2009 MONITORING OF GROUNDWATER DEPENDENT VEGETATION – SOUTHERN BLACKWOOD PLATEAU & SCOTT COASTAL PLAIN

Lake Jasper

A Report to Water Smart Australia and the Department of Water

J. Wilson, T. Boyd, L. Wyse, & R. Froend

CEM report no. 2009-8

ECU Joondalup

May 2010

Table of Contents

This work was funded by the Water Smart Australia Programme

The Australian Government's Water Smart Australia programme is part of the $2 billion Australian Government Water Fund. It provides funding for large-scale projects that will make a significant contribution to the sustainable and efficient management of Australia's water resources.

Project context

The Department of Water (DoW) is undertaking groundwater allocation planning work in the Busselton-Capel and Blackwood groundwater areas. As part of the allocation process, groundwater-dependent ecosystems of high ecological value have been identified and the water regimes required to maintain those values at low risk have been determined. These are referred to as Ecological Water Requirements (EWRs).

On the southern Blackwood Plateau and the eastern Scott Coastal Plain EWR sites have been established representing both wetland and phreatophytic terrestrial vegetation. This involved establishment of vegetation transects with baseline vegetation monitoring, and construction or utilisation of existing piezometers to measure groundwater levels. This work comprised the requirements of contracted works conducted by the Centre for Ecosystem Management (Edith Cowan University) in 2005 (Froend & Loomes, 2006a).

Previous monitoring rounds (2005 & 2006) have included assessments of all 24 sites established in 2005. As good baseline data have been collected, the monitoring effort was reduced in the 2007 round, with approximately 50% of sites monitored. During early 2008 new transects were also established and baseline monitoring undertaken at five wetland sites across the Western Scott Coastal Plain.

During the current spring monitoring round, 21 existing sites were assessed including those established in 2008.

The deliverables associated with this project are as follows:

- Annual spring vegetation monitoring at existing and newly established transects.
- Discussion and interpretation of results including identification of trends or impacts related to changes in water regimes.
- Review of current Ecological Water Requirements.

Background

A number of reasons for the implementation of a monitoring program have been identified and include: to characterise variations in responses of ecosystems to natural variability in the environment; to collect baseline data on an ecosystem as part of the inventory process; to record ecological changes occurring as result of specific natural or anthropological events; to measure progress towards set objectives of a management program and; to audit performance of management agencies and land users (Bunn, Boon, Brock, & Schofield, 1997; Finlayson & Mitchell, 1999). All of the above reasons, particularly the latter three, are relevant to the monitoring of wetland and terrestrial vegetation of the Southern Blackwood and Eastern Scott Coastal Plain study area.

This report presents the results of the fifth monitoring period at selected existing sites (Table 1) and a discussion of any identified trends or impacts related to changes in water regimes. Monitoring was undertaken during November and December 2009.

Table 1: Monitoring history of existing and newly established sites. * denotes transects established during spring 2008.

Site	2005	2006	2007	2008	2009
Adelaide Rd (w)			*	*	*
Blackpoint Rd (w)	*	*		*	
Blackpoint Rd (t)	*	*		*	
Blackpoint Rd base of dunes (w)	*	*		*	
Blackpoint Rd dunes (w)	*	*			*
Blackpoint/ Fouracres Rd (w)	*	*	*	*	*
Blackpoint/ Fouracres Rd (t)	*	*	*		
*Blackpoint/ Mayall Rd				*	*
Darradup Rd west (w)	*	*		*	
DarradupRd east (w)	*	*	*		*
Darradup Rd east (t)	*	*	*		
Darradup Rd north (t)	*	*			*
Dennis Rd (w)			*	*	*
Jack Track (t)	*	*		*	*
Jangardup Rd (w)	*	*			*
Lake Jasper east (w)	*	*	*		*
Lake Jasper south (w)	*	*	*		
Long bottom Rd (w)	*	*			*
Longbottom Rd (t)	*	*			*
Milyeanup (w)	*	*		*	*
Milyeanup (t)	*	*		*	*
Pneumonia Rd (w)	*	*	*		
Poison Gully (w)	*	*	*	*	*
Posion Gully (t)	*	*	*	*	*
Reedia north (w)			*	*	*
Reedia south (s)			*	*	*
Scott Rd (t)	*	*	*		*
Scott River Rd (w)			*	*	*
Stewart Rd (w)	*	*			
*Stewart Rd 2 (w)				*	*
Stewart Rd (t)	*	*	*		

Vegetation Monitoring

Approach/ Methods

Monitoring approach

Monitoring is defined as the collection of specific information for management purposes in response to hypotheses derived from assessment activities, and the use of these results for implementing management (Finlayson, 2003).

Parameters used in monitoring should reflect the ecological values, environmental condition and health of GDEs and have a defined relationship with groundwater levels. Froend and Zencich (2002) listed the following specific parameters as suitable for examining vegetation response to changed water regimes:

- Species diversity of plant communities;
- Cover and abundance of indicator plant species;
- Species evenness over time;
- Weediness index overtime;
- Regeneration index over time;
- Canopy fullness/density of indicator species;
- Community distribution/zonation change or distribution of indicator plant species along a gradient;
- Size (height) and age structure (dbh) of a local population;
- Canopy health.

When monitoring vegetation it is important to measure environmental variables that will influence vegetation communities, namely:

- Groundwater levels and fluctuating water regimes (duration of wet/dry phases, seasonality etc);
- Water quality (nutrient concentrations, salinity, toxicants);
- Soil water retention capacity and soil stratigraphy (water retention layers);
- Climatic information (rainfall and maximum temperatures during summer/early autumn);
- Frequency of fire disturbance (measured by recording the presence or absence of fire ephemeral native legumes).

Hypotheses

The formulation of a testable hypothesis is critical to the effectiveness of a monitoring program. Finlayson and Mitchell (1999) explain that monitoring is underpinned by the assumption that there is a specific reason for the collection of data, and the assumption should be clearly stated and presented as a hypothesis, subsequently tested and the information assessed and fed back into the management process. Management performance and accountability are also critical to effective monitoring and should be monitored alongside ecological parameters (Finlayson & Mitchell, 1999). An iterative relationship between monitoring and management should exist, resulting in an adaptive management program, where monitoring data provides a check on the progress of management and if necessary, the management program can be amended to ensure objectives are being met (Bunn et al., 1997).

A strong relationship between monitoring and research should also be encouraged in order to refine and extend scientific knowledge of the ecosystem (Bunn et al., 1997).

The critical importance of monitoring objectives, stated as clear and testable hypotheses, to the effectiveness of a monitoring program, has been emphasised by a number of authors (see Bunn et al., (1997); Finlayson and Mitchell (1999) and Finlayson (2003)). For each GDE clear identification and definition of monitoring objectives should be developed and expressed as testable hypotheses. These hypotheses should relate the loss of environmental values of a specific GDE to the groundwater regime and should incorporate monitoring parameters as compliance criteria. For instance, if a wetland has diverse littoral and fringing vegetation in good condition, supporting a diverse macroinvertebrate community and providing habitat for water birds, an appropriate hypothesis may be:

> *Increasing depth to groundwater will lead to a change in the structure, condition and vigour of littoral and fringing vegetation resulting in the decline of habitat values.*

The 'change in structure, condition and vigour' can be measured using relevant parameters (i.e. species diversity, species cover and abundance, vegetation structure, community distribution etc.). However, what constitutes a 'change' resulting in a loss of values will depend on the current condition of the littoral and fringing vegetation which led to the assignment of habitat values.

A vegetation monitoring regime for wetland and terrestrial criteria sites was proposed by Froend and Loomes (2006b). Initially overarching monitoring objectives were identified to provide general direction for the entire program. Monitoring objectives applicable at site level were then developed based on previously identified management objectives (Froend & Loomes, 2006b).

The suggested overarching monitoring objectives for wetland and terrestrial vegetation criteria sites of the study area were as following;

1. To forecast ecosystem response to a changing groundwater regime.
2. To ensure an early-warning system for critical GDE components.
3. To improve understanding of GDE response to changing groundwater regime.

To address these at a site level the following monitoring objectives were recommended;

- To detect changes in species composition related to water regime change.
- To detect changes in species distribution related to water regime change.
- To detect changes in species richness related to water regime change.
- To detect changes in species mortality related to water regime change.
- To detect changes in species condition and vigour related to water regime change.
- To detect changes in community structure related to water regime change.
- To detect changes in water regime.

Table 2 identifies vegetation monitoring parameters relevant to each of the above monitoring objectives.

Table 2: Monitoring objectives and relevant monitoring parameters.

Monitoring objective	Monitoring parameters
To detect changes in species composition related to water regime change	- species diversity - species cover and abundance
To detect changes in species distribution related to water regime change	- species evenness - species distribution
To detect changes in species richness related to water regime change	- species diversity
To detect changes in species mortality related to water regime change	- canopy health - species cover and abundance
To detect changes in species condition and vigour related to water regime change	- regeneration index - canopy health
To detect changes in community structure related to water regime change	- community distribution/ zonation - weediness index - size and age structure of tree populations
To detect changes in water regime	- ground and surface water levels

Although it was possible to develop testable hypotheses for each monitoring objective, it was more expedient to develop an 'all-encompassing' hypothesis for each site based on identified ecological values. Therefore only three hypotheses have been developed based on the ecological values of criteria sites.

The following wetlands/ wetland sites are known to support unaltered groundwater dependent flora and fauna assemblages (V & C Semeniuk Research Group, 2005):

- Poison Gully
- Blackpoint Rd
- Blackpoint Rd base of dunes
- Darradup Rd west
- Milyeanup
- Reedia North
- Reedia South
- Stewart Rd
- Blackpoint/ Mayall Rd.

The following hypothesis was applied to monitoring at these sites:

> *Increasing depth to groundwater will lead to a change in the structure, condition and vigour of littoral and fringing vegetation resulting in the decline of faunal habitat values.*

The remaining wetlands/ wetland sites are not thought to support groundwater dependent fauna however all support unaltered flora assemblages:

- Blackpoint/ Fouracres Rd
- Adelaide Rd

- Dennis Rd
- Scott River Rd

The following hypothesis was applied to monitoring at these sites:

> *Increasing depth to groundwater will lead to a change in the structure, condition and vigour of littoral and fringing.*

Although it is probable that all terrestrial sites support fauna it is unlikely that any species exhibit more than a very low level of groundwater dependence. Therefore the following hypothesis was applied to monitoring at terrestrial sites:

> *Increasing depth to groundwater will lead to a change in the structure, condition and vigour of phreatophytic vegetation.*

Monitoring should be undertaken in late spring to ensure all sites are accessible and that surface water levels in wetlands have declined sufficiently to allow field work to be completed. Spring is also the peak flowering period facilitating plant identification.

Monitoring of ground and surface water levels at each site represents the best 'early warning' signal of potential impacts of changing water regimes on ecosystem health. As the frequency of monitoring at criteria sites should be sufficient to detect seasonal fluctuations it should be undertaken on a seasonal basis at the very least, although monthly monitoring is recommended. Although hand-dug piezometers were installed at the time of transect establishment, they could not be dug deeper than the existing water table. In response the DoW and contractors are undertaking a program to install permanent piezometers.

Methods

A permanent 20 m wide, belt-transect was established at each site. Standard transects are composed of four 20 x 20m plots (Figure 1). Within each 20 x 20 m quadrat, all trees were tagged at breast height (approx. 1.5 m) with a numbered galvanised tag. Two 5 x 5 m sub-plots were established within each quadrat, and marked with galvanised steel posts for assessment of all understorey plants. Sub-plots were located in the bottom right and top left-hand corners of each 20 x 20 m plot.

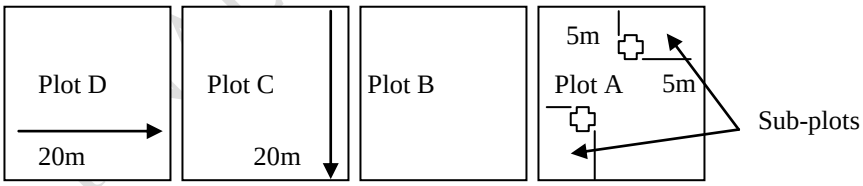


Figure 1: Standard set-up of sub-plots on monitoring transects at wetland and terrestrial sites.

During each monitoring round, the species, diameter at tag height and crown condition of each tree within each plot were recorded. In the case of individual trees with multiple stems, all stems were measured at the same height as the position of the tag or at breast height. In addition to tracking growth and vigour of trees in the future, stem diameters also permit size class analysis of populations. Crown assessments were carried out using a subjective three part scale where a score was recorded for crown density, dead branches and epicormic growth. Using diagrams for comparison, a score was given for each component (9, 7, 5, 3, 1

for crown density and dead branches and 5, 4, 3, 2, 1 for epicormic growth) (Ladd, 1996) and these scores totalled to give a health assessment score for each tree. Tree health or canopy condition was described as poor (1-5), moderate (6-11) or good (12-17) or very good (18-23).

Within each 5 x 5 m plot all species were identified and their cover estimated using the Domin-Krajina scale of cover and abundance (Kent & Coker, 1992). This technique allows comparison of changes in the relative importance of individual species within each plot over time. Based on this floristic data, a weediness index was calculated for each plot by dividing the cover of exotic species by the cover of natives and adding the number of exotics divided by the number of natives (Ladd, 1996). This provides an indication of the extent of weed invasion in each plot and changes over time.

To improve the understanding of relationships between vegetation condition and water regimes and to test the hypotheses, changes in canopy health, species composition and other vegetation measures are compared to water level trends and other influences including recent fire history and rainfall where available. However, as water level monitoring at the majority of sites has only commenced recently (within the last 1 to 4 years), relationships and trends between water regime change and vegetation change can only be described over the short term.

Results

Tables and figures documenting the health and DBH measurements of dominant tree species in each plot and tables of the cover and abundance values of all species within monitored sub-plots are presented in Appendices 1, 2 and 3. A summary of changes in selected vegetation parameters (across entire transects) is presented in Table 3. Complete descriptions of these results on a site by site basis are included in the following pages.

Bureau of Meteorology rainfall records were sourced for Pemberton this being the closest meteorological station to monitoring sites. Long-term average (1941-2010) monthly rainfall and 2007/08 - 2009/10 monthly rainfall (Figure 2) show that during 2009 long-term monthly averages were exceeded during June, July, September and November. Long-term averages were also exceeded during November and December of 2008 (Figure 2).

Table 3. Summary Table of Changes in Vegetation (Across Entire Transect).

Sites/ year last assessed	Vegetation change since previous assessment		
	[1]Tree health	[2]Inc exotics	[3]Similarity index
Wetlands			
Blackpoint Rd - Dunes (06)	7.0	200	0.878
Blackpoint/Fouracres Rd (08)	-3.2	100	0.906
Blackpoint/ Mayall Rd (08)	16.5	30	0.855
Darradup Rd East (07)	-45.6	0	0.742
Jangardup Rd (06)	31.9	0	0.860
Lake Jasper East (07)	-4.1	0	0.613
Longbottom Rd (06)	-84.8	600	0.821
Milyeanup (08)	12.9	0	0.897
Poison Gully (08)	23.3	0	0.935
Stewart Rd (08)	-8.1	0	0.883
Terrestrial			
Darradup Rd north (06)	8.7	0	0.868
Jack Track (08)	14.5	0	0.958
Longbottom Rd (06)	6.9	0	0.879
Milyeanup (08)	1.4	-100	0.855
Poison Gully (08)	-4.4	0	0.889
Scott Rd (07)	2.4	0	0.905
Western Scott Coastal Plain			
Adelaide Rd (08)	-9.5	0	0.909
Dennis Rd (08)	2.4	31.25	0.891
Reedia North (08)	2.4	0	0.847
Reedia South (08)	0.4	0	0.947
Scott River Rd (08)	-1.6	0	0.852

[1]% change in mean tree health/ canopy condition. [2]% change in abundance of exotic species. [3]Compositional similarity matrix.

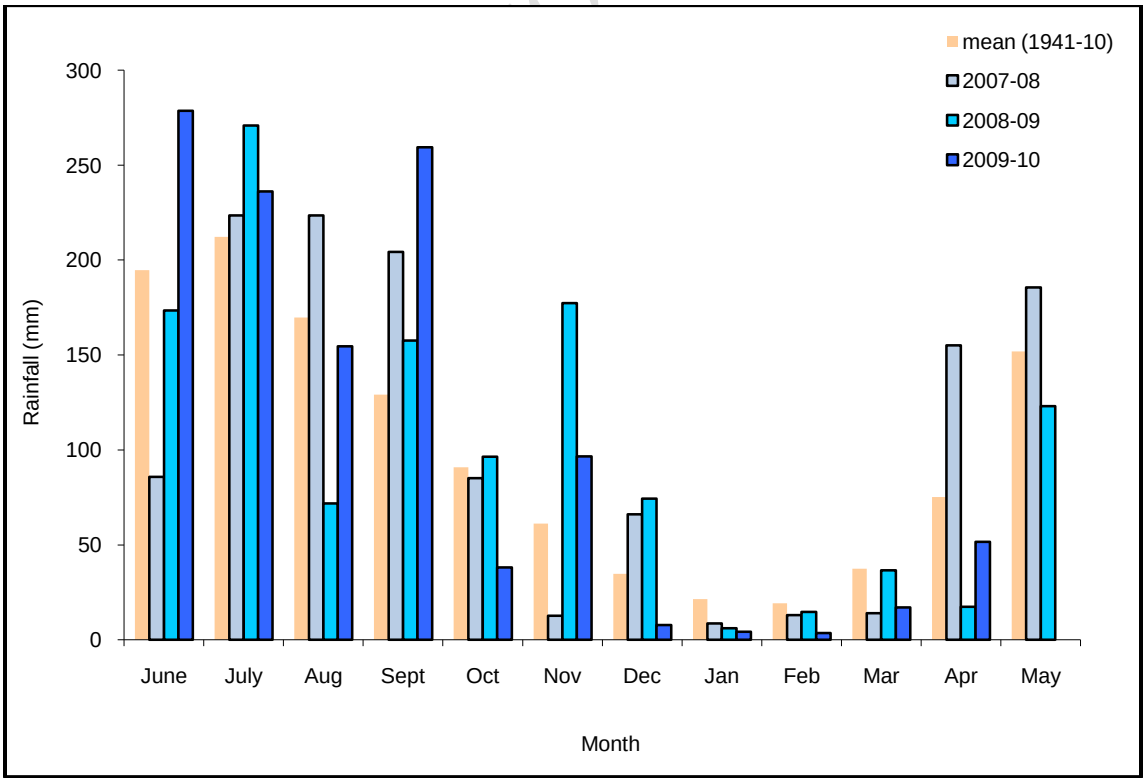
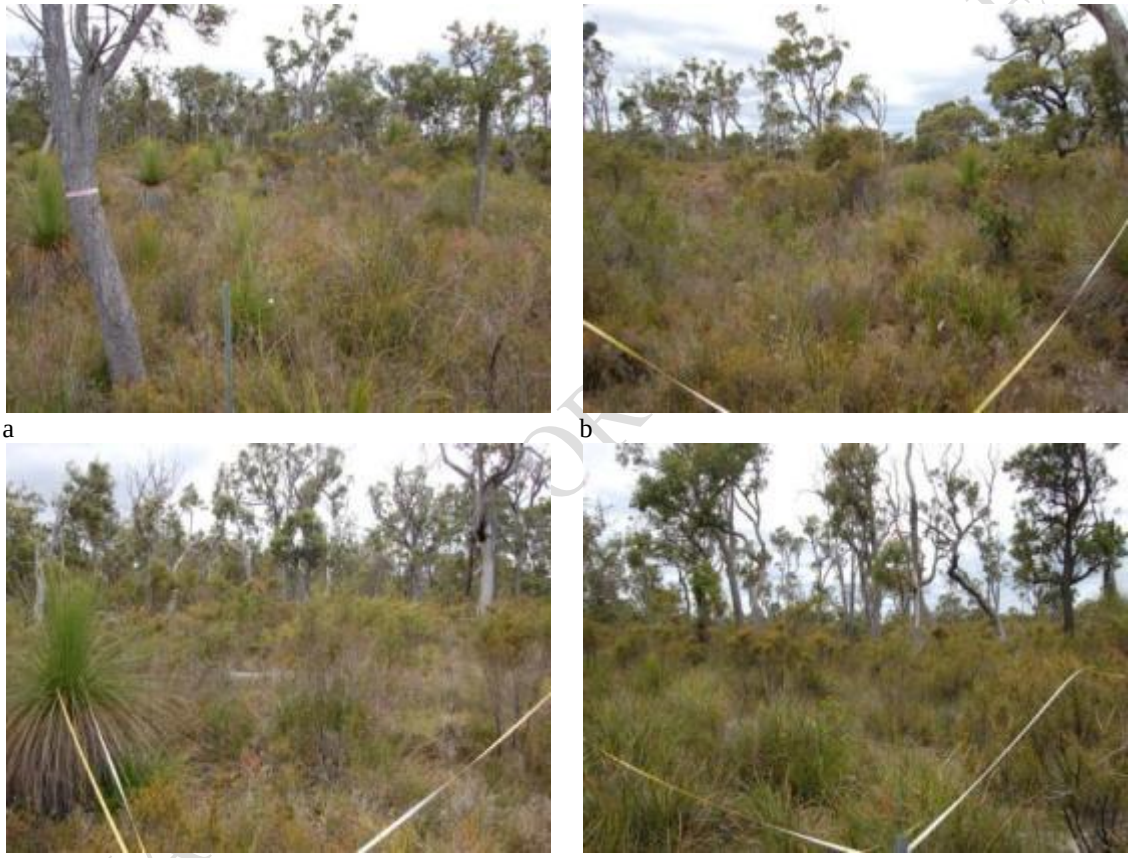


Figure 2: Long term (1941-2010) average monthly Pemberton rainfall compared to monthly rainfall recorded during 2007/08, 2008/09 and 2009/10.

Wetland Sites

Blackpoint/ Fouracres Rd

This transect, near the intersection of Blackpoint and Fouracres Rds, was established to run south-east between a piezometer on the roadside and a second piezometer 80 m into the wetland. Plot A has the highest elevation, which decreases with distance from Plot A, with a corresponding change in dominant species. *Eucalyptus marginata* with a predominately terrestrial understorey occurred over the first 15 m changing to vegetation dominated by *P. ellipticum* and emergent *M. preissiana* with more mesic species in the understorey (Figure 3).



a b c d

Figure 3. Blackpoint Fouracres Rd wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.)

There was a general decline in canopy condition across the transect during 2009 following on from the decline in 2008, with mean health decreasing a further 3% compared to 2008 (Table 3). Species composition was in the order of 90% similar to that described in 2008 while there was a 100% change in the number of exotics recorded across the trabnsect (Table 3). However, this figure should be read with caution it represents an increase of one (1) exotic from none in 2008.

During the 2006 assessment it was noted that much of the previously abundant *P. ellipticum* had dried off and thinned across the site. Although there was little change

during 2007, abundance increased again during 2008, and has since declined in several plots in 2009, while increasing in cover and abundance in plots of lower elevation (Appendix 2).

Hydrological data for bore 60810087, in close proximity to the Blackpoint/ Fouracres Rd wetland transect, is available for a relatively brief period (05/2007 – 03/2010) (Figure 4). This limited data has shown a slight increase in maximum groundwater levels from 2008 to 2009, similar to that seen from 2007 to 2008. The consistent minimum groundwater levels would suggest that perhaps the bore is not at an appropriate depth to measure the extent of seasonal declines.

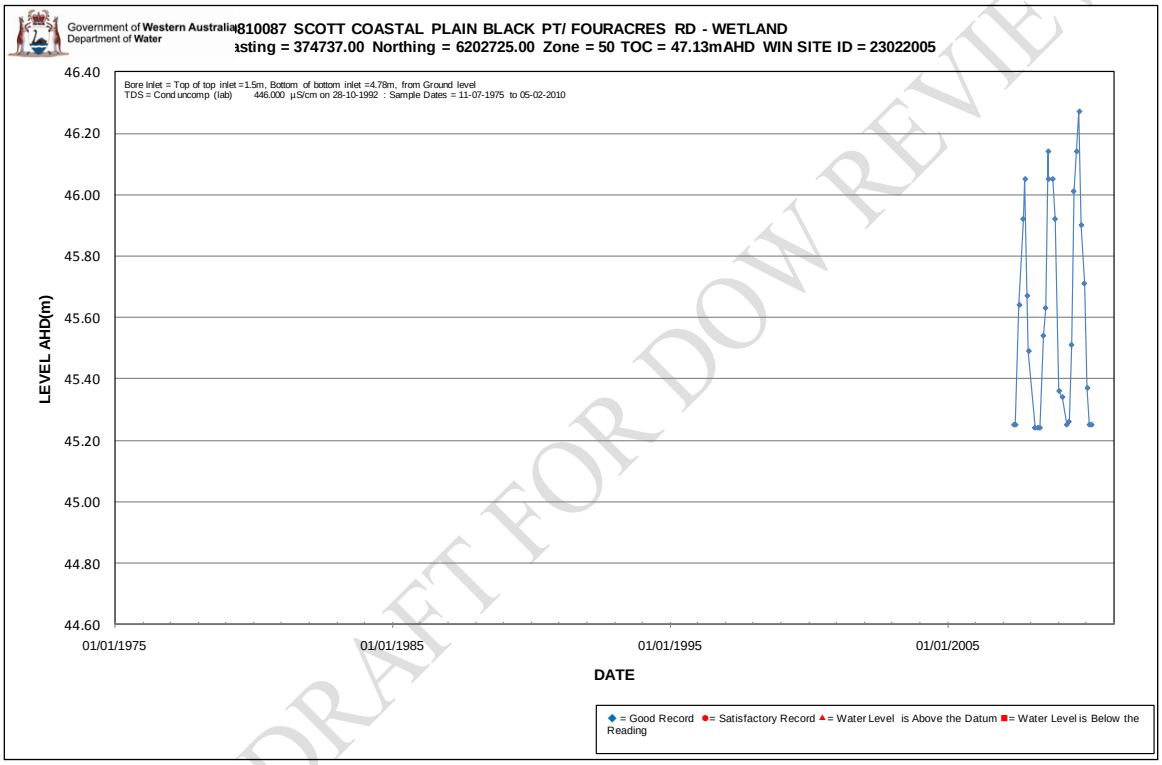


Figure 4. Blackpoint/Fouracres Rd wetland groundwater levels 05/2007-03/2010

Table 4: Blackpoint/ Fouracres Rd - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot		A			B			C			D		
Year	Spec[1].	07	08	09	07	08	09	07	08	09	07	08	09
Diameter range[2]	M.p.	-	-	-	-	-	-	5.2 - 46	<2-46.5	<2-46.5	4.2 - 22.5	<2-21	<2-21
	E.m.	<2 - 42	<2-42	<2-42	4.6 - 10.5	1.5-4.6	1.5-4.6	-	-	-	-	-	-
	C.c	<2-2.7	<2-3.2	<2-3.2	-	-	-	-	-	-	-	-	-
Health Mean[3]	M.p.	-	-	-	-	-	-	15.4	11.8	10.8	17	12.9	15.5
	E.m.	13.1	13.8	12.7	19	15	12	12	9	17	12	-	-
	C.c	15.3	15	12	-	-	-	-	-	-	-	-	-
Health Range	M.p.	-	-	-	-	-	-	11-19	8-17	10-12	15 - 19	10-17	13-19
	E.m.	9-19	9-18	6-19	19	15	12	-	-	17	-	-	-
	C.c	14 - 17	15	12	-	-	-	-	-	-	-	-	-
Density[4]	M.p.	-	-	-	-	-	-	5	5	4	5 (6)	7 (6)	6
	E.m.	8 (14)	8	7	1 (2)	1 (2)	1	(2)	-	1	-	-	-
	C.c	3	4	1 (14)	-	-	-	-	-	-	-	-	-

[1]Overstorey species – M.p. = *Melaleuca preissiana*; E.m. = *Eucalyptus marginata*; C.c = *Corymbia calophylla*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 5: Blackpoint/ Fouracres Rd - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	**07**	**08**	**09**	**07**	**08**	**09**	**07**	**08**	**09**	**07**	**08**	**09**	**07**	**08**	**09**	**07**	**08**	**09**	**07**	**08**	**09**	**07**	**08**	**09**
No. species	25	33	34	25	37	34	19	33	26	19	23	23	25	33	31	11	16	13	23	24	25	22	30	29
No. exotics	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Milyeanup

A 60 m transect was established to traverse the wetland at this site, with the piezometer located near the center of the basin. The elevational gradient was lowest in the basin, where a number of small creeks were running, increasing towards the wetland fringe. Vegetation composition and structure changed with elevation and reflected changes in water availability. The species poor, yet very dense vegetation of the basin was dominated by *T. linearifolia, T. parviceps* and a number of sedge species including *Lepidosperma tetraquetrum* (Figure 5). The wetland fringes comprised fewer sedges, a greater density of shrubs and tree species including *E rudis, B. littoralis, E. marginata* and *C. calophylla*. As the basin was relatively narrow only three plots were established.

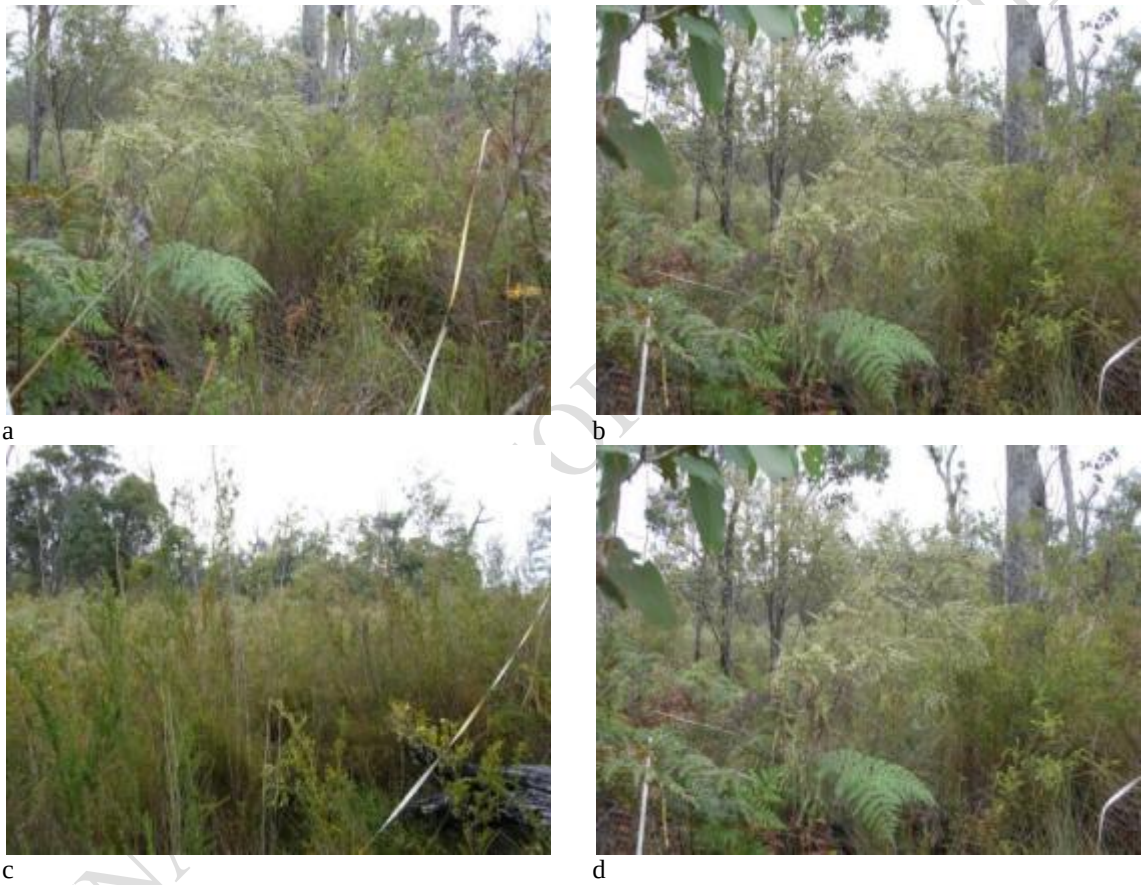


Figure 5. Milyeanup wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 20-40 m; c) 40-60 m; d) 80-60 m.

There was a 12.9% increase in canopy health between the 2008 and 2009 monitoring rounds, with species composition across the transect in the order of 89.7% similar to that recorded during the 2008 assessment (Table 3). Once again no exotic species were recorded at this site during this round of monitoring.

Hydrological data for bore 60914937, which lies in close proximity to the Milyeanup wetland transect, were available from May 2006 to March 2010 (Figure 6). The bore appears to have dried each summer; therefore it is not possible to comment on changes in

minimum groundwater levels. However, maximums groundwater levels have increased slightly each year since 2006.

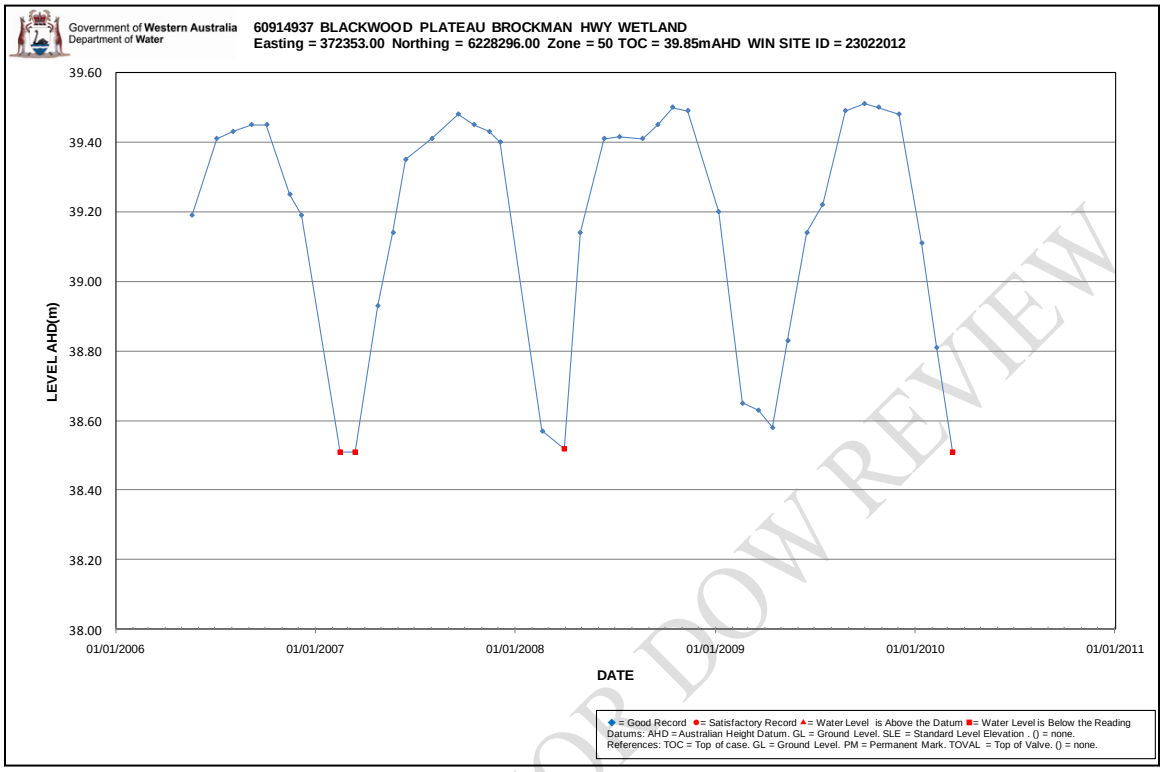


Figure 6. Milyeanup groundwater levels 05/2006 – 03/2010

Table 6: Milyeanup - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot		A			B			C		
Year	Spec[1].	06	08	09	06	08	09	06	08	09
Diameter range[2]	B.l.	<2	<2	<2	-	-	-	-	-	-
	E.r.	<2-35.7	<2-36.3	<2-36.3	-	-	-	-	-	-
	C.c.	-	-	-	-	-	-	<2-78.8	<2-78.8	<2-78.8
	E.m.	-	-	-	-	-	-	<2-15.1	<2-15.1	<2-15.1
Health Mean[3]	B.l.	15	18	21	-	-	-	-	-	-
	E.r.	8.8	10.4	11.4	-	-	-	-	-	-
	C.c.	-	-	-	-	-	-	14.1	14.8	17.4
	E.m.	-	-	-	-	-	-	13.1	15.9	22.0
Health Range	B.l.	15	17-19	21	-	-	-	-	-	-
	E.r.	3-15	3-19	2-21	-	-	-	-	-	-
	C.c.	-	-	-	-	-	-	5-19	7-21	11-21
	E.m.	-	-	-	-	-	-	12-17	11-21	21-23
Density[4]	B.l.	1	2	1	-	-	-	-	-	-
	E.r.	14	16	9	-	-	-	-	-	-
	C.c.	-	-	-	-	-	-	28	29 (1)	23 (20)
	E.m.	-	-	-	-	-	-	10	10	2

[1]Overstorey species –B.l = *Banksia littoralis;* C.c. = *Corymbia calophylla*; E.m. = *Eucalyptus marginata*; E.r. = *Eucalyptus rudis*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot. Figures in parenthesis represent tree deaths since the previous assessment.

Table 7: Milyeanup - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2		
Year	06	08	09	06	08	09	06	08	09	06	08	09	06	08	09	06	08	09
No. species	38	28	39	36	33	36	33	37	43	29	31	28	33	31	32	31	28	31
No. exotics	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	0
Weediness index	0	0	0	0	0	0	0	0	0	0.05	0.06	0	0.05	0.07	0	0.06	0.07	0

Poison Gully

Only two plots were established at this location due to the shape of the wetland and location of the piezometer and the presence of a man-made sump. The 40 m transect ran west from the roadside across the basin and into the fringing vegetation. The piezometer was located near the center of the basin, where the elevational gradient was at its lowest before rising towards the wetland edge and the road. Long-term monitoring bores are located in close proximity to the wetland. The vegetation across the basin was dominated by tall mixed, shrubland (*T. linearifolia*, *A. juniperiana* and *Pultenaea reticulata*) with sedge species and emergent *M. preissiana* (Figure 7).

a b

Figure 7. Poison Gully wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 20-0 m.

