37,	25, 26, 31, 34b, 37,
	Hakea amplexicaulis		11, 17,		
	Hakea oleifolia			51	29b, 34b, 51
	Hakea sp.		3,		
	Isopogon attenuatus	17,	11, 17,		
Lambertia multiflorus	11, 17,	17,			

	<i>Persoonia ellipticus</i>	17,	17,		
	<i>Petrophile squamata</i>	15, 17,	15,		
Pteridaceae	<i>Cheilanthes austrotenuifolia</i>	18, 52,	18, 52,		
Ranunculaceae	<i>Clematis pubescens</i>	19, 20, 22,	18, 19, 20, 22,		29b, 37, 51
Restionaceae	<i>Desmocladus fasciculatus</i>	4, 16,	2, 23,		31,
	<i>Desmocladus flexuosus</i>	5, 23,	5, 9, 13,	36, 37, 38, 51	32, 36, 37, 38, 51
	<i>Desmocladus</i> sp.		7,		
	<i>Hypolaena exsulca</i>	9, 12,	9,	41,	41,
	<i>Leptocarpus tenax</i>	10, 12, 13, 15,	15,		
	<i>Loxocarya cinerea</i>	17, 18,	17,		
	<i>Meeboldina scariosa</i>	5, 6, 15,	15,	26, 35, 50	26, 35,
Rhamnaceae	<i>Spyridium globulosum</i>	3,	16,	51	51
	<i>Trymalium odoratissimum</i>	1, 2, 4, 18, 19, 20, 22, 24, 52,	1, 2, 4, 18, 19, 20, 22, 24, 52,	38, 40,	38, 40, 44,
	<i>Trymalium ledifolium</i>	19,	3,		
Rubiaceae	<i>Opercularia hispidula</i>	52	12, 18, 52,	44,	44
	<i>Opercularia volubilis</i>	9A, 22,	9A, 22,	34,	33b,
	<i>Opercularia</i> sp.	16, 18, 20, 21,	20, 21,	30, 36, 38,	30, 38,
Rutaceae	<i>Boronia gracilipes</i>	3, 23, 24,	3, 5, 23, 24,		
	<i>Boronia spathulata</i>			41,	
	<i>Chorilaena quercifolia</i>	1, 2, 18, 22, 23, 24,	1, 18, 22, 23, 24, 52	38, 40, 44,	40, 44,
	<i>Crowea angustifolia</i>	5,	5,		
	<i>Diplolaena</i> sp.		4,		
Solanaceae	* <i>Solanum nigrum</i>			28, 36,	28, 36,
Stylidiaceae	<i>Stylidium</i> sp.		9	45	34,
Xanthorrhoeaceae	<i>Xanthorrhoea preissii</i>	3, 4, 5, 10, 11, 12, 14, 17,	3, 4, 5, 10, 11, 12, 16, 17,	31, 35, 39, 44, 45,	31, 35, 39, 44, 45
Zamiaceae	<i>Macrozamia reidlei</i>			25, 36, 38, 40,	36,
Unknown	Genus? sp? white flowers			41	

## **Discussion**

The survey further described the significant botanical and vegetation community diversity held in the Shire of Denmark reserves systems. While it did not reveal any rare or threatened species, the survey did record two potentially new species for the Shire: an *Alyogyne* species at site 38, and a possible *Frankenia* species at site 41 in the Wilson Inlet Foreshore Reserves (see recommendations).

Site locations and vegetation types were chosen for representation and condition. While the majority of the vegetation and flora at survey sites are in excellent condition, some sites in poorer condition were selected to include sites for monitoring recovery or decline, particularly within the Wilson Inlet Foreshore Reserves, where fringing and inundated vegetation commonly shows signs of compromise. The compromise (at sites 36, 41, 46, 47 and 48) is mainly due to weed species outcompeting native plants in these more dynamic areas, where disturbance is frequent due to water movement, algae deposition and increased nutrient supply (M. Parre pers. comm.) Fewer of the Mt Hallowell Reserve survey sites are in poorer condition, with only two having any significant compromise. The old gravel pit site no 15 contains some introduced species originally used to aid the revegetation of the area that are now dominating the regeneration, although few other weeds are present. As well, site 52 has some annual grass weeds among its ground flora.

Prescribed burning had taken place recently in parts of the reserve system, Wilson Inlet Foreshore Reserves in autumn 2011, and Mt Hallowell in early Spring 2012. Site 34 in Wilson Inlet Reserve was affected, showing strong recovery over the two survey periods. The northern boundary of Mt Hallowell Reserve was burnt just before the May 2012 survey, affecting sites 6, 7, 10, 14 and 16. The May 2012 survey showed significant damage to the vegetation, and it will be instructive to measure the recovery and compositional changes to the vegetation and flora of these sites over time.

Some differences were noted between the November 2011 and May 2012 surveys. Primarily this relates to changes in vegetation due to fire (sites 6, 7, 10, 14 16 and 34) as described in the previous paragraph, and in the exact location of sites due to GPS fluctuation under the forest canopy (sites 1, 2, 3, 4, 5, 9A, 11 and 17) (see also constraints). In the site affected by fire, only site 34 was of sufficient age to show significant difference and this was principally in structure due to the growth of many plants. The other sites were very different due to the recent destruction of both diversity and structure. One notable difference was the apparent loss of *Bossiaea linophylla* at sites 9, 9A, 10 and 11 in May 2012, this may be because it was less prominent in autumn, or that the plants had died. Relatively minor changes to floral composition and structure were observed in the forest sites affected by GPS fluctuation. In other sites minor differences were recorded due to flowering and annual growth timing making plants more prominent in spring.

The common local plant peppermint (*Agonis flexuosa*) occurrence in some places is of interest. Peppermint is very powerful regenerator common in coastal dunes and sandy patches in forest communities. These dryland situations and substrates are more dynamic than neighbouring sites, which may explain the

presence of peppermint. In this context peppermint occupies the more YODFEL (Young, Often-Disturbed, Fertile Landscapes) landscapes/sites discussed by Hopper (Hopper 2009), in comparing differences in landscape dynamism with OCBIL (Old Climatically Buffered Infertile Landscapes) sites at the other end of the spectrum. Measuring the occurrence of peppermint and its place in the composition of vegetation communities over time may help show whether change is occurring.

The botanical diversity and its composition, as well as the structure and condition of the vegetation communities in which the flora sits, combine to create a multi dimensional display that can be used to measure a continuing account of the health the local ecosystem. The sites put in place and scored by this survey provide the ability to continue to observe, record and assess the diversity, composition, structure, and condition of the flora and vegetation provide an ongoing resource by which to guide the management of the Shire's Reserve systems. Continued monitoring and scoring of the sites will allow any changes in condition or composition to be identified and if necessary remedial action designed and taken.

### ***Constraints***

In the November 2011 survey, site 26, 27, 28 and 39 in Wilson Inlet Foreshore Reserves were inadvertently placed outside the reserve due to map reading inconsistency. Sites 26, 27 and 28 were replaced in the May 2012 survey with representative locations nearby (29A, 33A, 34A). Site 39 was left intact, as it is in an otherwise unrepresented and easy to access landform and vegetation type. As the survey is designed to be ongoing, this error is not significant.

Access to the Wilson Inlet Foreshore reserves between sites 46 and 47 (between Paddyshot Point boat ramp and Rainbow Close) was unable to be accessed due to its location behind private property. Access would be possible from the estuary by boat, although this was not possible during the survey. Installing subsequent sites in this section via the estuary is recommended.

Locating the exact site under heavy forest canopy was a challenge at some sites in the May 2012 survey. This was due to the inaccuracy and fluctuation in the GPS satellite link under forest canopies. While descriptions of sites and memory assisted in locating exact placement, it is recommended that permanent marking of the sites is undertaken. Permanent marking was decided against when initially designing the survey, as it was thought that steel posts would be obtrusive. A smaller, more discreet steel marking system will be recommended (see recommendations).

Accurate identification of *Lepidosperma* species, except for a few, was difficult due to the incomplete status of *Lepidosperma* taxonomy. Dr Russell Barrett of the Botanic Gardens and Parks Authority is currently reviewing the genus, confirming the identification of named species, and formally describing the several hundred unnamed WA species. When this work is complete and published over the next few years, more accurate identification of the Denmark species will be possible.

## **Recommendations**

Collect herbarium specimens for the WA Herbarium of the *Alyogyne* sp. from Wilson Inlet Foreshore Reserve site 38, and the possible *Frankenia* sp. at site 41. Determine their identification. *Alyogyne* and *Frankenia* species have not been recorded before in the area.

Design a simple, relatively unobtrusive and indestructible permanent marking system for the survey sites. Suggest a stainless steel plate on a short stainless steel peg with the site number stamped or engraved. And/or a stainless steel tag stamped and wired with stainless wire at noticeable height to a prominent tree. Discuss with Shire of Denmark and Wilson Inlet Catchment Council Staff.

Rescore the sites in each spring to observe and measure longer-term changes in vegetation composition, structure and condition. Ensure community members are kept apprised of the survey, sites and its results.

Install additional survey sites in representative vegetation types in the section between Poddyshot Point and Rainbow Close. Access to this area would be obtained by boat via the estuary waters. Two to four sites would likely cover the range of vegetation types and condition present. Further, consider an expansion of the survey to other parts of the Shire of Denmark Reserve system, including the Wilson Inlet Foreshore Reserves East.

Use the information obtained by the surveys to support the design of management strategies in line with the Mt Hallowell and Wilson Inlet Foreshore Reserve management plans.

## **Acknowledgements**

The Shire of Denmark for the opportunity to undertake these plant community structure surveys for Mt Hallowell and Wilson Inlet Foreshore Reserves.

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Figure 2. Map of plant structural community survey site locations, Wilson Inlet Foreshore Reserves

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Table 1. Vegetation community types as surveyed in Mt Hallowell Reserve

Table 2. Vegetation community types surveyed in Wilson Inlet Foreshore Reserves

Table 3. Flora by Family Recorded at Mt Hallowell and Wilson Inlet Foreshore Reserves

## **Appendix**

Appendix 1: DEC FloraBase records Mt Hallowell Reserve

Appendix 2: DEC FloraBase records Wilson Inlet area

Appendix 3: Plant structural Community recording sheets Mt Hallowell Reserve, November 2011, May 2012

Appendix 4: Plant structural Community recording sheets Wilson Inlet Foreshore Reserves, November 2011, May 2012

Appendix 5: Field herbarium sheet example, Mt Hallowell 1

Appendix 6: Plants at 101, list only. Flora Observations, Wilson Inlet Foreshore near Minsterly Place

## Appendix 1. FloraBase Mt Hallowell records October 2012

PERTH 05218306

*Anthocercis sylvicola* T.Macfarlane & Wardell-Johnson Solanaceae

Plant Description, Notes: Diffuse shrub with drooping branches. Smaller branches flexuose with a spine and one or two small leaves at each angle. Height 1.5m. Not in flower but a few very immature buds - axillary, solitary & pedunculate. 5-ous with tips of both calyx lobes and petals hairy on the inner surface. One plant only seen on track but not identified at time of collection. Wider search planned at flowering time. Vegetation: Karri Forest over thicket of *Chorilaena quercifolia*, *Leucopogon verticillatus*, *L.capitellatus* & *Xanthorrhoea preissii*. Site Description: Moderate slope between granite summit and gully. Locality: Denmark Shire. Mt Hallowell Reserve. On Bibbulmun Track c.500 m. ENE of Trig.Station. State: WA Location: -35.003°, 117.301° (GDA94) Location (DMS): 35° 0' 10.0" S 117° 18' 5.0" E (GDA94) Collector: Hammersley, B.G. Coll No: 1992 Collection Date: 30 August 1998 Conservation Code: 2

Origin: DNK. Duplicates to: DNK. Record Basis: Preserved Specimen

PERTH 05218381

*Asplenium aethiopicum* (Burm.f.) Bech. Aspleniaceae

Plant Description, Notes: Rhizomatous fern. Recurs as isolated plants in similar habitat throughout the reserve. Site Description: On vertical granite rock face in moss pad. Seen also in sheltered areas under granite overhang. Locality: Denmark Shire. Bibbulmun track on southern and eastern slopes of Mt Hallowell. State: WA Location: -35.000°, 117.319° (GDA94) Location (DMS): 35° 0' 1.0" S 117° 19' 10.0" E (GDA94) Collector: Hammersley, B.G. Coll No: 1981 Collection Date: 23 August 1998

Origin: DNK. Record Basis: Preserved Specimen

PERTH 05611199

*Austrolejeunea occidentalis* Pocs Lejeuneaceae

Plant Description, Notes: Very small leafy liverwort, brown to pale green. Minute, widely spaced leaves more or less erect. Vegetation: Epiphytic on *Chorilaena quercifolia* in Karri forest. Locality: Denmark Shire. Mt Hallowell - Bibbulmun Track on the lower eastern slopes. State: WA Location: -35.001°, 117.321° (GDA94) Location (DMS): 35° 0' 3.7" S 117° 19' 16.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2468 Collection Date: 12 June 2000

Origin: PERTH Duplicates to: ALB. Record Basis: Preserved Specimen

PERTH 07534833

*Boletellus ananas* Xerocomaceae

Locality: Lights Road, S of Mt Hallowell, Denmark State: WA Location: -34.917°, 117.333° (GDA94) Location (DMS): 34° 55' S 117° 20' E (GDA94) Collector: Syme, K. Coll No: KS 1395/05 Collection Date: 7 June 2005

Origin: PERTH Duplicates to: MEL Record Basis: Preserved Specimen

PERTH 05218233

\**Crassula natans* var. *minus* (Eckl. & Zeyh.) G.D.Rowley Crassulaceae

Plant Description, Notes: Filiform stems to 15 cms floating in water. Minute 4-ous pedunculate flowers. Petals white, tinged red. Four glabrous carpels. A few mature plants in a bed of seedlings of the same taxon. Vegetation: Otherwise bare granite mountain summit. Site Description: In a small eroded pool in granite on summit. Locality: Denmark Shire. Mt Hallowell Reserve. Summit, close to Trig.Station. State: WA Location: -35.005°, 117.298° (GDA94) Location (DMS): 35° 0' 17.0" S 117° 17' 53.0" E (GDA94) Collector: Hammersley, B.G. Coll No: 1991 Collection Date: 30 August 1998

Origin: DNK. Duplicates to: DNK. Record Basis: Preserved Specimen

PERTH 05830702

*Didymodon torquatus* (Taylor) Catches. Pottiaceae

Plant Description, Notes: Small plants, most under 1 cm with spreading narrow, lanceolate leaves. Numerous erect immature capsules. On laterite in Jarrah/Marri forest. Locality: Denmark Shire. Lower slope on the east side of Mt Hallowell on the Bibbulmun Track. State: WA Location: -35.002°, 117.323° (GDA94) Location (DMS): 35° 0' 6.7" S 117° 19' 21.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2601 Collection Date: 14 August 2000

Temporary Sorting Slip: Wednesday, 21 February 2007 Origin: DNK. Duplicates to: ALB. Record Basis: Preserved Specimen

PERTH 05803039

*Diplasiolejeuna plicatiloba* (Hook.f. & Taylor) Grolle Lejeuneaceae

Plant Description, Notes: Tiny leafy liverwort, brown to green, forming inconspicuous patches on the bark of *Chorilaena quercifolia* in Karri forest. Numerous spent capsules present. Locality: Denmark Shire. Mid-slopes on the east side of Mt Hallowell on the Bibbulmun Track. State: WA Location: -35.000°, 117.319° (GDA94) Location (DMS): 34° 59' 58.7" S 117° 19' 8.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2597 Collection Date: 14 August 2000

Origin: DNK. Duplicates to: ALB. Record Basis: Preserved Specimen

PERTH 06943519

*Fissidens curvatus* Hornsch. Fissidentaceae

Plant Description, Notes: Scattered tiny plants, many fertile. Costae curved & capsules inclined. Site Description: On loam attached to the roots of an uprooted *Trymalium floribundum*. Locality: Denmark Shire. Hallowell Reserve. Eastern slope of Mt Hallowell on the Bibbulmun Track State: WA Location: -35.009°, 117.301° (GDA94) Location (DMS): 35° 0' 33.7" S 117° 18' 3.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 3342 Collection Date: 18 June 2003

Determinavit: B.G. Hammersley Date: 18 June 2003 Origin: PERTH Record Basis: Preserved Specimen

PERTH 05830680

*Fissidens tenellus* Hook.f. & Wilson Fissidentaceae

Plant Description, Notes: Tiny plants. Leaf and ventral lamina with single papillae producing a dentate margin. On rotting litter with *Chiloscyphus*, *Cephaloziella* and *Campylopus* in Karri forest. Locality: Denmark Shire. Mid-slopes on the east side of Mt Hallowell on the Bibbulmun Track. State: WA Location: -35.000°, 117.319° (GDA94) Location (DMS): 34° 59' 58.7" S 117° 19' 8.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2599 Collection Date: 14 August 2000

Origin: DNK. Record Basis: Preserved Specimen

PERTH 05611202

*Frullania probosciphora* Frullaniaceae

Plant Description, Notes: Epiphytic leafy liverwort, brown to pale green, with incubously shingled leaves. Ventral lobules helmet-shaped, underleaves bifid. Vegetation: On *Chorilaena quercifolia* with *Diplasiolejeuna* in Karri forest. Locality: Denmark Shire. Mt Hallowell - Bibbulmun Track on the lower eastern slopes. State: WA Location: -35.001°, 117.321° (GDA94) Location (DMS): 35° 0' 3.7" S 117° 19' 16.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2469 Collection Date: 12 June 2000

Origin: PERTH Duplicates to: ALB. Record Basis: Preserved Specimen

PERTH 05218225

*Hibbertia pilosa* Steud. Dilleniaceae

Plant Description, Notes: Straggling shrub with procumbent stems to 60 cms. Carpels glabrous. Number varies - two in some flowers, three in others. Other plants in the area as small erect shrubs, but with similar variable number of carpels. Vegetation: Karri-Jarrah forest with *Chorilaena quercifolia* & *Leucopogon capitellatus*. Site Description: In narrow cleft at base of large granite outcrop. Locality: Denmark Shire. Bibbulmun track on eastern slopes of Mt Hallowell. State: WA Location: -35.000°, 117.319° (GDA94) Location (DMS): 35° 0' 1.0" S 117° 19' 10.0" E (GDA94) Collector: Hammersley, B.G. Coll No: 1982 Collection Date: 23 August 1998

Origin: DNK. Record Basis: Preserved Specimen

PERTH 08319588

*Inocybe ? eriocaulis* Cortinariaceae

Plant Description, Notes: PILEUS 7-15 mm, conical, expanding with age to nearly plane, at times with a low obtuse umbo, margin decurved, velipellis none, surface dry, center recurved-squamulose, towards the margin fibrillose and rimulose, colored like *I. lanuginosa*-Mummy Brown to Prout's Brown or dark yellowish brown (10YR 3/4-3/3); context pallid, thin, not changing color upon exposure, odor none. LAMELLAE adnexed to sinuate, subdistant, 24-30 L, with several tiers of lamellulae, quite dark-strong brown to dark brown (7.5YR 4/4-3/2) with rusty tones, edges indistinctly pallid-fimbriate, medium. STIPE 20-35 1.5-2 mm, even, cortina fugacious, upper third pruinose under a hand lens, below appressed fibrillose (but not woolly as in *eriocaulis*), overall reddish brown (5YR 5/3-4/3), dark brown on the lower part (10YR 3/3); solid becoming hollow with a reddish brown cortex and pallid interior. NOTES: Similar to PBM3632, a more meager collection (see NLB photo, no card). Vegetation: In Jarrah-Marri (*Eucalyptus marginata*-*Corymbia calophylla*) forest mixed with *Allocasuarina fraseriana*. Site Description: On long unburnt (25 yrs) sandy soil. Locality: Mt. Hallowell northern fire access, 200 m elev, along firebreak, Coughlan Road, 4 km southwest of Denmark State: WA Location: -35.996°, 117.322° (GDA94) Location (DMS): 35° 59' 44.3" S 117° 19' 17.4" E (GDA94) Collector: Barrett, M. Coll No: PBM 3631 Collection Date: 16 July 2011

Origin: PERTH Duplicates to: TENN Record Basis: Preserved Specimen

PERTH 05803012

*Leucobryum subchlorophyllosum* Hampe Dicranaceae

Plant Description, Notes: Very brittle plants, most 5 to 10 mms, epiphytic on the corky bark of a large *Allocasuarina decussata* in Karri Forest. Vegetation: Assoc. with *Rhapidorhyncium amoenum* &

Chiloscyphus semiteres. Locality: Denmark Shire. Mid-slopes on the east side of Mt Hallowell on the Bibbulmun Track. State: WA Location: -35.000°, 117.320° (GDA94) Location (DMS): 35° 0' 0.7" S 117° 19' 10.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2595 Collection Date: 14 August 2000

Origin: DNK. Record Basis: Preserved Specimen

PERTH 05803020

Leucobryum subchlorophyllosum Hampe Dicranaceae

Plant Description, Notes: Very brittle plants, most 5 to 10 mms, on a charred, rotting Karri log. Vegetation: Assoc. with Rhapidorhyncium amoenum and Chiloscyphus semiteres. Locality: Denmark Shire. Mid-slopes on the east side of Mt Hallowell on the Bibbulmun Track. State: WA Location: -35.000°, 117.319° (GDA94) Location (DMS): 34° 59' 59.7" S 117° 19' 8.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2596 Collection Date: 14 August 2000

Origin: DNK. Duplicates to: ALB. Record Basis: Preserved Specimen

PERTH 08318662

? Marasmius sp. Tricholomataceae

Plant Description, Notes: Characteristic Features: (i) cap surface white, matted-fibrillose, dry; fruit bodies minute: caps up to 3 mm diam.; stipe up to 1.5 mm long; (ii) stipe white, very minutely glistening, dry, with white swelling sessile on the substrate; (iv) gills cream, well developed, not bifurcating and without anastomoses, gill edge concolorous but glistening (under hand lens). Odour not distinctive. Life mode: S Vegetation: Eucalyptus marginata, Corymbia calophylla and Allocasuarina fraseriana. Site Description: Attached to leaves and small branches. E. marginata, C. calophylla, A. fraseriana. Laterite to grey sand. Locality: Denmark area, Mt Hallowell northern fire access State: WA Location: -34.996°, 117.320° (GDA94) Location (DMS): 34° 59' 44.5" S 117° 19' 11.9" E (GDA94) Collector: Bougher, N.L.; Evans, J.; Tullis, K. Coll No: BOU 00816 Collection Date: 16 July 2011

Origin: PERTH Record Basis: Preserved Specimen

PERTH 00917761

Marasmius sp. Tricholomataceae

Locality: Mt Hallowell, Denmark State: WA Location: -34.950°, 117.350° (GDA94) Location (DMS): 34° 57' S 117° 21' E (GDA94) Collector: Hilton, R.N. Coll No: s.n. Collection Date: 18 May 1984

Origin: UWA Record Basis: Preserved Specimen

PERTH 05830699

Orthodontium lineare Schwägr. Orthodontiaceae

Plant Description, Notes: Small plants with spreading, linear-lanceolate leaves and numerous erect, reddish capsules. In a dense mat inside a charred, hollow Jarrah log. Locality: Denmark Shire. Lower slope on the east side of Mt Hallowell on the Bibbulmun Track. State: WA Location: -35.002°, 117.323° (GDA94) Location (DMS): 35° 0' 6.7" S 117° 19' 21.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2600 Collection Date: 14 August 2000

Origin: DNK. Record Basis: Preserved Specimen

PERTH 08018294

*Protuberia canescens* G.W. Beaton & Malajczuk Protophallaceae

Plant Description, Notes: Gregarious. 2 emergent the rest at depths of 5-8 cm. Odour: strong, of chemicals. Characterised by 1. smooth white fruitbody. 2. strong odour. 3. Gel like inner peridium. 4. lots of rhizomorphs. Vegetation: Under *Acacia pentadenia*, near *Agonis flexuosa*, *Eucalyptus marginata*, *E. diversicolor*. Locality: Denmark, track to Monkey Rock (S of Mt Hallowell) parallel to Bibbulmun Track State: WA Location: -35.013°, 117.295° (GDA94) Location (DMS): 35° 0' 48.0" S 117° 17' 43.0" E (GDA94) Collector: Syme, K.; Syme, A. Coll No: KS 1152/01 Collection Date: 15 July 2001

Origin: MEL Record Basis: Preserved Specimen

PERTH 05803047

*Radula buccinifera* Radulaceae

Plant Description, Notes: Dark green, pinnately divided with rounded, incubous leaves with ventral lobules. In a dense mat. Vegetation: Karri forest. Site Description: Lower vertical face of a large granite outcrop. Locality: Denmark Shire. Mid-slopes on the east side of Mt Hallowell on the Bibbulmun Track. State: WA Location: -35.000°, 117.319° (GDA94) Location (DMS): 34° 59' 58.7" S 117° 19' 8.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2598 Collection Date: 14 August 2000

Determinavit: M. Renner Date: 17 September 2012 Origin: DNK. Duplicates to: ALB. Record Basis: Preserved Specimen

PERTH 07574223

*Ramaria* sp. Ramariaceae

Plant Description, Notes: Branches: smooth, internodes rapidly decreasing with height from stem, orientation branching radially then vertically. Stem smooth, bulbous. Aborted branches absent. Single stem. Vegetation: Woodland, *Corymbia calophylla*, *Agonis flexuosa* (short leaved), *Jacksonia horrida*. Site Description: Soil, packed gravel next to vegetation. Frequency: solitary. Locality: Denmark, Mt Hallowell, next to carpark, Monkey Rock State: WA Location: -35.015°, 117.295° (GDA94) Location (DMS): 35° 0' 52.8" S 117° 17' 41.8" E (GDA94) Collector: Syme, K. Coll No: KS 1561/06 Collection Date: 28 June 2006

Origin: PERTH Record Basis: Preserved Specimen

PERTH 06943632

*Riccardia cochleata* Aneuraceae

Plant Description, Notes: *Riccardia* with brittle, pale green, translucent thalli, deeply concave at the apex. Numerous gemmae in the terminal cups. Vegetation: With *Cephaloziella arctica* & *Campylopus introflexus*. Site Description: In a sheltered area on broken granite. Locality: Denmark Shire. Hallowell Reserve. North slope of Mt Hallowell near the boundary with Harington Break State: WA Location: -34.999°, 117.320° (GDA94) Location (DMS): 34° 59' 55.7" S 117° 19' 10.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 3344 Collection Date: 20 June 2003

Determinavit: B.G. Hammersley Date: 18 June 2003 Origin: PERTH Record Basis: Preserved Specimen

PERTH 08018642

*Russula clelandii* Russulaceae



Plant Description, Notes: Gregarious. White spore print. Scarlet cap glutinose at first, rapidly drying, white gills, deep pinkish red stem, stem stuffed in centre. No odour, taste instantly bitter. Vegetation: *Eucalyptus marginata*, *Corymbia calophylla*. Frequency: 20-30 fruiting bodies seen at all stages, many rotting. Locality: Denmark, Bibbulmun Track below Monkey Rock on S side of Mt Hallowell, off Lights Road State: WA Location: -35.016°, 117.295° (GDA94) Location (DMS): 35° 0' 56.0" S 117° 17' 41.0" E (GDA94) Collector: Syme, K. Coll No: 1347/04 Collection Date: 29 June 2004

Origin: MEL Record Basis: Preserved Specimen

PERTH 06943624

*Weissia controversa* Hedw. Pottiaceae

Plant Description, Notes: Pale green plants with fine, spreading leaves; a few old capsules. Site Description: On loam pockets on broken granite. Locality: Denmark Shire. Hallowell Reserve. Eastern slope of Mt Hallowell on the Bibbulmun Track State: WA Location: -35.009°, 117.301° (GDA94) Location (DMS): 35° 0' 33.7" S 117° 18' 4.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 3343 Collection Date: 18 June 2003

Determinavit: B.G. Hammersley Date: 18 June 2003 Origin: PERTH Record Basis: Preserved Specimen

## Appendix 2. FloraBase records, Wilson Inlet Foreshore Reserves October 2012

PERTH 03175014

*Acacia pulchella* var. *goadbyi* (Domin) Maslin Fabaceae

Plant Description, Notes: Shrub, open no prickles obvious. 1.5 m high. Flowers yellow. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denticulata*, *Aira caryophyllea*. Site Description: Flood plain. Locality: Pt 5113, Wilson Inlet, near Hay River inlet, 10 km E of Denmark, Map Name: Denmark 1:50,000, Map Ref: TY 146 87 State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: 2059 Collection Date: 16 December 1991

Determinavit: M.A. Lewington Date: 13 September 1995 Origin: MJP. Record Basis: Preserved Specimen

PERTH 07089635

*Acetabularia peniculus* (Turner) Solms Polyphysaceae

Site Description: Drift at mouth of inlet. Locality: Wilson Inlet State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Cambridge, M.L. Coll No: s.n. Collection Date: 29 October 1976

Origin: UWA Record Basis: PreservedSpecimen

PERTH 07068891

*Acetabularia* sp. *Alga*

Site Description: On dead shells. Depth: 1 m. Locality: Wilson Inlet, banks across bar of Brown Lagoon State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Anonymous Coll No: s.n.