During 2009 canopy condition across the transect improved with mean tree health increasing by 23.3% overall when compared to 2008 data (Table 3). Species composition was similar to that described in 2008 with approximately 94% of species similar between the 2 years; there was no change in the number of exotics identified during this assessment (Table 3).

Bore 60910125, in close proximity to the Poison Gully transect was established in mid-2006 (Figure 8). Data indicated a short-term, declining trend in minimum and maximum groundwater levels; however over the period since monitoring began the water regime appears highly variable at this site.

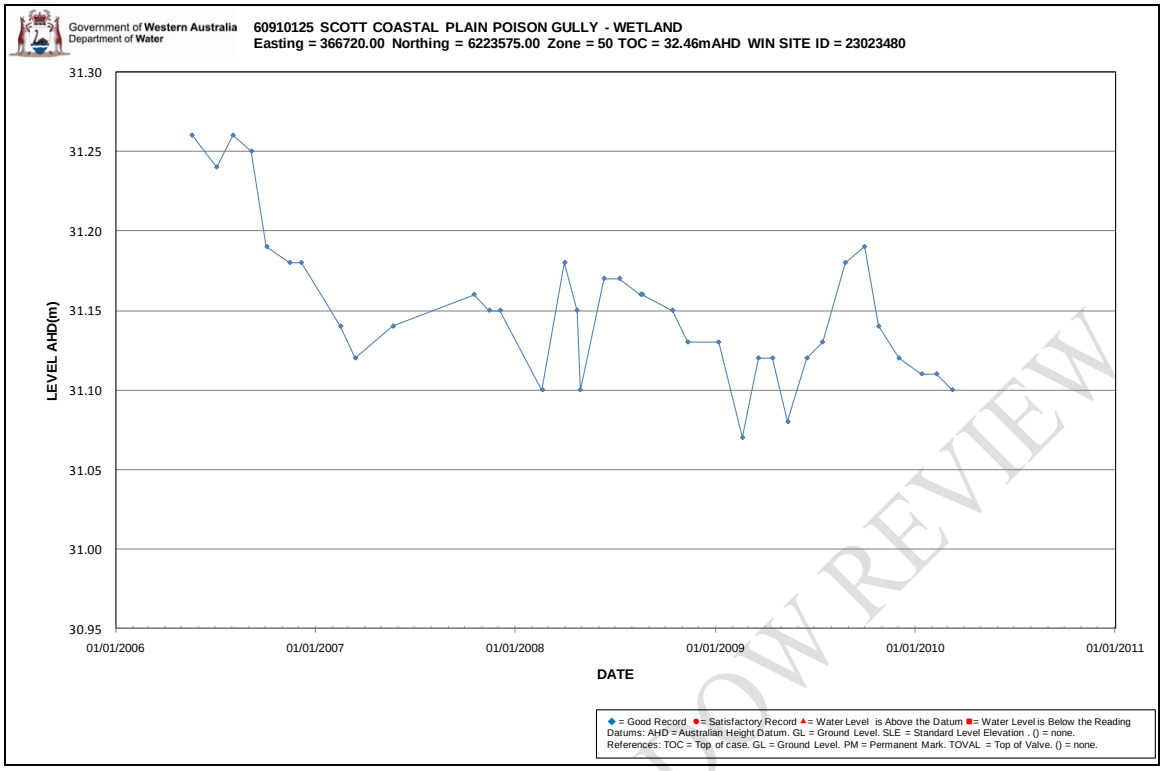


Figure 8. Poison Gully wetland groundwater levels 05/2006 - 03/2010

Table 8: Poison Gully - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot/ year		A			B		
	Spec[1].	07	08	09	07	08	09
Diameter range[2]	M.p.	7.0 – 14.5	7-16	7-16	<2 - 19	<2-19	<2-19
	B.l.	-	-	-	8-13	8-13	8-13
Health Mean[3]	M.p.	9	7	7	18	17	16
	B.l.	-	-	-	21	21	21
Health Range	M.p.	9	7	7	15 - 21	15-19	15-17
	B.l.	-	-	-	21	21	21
Density[4]	M.p.	1	1	1	2	2	2
	B.l.	-	-	-	1	1	1

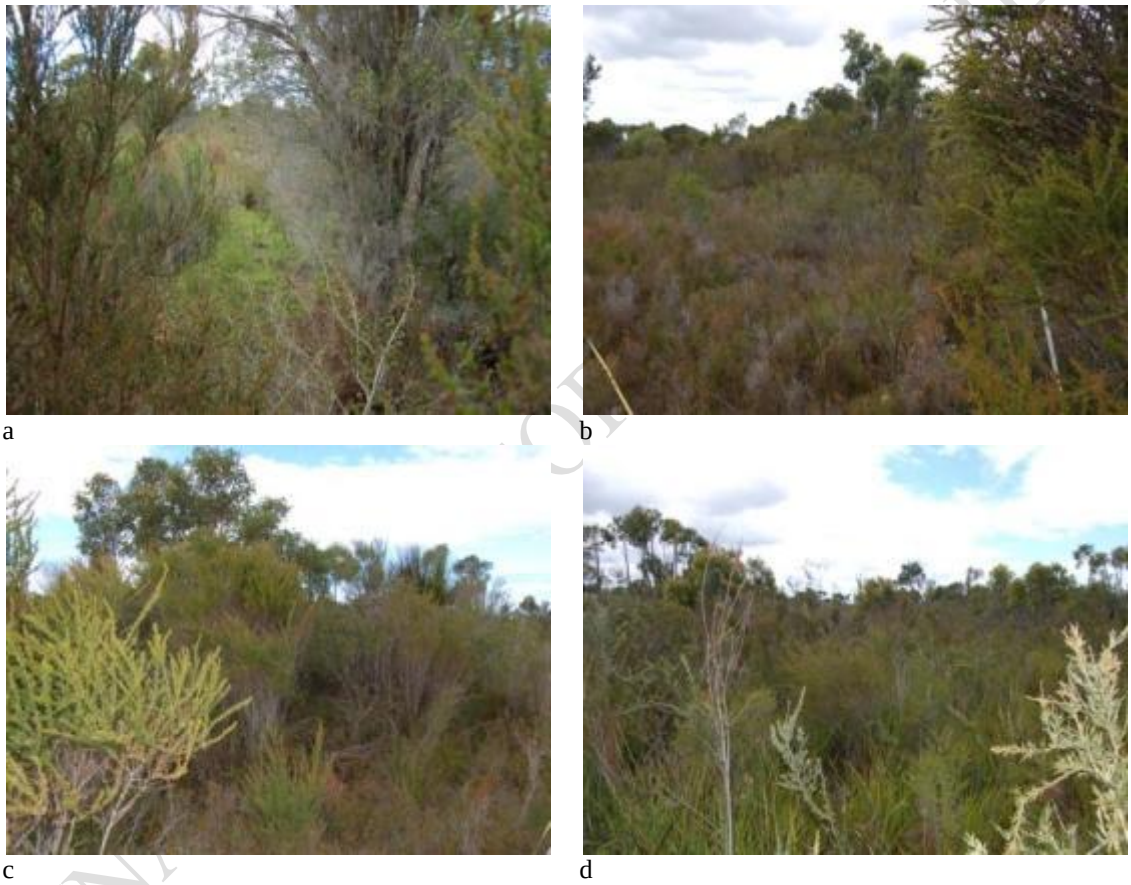
[1]Overstorey species – M.p. = *Melaleuca preissiana*; B.l.= *Banksia littoralis*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 9: Poison Gully - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2		
Year	**07**	**08**	**09**	**07**	**08**	**09**	**07**	**08**	**09**	**07**	**08**	**09**
No. species	18	20	19	9	10	9	9	10	11	12	17	20
No. exotics	0	0	0	0	0	0	0	0	0	0	1	1
Weediness index	0	0	0	0	0	0	0	0	0	0	0.09	0.07

Blackpoint/ Mayall Rd

The newly established transect was located adjacent to farmland on the north-eastern corner of D'Entrecasteaux National Park, approximately 200 m east of the intersection of Blackpoint and Mayall Rds. The 80 m transect runs perpendicular to the road, increasing in elevation with distance along the transect. The elevational gradient is reflected in changes in species composition with the low lying area adjacent to the road dominated by sedges and *M. preissiana,* progressing through mixed wetland shrubs and sedges and into *E. marginata* woodland over less mesic shrubs (Figure 9). The multi-stemmed nature of the trees across the site suggested the area have been burnt sometime in the past.



a b c d

Figure 9. Blackpoint Mayall Rd wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.)

During 2009 canopy condition across the transect improved with mean tree health increasing by 16.5% overall when compared to 2008 data (Table 3). Species composition was somewhat different to that described in 2008 with approximately 86% of species the same between the 2 years; there was an overall increase in the number of exotics identified during the 2009 assessment (Table 3).

Hydrological data for bore 60914933, in close proximity to the Blackpoint Rd wetland transect, were available from mid-2006 until early 2010 (Figure 10). Water levels appear

relatively stable at this site and are therefore unlikely to be affecting vegetation to any great extent.

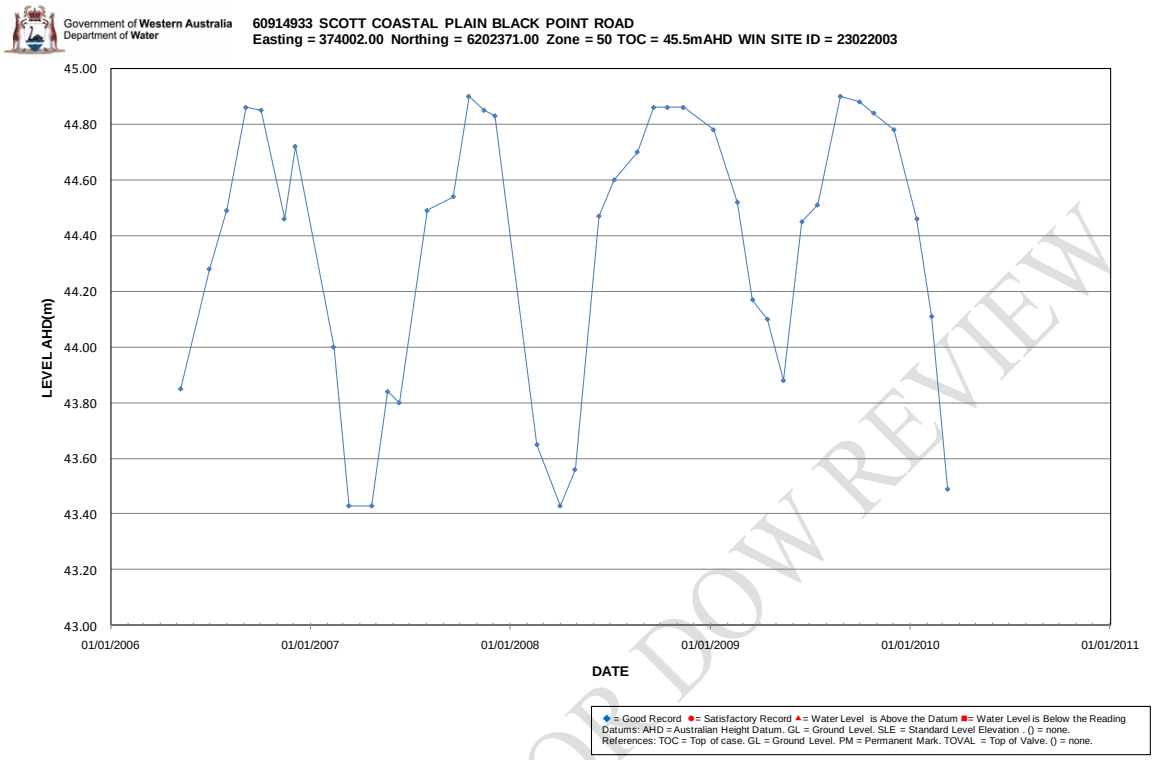


Figure 10. Blackpoint Rd wetland groundwater levels 05/2006 – 03/2010

Table 10: Blackpoint/ Mayall Road - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot/ year		A			B			C			D		
	Spec[1].	8	9	10	8	9	10	8	9	10	8	9	10
Diameter range[2]	Mp	<2-20	<2-20		-	-		-	-		-	-	
	Em	<2-13.5	<2-13.5		<2-14.7	<2-14.7		<2-12.5	<2-12.5		<2-14.2	<2-14.2	
Health Mean[3]	Mp	19	21.5		-	-		-	-		-	-	
	Em	14.2	13.8		12.3	15.7		12.6	18.4		15.8	16.7	
Health Range	Mp	17-21	21-23		-	-		-	-		-	-	
	Em	9-20	6-23		5-21	9-20		1-17	11-21		3-20	3-21	
Density[4]	Mp	4	4		-	-		-	-		-	-	
	Em	5	4		37	16		44	25		20	15	

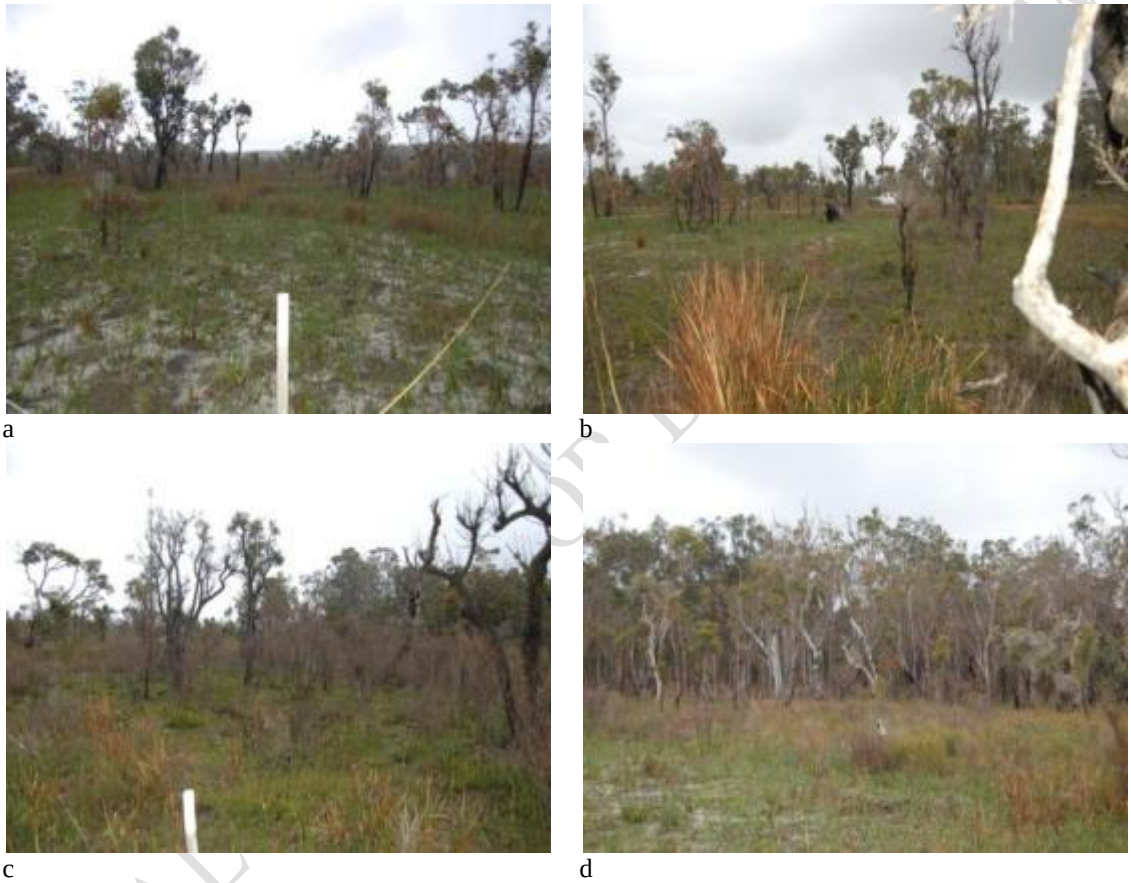
[1]Overstorey species – C.c. = *Corymbia calophylla*; M.p = *Melaleuca preissiana; E.m = Eucalyptus marginata*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 11: Blackpoint/ Mayall Road - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	08	09	10	08	09	10	08	09	10	08	09	10	08	09	10	08	09	10	08	09	10	08	09	10
No. species	13	15		30	31		27	31		25	25		31	31		29	27		25	27		26	23	
No. exotics	7	5		0	0		3	7		0	0		0	1		0	0		0	0		0	0	
Weediness index	0.97	0.63		0.00	0.00		0.17	0.33		0.00	0.00		0.00	0.06		0.00	0.00		0.00	0.00		0.00	0.00	

Darradup Rd – east

The transect at the Darradup Rd site was established to run north-east between a piezometer on the roadside and a second piezometer installed 80 m into the wetland. There is little change in the elevation across the transect with little change also occurring in vegetation composition. *M. preissiana* is dominant in the open overstorey with some *E. marginata* and *Nutysia floribunda* (Figure 11). This site had been burnt within the 12 month period prior to base-line monitoring; however, all trees continue to recover and the understorey re-establish.



a b c d

Figure 11 Darradup Rd east wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) Looking east from the 0 metre point towards terrestrial vegetation.)

There has been a marked decline in mean tree health (-45.6%) across the transect since 2007 when the site was last monitored (Table 3). While there has been no change in the number of exotics found across the transect since 2007, the similarity in species composition has declined (74.2% 2007-2009) when compared to the similarity between 2006 and 2007 (88%).

As bore 60810092, in close proximity to the Darradup Rd East wetland transect was only established in mid-2006, limited, yet relatively consistent, monthly hydrological data

were available (Figure 12). Hydrograph data shows a rising trend in maximum groundwater levels.

This site was burnt prior to baseline monitoring and continues to re-establish. In order to describe the vegetation-hydrology relationship, ideally, vegetation composition and condition should have undergone post-fire succession and stabilized.

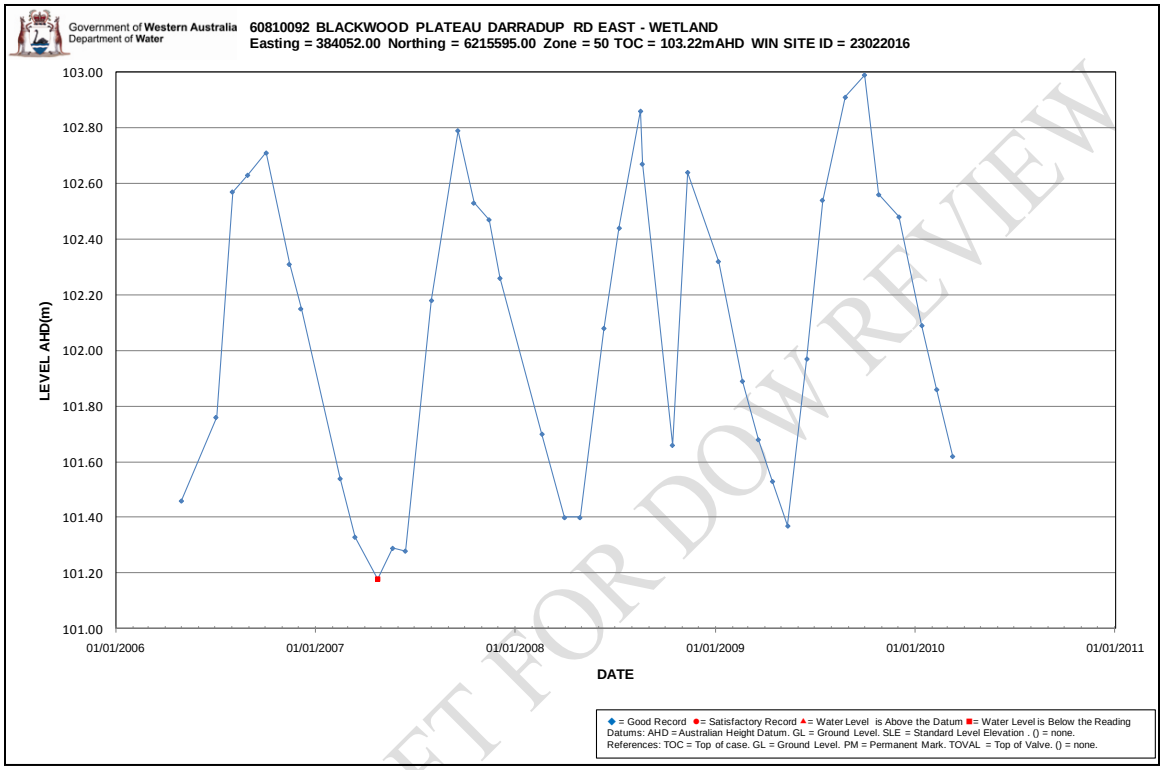


Figure 12. Darradup Rd East wetland groundwater levels 05/2006 - 03/2010

Table 12: Darradup Rd east - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20m).

Plot/ year		A			B			C			D		
	Spec.	06	07	09	06	07	09	06	07	09	06	07	09
Diameter range[2]	M.p.	<2 - 15.3	3.3 - 16.1	3.3 - 16.1	2.5 - 35.2	3.0 - 35.2	3.0 - 35.2	3.5 - 13.8	2.3 - 27.5	2.3 - 27.5	<2 - 43.8	<2 - 43.8	<2 - 43.8
	E.m.	<2 - 9.2	<2 - 10.5	<2 - 10.5	<2 - 9.3	<2 - 10.1	<2 - 10.1	-	-	-	-	-	-
Health Mean[3]	M.p.	16.4	19	15	9.8	10	6	10.2	12.2	6.2	10.5	11.5	3.6
	E.m.	17.5	21	9.25	17.6	19.6	2.5	-	-	-	-	-	-
Health Range	M.p.	12-21	18 - 21	13-17	7-15	7-15	2-12	9-12	9-15	2-9	7-13	7-15	2-8
	E.m.	16 - 19	19 - 23	0-17	17 - 19	18 - 21	0-4	-	-	-	-	-	-
Density[4]	M.p.	3	3	2	4	4	4	5	5	5	8	8	5
	E.m.	4	5	4	8	8	6	-	-	-	-	-	-

[1]Overstorey species – M.p. = *Melaleuca preissiana*; E.m.= *Eucalyptus marginata*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 13: Darradup Rd east - summary of transect data (all plots are 5 x 5m).

Plot	A1				A2				B1				B2				C1				C2				D1				D2			
Year	05	06	07	09	05	06	07	09	05	06	07	09	05	06	07	09	05	06	07	09	05	06	07	09	05	06	07	09	05	06	07	09
No. species	20	24	20	13	23	25	19	23	25	26	23	20	24	20	16	21	26	23	18	20	27	21	21	20	19	20	17	22	24	20	17	33
No. exotics	-	-	0	0	-	-	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Lake Jasper – East

The Lake Jasper East transect is situated in close proximity to an existing staff gauge within the recreation area. This site was burnt during 2004/05 and has regenerated extensively in the several years since the fire. Plot A of the 80 m transect extends into the lake and is dominated by the sedges *Baumea articulata* and *B. juncea*. *Melaleuca preissiana* and *B. littoralis* occur further along the transect with *Eucalyptus megacarpa* and *B. attenuata* becoming dominant in the overstorey with increasing elevation. Canopy condition declined slightly in 2009 compared to 2007 (Table 3). The transect continues to be free of exotics, as it was in 2007, however species composition in 2009 was more dissimilar to that recorded in 2007 (Table 3) compared to the similarity recorded between 2007 and 2006. This changing composition may be due to successional changes following the 2004/5 fire.

a b c d

Figure 13. Lake Jasper east wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.

As bore 60810002, in close proximity to the eastern transect, was only established in early 2007 limited, yet relatively consistent, monthly hydrological data are available (Figure 14). Both minimum and maximum groundwater levels appear to be increasing at this site. However the paucity of hydrodata, especially immediately prior and post-fire,

in combination with post-fire vegetation regeneration renders any assessment of the relationship between vegetation condition and the water regime problematic. In order to describe the vegetation-hydrology relationship a longer, more consistent hydrological data set is required and, ideally, vegetation composition and condition should have undergone post-fire succession and stabilized.

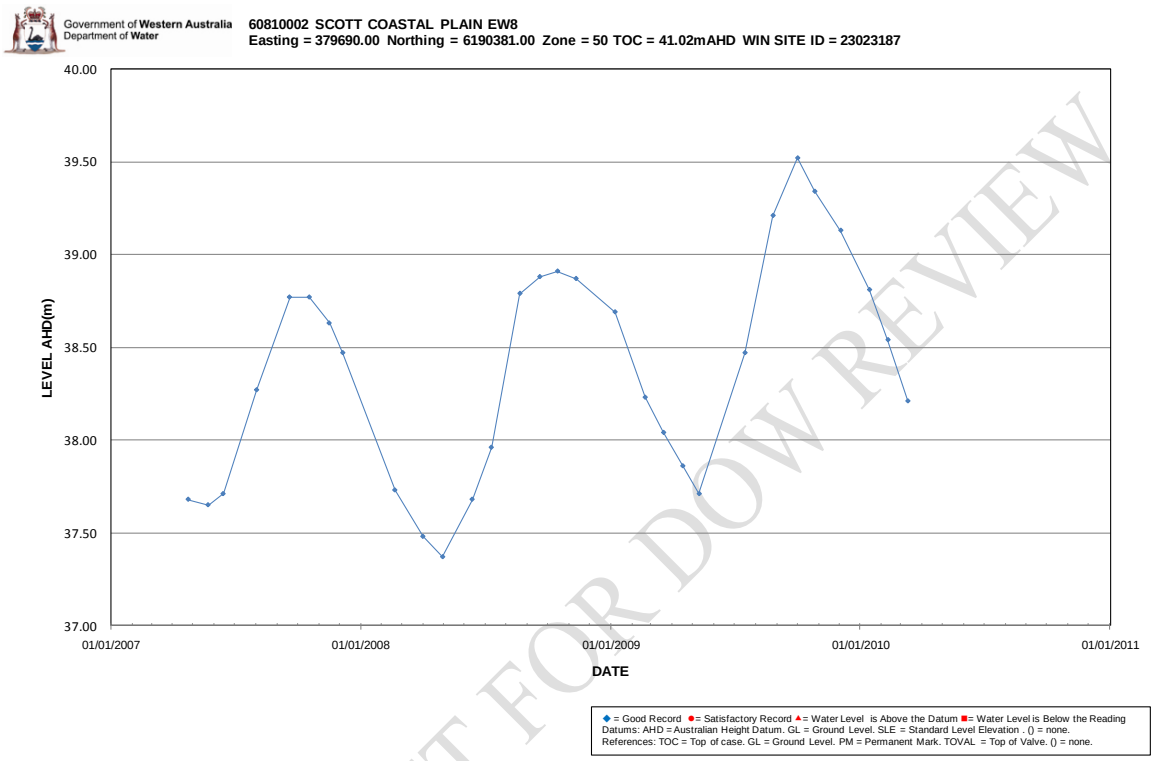


Figure 14. Lake Jasper East groundwater levels 04/2007 - 03/2010

Table 14: Lake Jasper east - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20m).

Plot/ year		A			B			C			D		
	Spec[1].	06	07	09	06	07	09	06	07	09	06	07	09
Diameter range[2]	M.p.	-	-	-	<2 - 104	<2 -104	<2 -104	-	-	-	-	-	-
	B.l.	-	-	-	10.3	10.3	10.3	15.6	18	18	-	-	-
	B.a.	-	-	-	-	-	-	-	-	-	<2.0 - 29.8	<2 - 32.0	<2 - 32.0
	E.mc.	-	-	-	43.8 - 79.4	43.8 - 79.4	43.8 - 79.4	30.9- 43.1	3 - 46.4	3 - 46.4	2.6 - 45.1	2.6 - 45.1	2.6 - 45.1
Health Mean[3]	M.p.	-	-	-	15	16.25	14.5	-	-	-	-	-	-
	B.l.	-	-	-	15	21	17	19	21	21	-	-	-
	B.a.	-	-	-	-	-	-	-	-	-	14.8	18.07	16.6
	E.mc.	-	-	-	11	14	14	9.5	14.5	17	9.5	18	17.7
Health Range	M.p.	-	-	-	10-18	15 - 18	11-19	-	-	-	-	-	-
	B.l.	-	-	-	15	21	17	19	21	21	-	-	-
	B.a.	-	-	-	-	-	-	-	-	-	6-20	9-21	8-21
	E.mc.	-	-	-	11	12-16	11-17	9-13	9-19	13-19	9-10	13 - 21	15-19
Density[4]	M.p.	-	-	-	4	4	4	-	-	-	-	-	-
	B.l.	-	-	-	1	1	1	1	1	1	-	-	-
	B.a.	-	-	-	-	-	-	-	-	-	14	14	10
	E.mc.	-	-	-	2	2	2	3	4	5	2	4	3

[1]Overstorey species – M.p. = *Melaleuca preissiana*; B.l.= *Banksia littoralis; B.a. = Banksia attenuata; E.mc. = Eucalyptus megacarpa.*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 15: Lake Jasper east - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	06	07	09	06	07	09	06	07	09	06	07	09	06	07	09	06	07	09	06	07	09	06	07	09
No. species	6	6	6	2	2	3	9	6	13	18	18	10	20	11	13	17	11	8	17	12	17	21	11	18
No. exotics	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	1	0	0	-	0	0	1	0	0
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Blackpoint Rd – dunes

The transect established at this site runs 80 m south-east from the piezometer through open *M. preissiana* woodland. There is little change in elevation and vegetation other than the introduction of *B. littoralis* two thirds of the way along the transect. Although the overstorey of this site was recovering well from the 2004/05 bushfires the understorey remained relatively sparse and species poor. Seasonal drying further reduced species numbers in 2006 as most annuals had been lost. Between monitoring in 2006 and 2009 there was a slight improvement in canopy condition at this site (Table 3). The 200% increase in the abundance of exotics (Table 3) was due to the identification of two (2) exotics across the transect, where none were located in 2006. Species composition was relatively similar between 2006 and 2009 (Table 3).

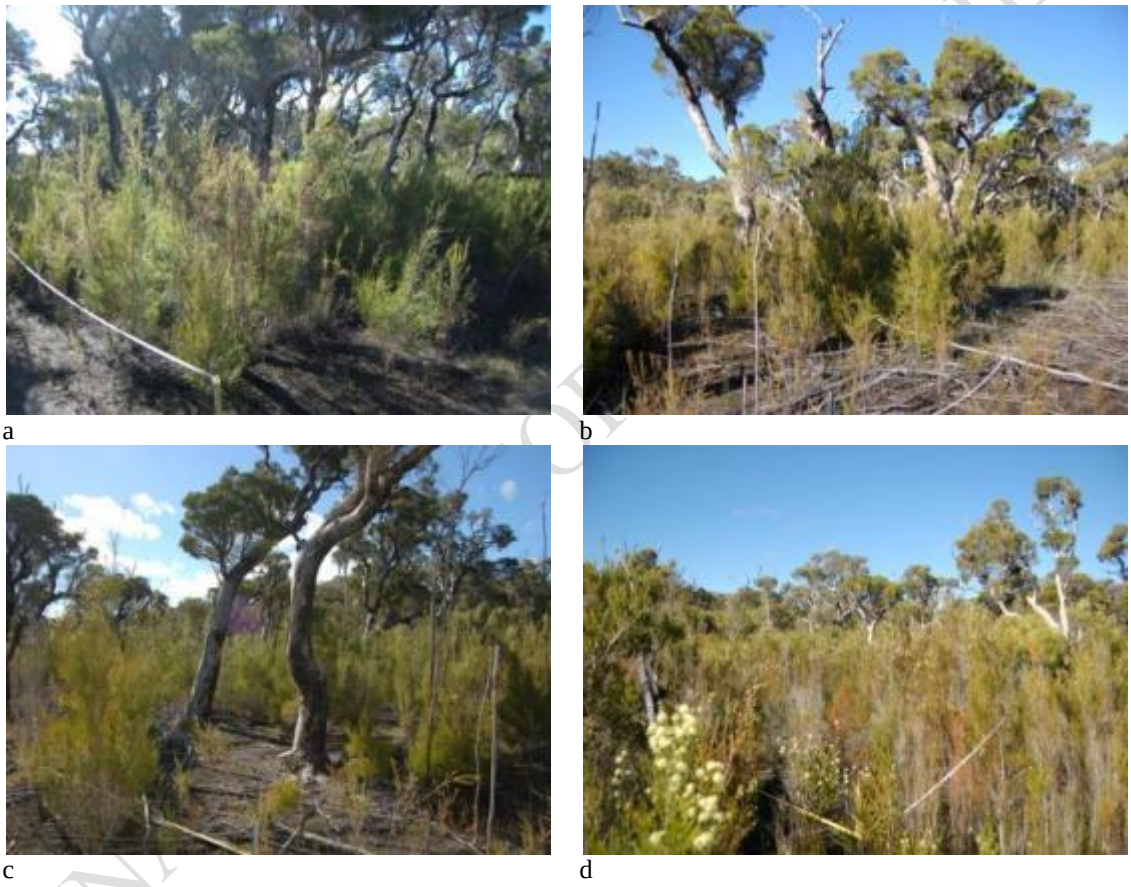


Figure 15. Blackpoint Rd dunes wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.)

Bore 60914935 was established in mid-2006 and therefore limited, yet relatively consistent, monthly hydrological data are available (Figure 16). Both minimum and maximum groundwater levels appear to be increasing at this site. However, the paucity of hydrodata, especially immediately prior and post-fire, in combination with post-fire vegetation regeneration and coupled with the limited vegetation monitoring rounds since 2006 renders any assessment of the relationship between vegetation condition and the water regime problematic. In order to describe the vegetation-hydrology relationship a longer, more consistent vegetation condition and

hydrological data set is required and, ideally, vegetation composition and condition should have undergone post-fire succession and stabilized.

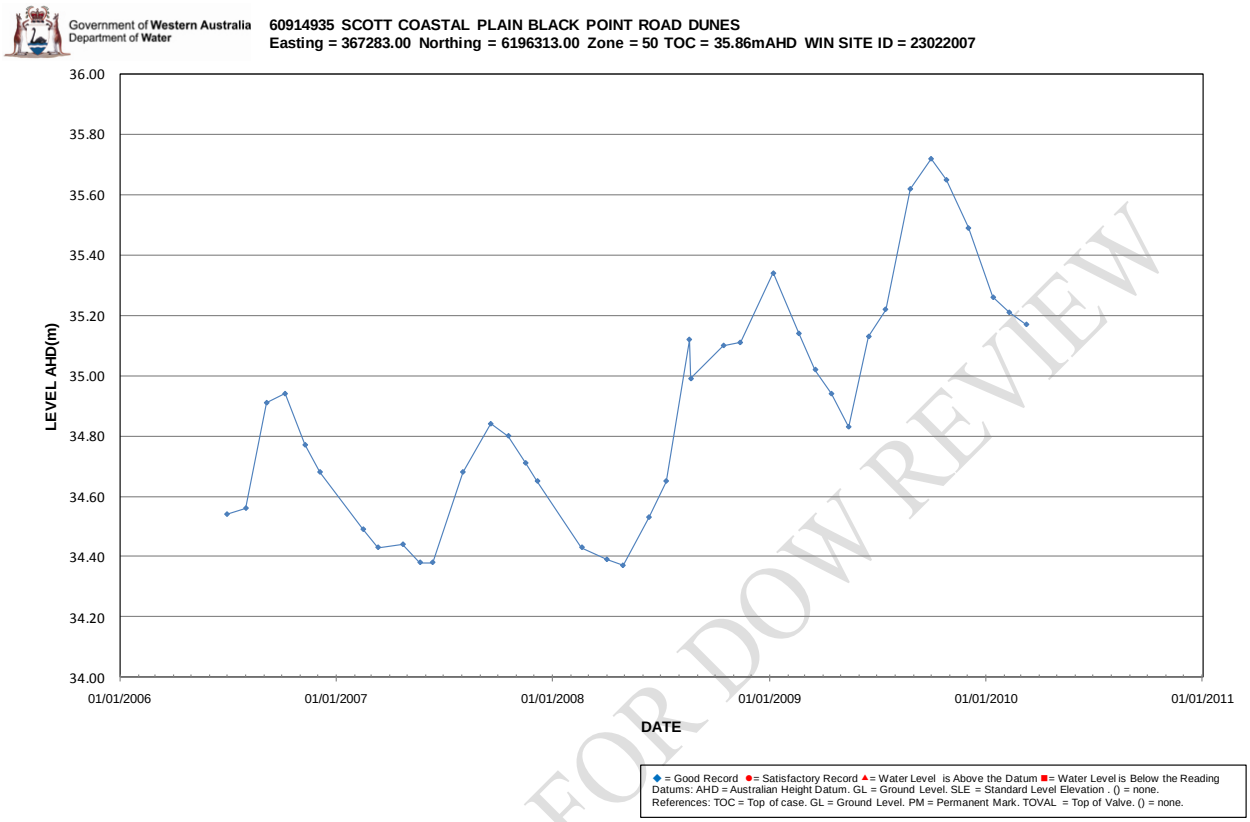


Figure 16. Blackpoint Rd Dunes groundwater levels 06/2006 - 03/2010

Table 16A: Blackpoint Rd dunes - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot		A			B			C			D		
Year	Spec[1].	05	06	09	05	06	09	05	06	09	05	06	09
Diameter range[2]	M.p	2.4 - 44.2	2.4 - 44.2	2.4 - 44.2	7.7 - 64	7.7 - 64	7.7 - 64	6.2 - 33.8	6.2 - 33.8	6.2 - 33.8	23 - 38.2	23 - 38.2	23 - 38.2
	B.l.	-	-	-	-	-	-	<2.0	<2.0	<2.0	-	-	-
Health Mean[3]	M.p.	13.0	13.2	13.4	15.5	15.8	14.8	14.9	15.3	17.0	16.0	16.0	15.7
	B.l.	-	-	-	-	-	-	18.0	18.0	0.0	-	-	23.0
Health Range	M.p.	5-17	5-17	6-17	9-18	9-18	6-18	11-18	12-18	13-21	13 - 18	13 - 18	14-18
	B.l.	-	-	-	-	-	-	18	18	0	-	-	23
Density[4]	M.p.	42	42	37	6	6	5	13	13	10	3	3	3
	B.l.	-	-	-	-	-	-	1	1	-	-	-	1

[1]Overstorey species – M.p. = *Melaleuca preissiana*; B.l. = *Banksia littoralis*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 10B: Blackpoint Rd dunes - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09
No. species	15	13	13	13	12	13	12	11	12	11	10	14	9	9	11	11	10	12	11	9	11	7	8	10
No. exotics	-	-	0	-	-	0	-	-	0	-	-	0	-	-	1	-	-	1	-	-	0	-	-	1
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.16	0	0	0.12	0	0	0	0	0	0.17

Jangardup Rd. Wetland

The majority of this transect was also burnt during the 2005 bushfires and was last monitored in 2006. As should be expected, vegetation has continued to re-establish. At the time of baseline monitoring in 2005 the first 15m of the transect was inundated to a depth of 0.5 m before drying with increased elevation. The dominant vegetation also changed with elevation moving from sedges, including *Anarthria scabra*, and *A. juniperiana* to *Pericalymma ellipticum* and *Acacia sp*.. Once again in the 2009 round of monitoring no exotics were identified in the understorey of each of the sub-plots (Table 3). Between 2006 and 2009 canopy condition improved considerably, in fact the extent of improvement was second only to that recorded at the Darradup Rd East transect (Table 3). Species composition across the transect in 2009 was approximately 86% similar to that observed in 2006 (Table 3).

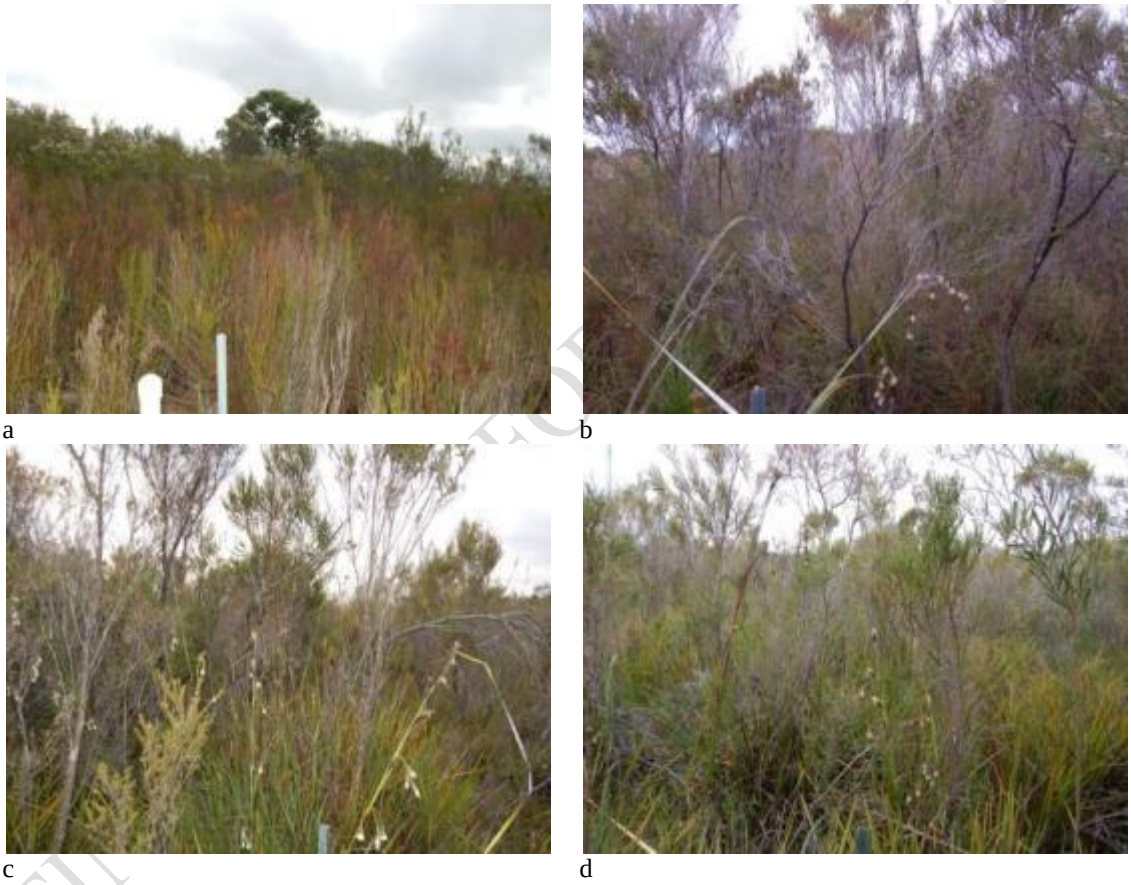


Figure 17 Jangardup Rd wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.

Bore 60914932 was established in mid-2006 and therefore limited, yet relatively consistent, monthly hydrological data are available (Figure 18). Both minimum and maximum groundwater levels appear relatively stable at this site. However, once again the paucity of hydrodata, especially immediately prior and post-fire, in combination with post-fire vegetation regeneration and coupled with the limited vegetation monitoring rounds since 2006 renders any assessment of the relationship between vegetation condition and the water regime problematic. In order to describe the vegetation-hydrology relationship a longer, more consistent vegetation condition

and hydrological data set is required and, ideally, vegetation composition and condition should have undergone post-fire succession and stabilized.

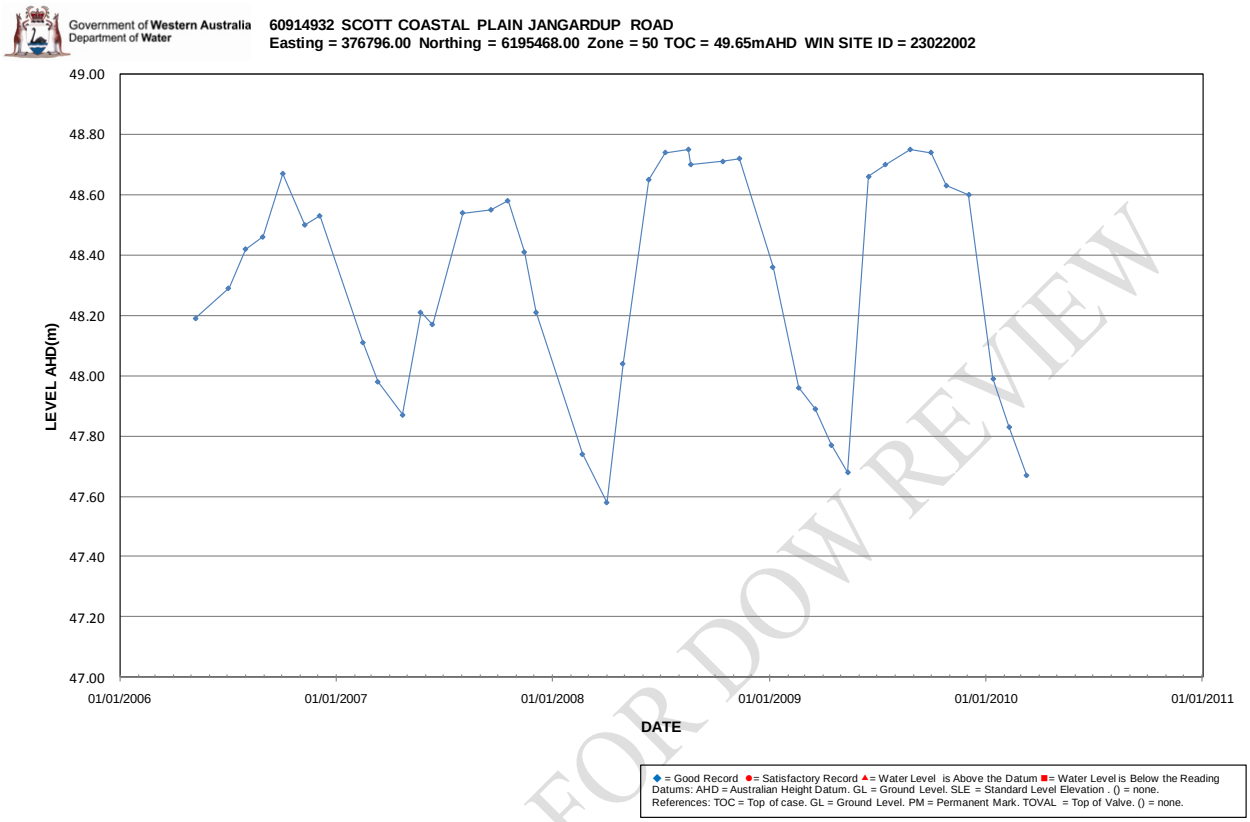


Figure 18. Jangardup Rd groundwater levels 05/2006 - 03/2010

Table 17A: Jangardup Rd - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20m).

Plot		A			B			C			D		
Year	Spec[1].	05	06	09	05	06	09	05	06	09	05	06	09
Diameter range[2]	M.p.	-	-	-	-	-	-	5-13	5-13	5-13	-	-	-
	E.m.	3.4 - 14.5	3.4 - 14.5	3.4 - 14.5	<2 - 10	<2 - 10	<2 - 10	-	-	-	-	-	-
Health Mean[3]	M.p.	-	-	-	-	-	-	8	8	12	-	-	-
	E.m.	12.4	12.6	18.7	13.8	14	15	-	-	-	-	-	-
Health Range	M.p.	-	-	-	-	-	-	8	8	12	-	-	-
	E.m.	9-14	10-14	10-21	12-15	11-16	13-19	-	-	-	-	-	-
Density[4]	M.p.	-	-	-	-	-	-	1	1	1	-	-	-
	E.m.	11	11	10	5	5	4	-	-	-	-	-	-

[1]Overstorey species – M.p. = *Melaleuca preissiana*; E.m. = *Eucalyptus marginata*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 5B: Jangardup Rd - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09
No. species	12	13	12	24	22	24	28	27	26	25	26	27	22	19	25	21	18	20	25	23	26	17	15	19
No. exotics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Blackwood River Crossing (LongbottomRd)

The transect established at this site was established to run 80 m north-east from the piezometer to the far-side of the wetland though dense, yet low, *P. ellipticum* shrubland with emergent *M. preissiana* and a single *B. littoralis*. There is an overall decrease in elevation across the transect although this is not reflected with a corresponding change in vegetation composition or structure (Figure 19). Due to the density of the *P. ellipticum* the site was very species poor, although this appears to have changed somewhat in 2009. There has been a dramatic decline in canopy condition along this transect when 2009 tree health is compared to that measured in 2006 (Table 3). The 2009 monitoring round has also identified a significant increase in the number of exotic species present at the site, while species composition is relatively similar to that measured in 2006 (Table 3).

Figure 19 Longbottom Rd wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.

Bore 60914936 was established in mid-2006 and once again limited, yet relatively consistent, monthly hydrological data are available (Figure 20). Hydrodata for this site suggests that the bore is not at an adequate depth to recorde minimum groundwater levels; it is therefore not possible to make an assessment of changing vegetation condition based on hydrological change. Once again the paucity of hydrodata, coupled with the limited vegetation monitoring rounds since 2006 also renders any assessment of the relationship between vegetation condition and the water regime problematic. In order to describe the vegetation-hydrology relationship a longer,

more consistent vegetation condition and hydrological data set is required and, ideally, bore depth extended.

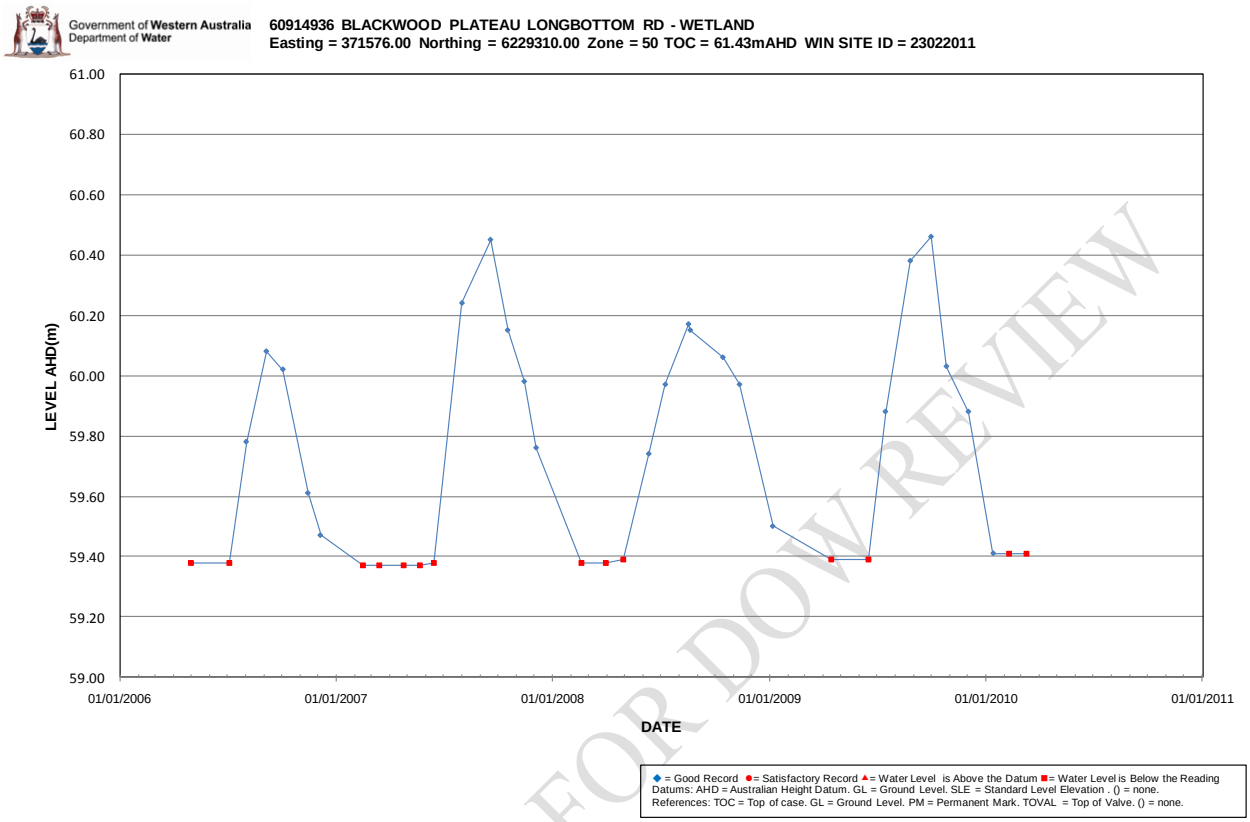


Figure 20. Blackwood River Crossing – Longbottom Rd groundwater levels 05/2006 - 03/2010

Table 18A: Blackwood River Crossing - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot		A			B			C			D		
Year	Spec[1].	05	06	09	05	06	09	05	06	09	05	06	09
Diameter range[2]	M.p.	3.6 - 86.2	3.6 - 86.2	3.6 - 86.2	10.8 - 46	10.8 - 46	10.8 - 46	5 - 10.7	5 - 10.7	5 - 10.7	-	-	-
Health Mean[3]	M.p.	12.7	13.3	14.7	14	18	17	11	15	14	-	-	-
Health Range	M.p.	9-17	10-17	12-17	14	18	17	11	15	14	-	-	-
Density[4]	M.p.	3	3	3	1	1	1	1	1	1	-	-	-

[1]Overstorey species – M.p. = *Melaleuca preissiana*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 13B: Blackwood River Crossing - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09
No. species	10	8	11	11	10	11	10	10	12	7	7	9	11	10	14	11	7	8	6	8	10	10	9	12
No. exotics	-	-	2	-	-	1	-	-	1	-	-	2	-	-	0	-	-	0	-	-	0	-	-	0
Weediness index	0	0	0.23	0	0	0.12	0	0	0.11	0	0	0.28	0	0	0	0	0	0	0	0	0	0	0	0

Stewart Rd

This 80 m transect was the second established at a wetland on Stewart Rd between Great South and Milyeanup Rds. Unlike the first transect, it runs parallel to the road moving upgradient from the wetland proper into littoral and then terrestrial vegetation (Figure 21). It also incorporates a greater diversity and density of trees, including *M. preissiana*, *B. littoralis*, *E. marginata* and *C. calophylla*. At the time of assessment the transect was inundated to 40 m.

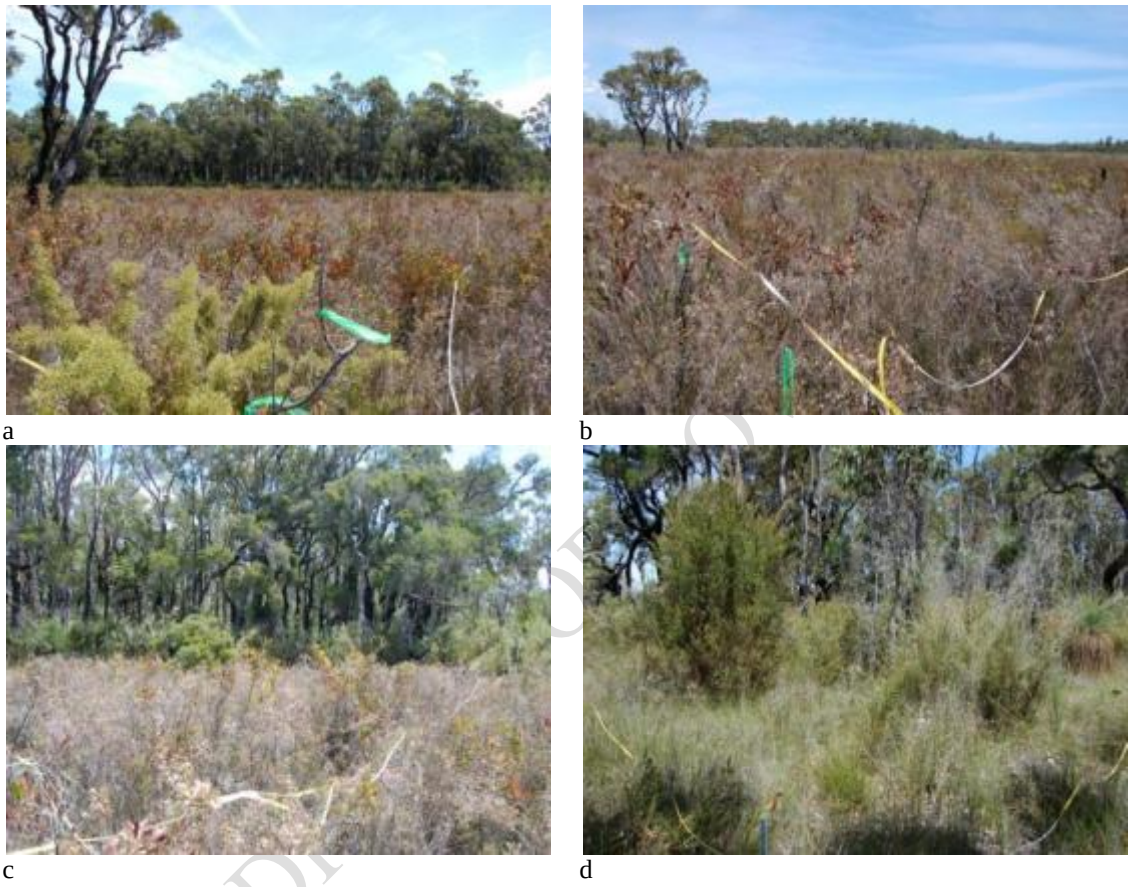


Figure 21 Stewart Rd wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m

There has been a slight decrease in canopy condition since 2008, while once again no exotics have been identified across the transect (Table 3). Species composition was relatively similar in 2009 compared to 2008 (Table 3).

Although a bore is yet to be installed adjacent to the new transect, hydrodata available for bore 60914938 established in 2006 in close proximity to the initial transect suggested that maximum groundwater levels have remained relatively stable in the short-term, although maximum 2009 water levels were at their highest since the bore was installed (Figure 22). However, as the bore appeared to dry each summer, it is not possible to comment on trends in minimum levels and an assessment of the relationship between vegetation structural change and hydrological change is not possible without trends in minimum water depths.

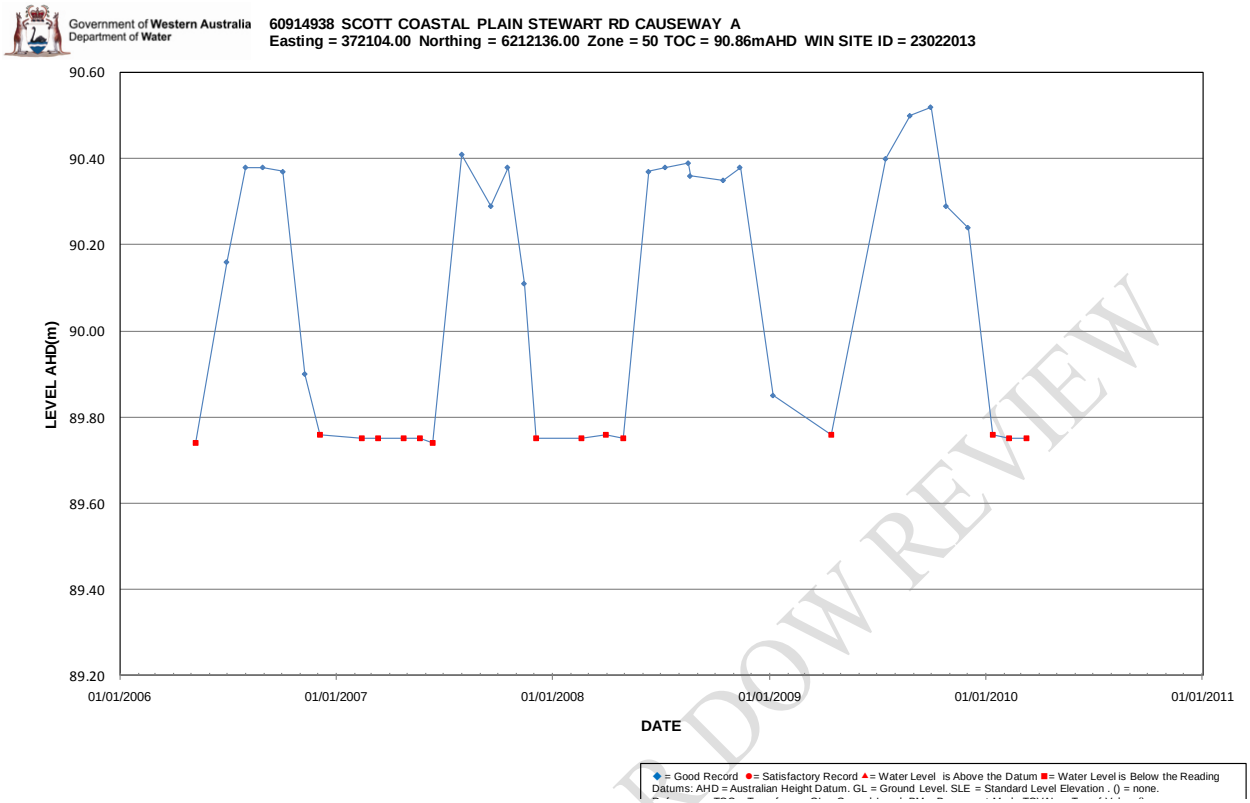


Figure 22. Stewart Rd Causeway wetland groundwater levels 05/2006-03/2010.

Table 19: Stewart Road - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot/ year		A			B			C			D		
	Spec[1].	08	09	10	08	09	10	08	09	10	08	09	10
Diameter range[2]	Mp	<2-46	<2-46		-	-		<2-42.5	<2-42.5		<2-53	<2-53	
	Em	-	-		-	-		<2-46.5	<2-46.5		<2-35	<2-35	
	Cc	-	-		-	-		17-33	17-33		<2-34.6	<2-34.6	
	Bl	-	-		-	-		-	-		<2	<2	
Health Mean[3]	Mp	18.5	18		-			17.1	15.5		17.5	13.5	
	Em	-	-		-			15.2	14.7		18.5	16.9	
	Cc	-	-		-			15.6	16.4		14.9	17	
	Bl	-	-		-			-	-		22	22	
Health Range	Mp	17-19	17-19		-			12-23	9-20		12-21	5-19	
	Em	-	-		-			10-21	10-21		12-23	7-21	
	Cc	-	-		-			13-18	13-19		3-20	12-20	
	Bl	-	-		-			-	-		21-23	21-23	
Density[4]	Mp	4	4		-			17	15		8	6	
	Em	-	-		-			11	11		50	16	
	Cc	-	-		-			5	5		9	3	
	Bl	-	-		-			-	-		2	2	

[1]Overstorey species – C.c. = *Corymbia calophylla*; M.p = *Melaleuca preissiana; E.m = Eucalyptus marginata*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 20: Stewart Road - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	08	09	10	08	09	10	08	09	10	08	09	10	08	09	10	08	09	10	08	09	10	08	09	10
No. species	15	17		14	14		17	17		13	14		13	14		25	30		27	29		23	32	
No. exotics	0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0	
Weediness index	0	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0	

Western Scott Coastal Plain Sites

The five Western Scott Coastal Plain sites were established in February 2008 with baseline monitoring undertaken at this time.

Adelaide Road (Upper Margaret)

The Adelaide Rd site is located between Margaret River and Margaret River North. The 80 m transect runs parallel to the road, heading north from open, mixed *Eucalyptus* woodland through fringing *M. preissiana* and into a wetland basin dominated by low shrubs and sedges (Figure 23). There is little change in elevation across the transect. There was a slight decline in canopy condition recorded in 2009 compared to 2008 (Table 3). No exotics were recorded across the transect and species composition was 90% similar to that described during the 2008 monitoring round (Table 3). No hydrograph dtat is available for this site.

a b c d

Figure 23. Adelaide Rd wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.)

Table 21: Adelaide Road - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot/ year		A			B			C			D		
	Spec[1].	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09
Diameter range[2]	M.p	<2-28.9	<2-28.9	<2-28.9	<2-45.8	<2-45.8	<2-45.9	<2 - 25.0	<2-25	<2-26	9.5 - 13.2	9.5-13.2	9.5-13.3
	C.c	<2-7.1	<2-27.1	<2-27.3	-	-	-	-	-	-	-	-	-
	E.m	-	-	-	<2	<2	<3	-	-	-	-	-	-
Health Mean[3]	M.p	14.7	14.11	14.44	15	13.5	12	14.5	14.5	12.33	17	18	15
	C.c	16.3	16.33	15.67	-	-	-	-	-	-	-	-	-
	E.m	-	-	-	-	-	-	-	-	-	-	-	-
Health Range	M.p	13-19	11-19	12-17	13-17	11-19	11-13	13-15	13-15	11-13	17	17-19	15
	C.c	13-21	13-21	15-17	-	-	-	-	-	-	-	-	-
	E.m	-	-	-	-	-	-	-	-	-	-	-	-
Density[4]	M.p	9	9	9	3 + 2 sap	5	5	4	4	3	2	2	1
	C.c	3 + 4 sap (16)	3	3 + 4 sap (15)	-	-	-	-	-	-	-	-	-
	E.m	-	-	-	4 sap	4 sap	4 sap	-	-	-	-	-	-

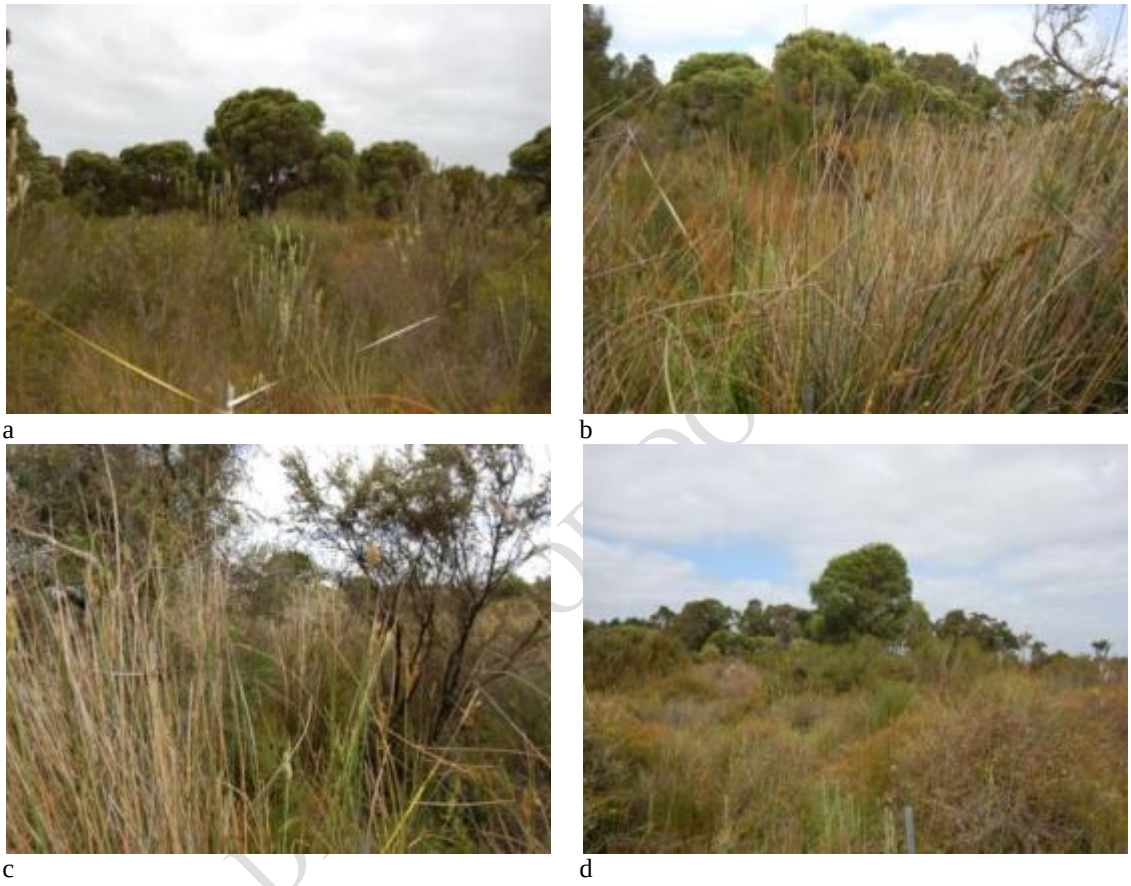
[1]Overstorey species – C.c. = *Corymbia calophylla*; M.p = *Melaleuca preissiana; E.m = Eucalyptus marginata*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 22: Adelaide Road - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09
No. species	18	19	22	22	27	29	20	23	24	25	25	28	19	24	29	20	23	23	19	28	24	24	28	23
No. exotics	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Dennis Road (Scott North)

The site is located on Dennis Rd south of Pagett Rd in an area of highly disturbed, remnant vegetation. The 80 m transect runs north from a small, area of woodland dominated by *C. calophylla*, down-gradient through a band of *M. preissiana* and across the dense, shrub dominated basin (Figure 24). Three (3) Priority flora species, *Grevillea papillosa*, *Adenanthos detmoldii* and *Cyathochaeta* stipiodes, occurred on the transect.



a b c d

Figure 24 Dennis Rd wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.

There was a slight improvement in canopy condition across the transect in 2009 compared to 2008 (Table 3). There was a greater number of exotics identified across the transect in 2009 compared to 2008; while species composition was relatively similar in 2009 compared to 2008 (Table 3). No hydrograph data is available for this site.

Table 23: Dennis Road - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot/		A			B			C			D		
year	Spec[1].	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09
Diameter range[2]	M.p	31.0-35.4	31-35.4	31-35.4	11.1-22.3	11.1-22.3	11.1-22.3	7.5-13.7	7.5-13.7	7.5-13.7	<2-21.8	<2-21.8	<2-21.8
	C.c	<2-7.5	<2-8.5	<2-8.5	-	-	-	-	-	-	-	-	-
	B.l	<2	<2	<2	10.6	3-12.3	3-12.3	-	-	-	23	4.2	4.2
Health Mean[3]	M.p	19	21	21	17	19	17	15	11	13	22.3	20.3	21
	C.c	17.8	18.7	18.1	-	-	-	-	-	-	-	-	-
	B.l	23	21	21	23	19	17	-	-	-	23	23	NF
Health Range	M.p	19	21	21	17	19	17	15	11	13	21-23	19-21	21
	C.c	15-21	15-21	15-21	-	-	-	-	-	-	-	-	-
	B.l	23	21	21	23	19	17	-	-	-	23	23	-
Density[4]	M.p	1	1	1	1	1	1	1	1	1	3	3	1
	C.c	7 + 2 sap (16)	7	7 + 2 sap (16)	-	-	-	-	-	-	-	-	-
	B.l	1	1	1	1	1	1	-	-	-	1	1	-

[1]Overstorey species – C.c. = *Corymbia calophylla*; M.p = *Melaleuca preissiana*; B.l = *Banksia littoralis*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 24: Dennis Road - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09
No. species	26	31	30	14	6	6	16	10	10	16	8	8	18	14	11	20	12	10	30	25	26	29	17	14
No. exotics	2	0	2	7	5	7	6	3	5	7	4	4	8	4	6	7	2	3	9	6	7	7	8	8
Weediness index	0.11	0	0.1	2.6	1.9	3.3	1.1	0.3	0.8	1.3	0.8	1	1.4	0.6	0.9	0.9	0.4	0.7	0.8	0.4	0.5	0.6	0.8	1.0

Reedia North

The Reedia North site is located on Blackwood Rd within the Blackwood River National Park. The transect traverses a sedge dominated wetland on Spearwood Brook, a tributary of the Blackwood River. The 80 m transect runs east from open *E. marginata/C. calophylla* woodland, down gradient (Figure 25) across the sedge/ shrub dominated basin and back into *E. marginata/C. calophylla* woodland on the far side.

a b c d

Figure 25. Reedia North wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.

There was a slight improvement in mean canopy health across the transect during 2009 (Table 3). As in 2008 no exotics were recorded across the transect in 2009 and species composition was approximately 85% similar to that described during 2008 (Table 3).

Groundwater level monitoring has been undertaken at bore 60915029, in close vicinity to, but upslope from, the Reedia North transect, since mid-2004 but was only available up to mid-2008 (Figure 26). Given that monitoring commenced at this site in 2008 and groundwater level monitoring ceased in the same year, it is not possible to comment on the relationship between vegetation condition and the hydrological regime.

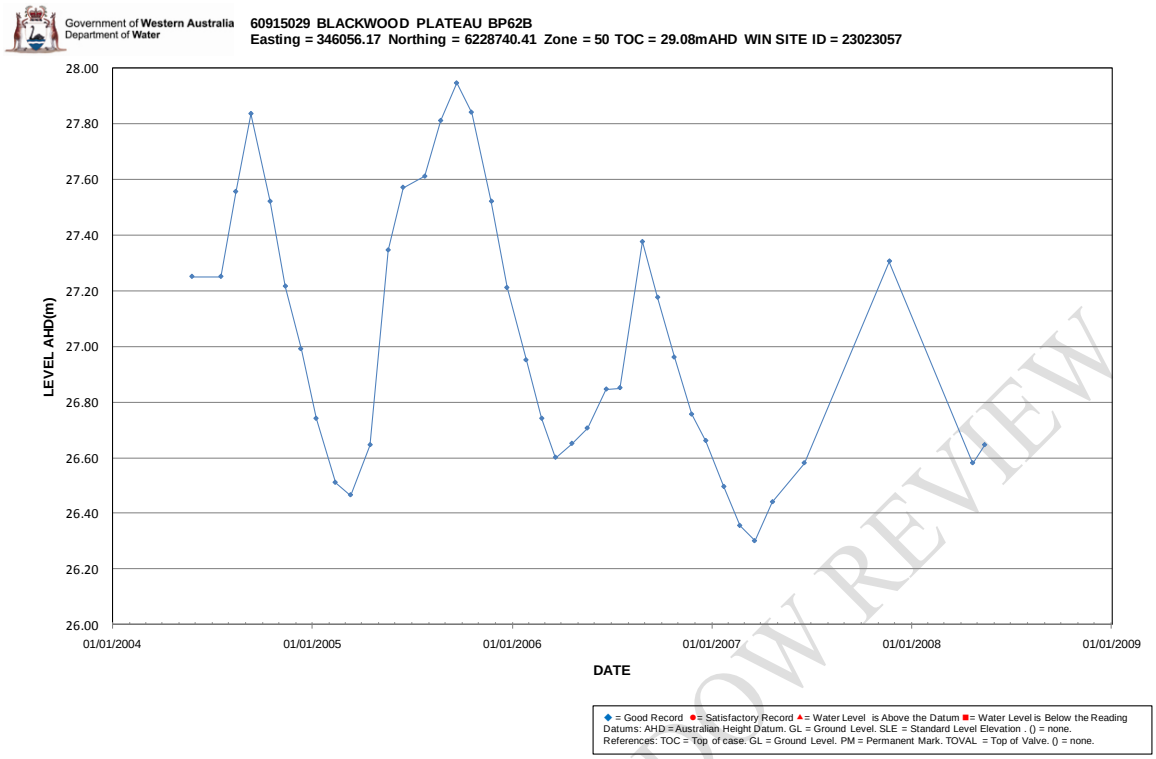


Figure 26. Reedia North groundwater levels 05/2004 - 05/2008.