Origin: UWA Record Basis: PreservedSpecimen

PERTH 04095219

*Acidonia microcarpa* (R.Br.) L.A.S.Johnson & B.G.Briggs Proteaceae

Plant Description, Notes: 3 ft shrub, yellow flowers. Locality: Rudyard's Beach, Wilson Inlet, 4.3 miles E of Denmark State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Lullfitz, F. Coll No: 5812 Collection Date: 23 November 1955

Origin: KPBG Record Basis: PreservedSpecimen

PERTH 01716476

*Adenanthos cuneatus* Labill. Proteaceae

Plant Description, Notes: Lignotuberous, spreading shrub to 1.6 m. Flowers crimson - pink. Regrowth. Abundance: Occasional. Vegetation: Stunted Marri-Jarrah fores bordering on tall heath. Site Description: Level ridge top. Regrowth on disturbed road verge. Locality: Ocean Beach Road, near [Paddy Point], Wilson Inlet State: WA Location: -35.000°, 117.333° (GDA94) Location (DMS): 35° 0' S 117° 20' E (GDA94) Collector: Rodd, A.N.; Fensom, G. Coll No: ANR 4940 Collection Date: 12 November 1985

Origin: NSW Record Basis: PreservedSpecimen

PERTH 05794358

*Adenanthos obovatus* Labill. Proteaceae

Plant Description, Notes: Upright shrub, 1 m high x 0.7 m wide. Vegetation: Degraded bush. With bracken, Anigozanthos and regrowth Agonis. Site Description: Sand flat. Cream sand. Frequency: only specimen noted. Locality: Denmark, 1.5 km from road junction near Rivermouth Caravan Park, along Wilson Inlet trail, State: WA Location: -34.983°, 117.350° (GDA94) Location (DMS): 34° 59' S 117° 21' E (GDA94) Collector: Smith, J.F. Coll No: 62 Collection Date: 20 March 2001

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 01721577

*Adenanthos obovatus* Labill. Proteaceae

Plant Description, Notes: Lignotuberous multi-stemmed shrub ca. 0.7 m. Scarlet flowers. Cuttings 853039. Vegetation: Stunted Marri-Jarrah forest bordering in tall heath. Site Description: Level ridgetop; Regrowth on disturbed road verge. Frequency: rare. Locality: Ocean Beach Road near Poddy Pt. Wilson Inlet State: WA Location: -35.000°, 117.333° (GDA94) Location (DMS): 35° 0' S 117° 20' E (GDA94) Collector: Rodd, A.N.; Fensom, G. Coll No: ANR 4941 Collection Date: 12 November 1985

Origin: NSW Record Basis: PreservedSpecimen

PERTH 02466694

*Amaranthus* sp. Amaranthaceae

Plant Description, Notes: Small domed herb to 5 cm x 10 cm, flowers green-red, in fruit. Abundance: uncommon in area. Site Description: Open granite slope, black peaty sandy clay. Locality: Honeymoon Island, Wilson Inlet, Denmark State: WA Location: -34.983°, 117.350° (GDA94) Location (DMS): 34° 59' S 117° 21' E (GDA94) Collector: Keighery, G.J. Coll No: 12697 Collection Date: 23 January 1992

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04921607

*Angianthus platycephalus* Benth. Asteraceae

Plant Description, Notes: Many stemmed herbs with stems to 10 cm. Terminal heads of yellow flowers. Abundance: dense cover over a wide area. Vegetation: Thicket of *Melaleuca cuticularis* over open herbs and low sedges. *Lobelia alata*, *Atriplex hypoleuca*. Site Description: Close to edge of inlet, below high water line in moist sand. Locality: Wilson Inlet, W side of mouth of the Hay River, State: WA Location: -34.968°, 117.460° (GDA94) Location (DMS): 34° 58' 5.7" S 117° 27' 35.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 1710 Collection Date: 5 February 1997

ID by: M. Falconer Date: 21 January 2005 Origin: DNK. Record Basis: PreservedSpecimen

PERTH 05611407

*Anthoceros* cf. *punctatus* Anthocerotaceae

Plant Description, Notes: Rosette of thick, dark green, short overlapping thalli. Margins dissected, upper surface irregular, Nostoc cavities present. Vegetation: With *Chiloscyphus semiteres* and *Lethocolea squamata*. Site Description: On wet clay-loam at the base of a long disused anthill. Locality: Denmark Shire. Wilson Inlet Heritage Trail, c.1.5 km east from the Railway Bridge over the Denmark River, State: WA Location: -34.970°, 117.380° (GDA94) Location (DMS): 34° 58' 11.7" S 117° 22' 47.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2513 Collection Date: 23 June 2000

Origin: PERTH Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 02391376

\**Asparagus asparagoides* (L.) Druce Asparagaceae

Plant Description, Notes: Tuberos perennial herb to 1 m. Abundance: uncommon in area. Vegetation: Open burnt *Eucalyptus diversicolor* low woodland. Site Description: Brown sandy clay over granite. Locality: Honeymoon Island, Wilson Inlet, Denmark State: WA Location: -34.983°, 117.350° (GDA94) Location (DMS): 34° 59' S 117° 21' E (GDA94) Collector: Keighery, G.J. Coll No: 12700 Collection Date: 23 January 1992

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06331807

*Astartea arbuscula* (Benth.) Rye Myrtaceae

Plant Description, Notes: Semi-prostrate plants - now in flower cf. when collected mid-December. Flowers minute, solitary, pink. Vegetation: In Low Heath C with *Astartea corniculata*, *Melaleuca pauciflora* and *Banksia quercifolia*. Site Description: A pan of sandy clay in a coastal swamp. Frequency: locally common. Locality: Denmark Shire. Wilson Inlet foreshore. Rudgyard Nature Reserve 0.3 Km west from Crusoe Beach Road on a walk track State: WA Location: -34.980°, 117.425° (GDA94) Location (DMS): 34° 58' 46.7" S 117° 25' 29.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 3250 Collection Date: 14 January 2003 Conservation Code: 4

Determinavit: B.L. Rye Date: 18 June 2003 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05796342

*Astartea arbuscula* (Benth.) Rye Myrtaceae

Plant Description, Notes: Spreading dwarf shrub to 30 cms high. Evidence of recent flowering with immature fruit present. Vegetation: In Low Scrub B and Low Sedges. Associated with *Astartea fascicularis*, *Pericalymma crassipes* and *Melaleuca leptoclada*. Site Description: In deep sand in a seasonally wet swamp. Frequency: ca 100 plants in localised area. Locality: Denmark Shire. Wilson Inlet foreshore. Rudgyard Nature Reserve. 400 m along a track running NE through the reserve State: WA Location: -34.980°, 117.425° (GDA94) Location (DMS): 34° 58' 46.7" S 117° 25' 28.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2432 Collection Date: 28 March 2000 Conservation Code: 4

Determinavit: B.L. Rye Date: 20 May 2003 Origin: DNK. Duplicates to: DNK. Record Basis: PreservedSpecimen

PERTH 06331785

*Astartea* sp. Myrtaceae

Plant Description, Notes: Multi-stemmed plants to 1.5 m. Flowers white to pale pink. Calyx lobes with a small tubercle & a rounded, membranous margin. Vegetation: In dense heath with *Beaufortia sparsa*, *Banksia quercifolia*, *Lysinema conspicuum* and *Anarthria scabra*. Site Description: Deep coastal sand in a seasonal swamp. Frequency: locally common. Locality: Denmark Shire. Wilson Inlet foreshore. Rudgyard Nature Reserve c.100 m west from Crusoe Beach Road on a walk track State: WA Location: -34.982°, 117.426° (GDA94) Location (DMS): 34° 58' 54.7" S 117° 25' 32.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 3251 Collection Date: 14 January 2003

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06331793

*Astartea* sp. Myrtaceae

Plant Description, Notes: A single flowering stem from a woody base, semi-prostrate with several old non-flowering stems. Flowers small, deep pink. Vegetation: In Low Heath C with *Baekkea arbuscula*, *Astartea corniculata* and *Melaleuca pauciflora*. Site Description: A pan of sandy clay in a coastal swamp. Frequency: One plant only found cf. several plants noted Jan. 2001 - see BGH 2753. Locality: Denmark Shire. Wilson Inlet foreshore. Rudyard NR. 0.3 Km west from Crusoe Beach Road on a walk track State: WA Location: -34.980°, 117.425° (GDA94) Location (DMS): 34° 58' 46.7" S 117° 25' 29.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 3249 Collection Date: 14 January 2003

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06102549

\**Atriplex prostrata* DC. Chenopodiaceae

Plant Description, Notes: Upright low shrub to 30cm by 25cm with greyish leaves. Vegetation: *Melaleuca* sp, rushes and *Agonis flexuosa*. Site Description: Shoreline with dead seaweed on grey, saline, coarse sand over granite. Frequency: plentiful in area. Locality: Wilson Inlet south, off Eden Road, 10 km SE of Denmark State: WA Location: -35.020°, 117.434° (GDA94) Location (DMS): 35° 1' 13.1" S 117° 26' 3.6" E (GDA94) Collector: Croxford, E.J. Coll No: 8167 Collection Date: 11 May 1999

Origin: ALB. Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 04293983

\**Atriplex prostrata* DC. Chenopodiaceae

Plant Description, Notes: Spreading, succulent, height to 30 cm. Vegetation: *Melaleuca cuticularis*, *M densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denitculata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near Hay river inlet, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annel, A.R. Coll No: ARA 2069 Collection Date: 16 December 1991

Determinavit: P. Wilson Date: 15 April 1992 Origin: MJP. Duplicates to: MJP. Record Basis: PreservedSpecimen

PERTH 01737678

*Banksia ? littoralis* Proteaceae

Plant Description, Notes: Small tree 3-4 m, styles red. Vegetation: Low open vegetation. Site Description: Edges inlet, loam over clay. Frequency: scattered. Locality: Rudyard Beach, Wilson's Inlet, 5 km E of Denmark State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Keighery, G.J. Coll No: 9903 Collection Date: 19 August 1986

Determinavit: S.D. Hopper Date: 28 August 1992 Origin: CALM. Duplicates to: CANB Record Basis: PreservedSpecimen

PERTH 01738046

*Banksia occidentalis* R.Br. Proteaceae

Plant Description, Notes: Tree to 3 m. Abundance: dense stands. Vegetation: With *Oxylobium lanceolatum* and *Banksia seminuda*. Site Description: Swampy flat in waterlogged sand. Locality: West of Hay River Bridge, 50 m N of Wilson's Inlet State: WA Location: -34.917°, 117.467° (GDA94) Location (DMS): 34° 55' S 117° 28' E (GDA94) Collector: Hopper, S.D. Coll No: 5952 Collection Date: 3 August 1987

Origin: PERTH Record Basis: Preserved,Specimen

PERTH 01737945

*Banksia occidentalis* R.Br. Proteaceae

Plant Description, Notes: Shrubby plant, calyx yellow, style bright red. Locality: Wilson's Inlet State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Anonymous Coll No: s.n. Collection Date: 22 December 1877

Determinavit: A.S. George Date: 6 February 1979 Origin: MEL Record Basis: PreservedSpecimen

PERTH 08126321

*Banksia quercifolia* R.Br. Proteaceae

Plant Description, Notes: Erect compact perennial shrub 1.5 m tall. Smooth grey-brown bark, flowers brown when old. More than 70% of old flowers not fertilised. Vegetation: Shrubland with *Adenanthos cuneatus*, *Allocasuarina*, *Anarthria scabra*, *Dasypogon bromeliifolius*, *Melaleuca* spp., *Taxandria parviceps*. Site Description: Flat with grey sand over granite. Frequency: 50+ plants. Locality: Rudgyard Nature Reserve, Crusoe Beach Road, Wilson Inlet, Denmark State: WA Location: -34.983°, 117.426° (GDA94) Location (DMS): 34° 58' 57.5" S 117° 25' 33.1" E (GDA94) Collector: Cochrane, J.A. Coll No: 7114 Collection Date: 13 October 2008

ID by: M. Hislop Date: 17 November 2009 Origin: PERTH Duplicates to: CANB Record Basis: PreservedSpecimen

PERTH 02089858

*Baumea articulata* (R.Br.) S.T.Blake Cyperaceae

Plant Description, Notes: Up to 7 to 8 ft high. Rushes. Site Description: On Whitlock's Peat swamp. Locality: Wilson's Inlet State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Jackson, S.W. Coll No: s.n. Collection Date: 22 February 1913

Origin: PERTH Duplicates to: CANB K Record Basis: PreservedSpecimen

PERTH 04713362

*Baumea juncea* (R.Br.) Palla Cyperaceae

Plant Description, Notes: Tussocky rush, height to 40 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Banksia occidentalis*, *B. seminuda*, *Kunzea ericifolia*, *Boronia denticulata*, *Gahnia trifida*, *Isolepis nodosa*, *Oxylobium lanceolatum*. Site Description: Flat, sandy flood plain. Locality: Plot 5112, Wilson Inlet near mouth of Hay River, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annel, A.R. Coll No: ARA 2055 Collection Date: 16 December 1991

Determinavit: R.J. Cranfield Date: 23 July 1992 Origin: MJP. Record Basis: PreservedSpecimen

PERTH 04713370

*Baumea juncea* (R.Br.) Palla Cyperaceae

Plant Description, Notes: Tussocky rush, height to 40 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Banksia occidentalis*, *B. seminuda*, *Kunzea ericifolia*, *Boronia denticulata*, *Gahnia trifida*, *Isolepis nodosa*, *Oxylobium lanceolatum*. Site Description: Flat, sandy flood plain. Locality: Plot 5112, Wilson Inlet near mouth of Hay River, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annel, A.R. Coll No: ARA 2057 Collection Date: 16 December 1991

Determinavit: R.J. Cranfield Date: 23 July 1992 Origin: MJP. Record Basis: PreservedSpecimen

PERTH 04713389

*Baumea juncea* (R.Br.) Palla Cyperaceae

Plant Description, Notes: Tussocky rush, height to 40 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denticulata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near mouth of Hay River, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2064 Collection Date: 16 December 1991

Determinavit: R.J. Cranfield Date: 23 July 1992 Origin: MJP. Record Basis: PreservedSpecimen

PERTH 04720210

*Baumea juncea* (R.Br.) Palla Cyperaceae

Plant Description, Notes: Rush, height to 80 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denticulata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near mouth of Hay River, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2064 Collection Date: 16 December 1991

Determinavit: M. Hislop Date: 9 April 1999 Origin: MJP. Record Basis: PreservedSpecimen

PERTH 01171933

*Baumea preissii* Nees subsp. *preissii* ms Cyperaceae

Plant Description, Notes: Abundance: Frequent. Vegetation: With *B. articulata* in water. Also *B. juncea* nearby. Site Description: In water in roadside ditch behind beach. Locality: Ocean Beach, ca 10 km S of Denmark, Wilson Inlet State: WA Location: -35.017°, 117.317° (GDA94) Location (DMS): 35° 1' S 117° 19' E (GDA94) Collector: Wilson, K.L. Coll No: 2998 Collection Date: 19 October 1979

Determinavit: M. Lawrence Date: 14 March 1995 Origin: NSW Record Basis: PreservedSpecimen

PERTH 05794242

*Beaufortia sparsa* R.Br. Myrtaceae

Plant Description, Notes: Upright shrub, 1-2 m high x 1-1.5 m wide. Midway through flowering season. Some spent flowers, others still to open. Vegetation: *Agonis*, *Anigozanthos*, bracken, *Melaleuca*, *Eucalyptus ?patens*. Site Description: Sandy flats, probably seasonally wet. Cream sand. Frequency: very common. Locality: Denmark, 300 m from road junction near Rivermouth Caravan Park along Wilson Inlet trail, State: WA Location: -34.983°, 117.367° (GDA94) Location (DMS): 34° 59' S 117° 22' E (GDA94) Collector: Smith, J.F. Coll No: 61 Collection Date: 20 March 2001

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05796350

*Billardiera laxiflora* (Benth.) E.M.Benn. Pittosporaceae

Plant Description, Notes: Slender twiner with white flowers in corymbs. Some flowers tinged very pale blue. Vegetation: In open low scrub over low sedges. Associated with *Beaufortia sparsa*, *Andersonia caerulea* and *Leucopogon glabellus*. Site Description: In deep sand in a seasonally wet swamp. Frequency: occasional over a wide area. Locality: Denmark Shire. South of Wilson Inlet Heritage Trail, c.1 km east from Denmark River. State: WA Location: -34.967°, 117.371° (GDA94) Location (DMS): 34° 58' 0.7" S 117° 22' 16.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2433 Collection Date: 4 April 2000

Origin: DNK. Duplicates to: DNK. Record Basis: PreservedSpecimen

PERTH 02464829

*Borya sphaerocephala* R.Br. Boryaceae

Plant Description, Notes: Mostly with orange but a few with green leaves. Abundance: a few tussocks Site Description: On a granitic outcrop with SW aspect and close to the road. Locality: Poison Point, Wilson Inlet, Denmark, 500 m from the point and 200 m from the waters edge State: WA Location: -34.984°, 117.351° (GDA94) Location (DMS): 34° 59' 4.0" S 117° 21' 2.0" E (GDA94) Collector: Churchill, D.M. Coll No: 20 Collection Date: 14 November 1983

Determinavit: D.M. Churchill Date: 5 November 1991 Origin: MEL Record Basis: PreservedSpecimen

PERTH 05611466

*Breutelia affinis* (Hook.) Mitt. Bartramiaceae

Plant Description, Notes: A delicate, pale green moss. Robust, red prostrate stems with semi-erect new growth. Leaves narrow lanceolate, concave, spreading. Little changed when dry. Site Description: On sand at the side of the track. Locality: Denmark Shire. Wilson Inlet Heritage Trail, c.2 km east from the old Railway Bridge over the Denmark River, State: WA Location: -34.969°, 117.385° (GDA94) Location (DMS): 34° 58' 9.7" S 117° 23' 4.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2518 Collection Date: 23 June 2000

Origin: PERTH Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 01713264

*Caladenia nana* subsp. *unita* (Fitzg.) Hopper & A.P.Brown Orchidaceae

Plant Description, Notes: This barcode refers to specimen 'l'. Locality: Wilsons [Wilson] Inlet State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Fitzgerald, R.D. Coll No: s.n.

ID by: K. Knight Date: 11 January 2002 Origin: BM \* Record Basis: DrawingOrPhotograph Type Status: Lectotype

PERTH 05900530

*Caladenia nana* subsp. *unita* (Fitzg.) Hopper & A.P.Brown Orchidaceae

Plant Description, Notes: This barcode refers to specimens 'd', 'g' and 'n'. These specimens are located with *Caladenia nana* subsp. *unita* PERTH 01713264 in the Type Collection. Locality: Wilsons [Wilson] Inlet, State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Fitzgerald, R.D. Coll No: s.n.

ID by: K. Knight Date: 11 January 2002 Origin: BM \* Record Basis: DrawingOrPhotograph Type Status: Isolectotype

PERTH 05900549

*Caladenia nana* subsp. *unita* (Fitzg.) Hopper & A.P.Brown Orchidaceae

Plant Description, Notes: This barcode refers to specimens 'e' and 'f'. This specimen is located with *Caladenia nana* subsp. *unita* PERTH 01713264 in the Type Collection. Locality: Wilsons [Wilson] Inlet, State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Fitzgerald, R.D. Coll No: s.n.



Determinavit: S.D. Hopper Date: 22 February 1989 Origin: BM \* Record Basis: DrawingOrPhotograph  
PERTH 05900557

*Caladenia nana* subsp. *unita* (Fitzg.) Hopper & A.P.Brown Orchidaceae

Plant Description, Notes: This barcode refers to specimen `m'. This specimen is located with *Caladenia nana* subsp. *unita* PERTH 01713264 in the Type Collection. Locality: Wilson Inlet, State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Fitzgerald, R.D. Coll No: s.n.

Origin: BM \* Record Basis: DrawingOrPhotograph

PERTH 05119367

*Calycopeplus oligandrus* P.I.Forst. Euphorbiaceae

Plant Description, Notes: Slender green shrub, woody at base. Perhaps suckering, to 2 m. In fruit. Vegetation: *Melaleuca cuticularis* low open woodland. Site Description: Wet brown gritty clay over granite. Edges of brackish inlet. Frequency: uncommon. Locality: Wilson Inlet, Denmark, State: WA Location: -34.983°, 117.333° (GDA94) Location (DMS): 34° 59' S 117° 20' E (GDA94) Collector: Keighery, G.J. Coll No: 11650 Collection Date: 19 January 1991

Temporary Sorting Slip: Thursday, 26 July 2001 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04720199

*Chaetanthus aristatus* (R.Br.) B.G.Briggs & L.A.S.Johnson Restionaceae

Plant Description, Notes: Rush, height to 80 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denticulata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near mouth of Hay River, 10 km E of Denmark State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2061 Collection Date: 16 December 1991

Origin: MJP. Record Basis: PreservedSpecimen

PERTH 04720202

*Chaetanthus aristatus* (R.Br.) B.G.Briggs & L.A.S.Johnson Restionaceae

Plant Description, Notes: Rush, height to 80 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denticulata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near mouth of Hay River, 10 km E of Denmark State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2062 Collection Date: 16 December 1991

Origin: MJP. Record Basis: PreservedSpecimen

PERTH 07005156

*Chaetomorpha* sp. Alga

Plant Description, Notes: With *Audoninella* epiphytic. Site Description: Rocks in 50 cm along shore line. Locality: Wilson Inlet State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Cambridge, M.L. Coll No: s.n. Collection Date: 28 October 1976

Origin: UWA Record Basis: PreservedSpecimen

PERTH 05611377

*Chaetophyllopsis whiteleggei* Chaetophyllopsidaceae

Plant Description, Notes: Small grey-green plants. One dense mat c. 2 cm diameter plus solitary plants scattered on a mat of *Cephaloziella*. Site Description: On the sandy bank of a drain at the base of *Lepidosperma* sp. Locality: Denmark Shire. Wilson Inlet Heritage Trail, c.0.5 km west from Minang shelter, State: WA Location: -34.974°, 117.390° (GDA94) Location (DMS): 34° 58' 26.7" S 117° 23' 25.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2509 Collection Date: 23 June 2000

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 07032412

*Chara* sp. Alga

Vegetation: Growing in clearings in *Ruppia* stands. Site Description: Depth: 1-2 m. Muddy sand. Locality: Wilson Inlet, W of Hay River State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Cambridge, M.L. Coll No: s.n. Collection Date: 28 October 1976

Origin: UWA Record Basis: PreservedSpecimen

PERTH 05758858

\**Chenopodium murale* L. Chenopodiaceae

Plant Description, Notes: Open erect shrub or ?annual, to 1.5 m high. Flowers reddish, largely in bud. Vegetation: In *Sarcocornia* succulent low shrubland. Site Description: Along edge of brackish inlet. Brown sandy clay over granite. Frequency: abundant. Locality: Honeymoon Island, Wilson Inlet, Denmark, State: WA Location: -34.983°, 117.342° (GDA94) Location (DMS): 34° 59' 0.0" S 117° 20' 30.0" E (GDA94) Collector: Keighery, G.J. Coll No: 11649 Collection Date: 21 January 1991

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06491189

*Cladia aggregata* (Sw.) Nyl. Cladoniaceae

Vegetation: Coastal scrub. Site Description: On sand. Locality: Denmark Shire, Wilson Inlet foreshore at Crusoe Beach State: WA Location: -34.984°, 117.425° (GDA94) Location (DMS): 34° 59' 0.7" S 117° 25' 31.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2485 Collection Date: 16 June 2000

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06491219

*Cladonia cervicornis* subsp. *verticillata* (Hoffm.) Ahti Cladoniaceae

Vegetation: Woodland. Site Description: On rotting Jarrah log. Locality: Denmark Shire. Wilson Inlet foreshore at Crusoe Beach State: WA Location: -34.981°, 117.427° (GDA94) Location (DMS): 34° 58' 50.7" S 117° 25' 35.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2488 Collection Date: 16 June 2000

ID by: R.J. Cranfield Date: 6 September 2000 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05682282

*Cladonia floerkeana* (Fr.) Florke Cladoniaceae

Plant Description, Notes: Erect spikes with intensely red terminal apothecia. Chemistry: K-, C-, KC-. Covering the entire surface of a large, sandy, long disused anthill. Locality: Wilson Inlet foreshore on the Heritage Trail above Springdale Beach, Denmark Shire, State: WA Location: -34.971°, 117.387° (GDA94) Location (DMS): 34° 58' 14.0" S 117° 23' 13.0" E (GDA94) Collector: Hammersley, B.G. Coll No: 2511 Collection Date: 23 June 2000

Determinavit: J.A. Elix Date: 7 November 2000 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06491286

*Cladonia floerkeana* (Fr.) Florke Cladoniaceae

Plant Description, Notes: Erect spikes with intensely red terminal apothecia. Site Description: Covering the entire surface of a large, sandy, long disused ant hill. Locality: Denmark Shire. Wilson Inlet foreshore on the Heritage Trail above Springdale Beach State: WA Location: -34.969°, 117.388° (GDA94) Location (DMS): 34° 58' 9.7" S 117° 23' 18.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2511 Collection Date: 23 June 2000

ID by: R.J. Cranfield Date: 6 September 2000 Origin: PERTH Duplicates to: CANB MJP. Record Basis: PreservedSpecimen

PERTH 06491200

*Cladonia ramulosa* (With.) J.R. Laundon Cladoniaceae

Vegetation: Coastal scrub. Site Description: On sand and litter. Locality: Denmark Shire. Wilson Inlet foreshore at Crusoe Beach State: WA Location: -34.984°, 117.425° (GDA94) Location (DMS): 34° 59' 0.7" S 117° 25' 31.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2487 Collection Date: 16 June 2000

Determinavit: R.J. Cranfield Date: 16 June 2000 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06286461

*Cladonia tessellata* Ahti & Kashiw. Cladoniaceae

Plant Description, Notes: Very small green thalli; unbranched podetia capped by brown +/- globular apothecia. Vegetation: Scattered on sand & mosses (*Campylopus introflexus* & *Barbula calycina*) Locality: Denmark Shire. Wilson Inlet foreshore, c.200 m south from Little River bridge. State: WA Location: -34.998°, 117.335° (GDA94) Location (DMS): 34° 59' 51.7" S 117° 20' 7.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2782 Collection Date: 13 June 2001

ID by: R.J.Cranfield Date: 30 September 2001 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 01785311

*Conospermum capitatum* R.Br. subsp. *capitatum* Proteaceae

Site Description: Sandy flat. Locality: Tennessee Railway Station near Wilson's Inlet, South West State: WA Location: -35.033°, 117.542° (GDA94) Location (DMS): 35° 2' 0.0" S 117° 32' 30.0" E (GDA94) Collector: Jackson, S.W. Coll No: s.n. Collection Date: 22 February 1913

Determinavit: E.M. Bennett Date: 13 March 1991 Origin: PERTH Duplicates to: CANB Record Basis: PreservedSpecimen

PERTH 02391597

\**Conyza sumatrensis* (Retz.) E.Walker Asteraceae

Plant Description, Notes: Slender erect herb, flowers yellowish in flower. Vegetation: Melaleuca cuticularis low open woodland. Site Description: Flat edging inlet, grey sandy clay over granite. Locality: Honeymoon Island, Wilson Inlet, Denmark State: WA Location: -34.983°, 117.350° (GDA94) Location (DMS): 34° 59' S 117° 21' E (GDA94) Collector: Keighery, G.J. Coll No: 12699 Collection Date: 23 January 1992

Temporary Sorting Slip: Wednesday, 4 September 2002 Origin: PERTH Record Basis: PreservedSpecimen  
PERTH 04402251

\**Corrigiola litoralis* L. Caryophyllaceae

Plant Description, Notes: Small mound 10 x 10 cm with white flowers. Vegetation: In association with *Scirpus* sp. and *Halosarcia lepidosperma*. Site Description: Soil, sea sand and rocks. Locality: On edge of Morley Beach, Wilson Inlet, off Eden Road, off South Coast Highway, W of Albany, State: WA Location: -35.000°, 117.478° (GDA94) Location (DMS): 35° 0' 0.0" S 117° 28' 39.0" E (GDA94) Collector: Croxford, E.J. Coll No: 7273 Collection Date: 14 February 1995

ID by: M. Hislop Date: 2 October 2008 Origin: ALB. Duplicates to: ALB. Record Basis: PreservedSpecimen  
PERTH 01317709

*Corymbia ? calophylla* Myrtaceae

Plant Description, Notes: Bloodwood or Red Gum sucker, leaf from sapling. Locality: Wilson's Inlet, SW State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Jackson, S.W. Coll No: s.n. Collection Date: 22 February 1913

Determinavit: N. Robinson Date: 26 July 1996 Origin: PERTH Duplicates to: CANB Record Basis: PreservedSpecimen

PERTH 01317717

*Corymbia ? calophylla* Myrtaceae

Plant Description, Notes: Bloodwood or Red Gum sucker, leaf from sapling. Locality: Wilson's Inlet, SW State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Jackson, S.W. Coll No: s.n. Collection Date: 22 February 1913

Determinavit: N. Robinson Date: 26 July 1996 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05092000

\**Dactylis glomerata* L. Poaceae

Plant Description, Notes: Robust perennial herb, 1-1.5 m high. Flowers green. Vegetation: Eucalyptus diversicolor woodland. Site Description: Steep slope. Loam over granite. Frequency: rare. Locality: Honeymoon Island, Wilson Inlet, Denmark State: WA Location: -34.983°, 117.450° (GDA94) Location (DMS): 34° 59' S 117° 27' E (GDA94) Collector: Keighery, G.J. Coll No: 12747 Collection Date: 23 January 1992

Origin: CALM. Record Basis: PreservedSpecimen

PERTH 04739639

*Dianella brevicaulis* (Ostenf.) G.W.Carr & P.F.Horsfall Hemerocallidaceae

Plant Description, Notes: Tussocky plant, height to 50 cm, broad flat leaves, blue flowers. Vegetation: Melaleuca cuticularis, M. densa, Lobelia alata, Gahnia trifida, Olearia paucidentata, Boronia denticulata,

*Aira caryophylla*. Locality: Plot 5113, Wilson Inlet near Hay river mouth, 10 km E of Denmark State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annel, A.R. Coll No: ARA 2071 Collection Date: 16 December 1991

Origin: MJP. Duplicates to: CANB Record Basis: PreservedSpecimen

PERTH 05805333

*Eccremidium pulchellum* (Hook.f. & Wilson) Muell.Hal. Ditrichaceae

Plant Description, Notes: Slender, erect plants 4 to 8 mms high with tightly appressed leaves. Terminal shoots deciduous. Many plants with long perichaetial leaves. Vegetation: Assoc. with *Rosulabryum billardieri* and *Sematophyllum homomallum*. Site Description: On sand in a open area. Locality: Denmark Shire. Wilson Inlet foreshore, c.50m south of the Little River bridge. State: WA Location: -34.829°, 117.336° (GDA94) Location (DMS): 34° 49' 45.7" S 117° 20' 9.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2784 Collection Date: 13 June 2001

Origin: DNK. Record Basis: PreservedSpecimen

PERTH 01392417

*Eucalyptus megacarpa* F.Muell. Myrtaceae

Locality: Wilson's [Wilson] Inlet State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Anonymous Coll No: s.n.