Table 25: Reedia North - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot/ year		A			B			C			D		
	Spec[1].	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09
Diameter range[2]	E.m.	<2- 02.0	<2-102	<2-102	-	-	-	<2	<2	<2	<2-39.6	<2-68.7	<2-68.7
	C.c.	<2	<2	<2	<2-2.3	2.2-3.8	2.2-3.8	-	-	37.8	41.4-68.0	41-68	41-68
	B.l	<2	<2	<2	-	-	-	-	-	-	-	-	-
	A.f.			<2-61						-			
Health Mean[3]	E.m.	10.6	11.7	10.6	-	-	-	13	16	16	11.3	11.3	11.3
	C.c.	-	-	-	22	22	19	-	5	8	11	9	11
	B.l	23	3	0	-	-	-	-	-	-	-	-	-
	A.f.			15.4			-			-			-
Health Range	E.m.	4-14	4-19	6-14	-	-	-	13	16	16	6-15	7-15	8-15
	C.c.	-	-	-	21-23	21-23	19	-	5	8	7-15	9	9-13
	B.l	23	3	0	-	-	-	-	-	-	-	-	-
	A.f.			10-21			-						-
Density[4]	E.m.	9 (13)	9	5 (13)	-	-	-	1	1	1	6 + 8 sap (76)	8	8 + 8 sap (76)
	C.c.	(8)	-	(8)	2 + 1 sap (2)	2	1 + 1 sap (2)	(6)	1 (6)	1 (6)	2 (19)	2	2 (19)
	B.l	1	1	1	-	-	-	-	-	-	-	-	-
	A.f.			11			-			-			-

[1]Overstorey species – C.c. = Corymbia calophylla; E.m.= Eucalyptus marginata; B.l = Banksia littoralis; A.f. = Allocasuarina fraseriana
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 26: Reedia North - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09
No. species	22	26	25	37	30	31	16	9	14	13	12	14	9	7	8	27	19	31	14	10	11	24	25	20
No. exotics	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Reedia South

The Reedia South transect is located on Denny Rd partly within the Blackwood River National Park and partly within State Forest. The transect traverses a *Reedia spathacea* (Declared Rare Flora) dominated wetland on Adelaide Brook, a tributary of the Blackwood River. The 80 m transect runs east from open, mixed, *Eucalyptus* woodland, down a steep gradient through sparse *E. megacarpa*, across the sedge dominated basin and back into *E. marginata/ C. calophylla* woodland on the far side (Figure 27). There was a negligible improvement in canopy condition in 2009 compared to 2008 (Table 3). There has been no increase in the number of exotic species recorded across the transect and species composition has remained relatively similar (94.7%) between 2008 and 2009 (Table 3).

Figure 27. Reedia south wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m

Groundwater level monitoring has been undertaken at bore 60915034, in close vicinity to the Reedia South transect, since 2004, but was only available consistently up to early 2007 with erratic monitoring occurring until November 2009 (Figure 28). The data indicates that minimum water levels appear relatively stable despite the erratic monitoring between 2007 and 2009. However, as 2008 represents the first round of vegetation monitoring at this site it is not possible to comment on the relationship between vegetation condition and the water regime.

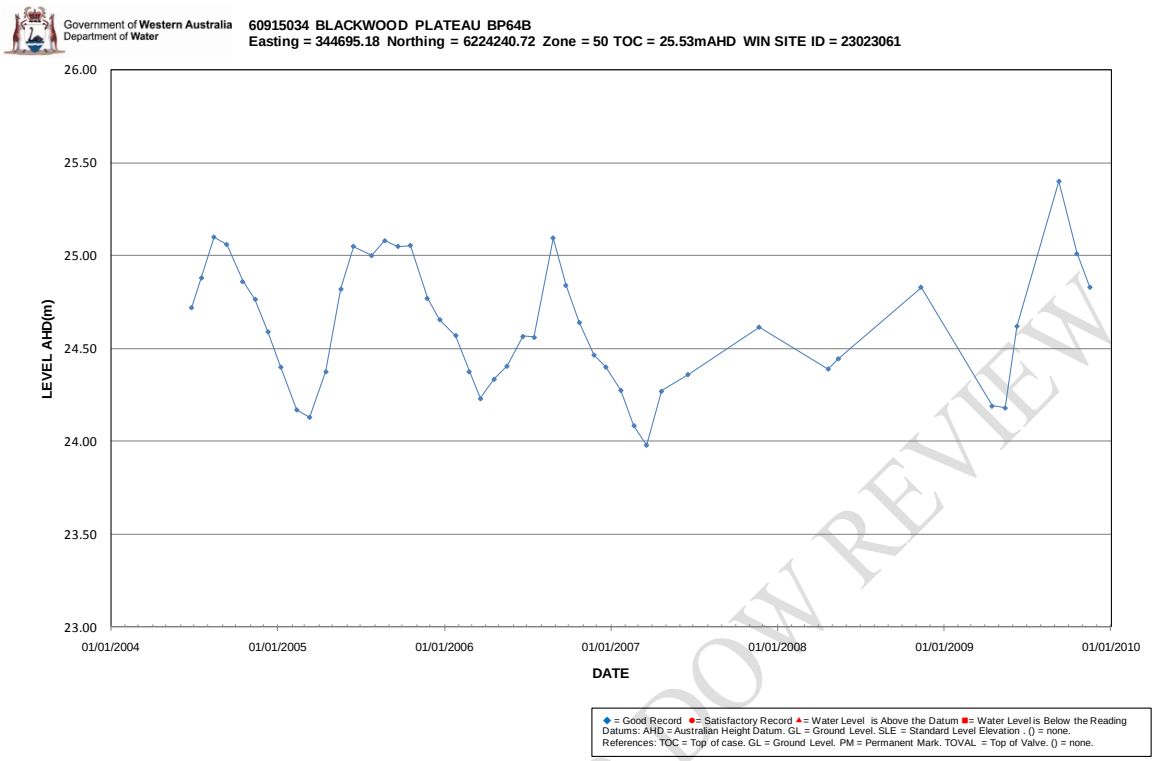


Figure 28. Reedia South groundwater levels 06/2004 – 11/2009.

Table 27: Reedia South - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot/ year		A			B			C			D		
	Spec[1].	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09
Diameter range[2]	E.m.	<2-20.5	<2-20.5	<2-20.5	9.6-18.6	9.6-18.8	9.6-18.8	-	-	-	-	-	-
	C.c.	6	5.6	5.6	-	-	-	-	-	-	-	-	-
	E.mc	39.7-46.4	39.7-46.4	39.7-46.4	<2-38.4	<2-38.4	<2-38.4	-	-	-	3.2-16.8	2.3-16.8	2.3-16.8
	A.f.			14-66.3									
Health Mean[3]	E.m.	16.2	16.3	15.8	10	11	13	-	-	-	-	-	-
	C.c.	17	19	18	-	-	-	-	-	-	-	-	-
	E.mc	16.5	16.75	17.25	16	16.33	14.2	-	-	-	17.5	18	18
	A.f.			17			17						-
Health Range	E.m.	11-21	9-21	7-21	7-13	9-13	12-14	-	-	-	-	-	-
	C.c.	17	19	18	-	-	-	-	-	-	-	-	-
	E.mc	11-21	15-21	11-21	15-19	15-19	5-17	-	-	-	16-19	17-19	18
	A.f.			14-19			17						-
Density[4]	E.m.	17 + 4 sap (59)	18	17 + 3 sap (59)	2 + 1 sap (22)	2	2 + 1 sap (22)	-	-	-	-	-	-
	C.c.	1 (11)	1	1 (11)	(8)	-	(8)	-	-	-	-	-	-
	E.mc	4 (4)	4	4 (4)	6 + 2 sap (6)	6	5 + 2 sap (6)	-	-	-	2 (2)	2	1 (2)
	A.f.			5			1						-

[1]Overstorey species – C.c. = *Corymbia calophylla*; E.M. = *Eucalyptus marginata*; E.mc = *Eucalyptus megacarpa*; A.f. = *Allocasuarina fraseriana*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 28: Reedia South - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09
No. species	23	34	29	19	11	19	22	27	30	11	12	17	11	13	14	16	23	27	12	14	17	16	18	20
No. exotics	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0.13	0.12	0	0	0	0	0	0	0	0.09	0.08

Scott River Road (Scott South)

The Scott River Rd site is located adjacent to the Scott National Park to the north of Scott River. The 80 m transect runs perpendicular to the road, 20m east of powerlines. There is little change in elevation moving north from open *E. marginata* woodland, through fringing *M. preissiana* and across a very, densely vegetated, wetland basin (Figure 29). There was a slight decline in canopy condition during 2009 compared to that in 2008 (Table 3). No exotic species were recorded across the transect in 2009 as was the case in the previous monitoring round (Table 3). Species composition in 2009 was approximately 85% similar to that recorded in 2008 (Table 3).

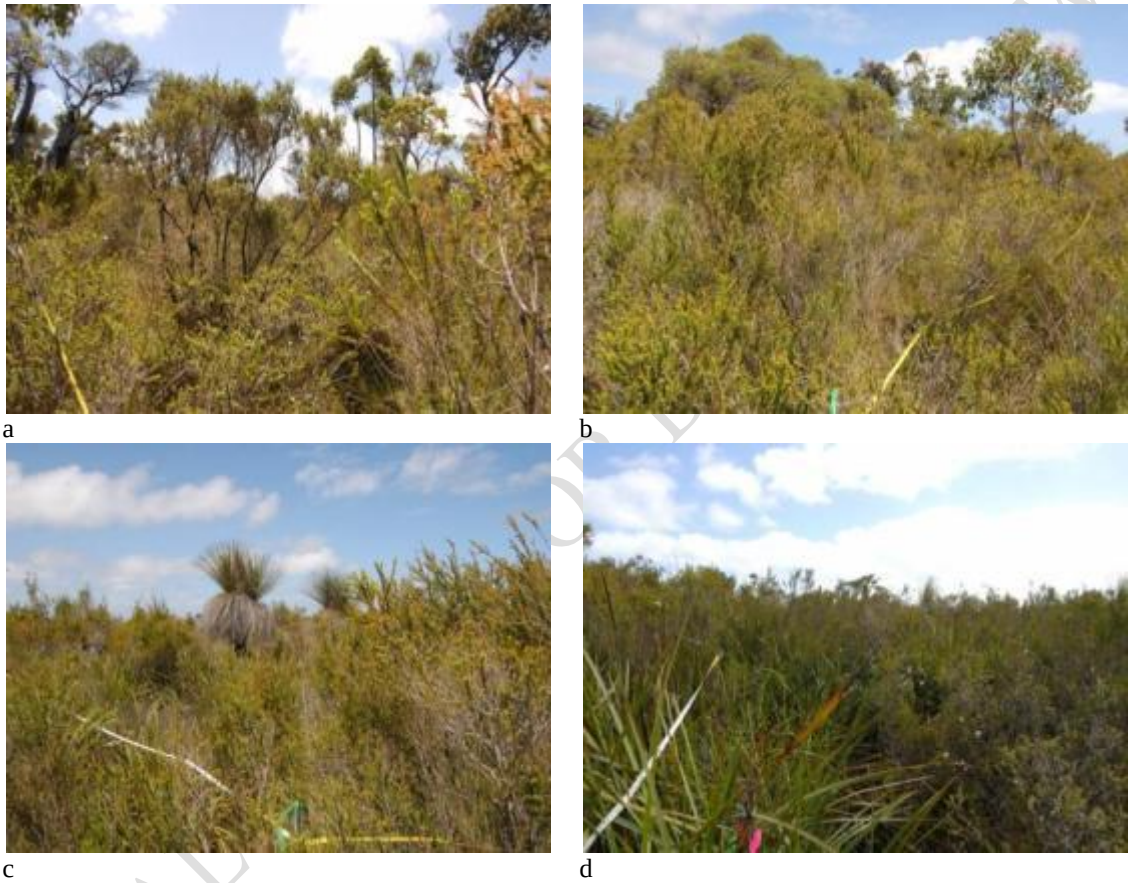


Figure 29. Scott River Rd wetland vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m

Groundwater level monitoring has been undertaken at bore 60930008, some distance and upslope from the Scott River Rd transect, since 1993 (Figure 30). The data indicates that water levels have remained relatively stable from 1993 to 2009, with strong seasonality evident. As the bore is some distance from the transect and November 2008 represents the first round of spring vegetation monitoring at this site it is not possible to comment on the relationship between vegetation condition and the water regime at this time. Continued, regular monitoring of both water levels and vegetation condition will allow assessment of this relationship.

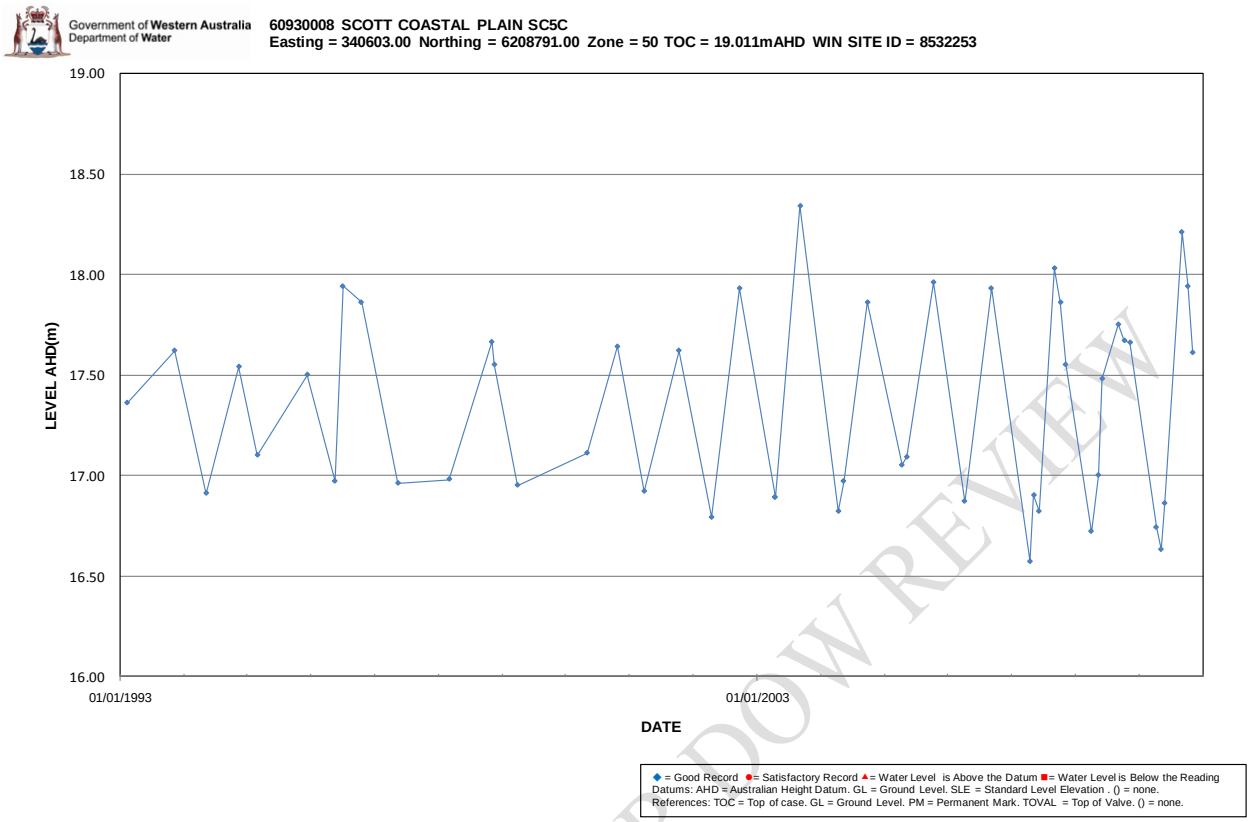


Figure 30. Scott River Rd groundwater levels 02/1993 – 11/2009.

Table 29: Scott River Road - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot/ year		A			B			C			D		
	Spec[1].	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09
Diameter range[2]	M.p	<2-14.1	<2-14.1	<2-14.1	4.7-21.0	4.7-21	4.7-21	-	-	-	5.7-28.4	5.7-28.4	5.7-28.4
	C.c	-	-	-	7.2-10.0	7.3-17.9	7.3-17.9	-	-	-	-	-	-
	E.m	6.6-32.5	6.8-32.5	6.8-32.5	4.0-14.0	4-14.4	4-14.4	-	-	-	-	-	-
Health Mean[3]	M.p	15	16	15.5	18	18	17	-	-		19	17	17
	C.c	-	-	-	7	13	10	-	-		-	-	-
	E.m	16.5	17.6	15.8	13.2	8.3	13.3	-	-		-	-	-
Health Range	M.p	13-21	13-19	13-17	18	18	17	-	-		19	17	17
	C.c	-	-	-	7	7-9	10	-	-		-	-	-
	E.m	10-20	11-21	12-19	5-19	3-19	4-19	-	-		-	-	-
Density[4]	M.p	4	4	4	1	1	1	-	-		1	1	1
	C.c	-	-	-	3	3	3	-	-		-	-	-
	E.m	8	8	8	4 + 1 sap (11)	4	4 + 1 sap (11)	-	-		-	-	-

[1]Overstorey species – C.c. = *Corymbia calophylla*; M.p = *Melaleuca preissiana*; E.m = *Eucalyptus marginata*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 30: Scott River Road - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09	07/08	08	09
No. species	25	20	27	21	26	28	20	22	27	16	13	24	21	19	28	13	15	19	16	14	17	9	11	11
No. exotics	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Weediness index	0	0	0	0	0	0	0	0	0	0.08	0	0	0.06	0	0	0	0	0	0	0	0	0	0	0

Terrestrial Sites

Jack Track

The transect at this site runs 80 m north-east from bore SC8 into open *E. marginata* woodland (Figure 31). Although there is little change in elevation across the transect, and *A. scabra* was the dominant species across the site (replacing *P. ellipticum*, dominant in 2005 and 2006), xeric species become more prominent at higher elevations. In 2009 there was an improvement in the canopy condition across the transect compared to that recorded in 2008 (Table 3). Once again no exotic species were recorded across the transect and species composition was highly similar in 2009 to that observed in 2008 (Table 3).

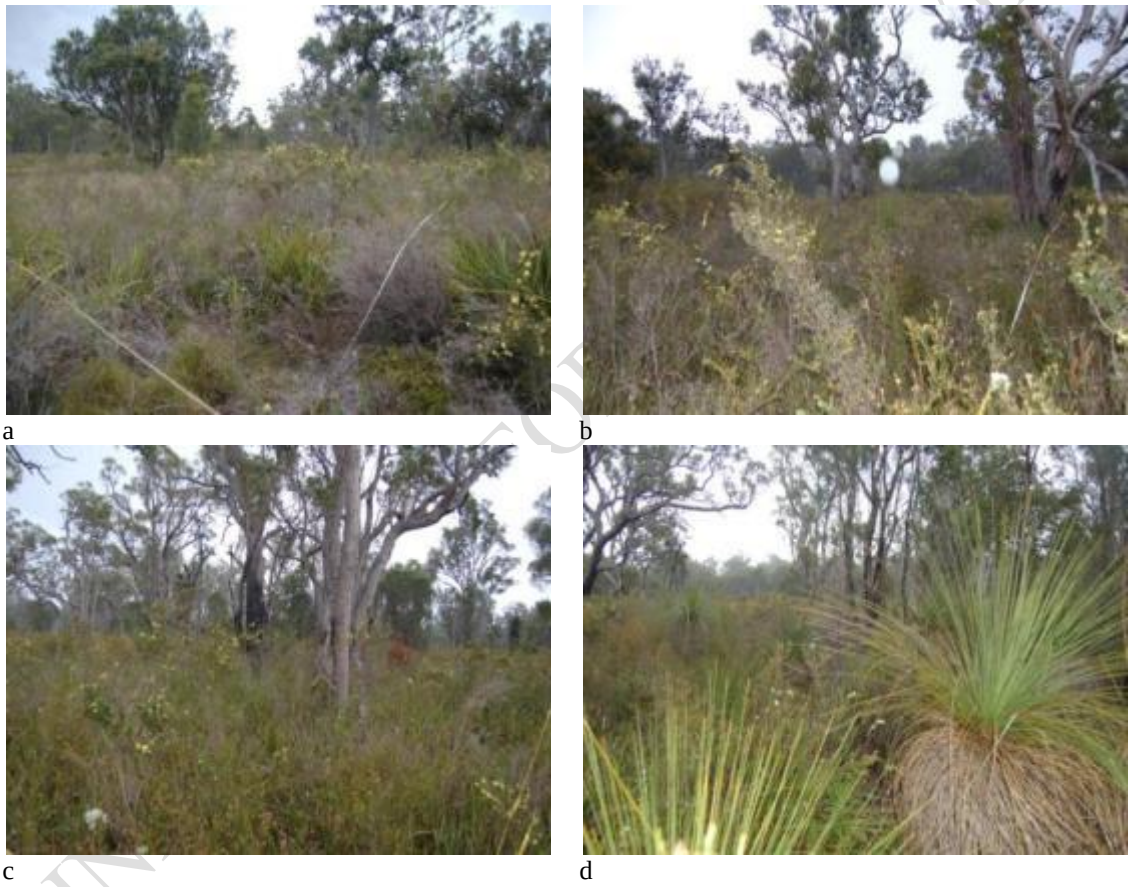


Figure 31. Jack Track terrestrial vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.

Groundwater level monitoring has been undertaken at bore 60930033 in close proximity to the transect since mid-2006 (Figure 32). There appears to have been a slight decrease in minimum water levels at this site, although this is offset by a substantial increase in maximum water levels recorded in October, 2009 (Figure 32). In order to assess the relationship between vegetation condition and water regime a longer hydrological data set is required which coincides with a greater number of monitoring rounds than is currently the case.

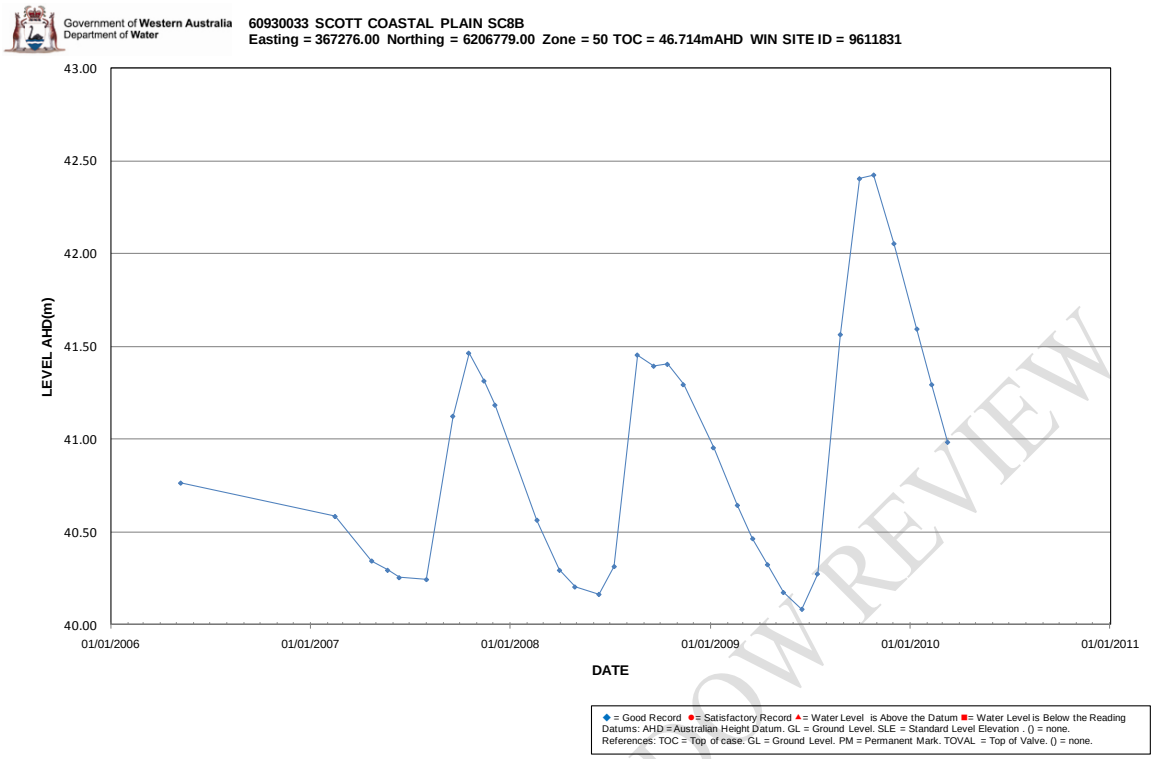


Figure 32. Jack Track groundwater levels 05/2006 – 03/2010

Table 31: Jack Track - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot		A			B			C			D		
Year	Spec[1].	06	08	09	06	08	09	06	08	09	06	08	09
Diameter range[2]	E.m.	13.8	14.2	14.2	<2 - 55	<2-55.7	<2-55.7	<2 - 67.7	<2-70.7	<2-70.7	<2 - 19	<2-20.6	<2-20.6
Health Mean[3]		17	15	21	16	15.1	18.3	17.6	16.6	14.75	15.9	14.9	16.5
Health Range		17	15	21	15 - 18	8-21	15-19	15 - 19	13-19	13-17	11-20	8-19	8-21
Density[4]	E.m.	1	1	1	3	8 + 9 sap	3 + 9 sap	7	9	8	11	18 + 2 resp	12 +2 rs

[1]Overstorey species – E.m.= *Eucalyptus marginata*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.
sap = saplings
rs = resprouter

Table 32: Jack Track - summary of understorey data (all plots are 5 x 5m).

Plot	A1				A2				B1				B2				C1				C2				D1				D2			
Year	05	06	08	09	05	06	08	09	05	06	08	09	05	06	08	09	05	06	08	09	05	06	08	09	05	06	08	09	05	06	08	09
No. species	27	23	25	28	25	24	19	19	35	32	27	30	35	25	23	22	27	23	20	20	29	24	26	27	28	22	21	19	24	19	14	20
No. exotics	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Milyeanup

The transect established at this site runs 60 m from the edge of the Brockman Highway wetland transect through fringing *B. littoralis* and wetland shrubs into low open woodland of *E. marginata*, *C. calophylla* and *B. grandis* (Figure 33). The elevation increases with distance and is reflected in a change from an understorey dominated by wetland species to one of terrestrial species only. Only three plots have been established at this site as the transect is located between the wetland and a forestry access track. Between 2008 and 2009 there has been a slight improvement in mean canopy condition across the transect (Table 3). The exotic species that has been previously identified at this transect was not present during the 2009 monitoring round while an increase in the number of species observed over the entire transect meant that the 2009 species composition was approximately 86% similar to that observed in 2008 (Table 3).

a b c d

Figure 33 Milyeanup terrestrial vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.

Groundwater level monitoring has been undertaken at bore 60914941 since May 2006 (Figure 34). Drying of the bore each summer would seem to suggest that the bore is of inadequate depth to allow comment on changing minimum groundwater levels, and hence to make an assessment on changing vegetation condition relative to changing hydrological regime.

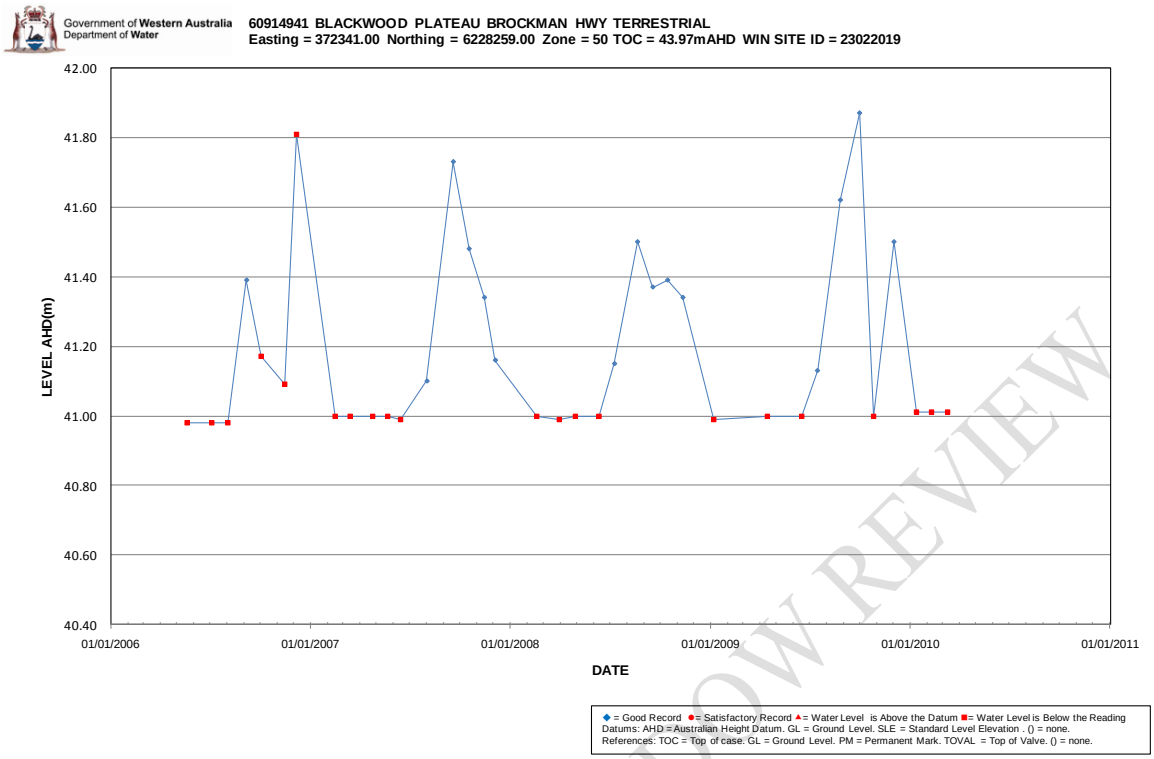


Figure 34. Milyeanup groundwater levels 05/2006 – 03/2010

Table 33: Milyeanup terrestrial - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot		A			B			C		
Year	Spec[1].	06	08	09	06	08	09	06	08	09
Diameter range[2]	B.g.	<2 - 4.8	<2-8	<2-8	<2 - 14.4	<2-15	<2-15	<2 – 8.6	<2-7.1	<2-7.1
	B.l.	4.8	10	10	-	-	-	-	-	-
	C.c.	<2 - 22.5	<2-24.3	<2-24.3	<2 - 12.5	<2-13.8	<2-13.8	<2 – 57.1	<2-57.1	<2-57.1
	E.m.	<2 - 59.6	<2-27.3	<2-27.3	<2 – 120	<2-120	<2-120	<2 – 32.2	<2-35	<2-35
Health Mean[3]	B.g.	14.8	19.1	19	16.9	19.6	19.4	11.9	13.6	15
	B.l.	21	23	23	-	-	-	-	-	-
	C.c.	17.6	17.7	19.4	16.9	17.7	19	15.2	16.7	18.7
	E.m.	17.6	19.1	20.2	13.3	16	13	15.7	17	19
Health Range	B.g.	11-19	15-23	17-21	12-19	15-21	15-21	0 - 15	0-21	15
	B.l.	21	23	23	-	-	-	-	-	-
	C.c.	13 - 21	15-21	15-23	14 - 21	13-21	19	12-23	9-21	15-23
	E.m.	14 - 21	16-23	19-23	13 - 16	13-19	9-16	3-19	5-21	11-23
Density[4]	B.g.	15	17	8	17	18	11	9	9	2
	B.l.	1	1	1	-	-	-	-	-	-
	C.c.	15	15	9	10	10	3	21	21	7
	E.m.	13	13	5	7	7	5	34	17	19

[1]Overstorey species –B.l.= *Banksia littoralis;* C.c. = *Corymbia calophylla*; E.m.= *Eucalyptus marginata*; B.g. = *Banksia grandis*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 34: Milyeanup terrestrial - summary of understorey data (all plots are 5 x 5m).

Plot	A1				A2				B1				B2				C1				C2			
Year	05	06	08	09	05	06	08	09	05	06	08	09	05	06	08	09	05	06	08	09	05	06	08	09
No. species	38	38	28	39	38	36	33	36	33	33	37	43	26	29	31	28	28	33	31	32	32	31	28	31
No. exotics	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0
Weediness index	0.04	0	0	0	0	0	0	0	0	0	0	0	0	0.05	0.06	0	0	0.05	0.07	0	0	0.06	0.07	0

Poison Gully terrestrial

The 80 m transect at this site was established in fringing vegetation adjacent to the Poison Gully wetland transect. Although the elevation increased markedly with distance there was little change in species composition and structure, with open *E. marginata*, *B. grandis* and *A. fraseriana* woodland (Figure 35). Between 2008 and 2009 there was a slight decline in canopy condition across this transect (Table 3). The transect remains free of exotic species, as it was in 2008. A slight increase in the number of species recorded in 2009 resulted in an 89% similarity to that recorded in 2008 (Table 3).

Figure 35. Poison Gully terrestrial vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.

As bore 60914942, in close proximity to the Poison Gully terrestrial transect was only established in mid- 2007, limited, yet relatively consistent, monthly hydrological data were available since that time (Figure 36). However, the bore appears to have been dry since October 2007, as evidenced by the 'bottoming out' of the hydrograph. Despite this, there has been no clear indications of declining vegetation condition or changes in community composition across the transect except for the slight decline in canopy condition recorded in 2009. A longer, more accurate hydrological data set coupled with further vegetation monitoring are required before a comprehensive assessment of the relationship between vegetation condition and the water regime is possible.

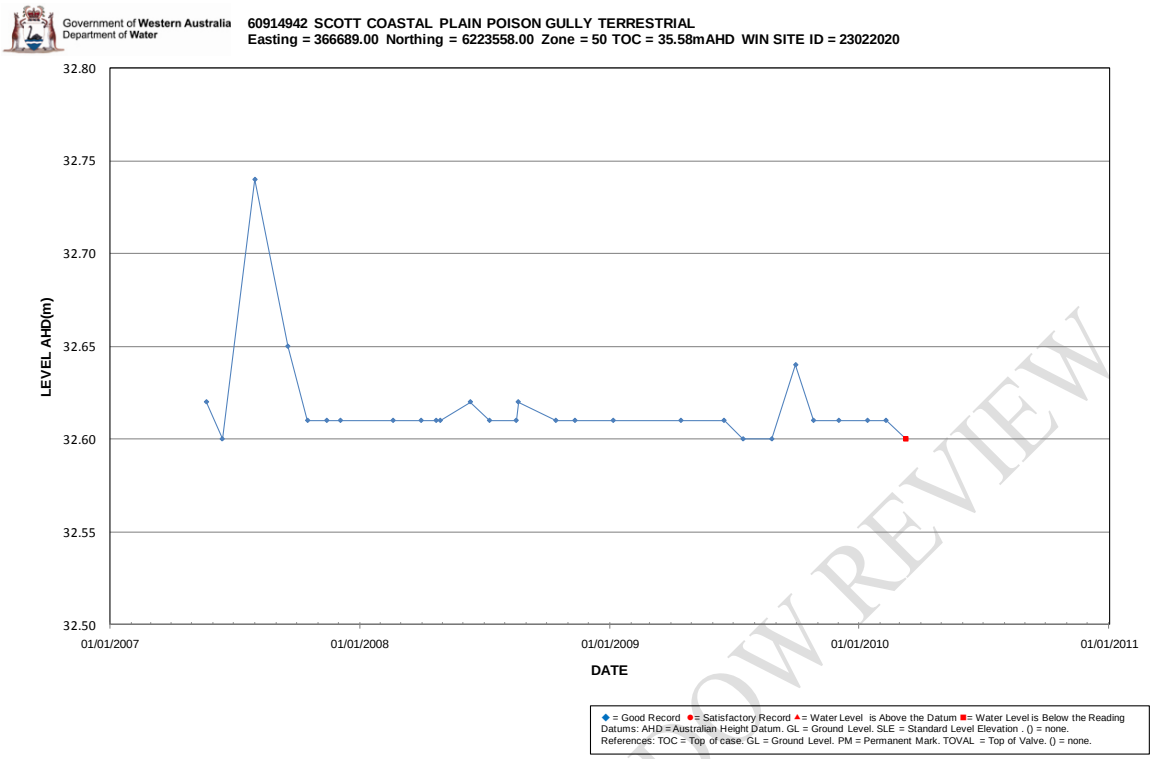


Figure 36. Poison Gully terrestrial site groundwater levels 05/2007 – 03/2010.

Table 35: Poison Gully terrestrial - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot		A			B			C			D		
Year	Spec[1].	07	08	09	07	08	09	07	08	09	07	08	09
Diameter range[2]	E.m.	<2 - 36.2	<2-36.2	<2-36.2	<2 - 63.3	<2-64	<2-64	<2 - 81.0	<2-81	<2-81	<2 - 61.5	<2 - 61.5	<2 - 61.5
	C.c.	-	-	-	23.0 -27.9	24-29	24-29	24 - 60	24-60	24-60	8.4 - 24.7	15.2-25	15.2-25
	B.g.	-	-	-	<2 - 11.7	<2-13	<2-13	<2 - 8.8	<2-9	<2-9	<2 - 8.2	<2-8	<2-8
	B.a.	-	-	-	-	12	12	<2 - 6	<2-7.7	<2-7.7	<2 - 22.5	<2-15.3	<2-15.3
Health Mean[3]	E.m.	12.2	12.9	16.8571429	12.7	12.4	14.1	14.1	13.3	16.3	16.4	13.2	15.6
	C.c.	-	-	-	10	9	9	12.5	16.5	16.5	10	14.3	15.5
	B.g.	-	-	-	20	20.3	15.2	20.7	19.8	12	20	18.6	18.6
	B.a.	-	-	-	20	22	21	18.4	19.8	7	21.3	19.3	22
Health Range	E.m.	4-18	7-17	15-20	9-18	10-15	10-19	10-19	10-17	6-21	6-21	10-20	10-21
	C.c.	-	-	-	9-11	9	9	11-14	16-17	16-17	9-12	13-16	14-17
	B.g.	-	-	-	20	19-21	21-22	18 - 21	15-21	0-19	18 - 23	6-21	17-21
	B.a.	-	-	-	20	22	21	15 - 23	0-23	0-21	18 - 23	15-21	21-23
Density[4]	E.m.	8 + 2 sap (2)	8 + 2 sap (2)	7 + 2 sap (2)	7 + 3 sap (12)	7 (15)	7 + 3 sap (12)	13 + 7 sap (18)	15	12 + 5 sap (18)	18 + 8 sap (20)	18 + 8 sap (20)	8 + 8 sap (20)
	C.c.	-	-	-	2	2	2	2	2	2	3	3	2
	B.g.	-	-	-	3 (3)	3 (3)	3 (3)	12	12	3	12 (15)	13 (15)	9 (15)
	B.a.	-	-	-	1	1	1	8	11	3	6	6	4

[1]Overstorey species – C.c. = *Corymbia calophylla*; E.m. = *Eucalyptus marginata*; B.g. = *Banksia grandis*; B.a. = *Banksia attenuata*.
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m). [3]Mean health rating for all overstorey species. [4]Density is number of trees in each plot.

Table 36: Poison Gully terrestrial - summary of understorey data (all plots are 5 x 5m).

Plot	A1				A2				B1				B2				C1				C2				D1				D2			
Year	06	07	08	09	06	07	08	09	06	07	08	09	06	07	08	09	06	07	08	09	06	07	08	09	06	07	08	09	06	07	08	09
No. species	13	15	15	17	27	23	23	23	31	28	33	36	29	27	27	26	33	32	34	39	33	34	34	40	36	34	40	43	27	24	31	39
No. exotics	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weed index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Scott Rd

The 80 m transect at this site ran south from bore SC22B through open *E. marginata* woodland towards a *M. preissiana* woodland. This change in vegetation composition reflected the significant decrease in elevation across the transect. Due to the degree of change in elevation, a piezometer was also installed at the end of the transect. The understorey was very dense across most of the site.

Figure 37. Scott Rd terrestrial vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m

Between 2007 and 2009 there has been a slight improvement in canopy condition across the transect (Table 3). The transect remains free of exotic species and species composition in 2009 was approximately 90% similar to that observed in 2007 (Table 3).

Monitoring of bore 60830007, in close proximity to the Scott Rd terrestrial transect, commenced in mid-2006 (Figure 38). The hydrograph data points to relatively stable groundwater levels over the 4 years of monitoring, which would appear to explain the relative stability of the vegetation along the transect.

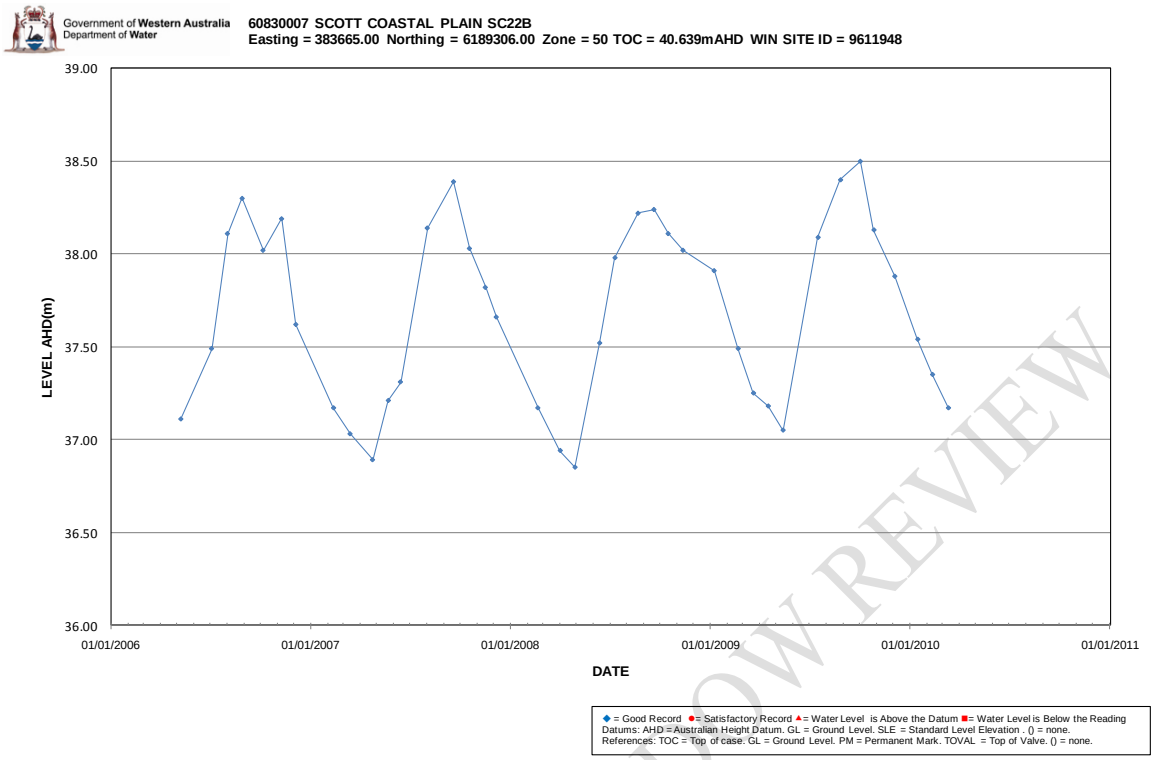


Figure 38. Scott Rd terrestrial site groundwater levels 05/2006 – 03/2010

Table 37: Scott Rd - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot/ year		A			B			C			D		
	Spec[1].	06	07	09	06	07	09	06	07	09	06	07	09
Diameter range[2]	E.m.	39.8 - 45	40.2 - 45.6	40.2 - 45.6	<2 - 53	<2 - 53.2	<2 - 53.2	45.3	<2 - 46.5	<2 - 46.5	7 - 67.1	<2 - 70.0	<2 - 70.0
	C.c.	<2 - 120	<2 - 120	<2 - 120	<2 - 72.2	<2 - 72.2	<2 - 72.2	2.7 - 45.5	2.7 - 46.5	2.7 - 46.5	46.7	46.7	46.7
	M.p.	-	-	-	-	-	-	<2 - 60.4	<2 - 61.2	<2 - 61.2	4.8 - 12.7	5 - 12.8	5 - 12.8
Health Mean[3]	E.m.	14	13.5	17	12.8	15.6	14.9	14	13	12	18.5	17.7	15.8
	C.c.	14.2	13	14.3	15	11	13	12	10.7	12	19	9	11
	M.p.	-	-	-	-	-	-	10.3	14.8	9.5	8.3	8.5	10.3
Health Range	E.m.	12-16	11-16	17	7-15	8-21	8-19	9-15	11-15	12	17 - 19	13- 21	13-18
	C.c.	11-20	9-19	11-17	15	9-15	12-14	9-15	5-17	9-17	19	9	11
	M.p.	-	-	-	-	-	-	8-13	10-21	8-11	3-10	3-11	10-11
Density[4]	E.m.	2	2	2 (36)	15	17	15 (35)	1	2	1 (45)	4	6	4 (32)
	C.c.	13	13	11	3	4	3	7	7	5	1	1	1
	M.p.	-	-	-	-	-	-	4	4	2	4	4	3
	B.a.			(1)						(2)			

[1]Overstorey species – M.p. = *Melaleuca preissiana*; C.c. = *Corymbia calophylla*; E.m.= *Eucalyptus marginata*; B.a. = *Banksia attenuata*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 38: Scott Rd terrestrial - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	06	07	09	06	07	09	06	07	09	06	07	09	06	07	09	06	07	09	06	07	09	06	07	09
No. species	29	28	29	20	22	22	24	23	24	19	18	20	26	24	27	15	14	15	10	11	15	17	15	18
No. exotics	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Darradup Rd north terrestrial

The transect at this site runs 80 m south-west from bore BP42B into closed *E. marginata* woodland, with *C. calophylla* and *A. fraseriana*. There is little change in elevation across the transect which is reflected in the homogeneity in vegetation composition and structure. The area has been logged in the past but appears to have undergone a recruitment event in recent years as indicated by the high number of seedlings and saplings recorded across the transect (Table 39). Since monitoring in 2006 canopy condition has increased by close to 9% with the transect remaining free of exotic species (Table 3). Despite the considerable gap in monitoring events, species composition in 2009 was approximately 87% similar to that recorded in 2006 (Table 3).

a b c d

Figure 39 Darradup Rd north terrestrial vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.

Bore 60910304 lies in close proximity to the monitoring transect at the terrestrial Darradup Rd Nth site. Hydrograph data for this bore shows a decline in minimum and maximum water levels between 2006 and 2007 before a stabilizing between 2007 and 2009 (Figure 40). Whether the declining trend is continuing will require further monitoring. Since the previous monitoing round was undertaken in 2006 just prior to the decline in water levels and given the general continuing good condition of the vegetation along the transect, it would appear that the vegetation is able to cope with the change in the hydrological regime.

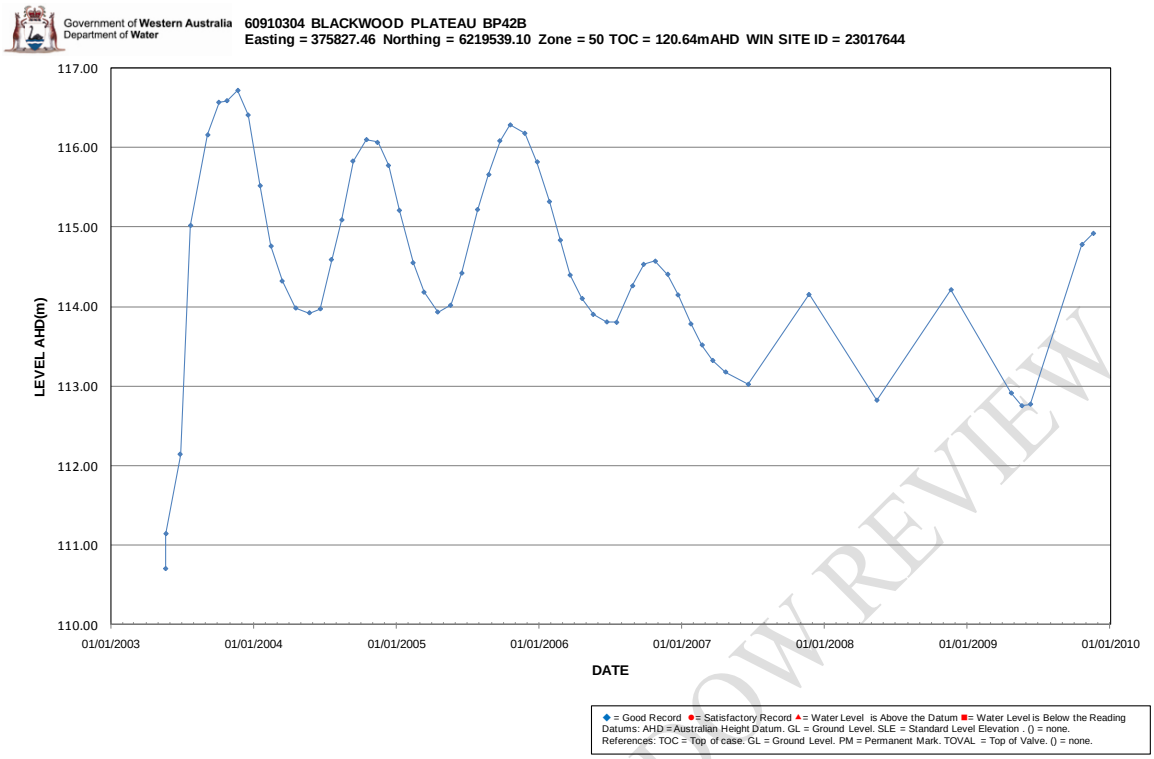


Figure 40. Darradup Rd Nth terrestrial groundwater levels 05/2003 – 11/2009

Table 39: Darradup Rd north terrestrial - summary of transect data; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot		A			B			C			D		
Year	Spec[1].	05	06	09	05	06	09	05	06	09	05	06	09
Diameter range[2]	E.m.	<2 - 49	<2 - 49	<2 - 49	<2 - 42.5	<2 - 54.6	<2 - 54.6	< 2 - 66.2	< 2 - 66.2	< 2 - 66.2	<2 - 100	<2 - 100	<2 - 100
	C.c.	<2 - 48.9	<2 - 48.9	<2 - 48.9	< 2 - 30	<2 - 30	<2 - 30	<2 - 54.9	<2 - 54.9	<2 - 54.9	<2 - 48 .1	<2 - 48 .1	<2 - 48 .1
Health Mean[3]	E.m.	12.6	13.8	14.4	11.2	11.2	11.55	12.5	13.9	14.7	12.1	13.4	12.8
	C.c.	12.3	14.2	16.9	11.6	11.8	13.5	11.5	13	15.4	12.6	12.5	13.5
Health Range	E.m.	9-17	4-19	4-21	5-17	5-17	0-19	9-15	5-19	6-21	5-16	7-17	4-19
	C.c.	5-20	0 - 21	9-21	4-16	5-17	5-19	7-13	7-19	11-19	6-16	7-18	9-21
Density[4]	E.m.	29 (95)	29	23 (18)	19 (89)	20	20 (23)	32 (41)	32	32 (52)	45 (87)	45	34 (56)
	C.c.	24 (18)	23	26 (29)	28 (41)	28	28 (41)	10 (20)	10	9 (20)	20 (47)	20	10 (47)

[1]Overstorey species – C.c. = *Corymbia calophylla*; E.m.= *Eucalyptus marginata*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 23: Darradup Rd north terrestrial - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09
No. species	29	28	33	29	30	29	26	34	39	35	37	43	36	42	44	31	32	37	37	38	40	37	33	41
No. exotics	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Blackwood River Crossing terrestrial (Longbottom Rd)

The 80 m transect at this site was established in fringing vegetation adjacent to the Blackwood River Crossing (longbottom Rd) wetland site. Although the elevation increases with distance there is no change in the vegetation composition from *E. marginata* woodland with *C. calophylla* and *B. littoralis*. Small to medium shrubs and terrestrial sedges are generally dominant throughout the understorey. Between 2006 and 2009 ther has been an improvement in canopy condition along the transect (Table 3). The species composition in 2009 was approximately 88% similar to that recorded in 2006; however there has been no change in the number of exotic species recorded at the site (Table 3).

Figure 41 Longbottom Rd terrestrial vegetation monitoring transect. All photos were taken looking diagonally across the plot. a). 0-20m; b) 40-20 m; c) 40-60 m; d) 80-60 m.

Bore 60914940, in close proximity to the Longbottom Rd terrestrial monitoring site, has been monitored since mid-2006 (Figure 42). Hydrograph data shows the bore drying on a seasonal basis, signaling that the bore is not deep enough to monitor minimum groundwater levels. The lack of minimum groundwater levels makes it difficult to ascertain the nature of the relationship between changing vegetation conditions and changing hydrological regime.

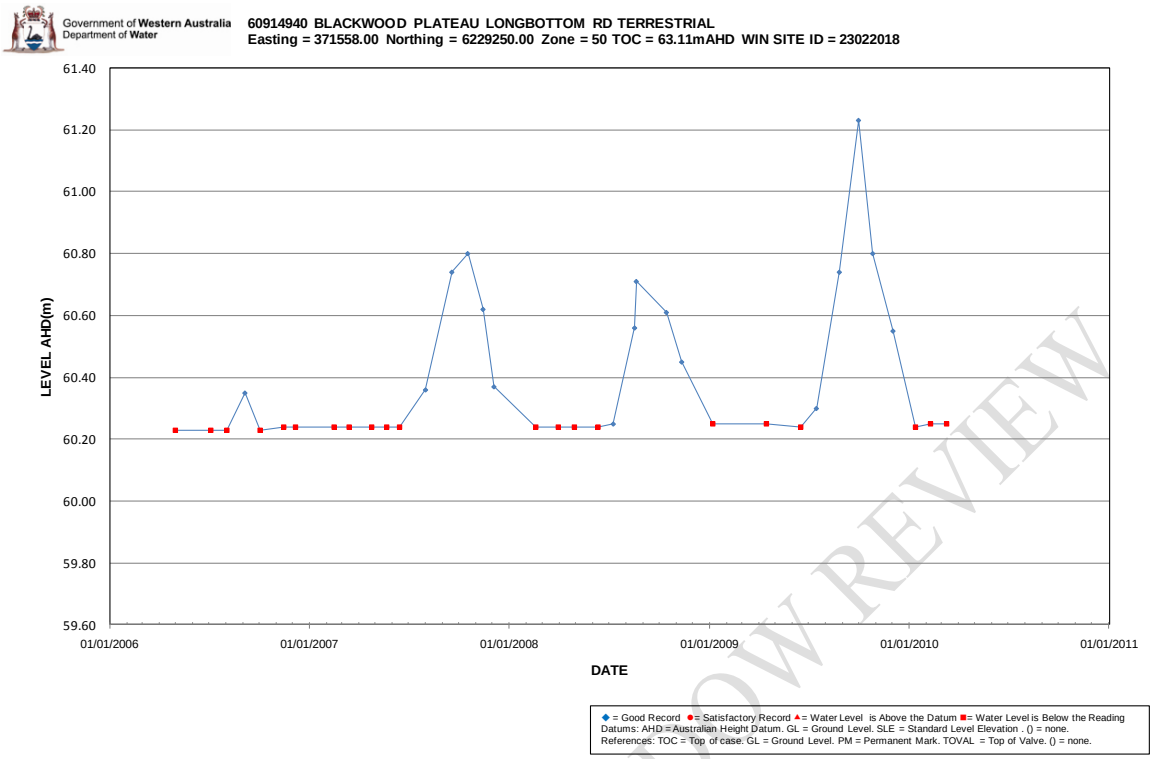


Figure 42. Longbottom Rd terrestrial site groundwater levels 05/2006 – 03/2010

Table 40: Blackwood River Crossing terrestrial - summary of transect; diameter, health and density of overstorey species (all plots are 20 x 20 m).

Plot		A			B			C			D		
Year	Spec[1].	05	06	09	05	06	09	05	06	09	05	06	09
Diameter range[2]	B.g.	10.5	10.5	10.5	-	-	-	<2 - 7.8	<2 - 7.8	<2 - 7.8	3.7 - 5.3	3.7 – 5.3	3.7 – 5.3
	E.m.	3.4 - 44	3.4 - 44	3.4 - 44	3.5 - 51.5	3.5 - 51.5	3.5 - 51.5	6.4 - 72.2	6.4 - 72.2	6.4 - 72.2	22.4	22.4	22.4
	C.c.	<2 - 124	<2 - 124	<2 - 124	<2 - 87	<2 – 89.3	<2 – 89.3	<2 - 9	<2 - 9	<2 - 9	<2 - 110	<2 - 110	<2 - 110
	B.l.	-	-	-	-	-	-	3.2	3.2	3.2	-	-	-
Health Mean[3]	B.g.	19	19	19	-	-	-	15	17	15.7	14	12.5	15
	E.m.	13.3	12.6	15.7	10.8	12.2	19	14.8	13.3	16.25	14	14	19
	C.c.	15.1	16	16.7	13.9	12.2	17.7	14.1	15.3	16.9	14.5	15.5	16.9
	B.l.	-	-	-	-	-	-	20	21	13	-	-	-
Health Range	B.g.	19	19	19	-	-	-	13 - 17	17	15-17	11-17	9-16	15
	E.m.	0 - 17	0 - 19	10-19	0 - 18	0 - 18	17-21	9-21	4-19	6-21	14	14	19
	C.c.	13 - 19	13 - 19	15-19	11-18	11-19	15-21	14 - 15	14 - 17	15-21	13 - 17	11 - 23	12-21
	B.l.	-	-	-	-	-	-	20	21	13	-	-	-
Density[4]	B.g.	1	-	-	-	-	-	2	2	3	2	2	1
	E.m.	12	12	10	5	5	3	8	8	8	1	1	1
	C.c.	9	9	6	23	23	13	7 (12)	7	18	15	15	14
	B.l.	-	-	-	-	-	-	1	1	1	-	-	-

[1]Overstorey species – B.l. = *Banksia littoralis;* C.c. = *Corymbia calophylla*; E.m.= *Eucalyptus marginata*; B.g. = *Banksia grandis*
[2]Diameter Range is the range in individual stem diameters (cm) at breast height (1.3m).
[3]Mean health rating for all overstorey species.
[4]Density is number of trees in each plot.

Table 19: Blackwood River Crossing terrestrial - summary of understorey data (all plots are 5 x 5m).

Plot	A1			A2			B1			B2			C1			C2			D1			D2		
Year	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09	05	06	09
No. species	28	35	37	29	32	36	37	39	40	30	30	33	35	39	41	29	30	37	33	36	45	31	36	45
No. exotics	-	-	0	-	-	0	-	0	0	-	0	0	-	1	1	-	0	0	1	1	1	-	1	1
Weediness index	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0.04	0.03	0	0	0.00	0.05	0.04	0.03	0	0.04	0.03

References

Bunn, S. E., Boon, P. I., Brock, M. A., & Schofield, N. J. (1997). National wetlands R & D program: scoping review. Canberra: Land and Water Resources Research and Development Corporation.

Del Borrello, N. (2008). *Management Triggers andResponses. Groundwater Dependent Ecosystems of the South West Groundwater Areas. DRAFT.* Department of Water.

Finlayson, C. M. (2003). The challenge of integrating wetland inventory, assessment and monitoring. Aquatic Conservation. *Marine and Freshwater Ecosystems, 13*, 281-286.

Finlayson, C. M., & Mitchell, D. S. (1999). Australian Wetlands: the Monitoring Challenge. *Wetlands Ecology and Management, 7*, 105-112.

Froend, R. H., & Loomes, R. C. (2006a). *Determination of Ecological Water Requirements for Wetland and Terrestrial Vegetation - Southern Blackwood and Eastern Scott Coastal Plain. A report to the Department of Water.* Joondalup: (CEM report no. 2005-07). Centre for Ecosystem Management, ECU.

Froend, R. H., & Loomes, R. C. (2006b). *Determination of Ecological Water Requirements of Wetland and Terrestrial Vegetation - Southern Blackwood and Eastern Scott Coastal Plain.* (No. 2005-07). Joondalup: CEM, ECU.

Froend, R. H., & Zencich, S. J. (2002). *Phreatophytic Vegetation and Groundwater Study. Phase 1: Phreatophytic Vegetation Research Review.* (No. 2001-12). Joondalup: ECU, Centre for Ecosystem Management.

Kent, M., & Coker, P. (1992). *Vegetation Description and Analysis: A Practical Approach.* London.: Belhaven Press.

Ladd, P. G. (1996). *Ecology/Ecological Principles - Unit Manual.* Perth.: Murdoch University.

Mattiske Consulting (2004). *Review of the Flora and Vegetation on the South West Yarragadee Project Areas.* A report to the Water Corporation.

Pettit, N., Loomes, R. C., & Froend, R. H. (2007). *Wetland Vegetation Monitoring 2006 - Survey of Gnangara Wetlands* (No. CEM 2007 - 03). Joondalup: Centre for Ecosystem Management. ECU.

V & C Semeniuk Research Group. (2005). *Wetland Mapping, Classification and Evaluation, Southern Blackwood and Eastern Scott Coastal Plain*.

Appendices

Appendix 1: Field data – DBH and canopy condition of overstorey species

1.1 Wetlands

1.1.1 Black Point/ Fouracres Rd								
Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***				
				05	**06**	**07/08**	**08**	**09**
A	*Eucalyptus marginata*	218	9.2	17	18	19	15	NF
		219	22.2	15	17	14	18	7 7 5 -19
		220	6.3	10	15	19	13	7 7 5 -19
		221	30.7	8	8	10	9	3 1 3 – 7
		NT	3.5, 3.2, 4.2	8	8	10	19	5 5 5 -15
		222	19.5, 15.7, <2	14	15	15	15	7 5 5 -17
		223	42	12	10	9	12	3 1 2 -6
		224	41.2	9	10	9	10	3 1 2 -6
	14 seedlings							NF
	Corymbia calophylla	NT	<2, <2, 2.8	-	-	14	15	NF
		NT	3.2, <2, <2	-	-	17	15	5 3 4 -12
		NT	2.5, 2.7	-	-	15	15	NF
B	*Eucalyptus marginata*	225	1.5, 4.6	15	15	19	20	5 3 4 -12
	2 seedlings							NF
C	*Melaleuca preissiana*	226	10	9	9	11	11	3 3 5 -11
		227	28.7	9	11	15	12	3 3 4 -10
		228	8.4, 46.5, 18.3	13	14	17	11	5 3 4 -12
		229	11, 5.9	7	9	15	8	3 3 4 -10
		NT	<2	-	-	19	17	NF
	Eucalyptus marginata	NT	<2, <2	-	-	12	9	5 7 5 -17
	2 seedlings							NF
D	*Melaleuca preissiana*	230	6.4	7	7	15	11	NF
		231	7.3, 6.3, 4.7, 4, <2	9	9	15	11	5 3 5 – 13
		232	20.8, 23, 14.2, <2, <2, 8	13	13	17	13	5 3 5 -13
		233	21.3, 6.7, 11.5, 20, 20.3	13	14	19	13	7 3 4 -14
		234	14.2, <2	12	12	19	15	7 5 5 -17
		NT	3.8				17	7 5 5 -17
	6 saplings	NT	<2				10	7 7 5 -19

1.1.2 Milyeanup							
Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***			
				05	**06**	**08**	**09**
A	*Banksia littoralis*	NT	<2	15	15	17	NF
		NT	<2	15	15	19	9 7 5 -21
	Eucalyptus rudis	597	35, 18.5	5	4	7	0 1 3 -4
		598	<2,<2, <2	3	3	3	NF
		599	28.6	5	3	5	0 0 2 -2
		NT	<2, ,2	3	3	10	NF
		600	22.4, <2	3	3	3	0 0 2 -2
		NT	<2	12	12	7	NF
		NT	<2	12	12	7	NF
		601	3.8, <2, <2, 35	9	3	3	3 0 3 -6
		602	29.3	12	15	19	9 7 5 -21
		603	31.5	12	15	16	7 5 5 -17
		604	3	14	13	11	5 3 5 -13
		605	16.1	14	13	16	7 7 5 -19
		NT	<2	14	13	15	NF
		606	34.7, 17.3, 36.3	14	11	19	19
		NT	<2			15	NF
B	*No Trees*						
C	*Corymbia calophylla*	607	74.6	16	13	19	5 3 3 -11
		609	6.3	13	15	17	7 7 5 -19
		612	78.8	17	16	16	7 3 5 -15
		632	3, <2	12	17	17	7 7 5 -19
		NT	<2	12	12	19	NF
		NT	<2	12	12	Dead	
		NT	<2	12	12	15	NF
		615	7.3, 8.1, 3.5	14	14	19	7 7 5 -19
		NT	4.2, ,2	16	16	21	NF
		633	3	12	12	20	9 7 5 -21
		NT	<2	12	12	7	NF
		NT	<2	12	12	13	5 3 5 -13
		NT	<2	12	12	15	NF
		614	9	12	15	13	5 3 5 -13
		611	5.7	11	11	11	7 3 5 -15
		616	18	13	19	15	9 7 5 -21
		610	2	10	5	9	5 5 5 -15
		617 (NT)	15.5	15	14	18	9 5 5 -19
		618	7	13	10	13	5 3 5 -13
		619	14.5	12	17	17	7 5 5 -17
		620	11.5	13	14	15	7 7 5 -19
		621 (NT)	14.8	12	15	17	9 7 5 -21
		622	10	11	15	9	7 5 5 -17
		623	8	11	15	13	9 7 5 -21
		624	7.8	13	15	12	9 7 4-20
		625	16.9	16	19	19	7 7 5 -19

		626	13.5	17	19	19	9 7 5 -21
		627	11.7	14	17	19	7 7 5 -19
		NT	3			11	5 3 5 -13
	Eucalyptus marginata	613	15, 11.5	15	18	19	9 7 5 -21
		608	12.7, 15.1	16	17	21	995-23
		NT	<2	12	12	17	NF
		NT	<2	12	12	15	NF
		NT	<2	12	12	12	NF
		NT	<2	12	12	15	NF
		NT	<2	12	12	19	NF
		NT	<2	12	12	17	NF
		NT	<2	12	12	11	NF
		NT	<2	12	12	13	NF
	20+C. calophylla	Seedlings					

1.1.3 Poison Gully

Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***				
				05	**06**	**07/08**	**08**	**09**
A	*Melaleuca preissiana*	381	16, 7, 14.5	9	9	9	7	NF
B	*Melaleuca preissiana*	379	13, 8.5, 7.5	17	17	21	19	7 5 5 -17
		380	8, 8.5, <2, <2, 11, 19	13	15	15	15	5 5 5 -15
	Banksia littoralis	382	13, 8	18	21	21	21	9 7 5 -21

1.1.4 Blackpoint/ Mayall Rd

Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***		
				08	**09**	
A	*Melaleuca preissiana*	983	8.7, 9, 4.1, 3.4, 2, <2, 3.7, <2	19	9 7 5 -21	
		984	6.3, 4.8, 3.1, 6, 4, 6.8, 5.8 ,8.6, 6.5, 9.8, 6.7, 2.6, 3.7, 2.7, <2, <2	21	9 9 5 –23	
		985	12.8, 11.3. 8.5	17	9 7 5 -21	
		986	20, 4, 10.3, 5.3, 9.1, 13.4, 8.3, 3.3, 12.2, 13.8, 12.9, 10.5	19	9 7 5 -21	
	Eucalyptus marginata	987	5.3, 5.3, <2, <2	9	3 1 2 – 6	
		NT	<2	11	3 1 3 -7	

		988	7.1, 5.8, <2	20	9 9 5 -23	
		989	5.7, 7.3, 6.8, 13.5, 4.6	16	7 7 5 -19	
		NT	<2, <2	15		
B	*Eucalyptus marginata*	990	11.9	13	9 7 4 -20	
		NT	2.3	21	NF	
		NT	3.2	12	NF	
		NT	2, <2	17	NF	
		NT	<2	15	NF	
		NT	<2	17	NF	
		NT	<2	15	NF	
		NT	<2	20	NF	
		991	3.5, 2.4	11	NF	
		992	9.7	11	7 7 5 -19	
		993	14.7, 8.4	9	7 5 5 -17	
		994	5.6, <2,<2	9	7 5 5 -17	
		995	9.8, <2	14	7 7 5 -19	
		996	11.8, 11.9	16	9 7 4 -20	
		997	9.1	7	7 5 4 -16	
		998	8	9	7 5 5 -17	
		NT	<2	9	NF	
		NT	<2	10	NF	
		NT	<2	11	NF	
		NT	<2	12	NF	
		NT	<2	13	NF	
		NT	<2	14	NF	
		NT	<2	15	NF	
		NT	<2	16	NF	
		999	<2, <2	6	5 3 4 -12	
		323	<2	6	NF	
		324	4, 4.1	11	7 7 5 -19	
		325	12.5, <2	15	7 7 5 -19	
		NT	<2	5	3 3 5 -11	
		326	3.6	16	5 3 3 -11	
		327	2.3	18	NF	
		328	4	11	5 3 4 -12	
		329	4.5, 8, <2	11	5 5 3 -13	
		330	4.2, 4	13	NF	
		NT	2.8, <2	11	NF	
		NT	<2, <2	9	3 3 3 -9	
		NT	2.2	7	NF	
C	*Eucalyptus marginata*	331	<2, <2, <2, 11.5, 3.4	9	5 3 3 -11	
		332	5, <2	7	9 7 5 -21	
		333	9	15	7 7 5 -19	
		334	5.5	12	7 7 5 -19	
		335	5.5, 3.6	13	9 7 5 -21	
		336	9.5	15	7 7 4 -18	
		337	<2, 12.5	11	7 7 4 -18	
		338	8.5	12	7 7 4 -18	

		339	5.5	15	9 7 5 -21	
		340	5.5	15	7 7 5 -19	
		341	3.5	13	5 5 5 -15	
		342	3.7	17	NF	
		343	<2, 3.7	11	NF	
		344	3.4, 3.3	7	7 5 5 -17	
		345	7.3	9	7 7 5 -19	
		346	5.8	13	9 5 5 -19	
		347	4.1	11	9 7 5 -21	
		348	4, <2	13	7 7 5 -19	
		349	4.5	13	7 7 5 -19	
		NT	1, 3	15	NF	
		NT	<2	9	NF	
		NT	<2	15	NF	
		NT	3.4	15	NF	
		NT	2	13	NF	
		NT	<2	1	NF	
		NT	<2	10	NF	
		350	5.5	15	NF	
		NT	<2	13	NF	
		351	4.4	15	5 7 5 -17	
		352	5.9, <2	12	5 7 5 -17	
		NT	<2	15	NF	
		NT	<2	13	NF	
		353	5,7, <2	14	9 7 5 -21	
		354	3	17	NF	
		NT	<2	12	NF	
		NT	<2	15	NF	
		NT	<2	15	NF	
		NT	<2	9	NF	
		355	3.3	13	7 7 5 -19	
		356	4.5	17	7 7 5 -19	
		357	2.5, 4.2	14	7 7 4 -18	
		358	3.5	16	7 7 3 -17	
		NT	<2	12	NF	
		NT	<2	10	NF	
D	*Eucalyptus marginata*	360	6.3, 6.5, 6.5, 2, <2, <2, 5.4	15	9 7 5 -21	
		361	7.5, 5.5	17	5 5 5 -15	
		NT	<2	18	7 7 5 -19	
		362	12.5, 4.5, 2.3, 14.2	18	7 5 4 -16	
		363	6.2, 3.1	17	5 7 5 -17	
		364	5.3	17	5 7 4 -16	
		365	6, 8.7	15	7 7 5 -19	
		366	12.1, 10.5, 5.4, 12	17	7 5 4 -16	
		367	7.2, 7.9, 6.3, <2	15	7 7 5 -19	
		368	16	14	7 5 4 -16	
		369	3	20	7 7 5 -19	
		370	6	19	7 7 5 -19	

		371	8	3	1 1 1 – 3	
		372	5.6, 2.5	17	7 5 5 -17	
		NT	<2	17	NF	
		373	5.5	19	5 7 4 -19	
		374	4.1	7	NF	
		NT	2.5	15	NF	
		NT	<2, <2	17	NF	
		375	2.4	19	NF	
1.1.5 Stewart Rd (relocated transect)						
Plot	***Species***	**Tag Number**	**DBH**	**Canopy condition**		
				08	**09**	
A	*Melaleuca preissiana*	376	15.7, 17, 12.8, 26, 21.9, 32.3	19	7 7 4 -18	
		377	46.1	19	7 7 3 -17	
		378	8.3, ,2	17	7 7 4 -18	
		379	8.7, 4, 2.9, 5, 3.5, 3.9	19	7 7 5 -19	
B	*No trees*					
C	*Melaleuca preissiana*	380	42.5, 11.4	21	7 7 5 -19	
		381	20.7	17	7 5 5 -17	
		382	7.5, 7.9	15	5 5 5-15	
		383	26.9	14	7 5 3 -15	
		384	38.8	17	7 5 5 -17	
		385	10.5, 14.3	12	3 3 3 -9	
		386	22, 21	19	5 3 3 -11	
		389	8.3, 54	21	9 7 4 -20	
		391	<2, <2, 4.5, 16, 4.7, 10.5, 6.7		NF	
		NT	2.3	14		
		394	14.1	13	7 3 4 -14	
		216	27.9	19	7 5 5 -17	
		217	30	16	5 5 5 -15	
		NT	<2, <2, <2	23	NF	
		220	15	17	5 5 5 -15	
		221	8.5	17	7 5 5 -17	
		222	7.1	17	5 3 5 -13	
		223	20, 27.4	18	7 7 5 -19	
	Eucalyptus marginata	387	46.4	22	7 7 3 -17	
		390	28.4, 9.8	20	7 7 4 -20	
		392	28.9	16	5 5 4 -14	
		NT	<2, <2, <2, <2	21	9 7 5 -21	
		395	18.8	17	7 5 5 -17	
		396	<2, <2, 15.7	10	3 3 5 -11	
		397	14.7, <2, <2	10	3 3 4 -10	

		398	<2, <2, 15.5	12	5 3 5 -13	
		NT	<2, <2	17	5 5 5 -15	
		NT	4.7	10	3 3 5 -11	
		399	10.2, 19, 20.3	12	5 3 5 -13	
	Corymbia calophylla	388	17.2	15	7 7 5 -19	
		393	18.8	16	5 5 4 -14	
		400	33	17	7 7 5 -19	
		218	26.1	13	5 3 5 -13	
		219	17.3	18	7 7 5 -17	
D	*Melaleuca preissiana*	224	53.5	19	7 5 4 –16	
		225	<2, 32.5	16	3 1 1 – 5	
		226	29.3	17	5 3 4 -12	
		233	41, 9	12	5 3 3 -11	
		234	48.1, 4.5, 5	18	7 7 4 -18	
		NT	<2	16	NF	
		248	36.8	21	7 7 5 -19	
		NT	<2, <2, <2	21	NF	
	Eucalyptus marginata	227	35	19	7 7 5 -19	
		230	13.2, 2.4, 14.3	18	9 7 5 -21	
		NT	<2, <2	23	NF	
		NT	<2, <2	21	NF	
		NT	<2, <2, <2, <2	19	NF	
		NT	<2, <2, 3	23	NF	
		NT	<2	19	NF	
		NT	<2	19	NF	
		231	4.8, 26, <2	20	7 7 3 -17	
		NT	<2, <2	21	NF	
		323	16.7, 13.8	18	7 5 3 -15	
		NT	<2	19	NF	
		NT	<2	19	NF	
		NT	<2	21	NF	
		NT	<2	21	NF	
		236	9.4	16	NF	
		NT	<2, 4.9	16	NF	
		237	10	16	5 5 4 -14	
		240	23.5	20	9 7 5 -21	
		241	9	12	3 1 3- 7	
		242	10, <2, 28.8	21	7 7 5 -19	
		NT	<2, <2	20	NF	
		NT	<2, 8.2	19	NF	
		NT	<2	19	NF	
		NT	<2	19	NF	
		243	20, 11.4	20	7 7 5 -19	
		NT	11.8	18	NF	

		244	18.2	18	7 5 5 -17	
		NT	6.7	15	NF	
		NT	2.7	17	NF	
		NT	9.6	13	NF	
		245	8.5, 27	16	5 3 3 -11	
		NT	<2	15	NF	
		NT	<2	15	NF	
		NT	<2, <2, 7, 7.3	17	NF	
		NT	7.6	21	NF	
		NT	<2, <2, <2, <2, <2	15	NF	
		260	9.3, 10.6, 9.6	21	NF	
		NT	<2	23	NF	
		NT	<2	21	NF	
		246	8.6	15	7 5 4 -16	
		NT	8.2	14	NF	
		NT	2.9	19	NF	
		249	30.8	21	9 7 5 -21	
		250	21.1, <2, <2, <2	20	9 7 5 -21	
		258	16.7, <2, <2, <2, <2	20	9 7 4 -20	
		259	21.3	21	7 3 3 -13	
		NT	<2	19	NF	
		NT	<2	17	NF	
		NT	<2	15	NF	
	Corymbia calophylla	228	20.6	20	9 7 4 -20	
		229	26.8	16	NF	
		235	34.2	18	NF	
		238	7.8	17	7 7 5 -19	
		239	17.2	9	5 3 4 -12	
		261	14.5	19	NF	
		247	13.7	19	NF	
		NT	8, 7.3	13	NF	
		NT	<2	3	NF	
	Banksia littoralis	NT	<2	23	NF	
		NT	<2	21	NF	