Determinavit: A.J.G. Wilson Date: 10 May 1990 Origin: MEL Record Basis: PreservedSpecimen

PERTH 04452283

*Evandra aristata* R.Br. Cyperaceae

Plant Description, Notes: 2 m sedge. This specimen is housed at Albany. ALB. 11254 Vegetation: In association with *Oxylobium* sp. and *Melaleuca* sp. Site Description: Soil, sandy peat. Locality: Confluence to Wilson Inlet, Denmark Road, State: WA Location: -34.950°, 117.467° (GDA94) Location (DMS): 34° 57' 0.0" S 117° 28' 0.0" E (GDA94) Collector: Anderson, L. Coll No: s.n. Collection Date: 3 May 1989

Origin: ALB. Duplicates to: ALB. Record Basis: Drawing Or Photograph

PERTH 05611415

*Fissidens curvatus* Hornsch. Fissidentaceae

Plant Description, Notes: Tiny plants, majority c. 0.5 cm high. Leaves and ventral laminae bordered with elongated cells. Vegetation: With *Chiloscyphus semiteres* and *Lethocolea squamata*. Site Description: On wet clay-loam at the base of a long disused anthill. Locality: Denmark Shire. Wilson Inlet Heritage Trail, c.1.5 km east from the Railway Bridge over the Denmark River, State: WA Location: -34.970°, 117.380° (GDA94) Location (DMS): 34° 58' 11.7" S 117° 22' 47.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2514 Collection Date: 23 June 2000

Origin: PERTH Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 05611458

*Fissidens tenellus* Hook.f. & Wilson Fissidentaceae

Plant Description, Notes: Tiny plants in a mat. Margins of leaf and lamina denticulate due to protrusion of papillae. Site Description: On a wet sandy bank. Locality: Denmark Shire. Wilson Inlet Heritage Trail, on the track down to the Springdale Tunnel, State: WA Location: -34.969°, 117.384° (GDA94) Location (DMS): 34° 58' 8.7" S 117° 23' 3.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2517 Collection Date: 23 June 2000

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05611423

*Fossombronia* sp. Fossombroniaceae

Plant Description, Notes: Scattered solitary plants with erect, crystalline-green leaves. Vegetation: With *Chiloscyphus semiteres* and *Lethocolea squamata*. Site Description: On wet clay-loam at the base of a long disused anthill. Locality: Denmark Shire. Wilson Inlet Heritage Trail, c.1.5 km east from the Railway Bridge over the Denmark River, State: WA Location: -34.970°, 117.380° (GDA94) Location (DMS): 34° 58' 11.7" S 117° 22' 47.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2515 Collection Date: 23 June 2000

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05856310

*Frullania falciloba* Frullaniaceae

Site Description: On vertical surface of large granite boulder at water's edge. Locality: Denmark townsite, Wilson Inlet foreshore on N boundary of W.I. Holiday Park, State: WA Location: -34.991°, 117.342° (GDA94) Location (DMS): 34° 59' 28.7" S 117° 20' 29.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2046 Collection Date: 16 October 1998

Determinavit: E.B. Best Date: 2 February 1999 Origin: PERTH Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 03175081

*Gastrolobium cuneatum* Henfr. Fabaceae

Plant Description, Notes: Shrub to 1.5 m high. Flowers orange. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denticulata*, *Aria caryophyllea*. Locality: Pt 5113, Wilson Inlet near Hay River mouth, 10 km E of Denmark, Map Name: Denmark 1:50,000, Map Ref: JY 146 87 State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annel, A.R. Coll No: 2073 Collection Date: 16 December 1991

Determinavit: G.T. Chandler Date: 25 August 2000 Origin: MJP. Record Basis: PreservedSpecimen

PERTH 05611261

Genus sp. Alga

Plant Description, Notes: Diffuse, brownish patches of slime on litter. Vegetation: In coastal scrub. Site Description: Around the margins of a claypan. Locality: Denmark Shire. Wilson Inlet foreshore at the west end of Rudgyard Nature Reserve, State: WA Location: -34.979°, 117.425° (GDA94) Location (DMS): 34° 58' 45.7" S 117° 25' 28.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2484 Collection Date: 16 June 2000

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06491197

Genus sp. Lichen

Plant Description, Notes: Diffuse white crust with 1 to 2 mm black, pin-head ? apothecia. Site Description: On small branches of a dead *Banksia littoralis*. Locality: Denmark Shire, Wilson Inlet foreshore at Crusoe Beach State: WA Location: -34.984°, 117.425° (GDA94) Location (DMS): 34° 59' 0.7" S 117° 25' 31.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2486 Collection Date: 16 June 2000

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05611385

*Goebelobryum unguiculatum* Acrobolbaceae

Plant Description, Notes: Plants c. 1 cm long in a mat of *Cephaloziella* with short tufts of new growth on the surface of the mat. Site Description: On black sand slime on the wall of a drain. Locality: Denmark Shire, Wilson Inlet Heritage Trail, c.0.5 km west from Minang shelter, State: WA Location: -34.974°, 117.390° (GDA94) Location (DMS): 34° 58' 26.7" S 117° 23' 25.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2510 Collection Date: 23 June 2000

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06997554

*Gracilaria* sp. Alga

Plant Description, Notes: With epiphyte [*Acrocarpia*]. Site Description: Sand shoals on base of algal drift. Locality: Mouth of Wilson Inlet State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Anonymous Coll No: s.n. Collection Date: 29 October 1976

Origin: UWA Record Basis: PreservedSpecimen

PERTH 06491162

*Graphis* sp. Graphidaceae

Plant Description, Notes: Diffuse white crust with 1-2 mm black, linear apothecia. Site Description: On dead twigs still attached to the trunk of *Allocasuarina fraseriana*. Locality: Denmark Shire, Wilson Inlet foreshore on the Heritage Trail, ca 0.5 km from Springdale Heights subdivision State: WA Location: -34.973°, 117.405° (GDA94) Location (DMS): 34° 58' 22.7" S 117° 24' 19.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2506 Collection Date: 23 June 2000

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06302726

*Hakea oleifolia* (Sm.) R.Br. Proteaceae

Plant Description, Notes: Tree to 20 feet high and 10 inches in diameter. Locality: Wilson's Inlet State: WA Location: -34.983°, 117.367° (GDA94) Location (DMS): 34° 59' S 117° 22' E (GDA94) Collector: Jackson, S.W.; Whitlock, F.L. Coll No: s.n. Collection Date: 22 February 1913

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04313119

*Helichrysum luteoalbum* (L.) Rchb. Asteraceae

Locality: Wilson Inlet, State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Pen, L.J. Coll No: LJP 59 Collection Date: 1 May 1992

Temporary Sorting Slip: Wednesday, 5 July 2006 Origin: ALB. Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 04296931

*Hemarthria uncinata* R.Br. Poaceae

Plant Description, Notes: Grass, height to 40 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denticulata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near Hay River inlet, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2070 Collection Date: 16 December 1991

Determinavit: T.D. Macfarlane Date: 22 February 1996 Origin: MJP. Duplicates to: MJP. Record Basis: PreservedSpecimen

PERTH 05127351

*Hemarthria uncinata* R.Br. Poaceae

Plant Description, Notes: Rhizomatous grass to 30 cm x 3 m wide. Flowers green, in full flower. Abundance: abundant in area. Vegetation: *Melaleuca cuticularis* low open woodland, edging brackish inlet. Site Description: Brown clay over granite. Locality: Wilson Inlet, Denmark, State: WA Location: -34.983°, 117.350° (GDA94) Location (DMS): 34° 59' S 117° 21' E (GDA94) Collector: Keighery, G.J. Coll No: 11663 Collection Date: 19 January 1991

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 00460028

\**Holcus lanatus* L. Poaceae

Vegetation: forest Karri Locality: near Wilson Inlet W side Denmark State: WA Location: -34.956°, 117.357° (GDA94) Location (DMS): 34° 57' 23.0" S 117° 21' 24.0" E (GDA94) Collector: Johnson - Coll No: - Collection Date: 16 January 1947

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 06491170

*Hypogymnia pulchrilobata* (Bitter) Elix Parmeliaceae

Plant Description, Notes: Grey-green plaques. Site Description: On small branches of *Allocasuarina fraseriana*. Locality: Denmark Shire, Wilson Inlet foreshore on the Heritage Trail, ca 0.5 km from Springdale Heights subdivision State: WA Location: -34.973°, 117.405° (GDA94) Location (DMS): 34° 58' 22.7" S 117° 24' 19.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2507 Collection Date: 23 June 2000

ID by: R.J. Cranfield Date: 6 September 2000 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04720172

*Hypolaena exsulca* R.Br. Restionaceae

Plant Description, Notes: Rush, height to 50 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Banksia occidentalis*, *B. seminuda*, *Kunzea ericifolia*, *Boronia denticulata*, *Gahnia trifida*, *Isolepis nodosa*, *Oxylobium lanceolatum*. Site Description: Flat, shallow flood plain. Locality: Plot 5112, Wilson Inlet near mouth of Hay River, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2058 Collection Date: 16 December 1991



Origin: MJP. Record Basis: PreservedSpecimen

PERTH 05120845

*Isolepis congrua* Nees Cyperaceae

Plant Description, Notes: Domed perennial herb, to 5-10 cm x 20-30 cm. Flowers brown. Abundance: common in area. Vegetation: Occurs with *I. prolifera* and presumed hybrids (GJK 11653, 11654). Open sedgeland. Site Description: Launching ramp on estuary edge. Wet coarse grey sand over clay. Locality: Wilson's Inlet, Denmark, opposite Honeymoon Island, State: WA Location: -34.983°, 117.342° (GDA94) Location (DMS): 34° 59' S 117° 20' 30.0" E (GDA94) Collector: Keighery, G.J. Coll No: 11655 Collection Date: 17 January 1991

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05120829

*Isolepis congrua* x *prolifera* Cyperaceae

Plant Description, Notes: Perennial herb to 10 cm x 30 cm. Flowers brown, largely in bud. Abundance: scattered in area. Vegetation: Both parents present GJK 11653, GJK 11655. Site Description: Launching ramp on estuary edge. Wet coarse grey sand over clay. Locality: Wilson's Inlet, Denmark, opposite Honeymoon Island, State: WA Location: -34.983°, 117.342° (GDA94) Location (DMS): 34° 59' S 117° 20' 30.0" E (GDA94) Collector: Keighery, G.J. Coll No: 11654 Collection Date: 18 January 1991

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05120837

\**Isolepis prolifera* (Rottb.) R.Br. Cyperaceae

Plant Description, Notes: Stoloniferous perennial herb to 30 cm x 1 m. Flowers green-brown, in flower. Abundance: common in area. Vegetation: Growing with *I. cernua* (GJK 11655) and hybrids (GJK 11654). Site Description: Launching ramp area edge of estuary. Grey coarse sandy clay over clay. Locality: Wilson's Inlet, Denmark, opposite Honeymoon Island, State: WA Location: -34.983°, 117.342° (GDA94) Location (DMS): 34° 59' S 117° 20' 30.0" E (GDA94) Collector: Keighery, G.J. Coll No: 11653 Collection Date: 18 January 1991

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 03423603

*Ixiolaena viscosa* Benth. Asteraceae

Plant Description, Notes: 20 cm high, flowers white. Vegetation: Associated with *Melaleuca* and *Hibbertia*. Locality: Against shoreline of Wilson's Inlet, off South Coast Highway State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Croxford, E.J. Coll No: 4737 Collection Date: 14 December 1985

Origin: ALB. Record Basis: PreservedSpecimen

PERTH 04294254

*Juncus kraussii* subsp. *australiensis* (Buchenau) Snogerup Juncaceae

Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denitculata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near Hay river inlet, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58'

33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2067 Collection Date: 16 December 1991

Determinavit: R.J. Cranfield Date: 23 July 1992 Origin: MJP. Record Basis: PreservedSpecimen

PERTH 04294262

*Juncus kraussii* subsp. *australiensis* (Buchenau) Snogerup Juncaceae

Vegetation: *Melaleuca cuticularis*, *M densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denitculata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near Hay river inlet, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2066 Collection Date: 16 December 1991

Determinavit: R.J. Cranfield Date: 23 July 1992 Origin: MJP. Record Basis: PreservedSpecimen

PERTH 04294270

*Juncus kraussii* subsp. *australiensis* (Buchenau) Snogerup Juncaceae

Plant Description, Notes: Rush, to 90 cm high. Vegetation: *Melaleuca cuticularis*, *M densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denitculata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near Hay river inlet, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2065 Collection Date: 16 December 1991

Determinavit: R.J. Cranfield Date: 2 June 1992 Origin: MJP. Record Basis: PreservedSpecimen

PERTH 04720229

*Juncus kraussii* subsp. *australiensis* (Buchenau) Snogerup Juncaceae

Plant Description, Notes: Rush, height to 70 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denticulata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near mouth of Hay River, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2067 Collection Date: 16 December 1991

Origin: MJP. Record Basis: PreservedSpecimen

PERTH 04084616

*Juncus kraussii* subsp. *australiensis* (Buchenau) Snogerup Juncaceae

Vegetation: Marginal vegetation. Locality: Wilson Inlet, Brown Lagoon State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Cambridge, M. Coll No: s.n. Collection Date: 28 October 1976

Determinavit: J. Hodgson Date: 1 October 2003 Origin: UWA Record Basis: PreservedSpecimen

PERTH 02405601

\**Leontodon saxatilis* Lam. Asteraceae

Plant Description, Notes: Rosetted perennial herb, flowers yellow. Site Description: Gentle open granite slope. Peaty black sand. Frequency: scattered in area. Locality: Honeymoon Island, Wilson Inlet, Denmark State: WA Location: -34.983°, 117.350° (GDA94) Location (DMS): 34° 59' S 117° 21' E (GDA94) Collector: Keighery, G.J. Coll No: 12702 Collection Date: 23 January 1992

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 02467119

\**Lepidium bonariense* L. Brassicaceae

Plant Description, Notes: Erect annual herb to 40 cm. Flowers greenish-white, in late flower. Abundance: scattered in area. Vegetation: *Melaleuca raphiophylla* low open shrubland. Site Description: Deep valley, black sandy clay. Locality: Honeymoon Island, Wilson Inlet, Denmark State: WA Location: -34.983°, 117.350° (GDA94) Location (DMS): 34° 59' S 117° 21' E (GDA94) Collector: Keighery, G.J. Coll No: 12703 Collection Date: 23 January 1992

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04481526

*Leptocarpus laxus* (R.Br.) B.G.Briggs Restionaceae

Plant Description, Notes: 1 m sedge with brown flower heads. Male and female flowers. Vegetation: In association with *Kunzea* sp. and *Melaleuca* sp. Site Description: Soil, peat-swamp. Locality: On the track to Wilson Inlet beside Hay River, W of Denmark Road, W of Albany State: WA Location: -34.950°, 117.467° (GDA94) Location (DMS): 34° 57' 0.0" S 117° 28' 0.0" E (GDA94) Collector: Croxford, E.J. Coll No: 6133 Collection Date: 23 April 1989

Temporary Sorting Slip: Tuesday, 4 December 2007 Origin: ALB. Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 04720164

*Meeboldina coangustata* (Nees) B.G.Briggs & L.A.S.Johnson Restionaceae

Plant Description, Notes: Rush, height to 60 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Banksia occidentalis*, *B. seminuda*, *Kunzea ericifolia*, *Boronia denticulata*, *Gahnia trifida*, *Isolepis nodosa*, *Oxylobium lanceolatum*. Site Description: Flat, shallow flood plain. Locality: Plot 5112, Wilson Inlet near mouth of Hay River, 10 km E of Denmark State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annel, A.R. Coll No: ARA 2056 Collection Date: 16 December 1991

Origin: MJP. Record Basis: PreservedSpecimen

PERTH 06491278

*Megalaria grossa* (Pers. Ex Nyl.) Hafellner Megalariaceae

Plant Description, Notes: Diffuse greyish white plaques with minute pinhead ? apothecia, majority black, but in one small area on the same tree apothecia are bright orange. Site Description: On the bark of *Agonis flexuosa*. Locality: Denmark Shire. Wilson Inlet foreshore on the Heritage Trail at the Minang Shelter State: WA Location: -34.972°, 117.398° (GDA94) Location (DMS): 34° 58' 20.7" S 117° 23' 54.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2508 Collection Date: 23 June 2000

ID by: R.J. Cranfield Date: 20 January 2010 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 03528375

*Melaleuca cuticularis* Labill. Myrtaceae

Plant Description, Notes: Tree 14 ft high. Site Description: On swamps. Locality: Wilson Inlet State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Jackson, S.W. Coll No: s.n. Collection Date: 22 February 1913

Determinavit: B.A. Barlow Date: 20 May 1986 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04304039

*Melaleuca lanceolata* Otto Myrtaceae

Plant Description, Notes: Common name: green leaves. Locality: Wilson Inlet, State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Pen, L.J. Coll No: LJP 60 Collection Date: 1 May 1992

Origin: ALB. Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 05796334

*Melaleuca pauciflora* Turcz. Myrtaceae

Plant Description, Notes: Stiff, semi-prostrate shrub to 1 m high. Soft grey bark - not papery. Leaves erect. Flowering finished - immature fruit present. Vegetation: In Low Scrub B and Low Sedges. Associated with *Astartea fascicularis*, *Pericalymma crassipes* and *Baeckea arbuscula*. Site Description: In deep sand in a seasonally wet swamp. Frequency: locally common. Locality: Denmark Shire. Wilson Inlet foreshore. Rudgyard Nature Reserve. 400 m along a track running NE through the reserve. State: WA Location: -34.980°, 117.425° (GDA94) Location (DMS): 34° 58' 46.7" S 117° 25' 28.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2431 Collection Date: 28 March 2000

Origin: DNK. Duplicates to: DNK. Record Basis: PreservedSpecimen

PERTH 03606031

*Melaleuca preissiana* Schauer Myrtaceae

Plant Description, Notes: Flowers white. "Paperbark". Locality: Wilson's Inlet, Denmark State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Gardner, C.A. Coll No: 740 Collection Date: 20 February 1922

Determinavit: B.A. Barlow Date: 19 September 1986 Origin: GARDNER. Record Basis: PreservedSpecimen

PERTH 03606058

*Melaleuca preissiana* Schauer Myrtaceae

Locality: Wilson's Inlet, Denmark State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Gardner, C.A. Coll No: 1240 Collection Date: 20 February 1922

Determinavit: B.A. Barlow Date: 19 September 1986 Origin: WAFD. Record Basis: PreservedSpecimen

PERTH 05333253

*Microtis atrata* Lindl. Orchidaceae

Plant Description, Notes: Small Mignonette Orchid on seasonally inundated moss pads. Site Description: On foreshore granite. Frequency: numerous. Locality: Denmark Shire, Wilson Inlet foreshore, S from W.I. Holiday Park, State: WA Location: -34.997°, 117.339° (GDA94) Location (DMS): 34° 59' 48.0" S 117° 20' 19.0" E (GDA94) Collector: Hammersley, B.G. Coll No: 2049 Collection Date: 16 October 1998

Origin: DNK. Duplicates to: DENMARK. Record Basis: PreservedSpecimen

PERTH 04213637

*Olax phyllanthi* (Labill.) R.Br. Olacaceae

Plant Description, Notes: Common name: pale willow. Locality: Wilson Inlet State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Pen, L.J. Coll No: LJP 58 Collection Date: 1 May 1992

Origin: ALB. Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 05856396

*Pallavicinia lyellii* Pallaviciniaceae

Plant Description, Notes: Thallose liverwort forming mats and rosettes. Vegetation: Under grasses and sedges. Associated with *Campylopus bicolor*. Site Description: In winter-wet swamp. Locality: Swamp area S of Wilson Inlet Heritage Trail, State: WA Location: -34.967°, 117.370° (GDA94) Location (DMS): 34° 58' 1.7" S 117° 22' 12.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2114 Collection Date: 24 November 1998

Determinavit: E.B. Best Date: 19 February 1999 Origin: PERTH Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 02522713

\**Paspalum dilatatum* Poir. Poaceae

Plant Description, Notes: Tufted caespitose perennial, clumps to 15 cm tall x 20 cm wide. Inflorescences to 40 cm. In flower; flowers green-purple. A common weed of granite rock slopes above inlet. Site Description: In soil filled rills and moss swards on granite. Locality: Wilson Inlet, Denmark State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Keighery, G.J. Coll No: 12678 Collection Date: 19 January 1992

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04213068

\**Paspalum vaginatum* Sw. Poaceae

Site Description: Shore line of Wilson Inlet, subject to saline inundation. Locality: Hay River mouth, Wilson Inlet State: WA Location: -34.967°, 117.467° (GDA94) Location (DMS): 34° 58' S 117° 28' E (GDA94) Collector: Janicke, G. Coll No: 193 Collection Date: 1 December 1994

Determinavit: T.D. Macfarlane Date: 22 February 1995 Origin: ALB. Record Basis: PreservedSpecimen

PERTH 03181847

\**Phytolacca octandra* L. Phytolaccaceae

Plant Description, Notes: Erect soft woody shrub, from a large tuber. Flowers white-pink, in full flower. Abundance: common. Site Description: Rock hills. Granite slopes. Black peaty sandy loam. Locality: Honeymoon Island; Wilson Inlet, Denmark State: WA Location: -34.983°, 117.350° (GDA94) Location (DMS): 34° 59' S 117° 21' E (GDA94) Collector: Keighery, G.J. Coll No: 12696 Collection Date: 23 January 1992

Origin: PERTH Duplicates to: CBG Record Basis: PreservedSpecimen

PERTH 07046456

*Polysiphonia* sp. Alga

Plant Description, Notes: [Epiphyte] on *Chara*. With heavy diatom cover. Site Description: Sand bar. Depth: 1 m. Brown lagoon. Locality: Wilson Inlet State: WA Location: -34.983°, 117.417°

(GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Anonymous Coll No: 74084 Collection Date: 28 October 1976

Origin: UWA Record Basis: Preserved Specimen

PERTH 05794234

\**Psoralea pinnata* L. Fabaceae

Plant Description, Notes: Upright shrub, 2-3 m high x 2 m wide. Flowers blue. End of flowering season. Only one with flowers. Shrub not noted on other parts of track. Vegetation: Degraded scrub beside walk trail. With *AQnigozanthos* and bracken. Site Description: Flat. Cream sandy gravel. Frequency: common. Locality: 300 m from road junction along Wilson Inlet Heritage Trail, near Denmark Rivermouth Caravan Park, State: WA Location: -34.983°, 117.367° (GDA94) Location (DMS): 34° 59' S 117° 22' E (GDA94) Collector: Smith, J.F. Coll No: 60 Collection Date: 20 March 2001

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05856418

*Ptychostomum angustifolium* (Brid.) J.R.Spence & H.P.Ramsay Bryaceae

Plant Description, Notes: Very small moss. Leaves with hyaline tips. Vegetation: Under *Melaleucas*. Site Description: In sand. On inlet foreshore. Locality: Crusoe Beach, Wilson Inlet, Denmark Shire, State: WA Location: -34.984°, 117.427° (GDA94) Location (DMS): 34° 59' 3.7" S 117° 25' 35.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2115 Collection Date: 24 November 1998

Temporary Sorting Slip: Wednesday, 7 February 2007 Origin: PERTH Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 05611288

*Riccardia aequicellularis* Aneuraceae

Plant Description, Notes: Thallose liverwort with narrow, erect terminal thalli. Apex not dissected. Vegetation: On green algae, *Cephaloziella arctica* and *Lethocolea squamata*. Site Description: On wet peaty sand in a seeping cavity. Locality: Denmark Shire. Wilson Inlet foreshore - on the track to Crusoe Beach, State: WA Location: -34.984°, 117.425° (GDA94) Location (DMS): 34° 59' 0.7" S 117° 25' 31.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2490 Collection Date: 16 June 2000

Origin: PERTH Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 05611431

*Riccardia bipinnatifida* Aneuraceae

Plant Description, Notes: Small *Riccardia* with narrow thalli lying flat. Terminal thalli slightly dissected. Occasional spent calyptra. Vegetation: On rotting bark scattered through a dense mat of *Rhapidorrhyncium amoenum*. Locality: Denmark Shire. Wilson Inlet Heritage Trail, c.1.7 km east from the Railway Bridge over the Denmark River, State: WA Location: -34.970°, 117.382° (GDA94) Location (DMS): 34° 58' 10.7" S 117° 22' 55.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2516 Collection Date: 23 June 2000

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04294246

*Sarcocornia ? quinqueflora* Chenopodiaceae

Plant Description, Notes: Height to 15 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denitculata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near Hay river inlet, 10 km E of Denmark, State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2068 Collection Date: 16 December 1991

Determinavit: P. Wilson Date: 15 April 1992 Origin: MJP. Record Basis: PreservedSpecimen

PERTH 02247631

*Scaevola microphylla* Benth. Goodeniaceae

Plant Description, Notes: Wiry-stemmed herb 30 cm high, flowers blue. Accession: SA 143 Vegetation: Disturbed Karri forest with shrubby understory. Site Description: Sand. Locality: Walking track between Campbell Road and Little River Wilson Inlet, Denmark State: WA Location: -34.967°, 117.333° (GDA94) Location (DMS): 34° 58' S 117° 20' E (GDA94) Collector: Howell, G.J. Coll No: 101 Collection Date: 26 October 1990

Origin: MELU Duplicates to: MEL Record Basis: PreservedSpecimen

PERTH 04698738

*Schoenus efoliatus* F.Muell. Cyperaceae

Plant Description, Notes: Tufted sedge with slender stems, height to 80 cm. Abundance: Occasional over large area of seasonal swamp, more numerous along margins of three year old fire break. Vegetation: Dense tall sedges, *Melaleuca raphiophylla*, *Beaufortia sparsa*, *Anarthria scabra*, *A. prolifera*. Site Description: Peaty grey sand over laterite, winter wet swamp on inlet at river mouth. Locality: E side of Denmark River near entry to Wilson Inlet, State: WA Location: -34.971°, 117.364° (GDA94) Location (DMS): 34° 58' 15.0" S 117° 21' 50.0" E (GDA94) Collector: Hammersley, B.G. Coll No: BGH 1217 Collection Date: 21 October 1994

ID by: M. Hislop Date: 12 March 2009 Origin: MJP. Record Basis: PreservedSpecimen

PERTH 06476376

*Selliera radicans* Cav. Goodeniaceae

Plant Description, Notes: Scrambling, prostrate herbaceous perennial with fleshy bright green leaves and adventitious roots. Flowers (not seen) and fruiting capsules held on a long peduncle. Capsules hold multiple winged seeds that become mucilaginous on wetting. Vegetation: Sedgeland. Assoc. sp.: *Atriplex* sp., Sedges and *Melaleuca cuticularis*. Site Description: Landform: estuarina flats tidally inundated. Soil type: grey/white sand. Parent material: sandstone. Frequency: 50 + plants. Locality: At the mouth of the Hay River on the Wilson Inlet, W side. Population extends along the shoreline for 50 m, more, and behind the bare sand State: WA Location: -34.971°, 117.461° (GDA94) Location (DMS): 34° 58' 17.0" S 117° 27' 41.0" E (GDA94) Collector: Cochrane, J.A.; Barrett, S. Coll No: 4181 Collection Date: 6 May 2002  
Conservation Code: 1

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04921542

*Selliera radicans* Cav. Goodeniaceae

Plant Description, Notes: Prostrate stems rooting at nodes. Leaves erect, semi-succulent. Remains of only two spent flowers found in numerous plants. Pedicels 1 cm. Abundance: recurring over distance of 2 km. More prevalent where associated vegetation is less dense. Vegetation: *Neurachne* sp., *Isolepis nodosa*, *Villarsia parnassifolia*, *Atriplex hypoleuca*. Site Description: Low lying, seasonally wet area on the edge of

inlet. In soil pockets on broken granite. Locality: Wilson Inlet, adjacent to N boundary of Wilson Inlet Holiday Park, State: WA Location: -34.992°, 117.342° (GDA94) Location (DMS): 34° 59' 30.7" S 117° 20' 30.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 1713 Collection Date: 27 March 1997 Conservation Code: 1

Origin: DNK. Record Basis: PreservedSpecimen

PERTH 04744462

*Selliera radicans* Cav. Goodeniaceae

Plant Description, Notes: Prostrate stems to 0.5 m, rooting at nodes. Fleshy erect leaves. No flowers found. Abundance: one patch c. 2 m diam. in 200 m of shoreline. Vegetation: Dense low sedges with *Atriplex hypoleuca* and *A. prostrata*, *Sarcicornia blackiana*. Site Description: Close to edge of inlet, below high water line in black mud. Locality: Wilson Inlet, W of mouth of the Hay River near boat launching site, State: WA Location: -34.972°, 117.463° (GDA94) Location (DMS): 34° 58' 20.0" S 117° 27' 45.0" E (GDA94) Collector: Hammersley, B.G. Coll No: 1711 Collection Date: 5 February 1997 Conservation Code: 1

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04744470

*Selliera radicans* Cav. Goodeniaceae

Plant Description, Notes: Prostrate stems to 50 cm, rooting at nodes. Fleshy erect leaves. Flowers sparse, pale blue, pedicillate. Abundance: small population c. 1 m diam. Vegetation: Open *Melaleuca* scrub over *Cyperaceae* and *Sarcocornia blackiana*. Site Description: In a pile of dead seagrass closed to waters edge in saline mud. Locality: Wilson Inlet - Crusoe Beach - E end, State: WA Location: -34.986°, 117.426° (GDA94) Location (DMS): 34° 59' 10.0" S 117° 25' 35.0" E (GDA94) Collector: Hammersley, B.G. Coll No: 1707 Collection Date: 1 February 1997 Conservation Code: 1