1.1.6 Adelaide Rd (Upper Margaret)

Plot	***Species***	**Tag Number**	**DBH**	**Canopy condition**		
				07/08	**08**	**09**
A	*Corymbia calophylla*	598	16.9	13	13	7 3 5 -15
		599	27.3	15	15	7 3 5 -15
		NT	<2, <2, <2, <2, <2	21	21	7 5 5 -17
	16 seedlings 4 saplings					

	Melaleuca preissiana	600	22.2, 9.0, 4.9, 6.8, 5.2, 3.0, 3.0, 3.0	19	19	7 5 5 –17
		958	9.9, 6.0	15	15	5 5 5 -15
		959	9.3	13	11	5 3 5 -13
		NT	<2, <2, <2, <2	13	15	5 3 5 -13
		960	12.0, 8.8	13	11	5 3 5 -13
		961	10.5	13	13	5 5 5 –15
		NT	2.2	13	13	7 5 5 -17
		962	13.6, 9.7	15	13	5 3 4 -12
		963	28.9, 12.4, 4.4, 6.1, 2.4, 3.0, 4.1, 6.7	19	17	5 5 5 -15
B	*Melaleuca preissiana*	964	45.8, 26.5	17	17	5 3 5 -13
		965	10.0, 6.0, 3.4	13	13	3 3 5 -11
		NT	<2, <2, <2	15	13	NF
		NT	<2, <2, <2		11	NF
		NT	<2, <2		15	NF
	Eucalyptus marginata 4 saplings					
C	*Melaleuca preissiana*	966	7.5, 2.8, 4.1, 7.4, 15.5, 16.2, 7.8, 3.0, <2, <2, 6.5, 5.0	15	13	5 1 5 -11
		NT	<2, <2	13	15	NF
		967	12.6, 5.3, 6.6, 10.6, 14.3	15	15	5 3 5 -13
		968	25.0	15	15	5 3 5 -13
D	*Melaleuca preissiana*	969	13.2	17	17	5 5 5 -15
		970	9.5	17	19	NF

1.1.7 Dennis Rd (Scott Nth)

Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***		
				07/08	**08**	**09**
A	*Corymbia calophylla*	569	7, 5, 6.1, 7.5	21	21	9 7 5-21
		NT	<2	17	21	7 7 5-19
		NT	<2	15	19	7 7 5-17
		NT	<2	15	15	5 7 5-17
		NT	<2	15	15	5 5 5-15
		570	7.9	21	21	7 7 5-19
		571	8.5	21	19	7 7 5-19
	16 seedlings 2 saplings					
	Melaleuca	572	35.4, 31.0	19	21	9 7 5-21

	preissiana					
	Banksia littoralis	NT	<2, <2	23	21	9 7 5-21
B	*Melaleuca preissiana*	573	17.5, 11.1, 16.4, 22.3, 18.9, 16.0	17	19	7 5 5-17
	Banksia littoralis	574	12.3, 3	23	19	7 5 5-17
C	*Melaleuca preissiana*	575	11.8, 7.5, 8.1, 13.7, 11.8, 10.2, 10.5	15	11	5 5 3-13
D	*Melaleuca preissiana*	576	18.5, 5.5, 21.8, 11.5, 3.7, 4.6	21	21	9 7 5-21
		NT	<2, <2	23	21	NF
		NT	<2	23	19	NF
	Banksia littoralis	NT	4.2	23	13	NF
1.1.8 Reedia North						
Plot	***Species***	**Tag Number**	**DBH**	**Canopy condition**		
				07/08	**08**	**09**
A	*Eucalyptus marginata*	530	60.7	9	11	5 3 4 -12
		531	102.0	10	13	5 5 4 -14
		532	36.0	4	4	1 3 2 -6
		533	47.4	9	9	3 3 1 -7
		534	9.8	14	15	5 5 4 -14
		NT	<2	13	13	NF
		NT	<2	11	10	NF
		NT	<2	13	11	NF
		NT	<2	13	19	NF
	13 seedlings					
	Banksia littoralis	NT	<2, <2	23	3	Dead
	C. calophylla 8 seedlings					
	Allocasuarina fraseriana	653	36, 14, 9.5			5 3 5 -13
		654	24			3 3 4 -10
		655	61, 8			5 5 5 -15
		656	7			9 7 5 -21
		657	7, 2, 6, 5			7 5 5 -17
		658	12.5, 11.6			7 5 4 -16
		659	13.3, 6.5, 4			5 7 3 -15
		660	13, 5.8, 13, 9.4			5 7 3 -15
		661	8.5, 4.5			7 7 4 -18
		662	32.6			5 5 3 -13
		663	11.6, <2			5 7 4- 16
B	*Corymbia calophylla*	NT	3.8, 2.7	21	21	7 7 5 -19

		NT	2.4, 2.1	23	23	NF
	2 seedlings 1 sapling				16	
C	*Eucalyptus marginata*	NT	<2	13	16	7 5 4 -16
	Corymbia calophylla	NT	37.8		5	3 3 2 -8
	C.calophylla 6 seedlings				15	
D	*Eucalyptus marginata*	535	35.6	9	11	5 5 3 -13
		536	68.7	6	7	3 3 2 -8
		NT	<2	13	15	5 5 5 -15
		NT	<2	13	13	5 5 4 -14
		537	7.8, 9.1, 11.2	12	11	5 3 3 -11
		540	23.3, 39.6	15	15	5 3 3 -11
		NT	29		7	3 3 3 -9
		NT	7.8, 9.1, 44.7		11	3 3 3 –9
	76 seedlings 8 saplings					
	Corymbia calophylla	539	41.4	15	9	3 3 3 -9
		541	68.0	7	9	5 5 3 -13
	19 seedlings					

1.1.9 Reedia South

Plot	***Species***	**Tag Number**	**DBH**	**Canopy condition**		
				07/08	**08**	**09**
A	*Eucalyptus marginata*	542	8.3, 6.1	19	19	7 5 4-16
		538	8.7	19	19	7 7 5- 19
		543	16.6	21	21	7 7 5 -21
		544	13	20	21	7 7 4 -20
		545	8.4	21	21	7 5 5 -17
		546	9.5	21	21	7 7 5 -21
		552	13	18	18	5 7 4 -16
		551	7.3	13	11	5 5 5 -15
		550	8.5	11	9	5 5 3 -13
		549	5.1	15	17	5 5 5 –15
		548	7.8	21	19	7 5 5 –17
		553	6.8	15	15	5 5 5 -15
		554	20.5, 15.7	11	11	5 3 4 -12
		555	14.4, 102	11	11	5 3 3 -11
		561	8.5, 8.1	13	11	7 5 3 –15
		560	9.5	12	11	7 7 3 – 7
		562	<2, <2, <2	19	19	7 7 5 –19
		NT	<2, <2		19	NF
	59 seedlings, 3 saplings					
	Corymbia calophylla	547	5.6	17	19	7 7 4 -18
	11 seedlings					
	Eucalyptus	556	46.4	17	15	7 5 4 -16

	megacarpa					
		557	40.5	21	21	7 7 5 -21
		558	42.7	11	10	5 3 3 -11
		559	39.7	17	21	9 7 5 -21
	4 seedlings					
	Allocasuarina fraseriana	664	52.1, 22.4, 66.3			7 7 5 -19
		665	50.6			7 5 4 -16
		666	17			5 5 4 -14
		667	34.8, 14			7 5 3 -17
		668	61.2			7 7 5 -19
B	*Eucalyptus marginata*	563	18.8	7	9	4 5 3 -12
		564	9.6	13	13	5 5 4 -14
	22 seedlings, 1 sapling					
	Eucalyptus megacarpa	NT	3.5	17	17	
		NT	<2	15	17	7 5 5 -17
		NT	<2	15	15	5 5 5 -15
		NT	<2	15	15	7 7 3 -17
		565	9.6	15	15	7 5 5 –17
		566	3, 38.4, 8.8	19	19	7 5 3 – 5
	6 seedlings, 2 saplings					
	C.calophylla 8 seedlings					
	Allocasuarina fraseriana.	NT				7 5 5 -17
C	*No trees*					
D	*Eucalyptus megacarpa*	567	16.8, 2.3, 6.4	16	17	7 7 4 -18
		568	4	19	19	NF
	2 seedlings					

1.1.10 Scott River Rd (Scott Sth)

Plot	***Species***	**Tag Number**	**DBH**	**Canopy condition**		
				07/08	**08**	**09**
A	*Eucalyptus marginata*	577	20.1, 15.5	17	19	7 5 4 -16
		581	11.7, 12.2	19	21	7 5 5 -17
		582	10.3	19	21	7 5 4 -16
		583	9.8	15	17	5 5 5 -15
		584	6.8	10	11	3 5 4 -12
		585	31.0	15	13	7 3 5 -15
		586	32.5, 13.4, 15.2	17	18	7 5 4 -16
		593	13.3, 10.7	20	21	9 7 3 -19
	Melaleuca preissiana	578	14.1	13	13	5 5 5 -15
		579	14.0	15	15	5 3 5 -13
		580	9.5	17	17	7 5 5 -17

		594	9.8, 7.8, 10.2, 3.0, <2, <2, <2, 5.6, 7.6, 6.8, 6.2, <2, 3.5, 3.3, 4.2, 3.4, 3.3, <2, 4.6, <2, 7.0	21	19	7 5 5 -17
B	*Eucalyptus marginata*	587	13.0	5	3	1 1 2 -4
		588	11.9	12	13	5 5 4 -14
		592	14.4	17	19	7 7 5 -19
		596	7.3, 4.0	19	17	7 5 4 -16
	11 seedlings 1 sapling					
	Corymbia calophylla	589	17.9	7	9	3 3 4 -10
		590	10.2	7	9	3 3 4 -10
		591	7.3	7	7	3 3 4 -10
	Melaleuca preissiana	595	21.0, 20.0, 15.3, 16.5, 4.7, 19.0, 18.8, 18.6, 11.0, 13.7, 9.4	18	18	7 5 5 -17
C	*No trees*					
D	*Melaleuca preissiana*	597	19.5, 15.0, 14.9, 22.1, 12.0, 6.8, 11.0, 17.0, 10.0, 7.1, 7.8, 10.2, 5.7, 7.5, 13.3, 27.5, 14.3, 28.4, 14.8, 6.5, 10.0, 8.3, 9.7, 14.0, 15.2, 18.0, 9.7, 10.0, 5.7	19	17	7 5 5 -17

1.1.11 Lake Jasper - east

Plot	***Species***	**Tag Number**	**DBH**	**Canopy condition**			
				05	**06**	**07/08**	**09**
A	*No trees*						
B	*Melaleuca preissiana*	601	104.0	16	16	17	7 5 5 -17
		602	100.0, 9.0	17	16	18	9 5 5 -19
		NT	<2.0	18	18	15	
		606	8.7	12	10	15	3 3 5 -11
	Banksia littoralis	603	10.3	19	15	21	7 5 5 -17

	Eucalyptus megacarpa	604	79.4	12	11	16	7 5 5 -17
		605	43.8	11	11	12	3 3 5 -11
C	*Banksia littoralis*	609	18	18	19	21	9 7 5 -21
	Eucalyptus megacarpa	607	37.4	13	13	17	7 7 5 -19
		608	46.4	16	9	19	7 5 5 -17
		610	25, 3, 3, 3, 3	13	9	13	NF
		NT	3, 3, 3, 3, 3, 3	-	-	9	NF
		NT	8				3 5 5 -13
		NT					9 5 5 -19
							7 5 5 -17
D	*Eucalyptus megacarpa*	611	45.1	10	9	13	7 3 5 -15
		619	7.5, <2,c 4.2, 4.5, 5.5	16	10	21	9 5 5 -19
		NT	4, 3	-	-	17	NF
		NT	2.5	-	-	21	NF
		NT	8				7 7 5 -19
	Banksia attenuata	NT	<2.0	16	16	21	NF
		612	25.3	16	15	21	7 5 5 -17
		613	13.4, 13.3	18	13	21	9 5 5 -19
		NT	<2.0	17	17	21	7 9 5-21
		NT	<2.0	16	16	21	NF
		NT	<2.0	17	17	21	3 1 4 -8
		614	7.4	16	6	15	5 1 5 -11
		615	24.0	19	17	21	9 5 5 -19
		616	23.8, 29.8	17	20	20	9 7 5 -21
		617	10	14	13	15	5 5 5 -15
		618	20.0	13	9	21	9 3 5 -17
		NT	<2.0	16	16	9	7 7 4 -18
		NT	<2.0	16	16	13	NF
		NT	<2.0	16	16	13	NF

1.1.12 Jangardup Road

Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***		
				06	**07**	**09**
A	*Eucalyptus marginata*	264	11.4	12	12	9 7 5 -21
		265	7.4	12	13	9 7 5 -21
		266	10.6, 13.0	12	12	9 7 5 -21
		267	14.5, 7.8	13	13	7 9 5 -21
		268	7.6	13	14	7 7 5 -19
		269	7.2	12	12	7 7 5 -19
		270	9.5	12	12	7 7 5 -19
		271	8.5	13	13	7 5 5 -17
		272	4.4	14	14	7 7 5 -19
		273	8.5	9	10	2 3 5 -10
		NT	3.4	14	14	NF

B	*Eucalyptus marginata*	NT	3.0	13	11	NF
		274	8.0, 8.2	14	15	5 5 5 -15
		275	9.0 , 8.0, 10.0, 4.0	15	16	7 7 5 -19
		NT	<2.0	12	12	
		276	10.0, 9.2, 6.0	15	16	5 3 5 -13
C	*Melaleuca preissiana*	26	12.0, 13.0, 6.0, 10.0, 5.0, 12.0, 13.0	8	8	5 3 4 -12
D	*No Trees*					

1.1.13 Black Point Rd – dunes

Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***		
				06	**07**	**09**
A	*Melaleuca preissiana*	872	13.6	14	14	755-17
		873	19.0	14	14	555-15
		874	8.2	12	12	335-11
		875	18.9	14	14	755-17
		876	15.3, 27.6	14	14	335-11
		877	26.0	15	15	555-15
		878	12.0	11	13	333-9
		879	28.1, 20.5	14	14	734-14
		880	28.8	14	14	535-13
		881	31.4	15	16	555-15
		882	11.3	10	10	535-13
		883	9.5	10	10	NF
		884	10.5	7	7	312-6
		885	15.5	10	10	535-13
		886	26.6, 31.1	12	12	734-14
		887	21.8, 10.6	14	14	734-14
		888	37.0, 27.3	16	16	755-17
		889	14.6	10	10	555-15
		890	24.5, 18.1	12	12	554-14
		891	8.5, 21.1	12	14	NF
		892	9.5	10	11	734-14
		893	18.6	12	13	NF
		894	17.8	12	13	555-15
		895	20.8	13	13	535-13
		896	21.5	13	13	535-13
		897	21.0	15	15	555-15
		898	7.5	10	10	334-10
		899	17.8, 14.1	14	15	534-12
		900	17.3	14	14	555-15
		901	21.0	15	14	554-14
		902	21.5	16	16	555-15
		903	13.7, 21.5	15	15	332-8
		904	9.8, 36.0	16	16	533-11
		905	12.6	13	13	533-11
		906	28.5	15	15	NF

		907	16.5, 4.8, 2.5, 2.6, 2.4	12	12	534-12
		908	18.8	13	13	534-12
		909	13.5, 15.7, 19.0	17	17	754-16
		910	14.5	5	5	NF
		911	44.2	15	15	754-16
		912	18.5	14	14	553-13
		913	24.8, 22.0, 30.8	17	17	755-17
B	*Melaleuca preissiana*	914	38.1, 41.8	18	18	774-18
		915	20.4, 15.8	15	15	774-18
		916	30.0, 32.0	17	19	
		917	22.5, 64.0	18	18	774-18
		918	37.6	9	9	312-6
		919	42.8, 7.7	16	16	734-14
C	*Banksia littoralis*	NT	<2.0	18	18	DEAD
	Melaleuca preissiana	920	30.2	18	18	975-21
		921	33.8	16	16	955-19
		922	13.0	15	15	NF
		923	25.3	17	17	975-21
		924	16.4, 6.2	14	14	754-16
		925	17.8	12	12	554-14
		926	21.3	15	15	755-17
		927	14.5	11	13	535-13
		928	18.0	14	14	555-15
		929	33.8	17	17	755-17
		930	32.8, 28.5	17	17	755-17
		931	20.5	13	16	NF
		932	23.5	15	15	NF
D	*Melaleuca preissiana*	933	38.2	17	17	753-15
		934	28.6	13	13	734-14
		935	23.0, 32.5	18	18	954-18
	B. littoralis	NT				995-23
1.1.14 Darradup Rd - East						
Plot	***Species***	**Tag Number**	**DBH**	**Canopy condition**		
				06	**07**	**09**
A	*Melaleuca preissiana*	1	10.9, 12.3, 3.7, 9.4	18	12	7 5 5 -17
		2	6.7, 7.2, 15.3	18	12	5 3 5 -13
	Eucalyptus marginata	3	1.2	16	21	7 5 5 -17
		4	7.0, 4.4, 4.6	16	19	5 3 2 -10
		5	8.9, 4.1, 9.2, 5.2, 5.5	16	19	5 3 2 -10
		NT	<2.0	16	16	Dead

		NT	<2.0	16	16	NF
B	*Melaleuca preissiana*	6	18.2, 16.1	12	9	3 1 4 -8
		7	35.2, 27.8, 26.7	12	15	5 3 4 -12
		8	2.5	9	7	0 0 2 -2
		9	3.0	9	8	0 0 2 -2
	Eucalyptus marginata	10	5.0	13	19	1 1 2 -4
		NT	<2.0	16	17	0 0 2 -2
		NT	<2.0	16	17	Dead
		NT	<2.0	16	17	NF
		NT	<2.0	16	17	NF
		11	9.3	16	18	1 0 2 -3
		12	8.0	16	18	1 1 2 -4
		13	6.1	16	18	0 0 2 -2
C	*Melaleuca preissiana*	14	12.6	11	12	3 3 3 -9
		15	3.8	9	9	3 1 1 – 5
		16	27.8, 7.9, 3.5, 5.5, 4.5	13	10	0 0 2 – 2
		17	11.7, 10.0, 8.3, 13.8, 8.3	12	9	3 1 4 -8
		18	7.0, 4.4, 2.7, 5.0, 6.7, 5.2	13	11	3 1 3 -7
D	*Melaleuca preissiana*	19	43.8, 27.8	7	5	1 1 1 -3
		20	2.8, 2.0, 10.5	7	7	0 0 2 -2
		21	5.0	11	13	NF
		22	9.0	9	13	NF
		23	8.0, 5.5	11	13	3 1 4 -8
		24	25.3, 12.3, 8.3, 8.5, 7.8, 8.0	13	11	1 1 1 -3
		NT	<2.0	9	11	NF
		25	2.0, 2.5, <2.0, <2.0	9	11	0 0 2 -2
1.1.15 Blackwood River Crossing – Longbottom Rd						
Plot	***Species***	**Tag Number**	**DBH**	**Canopy condition**		
				06	**07**	**09**
A	*Melaleuca preissiana*	585	12.6	9	10	5 3 4 -12
		590	41.2, 58.0, 7.5, 9.9, 4.8, 9.2, 3.6, 9.3, 7.8, 5.3	17	17	7 5 5 -17
		591	86.2	12	13	7 3 5 -15
Seedlings B. grandis – 1						

B	*Melaleuca preissiana*	593	30.0, 10.8, 46.0, 20.5, 19.1	14	18	7 5 5 -17
C	*Melaleuca preissiana*	596	10.7, 8.0, 5.0, 9.9, 7.5, 6.0, 7.0	11	15	5 5 4 -14
D	*No Trees*					
Distribution P. ellipticum 0 – 80 m; M. preissiana 5 – 55 m						

1.2 Terrestrial sites

1.2.1 Jack Track

Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***			
				05	**06**	**08**	**09**
A	*Eucalyptus marginata*	521	14.2	17	17	15	9 7 5 -21
B	*Eucalyptus marginata*	522	8.4	15	15	15	NF
		523	24, 23, 7, 55.7	19	18	13	7 3 5 -15
		NT	<2, <2	15	15	15	NF
		NT	<2			8	NF
		NT	<2			13	NF
		NT	4.7			19	9 7 5 -21
		NT	2.6			17	7 7 5 -19
		NT	3			21	NF
	9 saplings						
C	*Eucalyptus marginata*	524	59.4, 8.8, 8.7, 12.2, 59.6, 10.3	19	19	15	5 5 5 -15
		525	26.3	15	17	17	5 5 5 -15
		526	41.5, 41.2	19	19	19	5 5 5 -15
		527	70.7, 7.2, 21	19	19	16	7 5 5 -17
		528	49.3	17	17	19	7 5 5 -17
		NT	3.5, <2	16	15	13	
		NT	<2			17	3 5 5 -13
		NT	<2			17	3 5 5 -13
		529	22.2, 23.3, 27.9, 29.8	19	17	16	5 3 5 -13
D	*Eucalyptus marginata*	530	8.5	13	13	9	5 5 5 -15
		531	11.6, 7	18	19	17	7 7 5 -19
		532	9.6	18	18	13	7 5 5 -17
		533	5.7	14	15	11	3 3 4 -10
		534	4.1	13	11	8	3 1 4 -8
		535	20.6, 10.8	19	20	17	7 5 5 -17
		536	8.9	15	16	15	5 5 5 -15
		537	11, 11.3, 13.5	19	18	19	9 7 5 -21
		538	5.4, 7.1, <2, <2	18	18	19	9 7 5 -21
		539	9.9	11	11	11	9 5 5 -19
		540	5.5, 10.1	17	17	15	7 5 5 -17
		NT	<2			19	7 7 5 -19
		NT	<2			15	NF
		NT	<2			19	NF
		NT	<2			17	NF

		NT	<2			13	NF
		NT	<2			15	NF
		NT	<2			17	NF
	2 resprouters						

1.2.2 Milyeanup

Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***			
				05	**06**	**08**	**09**
A	*Banksia grandis*	635	5.6,3.5	17	19	21	9 7 5 -21
		NT	<2	11	11	19	NF
		642	4.1, 3.1	18	19	21	9 7 5 -21
		NT	<2	17	17	19	NF
		NT	<2	13	13	19	NF
		NT	<2	15	15	17	NF
		646 (NT)	3.4, ,2	14	13	19	5 7 5 -17
		NT	4.1, <2			19	5 7 5 -17
		NT	3.6, <2			19	
		636	8	14	19	19	9 7 5 -21
		647	2.5, <2	12	9	19	5 7 5 -17
		648	5, 6.1	17	19	19	7 7 5 -19
		NT	2.2	14	14	19	NF
		NT	<2	16	16	19	NF
		NT	2.2, 2.1	18	18	21	NF
		649	4, ,2	17	17	23	7 7 5 -19
		NT	<2	11	11	15	NF
		NT	<2	11	11	17	NF
	Banksia littoralis	643	10	21	21	23	9 9 5 -23
	Corymbia calophylla	628	7.3	15	15	15	5 5 5 -15
		629	8	15	17	17	9 7 5 -21
		630	13.5	16	19	19	7 7 5 -17
		632	24.3	18	20	21	9 7 5 -21
		633	12	15	15	15	7 7 5 -19
		634	8	16	19	19	7 7 5 -19
		NT	<2	16	16	17	NF
		NT	<2	16	16	15	NF
		NT	<2	16	16	19	NF
		NT	<2			15	NF
		NT	<2			15	NF
		641	7.5, 9.5	17	19	21	9 7 5 -21
		644	10.8	21	21	19	7 7 5 -19
		645	10.9	16	21	21	9 9 5 -23
		NT	<2	18	18	17	NF
	Eucalyptus marginata	631	14, 21.5, <2	17	20	18	7 7 5 -19
		637	15, 11.8	17	21	20	7 7 5 -19
		638	12.1	15	19	15	9 9 5 -23

		639	11.1, 13.2, 18.3, 23, 16.4, 4.6, 15.1, 27.3, 13.8	16	19	23	9 7 5 -21
		NT	<2	17	17	19	NF
		NT	<2	16	16	21	NF
		NT	<2	16	16	17	NF
		NT	3.7	14	14	16	NF
		NT	2.5	17	17	19	NF
		NT	3.2	17	17	21	NF
		NT	<2	17	17	17	NF
		NT	3.3	17	17	21	NF
		650	16.5, 16.1, 61.2	20	19	21	7 7 5 – 19
B	*Banksia grandis*	651	11.8	17	19	19	9 7 5 -21
		652	7.1	17	17	19	7 7 5 -19
		653	13.3	17	19	19	7 7 5 -19
		656	8.7, 6	17	15	21	9 7 5 -21
		659	6.4	14	19	21	9 7 5 -21
		NT	2, 2, <2	12	12	19	NF
		NT	<2	15	15	21	NF
		NT	<2	13	13	21	NF
		NT	3			19	NF
		663	6.2	14	19	17	7 7 5 -19
		667	15	17	17	15	5 5 5 -15
		668	11.7	17	17	19	7 7 5 -19
		669	12.3	17	17	21	7 7 5 -19
		670	12.4, 9	17	19	23	9 7 5 -21
		671	9.3, 14.2, 9.8	18	19	21	7 7 5 -19
		672	5.2	16	14	17	NF
		NT	4.1	16	19	21	NF
		NT	4.5, 3.4	16	17	19	NF
	Corymbia calophylla	654	10.8	17	21	19	7 7 5 -19
		655	4, 2.2	14	15	19	7 7 5 -19
		660 (NT)	13.8	15	21	17	NF
		661	12.3	15	19	19	7 7 5 -19
		NT	2.2	15	15	19	NF
		NT	<2	18	18	18	NF
		NT	<2	14	14	15	NF
		NT	3.2	14	10	13	NF
		673	6.6, 2.3	16	19	21	NF
		NT	<2	14	17	17	NF
	Eucalyptus marginata	657	71.6, 3.5	13	12	13	7 3 5 -15
		658	13.3, 47.8	13	13	19	7 3 4 -14
		662	53.3	17	13	19	NF
		NT	<2	14	15	19	NF

		664	66	16	13	13	5 3 3 -11
		665	35.1, 13.2, 8.3	15	14	16	7 5 4 -16
		666	120	14	13	13	3 3 3 -9
C	*Banksia grandis*	674	<2, <2, <2, <2, <2	15	9	15	7 3 5 -15
		678	6.8, 6	13	15	15	5 5 5 -15
		NT	<2	14	14	17	NF
		NT	<2	11	11	19	NF
		686	Dead	9	Dead	dead	
		687	Dead	15	15	Dead	
		NT	<2	13	15	19	NF
		NT	<2	13	13	21	NF
		NT	<2	15	15	16	NF
	Corymbia calophylla	675	7.1	13	19	17	7 7 5 -19
		NT	4	13	13	19	NF
		NT	3.5	12	12	16	NF
		NT	<2	14	14	19	NF
		NT	<2	16	16	21	NF
		NT	<2	16	16	16	NF
		NT	<2	12	12	15	NF
		NT	<2	14	14	16	NF
		689	13.4	18	23	19	9 9 5 -23
		690	9	19	21	17	7 7 5 -19
		NT	<2	13	15	17	NF
		692	7.5	16	14	17	7 7 5 -19
		695	3.2, <2	14	15	9	5 37 – 15
		698	10.8	16	19	15	7 7 5 -19
		NT	2.8	13	13	15	NF
		NT	3.5	15	15	15	NF
		NT	<2	15	15	15	NF
		NT	<2	14	14	17	NF
		NT	<2	13	13	19	NF
		NT	<2	13	13	21	NF
		703	57.1	17	13	15	7 5 5 -17
	Eucalyptus marginata	676	21.2, 8.6	13	9	11	5 3 3 -11
		677	19.3	14	13	15	9 7 5 -21
		NT	<2	15	15	19	NF
		679	11.5, 33.2	14	15	19	9 7 4 -20
		680	8.2, 15	14	19	18	9 5 5 -19
		681	16.7, 18.8	18	19	19	7 5 5 -17
		682	12.2, 15, 18.9	17	17	19	7 5 4 -16
		683	29.5	14	19	21	5 5 5 -15
		684	11.1	13	19	21	7 7 5 -19
		685	32	16	16	17	7 7 4 -18
		NT	<2	12	15	17	NF
		688	11.5	15	19	17	9 7 5 -21
		NT	<2	15	17	19	NF

		691	16	16	19	19	9 9 5 -23
		693	5.8	14	15	17	7 7 5 -19
		694	7.8	17	19	19	9 7 5 -21
		NT	3.1	17	19	19	NF
		696	5.3	9	3	5	NF
		NT	2.8 <2	14	14	16	NF
		697	7.5	16	15	19	7 9 5 -21
		NT	<2	14	14	12	NF
		NT	<2	12	13	16	NF
		NT	<2	14	14	19	NF
		699	7.2, <2	13	15	13	NF
		NT	<2	14	14	15	NF
		700	20.3	15	19	17	7 9 5 -21
		NT	<2	15	15	16	NF
		NT	<2	14	14	18	NF
		701	10.3	15	17	17	7 7 4 -18
		NT	<2	13	13	15	NF
		NT	<2	13	13	15	NF
		702	9.6	16	19	19	9 7 5 -21
		704	20.5, 7.1	18	19	19	7 7 5 -19
		705	17.5, 35, 24.2	19	19	21	9 7 5 -21

1.2.3 Poison Gully

Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***				
				05	**06**	**07/08**	**08**	**09**
A	*Eucalyptus marginata*	383	11.3, 9.8, 7.5	12	15	13	11	9 7 4 -20
		384	12.3, 10.0	12	13	15	13	5 5 5 -15
		385	36.2	16	16	18	16	7 5 5 -17
		386	3.8, 10.0, 6.1	12	11	15	12	7 5 5 -17
		387A	19.5	12	13	9	11	7 3 5 -15
		388	6.2	13	17	16	17	7 3 5 -15
		389	<2.0, <2.0, <2.0, <2.0	9	11	4	7	NF
		390	17.7, 9.8, 17.0, 19.0, 9.6, 18.1, 15.0, 18.9, 9.5, 10.5	16	18	9	16	9 5 5 -19
	2 saplings 2 seedlings							
B	*Eucalyptus marginata*	391	10.0, 9.2	13	14	14	10	5 5 4 -14
		393	7, <2.0	15	14	11	14	5 3 5 -13
		395	9.3	11	17	10	12	9 5 5 -19

		396	17.6, 15.2, <2.0, 10.0, 6.1 11.3, 16.0	13	14	18	14	7 5 5 -17
		397	41.5	15	13	16	11	7 3 5 -15
		399	29.7	15	13	11	15	3 3 4 -10
		401	64.1	15	9	9	11	5 3 3 -11
	3 saplings 12 seedlings							
	Corymbia calophylla	392	29.1	14	7	11	9	3 3 3 -9
		402	24	15	14	9	9	3 3 3 -9
	Banksia grandis	394	13.5	16	17	20	19	9 7 5 -21
		NT	4.5, 2.5, <2	17	18	20	21	9 7 5 -21
		NT	4.8	-	-	20	21	9 9 4 -22
	3 seedlings							
	Banksia attenuata	403	12	13	18	20	22	9 7 5 -21
C	*Eucalyptus marginata*	404	40.0	11	10	16	10	5 3 5 -13
		405	22.3	12	14	11	13	7 5 5 – 17
		406	21.5	13	14	14	13	5 3 5 -13
		NT	<2.0	12	9	19	11	5 5 5 -15
		408	18.2, 7.8, 7.8	11	12	18	16	9 5 4 -18
		410	17.5	12	14	18	13	7 7 4 -18
		411	81.0	14	14	10	13	3 1 2 -6
		NT	<2.0	14	14	14	14	
		413	17.7, 3.5	14	16	12	15	9 7 5 -21
		414	8.3, 9	14	14	14	13	9 5 4 -18
		415	17, <2.0, 11	15	15	16	16	7 7 5 -19
		418	30.0, 6.3, 10.5	16	14	13	16	7 7 4 -18
		420	8.5	13	17	17	17	7 7 5 -19
		NT	<2				10	NF
		NT	5 x<2				10	NF
	5 saplings 18 seedlings							
	Corymbia calophylla	412	60.0	13	14	11	16	NF
		419	24.2	15	14	14	17	NF
	Banksia attenuata	NT	7.7, 4	15	15	23	23	NF
		407	3.3	16	18	21	Dead	
		NT	5 x <2.0	15	15	15	21	NF
		NT	3.5, 3	15	15	16	23	NF
		NT	3	16	16	15	21	NF
		NT	<2.0	16	16	16	23	NF
		421	6.0	16	18	21	21	Dead
		422	2.3	16	15	20	21	Dead
		444	4.8				21	9 7 5 -21
		NT	<2				21	NF

		NT	<2				23	NF
	Banksia grandis	NT	3.3	15	15	21	21	NF
		409	3.8, <2.0	10	17	21	21	Dead
		NT	<2.0, 3	13	13	21	15	NF
		NT	<2.0, <2	13	13	21	19	NF
		NT	<2.0	13	13	21	21	NF
		NT	<2.0, <2	13	13	21	21	NF
		NT	<2.0	12	12	21	19	NF
		NT	<2.0	12	12	18	21	NF
		NT	<2.0	12	12	21	19	NF
		NT	<2.0	12	12	21	21	NF
		416	9.1, 4.8, 2.0	15	17	20	19	7 5 5 -17
		417	6.7, 6.2	15	15	21	21	7 7 5 -19
D	*Corymbia calophylla*	423	25	15	16	12	14	NF
		424	21.3	13	14	9	13	7 3 4 -14
		444	18.2, 15.2	14	16	9	16	7 5 5 -17
	Eucalyptus marginata	426	61.5	17	16	14	17	7 5 4 -16
		NT	4	12	12	17	13	NF
		433	17.6, 21.8, 13.2	14	18	19	20	NF
		NT	<2.0	12	12	15	11	NF
		435	30.5	14	18	18	19	NF
		NT	2.1	12	12	17	14	NF
		NT	<2.0, <2	12	12	17	12	NF
		437	10.2, 12.2	13	17	21	16	NF
		440	9.9, 14	12	15	9	13	5 3 5 -13
		441	7.5, 4.1	10	10	6	10	3 3 4 -10
		442	10.1, 5.8, 2.4	10	10	11	10	3 3 4 -10
		445	12.6	12	17	21	15	9 7 5 -21
		446	15.3, 13.2, 6.7, 12.2	14	14	15	15	7 7 5 – 19
		447	8.7, <2.0	12	15	17	14	9 5 5 -19
		448	17.8, 7.7	14	17	16	16	7 5 5 -17
		NT	<2.0, <2, <2	13	13	21	16	NF
		NT	<2.0, <2	13	13	21	14	NF
		NT	<2.0, <2	13	13	21	10	NF
	8 saplings 20 seedlings							
	Banksia attenuata	429	9.4	15	17	23	21	7 9 5 -21
		430	14.3	15	17	21	21	9 9 5 -23
		431	15.3, 6.4, 7.1, 4.0	16	17	19	21	7 9 5 -21
		NT	<2.0	12	12	23	17	NF
		NT	<2.0	12	12	21	15	NF

		387B	12, 10.9	-	-	21	21	9 9 5 -23
	Banksia grandis	425	4, 3.4	13	17	18	19	7 7 5 – 19
		427	6.3	14	17	19	17	7 7 5 – 19
		NT	<2.0	13	13	21	17	
		428	8.0, 5.8	14	17	18	19	7 5 5 -17
		432	7.5	13	17	23	19	7 7 5 -19
		434	5.9	10	17	21	18	7 7 5- 19
		436	9	12	17	21	19	7 7 5 -19
		438	5.2, 5.2, 8	13	15	19	18	7 5 5 -17
		439	3.4, 3.2	12	13	19	18	7 5 5 – 17
		443	6.7, 4.5	14	18	21	21	9 7 5 - 21
		NT	<2.0, <2	8	11	19	15	NF
		NT	<2.0, <2	12	15	21	21	NF
		NT	2.5				21	NF
	15 seedlings							

1.2.4 Blackwood River Crossing – Longbottom Rd terrestrial

Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***		
				06	**07**	**09**
A	*Banksia grandis*	553	10.5	19	19	9 5 5 -19
	Corymbia calophylla	NT	<2.0	14	15	5 5 5 -15
		619	5.5	15	17	5 5 5 -15
		541	7	15	17	7 7 5 -19
		542	4.0	14	17	7 5 5 -17
		604	124.0	19	19	7 5 5 -17
		606	44.5	18	18	7 5 5 -17
		NT	<2.0	13	13	NF
		NT	<2.0	14	14	NF
		NT	2.7	14	14	NF
	Eucalyptus marginata	NT	3.4	14	14	NF
		630	55.5	17	14	7 5 4 -16
		609	33.6	12	11	5 5 4 -14
		NT	55.0	Dead		
		546	32.5	13	9	3 3 4 -10
		547	9.9, 13.8, 21.0, 24.0	18	17	7 7 5 -19
		548	44.0	14	11	7 5 5 -17
		605	23.0	10	9	5 1 5 -11
		550	14.0, 8.9, 8.0	15	16	5 5 5 -15
		552	43.8	17	16	9 5 5 -19
		618	22.2	12	15	7 5 5 -17
		555	11.0, 22.0, 10.6, 12.7	17	19	9 5 5 -19
B	*Corymbia calophylla*	NT	2.7	14	15	NF
		556	3.5	16	17	9 5 5 -19
		NT	<2.0	14	15	NF

		607	18	13	19	7 7 5 -19
		NT	<2.0	11	11	NF
		NT	<2.0	12	12	NF
		560	87.0	16	10	7 5 4 -16
		561	5.8	15	17	5 5 5 -15
		562	3.6	12	15	7 5 5 -17
		NT	<2.0	14	15	NF
		NT	<2.0	14	15	NF
		NT	2.8, <2.0	13	15	NF
		NT	<2.0	11	11	NF
		621	18.0, 89.3	18	15	7 5 5 -17
		564	9	15	19	7 7 5 -19
		NT	2.8	16	16	5 5 5 -15
		565	10.8	15	19	9 7 5 -21
		615	8.1	16	19	5 7 5 -17
		567	13.0	16	19	7 7 5 -19
		568	8.2	13	15	5 7 5 -17
		NT	<2.0	12	12	NF
		NT	<2.0	11	11	NF
		570	10.6	13	19	7 7 5 -19
	Eucalyptus marginata	558	11.5, 8.5, 4.7	13	17	7 5 5 -17
		559	51.5	18	18	9 7 5 -21
		NT	3.5	11	11	NF
		NT	37.0	Dead		NF
		569	24.2	12	15	7 7 5 -19
C	*Banksia grandis*	576	7.8, 3.3, 3.0	13	17	7 5 5 -17
		NT	<2.0	17	17	5 5 5 -15
		NT	<2.0			5 5 5 -15
	Banksia littoralis	578	3.2	20	21	5 3 5 -13
	Corymbia calophylla	574	2.3	13	15	5 7 5 -17
		577	7.0	12	19	9 7 5 -21
		NT	<2.0	14	15	NF
		581	4.7	15	19	9 7 5 -21
		611	8	15	17	9 7 5 -21
		585	9.0	15	17	7 7 5 -19
		586	9.0	15	19	9 7 5 -21
		587	3.7	14	15	7 7 5 -19
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
	Eucalyptus marginata	571	31.5	14	15	7 7 5 -19