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04744489

*Selliera radicans* Cav. Goodeniaceae

Plant Description, Notes: Prostrate stems to 50 cm, rooting at nodes. Fleshy erect leaves. Flowers sparse, pale blue, pedicillate. Abundance: abundant in restricted area. Vegetation: Open herbs, *Lobelia alata*, *Villarsia parnassifolia*, *Samolus junceus*, *Apium prostratum*. Site Description: At edge of inlet below high water line, now moist sand. Locality: Wilson Inlet, W end of Crusoe Beach, State: WA Location: -34.986°, 117.422° (GDA94) Location (DMS): 34° 59' 10.0" S 117° 25' 20.0" E (GDA94) Collector: Hammersley, B.G. Coll No: 1706 Collection Date: 1 February 1997 Conservation Code: 1

Origin: ALB. Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 05119677

*Selliera radicans* Cav. Goodeniaceae

Plant Description, Notes: Rhizomatous perennial herb to 5 cm tall x 1-2 m wide. Flowers inconspicuous, creamy yellow. In full flower. Vegetation: *Melaleuca cuticularis* low open woodland. Site Description: Edging brackish inlet. Wet brown sandy clay over granite. Locality: Honeymoon Island, Wilson Inlet, Denmark, State: WA Location: -34.983°, 117.350° (GDA94) Location (DMS): 34° 59' S 117° 21' E (GDA94) Collector: Keighery, G.J. Coll No: 11646 Collection Date: 21 January 1991 Conservation Code: 1

Origin: PERTH Record Basis: PreservedSpecimen



PERTH 02763338

*Selliera radicans* Cav. Goodeniaceae

Plant Description, Notes: Prostrate. Vegetation: Shaded by *Melaleuca cuticularis*. Site Description: On saline mud, inundated by estuarine water at high tide. Locality: Caruso Beach on Wilson Inlet, 10 km W of Denmark State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Marchant, N.G. Coll No: s.n. Collection Date: 4 March 1977 Conservation Code: 1

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 02522462

\**Sporobolus africanus* (Poir.) Robyns & Tournay Poaceae

Plant Description, Notes: Rosetted perennial herb to 40 cm. Flowers green-purple, in late flower. Site Description: Open granite slopes, black peaty sandy clay. Frequency: scattered in area. Locality: Honeymoon Island, Wilson Inlet, Denmark State: WA Location: -34.983°, 117.350° (GDA94) Location (DMS): 34° 59' S 117° 21' E (GDA94) Collector: Keighery, G.J. Coll No: 12701 Collection Date: 24 January 1992

Temporary Sorting Slip: Thursday, 26 August 1999 Origin: PERTH Duplicates to: CBG Record Basis: PreservedSpecimen

PERTH 07005652

*Spyridia filamentosa* (Wulfen) Harv. Ceramiaceae

Locality: Wilson Inlet State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Lenanton, R. Coll No: s.n. Collection Date: 18 July 1971

Origin: UWA Record Basis: PreservedSpecimen

PERTH 07005687

*Spyridia filamentosa* (Wulfen) Harv. Ceramiaceae

Locality: Wilson Inlet State: WA Location: -34.983°, 117.417° (GDA94) Location (DMS): 34° 59' S 117° 25' E (GDA94) Collector: Lenanton, R. Coll No: s.n. Collection Date: 18 July 1971

Temporary Sorting Slip: Tuesday, 14 April 2009 Origin: UWA Record Basis: PreservedSpecimen

PERTH 04720180

*Stenotalis ramosissima* (Gilg) B.G.Briggs & L.A.S.Johnson Restionaceae

Plant Description, Notes: Rush, height to 40 cm. Vegetation: *Melaleuca cuticularis*, *M. densa*, *Lobelia alata*, *Gahnia trifida*, *Olearia paucidentata*, *Boronia denticulata*, *Aira caryophylla*. Site Description: Flood plain. Locality: Plot 5113, Wilson Inlet near mouth of Hay River, 10 km E of Denmark State: WA Location: -34.976°, 117.459° (GDA94) Location (DMS): 34° 58' 33.0" S 117° 27' 33.0" E (GDA94) Collector: Annels, A.R. Coll No: ARA 2060 Collection Date: 16 December 1991

Origin: MJP. Record Basis: PreservedSpecimen

PERTH 04547128

*Stylidium caespitosum* R.Br. Stylidiaceae

Plant Description, Notes: 10 cm plant with mauve flowers. This specimen is housed at Albany. ALB. 9882 Vegetation: In association with *Melaleuca* sp. and *Mesomelaena* sp. Site Description: Soil, sandy. Locality: Against Wilson Inlet, Eden Road, off south Coast Highway, W of Albany, State: WA Location: -35.015°, 117.484° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 29' 2.0" E (GDA94) Collector: Croxford, E.J. Coll No: 4729 Collection Date: 14 December 1985

Determinavit: A. Lowrie Date: 1 October 1994 Origin: ALB. Duplicates to: ALB. Record Basis: DrawingOrPhotograph

PERTH 02957124

*Stylidium caespitosum* R.Br. Stylidiaceae

Site Description: By water's edge. Locality: Rudgyard, Wilson's Inlet, E of Denmark State: WA Location: -34.975°, 117.417° (GDA94) Location (DMS): 34° 58' 30.0" S 117° 25' 0.0" E (GDA94) Collector: Erickson, R. Coll No: s.n. Collection Date: 13 January 1953

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05668948

*Stylidium piliferum* R.Br. Stylidiaceae

Plant Description, Notes: White flowering herb 10 cms high with rosette leaves. Vegetation: In association with *Anarthria* sp. *Agonis* sp. and *Darwinea* sp. Site Description: Growing on slope to shoreline, soil a grey sand. Frequency: few in area. Locality: Old Rail Track along shoreline of Wilson Inlet, W of Hay River, E of Denmark, State: WA Location: -34.971°, 117.397° (GDA94) Location (DMS): 34° 58' 14.0" S 117° 23' 50.0" E (GDA94) Collector: Croxford, E.J. Coll No: 7557 Collection Date: 19 October 1996

Confirmavit: A. Lowrie Date: 27 September 2007 Origin: ALB. Record Basis: PreservedSpecimen

PERTH 03159299

*Stylidium pritzelianum* Mildbr. Stylidiaceae

Plant Description, Notes: "Royal-trigger". Site Description: Sandy soil on headland above the water. Locality: Rudyard, Wilson Inlet State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Erickson, R. Coll No: s.n. Collection Date: 13 January 1953

Confirmavit: J.A. Wege Date: 15 June 2005 Origin: UWA Record Basis: PreservedSpecimen

PERTH 03159302

*Stylidium pritzelianum* Mildbr. Stylidiaceae

Locality: Rudyard, Wilson Inlet State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Anonymous Coll No: s.n. Collection Date: 13 January 1953

Confirmavit: J.A. Wege Date: 15 June 2005 Origin: UWA Record Basis: PreservedSpecimen

PERTH 03160270

*Stylidium repens* R.Br. Stylidiaceae

Plant Description, Notes: Abundance: common. Site Description: Down to water's edge. Locality: Rudyard, Wilson Inlet just E of Denmark State: WA Location: -35.015°, 117.335° (GDA94) Location (DMS): 35° 0' 54.0" S 117° 20' 5.0" E (GDA94) Collector: Erickson, R. Coll No: s.n. Collection Date: 13 January 1953

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04065271

*Taraxis grossa* B.G.Briggs & L.A.S.Johnson Restionaceae

Plant Description, Notes: Mass of intertwined wiry stems to 1 m. Abundance: locally dominant Vegetation: Thicket, *Callistachyus lanceolatum*, *Hakea oleifolia*, *Agonis flexuosa*, *Boronia denticulata*. Site Description: Deep grey sand, laterite. Shore of inlet. Locality: Denmark Shire, Wilson Inlet, on track S from Wilson Inlet Caravan Park State: WA Location: -34.992°, 117.333° (GDA94) Location (DMS): 34° 59' 30.0" S 117° 20' 0.0" E (GDA94) Collector: Hammersley, B.G. Coll No: 1316 Collection Date: 8 December 1994

Origin: PERTH Record Basis: PreservedSpecimen

PERTH 04402480

*Tecticornia* sp. Chenopodiaceae

Plant Description, Notes: 30 cm plant with green brown flowers. Vegetation: In association with *Scirpus* sp. and *Melaleuca* sp. Site Description: Soil, sea sand near waterline and rocks. Locality: Morley Beach off Eden Road, on the Wilson Inlet, off South Coast Highway, W of Albany, State: WA Location: -35.032°, 117.478° (GDA94) Location (DMS): 35° 1' 55.0" S 117° 28' 39.0" E (GDA94) Collector: Croxford, E.J. Coll No: 7249 Collection Date: 14 February 1995

Temporary Sorting Slip: Friday, 21 December 2007 Origin: ALB. Duplicates to: ALB. Record Basis: PreservedSpecimen

PERTH 05781159

*Tetragonia implexicoma* (Miq.) Hook.f. Aizoaceae

Plant Description, Notes: Trailing shrub. Bright yellow flowers; deep red-brown fruits, stems very tough and flexible. Leaves succulent, fruits with profuse brownish-red juice, staining fingers. Living Coll. No. 853037 Vegetation: Low scrub of *Acacia* sp. and *Agonis flexuosa*. Site Description: Low calccrete cliffs just above water, ca 200 m upstream from ocean bar. Cliff face from high water mark to ca 4 m. On rock. Frequency: locally abundant. Locality: Mouth of Wilson Inlet, S of Denmark, State: WA Location: -34.983°, 117.367° (GDA94) Location (DMS): 34° 59' S 117° 22' E (GDA94) Collector: Rodd, A.N.; Fensom, G. Coll No: ANR 4939 Collection Date: 12 November 1985

Origin: NSW Duplicates to: AD Record Basis: PreservedSpecimen

PERTH 05805341

*Tortula atrovirens* (Sm.) Lindb. Pottiaceae

Plant Description, Notes: Tiny plants, 0.5 to 2 mm high with spreading obtuse leaves. Occasional small mats, most plants scattered on sand and through other mosses. Vegetation: Assoc. with *Eccremidium pulchellum*, *Rosulabryum billardieri* and *Sematophyllum homomallum*. Site Description: On sand in an open area close to private jetty and boat launch site - i.e. ?transported. Frequency: only one in site in an area <2 m sq. Locality: Denmark Shire. Wilson Inlet foreshore, c.50m south of the Little River bridge State: WA Location: -34.829°, 117.336° (GDA94) Location (DMS): 34° 49' 45.7" S 117° 20' 9.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2783 Collection Date: 13 June 2001

Temporary Sorting Slip: Thursday, 8 February 2007 Origin: DNK. Record Basis: PreservedSpecimen

PERTH 05611393

*Trichostomum eckelianum* R.H.Zander Pottiaceae

Plant Description, Notes: Small moss in loose tufts. Site Description: On sand. Locality: Denmark Shire. Wilson Inlet Heritage Trail, on the track up to Springdale Hill lookout, State: WA Location: -34.970°, 117.381° (GDA94) Location (DMS): 34° 58' 12.7" S 117° 22' 51.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2512 Collection Date: 23 June 2000

Temporary Sorting Slip: Wednesday, 28 March 2007 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 05930650

Usnea sp. Usneaceae

Site Description: On a small dead branch of *Agonis parviceps* in a seasonally wet restionaceous swamp. Locality: Denmark Shire - South of the Wilson Inlet Heritage Trail, c. 1 km E from the Denmark River State: WA Location: -34.967°, 117.371° (GDA94) Location (DMS): 34° 58' 0.7" S 117° 22' 16.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2435 Collection Date: 4 April 2000

ID by: R.J. Cranfield Date: 29 September 2000 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 03732150

*Westringia dampieri* R.Br. Lamiaceae

Plant Description, Notes: Spreading shrub to 1 m. Flowers white. Bark of old stems stringy-flaky. Abundance: frequent. Photo, seed: 853036. Vegetation: Low scrub of *Acacia* sp., *Agonis flexuosa*. Site Description: Low calccrete cliffs just above water, ca 200 m upstream from ocean bar. Sandy drift soil spilling over cliffs. Locality: Mouth of Wilson Inlet, S of Denmark State: WA Location: -35.000°, 117.333° (GDA94) Location (DMS): 35° 0' S 117° 20' E (GDA94) Collector: Rodd, A.N.; Fensom, G. Coll No: ANR 4938 Collection Date: 12 November 1985

Origin: NSW Record Basis: PreservedSpecimen

PERTH 06491227

*Xanthoparmelia* sp. Parmeliaceae

Plant Description, Notes: Large mats of grey-green thalli. Site Description: On granite close to waterline. Locality: Denmark Shire. Wilson Inlet foreshore at E end of Crusoe Beach State: WA Location: -34.985°, 117.427° (GDA94) Location (DMS): 34° 59' 4.7" S 117° 25' 38.5" E (GDA94) Collector: Hammersley, B.G. Coll No: 2489 Collection Date: 16 June 2000

ID by: R.J. Cranfield Date: 29 August 2000 Origin: PERTH Record Basis: PreservedSpecimen

PERTH 02020726

PERTH 02021684

PERTH 02022680

*Xanthorrhoea* sp. Xanthorrhoeaceae

Plant Description, Notes: No flowering or fruiting *Xanthorrhoea* here but two? - kinds of trunked *Xanthorrhoea* - this sort with broader [broad triangular] leaves and another with [rhomboid] leaves. Abundance: Occasional. Vegetation: In *Casuarina* and Jarrah low woodland. Site Description: On grey white sand. Locality: On road from Denmark to Albany, 8.2 km E of Denmark River Bridge, by Wilson Inlet (odometer 050.7) State: WA Location: -34.967°, 117.483° (GDA94) Location (DMS): 34° 58' S 117° 29' E (GDA94) Collector: Bedford, D.; Macfarlane, T.D. Coll No: DJB 22 Collection Date: 26 November 1982

Origin: NSW Record Basis: PreservedSpecimen

**Appendix 3: Plant structural community recording sheets Mt Hallowell Reserve,  
November 2011, May 2012**

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID: MH 001</b>
<b>Date:</b> 22/11/2011	<b>GPS WPT:</b> 001	<b>Structural comm. type (app 2)</b> Karri Forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 001 S	
<b>Location:</b> NW corner Mt Hallowell reserve, near S/E corner of farm, 100m in		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W <u>NW</u>	<b>Slope:</b> Flat Gentle <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> 0 <u>&lt;2</u> 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm. old rotting logs, lots of hung up sticks to 1.5m	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	30-70	Karri
Tree (T2)	10-30	10-30	Euc diversicolour, Allocasuarina decussata,
Tree (T3)	< 10	2-10	A. decussata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	70+	Chorilaena quercifolia, Trymalium floribundum,
Shrub (S2)	1-2	10-30	Hibbertia cuneatus, Chorilaena quercifolia, Hovea trisperma,
Shrub (S3)	0-1	< 2	Leucopogon verticillatus,
Sedge/Rush (VR)		2-10	Lepidosperma effusus
Herb (H)		2-10	Pteridium esculentum
Grass (G)		2-10	Tetrarrhena laevis
Other (climbers) (C)		< 2	Cassytha glabrella

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 1. Looking south

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID: MH 001</b>
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 001	<b>Structural comm. type (app 2)</b> Karri Forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 001 SSE	
<b>Location:</b> N/W corner Mt Hallowell reserve, near S/E corner of farm, 100m in		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> 0 <u>&lt;2</u> 2-10 10-20 20-50 >50 <u>On edge here and there</u>
<b>Soil Colour:</b> Grey <u>Dark Brown</u> <u>Light Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm. old rotting logs, lots of hung up sticks to 1.5m		<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	10-30	Karri
Tree (T2)	10-30	10-30	Eucalyptus diversicolour, Corymbia calophylla, Allocasuarina decussata,
Tree (T3)	< 10	2-10	Allocasuarina decussata, Trymalium odoratissimum
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	70+	Chorilaena quercifolia, Hovea trisperma, Trymalium odoratissimum
Shrub (S2)	1-2	10-30	Chorilaena quercifolia, Hibbertia cuneatus
Shrub (S3)	0-1	2 - 10	Leucopogon verticillatus
Sedge/Rush (VR)		2 - 10	Lepidosperma effusus, Sedge sp. no seed heads
Herb (H)		2 - 10	Pteridium esculentum
Grass (G)			
Other (climbers) (C)		< 2	Billardiera villifolia, Cassytha glabella. (dead).

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: GPS struggles under canopy. Old decaying log on ground – almost decomposed
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Site 1. Looking SSE



Site 1. Ground

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID: MH 002</b>
<b>Date:</b> 22/11/2011	<b>GPS WPT:</b> 002	<b>Structural comm. type (app 2)</b> Karri /marri Forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 002 SSE	
<b>Location:</b> N/W corner Mt Hallowell reserve, 100m in from west fence		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE S SW W <u>NW</u>		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> 0 <u>&lt;2</u> 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS <u>L</u> LS S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 7 cm. dense. Hung up sticks to 1.2m		<b>Bare Ground (% cover)</b> 0%. Tiny amount at animal diggings
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	30-70	Eucalyptus diversicolour, Corymbia calophylla
Tree (T2)	10-30	30 - 70	C. calophylla, Allocasuarina decussata,
Tree (T3)	< 10	2-10	A. decussata, Chorilaena quercifolia
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10-30	Chorilaena quercifolia, Trymalium floribundum,
Shrub (S2)	1-2	10-30	Acacia pentadenia, Hibbertia cuneatus, Lasiopetalum floribundum, Trymalium floribundum,
Shrub (S3)	0-1	2-10	Leucopogon verticillatus, H. cuneatus, A. pentadenia, Leucopogon racemosus, Tremandra stelligera
Sedge/Rush (VR)		10-30	Lepidosperma effusus
Herb (H)		2-10	Pteridium esculentum
Grass (G)		2-10	Tetrarrhena laevis, Poaceae sp NM 7
Other (climbers) (C)		< 2	Billardiera villifolia

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Lot of litter, few weeds along paddock edge – Phalaris sp., etc 1-2m into bush only
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Site 2. Looking SSE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID: MH 002</b>
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 002	<b>Structural comm. type (app 2)</b> Karri /marri Forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 1 SW	
<b>Location:</b> N/W corner Mt Hallowell reserve, 100m in from west fence. Between large karri to S 50m, marri to SW 20m		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W <u>NW</u>	<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> <u>Lat</u> Lime Other ?	<b>Rock:</b> 0 <u>&lt;2</u> 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS <u>L</u> LS S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm. dense. Lot of sticks and logs	<b>Bare Ground (% cover)</b> 0%. Only at few animal diggings
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	30-70	Eucalyptus diversicolour, Corymbia calophylla
Tree (T2)	10-30	30 - 70	Corymbia calophylla, Allocasuarina decussata,
Tree (T3)	< 10	10-30	Allocasuarina decussata, Trymalium odoratissimum
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10-30	Acacia pentadenia, Leucopogon verticillatus, Hibbertia cuneiformis, Tremandra stelligera
Shrub (S2)	1-2	10-30	Hibbertia cuneiformis
Shrub (S3)	0-1	2-10	Leucopogon verticillatus, Hibbertia cuneiformis, Acacia pentadenia, Leucopogon racemosus,
Sedge/Rush (VR)		10-30	Lepidosperma effusus, Lepidosperma gracile (NM 11), Desmocladus fasciculatus
Herb (H)			
Grass (G)		2-10	Tetrarrhena laevis
Other (climbers) (C)		< 2	Billardiera villifolia, Billardiera heterophylla

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Very difficult to find with GPS, need to peg site next visit. Greater detail of site provided in "Location" above
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Site 2. Looking SW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID: MH 003</b>
<b>Date:</b> 22/11/2011	<b>GPS WPT:</b> 003	<b>Structural comm. type (app 2)</b> Karri /marri Forest with grasstree
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 002 SSE	
<b>Location:</b> N/W corner Mt Hallowell reserve, 20m E of west fence		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE S SW W <u>NW</u>		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> 0 <u>&lt;2</u> 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 7 cm. dense. Lot of branches hung up		<b>Bare Ground (% cover)</b> 0%.
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	30 - 70	Eucalyptus diversicolour, Corymbia calophylla
Tree (T2)	10-30	2 - 10	C. calophylla, E. marginata (few), Allocasuarina decussata,
Tree (T3)	< 10	<2	A. decussata, C. calophylla
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10-30	Acacia pentadenia, Xanthorrhoea preissii, Spyridium globulosum, Leucopogon racemosus
Shrub (S2)	1-2	30-70	Acacia pentadenia, Hibbertia cuneatus
Shrub (S3)	0-1	< 2	Boronia gracilipes, L. racemosus
Sedge/Rush (VR)		< 2	Lepidosperma gracile
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Lot of hung up litter, monitor goanna diggings
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Site 3. Looking SSE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID: MH 003</b>
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 003	<b>Structural comm. type (app 2)</b> Karri /marri Forest with grasstree
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 1 S. 1 E	
<b>Location:</b> N/W corner Mt Hallowell reserve, 20m E of west fence		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS <u>L</u> LS S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 7 cm. dense		<b>Bare Ground (% cover)</b> 0%.
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	30 - 70	Eucalyptus diversicolour, Corymbia calophylla
Tree (T2)	10-30	10 - 30	Corymbia calophylla, Eucalyptus diversicolour, Eucalyptus marginata (few to N)
Tree (T3)	< 10	< 2	Allocasuarina decussata, Corymbia calophylla
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10-30	Acacia pentadenia, Xanthorrhoea preissii, Hakea sp, Leucopogon racemosus
Shrub (S2)	1-2	30-70	Lasiopetalum floribundum, Acacia pentadenia, Trymalium ledifolium, Hakea sp., Leucopogon racemosus
Shrub (S3)	0-1	2 - 10	Hibbertia furfuraceae, Boronia gracilipes
Sedge/Rush (VR)		< 2	Lepidosperma gracile, Dasypogon bromeliifolius
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: GPS difficult to settle on same spot. Peg site next visit
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Site 3. Looking S



Site 3. Looking E

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID: MH 004</b>
<b>Date:</b> 22/11/2011	<b>GPS WPT:</b> 004	<b>Structural comm. type (app 2)</b> Jarrah, karri oak, marri forest with banksia
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 004 S	
<b>Location:</b> N/W corner Mt Hallowell reserve, 20m E of paddock/fence		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE S SW W <u>NW</u>		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> <u>Orange/Brown</u> Red/Brown White Yellow <u>Patchy</u>		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 3-4 cm. Lot of branches hung up		<b>Bare Ground (% cover)</b> < 2%.
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	30 - 70	Eucalyptus marginata, Corymbia calophylla
Tree (T2)	10-30	30 - 70	C. calophylla, E. marginata, few karri outside plot
Tree (T3)	< 10	10 - 30	A. decussata, Banksia grandis
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Acacia pentadenia, Xanthorrhoea preissii, Hibbertia cuneatus
Shrub (S2)	1-2	10 - 30	Hibbertia cuneatus, Lasiopetalum odoratissimum, Acacia pentadenia
Shrub (S3)	0-1	2 - 10	Monotoca tamariscina, Chorizema cordatum, Tremandra stelligera, Patersonia sp tall (no flowers).occidentalis
Sedge/Rush (VR)		2-10	Desmocladus fasciculatus
Herb (H)		< 2	? sp. white flowers, Lindsaea linearis
Grass (G)		< 2	Poaceae sp. NM 7
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Marri regenerating. Lot of Xanthosia at/near edge with paddock - seems to like some disturbance
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Site 4. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID: MH 004</b>
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 004	<b>Structural comm. type (app 2)</b> Jarrah, karri oak, marri forest with banksia
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 1 S	
<b>Location:</b> N/W corner Mt Hallowell reserve, 20m E of paddock/fence		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> <u>Orange/Brown</u> Red/Brown White Yellow <u>Patchy</u>		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 3 cm. Lot of branches hung up		<b>Bare Ground (% cover)</b> 0% marri litter dominant
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creepline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	30 - 70	Eucalyptus marginata, Corymbia calophylla (Eucalyptus diversicolour off edge to S)
Tree (T2)	10-30	30 - 70	Corymbia calophylla, Eucalyptus marginata, Allocasuarina decussata
Tree (T3)	< 10	10 - 30	Allocasuarina decussata, Banksia grandis
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	30 - 70	Hibbertia furfuraceae, Acacia pentadenia, Xanthorrhoea preissii, Trymalium odoratissimum
Shrub (S2)	1-2	10 - 30	Acacia pentadenia, Hibbertia furfuraceae, Leucopogon racemulosus, Xanthorrhoea preissii, Leucopogon verticillatus
Shrub (S3)	0-1	2 - 10	Monotoca tamariscina, Leucopogon racemulosus, Diplolaena sp., Tremandra stelligera, Leucopogon verticillatus,
Sedge/Rush (VR)		2-10	Lepidosperma sp fine gracile? Lepidosperma sp medium revolute, Dasypogon bromeliifolius
Herb (H)			
Grass (G)		2 - 10	Tetrarrhena laevis
Other (climbers) (C)			Lyndsaea linearis, Billardiera heterophylla

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Stypantra, Opercularia and grass weeds on west edge. GPS location difficult to relocate. Peg site.
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Site 4. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID: MH 005</b>
<b>Date:</b> 22/11/2011	<b>GPS WPT:</b> 005	<b>Structural comm. type (app 2)</b> Jarrah, karri oak, marri forest with banksia
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 005 Centre - NE	
<b>Location:</b> N/W corner Mt Hallowell reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE S SW W <u>NW</u>		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> <u>Orange/Brown</u> Red/Brown White Yellow <u>Patchy</u>		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 3-4 cm. Lot of branches hung up		<b>Bare Ground (% cover)</b> < 2%.
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus marginata, Corymbia calophylla
Tree (T3)	< 10	< 2	C. calophylla, E. marginata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Xanthorrhoea preissii, Taxandria parviceps, Acacia pentadenia
Shrub (S2)	1-2	2 - 10	Acacia pentadenia, Crowea angustifolia, Taxandria parviceps, Xanthorrhoea preissii
Shrub (S3)	0-1	< 2	Crowea angustifolia
Sedge/Rush (VR)		70+	Stypantra glauca, Meeboldina scariosa, Schoenus sp, Desmodcladus flexuosus
Herb (H)		< 2	Patersonia occidentalis
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Degraded to some degree edge near paddock has Opercularia sp and Agonis hypericifolia
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Site 5. Looking NE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID: MH 005</b>
<b>Date:</b> 7/5/2012 and 10/5/2012	<b>GPS WPT:</b> 005	<b>Structural comm. type (app 2)</b> Jarrah, marri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 2 ENE. + 1 NE 10/5/12	
<b>Location:</b> N/W corner Mt Hallowell reserve. Revisited on 10/5/12. GPS 0526550, 6127326		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W <u>NW</u>	<b>Slope:</b> <u>Flat</u> <u>Gentle</u> Mod Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow Patchy	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 3-4 cm.	<b>Bare Ground (% cover)</b> < 2%.
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus marginata, Corymbia calophylla
Tree (T3)	< 10	10 - 30	Corymbia calophylla, Eucalyptus marginata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Taxandria parviceps, Acacia pentadenia, Hibbertia furfuracea
Shrub (S2)	1-2	2 - 10	Xanthorrhoea preissii, Hovea trisperma, Boronia gracilipes, Banksia grandis
Shrub (S3)	0-1	< 2	Astartea sp, Crowea angustifolia, Boronia gracilipes, Leucopogon verticillatus, Leucopogon sp, Xanthosia rotundifolius
Sedge/Rush (VR)		30 - 70	Sedge sp (no seed heads), Desmodcladus flexuosus, Patersonia occidentalis
Herb (H)			
Grass (G)			
Other (climbers) (C)		< 2	Lyndsaea linearis

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

<p><b>Other notes:</b> Went to site twice 7 and 10 May, difficult to find site due to GPS fluctuation under canopy. Re-mark with peg at next visit.</p>
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Site 5. Looking ENE 1. 7/5/2012



Site 5. Looking ENE 2. 7/5/2012

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 006
<b>Date:</b> 22/11/2011	<b>GPS WPT:</b> 005	<b>Structural comm. type (app 2)</b> Taxandria/Beaufortia shrubland/sedgeland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 008 NW	
<b>Location:</b> N/W corner Mt Hallowell reserve, just NW of firebreak		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE S SW W <u>NW Flat</u>		<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 1 cm.		<b>Bare Ground (% cover)</b> 0 (0-1) tiny patches.
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year <u>Seas wet winter/spring</u>		<b>Topographic position:</b> Upland <u>Wetland</u> Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	2 - 10	Eucalyptus marginata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Taxandria parviceps
Shrub (S2)	1-2	10 - 30	Taxandria parviceps, Beaufortia sparsa, Homalospermum firmum, Pultenaea reticula, Adenanthos obovatus, Banksia quercifolia
Shrub (S3)	0-1	< 2	Astartea sp.
Sedge/Rush (VR)		>70	Sphenotoma gracile, Anarthria scabra. Meeboldina scariosa, Anarthria prolifera, Evandra aristata, Dasypogon bromeliifolius,
Herb (H)		< 2	Tripterococcus sp.
Grass (G)			
Other (climbers) (C)			Cassytha sp.

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 6. Looking NW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 006
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 006	<b>Structural comm. type (app 2)</b> Taxandria/Beaufortia shrubland/sedgeland Burnt
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 1 NW	
<b>Location:</b> N/W corner Mt Hallowell reserve, just NW of firebreak along edge access track		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good <b>Degraded Just burnt – still smoking</b>	
<b>Aspect:</b> N NE E SE S SW W <u>NW Flat</u>	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 0, all burnt	<b>Bare Ground (% cover)</b> 65% bare
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year <u>Seas wet winter/spring</u>	<b>Topographic position:</b> Upland <u>Wetland</u> Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	2 - 10	Eucalyptus marginata (mallee form)
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Taxandria parviceps
Shrub (S2)	1-2	10 - 30	Taxandria parviceps, Beaufortia sparsa, Homalospermum firmum recognisable by burnt stems
Shrub (S3)	0-1		
Sedge/Rush (VR)			Burnt bases, sp indistinguishable
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

<b>Other notes:</b>  Site burnt and significantly altered, few species present since spring survey
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Site 6. Looking NW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 007
<b>Date:</b> 22/11/2011	<b>GPS WPT:</b> 007	<b>Structural comm. type (app 2)</b> Jarrah woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 008 NW	
<b>Location:</b> N/W corner Mt Hallowell reserve, just NW of firebreak		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W <u>NW Flat</u>	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 1 cm.	<b>Bare Ground (% cover)</b> 0 (0-1) tiny patches.
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year <u>Seas wet winter/spring</u>	<b>Topographic position:</b> Upland <u>Wetland</u> Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Eucalyptus marginata, Allocasuarina fraseriana,
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Jacksonia horrida, Agonis flexuosa x var Mt Hallowell
Shrub (S2)	1-2	2 - 10	Dasypogon bromeliifolius, Adenanthos obovatus, Jacksonia horrida,
Shrub (S3)	0-1	< 2	Leucopogon sp. NM 29, Xanthosia rotundifolius, Acacia myrtifolia,
Sedge/Rush (VR)		2 - 10	Anarthria scabra, Lyginia imberbis, Johnsonia lupulina,
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Sparse
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Site 7. Looking NW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 007
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 007	<b>Structural comm. type (app 2)</b> Jarrah sheoak woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 2 ENE (same shot)	
<b>Location:</b> N/W corner Mt Hallowell reserve, just NW of firebreak		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good <b>Degraded Burnt recently, still smells smoky</b>	
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 1 cm. Some litter not burnt	<b>Bare Ground (% cover)</b> 50% since fire
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully <u>Plain</u> Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Eucalyptus marginata, Allocasuarina fraseriana, Agonis flexuosa x Mt Hallowell
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Jacksonia horrida, Agonis flexuosa x var Mt Hallowell
Shrub (S2)	1-2	2 - 10	Dasypogon bromeliifolius, Adenanthos obovatus, Jacksonia horrida, Acacia myrtifolia (burnt)
Shrub (S3)	0-1		
Sedge/Rush (VR)		2 - 10	Anarthria scabra, Dasypogon bromeliifolius, Desmocladus sp.
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Site burnt mostly, many species removed
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Site 7. Looking ENE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 008
<b>Date:</b> 22/11/2011	<b>GPS WPT:</b> 008	<b>Structural comm. type (app 2)</b> Sheoak woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 008 NW	
<b>Location:</b> N/W corner Mt Hallowell reserve, just SW of firebreak 100 m.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm, thick needles 70%	<b>Bare Ground (% cover)</b> 0 % bare
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year <u>Seas wet winter/spring</u>	<b>Topographic position:</b> Upland <u>Wetland</u> Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Allocasuarina fraseriana, Eucalyptus marginata,
Tree (T3)	< 10	10 - 30	Banksia illicifolia, Eucalyptus marginata, Allocasuarina fraseriana,
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Taxandria parviceps (var longer narrow), Agonis hypericifolia, Dasypogon bromeliifolius,
Shrub (S2)	1-2	2 - 10	Adenanthos obovatus, Dasypogon bromeliifolius
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 70	Anarthria scabra, Anarthria prolifera
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

<b>Other notes:</b> Probably quite old vegetation since fire, seems 30 + years.
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Site 8. Looking NW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 008
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 008	<b>Structural comm. type (app 2)</b> Sheoak woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction:</b> 1 S	
<b>Location:</b> N/W corner Mt Hallowell reserve, just SW of firebreak 100 m.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm, thick needles 70%	<b>Bare Ground (% cover)</b> 0 % bare
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland_ Rock Outcrop Drainage Depression Creekline Riparian Bank Gully <u>Plain</u> Slope Lower Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Allocasuarina fraseriana, Eucalyptus marginata,
Tree (T3)	< 10	10 - 30	Banksia illicifolia, Eucalyptus marginata, Allocasuarina fraseriana,
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Taxandria parviceps
Shrub (S2)	1-2	2 - 10	Adenanthos obovatus, Dasypogon bromeliifolius, Agonis hypericifolia, Banksia illicifolia (1), Monotoca tamariscina
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 70	Lepidosperma sp., Anarthria scabra
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

<b>Other notes:</b> Probably quite old vegetation since fire, seems 30 + years. Excellent thick habitat
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Site 8. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 009
<b>Date:</b> 22/11/2011	<b>GPS WPT:</b> 009	<b>Structural comm. type (app 2)</b> Taxandria swamp/creek
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 E	
<b>Location:</b> South of large parking area on fire trail. NW corner Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW		<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other ?		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS <u>organic sand</u>
<b>Litter (% cover &amp; depth)</b> 3 cm 70%		<b>Bare Ground (% cover)</b> 0
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year <u>Seas wet winter/spring</u>		<b>Topographic position:</b> Upland Wetland Rock Outcrop <u>Drainage Depression</u> Creekline <u>Riparian Bank</u> Gully Plain Slope Lower Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	E	Eucalyptus marginata
Tree (T3)	< 10	E	Eucalyptus marginata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	30 - 70	Taxandria parviceps, Taxandria linearifolia, Bossiaea linophylla
Shrub (S2)	1-2	10 - 30	Taxandria parviceps, Aotus intermedia, Monotoca tamariscina
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 70	Anarthria scabra, A. prolifera, Hypolaena exsulca, Lyginea imberbis
Herb (H)		< 2	Dampiera linearis
Grass (G)			
Other (climbers) (C)		2 - 10	Pteridium esculentum

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

<b>Other notes:</b> No Astartea seen, could be in creek further up
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Site 9. Looking E

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 009
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 009	<b>Structural comm. type (app 2)</b> Taxandria swamp/creek
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 E	
<b>Location:</b> NW corner Mt Hallowell Reserve. 100 m south of large parking area on fire trail		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS <u>organic sand</u>
<b>Litter (% cover &amp; depth)</b> 3 cm 70%	<b>Bare Ground (% cover)</b> 0
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year <u>Seas wet winter/spring</u>	<b>Topographic position:</b> Upland <u>Wetland</u> Rock Outcrop <u>Drainage Depression</u> Creekline <u>Riparian Bank</u> Gully Plain Slope Lower Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	E	Eucalyptus marginata
Tree (T3)	< 10	E	Eucalyptus marginata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	30 - 70	Taxandria parviceps, Taxandria linearifolia,
Shrub (S2)	1-2	10 - 30	Taxandria parviceps, Aotus intermedia, Monotoca tamariscina
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 70	Anarthria scabra and A. prolifera on edges, Hypolaena exsulca, Lyginea imberbis, Desmocladus flexuosa (on edge)
Herb (H)		< 2	Dampiera linearis (NM 36)
Grass (G)			
Other (climbers) (C)		2 - 10	Pteridium esculentum, Stylidium sp.

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: GPS fluctuation found it difficult to locate exact spot
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Site 9. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 009 A
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 009 ?	<b>Structural comm. type (app 2)</b> Jarrah, marri, banksia woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 E	
<b>Location:</b> NNW corner of Mt Hallowell Reserve. Along firebreak (south side) just E of paddock		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N <u>NE</u> E SE S SW W NW		<b>Slope:</b> <u>Flat</u> Gentle <u>Mod</u> Steep slope just SW
<b>Geology:</b> Gran <u>Lat</u> Lime Other ?		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS organic sand
<b>Litter (% cover &amp; depth)</b> 2 cm. Sticks hanging up to 1 m sparse		<b>Bare Ground (% cover)</b> 0 bare, only quenda diggings
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully <u>Plain</u> <u>Slope Lower</u> Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Corymbia calophylla, Eucalyptus marginata
Tree (T3)	< 10	< 2	Banksia grandis
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Taxandria parviceps, Agonis flexuosa x var Mt Hallowell, Bossiaea linophylla, Kingia australis (just off W edge).
Shrub (S2)	1-2	30 - 70	Acacia hastulata, Hibbertia furfuraceae, Kingia australis, Monotoca tamariscina. Dasypogon bromeliifolius,
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 70	Anarthria scabra, A. prolifera, Lepidosperma sp. tall thin NM 44.
Herb (H)		< 2	Opercularia volubile
Grass (G)			
Other (climbers) (C)		< 2	Gompholobium polymorphum, Cassytha glabella

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 9A. Looking E

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 009 A
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 0527178 S, 6127570 E	<b>Structural comm. type (app 2)</b> Jarrah, marri banksia woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 SSE	
<b>Location:</b> NNW corner of Mt Hallowell Reserve. Along firebreak (south side) just E of paddock access		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW		<b>Slope:</b> <u>Flat</u> Gentle <u>Mod</u> Steep slope just SW
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS organic sand
<b>Litter (% cover &amp; depth)</b> 2 - 4 cm patchy. Sticks hanging up to 1 m		<b>Bare Ground (% cover)</b> 0 bare, only quenda diggings
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully <u>Plain</u> <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Corymbia calophylla, Eucalyptus marginata
Tree (T3)	< 10	< 2	Banksia grandis (dead, was alive in spring)
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 – 30 (10)	Taxandria parviceps, Agonis flexuosa x var Mt Hallowell, Kingia australis (just off W edge),
Shrub (S2)	1-2	30 – 70 (30)	Acacia hastulata, Hibbertia furfuraceae, Monotoca tamariscina, Dasypogon bromeliifolius,
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 70	Anarthria scabra, A. prolifera, Lepidosperma sp. tall thin NM 44.
Herb (H)		< 2	Opercularia hispidula
Grass (G)			
Other (climbers) (C)		< 2	Cassytha sp. fine

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Banksia grandis dead this survey
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Site 9A. Looking SSE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 010
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 010	<b>Structural comm. type (app 2)</b> Sedgeland with emergent eucalypts and tea tree
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 N.	
<b>Location:</b> N side of Mt Hallowell Reserve. Along track/firetrail on N side 100 m in.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW		<b>Slope:</b> <u>Flat</u> <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran Lat Lime Other ?		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> <u>Light Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Patchy. To 2 cm under tree, to 1 cm in open		<b>Bare Ground (% cover)</b> 0 bare,
<b>Hydrology:</b> Good drain <u>Poor drain</u> <u>Wet all year</u> <u>Seas wet</u> winter/spring		<b>Topographic position:</b> Upland <u>Wetland</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	E	Eucalyptus patens, E. marginata, Banksia littoralis, Taxandria juniperina
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Taxandria parviceps, Taxandria linearifolia, Taxandria parviceps x linearifolia, Acacia hastulata, Xanthorrhoea preissii
Shrub (S2)	1-2	10 - 30	Taxandria parviceps, Taxandria linearifolia, Taxandria parviceps x linearifolia, Bossiaea linophylla
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 70	Evandra aristata, Leptocarpus tenax, Johnsonia lupulina, Mesomelaena tetragona.
Herb (H)		< 2	Thysanotus sp NM 49
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)		< 2	Billardiera sp.

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Maybe Phalaris weeds – Tetrarrhena ?
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Site 10. Looking N

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 010
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 010	<b>Structural comm. type (app 2)</b> Sedgeland with emergent eucalypts and tea tree
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2 N	
<b>Location:</b> N side of Mt Hallowell Reserve. Along track/firetrail on N side 100 m in.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good <b>Degraded All burnt</b>	
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Patchy. To 2 cm under tree, to 1 cm in open	<b>Bare Ground (% cover)</b> 0 bare,
<b>Hydrology:</b> Good drain <u>Poor drain</u> <u>Wet all year</u> <u>Seas wet</u> winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	E	Eucalyptus patens
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Taxandria parviceps, Taxandria linearifolia, Taxandria parviceps x linearifolia, Acacia hastulata, Xanthorrhoea preissii (stumps), Taxandria juniperina x parviceps (1)
Shrub (S2)	1-2	10 - 30	Taxandria parviceps
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 2	All burnt clumps, Evandra aristata just emerging
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Burnt recently, all blackened sp. hard to distinguish
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Site 10. Looking N, in front of tree



Site 10. Looking N, through tree

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 011
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 011	<b>Structural comm. type (app 2)</b> Jarrah/marri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 ENE.	
<b>Location:</b> N side of Mt Hallowell Reserve. South 100 m off track/firetrail on N side.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White <u>Yellow</u>	<b>Soil Type:</b> C CL <u>CLS</u> CS L LS S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4 cm. 50%	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Eucalyptus marginata, Corymbia calophylla
Tree (T3)	< 10	< 2	Banksia grandis
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Acacia pentadenia, Lambertia multiflorus, Agonis hypericifolia. Taxandria parviceps
Shrub (S2)	1-2	10 - 30	Hibbertia cuneatus, Xanthorrhoea preissii, Bossiaea linophylla,
Shrub (S3)	0-1		
Sedge/Rush (VR)		30 - 70	Patersonia occidentalis, Anarthria prolifera, Xanthorrhoea preissii (small plants).
Herb (H)		< 2	Xanthosia rotundifolius
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)		< 2	Thysanotus tenellus, Lyndsaea linearis

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Lot of 5-10 year old regeneration. Lot of stick and stone ants
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Site 11. Looking ENE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 011
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 011	<b>Structural comm. type (app 2)</b> Jarrah/marri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 ENE	
<b>Location:</b> N side of Mt Hallowell Reserve. South 100 m off track/firetrail.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White <u>Yellow</u>	<b>Soil Type:</b> C CL <u>CLS</u> CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4 cm. 50%	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Eucalyptus marginata, Corymbia calophylla
Tree (T3)	< 10	2 – 10 (2)	Banksia grandis, Allocasuarina fraseriana to west
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Acacia pentadenia, Taxandria parviceps
Shrub (S2)	1-2	10 - 30	Taxandria parviceps, Agonis hypericifolia, Jacksonia horrida, Hibbertia furfuraceae, Xanthorrhoea preissii, Hakea amplexicaulis
Shrub (S3)	0-1	10 - 30	Agonis hypericifolia, Hibbertia furfuraceae, Xanthorrhoea preissii, Isopogon attenuatus, Leucopogon verticillatus, Acacia pentadenia seedling
Sedge/Rush (VR)		30 - 70	Patersonia occidentalis, Anarthria prolifera,
Herb (H)		< 2	Xanthosia rotundifolius
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  GPS difficult to settle on exact location. S3 layer not recorded on Spring survey, strong regeneration represented by this layer
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Site 11. Looking ENE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 012
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 012	<b>Structural comm. type (app 2)</b> Sheoak/banksia woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 SE	
<b>Location:</b> NNE section of Mt Hallowell Reserve.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White <u>Yellow</u>	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 3 cm. 60%	<b>Bare Ground (% cover)</b> <2 %. Scratchings only
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30 Just 10	< 2	Allocasuarina fraseriana, Corymbia calophylla
Tree (T3)	< 10	10 - 30	Allocasuarina fraseriana, Corymbia calophylla, Banksia illicifolia
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Taxandria parviceps
Shrub (S2)	1-2	10 - 30	Taxandria parviceps, Adenanthos obovatus
Shrub (S3)	0-1	10 - 30	Hypocalymma strictum, Dasypogon bromeliifolius, Xanthorrhoea preissii
Sedge/Rush (VR)		70 +	Anarthria prolifera, Anarthria scabra, Leptocarpus tenax, Hypolaena exulca
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Lot of 5-10 year old regeneration. Lot of stick and stone ants
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Site 12. Looking SE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 012
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 012	<b>Structural comm. type (app 2)</b> Sheoak/banksia woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 SE + banksia close up	
<b>Location:</b> NNE section of Mt Hallowell Reserve. 20m south of track/firetrail		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 2 cm		<b>Bare Ground (% cover)</b> 0%. Scratchings only
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30 Just 10	2 – 10 (2)	Allocasuarina fraseriana, Corymbia calophylla, Eucalyptus marginata (on edge)
Tree (T3)	< 10	10 - 30	Allocasuarina fraseriana, Banksia illicifolia, Corymbia calophylla
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Taxandria parviceps, Pultenaea reticula
Shrub (S2)	1-2	10 - 30	Taxandria parviceps, Adenanthos obovatus, Leucopogon revolutus, Hypocalymma strictum
Shrub (S3)	0-1	10 - 30	Hypocalymma strictum, Xanthorrhoea preissii
Sedge/Rush (VR)		70 +	Anarthria prolifera, Anarthria scabra, Dasypogon bromeliifolius, Lepidosperma gracile
Herb (H)		< 2	Opercularia hispidula
Grass (G)			
Other (climbers) (C)		< 2	Cassytha sp fine

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Seems slightly different than Spring
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Site 12. Looking SE



Site 12. *Banksia illicifolia*

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 013
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 013	<b>Structural comm. type (app 2)</b> Jarrah/sheoak woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 To N. Second image taken to S – no good	
<b>Location:</b> N side of Mt Hallowell Reserve, 50m S of firebreak, just W of creek		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N <u>NE</u> E SE S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 3 cm. 60%	<b>Bare Ground (% cover)</b> <2 %. Scratchings only
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully <u>Plain Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30 Just 10	10 - 30	Eucalyptus marginata, Allocasuarina fraseriana, Corymbia calophylla (on edge)
Tree (T3)	< 10	10 - 30	Eucalyptus marginata, Allocasuarina fraseriana, Banksia illicifolia
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Taxandria parviceps, Pultenaea reticulata
Shrub (S2)	1-2	30 - 70	Taxandria parviceps, Adenanthos obovatus, Astroloma sp. NM 56
Shrub (S3)	0-1	< 2	Hypocalymma strictum, Adenanthos obovatus, Bossiaea sp. NM 55
Sedge/Rush (VR)		30 - 70	Anarthria scabra, Leptocarpus tenax, Dasypogon bromeliifolius
Herb (H)		< 2	Dampiera linearis
Grass (G)			
Other (climbers) (C)		< 2	Thysanotus sp, Pteridium esculentum

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 13. Looking N

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 013
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 013	<b>Structural comm. type (app 2)</b> Jarrah/sheoak woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2 to N	
<b>Location:</b> N side of Mt Hallowell Reserve, 50m S of firebreak, just W of creek		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N <u>NE</u> E SE S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran Lat Lime Other ?		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm		<b>Bare Ground (% cover)</b> 0 %. Scratchings only
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully <u>Plain Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30 Just 10	10 - 30	Eucalyptus marginata, Allocasuarina fraseriana, Corymbia calophylla (on edge)
Tree (T3)	< 10	10 - 30	Allocasuarina fraseriana, Eucalyptus marginata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Banksia illicifolia (1), Taxandria parviceps, Pultenaea reticulata
Shrub (S2)	1-2	10 - 30	Taxandria parviceps, Adenanthos obovatus, Pultenaea reticulata, Pteridium esculentum, Hypocalymma strictum
Shrub (S3)	0-1	2 - 10	Hypocalymma strictum, Adenanthos obovatus, Leucopogon racemosulus, Leucopogon sp. no flowers
Sedge/Rush (VR)		30 - 70	Anarthria scabra, Anarthria prolifera, Dasypogon bromeliifolius, Desmocladus flexuosa,
Herb (H)			
Grass (G)			
Other (climbers) (C)		< 2	Lyndsaea linearis

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 13. 1, Looking N



Site 13. 2, Looking N



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 014
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 014	<b>Structural comm. type (app 2)</b> Agonis/callistemon shrubland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> X 2. ENE	
<b>Location:</b> Mt Hallowell Reserve, N side, at NW corner of extra rectangle area, N of access to paddock corner.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> <u>Gran</u> <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS organic sand
<b>Litter (% cover &amp; depth)</b> sparse, none really	<b>Bare Ground (% cover)</b> <2 %. Roo pads and scratchings only
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year <u>Seas wet winter/spring</u>	<b>Topographic position:</b> Upland <u>Wetland</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30 Just 10		
Tree (T3)	< 10	E	Melaleuca preissiana
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Taxandria parviceps
Shrub (S2)	1-2	30 - 70	Taxandria parviceps, Melaleuca preissiana, Callistemon glauca, Taxandria linearifolia x parviceps, Sphaerolobium vimineum.
Shrub (S3)	0-1	< 2	Xanthosia rotundifolius, Xanthorrhoea preissii
Sedge/Rush (VR)		30 - 70	Anarthria prolifera, Anarthria scabra, Dasypogon bromeliifolius
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Christmas spiders in profusion
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Site 14. Looking E



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 014
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 014	<b>Structural comm. type (app 2)</b> Agonis/callistemon shrubland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2, ENE, 1 up 1 down	
<b>Location:</b> Mt Hallowell Reserve, N side, at NW corner of extra rectangle area, N of access to paddock corner.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good <u>Degraded</u> Burnt recently		
<b>Aspect:</b> <u>N</u> <u>NE</u> E SE S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow <b>Organic layer burnt off</b>		<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS organic sand
<b>Litter (% cover &amp; depth)</b> 60% Charcoal and burnt sedge leaves		<b>Bare Ground (% cover)</b> 40%, blackened
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year <u>Seas wet winter/spring</u>		<b>Topographic position:</b> Upland <u>Wetland</u> Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30 Just 10		
Tree (T3)	< 10	E	Melaleuca preissiana
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	E	Taxandria parviceps
Shrub (S2)	1-2	2 - 10	Taxandria parviceps, Melaleuca preissiana, Callistemon glauca, Taxandria linearifolia x parviceps, Melaleuca lateritia, all burnt
Shrub (S3)	0-1		
Sedge/Rush (VR)		< 2	All burnt, will probably resprout
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Site burnt recently, almost totally consumed
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Site 14. Looking E



Site 14. Sedge bases

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 015
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 015	<b>Structural comm. type (app 2)</b> Reveg in old gravel pit
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 N/W	
<b>Location:</b> Mt Hallowell Reserve, N side, at NW corner of extra rectangle area, N of access to paddock corner.		

<b>Condition:</b> Pristine Excellent Very Good Good <u>Degraded</u>	
<b>Aspect:</b> N NE E SE S SW W NW <u>Hole</u>	<b>Slope:</b> Flat Gentle Mod Steep slope just SW
<b>Geology:</b> <u>Gran</u> <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown ___ Light Brown <u>Orange/Brown</u> Red/Brown <u>White</u> Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> <u>S</u> SCL SL SP ZCL ZL ZS gravelly sand
<b>Litter (% cover &amp; depth)</b> sparse, 20 % to 1 cm deep	<b>Bare Ground (% cover)</b> 80 % bare
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30 Just 10		
Tree (T3)	< 10	2 - 10	Eucalyptus cladocalyx, E. occidentalis
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Agonis x flexuosa var Mt Hallowell, Melaleuca cuticularis
Shrub (S2)	1-2	10 - 30	Agonis x flexuosa var Mt Hallowell, Kunzea recurva, Taxandria linearifolia.
Shrub (S3)	0-1	2 - 10	Astartea fascicularis, Adenanthos obovatus, Acacia browniana, Petrophile squamata,
Sedge/Rush (VR)		2 - 10	Anarthria scabra, Meeboldina scariosa, Lyginea imberbis, Leptocarpus tenax
Herb (H)		< 2	Anigozanthos flavidus
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Eucalyptus occidentalis seedlings, damp patch in mid winter only
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Site 15. Looking NW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 015
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 015	<b>Structural comm. type (app 2)</b> Reveg in old gravel pit
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 N/W	
<b>Location:</b> Mt Hallowell Reserve, N side, at NW corner of extra rectangle area, N of access to paddock corner.		

<b>Condition:</b> Pristine Excellent Very Good Good <u>Degraded</u> Gravel pit regeneration	
<b>Aspect:</b> N NE E SE S SW W NW <u>Hole</u>	<b>Slope:</b> Flat Gentle Mod Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown ___ Light Brown <u>Orange/Brown</u> Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> <u>S</u> SCL SL SP ZCL ZL ZS gravelly sand
<b>Litter (% cover &amp; depth)</b> sparse, 20 % to 1 cm deep, sparse	<b>Bare Ground (% cover)</b> 80 % bare
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop <u>Gravel pit</u> Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	2 - 10	Eucalyptus cladocalyx, E. occidentalis, Corymbia calophylla on edge
Tree (T3)	< 10		
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Agonis x flexuosa var Mt Hallowell, Melaleuca cuticularis, Allocasuarina fraseriana
Shrub (S2)	1-2	10 - 30	Agonis x flexuosa var Mt Hallowell, Kunzea recurva, Taxandria linearifolia, Taxandria parviceps, Adenanthos obovatus, Petrophile squamata, Eucalyptus occidentalis seedlings
Shrub (S3)	0-1	2 - 10	Astartea fascicularis, Agonis x sp Mt Hallowell seedlings, Acacia browniana,
Sedge/Rush (VR)		10 - 30	Anarthria scabra, Anarthria prolifera, Meeboldina scariosa, Lyginea imberbis, Leptocarpus tenax
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  
Lot of Agonis and eucalypt regeneration,



Site 15. Looking NW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 016
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 016	<b>Structural comm. type (app 2)</b> Jarrah/sheoak woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, NW.	
<b>Location:</b> N/E corner of Mt Hallowell Reserve, N of old gravel pit		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW		<b>Slope:</b> <u>Flat</u> <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS <u>Organic sand</u>
<b>Litter (% cover &amp; depth)</b> 5 cm. 90%. Lot of sticks hung up – 0.9m		<b>Bare Ground (% cover)</b> < 2%. Roo pads and quenda diggings only
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Eucalyptus marginata, Allocasuarina fraseriana
Tree (T3)	< 10	2 - 10	Eucalyptus marginata, Allocasuarina fraseriana
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Taxandria parviceps
Shrub (S2)	1-2	2 - 10	Taxandria parviceps, Agonis hypericifolia, Hibbertia furfuraceae, Adenanthos obovatus
Shrub (S3)	0-1	< 2	Opercularia sp., Xanthosia rotundifolius
Sedge/Rush (VR)		> 70	Anarthria scabra, Patersonia occidentalis, Anarthria prolifera, Dasypogon bromeliifolius, Cyathochaeta sp. Desmocladus fascicularis
Herb (H)		< 2	Dampiera sp.
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 16. Looking NW



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 016
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 016	<b>Structural comm. type (app 2)</b> Jarrah/Sheoak woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, NW. 1 to E across paddock	
<b>Location:</b> N/E corner of Mt Hallowell Reserve, N of old gravel pit, paddocks to E and N		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good <u>Degraded burnt recently</u>	
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW	<b>Slope:</b> <u>Flat</u> <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 0% burnt, charcoal, bits of unburnt litter	<b>Bare Ground (% cover)</b> 30%. Charcoal and unburnt litter between
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Eucalyptus marginata, Allocasuarina fraseriana
Tree (T3)	< 10	2 - 10	Eucalyptus marginata, Allocasuarina fraseriana
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2		Banksia grandis burnt
Shrub (S2)	1-2		Taxandria parviceps, Spyridium globulosum, Agonis hypericifolia, Xanthorrhoea preissii, Pultenaea reticula, all burnt
Shrub (S3)	0-1		
Sedge/Rush (VR)			All burnt, Anarthria scabra only thing recognisable
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Aborted jarrah buds all over ground
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Site 16. Looking NW



Site 16. Looking E to paddock

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 017
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 017	<b>Structural comm. type (app 2)</b> Marri/jarrah woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S.	
<b>Location:</b> N/E corner of Mt Hallowell Reserve, about 300 m N/W of gate, 100 m S of firebreak		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> <u>N NE</u> E SE S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White <u>Yellow</u>	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4 cm	<b>Bare Ground (% cover)</b> < 2%.
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Corymbia calophylla, Eucalyptus marginata
Tree (T3)	< 10	10 - 30	Corymbia calophylla, Eucalyptus marginata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Bossiaea linophylla, Corymbia calophylla, Banksia grandis
Shrub (S2)	1-2	2 - 10	Podocarpus drouynianus, Banksia grandis, Bossiaea linophylla, Agonis hypericifolia, Pteropodium squamata, Leucopogon verticillatus, Lambertia multiflorus, Persoonia ellipticus, Xanthorrhoea preissii
Shrub (S3)	0-1	< 2	Isopogon attenuatus, Xanthosia rotundifolius, Acacia browniana
Sedge/Rush (VR)		30 - 70	Loxocarya cinerea, Anarthria prolifera, Patersonia occidentalis, Lepidosperma sp. NM 61
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 17. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 017
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 017	<b>Structural comm. type (app 2)</b> Marri/jarrah woodland/forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S.	
<b>Location:</b> N/E corner of Mt Hallowell Reserve, about 300 m N/W of gate, 100 m S of firebreak		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> <u>N</u> NE E SE S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep slope just SW
<b>Geology:</b> Gran <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White <u>Yellow</u>	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4 cm	<b>Bare Ground (% cover)</b> < 2%.
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Corymbia calophylla, Eucalyptus marginata
Tree (T3)	< 10	12 - 10	Corymbia calophylla, Eucalyptus marginata, Banksia grandis
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Bossiaea linophylla, Banksia grandis, Persoonia elliptica
Shrub (S2)	1-2	10 - 30	Podocarpus drouynianus, Banksia grandis, Bossiaea linophylla, Agonis hypericifolia, Lambertia multiflorus, Xanthorrhoea preissii, Hakea amplexicaulis, Acacia browniana, Isopogon attenuatus
Shrub (S3)	0-1	< 2	Isopogon attenuatus, Leucopogon verticillatus Xanthosia rotundifolius, Agonis hypericifolia
Sedge/Rush (VR)		30 - 70	Loxocarya cinerea, Anarthria prolifera, Patersonia occidentalis, Lepidosperma sp. NM 61
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  GPS not able to fix on location absolutely
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Site 17. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 018
<b>Date:</b> 23/11/2011	<b>GPS WPT:</b> 018	<b>Structural comm. type (app 2)</b> Yandil woodland on granite rock
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S.	
<b>Location:</b> Monkey Rock, Mt Hallowell Reserve		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded		
<b>Aspect:</b> <u>N NE</u> E SE S SW W NW		<b>Slope:</b> Flat Gentle Mod <u>Steep slope</u> hill top
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 <u>10-20</u> 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS S <u>SCL</u> SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> to 3 cm. 70% also on rocks, lot of sticks hung up		<b>Bare Ground (% cover)</b> < 2% only bare areas are tiny bits of rock
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	10 - 30	Eucalyptus diversicolour
Tree (T2)	10-30	30 - 70	Eucalyptus cornuta, Eucalyptus diversicolour on edge
Tree (T3)	< 10	10 - 30	Eucalyptus cornuta, Trymalium odoratissimum
Mallee (M1)	> 8	2 - 10	Eucalyptus cornuta (it's a mallee in rock gullies)
Mallee (M2)	< 8		
Shrub (S1)	> 2	30 - 70	Chorilaena quercifolia, Leucopogon revolutus
Shrub (S2)	1-2	2 - 10	Agonis flexuosa, Leucopogon revolutus, Hibbertia cuneatus, Tremandra stelligera, Acacia pentadenia
Shrub (S3)	0-1		
Sedge/Rush (VR)		30 - 70	Loxocarya cinerea, Anarthria prolifera, Patersonia occidentalis, Lepidosperma sp. NM 67
Herb (H)		< 2	Opercularia sp.
Grass (G)		< 2	Poa poiformis
Other (climbers) (C)		< 2	Hardenbergia comptoniana, Cheilanthes austrotenuifolia. on rock, Cassytha glabella Moss