		572	35.7	11	12	9 7 5 -21
		573	39.5	17	16	7 7 5 – 19
		575	17.3, 11.7, 10.7, 17.5, 12.5, 11.2	16	16	7 7 5 -19
		579	67.8	16	13	3 7 3 -13
		580	25.4, 6.4	9	4	3 1 2 -6
		582	60.0, 14.7	14	11	5 3 4 -12
		612	72.2	21	19	7 9 5 -21
D	*Banksia grandis*	591	5.3	17	16	5 5 5 -15
		NT	3.7	11	9	
	Corymbia calophylla	588	9.7	16	23	9 9 5 -23
		589	110.0	16	14	5 3 4 -12
		NT	<2.0	13	11	
		592	3.4	13	13	7 7 5 -19
		593	6.0	15	19	9 7 5 -21
		594	6.0, 4.0	15	19	9 7 5 -21
		595	10.5	17	19	7 7 5 -19
		613	8	15	17	7 7 5 -19
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
		NT	<2.0	14	14	15
	Eucalyptus marginata	590	22.4	14	14	7 7 5 -19

Distributions
P. ellipticum 63 – 64 m
T. parviceps 0 – 80 m

1.2.5 Darradup Rd North

Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***		
				06	**07**	**09**
A	*Corymbia calophylla*	706	3.2, 2.8, 2.0, <2.0	20	21	7 9 5 -21
		709	21.5	11	17	7 7 5 -19
		710	25.0	5	7	3 1 5 -9
		711	15.8	12	16	9 7 5 -21
		719	10	13	15	5 7 5 -17
		720	14.9	14	17	9 7 5 -21
		721	9.7	13	13	5 5 5 -15
		723	7.5, 9.0	15	15	5 7 5 -17
		725	12	12	15	7 7 5 -19
		727	5.4	12	13	5 5 5 -15
		728	6.1	13	17	7 7 5 -19
		731	48.9	9	8	7 1 4 -12
		735	16	10	Dead	

		737	12.4	11	17	9 5 5 -19
		741	9.0, 5.0	12	17	9 5 5 -19
		745	5.4, >2.0, 3.3	11	14	3 3 5 -11
		747	12.0	12	14	7 5 5 -17
		748	4.4	11	11	7 3 5 -15
		751	18.1	14	15	7 7 5 -19
		753	21.3	12	16	7 5 5 -17
		754	13	14	14	5 7 4 -16
		755	16.1	14	16	7 5 5 -17
		757	19.7	15	17	7 7 5 -19
		758	20.0	11	15	7 3 5 -15
	18 Seedlings/ saplings	**NT**	**<2**			
	Eucalyptus marginata	707	49.0	17	13	7 3 5 -15
		708	41.5	11	4	3 3 3 -9
		712	4.8	13	15	7 5 5 -17
		713	4.4	15	17	5 5 5 -15
		715	17.2	12	7	NF
		NT	3.2	13	15	NF
		716	9.2	14	17	7 7 5 -19
		717	15.2	13	12	5 1 4 -10
		718	5.4	13	17	5 5 5 -15
		722	12.6	14	17	7 7 5 –19
		724	10.0	12	17	5 1 4 -10
		726	10.1, 4.8	11	19	7 5 5 -17
		729	5.4	10	15	3 3 4 -10
		730	5.2	13	11	3 1 5 -4
		732	47.2	9	7	3 1 2 -6
		733	10.4	13	12	9 7 5 -21
		734	11.1	14	17	5 7 5 -17
		736	10.2	11	10	
		738	17	14	19	5 7 5 -17
		739	8.7	14	11	5 3 4- 12
		740	13	13	17	5 5 5 – 15
		742	5.0, 4.2	15	19	7 7 5 – 19
		743	10.0	9	6	3 1 2 – 6
		744	12.2	12	16	7 7 4 -18
		746	7.3	12	11	5 5 5 -15
		749	16.1	12	16	7 5 5 – 17
		750	7.3	10	11	3 3 5 – 11
		752	17.2	13	16	7 7 5 -19
		756	28.8	13	17	9 7 5 -21
	29 Seedlings/ saplings	**NT**	**<2**			
B	*Corymbia calophylla*	759	27.0	4	5	3 1 3 -7
		762	51.8	10	8	3 1 3 -7
		763	17.2	10	9	3 3 5 -11
		764	15.6	12	15	7 5 5 -17
		766	11.0	14	13	5 5 5 -15
		768	16.8	11	10	5 3 5 -13
		770	26.0	9	4	3 0 2 -5

		771	30.0	11	5	5 0 3 -8
		774	13.4	13	15	7 7 5 -19
		776	19.7	11	15	5 5 5 -15
		777	17.8	14	9	3 3 4-10
		780	25.1	13	11	7 5 5 -17
		781	8.9	12	12	5 5 5 -15
		782	27.5	11	12	3 3 5 -11
		783	10.4	11	15	5 7 5 -17
		785	22.0	12	7	3 1 3 -7
		787	18.7	14	17	7 7 5 -19
		789	20.4	16	17	7 5 5 -17
		791	16.3	13	14	5 5 5 -15
		792	7.5	13	14	5 3 5 -13
		795	9.0	12	13	7 7 5 -19
		796	15.1	11	12	5 3 4 -12
		798	14.3	11	17	7 7 5 -19
		799	23.0	13	14	5 5 5 -15
		800	13.0	14	14	7 5 4 -16
		801	31.4	6	5	5 0 3-8
		803	20.0	12	15	7 5 5 -17
		805	15.8	11	14	7 3 5 -15
	41 Seedlings/ saplings	**NT**	**<2**			
	Eucalyptus marginata	760	10.0	11	14	5 3 3 -11
		761	8.9	11	11	3 3 4 -10
		765	54.0	13	9	5 3 3 -11
		767	11.5	9	9	1 3 3 -7
		769	31.7	12	14	5 3 4 -12
		772	7.2	13	14	7 5 5 -17
		773	38.0	9	8	3 1 4 -8
		775	12.8, 8.2	15	12	7 5 5 -17
		778	14.7	15	17	7 7 5 -19
		779	10.8	5	6	1 1 5 -7
		784	27.3	11	10	3 1 3 -7
		786	10.5	11	15	5 7 5 -17
		788	42.5	15	15	7 5 5 -17
		790	39.0	10	5	3 0 4 -7
		793	22.5	9	6	1 0 5 -6
		794	12.0	11	15	5 3 5 -13
		797	15.8	13	11	5 5 5 -15
		802	54.6	17	15	5 5 5 -15
		804	16.7	3	3	Dead
		900	13.3		15	5 7 3 -15
	23 Seedlings/ saplings	**NT**	**<2**			
C	*Corymbia calophylla*	806	21.6	13	15	9 5 5 -19
		807	10.0	13	13	7 5 5 -17
		809	10.0	11	13	5 3 5 -13
		811	15.4, 15.6, 16.5	13	16	7 5 5 -17
		817	8.9	12	10	7 5 5 -17

		826	10.5	10	15	5 5 5 -15
		831	16.6	13	15	NF
		832	54.9	7	7	5 3 3 -11
		837	10.0	12	17	7 7 5 -19
		842	42.3	11	9	5 3 3 – 11
	20 Seedlings/saplings	**NT**	**<2**			
	Eucalyptus marginata	808	27.5	15	16	7 5 5 – 17
		810	16.5	13	14	7 5 5 -17
		812	12.7	14	15	9 5 5 -19
		813	13.2	14	15	5 7 5 -17
		814	20.5	15	17	7 7 5 -19
		815	24.2	15	17	7 7 5 -19
		816	9.8, 3.5	11	10	5 1 5 -11
		818	13.3	14	17	7 7 5 -19
		819	10.7	13	5	3 1 2 -6
		820	14.1	12	17	7 7 5 -19
		821	17.4	13	17	7 5 5 -17
		822	16.5, 4.3, 52.0	14	17	7 7 5 -19
		823	10.3	11	10	1 3 4 -8
		824	42.3, 17.2	9	14	3 1 4 -8
		825	39.0	9	9	3 0 4 -7
		827	18.0	12	15	7 7 5 -19
		828	9.0	13	17	7 7 5 -19
		829	10.0	12	19	9 7 5 -21
		830	66.2	13	13	5 3 5 -13
		833	10.4	10	14	3 3 3 -9
		834	13.7	9	12	3 3 5 -11
		835	7.6	12	12	5 3 5 -13
		836	16.2	15	14	7 5 5 -17
		838	19.7	13	14	7 5 5 -17
		839	20.0, 12.5, 3.2	13	11	5 3 3 -11
		840	9.4	14	14	5 5 5 -15
		841	10.7	13	14	7 5 5 -17
		843	9.4	12	13	1 3 5 -9
		844	10.3	10	13	5 5 5 -15
		845	11.0, 2.5	12	14	5 5 4 -14
		846	10.0	13	14	5 5 5 -15
		847	11.2	12	11	5 5 4 -14
	52 Seedlings/ saplings	**NT**	**<2**			
D	*Corymbia calophylla*	848	46.3	13	7	7 3 3 -13
		849	48.1	13	9	5 1 3 -9
		853	47.0	15	14	
		854	31.5	12	10	5 3 4 -12
		855	27.7	9	7	5 1 3 -9
		NT	10.4	11	11	NF
		NT	13.4	12	12	NF
		NT	10.3	12	12	5 5 5 -15

		NT	8.9	9	13	5 3 4 -12
		NT	7.3	12	13	5 3 5 -13
		NT	14.8	15	15	NF
		NT	10.0	12	13	7 5 4 -16
		NT	9.5	12	15	9 7 5 -21
		NT	10.2	12	9	NF
		862	22.2	15	18	NF
		NT	8.7	12	13	NF
		NT	13.0	15	15	NF
		NT	6.2	12	15	NF
		866	29.5	16	14	7 3 5 -15
		NT	11.6	13	15	NF
	47 Seedlings/saplings	**NT**	**<2**			
	Eucalyptus marginata	850	20.6	14	12	5 3 4 -12
		851	47.0	13	9	5 3 3 -11
		852	35.8	13	9	5 5 3 -13
		613	11	5	9	3 1 5 -9
		620	9.2	9	15	5 5 5 -15
		NT	9.1	10	15	NF
		NT	10.2	13	13	NF
		636	12	12	14	7 5 4 -16
		856	29.0	11	11	5 3 4 -12
		857	23.4	11	13	3 3 3 -9
		858	15.9	13	18	9 5 5 -19
		859	34.8	11	11	5 5 3 -13
		NT	6.5, 5.0	12	13	NF
		625	15	12	15	3 3 5 -11
		627	9.5	5	7	5 1 4 -10
		622	13.4, 15.8	15	16	7 5 5 -17
		NT	9.8	15	17	NF
		624	9.8	12	15	5 5 5 -15
		626	10.7	7	11	5 5 5 -15
		860	100.0	11	14	5 7 5 -17
		861	25.5	13	13	5 5 5 -15
		NT	10.7	12	15	NF
		641	9	9	13	1 3 5 -9
		639	9.8	12	13	3 5 4 -12
		642	10.2	11	13	5 3 5 -13
		643	11	13	15	5 3 3 -11
		645	10.8	13	15	3 5 5 -13
		644	7.5, 4	13	15	3 1 5 -9
		634	9.8	11	15	1 3 2 -6
		623	16.5	14	15	5 5 5 -15
		635	7.5,7.2	13	14	5 3 3 -11
		627	12.6	14	16	5 5 4 -14
		647	9.5	15	17	3 3 5-11
		646	8.7	12	9	5 1 3 -9
		NT	4.0	12	13	NF
		863	37.0	16	14	NF
		NT	7.7	12	14	NF
		628	14	15	17	7 7 5 -19

		864	45.4	12		15	NF
		865	23.0	14		15	5 5 5 -15
		867	16.4	16		15	5 7 5 -17
		NT	13.4	13		7	NF
		649	7.8	11		13	1 0 3 -4
		648	8.0	11		13	7 5 5 -17
	56 Seedlings/ saplings	**NT**	**<2**				
Distributions:							
H. angustifolium 55 – 80 m							
E. marginata 0 – 80 m							
C. calophylla 0 – 80 m							
1.2.6 Scott Rd							
Plot	***Species***	***Tag Number***	***DBH***	***Canopy condition***			
				05	**06**	**07**	**09**
A	*Corymbia calophylla*	474	95.2	12	13	10	735
		475	15.3	10	12	13	735
		477	120.0	20	20	17	535
		478	55.8	19	19	19	535
		479	30.3	15	16	13	755
		652	5.0, 6.3	15	15	13	555
		482	26.7	14	14	12	755
		483	3.8	10	11	9	335
		484	8.9	11	11	13	755
		485	8.8	10	10	13	335
		NT	2.5	14	14	11	355
		NT	<2.0	14	15	11	NF
		NT	<2.0	14	14	15	NF
	Eucalyptus marginata	476	45.6	17	16	11	755
		481	40.2	12	12	16	755
	36 Euc Seedlings/ saplings 1 B. attenuata	**NT**	**<2**				
B	*Eucalyptus marginata*	486	19.9, 7	7	7	8	314
		487	7	14	14	17	535
		488	53.2	13	14	13	734
		490	18.1	13	11	11	534
		525	30			17	734
		526	9.3			21	775
		491	10	15	15	18	755
		492	2.2, <2.0	15	15	16	574
		493	9.5	15	15	21	775
		494	3.7	15	15	19	574
		495	5.5	15	15	16	755
		NT	<2.0	15	14	16	NF
		497	15	15	15	21	955
		498	21.5	13	14	13	754
		500	33.4	8	8	9	535
		501	21.1	5	8	16	533

		502	18.2, 31.8, <2.0	12	12	13	NF
	Corymbia calophylla	489	3.2, <2.0	14	15	15	NF
		496	72.2	13	15	9	535
		524	35			11	534
		499	30.6	13	15	9	734
	35 Euc Seedlings/ saplings	**NT**	**<2**				
C	*Corymbia calophylla*	503	9.5	9	10	9	NF
		504	14.2	9	9	6	333
		505	21	12	12	8	334
		506	12.1	11	13	13	13
		508	46.5	14	14	5	533
		509	3	11	11	17	NF
		NT	2.6	14	15	17	NF
		NT	7.5				575
	Eucalyptus marginata	507	46.5	11	14	11	534
		NT	<2, <2	-	-	15	NF
	Melaleuca preissiana	510	25.2, 61.2, 43.6	13	13	10	335
		511	6.0	8	8	13	332
		NT	<2.0	10	10	15	NF
		NT	<2.0	10	10	21	NF
	45 Euc Seedlings/ saplings 2 B. attenuata	**NT**	**<2**				
D	*Eucalyptus marginata*	512	64.1, 70	19	19	13	535
		513	9.5, 10, 11, 7.5	19	19	21	754
		519	26.8	17	17	18	772
		520	40.5	17	19	18	774
		NT	<2	-	-	15	NF
		NT	<2	-	-	21	NF
	Corymbia calophylla	514	46.7	19	19	9	533
	Melaleuca preissiana	515	12.8	10	10	9	334
		516	7.6	5	3	3	NF
		517	5	10	10	11	334
		518	8	9	10	11	335
	32 Euc Seedlings/ saplings	**NT**	**<2**				

Appendix 2: Field data – cover and abundance of species in sub-plots.

2.1 Wetlands

2.1.1 Blackpoint/ Fouracres Rd								
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Taxandria parviceps	*4*	*6*	*7*	*6*	*4*		*4*	*5*
Pericalymma ellipticum	*3*	*3*	*5*	*4*	*5*	*10*	*8*	*5*
Anarthria scabra	*5*	*9*			*3*			
Stylidium scandens	*3*	*3*	*3*		*2*			
Lindsaea linearis	*6*	*3*			*2*			*1*
Mesomelaena tetragona	*5*	*4*	*6*	*5*		*5*	*3*	*4*
Eucalyptus marginata	*1*	*4*			*3*			
Adenanthos obovatus	*1*	*1*	*1*		*1*			*2*
Hibbertia stellaris	*2*			*1*	*2*		*3*	
Sphaerolobium medium	*2*	*2*						
Anarthria prolifera	*5*	*5*	*6*		*7*		*5*	*6*
Acacia browniana	*1*	*3*						
Andersonia caerula	*2*	*3*	*3*		*1*			
Xanthorrhoea preissii					*3*		*5*	*4*
Dampiera linearis	*1*	*1*	*2*		*1*			*1*
Sp 15 Papilionaceae sp.	*1*	*2*						
Sp 19 Schoenus sublateralis	*2*	*1*	*2*					
Sp 20 Hemigenia sp.	*2*	*2*		*2*	*1*		*3*	*2*
Hypocalymma angustifolium	*3*	*2*	*6*		*5*		*5*	*3*
Nuytsia floribunda			*2*				*3*	
Drosera menziesii	*2*		*1*	*1*			*1*	
Lyginia barbata	*4*		*3*		*3*		*2*	
Sp 27 Hypolaena large	*3*	*3*	*2*	*3*	*3*	*3*	*3*	*2*
Cyathochaeta avenacea	*2*			*3*			*2*	
Leschenaultia biloba	*3*	*2*	*3*	*1*	*1*			
Platysace tenuissima		*2*						
Thysanotus tenullus	*3*	*3*	*1*	*2*				
Conostylis setigera subsp. setigera	*2*							
Xylomelon occidentale								
Dasypogon bromeliifolius		*4*	*5*	*4*	*4*		*4*	*4*
Evandra aristata		*2*			*2*		*3*	*3*
Lomandra caespitosa	*3*	*4*	*2*		*3*			
Pimelea longiflora	*2*	*2*			*1*			
Johnsonia lupulina	*3*	*1*	*4*		*3*			*3*
Sp 37 Leucopogon australis		*2*						
Cassytha racemosa	*1*		*1*				*2*	
Beaufortia sparsa		*3*	*3*	*4*	*5*			*6*
Melaleuca preissiana				*1*	*3*		*1*	*3*
Xyris roycei				*4*	*3*	*3*	*3*	*5*
Amphipogon turbinatus			*2*	*2*	*2*		*2*	*3*
Sp 45 Sporadanthus strictus				*2*		*3*		*2*
Chordifex amblycoleus				*2*		*3*		*1*
Sp 47 Schoenus efoliatus				*3*	*3*		*3*	
Sp 49 Meeboldinia denmarkica			*2*	*2*	*5*		*6*	*4*
Sp 50 Tricostularia neesii	*1*		*2*		*5*		*2*	*2*
Eutaxia myrtifolia	*2*	*2*		*2*				*2*

Hakea certophylla						4		
Calothamnus lateralis						2	1	1
Platychorda applanata						3	3	
Sp 56 Leucopogon sp.								
*Poaceae sp**								
Sphenotoma gracile								3
Sp 61 Meeboldinia scariosa	3	3		4		3		3
Mesomoleana graciliceps	2	5	4	2	4		2	3
Lomandra purpurea								
Thelymitra sp.								
Drosera sp.		2						
Agrostocrinum stypandroides		2						
Pultenaea drummondii								
Trachymene-like	1	1	1					
Mitrasacme paradoxa								
Burchardia umbellata								
Drosera sp. (yellow)								
Acacia sp.				1				1
Drosera pulchella								
Xanthorrhoea brunonis					1			
Schoenus cruentus						2		
Sp BW 68 (Lime green plant)						1		
Sphaerolobium fornicatum								2
Eutaxia virgata						2		
*Medicago sp.**							1	

2.1.2 Milyeanup

Species	***Cover and abundance***					
	A1	***A2***	***B1***	***B2***	***C1***	***C2***
Taxandria linearifolia	6	9	8	9	8	
Sp 168 Leucopogon australis	3					
Pteridium esculentum	8	2		4	3	8
Banksia seminuda	3					
Astartea juniperina	3	3	3	3	4	
Comesperma confertum					1	
Acacia uliginosa	5		2	5	4	
Acacia pulchella var. goadbyi	2					
Eucalyptus rudis	3					
Mirbelia dilatata	3					3
Tremandra stelligera	2					
Dampiera hederacea	4			2		
Sp 175 Baumea vaginalis	5			9	8	
Sphaerolobium medium	2	3	3	5	3	
Empodisma gracillima	5	7	9	3	4	
Lepidosperma tetraquetrum		9	8	3		
Sp 181 Sporodanthus sp.		10	9	5		
Taxandria juniperiana				3		
Cassytha racemosa				5	2	2
Anigozanthos flavidus						2
Platysace filiformis						2
Scaevola calliptera						3
Xanthorrhoea preissii						4
Lomandra caespitosa						4
Acacia extensa						4

Patersonia umbrosa						*2*
Bossiaea linophylla						*7*
Corymbia calophylla						*8*
Eucalyptus marginata						*5*
Opercularia hispidula	*2*					*3*
Hypolaena exsulca						*3*
Leucopogon hirsutus	*3*			*2*	*2*	*2*
BW77						
Dampiera sp.			*1*			
Leucopogon propinquus1						*2*
Lindsaea linearis						*3*
Loxocarya sp.						*3*
Macrozamia riedlei						*2*
Desmocladus fasicularis						*2*
Thomasia sp.	*4*					
Sp. 75 Tetraria capillaris						*2*
Drosera sp. (white)	*2*					*1*
Leucopogon verticillatus	*1*					
Sedge sp.					*2*	
Corymbia calophylla (seedling)				*1*		
Banksia grandis (seedling)						*1*
Lagenophera huegelii						*2*

2.1.3 Poison Gully

Species	***Cover and abundance***			
	A1	***A2***	***B1***	***B2***
Astartea juniperina	*3*	*1*	*3*	*1*
Casuarina fraseriana	*4*			
Eucalyptus marginata	*2*			
Anarthria scabra	*8*			
Dampiera linearis	*2*		*1*	
Sp 16 Acacia extensa	*3*			
Pimelea longiflora	*2*			
Cassytha racemosa	*2*	*3*	*2*	*2*
Beaufortia sparsa		*2*	*6*	*5*
Sp 47 Schoenus efoliatus	*3*			*4*
Sphenotoma gracile			*5*	*1*
Pulteneae reticulata	*4*			
Kunzea recurva				*3*
Sphaerolobium fornicatum	*2*	*1*	*3*	*2*
Sp 97 Hyploaena exsulca	*4*		*3*	*3*
Empodisma gracillimum	*2*	*3*	*5*	*2*
Taxandria pariceps	*5*	*4*	*4*	*9*
Loxocarya exsulca				
Sp 115 Baumea sp. vaginalis	*4*	*10*	*8*	*5*
Callistemon glaucus		*5*	*3*	*3*
Pultenaea drummondii				*2*
Xanthorrea preissii	*5*			
Podocarpus drouynianus	*2*			
Billardiera laxiflora	*2*			
Mirbelia dilata				*3*
Leucopogon sp.	*1*			
Dampiera linearis		*1*		*2*

Lyginea sp. imberis					*3*
Drosera macrantha subsp. macrantha					*2*
*Unknown herb**					*1*
Comesperma confertum					*1*
Thysanotus sp.					*1*
Thelmytria (orchid) purple					*1*
BW85 (Anarthria?) prolifera					

2.1.4 Blackpoint/ Mayall Rds

Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Beaufortia sparsa			*3*		*5*			
Hypocalymma (yellow)			*7*		*8*			
Kunzea recurva	*4*	*3*	*3*		*3*	*1*	*2*	*3*
Taxandria parviceps	*3*	*3*		*5*	*8*	*7*	*3*	
Adenanthos obovatus		*2*	*3*	*3*	*2*	*3*	*3*	*3*
Schoenus efoliatus			*5*	*2*	*1*	*4*		
Lysinema cilatum		*1*	*1*	*5*		*2*	*2*	
Anarthria prolifera		*3*	*4*	*4*	*5*	*4*	*4*	*3*
Xanthorrhoea preissii		*2*		*4*	*3*	*2*	*3*	*2*
Acacia sp.	*1*	*3*	*2*	*4*	*3*	*4*	*4*	*2*
Drosera sp.		*2*	*2*	*2*	*1*	*2*	*1*	*2*
Dampiera linearis		*2*			*2*	*1*	*1*	*2*
Hypolaena exculsa	*4*	*3*		*3*	*3*	*3*	*3*	*3*
Cassytha sp.		*1*			*2*	*3*	*2*	
Lyginea barbata	*1*		*2*		*2*		*2*	
Evandra aristata	*2*	*3*	*5*	*1*	*3*			
Thelymitra sp.					*1*			
Astartea fascicularis	*6*							
Meeboldina scariosa	*7*							
Dasypogon bromeliifolius	*1*	*5*	*4*	*4*	*3*	*5*	*3*	*3*
**Briza minor*	*1*		*1*					
**Lolium rigidum*								
**Medicago sp.*	*3*		*1*		*2*			
**Holcus lanatus*	*3*							
Juncus microcephalus	*3*							
**Mentha pulegium*	*3*		*1*					
Isolepsis sp. 1	*1*		*1*	*1*				
**Hypochaeris glabra*	*2*		*2*					
Meeboldina denmarkica	*3*		*5*		*2*			
Drosera sp.	*1*	*2*	*2*		*1*			
Cotula sp.	*2*		*1*					
Anarthria scabra	*1*	*9*	*4*	*9*		*8*	*10*	*8*
Eucalyptus marginata		*4*		*5*		*4*		
Melaleuca thymoides		*5*		*6*		*5*	*5*	*5*
Hibbertia stellaris								
Sp BW59 Acacia sp.		*4*	*3*	*4*	*3*	*3*	*3*	*3*
Johnsonia lupulina		*1*		*1*		*1*		*3*
Andersonia caerulea		*2*	*2*	*6*	*2*	*2*	*3*	*2*
Sp BW60 Gompholobium capitatum		*1*						
Lomandra caespitosa		*2*						
Philydrella pygmaea		*1*	*1*					*2*

Pimelea spectablis		*1*		*2*		*1*	*2*	*1*
Sp BW61 Bossiaea linophylla		*2*		*3*	*3*	*2*	*3*	*2*
Sp BW62 Sphaerolobium sp.		*1*				*1*		*1*
Sp BW63 Schoenus sublateralis		*2*	*2*		*2*			
Taxandria parviceps		*3*						
Nuytsia floribunda			*4*	*2*				
Xyris roycei			*3*					
Boronia denticulata			*1*		*1*			
Pericalymma ellipticum			*4*		*2*			
Microtis sp.			*1*					
Leschenaultia biloba		*1*	*2*		*1*		*2*	*3*
Stylidium caespitosum			*2*					
Isolepis sp.			*2*					
Levenhookia sp.			*2*					
**Vellereophyton dealbatum*			*2*					
Sp BW58 Tricostularia neesii					*2*			
**Larugus ovatus*			*1*					
Sp BW64 Amphipogon turbinatus			*2*		*2*			
Patersonia occidentalis		*2*		*2*	*2*	*2*	*2*	*2*
Jacksonia horrida		*1*		*4*	*1*	*4*	*6*	*5*
Sp BW65 Hibbertia sp.				*2*		*2*	*2*	*2*
Scaevola calliptera				*1*				
Boronia spathulata						*1*	*1*	
Hypocalymma robustum						*2*	*2*	*1*
Stylidium schoenoides								
Platysace filiformis							*2*	
Mesomelaena graciliceps								
Sp BW66 Bossiaea rufa							*1*	
Burchardia umbellata								
BW 67 Velleia trinervis								
**Bromus sp.*			*1*					
Opercularia hispidula					*1*			
2.1.5 Stewart Rd								
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Hakea ceratophylla	*7*	*4*	*7*	*7*	*6*			
Chordifex amblycoleus	*3*		*3*	*4*	*2*			
Pericalymma ellipticum	*8*	*3*	*6*	*3*	*10*		*2*	*2*
Hakea trifurcata / varia	*3*		*1*					
Hypolaena exsulca (large)	*4*	*2*	*3*	*3*	*6*			
Sp. BW69 Papilionaceae	*3*	*3*	*5*	*3*	*2*			
Melaleuca basicephala P4	*2*	*2*	*2*	*3*	*3*			
Astartea fascicularis	*1*							
Meeboldina scariosa	*5*	*2*	*3*	*2*	*7*			
Schoenus cruentus	*4*	*2*	*2*	*3*				
Sp. BW71 Cassytha sp	*2*	*3*	*2*	*2*	*2*			
SP BW74 Eriostemon sp.	*3*	*4*	*4*	*4*	*2*			
Melaleuca laterita	*1*	*5*						
Sp. 65 (sedge) Schoenus cruentis	*5*	*4*	*2*	*7*	*1*			
Sp. BW70 (sedge) Xyris roycei	*3*	*2*	*2*	*3*	*1*			

Platychordia applanta		*1*	*2*		*2*			
Sp. BW40 Leptocarpus elegans	*2*	*9*	*7*	*8*				
Sp. BW73 Chorizandra cymbaria			*2*					
Sp. BW72 Leptomeria sp.	*4*		*1*	*3*	*3*			
Eucalyptus marginata						*4*		*9*
Corymbia calophylla						*5*	*3*	*3*
Melaleuca preissiana						*6*	*9*	
Taxandria juniperiana						*9*	*9*	*9*
Podocarpus drouynianus						*1*	*1*	*1*
Comesperma confertum						*2*	*2*	*1*
Dampiera linearis						*2*	*3*	*3*
Cassytha racemosa						*3*	*1*	*3*
Stylidium sp.						*3*	*1*	*2*
Patersonia umbrosa						*2*		*2*
Xanthorrhoea brunonis						*2*	*1*	*1*
Gompholobium ovatum						*2*		
Kingia australis						*3*		*4*
Sphenotoma gracile						*2*	*3*	*2*
Leucopogon australis						*3*	*1*	*2*
Adenanthos obovatus						*1*	*1*	*3*
Scaevola calliptera						*2*	*2*	*2*
Lindsaea linearis						*3*	*4*	*6*
Drosera sp.						*1*		
Xanthosia candida						*1*	*2*	*2*
Mesomelaena graciliceps						*6*	*3*	*4*
Lepidosperma sp. (Chordifex)						*3*	*3*	*2*
Thelymitra sp.						*1*		*1*
Acacia mooreana						*2*	*2*	
Billardiera laxiflora						*2*	*1*	*2*
Isopogon sphaerocephalus							*1*	*1*
Xylomelon occidentalis							*1*	*1*
Boronia spathulata							*2*	*2*
Pimelea spectablis						*1*	*2*	*2*
Platysace filiformis							*1*	
Conostylis sp.							*2*	
Hypolaena exsulca						*2*	*2*	*4*
Villarsia parsnassifolia					*2*			
BW 85 Anarthria sp.						*2*	*2*	*3*
Acacia extensa						*1*		
Chamescilla corymbosa						*2*		
Eutaxia epacridoides							*1*	
Tetratheca setigera								*2*
Leucopogon verticillus								*1*
Hibbertia ainnihamii								*1*
Sphaerolobium sp. (yellow)								*2*
2.1.6 Adelaide Road (Upper Margaret)								
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Pericallyma ellipticum	*3*	*8*	*9*	*8*	*9*	*5*		*2*
Leschenaultia expansa	*2*							
Hibbertia hypercoides	*4*	*3*						
Patersonia umbrosa	*3*	*1*	*2*	*1*	*2*			

Allocasuarina fraseriana	3							
Desmocladus fascicularis	2	4	3		3			
Xanthorrhoea preissii	2	3	6	3	3	3		3
Lepidosperma longitudinale								
Drosera sp. (small)	3				1			1
Gompholobium capitatum	3	1	1		1	1		
Hypocalymma angustifolium		2	2					
Sp. 46 Unknown herb	1		1					
Hemigenia rigida ΔP1	1		2					
Melaleuca preissiana		6	2	1	8	3		
Dasypogon bromeliifolius		3		2	3			
Corymbia calophylla		2						
Adenanthos obovatus		2			3	1	3	1
Melanostachys ustulata		9		8	3	8	3	
Calothamnus lateralis		2		2			3	2
Acacia divergens		1			2		2	
Mesomelaena tetragona		3	3	3	4	3	4	
Bossiaea linearis?				3		2		
Conostylis setigera		3	3		2			
Hibbertia rhadinopda			4		4			
Stirlingia latifolia			1	2	1		1	1
Eutaxia sp.		2		2	3	3	3	3
Viminaria juncea			3					
Cassytha sp.			1		2			2
Hypolaena exsulca		2	2	2	2		3	6
Lyginia imberis		3		2		3	3	3
Beaufortia sparsa				3		3	2	2
Adenanthos meisneri				8	1			
Baxteria australis		2	3	2	3	2	4	3
Dampiera linearis		2		2	2	2	2	2
Conospermum caeruleum							1	
Sp. 36 Sporadanthus strictus						3	4	
Leucopogon gilbertii				1				
Hakea ceratophylla					1		2	1
Daviesia sp.				1				
Sp. 54 Lepyrodia elegans		2	2	4	6	2	3	2
Astartea fascicularis						2	5	5
Taxandria parviceps							5	
Taxandria juniperiana						2		
Hakea sulcata							5	2
Amphipogon turbinatus								
Chordifex amblycoleus							3	2
Melaleuca basicephala (P4)							3	3
Leptomeria squarrulosa							2	2
Sp. 58 Restionaceae sp.								1
Sp BW78 Goodeniaceae sp.	1							
Sp 44 Darwinea sp.	3	1	2					
Lobelia tenuior	1							
Sp BW79 Stylidium calcartum	2							
Leptospermum squarmatum	2						2	
Sedge sp.	1							
Lomandra nigricans	1							
Sp BW80 Leucopogon sp.	1							
Anarthria prolifera		2						
Meeboldinia denmarkica		4		45		6		4
Drosera pallida		2	2	2	2	2		2

Utricularia multifida		*2*		*2*	*2*	*1*		
Drosera sp.			*1*	*1*	*2*	*1*		
Sp BW81			*2*	*1*				
Stylidium amoenum			*2*	*2*	*1*			
Sedge sp.			*3*					
Stylidium perpusillum								
Diaspasis filifolia							*2*	
Comesperma flavum					*2*			
Stylidium junceum subsp. junceum								
Philotheca spicata	*1*	*1*		*1*				
Levenhookia pusilla	*2*							
Siloxerus humifusus	*1*							
Boronia anceps Δ P3		*2*		*1*	*1*	*1*		
Hodgsoniola junciformis						*1*		
2.1.7 Dennis Road (Scott Nth)								
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Xanthorrhoea preissii	*5*	*5*					*5*	*5*
Beaufortia sparsa	*7*						*2*	
Grevillea papillosa P3	*4*		*3*	*3*	*5*		*6*	*7*
Adenanthos detmoldii P4	*6*						*4*	
Adenanthos obovatus	*2*						*3*	
Eutaxia epacridoides	*3*							
Amphipogon turbinatus	*4*							
Leptocarpus tenax	*5*						*3*	*3*
Tricostularia neesii	*5*						*4*	*5*
Empodisma gracillimum	*8*						*3*	
Baxteria australis	*2*							
Dasypogon bromeliifolius	*3*				*2*			*3*
Mesomelaena tetragona	*8*		*4*			*2*	*3*	*4*
Anarthria prolifera	*3*						*4*	
Patersonia occidentalis	*3*							
Schoenus efoliatus	*4*							*4*
Xyris sp.	*3*							
Persoonia graminea	*1*							
Lepidosperma squamatum	*2*							
Dampiera linearis	*1*		*3*				*2*	
Acacia browniana	*2*							
*Juncus microcephala**	*2*	*7*		*3*			*2*	*2*
Cyathochaeta avenacea	*3*	*3*		*3*	*3*	*4*	*2*	
Melaleuca preissiana			*5*		*7*			
Banksia littoralis		*2*		*1*				
Hakea ceratophylla		*3*	*3*	*3*		*5*	*3*	*4*
*Mentha pulegium**		*10*	*6*	*5*	*4*	*8*	*3*	*5*
*Rumex crispus**		*4*	*2*	*3*	*3*	*4*	*3*	*3*
*Epilobium hirtigerum**			*3*	*3*	*3*	*2*	*3*	*3*
*Holcus lanatus**		*3*	*1*		*1*		*3*	*2*
Alternanthera nodiflora		*2*	*5*	*5*	*5*	*7*	*4*	
Juncus pallidus			*7*	*7*	*9*	*2*	*3*	*4*
Calothamnus lateralis	*2*		*1*	*2*		*1*	*2*	*1*
Baumea juncea			*9*		*2*	*4*	*2*	
*Conyza sumatrensis**		*3*						*2*
Astartea fascicularis			*2*	*4*		*7*		
Cyathochaeta stipiodes P3					*3*			
Taxandria linearifolia					*3*		*3*	

*Sonchus asper**					*1*		*3*	
Gastrolobium formosum P3							*5*	
Daviesia inflata							*1*	
Johnsonia lupulina							*2*	*3*
Meeboldina scariosa						*3*	*3*	*2*
Chordifex amblycoleus					*1*	*1*	*2*	*3*
Boronia fastigiata	*3*						*1*	
Sphenotoma gracile								
Stylidium scandens	*3*							
Sp BW87 Eutaxia virgata	*3*							
Thysanotus multiflorus	*1*							
Drosera sp.	*2*							
Sp BW88 Dampiera sp.								
*Medicago sp.**	*1*	*6*			*3*		*3*	*3*
Eucalyptus marginata	*1*							
Microtis sp.		*2*					*1*	
Sp. BW71 Cassytha sp.								
*Aster subulatus**								*3*
*Briza minor**								
Chorizandra sp.								*2*
Schoenus cruentus								
Orchid sp.							*0*	
Sp. 36 Restio sp.					*2*			
Hodgsoniola junciformis	*2*							
*Trifolium sp.**		*4*						
*Cyperus sp. **			*1*					