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 18. Looking S



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 018
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 018	<b>Structural comm. type (app 2)</b> Yandil woodland on granite rock, with karri at edge
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S.	
<b>Location:</b> Monkey Rock, Mt Hallowell Reserve		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded		
<b>Aspect:</b> <u>N NE</u> E SE S SW W NW		<b>Slope:</b> Flat Gentle <u>Mod</u> <u>Steep</u> hill top
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 <u>10-20</u> 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS S <u>SCL</u> SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> to 4 cm. patchy, 70% also on rocks, lot of sticks hung up		<b>Bare Ground (% cover)</b> < 2% only bare areas are bits of rock
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> <u>Upland</u> Wetland <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	10 - 30	Eucalyptus diversicolour
Tree (T2)	10-30	30 - 70	Eucalyptus cornuta, Eucalyptus diversicolour on edge
Tree (T3)	< 10	10 - 30	Eucalyptus cornuta, Trymalium odoratissimum
Mallee (M1)	> 8	2 - 10	Eucalyptus cornuta (it's a mallee in rock gullies)
Mallee (M2)	< 8		
Shrub (S1)	> 2	30 - 70	Chorilaena quercifolia, Leucopogon revolutus
Shrub (S2)	1-2	2 - 10	Agonis flexuosa, Leucopogon revolutus, Tremandra stelligera, Acacia pentadenia
Shrub (S3)	0-1	< 2	Tremandra stelligera,
Sedge/Rush (VR)		2 - 10	Lepidosperma sp. glossy NM 64
Herb (H)		< 2	Opercularia hispidula
Grass (G)		< 2	Poa poiformis
Other (climbers) (C)		< 2	Hardenbergia comptoniana, Cheilanthes sp. on rock, Clematis pubescens, Moss

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Very different sedge layer this time, exact same spot, although very wet this time
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Site 18. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 019
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 019	<b>Structural comm. type (app 2)</b> Karri oak, bullich and yate forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2 <b>NW</b> , 1 from trail, 1 close up	
<b>Location:</b> Bibblimen Track, ENE of Mt Hallowell, N 50 m towards boulder. Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 <u>10-20</u> 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm, lot of thick sticks hung up		<b>Bare Ground (% cover)</b> Some rock only
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle <u>Slope Upper</u> Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	10 - 30	Eucalyptus diversicolour
Tree (T2)	10-30	< 70	Allocasuarina decussata, Corymbia calophylla (1) and with Eucalyptus diversicolour surrounding
Tree (T3)	< 10		
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Leucopogon verticillatus, Trymalium odoratissimum
Shrub (S2)	1-2	2 - 10	Acacia pentadenia, Trymalium ledifolium
Shrub (S3)	0-1	2 - 10	Xanthosia rotundifolius, Hovea trisperma,
Sedge/Rush (VR)		10 - 30	Lepidosperma effusus
Herb (H)			
Grass (G)		< 2	Poa poiformis
Other (climbers) (C)		< 2	Chorizema cordatum, Clematis pubescens

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: This is the thin S/E section of karri oak ,yate, bullich vegetation type as mapped



Site 19. From trail looking NW



Site 19. Close up looking NW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 019
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 019	<b>Structural comm. type (app 2)</b> Karri oak
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2 N/W, from trail	
<b>Location:</b> Bibbulmen Track, ENE of Mt Hallowell, N 50 m towards boulder. Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep <u>Hill top</u>
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> 0 <2 2-10 <u>10-20</u> 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm, thick		<b>Bare Ground (% cover)</b> ), Some rock only
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle <u>Slope Upper</u> Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	2 - 10	Eucalyptus diversicolour
Tree (T2)	10-30	30 - 70	Allocasuarina decussata, Corymbia calophylla (1) and with E. diversicolour surrounding
Tree (T3)	< 10	2 - 10	Allocasuarina decussata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Leucopogon verticillatus, Trymalium odoratissimum,
Shrub (S2)	1-2	2 - 10	Acacia pentadenia, Leucopogon verticillatus, Trymalium odoratissimum
Shrub (S3)	0-1	2 - 10	Xanthosia rotundifolius, Hovea trisperma, Hovea chorizemifolia
Sedge/Rush (VR)		10 - 30	Lepidosperma effusus
Herb (H)			
Grass (G)		< 2	Poa poiformis
Other (climbers) (C)		< 2	Clematis pubescens, Pteridium esculentum surrounding

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: This is the thin S/E section of karri oak ,yate, bullich vegetation type as mapped Foot scrape from November spring survey not evident
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Site 19. Looking NW



Site 19. Looking NW close up

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 020
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 020	<b>Structural comm. type (app 2)</b> Yate and karri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2, 1 E over log, 1 N with sign	
<b>Location:</b> Bibbulmen Track, junction of Mt Hallowell access track spur, sign says Kooryunderup. Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW just off peak	<b>Slope:</b> Flat Gentle <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> 0 <2 <u>2-10</u> 10-20 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown <u>Orange/Brown</u> Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 3 cm, fallen logs	<b>Bare Ground (% cover)</b> Some rock only
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> <u>Upland</u> Wetland <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle <u>Slope Upper</u> Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus cornuta, Eucalyptus diversicolour
Tree (T3)	< 10	10 - 30	Eucalyptus cornuta, Trymalium odoratissimum, Corymbia calophylla (1)
Mallee (M1)	> 8	2 - 10	Eucalyptus cornuta
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Trymalium odoratissimum
Shrub (S2)	1-2	2 - 10	Hibbertia furfuraceae, Leucopogon revolutus, Hovea trisperma
Shrub (S3)	0-1	< 2	Opercularia sp.
Sedge/Rush (VR)		2 - 10	Lepidosperma effusus
Herb (H)			
Grass (G)		2 – 10	Poa poiformis, Tetrarrhena laevis
Other (climbers) (C)		2 - 10	Billardiera sp., Clematis pubescens, bracket fungi, Moss

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 20. Looking E



Site 20. Looking N



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 020
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 020	<b>Structural comm. type (app 2)</b> Yate and karri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2, 1 E over log, 1 N with sign	
<b>Location:</b> Bibblimen Track, junction of Mt Hallowell access track spur, sign says Kooryunderup. Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW just off peak	<b>Slope:</b> Flat Gentle <u>Mod</u> <u>Steep hill top</u>
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> 0 <2 <u>2-10</u> 10-20 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4 cm, fallen logs	<b>Bare Ground (% cover)</b> Patchy, mostly rock
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> <u>Upland</u> Wetland <u>Rock Outcrop</u> Drainage Depression_ Creekline Riparian Bank Gully Plain Slope Lower Slope Middle <u>Slope Upper</u> Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus cornuta, Eucalyptus diversicolour
Tree (T3)	< 10	10 - 30	Eucalyptus cornuta, Trymalium odoratissimum, Corymbia calophylla (1)
Mallee (M1)	> 8	2 - 10	Eucalyptus cornuta
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Trymalium odoratissimum
Shrub (S2)	1-2	2 - 10	Hibbertia furfuraceae, Leucopogon revolutus, Hovea trisperma, Leucopogon verticillatus
Shrub (S3)	0-1	2 - 10	Hibbertia furfuraceae, Leucopogon revolutus, Hovea trisperma, Leucopogon verticillatus, Corymbia calophylla seedlings
Sedge/Rush (VR)		2 - 10	Lepidosperma effusus
Herb (H)		< 2	Opercularia sp.
Grass (G)		2 – 10	Poa poiformis, Tetrarrhena laevis
Other (climbers) (C)		2 - 10	Billardiera sp., Clematis pubescens, bracket fungi

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Much the same as November 2011 survey
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Site 20. Looking E



Site 20. Looking N

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 021
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 021	<b>Structural comm. type (app 2)</b> Granite outcrop shrubland and sedge
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, E	
<b>Location:</b> Bibbulmun Track, S/E of Mt Hallowell peak. Mt Hallowell Reserve		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded <u>Drought impacts</u>		
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> <u>Steep</u>
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> 0 <2 2-10_ 10-20 <u>20-50</u> >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS S <u>SCL</u> SL SP ZCL ZL ZS Course gritty
<b>Litter (% cover &amp; depth)</b> Patchy sparse		<b>Bare Ground (% cover)</b> Some rock only
<b>Hydrology:</b> <u>Good drain</u> <u>Poor drain</u> Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10		
Mallee (M1)	> 8		Eucalyptus cornuta off to side, not in plot
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Eutaxia myrtifolia, Taxandria marginata, Leucopogon revolutus
Shrub (S2)	1-2	2 - 10	Hibbertia furfuraceae, Leucopogon revolutus, Hovea trisperma
Shrub (S3)	0-1	30 - 70	Stypandra glauca, Opercularia sp.
Sedge/Rush (VR)		30 - 70	Lepidosperma effusus, Lepidosperma sp. fine narrow NM 67
Herb (H)		< 2	Borya sp.
Grass (G)			
Other (climbers) (C)		10 - 30	Moss beds, dry on rock

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 21. Looking SE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 021
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 021	<b>Structural comm. type (app 2)</b> Granite outcrop shrubland and sedge
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, E	
<b>Location:</b> Bibbulmun Track, S/E of Mt Hallowell peak. Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE <u>E</u> SE S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> 0 <2 2-10_ 10-20 <u>20-50</u> >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS S <u>SCL</u> SL SP ZCL ZL ZS Course gritty
<b>Litter (% cover &amp; depth)</b> Patchy sparse		<b>Bare Ground (% cover)</b> 50%, rock only
<b>Hydrology:</b> <u>Good drain</u> <u>Poor drain</u> Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10		
Mallee (M1)	> 8		Eucalyptus cornuta off to side, not in plot
Mallee (M2)	< 8		
Shrub (S1)	> 2		
Shrub (S2)	1-2	2 - 10	Eutaxia myrtifolia, Taxandria marginata, Leucopogon revolutus (some dead)
Shrub (S3)	0-1	30 - 70	Stypantra glauca, Opercularia sp., Tremandra stelligera,
Sedge/Rush (VR)		30 - 70	Lepidosperma effusus, Lepidosperma sp. fine narrow NM 67
Herb (H)		< 2	Borya sp.
Grass (G)			
Other (climbers) (C)		10 - 30	Moss beds, wet and thick

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  S 1 strata data in Nov 2011 may have been misplaced, should have been in S 2 strata. It could not have shrunk
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Site 21. Looking E

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 022
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 022	<b>Structural comm. type (app 2)</b> Karri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S	
<b>Location:</b> Bibbulmun Track, S of Mt Hallowell peak. Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS <u>L</u> <u>LS</u> S SCL SL SP ZCL ZL ZS Course gritty
<b>Litter (% cover &amp; depth)</b> 5 cm. Thick, lots of logs, sticks to 1 m hung up		<b>Bare Ground (% cover)</b> < 2%. Trail, and few other spots
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> <u>Slope Upper</u> Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	30 - 70	Eucalyptus diversicolour
Tree (T2)	10-30		
Tree (T3)	< 10	2 - 10	Trymalium odoratissimum, Paraserianthes lophostemon
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	30 - 70	Chorilaena quercifolia, Trymalium odoratissimum, Leucopogon revolutus
Shrub (S2)	1-2	30 - 70	Tremandra stelligera, Pteridium esculentum
Shrub (S3)	0-1	2 - 10	Tremandra stelligera
Sedge/Rush (VR)			
Herb (H)			.
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)		2 - 10	Opercularia volubilis, Clematis pubescens, Billardiera sp.

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Hazel here has largely dropped out, dense shrubs 2-4m dominating
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Site 22. Looking S



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 022
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 022	<b>Structural comm. type (app 2)</b> Karri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2, S. 1 portrait 1 landscape	
<b>Location:</b> Bibbulmun Track, S of Mt Hallowell peak. Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS <u>L</u> <u>LS</u> S SCL SL SP ZCL ZL ZS Course gritty
<b>Litter (% cover &amp; depth)</b> 6 cm. Thick, lots of logs, sticks		<b>Bare Ground (% cover)</b> < 2%. On trail, and few other spots
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> <u>Slope Upper</u> Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30	30 - 70	Eucalyptus diversicolour
Tree (T2)	10-30		
Tree (T3)	< 10	2 - 10	Trymalium odoratissimum, Paraserianthes lophostemon
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	30 - 70	Chorilaena quercifolia, Trymalium odoratissimum,
Shrub (S2)	1-2	30 - 70	Tremandra stelligera, Pteridium esculentum, Chorilaena quercifolia
Shrub (S3)	0-1	< 2	Unknown sp. No flowers or other distinguishing features
Sedge/Rush (VR)			
Herb (H)			.
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)		2 - 10	Opercularia volubilis, Clematis pubescens, Billardiera sp.

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Foot scrape for soil record is still evident from November. GPS struggles to locate site in forest
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Site 22. 1, Looking S



Site 22. 2, Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 023
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 023	<b>Structural comm. type (app 2)</b> Karri, marri, jarrah forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1. W	
<b>Location:</b> Off diagonal track behind FESA shed and towards Heather Rd. Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded Some cutting evident, and near old gravel pit	
<b>Aspect:</b> N NE <u>E</u> SE S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown Light Brown <u>Orange/Brown</u> Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 11 cm., deep! Thick. Lots of branches, logs, sticks to 1.1 m hung up	<b>Bare Ground (% cover)</b> < 2%.
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus diversicolour, Eucalyptus marginata, Corymbia calophylla
Tree (T3)	< 10		
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Acacia pentadenia, Chorilaena quercifolia
Shrub (S2)	1-2	30 - 70	Acacia pentadenia, Hibbertia furfuraceae, Chorizema illicifolia, Leucopogon verticillatus, Hovea trisperma, Leucopogon revolutus,
Shrub (S3)	0-1	2 - 10	Boronia gracilipes, Hibbertia furfuraceae, Lasiopetalum floribundus
Sedge/Rush (VR)		< 2	Anarthria prolifera, Desmocladius flexuosa off edge
Herb (H)			.
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)		< 2	Cassytha glabella, Pteridium esculentum,

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 23. Looking W

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 023
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 023	<b>Structural comm. type (app 2)</b> Karri, marri, jarrah forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2. 1 SE, 1 SW	
<b>Location:</b> Off diagonal track behind FESA shed and towards Heather Rd. Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded Some cutting evident, and near old gravel pit	
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown Light Brown <u>Orange/Brown</u> Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 10 cm., deep! Thick. Lots of branches, logs,	<b>Bare Ground (% cover)</b> 0%, track only
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus diversicolour, Eucalyptus marginata, Corymbia calophylla
Tree (T3)	< 10		
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Acacia pentadenia, Chorilaena quercifolia
Shrub (S2)	1-2	30 - 70	Acacia pentadenia, Hibbertia furfuraceae, Chorizema illicifolia, Leucopogon verticillatus, Hovea trisperma,
Shrub (S3)	0-1	2 - 10	Boronia gracilipes, Hibbertia furfuraceae, Lasiopetalum floribundus, Chorizema illicifolia
Sedge/Rush (VR)		2 - 10	Anarthria prolifera and Desmocladus fasciculatus at edge
Herb (H)			.
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)		< 2	Cassytha sp, Pteridium esculentum

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 23. Looking SE



Site 23. Looking SW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 024
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 024	<b>Structural comm. type (app 2)</b> Karri, marri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 SW	
<b>Location:</b> Off diagonal track behind FESA shed. Mt Hallowell Reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown Light Brown <u>Orange/Brown</u> Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 7 cm., deep. Logs, lots of sticks to 0.8 m hung up		<b>Bare Ground (% cover)</b> < 2%. Just diggings
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus diversicolour, Corymbia calophylla, Allocasuarina decussata
Tree (T3)	< 10		
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Trymalium odoratissimum, Acacia pentadenia, Chorilaena quercifolia
Shrub (S2)	1-2	10 - 30	Hibbertia furfuraceae, Lasiopetalum floribunda, Leucopogon verticillatus
Shrub (S3)	0-1	2 - 10	Boronia gracilipes, Hibbertia furfuraceae, Lasiopetalum floribunda
Sedge/Rush (VR)		2 - 10	Lepidosperma effusus
Herb (H)			.
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)		< 2	Pteridium esculentum, Billardiera sp., Hardenbergia comptoniana

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Lots of litter and no ground shrubs
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Site 24. Looking SW



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 024
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 024	<b>Structural comm. type (app 2)</b> Karri, marri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 E	
<b>Location:</b> Mt Hallowell Reserve. Off diagonal track behind FESA shed.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown Light Brown <u>Orange/Brown</u> Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm. Deep, thick. Logs and lots of sticks	<b>Bare Ground (% cover)</b> < 2%. Just diggings
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus diversicolour, Corymbia calophylla, Allocasuarina decussata
Tree (T3)	< 10	10 - 30	Trymalium odoratissimum, Agonis flexuosa, Allocasuarina decussata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 – 30 (10)	Trymalium odoratissimum, Acacia pentadenia, Chorilaena quercifolia
Shrub (S2)	1-2	10 - 30	Hibbertia furfuracea, Lasiopetalum floribundus, Leucopogon verticillatus, Boronia gracilipes
Shrub (S3)	0-1		
Sedge/Rush (VR)		2 - 10	Lepidosperma effusus
Herb (H)			
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)		< 2	Pteridium esculentum, Billardiera sp.

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 24. Looking E

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 052
<b>Date:</b> 26/11/2011	<b>GPS WPT:</b> 052	<b>Structural comm. type (app 2)</b> Peppermint woodland on granite among karri and marri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, N from Bib track	
<b>Location:</b> Mt Hallowell Reserve, eastern peaks near Bibbulmun Track		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE <u>E</u> SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4 cm.	<b>Bare Ground (% cover)</b> 0%, rock and moss
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland_ Estuary <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Old Dune Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	2 - 10	Corymbia calophylla
Tree (T3)	< 10	10 - 30	Agonis flexuosa very large shrubs rather than trees
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Agonis flexuosa, Acacia urophylla, Leucopogon capitellatus,
Shrub (S2)	1-2	< 2	Acacia urophylla, Hibbertia furfuraceae, Trymalium odoratissimum
Shrub (S3)	0-1	2 - 10	Tremandra stelligera, Opercularia hispidus, Agonis flexuosa seedlings,
Sedge/Rush (VR)		< 2	Lepidosperma effusus
Herb (H)			
Grass (G)		2 - 10	Poa poiformis, *Briza maxima
Other (climbers) (C)		10 - 30	Cheilanthes sp austrotenuifolia ? (almost shrubby), Hardenbergia comptoniana, Billardiera sp.

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  WPT 051 = huge granite boulder S/W of site 051
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Site 52. Looking N

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> MH 052
<b>Date:</b> 8/5/2012	<b>GPS WPT:</b> 052	<b>Structural comm. type (app 2)</b> Peppermint woodland on granite among karri and marri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, N from Bib track	
<b>Location:</b> Mt Hallowell Reserve. Eastern peaks near Bibbulmun Track west of FESA shed		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE <u>E</u> SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod <u>Steep hill</u>
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> Gritty S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 3 cm. Moss sections	<b>Bare Ground (% cover)</b> 15%, rock and moss
<b>Hydrology:</b> <u>Good drain</u> <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland_ Estuary <u>Rock Outcrop</u> Drainage Depression_ Creekline Riparian Bank Gully Old Dune Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Corymbia calophylla, Agonis flexuosa very large shrubs rather than trees
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Agonis flexuosa, Acacia urophylla, Trymalium odoratissimum, Chorilaena quercifolia (on W edge)
Shrub (S2)	1-2	< 2	Acacia urophylla, Leucopogon revolutus, Hibbertia furfuraceae, Leucopogon verticillatus
Shrub (S3)	0-1	2 - 10	Tremandra stelligera, Opercularia hispidula, Agonis flexuosa seedlings,
Sedge/Rush (VR)			
Herb (H)			
Grass (G)		2 - 10	Poa poiformis, * annual grass weeds (dead),
Other (climbers) (C)		2 - 10	Chelianthes sp., Cassytha sp. fine, moss

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  WPT 051 = huge granite boulder S/W of site 051
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Site 52. Looking N

**Appendix 4: Plant structural community recording sheets Wilson Inlet Foreshore Reserves, November 2011, May 2012**

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 025
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 025	<b>Structural comm. type (app 2)</b> Marri jarrah woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Extreme E end of reserve near tunnel off the private property boundary.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE_ S SW W <u>NW</u>	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm., deep. Logs, lots of sticks.	<b>Bare Ground (% cover)</b> < 2%.
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Corymbia calophylla, Eucalyptus marginata, Agonis flexuosa
Tree (T3)	< 10	2 - 10	Corymbia calophylla, Eucalyptus marginata, Agonis flexuosa
Mallee (M1)	> 8		Some jarrah is mallee form
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Agonis flexuosa, Callistachys lanceolata, Gastrolobium bilobum
Shrub (S2)	1-2	< 2	Hovea trisperma, Leucopogon propinquus
Shrub (S3)	0-1	10- 30	Darwinia citriodora
Sedge/Rush (VR)		2 - 10	Lepidosperma sp. fine tall sparse – no flowers, Anarthria scabra, Dianella sp.
Herb (H)			.
Grass (G)			
Other (climbers) (C)		< 2	Pteridium esculentum, Macrozamia reidlei

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Banksia seminuda off SE edge – a few recruiting seedlings
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Site 25. Looking SE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 025
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 025	<b>Structural comm. type (app 2)</b> Marri, peppermint jarrah woodland, banksia seminuda to south
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. E end of reserve.		

<b>Condition:</b> <u>Pristine</u> <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE_ S SW W <u>NW</u>		<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other ?		<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS <u>Gritty</u>
<b>Litter (% cover &amp; depth)</b> 4-5 cm., deep. Logs, lots of sticks.		<b>Bare Ground (% cover)</b> 0%.
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland Rock Outcrop <u>Estuary 200m S</u> Drainage Depression_ Creepline <u>Riparian Bank</u> Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Corymbia calophylla, Eucalyptus marginata, Agonis flexuosa
Tree (T3)	< 10	2 - 10	Corymbia calophylla, Eucalyptus marginata, Agonis flexuosa
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Agonis flexuosa, Callistachys lanceolata, Gastrolobium bilobum
Shrub (S2)	1-2	< 2	Hovea trisperma, Leucopogon propinquus, Gastrolobium bilobum
Shrub (S3)	0-1	10- 30	Darwinia citriodora
Sedge/Rush (VR)		10 - 30	Lepidosperma sp. fine tall sparse – no flowers, Anarthria scabra, Dianella sp.
Herb (H)			.
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Banksia seminuda off SE edge – a few recruiting seedlings
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Site 25. Looking SE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 026
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 026	<b>Structural comm. type (app 2)</b> Wattie/peppermint woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 SSW	
<b>Location:</b> Wilson Inlet Foreshore Reserve. SE corner, between beach and tunnel, 100 m N.		

<b>Condition:</b> Pristine Excellent Very Good <b>Good</b> Degraded	
<b>Aspect:</b> N NE E SE_ S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat_ Lime Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS <u>Organic sand</u>
<b>Litter (% cover &amp; depth)</b> 5 cm., deep. Lots of branches.	<b>Bare Ground (% cover)</b> < 2%, only diggings
<b>Hydrology:</b> <u>Good drain</u> <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> <u>Estuary (300m)</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Taxandria juniperina
Tree (T3)	< 10	2 - 10	Agonis flexuosa, Callistachys lanceolata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Callistachys lanceolata
Shrub (S2)	1-2	< 2	Pteridium esculentum
Shrub (S3)	0-1	< 2	Astartea sp., Banksia seminuda seedlings on S edge (very large old adults to S)
Sedge/Rush (VR)		> 70	Meeboldina scariosa, Anigozanthos flavidus
Herb (H)		< 2	Hydrocotyle sp. in damp areas
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Weeds = Phalaris aquatica. Old fence off S edge
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Site 26. Looking SSW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 026
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 026	<b>Structural comm. type (app 2)</b> Wattie/peppermint woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 SSW	
<b>Location:</b> Wilson Inlet Foreshore Reserve. SE corner, between beach and tunnel, 100 m N.		

<b>Condition:</b> Pristine Excellent Very Good <b>Good</b> Degraded	
<b>Aspect:</b> N NE E SE_ S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat_ Lime Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS <u>Organic sand</u>
<b>Litter (% cover &amp; depth)</b> 5 cm., deep. Lots of branches.	<b>Bare Ground (% cover)</b> < 2%, only diggings
<b>Hydrology:</b> <u>Good drain</u> <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> <u>Estuary (300m)</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Taxandria juniperina
Tree (T3)	< 10	2 - 10	Agonis flexuosa, Callistachys lanceolata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Callistachys lanceolata
Shrub (S2)	1-2	< 2	Pteridium esculentum
Shrub (S3)	0-1	< 2	Astartea sp., Banksia seminuda seedlings on S edge (very large old adults to S)
Sedge/Rush (VR)		> 70	Meeboldina scariosa, Anigozanthos flavidus
Herb (H)		< 2	Hydrocotyle sp. in damp areas
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Weeds = Phalaris aquatica. Old fence off S edge
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<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 027
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 027	<b>Structural comm. type (app 2)</b> Wattie/peppermint woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 SSW	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Bare bracken patch north of inlet beach access. NB. This area is outside WIFR		

<b>Condition:</b> Pristine Excellent Very Good Good <u>Degraded</u>	
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> Gran Lat <u>Lime</u> Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS <u>Organic sand</u>
<b>Litter (% cover &amp; depth)</b> 3 cm, surprisingly.	<b>Bare Ground (% cover)</b> 10%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Estuary (300m) Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10		
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2		
Shrub (S2)	1-2	2 - 10	Agonis flexuosa (resprouting), Callistachys lanceolata, Anigozanthos flavidus
Shrub (S3)	0-1	30 - 70	Pteridium esculentum, Leucopogon propinquus, *Psoralea pinnata, Hibbertia cuneiformis
Sedge/Rush (VR)			
Herb (H)		< 2	Slipper orchid
Grass (G)		< 2	*Phalaris aquatica
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Weeds = *
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Site 27. Looking SSW



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 028
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 028	<b>Structural comm. type (app 2)</b> Woody weed forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Near gazebo 200m north of inlet beach access. NB. This area is outside WIFR		

<b>Condition:</b> Pristine Excellent Very Good Good <b>Degraded</b>	
<b>Aspect:</b> N NE E <b>SE</b> S SW W NW	<b>Slope:</b> Flat <b>Gentle</b> Mod Steep
<b>Geology:</b> Gran <b>Lat</b> Lime Other	<b>Rock:</b> 0 <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <b>Grey</b> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <b>S</b> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 1 cm, sparse	<b>Bare Ground (% cover)</b> 20%
<b>Hydrology:</b> <b>Good drain</b> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Estuary (300m) Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle <b>Slope Upper</b> Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10-30	*Eucalyptus globulus, *Pinus sp, Corymbia calophylla, Agonis flexuosa
Tree (T3)	< 10		
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2		
Shrub (S2)	1-2	< 2	*E. globulus seedling, Hibbertia cuneiformis
Shrub (S3)	0-1	2 - 10	*E. globulus seedling, *Conyza sp., Podocarpus drouynianus, C. calophylla seedling, *Solanum sp. seedling, Hovea trisperma seedlings, *yellow asterceae
Sedge/Rush (VR)		< 2	Watsonia sp. dead/dormant
Herb (H)		< 2	*Trifolium sp., *Anagallis arvensis
Grass (G)		< 2	*Phalaris aquatica *Briza maxima,
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Weeds = *
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Site 28. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 029
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 029	<b>Structural comm. type (app 2)</b> Marri, peppermint, jarrah woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S	
<b>Location:</b> Wilson Inlet Foreshore Reserve. E end		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW		<b>Slope:</b> Flat Gentle <u>Mod</u> Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm, lots of sticks and branches to 0.8		<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Estuary (400m)</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle <u>Slope Upper</u> Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10-30	Corymbia calophylla, Agonis flexuosa, Eucalyptus marginata
Tree (T3)	< 10	2-10	Corymbia calophylla, Agonis flexuosa
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Agonis flexuosa, Callistachys lanceolata
Shrub (S2)	1-2	< 2	Hibbertia cuneiformis, Podocarpus drouynianus
Shrub (S3)	0-1	2 - 10	Podocarpus drouynianus, Agonis flexuosa, Leucopogon revolutus, Pteridium esculentum
Sedge/Rush (VR)		10 - 30	Lepidosperma sp. glossy NM 70
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Lot of regeneration of most species. Corner 17.14 pm 0537420/6129509
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Site 29. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 029 New site
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 0534574 S, 6130286 N	<b>Structural comm. type (app 2)</b> Marri, peppermint, jarrah woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S/W, 1 NW along track	
<b>Location:</b> Wilson Inlet Foreshore Reserve. On track just N/W of Bandicoot Point		

<b>Condition:</b> Pristine Excellent <b>Very Good</b> Good Degraded <b>Track edge</b>	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <b>Flat</b> Gentle Mod Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey Dark Brown <b>Light Brown</b> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <b>LS</b> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4 cm	<b>Bare Ground (% cover)</b> Track bare, bush 20%
<b>Hydrology:</b> <u>Good drain</u> <u>Poor drain mix</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Estuary Rock Outcrop Drainage Depression_ Creepline <b>Riparian Bank</b> Gully <b>Track mound</b> Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Taxandria juniperina
Tree (T3)	< 10	10 - 30	Eucalyptus patens, Taxandria juniperina
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Taxandria juniperina (young), Callistachys lanceolata, Hakea oleifolia
Shrub (S2)	1-2	30 - 70	Hypocalymma cordifolium, Pteridium esculentum, Leucopogon capitellatus
Shrub (S3)	0-1		
Sedge/Rush (VR)		10 - 30	Lepidosperma effusum
Herb (H)			
Grass (G)			
Other (climbers) (C)		<2	Clematis pubescens

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Track side, only place <i>Hypocalymma cordifolium</i> seen. Thick luxuriant habitat under sedges and dense shrubs
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Site 29 New. Looking SW



Site 29 New. Looking NW along track

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 030
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 030	<b>Structural comm. type (app 2)</b> Marri/peppermint woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Offend of Lakeview Place, E end of reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm, lots of sticks and branches to 0.8		<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Estuary (400m)</u> Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle <u>Slope Upper</u> Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10-30	Corymbia calophylla, Agonis flexuosa
Tree (T3)	< 10	2-10	Corymbia calophylla, Agonis flexuosa, Taxandria juniperina (1)
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Callistachys lanceolata, Taxandria parviceps
Shrub (S2)	1-2	30 - 70	Leucopogon revolutus, Taxandria parviceps, Pteridium esculentum
Shrub (S3)	0-1	< 2	Corymbia calophylla seedling
Sedge/Rush (VR)		30 - 70	Lepidosperma sp. glossy NM 70, L. sp. terete (no heads)
Herb (H)		< 2	Opercularia sp.
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Bush rat runs under vegetation
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Site 30. Looking SE



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 030
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 030	<b>Structural comm. type (app 2)</b> Marri/peppermint woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Off the end of Lakeview Place, E end of reserve		

<b>Condition:</b> <u>Pristine</u> <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW		<b>Slope:</b> Flat <u>Gentle</u> <u>Mod</u> Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow <u>Organic layer</u>		<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4 cm		<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Estuary (400m)</u> Rock Outcrop Drainage Depression_ Creekline <u>Riparian Bank</u> Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10-30	Corymbia calophylla, Agonis flexuosa
Tree (T3)	< 10	2-10	Corymbia calophylla, Agonis flexuosa, Taxandria juniperina (1), Callistachys lanceolata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Callistachys lanceolata, Taxandria parviceps
Shrub (S2)	1-2	30 - 70	Leucopogon elatior, Taxandria parviceps, Pteridium esculentum, Agonis flexuosa
Shrub (S3)	0-1	< 2	Leucopogon elatior seedlings
Sedge/Rush (VR)		30 - 70	Lepidosperma sp. glossy NM 70, L. sp. terete (no heads)
Herb (H)		< 2	Opercularia sp.
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Seems thicker this time?
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Site 30. Looking S/E

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 031
<b>Date:</b> 24/11/2011	<b>GPS WPT:</b> 031	<b>Structural comm. type (app 2)</b> Sheoak/jarrah woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 W	
<b>Location:</b> Wilson Inlet Foreshore Reserve. West of Lakeview Place access, E end of reserve		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW	<b>Slope:</b> Flat Gentle <u>Mod</u> Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary (500m)</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10-30	Eucalyptus marginata, Allocasuarina fraseriana, Banksia grandis
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	30 - 70	Taxandria parviceps
Shrub (S2)	1-2	> 70	Podocarpus drouynianus, Agonis hypericifolia, Xanthorrhoea preissii, Leucopogon propinquus, Adenanthos obovatus
Shrub (S3)	0-1	2 - 10	Dasypogon bromeliifolius
Sedge/Rush (VR)		30 - 70	Anarthria prolifera, A. scabra, Lepidosperma sp. terete (no heads), Mesomelaena tetragona,
Herb (H)		< 2	Conostylis pusilla
Grass (G)			
Other (climbers) (C)		2 - 10	Lyndsaea linearis

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Very dense, a lot of litter hung up in vegetation
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Site 31. Looking W

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 031
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 031	<b>Structural comm. type (app 2)</b> Sheoak/jarrah woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 N	
<b>Location:</b> Wilson Inlet Foreshore Reserve. West of Lakeview Place access, E end of reserve		

<b>Condition:</b> <u>Pristine</u> <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW		<b>Slope:</b> Flat Gentle <u>Mod</u> Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm average, 3 to 10 cm. Patchy needles		<b>Bare Ground (% cover)</b> 0% just diggings
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Estuary (400m)</u> Rock Outcrop Drainage Depression Creekline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10-30	Eucalyptus marginata, Allocasuarina fraseriana, Banksia grandis
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	30 - 70	Taxandria parviceps, Podocarpus drouynianus
Shrub (S2)	1-2	30 - 70	Podocarpus drouynianus, Taxandria parviceps, Agonis hypericifolia, Xanthorrhoea preissii, Hypocalymma strictum, Adenanthos obovatus,
Shrub (S3)	0-1	< 2	Podocarpus drouynianus, Dasypogon bromeliifolius
Sedge/Rush (VR)		30 - 70	Anarthria scabra, Lepidosperma sp. terete (no heads), Desmocladus fasciculatus
Herb (H)		< 2	Dampiera sp
Grass (G)			
Other (climbers) (C)		<2	Lyndsaea linearis. Billardiera heterophylla

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Seems even thicker this time?
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Site 31. Looking N

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 032
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 032	<b>Structural comm. type (app 2)</b> Marri/peppermint woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Central line N/S of eastern most reserve (near island to W), 100m in		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW	<b>Slope:</b> Flat Gentle <u>Mod</u> Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 3 cm	<b>Bare Ground (% cover)</b> 5%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary (300m)</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Corymbia calophylla, Agonis flexuosa, Banksia grandis, Banksia seminuda just off E edge
Tree (T3)	< 10	10-30	Corymbia calophylla, Agonis flexuosa,
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Callistachys lanceolata, Taxandria linearifolia, Agonis flexuosa
Shrub (S2)	1-2	2 - 10	Monotoca tamariscina, Callistachys lanceolata, Taxandria linearifolia
Shrub (S3)	0-1	2 - 10	Tremandra stelligera, Pteridium esculentum, Banksia seminuda seedlings
Sedge/Rush (VR)		< 2	Gahnia trifida,
Herb (H)		< 2	Dampiera linearis
Grass (G)			
Other (climbers) (C)		< 2	Hardenbergia comptoniana

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  At fence corner, at a survey tape line N/S
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Site 32. Looking S



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 032
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 032	<b>Structural comm. type (app 2)</b> Marri/peppermint woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Central line N/S of eastern most reserve (near island to W), 100m in, end of taped line		

<b>Condition:</b> Pristine <u>Excellent</u> <u>Very Good</u> Good Degraded Some old dead Banksia seminuda	
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW	<b>Slope:</b> Flat Gentle <u>Mod</u> <u>Steep</u>
<b>Geology:</b> Gran <u>Lat</u> Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4 cm	<b>Bare Ground (% cover)</b> 0% just diggings
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Estuary Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain <u>Slope Lower</u> <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Corymbia calophylla, Agonis flexuosa, B. seminuda just off E edge
Tree (T3)	< 10	10-30	Corymbia calophylla, Agonis flexuosa,
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Callistachys lanceolata, Taxandria linearifolia, Agonis flexuosa
Shrub (S2)	1-2	2 - 10	Callistachys lanceolata, Agonis flexuosa seedlings, Leucopogon racemosulus
Shrub (S3)	0-1	2 - 10	Monotoca tamariscina, Tremandra stelligera
Sedge/Rush (VR)		2 - 10	Gahnia trifida, Desmocladus flexuosus, Gahnia trifida off edge
Herb (H)		< 2	Drosera sp,
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  At fence corner, at a survey tape line N/S
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Site 32. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 033
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 033	<b>Structural comm. type (app 2)</b> Peppermint woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S, 1 N	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Behind (N) of seat 3 near point on E end of reserve E of trotting track		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded Pine trees off edges to S	
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod <u>Steep to estuary to S</u>
<b>Geology:</b> Gran <u>Lat</u> Lime Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 2 cm	<b>Bare Ground (% cover)</b> 5%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary (200m)</u> Rock Outcrop Drainage Depression_ Creepline <u>Riparian Bank</u> Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	2 -10	Agonis flexuosa, Callistachys lanceolata, Eucalyptus marginata (1), Allocasuarina fraseriana
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Agonis flexuosa, Taxandria parviceps, Aotus intermedia
Shrub (S2)	1-2	10 - 30	Podocarpus drouynianus, Leucopogon propinquus, Pteridium esculentum, Dasypogon bromeliifolius
Shrub (S3)	0-1	< 2	Taxandria parviceps
Sedge/Rush (VR)		30 - 70	Anarthria scabra, Lepidosperma sp. narrow
Herb (H)		< 2	Johnsonia lupulina
Grass (G)			
Other (climbers) (C)		< 2	Billardiera sp.

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 33. Looking S



Site 33. Looking N

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 033 New
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 0535088 S, 6130237 E	<b>Structural comm. type (app 2)</b> Peppermint woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S, from slope	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Point on E end of Reserve No R41815. New site from Nov. 2011		

<b>Condition:</b> Pristine Excellent Very Good <u>Good</u> Near edge has fringe couch grass	
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light <u>Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Moss mostly	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary Edge</u> Rock Outcrop Drainage Depression_ Creeklime <u>Riparian Bank</u> Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Agonis flexuosa, Melaleuca cuticularis, Allocasuarina fraseriana
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Agonis flexuosa
Shrub (S2)	1-2	< 2	Agonis flexuosa, Leucopogon verticillatus, Leucopogon propinquus, Pteridium esculentum,
Shrub (S3)	0-1		
Sedge/Rush (VR)		30 - 70	Lepidosperma effusum, Baumea juncea
Herb (H)		< 2	Anigozanthos flavidus
Grass (G)		10 - 30	*Cynodon dactylon (couch) on edge
Other (climbers) (C)		< 2	Opercularia volubilis

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: An edge system where Agonis flexuosa occurs on the edge of the estuary shore
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Site 33 New. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 034
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 034 + 035?	<b>Structural comm. type (app 2)</b> Burnt blackbutt and teatree wetland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 N	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Bend of track east of trotting track access, 20m N of track		

<b>Condition:</b> Pristine Excellent Very Good <u>Good</u> Degraded <u>Burnt 1 – 2 years ago</u>	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS <u>Peaty organic sand</u>
<b>Litter (% cover &amp; depth)</b> Sparse very little	<b>Bare Ground (% cover)</b> 15% among regrowth
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> Estuary Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully <u>Plain</u> Slope Lower Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	2 - 10	Melaleuca preissiana, Eucalyptus patens, Taxandria juniperina
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2		
Shrub (S2)	1-2		
Shrub (S3)	0-1	30 - 70	Taxandria parviceps, Conostylis sp., Aotus intermedia, Comesperma virgatum, Astartea fascicularis
Sedge/Rush (VR)		30 - 70	Anarthria scabra
Herb (H)		2 - 10	Dampiera linearis
Grass (G)			
Other (climbers) (C)		< 2	Comesperma ciliatum, Opercularia volubilis

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Area burnt 1 – 2 years, vegetation recovering
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Site 34. Looking N



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 034
<b>Date:</b> 9/5/2011	<b>GPS WPT:</b> 034 + 035?	<b>Structural comm. type (app 2)</b> Burnt blackbutt and teatree wetland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 N	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Bend of track east of trotting track access, 20m N of old railway line track		

<b>Condition:</b> Pristine Excellent Very Good <u>Good</u> <u>Degraded</u> <u>Burnt 2 years ago</u>	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> <u>S</u> SCL SL SP ZCL ZL ZS <u>Peaty organic sand</u>
<b>Litter (% cover &amp; depth)</b> 1 cm, Sparse very little	<b>Bare Ground (% cover)</b> 0% among regrowth
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> Estuary Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully <u>Plain</u> Slope Lower Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Melaleuca preissiana, Eucalyptus patens, Taxandria juniperina
Mallee (M1)	> 8		
Mallee (M2)	< 8	2 - 10	Eucalyptus patens
Shrub (S1)	> 2		
Shrub (S2)	1-2	30 - 70	Taxandria juniperina (seedlings), Aotus intermedia
Shrub (S3)	0-1	10 - 30	Taxandria parviceps, Acacia hastulata
Sedge/Rush (VR)		30 - 70	Anarthria scabra, Evandra aristata
Herb (H)		< 2	Dampiera linearis, Stylidium sp
Grass (G)			
Other (climbers) (C)		2 - 10	Cassytha sp fine

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Changes in vegetation composition and structure since spring
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Site 34. Looking N

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 034b New site
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 0534739 N, 6130114 E	<b>Structural comm. type (app 2)</b> Peppermint, river banksia and marri woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Just behind Bandicoot Point shelter (70m), just S/E of paperbarks		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS <u>Organic</u>
<b>Litter (% cover &amp; depth)</b> 3-4 cm. Lots of old dead trees and logs. Patchy	<b>Bare Ground (% cover)</b> 10% Path only bare
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Estuary Rock Outcrop Drainage Depression_ Creeklime <u>Riparian Bank</u> Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Corymbia calophylla, Agonis flexuosa, Banksia seminuda
Tree (T3)	< 10	10 - 30	Banksia seminuda, Agonis flexuosa, Hake oleifolia
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Agonis flexuosa
Shrub (S2)	1-2	< 2	Pteridium esculentum
Shrub (S3)	0-1		
Sedge/Rush (VR)		30 - 70	Ficinia nodosa, Lepidosperma effusum
Herb (H)			
Grass (G)			
Other (climbers) (C)		< 2	Moss, Hardenbergia comptoniana, lichen

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 34 New. Looking SE

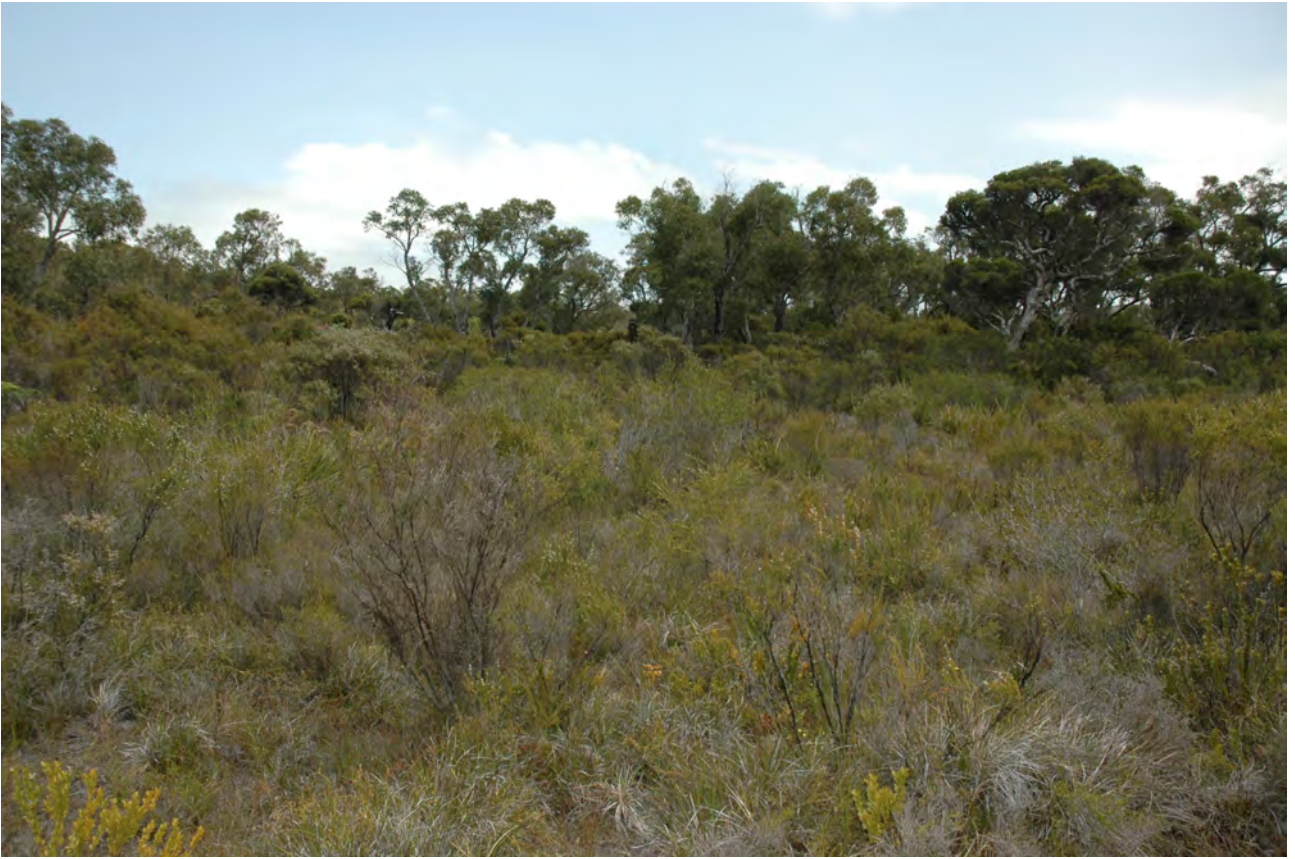
<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 035
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 036	<b>Structural comm. type (app 2)</b> Teatree/beaufortia wetland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 N/W	
<b>Location:</b> Wilson Inlet Foreshore Reserve. South off track, S of rail trail, S of trotting track		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> <u>S</u> SCL SL SP ZCL ZL ZS <u>Organic</u>
<b>Litter (% cover &amp; depth)</b> Moss and cryptogams to 2 cm	<b>Bare Ground (% cover)</b> 15% among regrowth
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> Estuary Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10		
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2		
Shrub (S2)	1-2	10 - 30	Beaufortia sparsa, Taxandria parviceps, Aotus intermedia
Shrub (S3)	0-1	10 - 30	Xanthorrhoea preissii, Adenanthos obovatus, Taxandria parviceps, Astartea fascicularis, Sphaerolobium vimineum
Sedge/Rush (VR)		30 - 70	Anarthria prolifera, Meeboldina scariosa, Dasypogon bromeliifolius
Herb (H)		< 2	Hypoxis occidentalis
Grass (G)			
Other (climbers) (C)		10 - 30	Moss

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:



Site 35. Looking NW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 035
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 036	<b>Structural comm. type (app 2)</b> Teatree/beaufortia wetland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 N/W	
<b>Location:</b> Wilson Inlet Foreshore Reserve. South off track, S of rail trail, S of trotting track		

<b>Condition:</b> <u>Pristine</u> <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> <u>S</u> SCL SL SP ZCL ZL ZS <u>Organic</u>
<b>Litter (% cover &amp; depth)</b> Patchy, sparse to 0.5 cm	<b>Bare Ground (% cover)</b> 20% patches sand oxidised grey/white
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> Estuary Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10		
Mallee (M1)	> 8		Eucalyptus patens off edges in surrounds
Mallee (M2)	< 8		
Shrub (S1)	> 2		
Shrub (S2)	1-2	10 - 30	Beaufortia sparsa, Taxandria parviceps, Aotus intermedia, Xanthorrhoea preissii, Taxandria linearifolia x parviceps
Shrub (S3)	0-1	10 - 30	Xanthorrhoea preissii, Adenanthos obovatus, Taxandria parviceps, Astartea fascicularis, Leucopogon sp.
Sedge/Rush (VR)		30 - 70	Anarthria prolifera, Meeboldina scariosa, Dasypogon bromeliifolius, Lepidosperma sp. no flowers
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Slight changes since spring
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Site 35. Looking NW



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 036
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 037	<b>Structural comm. type (app 2)</b> Karri/yate forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 W	
<b>Location:</b> Wilson Inlet Foreshore Reserve. South of Rivermouth Caravan Park, on E side of creek bend, near estuary		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded <u>Grass weeds</u>	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat <u>Lime</u> Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L _LS S SCL <u>SL</u> SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4 cm	<b>Bare Ground (% cover)</b> 15% among regrowth
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary 150m</u> Rock Outcrop Drainage Depression_ Creekline <u>Riparian Bank</u> Gully <u>Plain</u> Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Eucalyptus cornuta, E. diversicolour
Tree (T3)	< 10	10 - 30	Agonis flexuosa, Melaleuca raphiophylla (on creek edge)
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Agonis flexuosa, Bossiaea linophylla
Shrub (S2)	1-2	10 - 30	Hibbertia furfuracea, Leucopogon revolutus
Shrub (S3)	0-1	2 - 10	*Solanum nigrum, Tremandra stelligera, Opercularia sp. Macrozamia reidlei
Sedge/Rush (VR)		30 - 70	Desmocladus flexuosus, Lepidosperma sp. glossy
Herb (H)			
Grass (G)		10 - 30	*Bromus sp., *Phalaris sp. aquatica?
Other (climbers) (C)		< 2	Hardenbergia comptoniana

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  * = weeds
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Site 36. Looking W

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 036
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 037	<b>Structural comm. type (app 2)</b> Karri/yate forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 W	
<b>Location:</b> Wilson Inlet Foreshore Reserve. South of Rivermouth Caravan Park, on E side of creek bend, near estuary		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded <u>Grass weeds</u>	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat Lime Other ?	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> some gravel S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm. deep	<b>Bare Ground (% cover)</b> 15% among regrowth
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Estuary 150m Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Eucalyptus cornuta, E. diversicolour
Tree (T3)	< 10	10 - 30	Agonis flexuosa, Melaleuca raphiophylla (on creek edge)
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Agonis flexuosa, Bossiaea linophylla
Shrub (S2)	1-2	10 - 30	Hibbertia furfuraceae, Macrozamia reidlei
Shrub (S3)	0-1	2 - 10	*Solanum nigrum
Sedge/Rush (VR)		30 - 70	Desmocladius flexuosa, Lepidosperma squamatum
Herb (H)			
Grass (G)		10 - 30	Poa poiformis, dead grass weeds - *Bromus sp., *Phalaris sp.
Other (climbers) (C)		< 2	Hardenbergia comptoniana

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  * = weeds
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Site 36. Looking W

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 037
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 038	<b>Structural comm. type (app 2)</b> Jarrah/peppermint/marri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Off Harper Court Denmark town		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E SE S SW W NW		<b>Slope:</b> _Flat Gentle <u>Mod</u> <u>Steep</u>
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White <u>Yellow</u>		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm, thick, lots of sticks hung up to 0.6m		<b>Bare Ground (% cover)</b> 15% among regrowth
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Estuary 300m</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully <u>Plain</u> Slope Lower <u>Slope Middle</u> Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Corymbia calophylla, Eucalyptus marginata, Eucalyptus diversicolour (just to E), Eucalyptus guilfoylei (just to E), Agonis flexuosa, Banksia seminuda,
Tree (T3)	< 10	< 2	Agonis flexuosa
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Bossiaea linophylla
Shrub (S2)	1-2	2 - 10	Hibbertia furfuracea, Hovea trisperma, Monotoca tamarascina, Bossiaea linophylla, Pteridium esculentum
Shrub (S3)	0-1	< 2	Xanthosia rotundifolia
Sedge/Rush (VR)		10 - 30	Desmocladius flexuosus, Lepidosperma effusus, Anarthria prolifera
Herb (H)		< 2	Anigozanthos flavidus
Grass (G)		< 2	Tetrarrhena laevis
Other (climbers) (C)		< 2	Hardenbergia comptoniana

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 37. Looking SE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 037
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 038	<b>Structural comm. type (app 2)</b> Jarrah/peppermint/marri forest
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Off Harper Court, corner of Lunan St, Denmark town		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW		<b>Slope:</b> Flat Gentle <u>Mod</u> Steep
<b>Geology:</b> Gran <u>Lat</u> Lime Other		<b>Rock:</b> 0 <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White <u>Yellow (Pale)</u>		<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm, thick, lots of sticks hung up to 0.6m		<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Estuary 300m away</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower <u>Slope Middle</u> <u>Slope Upper</u> Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Corymbia calophylla, Eucalyptus marginata, Eucalyptus diversicolour (just to E), Eucalyptus guilfoylei (just to E), Agonis flexuosa, Banksia seminuda (1)
Tree (T3)	< 10	10 – 30	Eucalyptus marginata, Agonis flexuosa, Corymbia calophylla. (This strata at 10m so could be considered part of T2).
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 – 10	Bossiaea linophylla, Agonis flexuosa
Shrub (S2)	1-2	10 – 30 (10)	Hibbertia furfuraceae, Bossiaea linophylla, Pteridium esculentum
Shrub (S3)	0-1	< 2	Hovea trisperma, Monotoca tamarascina, Hibbertia furfuraceae, Xanthosia rotundifolia, ,
Sedge/Rush (VR)		10 - 30	Lepidosperma effusum, Desmocladus flexuosa, Anarthria prolifera
Herb (H)			
Grass (G)			
Other (climbers) (C)		< 2	Clematis pubescens, Hardenbergia comptoniana

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Spring survey showed the T3 and T2 strata to be separate, they could be seen either way.
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Site 37. Looking SE



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 038
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 039	<b>Structural comm. type (app 2)</b> Yate/marri woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 NW	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Poisson Point, just west of fishing boats		

<b>Condition:</b> Pristine <u>Excellent</u> <b>Very Good</b> Good Degraded	
<b>Aspect:</b> N NE E SE S SW <u>W</u> NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> 0 <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 3 cm	<b>Bare Ground (% cover)</b> <2%, only scratchings
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary 70m</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Corymbia calophylla, Eucalyptus cornuta
Tree (T3)	< 10	2 - 10	Trymalium odoratissimum, Agonis flexuosa
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Chorilaena quercifolia, Trymalium odoratissimum, Bossiaea linophylla
Shrub (S2)	1-2	2 - 10	Gastrolobium bilobum, Leucopogon revolutus, Hibbertia furfuraceae
Shrub (S3)	0-1	2 - 10	Macrozamia reidleyi, Opercularia sp, Thomasia paniculata
Sedge/Rush (VR)		10 - 30	Desmocladus flexuosa, Lepidosperma sp. glossy
Herb (H)		< 2	Alyogyne sp.
Grass (G)		< 2	Poa poiformis
Other (climbers) (C)		< 2	Hardenbergia comptoniana

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Bush rats evident
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Site 28. Looking NW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 038
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 039	<b>Structural comm. type (app 2)</b> Yate/marri woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1N/W, 1 S/W	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Poisson Point, just west of fishing boats		

<b>Condition:</b> Pristine <u>Excellent</u> <b>Very Good</b> Good Degraded	
<b>Aspect:</b> N NE E SE S SW <u>W</u> NW	<b>Slope:</b> <u>Flat</u> <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS gritty</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm	<b>Bare Ground (% cover)</b> 0%,
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary 70m</u> Rock Outcrop Drainage Depression_ Creepline <u>Riparian Bank</u> Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Corymbia calophylla, Eucalyptus cornuta
Tree (T3)	< 10	2 - 10	Trymalium odoratissimum, Agonis flexuosa
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Bossiaea linophylla, Corymbia calophylla seedlings
Shrub (S2)	1-2	10 - 30	Hibbertia furfuracea, Gastrolobium bilobum, Leucopogon revolutus, Agonis flexuosa, Eucalyptus cornuta seedlings
Shrub (S3)	0-1	2 - 10	Opercularia sp
Sedge/Rush (VR)		30 - 70	Desmocladus flexuosa, Lepidosperma sp. glossy
Herb (H)			
Grass (G)		< 2	Poa poiformis
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Seems a little different than spring survey
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Site 38. Looking NW



Site 38. Looking SW



<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 039
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 040	<b>Structural comm. type (app 2)</b> Granite outcrop
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, SSE	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Poisson Point, below carpark on granite		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded	
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> 0 <2 2-10 10-20 <u>20-50</u> >50
<b>Soil Colour:</b> Grey <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS gritty</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 1 cm, sparse	<b>Bare Ground (% cover)</b> 5%
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> <u>Upland</u> Wetland Estuary <u>Rock Outcrop</u> Drainage Depression_ Creekline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	2 - 10	Corymbia calophylla (shrubs really, 4m)
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Melaleuca viminea, Malaleuca raphiophylla (1)
Shrub (S2)	1-2	10 - 30	Melaleuca viminea, Taxandria linearifolia, Kunzea recurva, Xanthorrhoea preissii
Shrub (S3)	0-1	30 - 70	Darwinia citriodora, Eutaxia myrtifolia
Sedge/Rush (VR)		30 - 70	Lepidosperma sp. narrow
Herb (H)		< 2	Borya sp., Stypantra glauca
Grass (G)		< 2	Nureachne alopecuroidea
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 39. SSE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 039
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 040	<b>Structural comm. type (app 2)</b> Granite outcrop
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, SSE	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Poisson Point, below carpark on granite		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> 0 <2 2-10 10-20 <u>20-50</u> >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS gritty</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 1 -3 cm, sparse patchy	<b>Bare Ground (% cover)</b> 5-10% rock
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> <u>Upland</u> Wetland Estuary <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	2 - 10	Corymbia calophylla (shrubs/stunted trees, 4m)
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Melaleuca viminea, Melaleuca raphiophylla (1)
Shrub (S2)	1-2	10 - 30	Melaleuca viminea, Taxandria linearifolia, Kunzea recurva, Xanthorrhoea preissii
Shrub (S3)	0-1	30 - 70	Taxandria linearifolia, Darwinia citriodora, Eutaxia myrtifolia
Sedge/Rush (VR)		30 - 70	Lepidosperma sp. narrow, Patersonia sp small
Herb (H)		< 2	Borya sp., Stypanandra glauca
Grass (G)		< 2	Rytidosperma caespitosa
Other (climbers) (C)		< 2	Eriochilus dilitatus

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 39. Looking SSE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 040
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 039 ?	<b>Structural comm. type (app 2)</b> Karri forest on estuary edge
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Along walk trail S of boat ramp on Inlet Drive, SW Poisson Point.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE <u>S</u> SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm, lots of sticks	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary (30m)</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus diversicolour
Tree (T3)	< 10	30 - 70	Trymalium odoratissimum, Agonis flexuosa
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Chorilaena quercifolia, Agonis flexuosa
Shrub (S2)	1-2	< 2	Hibbertia furfuracea, Agonis flexuosa, Macrozamia reidleyi, Pteridium esculentum
Shrub (S3)	0-1	< 2	Tremandra stelligera
Sedge/Rush (VR)		2 - 10	Lepidosperma effusus, L. sp. glossy
Herb (H)			
Grass (G)			
Other (climbers) (C)		< 2	Billardiera sp

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Walk track to W is Bibbulmun Track
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Site 40. Looking E

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 040
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 041	<b>Structural comm. type (app 2)</b> Karri forest on estuary edge
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2, E. Different settings on camera	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Along walk trail S of boat ramp on Inlet Drive, SW Poisson Point.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 6 cm	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary (30m)</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus diversicolour
Tree (T3)	< 10	30 - 70	Trymalium odoratissimum, Agonis flexuosa
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Chorilaena quercifolia, Agonis flexuosa
Shrub (S2)	1-2	2 – 10 (2)	Hibbertia furfuracea, Chorilaena quercifolia, Logania serpyllifolia, Pteridium esculentum
Shrub (S3)	0-1	< 2	Tremandra stelligera
Sedge/Rush (VR)		2 - 10	Lepidosperma effusus, Lepidosperma sp. glossy
Herb (H)			
Grass (G)			
Other (climbers) (C)		< 2	Billardiera sp

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Walk track to W is Bibbulmun Track
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Site 40. 1, Looking E



Site 40. 2, Looking E

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 041
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 040 ?	<b>Structural comm. type (app 2)</b> Wattie forest with paperbark on estuary edge
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, N	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Behind boat ramp, west of Poisson Point.		

<b>Condition:</b> Pristine Excellent Very Good <u>Good</u> Degraded	
<b>Aspect:</b> N NE <u>E</u> SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat <u>Lime</u> Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Grass cover	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Taxandria juniperina
Tree (T3)	< 10	10 - 30	Melaleuca raphiophylla, Melaleuca densa, Callistachys lanceolata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2		
Shrub (S2)	1-2	2 - 10	Taxandria parviceps, Pteridium esculentum
Shrub (S3)	0-1	2 - 10	Boronia spathulata
Sedge/Rush (VR)		30 - 70	Lepidosperma gladiatum, Hypolaena exulca, Ficinia nodosa
Herb (H)		< 2	Anigozanthos flaviudus, Sp ? with white flowers
Grass (G)		30 - 70	*Phalaris aquatica
Other (climbers) (C)		< 2	Billardiera sp

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Walk track to W is Bibbulmun Track
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Site 41. Looking N

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 041
<b>Date:</b> 9/5/2012	<b>GPS WPT:</b> 042	<b>Structural comm. type (app 2)</b> Wattie forest with paperbark on estuary edge
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, N	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Behind boat ramp, west of Poisson Point.		

<b>Condition:</b> Pristine Excellent Very Good <u>Good</u> Degraded	
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat <u>Lime</u> Other	<b>Rock:</b> <u>0</u> <2 2-10_ 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS silty</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Grass thatch cover	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> <u>Estuary</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Taxandria juniperina, Melaleuca raphiophylla
Tree (T3)	< 10	10 - 30	Taxandria juniperina, Melaleuca raphiophylla, Callistachys lanceolata, Melaleuca densa to east side
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Callistachys lanceolata
Shrub (S2)	1-2	2 - 10	Taxandria juniperina, Pteridium esculentum
Shrub (S3)	0-1	< 2	Chenopod sp.
Sedge/Rush (VR)		30 - 70	Lepidosperma effusum, Hypolaena exulca, Ficinia nodosa
Herb (H)		< 2	Frankenia sp.
Grass (G)		30 - 70	*Cynodon dactylon
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

<p>Other notes: * = weeds Walk track to W is Bibbulmun Track</p>
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Site 41. Looking N

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 044
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 043 ?	<b>Structural comm. type (app 2)</b> Karri/marri woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Between Poisson Point and Ridley Place.		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded	
<b>Aspect:</b> N NE E SE S SW W <u>NW</u>	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> 0 <2 2-10_ <u>10-20</u> 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS organic</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 7 cm, deep, lots of sticks to 1m	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary</u> <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus diversicolour, Corymbia calophylla
Tree (T3)	< 10	2 - 10	Corymbia calophylla, Agonis flexuosa
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	30 - 70	Bossiaea linophylla, Agonis flexuosa, Chorilaena quercifolia, Corymbia calophylla
Shrub (S2)	1-2	2 - 10	Acacia pentadenia, Agonis flexuosa, Hibbertia furfuraceae, Leucopogon revolutus, Pteridium esculentum, Xanthorrhoea preissii
Shrub (S3)	0-1	< 2	Opercularia hispidula
Sedge/Rush (VR)		30 - 70	Lepidosperma effusus, L. sp. glossy
Herb (H)		< 2	Eriochilus sp.
Grass (G)			
Other (climbers) (C)		2 - 10	Kennedia sp., Cassytha sp. (dead), moss on rock

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 44. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 044
<b>Date:</b> 10/5/2012	<b>GPS WPT:</b> 043	<b>Structural comm. type (app 2)</b> Karri/marri woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Between Poisson Point and Ridley Place.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W <u>NW</u>	<b>Slope:</b> Flat <b>Gentle</b> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> 0 <2 2-10_ <u>10-20</u> 20-50 >50 East edge mainly
<b>Soil Colour:</b> <u>Grey</u> <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS organic</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 7 cm, deep, lots of sticks to 1m	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland Estuary <u>Rock Outcrop</u> Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	30 - 70	Eucalyptus diversicolour, Corymbia calophylla
Tree (T3)	< 10	10 - 30	Agonis flexuosa, Corymbia calophylla, Trymalium odoratissimum on edge
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2-10	Chorilaena quercifolia, Bossiaea linophylla, Agonis flexuosa
Shrub (S2)	1-2	2 - 10	Chorilaena quercifolia, Acacia pentadenia, Hibbertia furfuracea, Leucopogon revolutus, Xanthorrhoea preissii
Shrub (S3)	0-1	< 2	Agonis flexuosa seedlings, Tremandra stelligera, Pteridium esculentum
Sedge/Rush (VR)		10 - 30	Lepidosperma effusus, L. sp. medium glossy
Herb (H)		< 2	Opercularia hispidula
Grass (G)			
Other (climbers) (C)		2 - 10	Billardiera sp., Cryptostylis ovata, moss on rock

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Structure seems different than spring, may be in the interpretation?
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Site 44. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 045
<b>Date:</b> 25/11/2011	<b>GPS WPT:</b> 044 ?	<b>Structural comm. type (app 2)</b> Peppermint/marri open low woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Just N of Ridley Place.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE <u>E</u> SE S SW W <u>NW</u>	<b>Slope:</b> <u>Flat</u> <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 2 cm, lots of moss and sticks	<b>Bare Ground (% cover)</b> 5%, moss
<b>Hydrology:</b> <u>Good drain</u> <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary 5m</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Agonis flexuosa, Corymbia calophylla
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Eutaxia myrtifolia, Agonis flexuosa
Shrub (S2)	1-2	2 - 10	Leucopogon revolutus, Eutaxia myrtifolia, Xanthorrhoea preissii
Shrub (S3)	0-1	2 - 10	Darwinia citriodora, Leucopogon revolutus, Acacia pulchella
Sedge/Rush (VR)		10 - 30	Lepidosperma sp. tall narrow sharp NM 82, Patersonia occidentalis
Herb (H)		< 2	Stylidium sp.
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Lot of Darwinia citriodora seedlings
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Site 45. Looking SE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 045
<b>Date:</b> 10/5/2012	<b>GPS WPT:</b> 044	<b>Structural comm. type (app 2)</b> Peppermint/marri open low woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Just N of Ridley Place.		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded		
<b>Aspect:</b> N NE <u>E</u> SE S SW W NW		<b>Slope:</b> <u>Flat</u> <u>Gentle</u> Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other		<b>Rock:</b> 0 <u>&lt;2</u> 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ Dark Brown Light <u>Brown</u> Orange/Brown Red/Brown White Yellow		<b>Soil Type:</b> C CL CLS CS L <u>LS gritty</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 2 cm, lots of moss		<b>Bare Ground (% cover)</b> 0%, diggings only (lots)
<b>Hydrology:</b> <u>Good drain</u> <u>Poor drain</u> Wet all year Seas wet winter/spring		<b>Topographic position:</b> Upland Wetland <u>Estuary 5m</u> <u>Rock Outcrop ?</u> Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Agonis flexuosa, Corymbia calophylla
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Eutaxia myrtifolia, Agonis flexuosa
Shrub (S2)	1-2	2 - 10	Leucopogon revolutus, Eutaxia myrtifolia, Xanthorrhoea preissii, Agonis flexuosa
Shrub (S3)	0-1	2 - 10	Darwinia citriodora, Acacia pulchella
Sedge/Rush (VR)		10 - 30	Lepidosperma sp. tall narrow sharp NM 82, Patersonia occidentalis
Herb (H)			
Grass (G)			
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Lot of rabbit scratchings, dung mounds
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Site 45. Looking SE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 046
<b>Date:</b> 26/11/2011	<b>GPS WPT:</b> 045 ?	<b>Structural comm. type (app 2)</b> Paperbark woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S	
<b>Location:</b> Wilson Inlet Foreshore Reserve. 50 m S of Little River mouth.		

<b>Condition:</b> Pristine Excellent Very Good Good <b>Degraded</b>	
<b>Aspect:</b> N NE <b>E</b> SE S SW W NW	<b>Slope:</b> <b>Flat</b> Gentle Mod Steep
<b>Geology:</b> <b>Gran</b> Lat Lime Other	<b>Rock:</b> <b>0</b> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <b>Dark Brown</b> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <b>LS organic</b> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Covered by grass weeds, few sticks	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> Good drain <b>Poor drain</b> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <b>Estuary 6m</b> Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Melaleuca cuticularis, M. raphiophylla
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	< 2	Melaleuca viminea NM 83
Shrub (S2)	1-2	< 2	Taxandria parviceps
Shrub (S3)	0-1	2 - 10	*Chenopodium album
Sedge/Rush (VR)		2 - 10	Juncus krausii, *Watsonia sp.
Herb (H)		2 - 10	*Cotula sp.
Grass (G)		> 70	*Grass weed sp. ?, *Grass weed sp. ? no heads, *Phalaris aquatica
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Infested with grass weeds, two sp had no distinguishing heads or flowers
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Site 46. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 046
<b>Date:</b> 10/5/2012	<b>GPS WPT:</b> 045	<b>Structural comm. type (app 2)</b> Paperbark woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S (camera did 2)	
<b>Location:</b> Wilson Inlet Foreshore Reserve. 50 m S of Little River mouth.		

<b>Condition:</b> Pristine Excellent Very Good Good <b>Degraded</b>	
<b>Aspect:</b> N NE <b>E</b> SE S SW W NW	<b>Slope:</b> <b>Flat</b> Gentle Mod Steep
<b>Geology:</b> <b>Gran</b> Lat Lime Other	<b>Rock:</b> <b>0</b> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ Dark <b>Brown</b> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <b>LS organic</b> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Covered by grass weed thatch	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> Good drain <b>Poor drain</b> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <b>Estuary 6m</b> Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Melaleuca cuticularis, Melaleuca raphiophylla
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 -10	Melaleuca viminea, some seedlings
Shrub (S2)	1-2	< 2	Taxandria parviceps
Shrub (S3)	0-1	2 - 10	*Chenopodium album, Conyza bonariensis
Sedge/Rush (VR)		2 - 10	Juncus krausii, Ficinia nodosa, *Watsonia sp.
Herb (H)		2 - 10	*Chenopodium album
Grass (G)		> 70	*Dactylon Cynodon
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes: Infested with grass weeds, very degraded



Site 46. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 047
<b>Date:</b> 26/11/2011	<b>GPS WPT:</b> 046 ?	<b>Structural comm. type (app 2)</b> Blackbutt woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, N/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. S of Little River mouth, near point.		

<b>Condition:</b> Pristine Excellent Very Good <b>Good</b> Degraded	
<b>Aspect:</b> N NE <b>E</b> SE S SW W NW	<b>Slope:</b> <b>Flat</b> Gentle Mod Steep
<b>Geology:</b> <b>Gran</b> Lat Lime Other	<b>Rock:</b> <b>0</b> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <b>Dark Brown</b> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <b>LS</b> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4cm	<b>Bare Ground (% cover)</b> 0%, only on track on W side
<b>Hydrology:</b> <b>Good drain</b> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <b>Estuary 100m</b> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <b>Slope Lower</b> Slope Middle Slope Upper Valley <b>Flat</b>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Eucalyptus patens
Tree (T3)	< 10	10 - 30	Callistachys lanceolata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Callistachys lanceolata
Shrub (S2)	1-2	10 - 30	Leucopogon revolutus, Pteridium esculentum, Callistachys lanceolata regeneration
Shrub (S3)	0-1	< 2	Tremandra stelligera, *Asparagus aethiopicus
Sedge/Rush (VR)			
Herb (H)		<2	*Oxalis pes - caprae
Grass (G)		> 70	*Phalaris aquatica
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Quite weedy, although in reasonable condition
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Site 47. Looking NE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 047
<b>Date:</b> 10/5/2012	<b>GPS WPT:</b> 046	<b>Structural comm. type (app 2)</b> Blackbutt woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, N/E	
<b>Location:</b> Wilson Inlet Foreshore Reserve. S of Little River mouth, near point.		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ Dark Brown Light Brown <u>Orange/Brown</u> Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS gritty</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary 100m</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain <u>Slope Lower</u> Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30	10 - 30	Eucalyptus patens
Tree (T3)	< 10	10 - 30	Callistachys lanceolata
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Callistachys lanceolata
Shrub (S2)	1-2	10 - 30	Leucopogon revolutus, Pteridium esculentum, Callistachys lanceolata
Shrub (S3)	0-1	< 2	Tremandra stelligera
Sedge/Rush (VR)			
Herb (H)		<2	Anigozanthos flavidus
Grass (G)		> 70	*Dactylon Cynodon, *Phalaris aquatica
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Quite weedy, although in reasonable condition. Garden rubbish dumped, long handled secateurs in bush on trail
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Site 47. Looking NE

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 048
<b>Date:</b> 26/11/2011	<b>GPS WPT:</b> 047 ?	<b>Structural comm. type (app 2)</b> Wattie woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S/W	
<b>Location:</b> Wilson Inlet Foreshore Reserve. N of Poddy Point.		

<b>Condition:</b> Pristine Excellent Very Good <u>Good</u> <u>Degraded</u>	
<b>Aspect:</b> N NE E <u>SE S</u> SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS peaty organic</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4cm	<b>Bare Ground (% cover)</b> 0%, only on track on W side
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year <u>Seas wet winter/spring</u>	<b>Topographic position:</b> Upland <u>Wetland</u> <u>Estuary</u> Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Taxandria juniperina
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Callistachys lanceolata
Shrub (S2)	1-2	< 2	*Asparagus aethiopica
Shrub (S3)	0-1	< 2	Platysace pendula, Rhagodia baccata
Sedge/Rush (VR)		30 - 70	Juncus krausii, Ficinia nodosa,
Herb (H)		2 - 10	Dampiera alata, *Chenopodium album, *Watsonia sp.
Grass (G)		2 - 10	*Phalaris aquatica.
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 48. Looking SW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 048
<b>Date:</b> 10/5/2011	<b>GPS WPT:</b> 047	<b>Structural comm. type (app 2)</b> Melaleuca low woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S/W, 1 S	
<b>Location:</b> Wilson Inlet Foreshore Reserve. N of Poddy Point.		

<b>Condition:</b> Pristine Excellent Very Good <u>Good</u> <u>Degraded</u>	
<b>Aspect:</b> N NE E <u>SE S</u> SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ Dark Brown <u>Light Brown</u> Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS peaty organic</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 4cm	<b>Bare Ground (% cover)</b> 0%, only on track on W side
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year <u>Seas wet winter/spring</u>	<b>Topographic position:</b> Upland <u>Wetland</u> <u>Estuary</u> Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Melaleuca viminea (mistook this for Taxandria juniperina in spring)
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Callistachys lanceolata
Shrub (S2)	1-2	< 2	Melaleuca viminea
Shrub (S3)	0-1	< 2	Chenopodium album, *Conyza bonariensis, Rhagodia baccata
Sedge/Rush (VR)		30 - 70	Juncus krausii, Juncus sp (NM 33), Ficinia nodosa,
Herb (H)			This line included in others this survey
Grass (G)		< 2	* Cynodon dactylon, sedges are out-competing
Other (climbers) (C)		< 2	*Asparagus aethiopica, *Watsonia sp.

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 48. Looking SW



Site 48. Looking S

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 049
<b>Date:</b> 26/11/2011	<b>GPS WPT:</b> 048	<b>Structural comm. type (app 2)</b> Paperbark woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, S/W	
<b>Location:</b> Wilson Inlet Foreshore Reserve. S of Poddyshot Point boat ramp		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE <u>E</u> SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS peaty organic</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm reeds	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> Good drain Poor drain <u>Wet all year</u> Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland <u>Estuary</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Melaleuca cuticularis
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Melaleuca cuticularis
Shrub (S2)	1-2		
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 70	Juncus krausii, Ficinia nodosa,
Herb (H)			
Grass (G)		2 - 10	*Phalaris aquatica.
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Very old fire scar to N 10m
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Site 49. Looking SW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 049
<b>Date:</b> 10/5/2012	<b>GPS WPT:</b> 048	<b>Structural comm. type (app 2)</b> Paperbark woodland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1 S/W, 1 SSW	
<b>Location:</b> Wilson Inlet Foreshore Reserve. S of Poddyshot Point boat ramp, opposite A frame house with pale bricks		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded	
<b>Aspect:</b> N NE E <u>SE</u> S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat Lime Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> S SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> 5 cm reeds and grass thatch	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> Good drain <u>Poor drain</u> <u>Wet all year</u> Seas wet winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> <u>Estuary 10m</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Melaleuca cuticularis
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Melaleuca cuticularis
Shrub (S2)	1-2		
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 70	Juncus krausii, Ficinia nodosa,
Herb (H)			
Grass (G)		2 - 10	*Phalaris aquatica, *Cynodon dactylon on edges, dense under sedges
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Very old fire scars on melaleuca branches
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Site 49. Looking SW



Site 49. Looking SSW

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 050
<b>Date:</b> 26/11/2011	<b>GPS WPT:</b> 049	<b>Structural comm. type (app 2)</b> Juncus and paperbark shrubland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, W	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Dog exercise area		

<b>Condition:</b> Pristine Excellent <u>Very Good</u> Good Degraded	
<b>Aspect:</b> N NE <u>E</u> SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> <u>Gran</u> Lat <u>Lime</u> Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Couch covers it, mainly thatch	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> <u>Estuary</u> Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley <u>Flat</u>

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10		
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Melaleuca cuticularis
Shrub (S2)	1-2		
Shrub (S3)	0-1		
Sedge/Rush (VR)		> 70	Juncus kraussii, Ficinia nodosa, Meeboldina scariosa
Herb (H)		< 2	*Cotula sp.
Grass (G)		30 - 70	Sporobolus virginicus
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Very old fire scar to N 10m
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Site 50. Looking W

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 050
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 049	<b>Structural comm. type (app 2)</b> Sedge (Juncus) and paperbark shrubland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 1, W	
<b>Location:</b> Wilson Inlet Foreshore Reserve. Dog exercise area near river mouth		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW W NW	<b>Slope:</b> <u>Flat</u> Gentle Mod Steep
<b>Geology:</b> Gran Lat <u>Lime</u> Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> Grey_ <u>Dark Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Not visible through sedges	<b>Bare Ground (% cover)</b> 0%
<b>Hydrology:</b> Good drain <u>Poor drain</u> Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland <u>Wetland</u> <u>Estuary</u> Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10		
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	2 - 10	Melaleuca cuticularis
Shrub (S2)	1-2		
Shrub (S3)	0-1	< 2	Leucopogon revolutus near edge
Sedge/Rush (VR)		> 70	Juncus krausii, Ficinia nodosa
Herb (H)		< 2	*Cotula sp., Scaevola sp.
Grass (G)		30 - 70	Sporobolus virginicus, Grass weed sp, no seed heads for ID
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:
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Site 50. Looking W

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 051
<b>Date:</b> 26/11/2011	<b>GPS WPT:</b> 050	<b>Structural comm. type (app 2)</b> Coastal peppermint tall shrubland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2, S in 2 patches	
<b>Location:</b> Wilson Inlet Foreshore Reserve. 50 m S of carpark at river mouth		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S SW <u>W</u> NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> Gran Lat <u>Lime</u> Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark <u>Brown</u> Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L <u>LS</u> <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Moss and leave 4 cm. Moss covers most – 70%	<b>Bare Ground (% cover)</b> 0% Moss on all bare ground
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland_ Estuary Rock Outcrop Drainage Depression_ Creepline Riparian Bank Gully <u>Old Dune</u> Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	10 - 30	Agonis flexuosa very large shrubs rather than trees
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Agonis flexuosa, Hakea oleifolia
Shrub (S2)	1-2	30 - 70	Spyridium globulosum, Hibbertia cuneiformis, Leucopogon parviflorus, Rhagodia baccata, Acacia littorea
Shrub (S3)	0-1		
Sedge/Rush (VR)		30 - 70	Lepidosperma gladiatum, Desmodcladus flexuosa, L. sp. glossy (no heads)
Herb (H)			
Grass (G)		< 2	Poa poiformis
Other (climbers) (C)			

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Moss covering ground + 70%
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Site 51. Looking S 1



Site 51. Looking S 2.

<b>DENMARK RESERVES STRUCTURAL PLANT COMMUNITY SURVEY – Relevé</b>		<b>SITE_ID:</b> WIF 051
<b>Date:</b> 7/5/2012	<b>GPS WPT:</b> 050	<b>Structural comm. type (app 2)</b> Coastal peppermint tall shrubland
<b>Recorder:</b> Nathan McQuoid	<b>Photo no. + direction.</b> 2, S in 2 patches	
<b>Location:</b> Wilson Inlet Foreshore Reserve. 50 m S of carpark at river mouth		

<b>Condition:</b> Pristine <u>Excellent</u> Very Good Good Degraded	
<b>Aspect:</b> N NE E SE S <u>SW</u> W NW	<b>Slope:</b> Flat <u>Gentle</u> Mod Steep
<b>Geology:</b> Gran Lat <u>Lime</u> Other	<b>Rock:</b> <u>0</u> <2 2-10 10-20 20-50 >50
<b>Soil Colour:</b> <u>Grey</u> Dark Brown Light Brown Orange/Brown Red/Brown White Yellow	<b>Soil Type:</b> C CL CLS CS L LS <u>S</u> SCL SL SP ZCL ZL ZS
<b>Litter (% cover &amp; depth)</b> Moss and leaves 3 cm.	<b>Bare Ground (% cover)</b> 0% Just diggings
<b>Hydrology:</b> <u>Good drain</u> Poor drain Wet all year Seas wet winter/spring	<b>Topographic position:</b> Upland Wetland_ Estuary Rock Outcrop Drainage Depression_ Creekline Riparian Bank Gully <u>Old Dune</u> Plain Slope Lower Slope Middle Slope Upper Valley Flat

Layer	Height (m)	Cover	Plant Species (Dominant 3 first)
Tree (T1)	> 30		
Tree (T2)	10-30		
Tree (T3)	< 10	2 – 10 (10)	Agonis flexuosa very large shrubs rather than trees
Mallee (M1)	> 8		
Mallee (M2)	< 8		
Shrub (S1)	> 2	10 - 30	Agonis flexuosa, Hakea oleifolia
Shrub (S2)	1-2	30 - 70	Spyridium globulosum, Hibbertia cuneiformis, Leucopogon parviflorus, Rhagodia baccata, Acacia littorea
Shrub (S3)	0-1	< 2	Dasypogon bromeliifolius (N edge)
Sedge/Rush (VR)		30 - 70	Lepidosperma gladiatum, Desmocladus flexuosa,
Herb (H)			
Grass (G)		< 2	Poa poiformis
Other (climbers) (C)		< 2	Clematis pubescens, Muehlenbeckia adpressa, Billardiera heterophylla. Moss

Cover Codes: D >70% M 30-70% S 10-30% V 2-10% VV <2% E <5% Emergent

Other notes:  Moss covering ground, and diggings
--





Site 51. 1, Looking S



Site 51. 2, looking S

Appendix 5. Field herbarium sheet example. (Mt Hallowell 1)



**Appendix 6. Plants at 101, list only. Flora Observations, Wilson Inlet Foreshore, Minsterly Place**

FAMILY	SPECIES	FAMILY	SPECIES
Adiantaceae	<i>Cheilanthes austrotenuifolia</i>	Lindsaeaceae	<i>Lindsaea linearis</i> (screw fern)
Anarthriaceae	<i>Anarthria scabra</i>	Lobeliaceae	<i>Lobelia alata</i>
Apiaceae	<i>Apium prostratum</i>	Lobeliaceae	<i>Lobelia gibbosa</i>
Apiaceae	<i>Platysace filiformis</i>	Myrtaceae	<i>Agonis flexuosa</i>
Asperagaceaea	<i>Thysanotus patersonii</i>	Myrtaceae	<i>Taxandria linearifolia</i>
Asperagaceaea	<i>Thysanotus</i> sp.	Myrtaceae	<i>Taxandria juniperina</i>
Asteraceae	<i>Angianthus preissianus</i>	Myrtaceae	<i>Corymbia calophylla</i>
Asteraceae	<i>Leptorhynchus</i> ??	Myrtaceae	<i>Darwinia citriodora</i>
Chenopodiaceae	<i>Atriplex hypoleuca</i>	Myrtaceae	<i>Eucalyptus patens</i>
Chenopodiaceae	<i>Sarcocornia blackiana</i>	Myrtaceae	<i>Melaleuca cuticularis</i>
Colchicaceae	<i>Burchardia congesta</i>	Myrtaceae	<i>Melaleuca viminea</i>
Cyperaceae	<i>Lepidosperma gladiatum</i>	Orchidaceae	<i>Caladenia flava</i> subsp. <i>flava</i>
Cyperaceae	<i>Lepidosperma</i> ? <i>squamatum</i>	Orchidaceae	<i>Caladenia reptans</i> subsp. <i>reptans</i>
Cyperaceae	<i>Lepidosperma</i> sp.	Orchidaceae	<i>Cryptostylis ovata</i>
Dasyopogonaceae	<i>Dasyopogon bromeliaefolius</i>	Orchidaceae	<i>Diuris emarginata</i>
Dasyopogonaceae	<i>Lomandra integra</i>	Orchidaceae	<i>Eriochilus scaber</i> subsp. <i>scaber</i>
Dennstaedtiaceae	* <i>Hypolepis rugosula</i>	Orchidaceae	<i>Eriochilus dilatatus</i> subsp. <i>dilatatus</i>
Dennstaedtiaceae	<i>Pteridium esculentum</i>	Orchidaceae	<i>Microtis media</i>
Dilleniaceae	<i>Hibbertia furfuracea</i>	Orchidaceae	<i>Pterostylis recurva</i>
Droseraceae	<i>Drosera</i> sp. (small, orange)	Orchidaceae	<i>Pterostylis vittata</i>
Droseraceae	<i>Drosera pallida</i>	Orchidaceae	<i>Thelymitra antennifera</i>
Ericaceae	<i>Andersonia caerulea</i>	Orchidaceae	<i>Thelymitra flexuosa</i>
Ericaceae	<i>Leucopogon capitellatus</i>	Orchidaceae	<i>Thelymitra pauciflora</i>
Ericaceae	<i>Leucopogon oxycedrus</i>	Papilionaceae	<i>Bossiaea praetermissa</i>
Ericaceae	<i>Monotoca tamariscina</i>	Pittosporaceae	<i>Buillardiera fusiformis</i> (Sollya)
Fabaceae	<i>Acacia myrtifolia</i>	Pittosporaceae	<i>Billardiera variifolia</i> ? <i>drummondii</i> ?
Fabaceae	<i>Acacia pentadenia</i>	Primulaceae	<i>Samolus repens</i>
Fabaceae	<i>Callystachys lanceolata</i>	Restionaceae	<i>Desmocladus fasciculatus</i>
Fabaceae	<i>Chorizema ilicifolium</i>	Restionaceae	<i>Hypolaena exsulca</i>
Fabaceae	<i>Eutaxia obovata</i>	Restionaceae	Restionaceae sp. 3 (flat area)
Fabaceae	<i>Hardenbergia comptoniana</i>	Rubiaceae	<i>Opercularia hispidula</i>
Fabaceae	<i>Pultenaea reticulata</i>	Rutaceae	<i>Boronia crenulata</i>
Fabaceae	<i>Stypantra glauca</i>	Rutaceae	<i>Boronia</i> sp. (pink, fine lvs, slope)
Goodeniaceae	<i>Dampiera hederacea</i>	Scrophulariaceae	<i>Gratiola pubescens</i>
Goodeniaceae	<i>Dampiera linearis</i>	Sterculiaceae	<i>Thomasia quercifolia</i>
Goodeniaceae	<i>Scaevola striata</i> subsp. <i>striata</i>	Sterculiaceae	<i>Thomasia purpurea</i>
Haemodoraceae	<i>Anigozanthos flavidus</i>	Sterculiaceae	<i>Thomasia rhynchocarpa</i>
Haemodoraceae	<i>Haemodorum spicatum</i>	Stylidiaceae	<i>Stylidium assimile</i>
Hemerocallidaceae	<i>Agrostocrinum scabrum</i>	Stylidiaceae	<i>Stylidium calcaratum</i>
Hemerocallidaceae	<i>Chamaescilla corymbosa</i>	Stylidiaceae	<i>Stylidium scandens</i>
Hypoxidaceae	<i>Hypoxis glabella</i>	Stylidiaceae	<i>Stylidium spathulatum</i>
Hypoxidaceae	<i>Hypoxis occidentalis</i>	Stylidiaceae	<i>Stylidium</i> ? <i>hirsutum</i>
Iridaceae	<i>Patersonia umbrosa</i> var. <i>umbrosa</i>	Stylidiaceae	<i>Stylidium</i> (sm pinks fls, stoloniferous)
Juncaceae	<i>Ficinia nodosa</i>	Tremandraceae	<i>Tremandra diffusa</i>
Juncaceae	<i>Juncus kraussii</i>	Tremandraceae	<i>Tremandra stelligera</i>
Juncaceae	<i>Luzula meridionalis</i>	Xanthorrhoeaceae	<i>Xanthorrhoea preissii</i>
Lauraceae	<i>Cassytha glabella</i>	Zamiaceae	<i>Macrozamia reidlii</i>
		<b>Total species</b>	90