2.1.8 Reedia North

Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Xanthorrhoea preissii	*4*							*3*
Xanthorrhoea gracilis	*3*							
Allocasuarina fraseriana	*3*	*6*						
Macrozamia reidlei	*1*							
Leucopogon propinquus	*2*	*3*						*4*
Patersonia umbrosa	*3*	*2*				*3*		*2*
Dasypogon bromeliifolius	*8*	*3*						
Acacia extensa	*3*	*2*						
Lepidosperma squamatum	*3*					*2*		
Podocarpus drouynianus	*3*							
Hypolaena exsulca	*4*	*6*						*3*
Hibbertia hypercoides	*6*							*3*
Eucalyptus marginata	*7*	*7*						*5*
Gompholobium confertum	*2*	*1*						
Loxocarya cinerea	*2*		*3*					
Anigozanthos flavidus	*1*							
Conostylis setigera	*2*							
Desmocladus fasciculatus	*2*							
Lomandra caespitosa		*2*				*1*		
Taxandria linearifolia		*7*	*8*	*9*	*9*	*7*	*7*	
Acacia divergens		*6*	*4*	*3*		*2*		
Anarthria prolifera	*1*	*4*				*3*		
Corymbia calophylla		*2*				*2*		*5*
Xyris gracillima		*3*	*6*	*5*	*7*	*4*	*5*	
Astartea fascicularis		*2*	*5*	*4*		*5*	*2*	
Boronia fastigiata		*4*				*2*		
Tetrarrhena laevis								

Acacia browniana		*2*				*3*	*2*	*3*
Sporadanthus rivularis		*4*	*3*	*7*	*6*	*3*	*3*	
Leucopogon hirsutus		*3*	*1*	*2*		*2*		*1*
Dampiera hederacea			*3*			*2*		
Empodisma gracillima		*3*	*5*	*4*	*3*	*6*	*4*	
Mesomelaena tetragona		*2*				*3*		*6*
Gonocarpus diffusus				*2*		*3*		
Baumea sp. Blackwood (flat/abrasive/thin)				*6*		*3*	*4*	
Hibbertia perfoliata			*3*	*2*				
Lepidosperma tetraquetrum			*3*					
Tricostularia neesii			*2*	*6*		*2*		
Baumea rubiginosa (flat/thick)				*2*		*2*		
Drosera glanduligera						*2*		*2*
Acacia pulchella					*4*			
Hovea trisperma						*1*		
Amphipogon sp.								
Johnsonian lupulina						*3*		
Dampiera linearis								
Pentapeltis peltigra						*1*		*2*
Pimelea sp.								
Amphipogon turbinatus		*2*				*1*		*1*
Homalospermum firmum?							*7*	
Taxandria parviceps		*4*	*5*					*4*
Stylidium sp.								*5*
Lomandra pauciflora								*3*
Hibbertia cunninghamii						*1*		*1*
Lindsaea linearis	*1*							
Sp BW84				*3*		*2*		
Jansonia formosa P sp.								
Haemodorum sp.								
Thysanotus manglesianus								
Scaevola calliptera	*1*	*2*				*2*		
Xyris sp.		*4*						
Goodenia eatoniana		*2*						
Banksia seminuda		*1*						
Baxteria australis		*2*						
Unknown climber		*1*						
Comesperma confertum		*2*			*1*			
Sp BW82 Baumea sp.			*5*	*3*	*9*		*8*	
Diapasis filifolia					*2*			
Thysanotus tenellus								
Sphaerolobium sp.								
Thysanotus sp.						*2*		
Sp BW85 Anarthria sp								*2*
Anarthria scabra	*2*							
Tetraria octandra	*1*							*1*
Opercularia hispidula	*1*							
Tetraria capillaris	*2*							
Stackhousia monogyna		*1*						
Cassytha sp.							*1*	
Lobelia sp.							*2*	
Vellia sp.						*1*		
Billardia sp.						*1*		*1*
2.1.9 Reedia South								
Species	***Cover and abundance***							

	A1	A2	B1	B2	C1	C2	D1	D2
Taxandria parviceps	7		6			3		
Eucalyptus marginata	3		2					
Corymbia calophylla	3							
Astartea fascicularis		6					2	3
Hibbertia hypercoides	6		3					
Leucopogon verticillatus	1							
Lindsaea linearis	4							
Leucopogon australis	2		4					
Patersonia occidentalis	3		3					
Pimelea sp.	2		2			3		
Anarthria prolifera	2	2	5			3		3
Tetrarrhena laevis	1							
Tetraria capillaris	4	3						
Lepidosperma squamatum	2							
Gompholobium confertum	2		1					
Podocarpus drouynianus			3					
Dampiera linearis	1	2	2					
Goodenia eatoniana								
Pentapeltis sp.	2		3					
Hakea amplexicaulis	2							
Mesomelaena graciliceps	1							
Desmocladus fasciculatus	1							
Taxandria linearifolia		6		4	8	7	4	
Homalospermum firmum?		5		7	6	5	3	7
Boronia fastigiata	1	5	3	4	4	4	4	5
Acacia pulchella		4		4	5	4	2	3
Beaufortia sparsa		2				3	2	3
Loxocarya cineria		7				3		3
Xyris sp.				3	3	6	3	2
Hypolaena exsulca			4			3		
Hakea lasanthoides		3	5					
Cassytha sp.		2			2	2		2
Leucopogon hirsutus						2		1
Sporadanthus rivularis		4		8	9	5		5
Lomandra purpurea			1					
Allocasuarina fraseriana	9	3	6					
Eucalyptus megacarpa			2			2		4
Stylidium sp.	2		3					
Acacia divergens		2	2					
Baumea rubiginosa				5	4			5
Reedia spathacea DRF				5	6	4	9	
Comesperma confertum						2	1	
Sp. BW9 Lepidosperma sp.?		7			2	4	4	
Sp BW10 Leptocarpus/Meeboldina sp.		5				3		6
Aotus cordifolium							4	
Mesomelaena tetragona			3					
Thysanotus sp.			2					2
Agrostocrinum stypandroides								
Thysanotus tenellus	1		2					2
Drosera sp.	2		3	2		2	2	
Hibbertia cunninghamii	1		1					
Lobelia sp.	1		2					
Orchid sp.								
Chorizandra sp.	2							

Johnsonia lupulina	*1*		*2*					
Sphaerolobium sp.			*1*			*1*		*3*
Tricostularia neesii		*5*		*3*	*3*			*3*
Baumea sp.		*9*	*3*	*4*	*6*	*6*	*6*	
Xyris sp. (tall)				*1*				
Diapasis filifolia				*1*		*1*	*1*	
Empodissima gracillima				*5*	*4*	*4*	*4*	
Actinotus omnifertilis						*4*		
Amphipogon turbinatus			*1*			*1*		*1*
*Cynodon dactylon**					*3*			*2*
Xyris sp. (scaly)				*4*	*3*	*5*	*3*	*3*
Persoonia sp.	*1*							
Baumea "Blackwood"				*2*			*4*	
Stylidium sp. (tall pink)				*1*				
Tricoryne elatior			*1*					
2.1.10 Scott River Road (Scott Sth)								
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Taxandria parviceps	*6*	*9*	*4*	*8*	*4*	*5*	*5*	*4*
Beaufortia sparsa	*8*	*3*		*5*	*4*	*4*	*4*	*2*
Cassytha sp.	*2*	*2*						*2*
Anarthria scabra	*5*		*10*	*5*	*2*	*9*	*9*	
Anarthria prolifera	*5*	*5*	*2*	*9*	*5*	*5*	*3*	
Xanthorrhoea preissii	*3*	*5*	*3*	*3*		*3*	*3*	
Gompholobium capitatum	*2*	*2*	*3*					
Melanostachys ustulata	*5*	*6*	*3*					
Sphenotoma gracile	*3*	*2*	*2*	*1*	*2*	*3*	*4*	
Lyginea barbata	*1*	*2*	*3*					
Cyathochaeta stipiodes P3	*2*	*2*						
Lindsaea linearis	*2*		*4*					
Mesomelaena graciliceps	*2*		*3*			*2*		
Hypolaena pubescens	*3*							
Kunzea recurva	*2*	*5*	*3*	*1*				
Lomandra nigricans	*2*	*2*						
Dasypogon bromeliifolius	*7*	*2*	*3*	*4*	*3*	*4*	*3*	
Hypolaena exsulca	*2*	*1*	*2*	*2*	*2*	*3*		
Hypolaena caespitosa	*3*	*3*				*5*		
Homalospermum firmum		*3*		*4*	*9*	*8*	*6*	
Eucalyptus marginata		*2*	*4*	*1*				
Adenanthos obovatus		*1*	*1*	*1*				
Dampiera linearis				*2*	*2*	*2*	*1*	
BW89Acacia hastulata	*2*	*1*	*2*	*2*	*2*	*2*	*3*	
Baxteria australis			*2*	*2*	*2*		*2*	
Johnsonia lupulina	*1*	*2*						
Evandra aristata		*3*		*2*	*2*	*2*		
Corymbia calophylla	*3*		*4*					
Jacksonia horrida			*3*					
Schoenus sp. (multiglumis?)				*3*	*4*	*4*	*5*	
Astartea fascicularis					*3*			*9*
Sp. 36 Sporodantus strictus					*3*			
Platychorda applanta					*2*			*4*
Loxocarya cineria					*3*			*2*
Amphipogon turbinatus		*1*		*1*	*3*	*1*		
Leucopogon australis						*2*	*2*	*1*
Actinotus omnifertilis				*2*	*2*		*2*	
Melaleuca preissiana								*4*

Calothamnus lateralis			1					2
Meeboldinia scariosa					7			5
Pericalymma ellipticum					3			3
Comesperma confertum			1		1	1		
Empodisma gracillima						3		
BW 90 Leucopogon sp.		1		2	1			
Drosera sp.	2	2	1		1		1	
Hypocalymma angustifolium								
Scaevola calliptera		1	1					
Diapasis filifolia		2		1	4		1	
Sp BW91 Platysacne pendula		2	1	1				
Eutaxia epacridoides	1							
BW 92 Stylidium sp	1	2		1				
Leschenaultia biloba	1		1					
Nuytsia floribunda	1							
BW 93Thysanotus multiflorus			2					
Phyllangium paradoxum (Mitrasacne)			1				1	
Conospermum caeruleum				1	1			
Taxandria sp.					1			
Valierian sp.					1			

2.1.11 Blackpoint Rd – dunes

Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Taxandria juniperina	7	5	5	4	3	3	3	3
Cassytha racemosa	4	4	2	2	2	2	2	-
Eutaxia virgata	5	5	3	5	3	3	4	3
Sp 61 Hypolaena exsulca	6	4	4	3	3	3	3	2
Amphipogon turbinatus	-	-	-	-	-	-	-	-
Sp 191 Cyperaceae sp.	3	1	2	2	3	2	3	2
Melaleuca preissiana	3	6	3	4	-	-	3	1
Hakea linearis	3	2	2	-	-	-	-	-
Patersonia occidentalis	2	1	3	-	-	1	-	-
Eutaxia myrtifolia	2	2	2	2	2	2	2	-
Sp 197	1	1	-	-	-	-	-	-
Kunzea spathulata	6	4	4	5	5	5	9	6
Meeboldina scariosa	2	-	2	3	-	2	1	
Villarsia parnissifolia	1	2	2	2	2	-	2	2
Astartea juniperina	-	2	-	-	-	-	-	3
Melaleuca laterita	-	-	-	-	4	-	-	2
Macrozamia reidlei	-	-	-	2	-	-	-	-
Lepidosperma longitudinale	-	-	-	3	3	3	2	4
Pericalymma ellipticum	-	-	-	-	-	2	-	-
Banksia littoralis	-	-	-	-	-	3dead	-	-
Stylidium sp.	-	-	-	1	-	1	-	-
Utricularia sp.	-	-	-	1	1	-	-	-
**Isolepis cernua*	-	-	-		2	1	-	2

2.1.12 Darradup Rd East

Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Anarthria scabra	9	9	9	8	2	8	-	5
Adenanthos obovatus	3	3	2	3	2	2	2	2
Pimelea longiflora	-	2	1	1	1	1	1	3
Haemodoracea spicatum	-	1	1	-	-	-	-	-

Sp 270 Jacksonia sp.	-	-	-	-	-	-	-	-
Xanthorrhoea preissii	-	-	-	-	-	-	-	-
Dasypogon bromeliifolius	5	2	3	3	2	2	4	2
Johnsonia lupulina	-	1	-	-	-	-	1	-
Velleia trinervis	2	2	2	2	-	-	-	-
Drosera marchantii	2	2	-	-	-	1	1	-
Comesperma flavum	-	-	1	-	-	-	-	-
Melaleuca thymoides	-	2	-	-	-	-	-	-
Sp 241 Dampiera sp.	-	-	1	-	-	-	-	-
Lyginea imberbis	-	-	-	-	-	-	-	3
Sphenotoma gracile	1	2	1	-	2	-	2	2
Adenanthos meisneri	-	-	-	-	-	-	-	-
Pericalymma ellipticum	-	2	3	2	3	1	2	3
Andersonia caerula	-	1	-	-	-	-	-	1
Stylidium calcaratum	-	-	-	-	2	-	2	1
Hypolaena exsulca	-	3	1	2	1	-	1	4
Sp D2 Pulteneaea sp.	-	-	-	-	-	-	-	-
Sp D3 Leucopogon assimilis	-	2	-	3	-	-	-	-
Hypocalymma angustifolium	-	-	1	2	4	3	4	5
Cassytha racemosa	-	-	-	-	-	1	-	2
Astartea juniperiana	-	-	-	3	3	2	-	-
Sphaerolobium fornicatum	-	-	1	-	-	-	-	-
Beaufortia sparsa	-	2	-	2	2	1	-	2
Sp 247 Acacia sp.	1	2	2	-	1	2	3	2
Nuytsia floribunda	-	3	3	-	-	2	2	1
Eucalyptus marginata	1	-	3	-	-	-	-	-
Dampiera linearis	-	-	-	-	-	-	-	1
Scaevola calliptera	-	-	2	2	-	1	1	-
Sp 262 Isolepis sp	-	-	-	-	3	1	-	-
Sp. 266 Drosera sp.	-	-	-	-	-	-	-	-
Melaleuca preissiana	-	-	-	4	2	-	-	2
Hypocalymma ericifolium	1	2	-	-	-	-	-	-
Phlebocarya ciliata	-	-	-	-	-	2	-	3
Boronia anceps	-	2	-	3	2	-	3	6
Xyris roycei	-	-	-	-	-	-	-	2
Evandra aristata	1	2	3	3	-	-	-	-
Drosera sulphurea	-	-	-	-	-	-	-	-
Stylidium repens	-	-	2	-	1	-	2	4
Phyllangium paradoxum	2	2	1	2	-	2	2	-
Hakea ceratophylla	-	-	-	-	-	-	2	-
Sp 182 Rubiaceae sp.	-	-	-	-	-	-	-	-
Taxandria parviceps	-	4	-	3	-	3	3	4
Schoenus curvifolius	2	-	-	1	-	-	-	1
Melanostachya ustulata	3	-	-	4	3	-	3	6
Leucopogon elatior	-	1	-	-	-	-	-	-
Meeboldina denmarkica	-	-	-	2	-	-	-	2
Lobelia sp.	-	-	-	2	2	2	-	1
Levenhookia stipitata	-	-	-	-	2	2	4	3
Taxandria sp.	-	-	-	-	-	-	-	5
Desmocladus fasciculatus	-	-	-	-	-	-	2	3
Philydrella pygmaea	-	-	-	-	1	1	3	-
Acacia mooreana	-	-	-	-	-	-	-	2
Eutaxia epacridoides	-	-	-	-	-	-	-	3

Lindsaea linearis	-	-	-	-	-	-	-	*4*
Mesomelaena graciliceps	-	-	-	-	-	-	-	*1*
2.1.13 Jangardup Rd								
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Sp 55 Restionaceae sp.	*7*	-	-	-	-	-	-	-
Sp 60 Taxandria inundata	*2*	-	-	-	-	-	-	-
Meeboldina scariosa	*4*	-	*2*	-	-	-	-	-
Xyris roycei	*1*	-	*2*	-	-	-	*2*	-
Beaufortia sparsa	*3*	-	*3*	-	-	*5*	-	*3*
Sp 77 Acacia sp.	*2*	*4*	*3*	*4*	*3*	*2*	*5*	*4*
Schoenus indutus P1	*2*	-	-	-	*2*	-	-	-
Homalospermum firmum	*3*	-	-	-	-	-	-	-
Astartea juniperina	*9*	-	-	-	-	-	-	-
Adenathos obovatus	*1*	*3*	*3*	*3*	*3*	*3*	*3*	*1*
Taxandria parviceps	-	*4*	*3*	*3*	*4*	*8*	*1*	*7*
Pericalymma ellipitcum	-	*2*	*2*	*1*	*2*	-	*3*	-
Anarthria prolifera	-	*8*	*8*	*4*	*7*	*3*	*4*	*3*
Dampiera linearis	-	*3*	*2*	*2*	*1*	*1*	*2*	-
Anarthria scabra	-	-	*5*	*9*	*1*	*8*	*8*	*10*
Drosera sulphurea	-	*1*	*2*	*2*	*2*	*1*	*2*	*1*
Xanthorrhoea preissii	-	*1*	*2*	-	*3*	*2*	*2*	-
Dasypogon bromeliifolius	-	*3*	*4*	*4*	*4*	*3*	*5*	*3*
Evandra aristata	*3*	*6*	*6*	*3*	*3*	*3*	*3*	*4*
Pimelea longiflora	-	*1*	-	-	-	-	-	-
Amphipogon turbinatus	-	*3*	*2*	*2*	*2*	-	-	-
Lyginea imberbis	-	*1*	-	-	*2*	-	*1*	-
Comesperma confertum	-	*2*	-	-	*1*	-	*2*	-
Cyathochaeta clandestine	*3*	-	*1*	-	-	-	-	-
Acacia semitrullata	-	*3*	-	*3*	*3*	*6*	-	-
Tremulina tremula	-	*3*	*2*	*3*	*5*	*2*	*4*	*1*
Melaleuca thymoides	-	*4*	*3*	*3*	*3*	*3*	*3*	*1*
Kunzea recurva	-	*3*	*4*	*4*	*3*	*3*	*6*	*5*
Kunzea micrantha	-	*3*	-	*3*	*3*	*5*	*3*	*7*
Boronia crenulata	-	*2*	*3*	*2*	*2*	*2*	*2*	-
Sp 90 Lepidosperma viscidum	-	*2*	-	*2*	-	-	-	-
Thylmitra aff macrophylla	-	-	-	-	-	-	-	-
Cassytha racemosa	-	-	-	-	-	-	-	-
Sp 49 Restionacea sp.	-	-	*2*	-	-	-	-	-
Sp 50 Tricostularia neesii	-	-	*1*	-	-	-	-	-
Andersonia caerulea	-	*2*	*1*	*1*	-	-		-
Bossiaea linophylla	-	-	-	*4*	*2*	-	*3*	-
Sp 28 Lyginea imberis	-	-	-	*1*	-	-	-	-
Sp 15 Papilionaceae sp.	-	-	-	*2*	-	-	-	-
Lomandra caespitosa	-	-	-	*1*	*2*	-	*2*	-
Xanthosia huegelii	-	-	-	-	-	-	-	-
Melaleuca preissiana	-	-	-	-	-	*2*	-	-
Hypocaylmma angustifolium	-	-	-	-	-	-	*3*	-
Sphenotoma gracile	-	*3*	*2*	*2*	-	-	*2*	-
Acacia pulchella var. goadbyi	-	-	-	-	-	-	-	*2*
Billardiera laxiflora	-	-	-	-	-	-	-	*1*

Hypolaena exsulca	-	-	3	3	2	2	2	2
Meeboldina denmarkica	-	-	2	-	-	-	2	-
Anarthria laevis	-	1	-	-	-	-	-	-
Sphaerolobium medium	-	-	-	1	-	-	-	-
Mesomelaena graciliceps	-	-	-	2	-	2	2	2
Leucopogon assimilis	-	-	-	-	1	-	-	-
Haemadoron spicatum	-	-	-	-	-	-	-	1
Tricostularia neesii	-	-	-	-	-	-	-	2
2.1.14 Blackwood River Crossing/Longbottom Rd Wetland								
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Pericalymma ellipticum	10	9	10	10	8	9	9	9
Cassytha racemosa	1	-	1	2	-	-	-	-
Sp 55 Restionaceae sp. [Anarthria prolifera]	5	8	5	8	9	5	6	7
Conostylis laxiflora	3	3	3	4	3	3	4	4
Cyathochaeta avenacea	4	2	2	3	4	3	4	4
Sp 41 Drosera sp.	2	2	2	-	-	-	-	1
Sp 163 Hakea sp.	4	3	4	3	7	3	4	4
Comesperma confertum	1	2	-	-	3	-	1	1
Mesomelaena tetragona	5	4	3	4	2	-	-	-
Anigozanthos flavidus	-	3	2	-	3	-	3	2
Oxylobium lineare	-	2	2	1	-	-	-	-
Dampiera linearis	2	-	2	-	3	2	2	1
Melaleuca preissiana	-	-	-	-	8	2	-	-
Lobelia alata	-	-	-	-	1	-	-	-
Sp 37 Leucopogon sp. [australis]	-	-	-	-	3	-	-	-
Villarsia parnissifolia	-	-	-	-	2	-	-	1
Lindsaea linearis	2	3	-	-	-	-	-	-
Trifolium sp./Medicargo sp.*	1	1	1	1	-	-	-	-
Lolium sp.*	1	-	-	1	-	-	-	-
Lepyrodia muirii	-	-	2	2	2	3	3	2
Orchid sp. 1								
Stylidium sp.	-	-	-	-	-	-	2	1
2.1.15 Lake Jasper – east								
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Taxandria inundata	4	-	3	-	3	-	1	2
Baumea articulata	3	8	2	-	-	-	-	-
Callistachys lanceolata	3	-	1	9	5	-	-	-
Baumea juncea	8	8	9	-	-	-	-	-
Diaspasis filifolia	2	-	2	-	-	-	-	-
Melaleuca preissiana	-	-	-	3	-	-	-	-
Triglochin sp.	3	2	2	-	-	-	-	-
Pteridium esculatum	-	-	5	8	3	-	4	-
Macrozamia reidlei	-	-	3	3	4	3	6	7
Opercularia hispidula	-	-	4	5	2	-	2	2
Acacia rostellifera	-	-	-	4	5	5	6	4
Stackhousia monogyna	-	-	-	-	-	4	1	2
Xanthorrhoea preissii	-	-	4	3	4	6	5	3
Sp 129 Asteraceae sp.	-	-	-	-	-	-	-	-
Eucalyptus megacarpa	-	-	3	-	-	3	-	-

Stylidium amoenum	-	-	-	-	*3*	-	*2*	*1*
Hardenbergia comptoneana	-	-	-	*2*	-	*1*	*1*	-
Hypolaena exculsa	-	-	-	-	*4*	*3*	*2*	*3*
Dampiera linearis	-	-	-	-	*1*	-	*1*	*2*
Anarthria prolifera	-	-	-	-	-	-	*4*	*3*
Banksia attenuata	-	-	-	-	-	-	*2*	*1*
Pultenaea drummondii	-	-	*1*	-	*4*	*3*	-	*1*
Gompholobium tomentosum	-	-	-	-	-	-	-	*1*
Kunzea sp.	-	-	-	-	-	-	-	*2*
Astartea fascicularis	-	-	*3*	-	-	-	-	-
Sollya sp.	-	-	-	-	*2*	-	-	-
Leucopogon revolutus	-	-	-	*4*	*8*	-	*3*	*3*
Leucopogon elatior	-	-	-	-	-	-	*3*	*2*
Melaleuca thymoides	-	-	-	-	-	-	*2*	*4*
Thelymitra sp.	-	-	-	*1*	-	-	-	-
Bossiaea praetermissa	-	-	-	-	-	-	*2*	*4*

2.2 Terrestrial Sites

2.2.1 Jack Track								
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Xanthorrhoea brunonis					1			
Xanthorrhoea preissii	1	2	3		2	4	4	6
Anarthria prolifera	5	3	5	4	4	5	6	4
Adenathos obovatus	3	3	3	3	3	3	3	3
Andersonia caerula	3	5	2	4		2	2	2
Hypocalymma robustum	1		3	1	1	2	2	
Dasypogon bromeliifolius	2	4		3	3	2	2	4
Anarthria scabra	8	9	10	10	10	10	8	9
Johnsonia lupinia	2		2	2	4	2	2	
Lyginia barbata	3	3	3			1	1	
Melaleuca thymoides	6	3	5	6	4	7	8	5
Pimelea longiflora	1		3	3	3	3	1	2
Pericalymma ellipticum	3	3	3		3			3
Lechenaultia biloba	1							
Hibbertia pilosa	4	2		3	2		1	2
Patersonia occidentalis		2		1		2	2	
Hibbertia stellaris	2							
Kunzea recurva	4		3	2	2	1	2	2
Bossiaea linophylla	2	2						
Lindsaea linearis	1		1				2	
Nuytsia floribunda	2		4	1		2		
Sp 162 Leucopogon gilbertii	4	5	2					
Sp 163 Leucopogon sp. Darradup	3	3	4	4	3	3		3
Sp 164	1							
Lomandra nigricans	4	4	3	3	3	2	4	4
Stylidium repens								
Hypolaena exsulca	2	2						
Petrophile linearis			2	1		1	1	
Lysinema ciliatum		3	3	3		1		
Sphenotoma gracile								2
Sp 168 Dillwynia laxiflora		4	4	3	2	5	3	6
Tetratheca setigera			2	2	1	3		
Lomandra caespitosa								
Eucalyptus marginata			2	7		8		2
Cassytha racemosa			1			2	2	2
Acacia uliginosa			3					
Comesperma confertum			1					
Dampiera linearis				2				
Sp 155 Mesomelaena graciliceps	1				1	2		
Conospermum capitatum subsp. glabratum			1	1				
Scaevola calliptera					1			
Allocasuarina fraseriana		2				3		3
Sphaerolobium fornicatum								
Caladenia sp.								
Drosera sp.	1		1			1		1
Mitrasacme paradoxa								

Hodgsoniola junciformis			*1*			*1*		
Thelymitra sp.	*1*							
Papilonaceae sp.			*1*					
Boronia sp. (Stewart rd)						*2*		
Scaevola sp.					*2*			
Herb sp.	*1*		*1*					
Beaufortia sparsa								*2*
2.2.2 Milyeanup								
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***		
Platysace tenuissima	*2*	*1*	*3*		*2*	*2*		
Opercularia hispidula	*3*	*2*	*2*	*2*	*3*			
Lindsaea linearis	*3*	*3*						
Chorizema nanum	*2*	*2*	*3*	*3*	*3*	*2*		
Lolium tremulentum		*2*	*2*	*3*	*2*	*2*		
Desmocladus fasciculatus	*4*	*2*	*3*	*2*	*2*			
Dampiera linearis	*2*		*1*		*1*			
Acacia extensa	*2*	*3*		*4*				
Leucopogon australis	*3*	*2*			*1*			
Persoonia longiflora	*1*		*2*					
Mesomelaena tetragona	*2*		*3*					
Conostylis laxiflora		*2*		*2*				
Tetraria capillaris	*3*	*3*	*2*		*3*			
Podolepsis lessonii						*2*		
Kennedia coccinea		*2*			*1*			
Eucalyptus marginata	*7*	*6*	*5*	*7*	*7*	*4*		
Corymbia calophylla	*6*		*3*	*3*	*3*	*9*		
Hibbertia cunninghamii	*2*	*4*		*1*		*2*		
Bossiae linophylla	*7*	*4*	*5*	*8*	*4*	*4*		
Dampiera headenaceae						*2*		
Gompholobium marginatum	*3*	*3*	*2*	*2*	*2*	*2*		
Agrostocrinum stypandroides	*1*		*2*					
Cyathochaeta avenacea			*1*	*3*		*2*		
Mirbelia dilatata	*4*	*3*	*4*		*4*	*4*		
Anigozanthos flavida	*2*	*4*	*3*			*2*		
Lagenphora huegelii		*2*	*2*	*3*		*2*		
Thysantous multiflorus			*1*		*1*	*1*		
Haemodorum spicatum	*2*							
Billardiera floribunda				*1*		*1*		
Pteridium esculentum	*3*	*2*	*3*		*4*			
Sp 182	*2*	*2*	*2*	*2*	*2*	*2*		
Thysantous tenellus	*2*		*1*		*2*			
Hypolaena exsulca	*3*	*3*	*2*	*1*	*2*	*3*		
Scaevola calliptera					*1*			
Leucopogon verticillatus	*2*					*2*		
Fleshy exotic								
Anigozanthus manglesii						*2*		
Patersonia umbrosa	*3*		*3*	*3*	*3*			
Taxandria linearifolia	*3*							
Dasypogon bromeliifolius								
Sp 269 Stylidium schoenoides.	*2*							
Sp 270								

Xylomelon occidentale		*3*	*3*	*5*			
Banksia grandis	*2*	*3*	*3*	*1*	*3*	*Dead*	
Xanthorrhoea preissii		*5*					
Macrozamia riedlei		*4*	*3*	*4*	*2*		
Conostylis setigera	*3*	*2*	*2*		*1*		
Lomandra caespitosa	*4*		*2*				
Sp 37 (Curly Sedge)			*2*				
Gompholobium knightiatum	*3*						
Hypolaena pubescens		*2*		*5*			
Gompholobium preissii			*2*	*1*			
Hibbertia pilosa		*2*	*3*	*2*		*3*	
Acacia uglinosa	*3*						
Stylidium piliferum						*2*	
Sp 129 (herb)	*2*		*2*				
Acacia pulchella goadabyi		*1*	*1*				
Trachymene sp.		*1*	*2*				
Tetraria laevis							
Pentapeltis peltigera			*2*		*2*		
Xanthosia candida			*3*		*2*	*3*	
Lepidosperma pubisquameum		*2*			*2*	*4*	
Lagrus obovatus							
Sp 211 Austrostipa sp.		*2*				*2*	
Samolus repens			*2*	*2*	*2*	*2*	
*Sonchus oleareus**							
Stylidium amoenum	*1*					*3*	
Astroloma ciliatum		*2*	*1*				
Stackhousia monogyna			*1*	*1*	*2*		
Tripterococcus brunonis							
Hypolaena sp.		*3*					
Banksia littoralis					*1*	*1*	
Trifolium sp.				*1*			
Drosera sp.	*2*	*1*	*2*	*1*	*1*		
Kennedia prostrata			*1*				
Thysanotis sp.							
Levenhookia pusilla							
Caesia micrantha	*1*				*2*	*1*	
Thelymitra sp.(orchid pink)		*1*				*1*	
Pimelea sp. (white)	*2*						
Leucopogon hirsutus	*1*		*2*				
Cassytha sp.				*1*			
Hovea chorizemifolia						*2*	

2.2.3 Poison Gully

Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Astartea juniperiana	*4*							
Dasypogon bromeliifolius	*5*	*6*	*4*	*4*	*5*	*5*	*4*	*3*
Anarthria scabra	*8*	*7*	*7*	*3*	*3*	*3*	*6*	*5*
Hypolaena exsulca	*3*	*1*	*1*	*1*	*3*	*3*	*3*	*2*
Pultenaea reticulata	*8*		*4*	*4*	*3*			*3*
Eucalyptus marginata	*5*		*8*	*4*	*8*	*6*	*4*	*5*
Melaleuca thymoides	*4*	*2*	*3*		*3*	*4*	*5*	*3*
Pimelea longiflora	*2*		*1*					

Xanthorrhoea preissii	*1*		*3*	*1*	*3*	*1*	*3*	
Stylidium scandens			*3*	*2*	*3*	*3*	*2*	*3*
Sp 35 Lepidosperma pubsquteum	*2*	*2*				*1*	*1*	*2*
Leucopogon australis	*2*							
Hypolaena pubescens	*1*		*2*	*1*	*2*	*2*	*2*	*1*
Tricoryne elatior								
Adenanthos obovatus		*3*			*2*	*3*	*1*	*2*
Allocasuarina fraseriana		*8*	*1*	*6*	*1*	*4*		
Adenanthos meisneri		*2*		*3*		*3*	*2*	*5*
Anarthria prolifera		*3*	*2*	*2*	*3*	*3*	*3*	*2*
Desmocladus fasciculatus		*2*	*2*	*1*	*3*	*2*	*3*	*2*
Xylomelon occidentale		*2*	*3*	*1*	*1*			
Daviesia inflate					*2*	*3*	*3*	*3*
Xanthorrhoea gracilis		*1*					*2*	
Sp 134 Lomandra caespitosa		*4*	*3*	*2*			*2*	
Lomandra nigricans		*2*	*4*	*1*			*3*	*2*
Hibbertia cunninghamii			*1*	*1*		*1*	*3*	*1*
Astroloma pallidum						*1*	*1*	*3*
Sp 150 Levenhookia pusilla								
Platysace tenuissima								
Pentapeltis peltigera		*2*	*2*	*2*	*3*	*2*	*2*	*2*
Sp 75 Tetraria capillaries	*3*	*1*	*2*	*2*	*2*		*2*	
Scaevola calliptera	*2*	*1*	*2*		*2*	*1*	*2*	*1*
Dampiera linearis		*2*	*2*	*1*	*2*		*2*	*2*
Banksia grandis			*5*			*3*		*3*
Hakea ruscifolia			*2*		*3*	*2*		*1*
Acacia extensa				*1*				
Sp 177 Drosera sp.			*1*		*2*			
Thysantous tenellus			*1*					
Epacridaceae sp.								
Conostylis setigera		*2*	*3*	*2*	*2*	*2*	*3*	*1*
Sp 183 Hibbertia pilosa			*1*					*1*
Burchardia umbellate			*2*			*1*		
Grevillea quercifolia					*3*	*2*	*3*	
Haemodorum spicatum								
Petrophile linearis		*1*	*1*		*1*	*1*		
Isopogon sphaerocephalus		*1*		*1*	*1*	*3*	*1*	*4*
Lindsaea linearis	*2*							
Gompholobium polymorphum								
Banksia attenuate				*5*	*4*			
*Sp 30 Poaceae sp.**								
Macrozamia riedlei					*2*	*1*		
Hypocalymma robustum					*2*	*2*		
Sp 112 Jacksonia sp.					*2*	*2*	*3*	
Patersonia umbrosa					*3*		*2*	*2*
Hibbertia quadricolour			*1*	*2*	*3*	*2*	*1*	*2*
Dryandra lindeyana					*3*			*1*
Acacia stenoptera	*1*	*3*						*1*
Corymbia calophylla						*4*	*5*	
Patersonia occidentalis						*2*	*2*	
Thelymitra aff. macrophylla			*1*		*2*	*1*	*2*	
Cassytha racemosa							*1*	

Sp 24 Orchidaceae sp.								
Boronia denticulate							*2*	*1*
Philotheca spicata								
Thysanotus manglesianus							*1*	
Acacia pulchella							*2*	
Hibbertia hypercoides								*1*
Podocarpus drouynianus								*3*
Sp 194 Epacridaceae sp.		*1*						*2*
Stylidium repens					*1*			
Billardiera laxiflora				*1*			*1*	
Gompholobium ovatum					*2*	*2*	*3*	
Conostylis laxiflora			*1*		*1*	*2*	*2*	
Stylidium schoenoides			*1*					
Caladenia flava							*2*	
Stylidium sp.								*1*
Samolus repens			*1*	*1*	*1*	*1*		
Conostylis aculeata								*1*
Sp. 192 Bossiea sp.					*1*	*1*	*1*	*1*
Loxocarya sp.	*2*		*2*					
Opercularia hispidula			*2*					
Johnsonia lupulina						*2*		
Agrostocrinum stypandroides					*1*			
Sphaerolobium sp.						*2*	*1*	*1*
Bossiaea linophylla						*2*		
Lomandra purpurea							*1*	
Scaevola sp.(large purple flowers)								*1*
Corynotheca micrantha								*1*

2.2.4 Blackwood River Crossing/Longbottom Rd Terrestrial

Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Lindsaea linearis	*9*	*6*	*7*	*8*	*9*	*-*	*-*	*-*
Patersonia umbrosa	*1*	*3*	*2*	*1*	*3*	*3*	*4*	*3*
Acacia browniana	*1*	*1*	*1*	*1*	*2*	*-*	*2*	*2*
Anarthria prolifera	*3*	*2*	*1*	*1*	*1*	*1*	*2*	*2*
Johnsonia lupinina	*4*	*3*	*2*	*4*	*3*	*3*	*1*	*3*
Platysace tenuissima	*2*	*-*	*-*	*-*	*2*	*2*	*3*	*3*
Xanthorrhoea preissii	*3*	*-*	*-*	*-*	*-*	*2*	*3*	*-*
Sp 46 Leucopogon sp.	*3*	*-*	*-*	*-*	*-*	*-*	*-*	*-*
Desmocladus fasciculatus	*3*	*2*	*5*	*3*	*3*	*2*	*2*	*3*
*Sp 9 [minty thing]**	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*
Lyginia barbata	*2*	*2*	*2*	*-*	*-*	*-*	*-*	*-*
Eucalyptus marginata	*8*	*4*	*3*	*5*	*8*	*10*	*-*	*6*
Pimelea spectablis	*2*	*1*	*-*	*-*	*-*	*2*	*2*	*2*
Dasypogon bromeliifolius	*3*	*2*	*4*	*4*	*2*	*5*	*6*	*3*
Bossiaea ornata	*2*	*3*	*3*	*6*	*4*	*3*	*2*	*3*
Hypolaena exsulca	*3*	*3*	*2*	*2*	*4*	*3*	*3*	*3*
Sp 155 [Mesa gracilis?]	*1*	*-*	*-*	*-*	*1*	*2*	*1*	*-*
Hibbertia hypericoides	*7*	*4*	*3*	*1*	*-*	*3*	*3*	*-*
Conospermum capitatum subsp. glabratum	*1*	*-*	*-*	*-*	*-*	*-*	*1*	*-*
Acacia stenoptera	*-*	*-*	*-*	*-*	*-*	*-*	*-*	*-*
Gompholobium knightianum	*-*	*-*	*1*	*-*	*2*	*-*	*1*	*1*

Lomandra purpurea	-	1	2	-	-	-	-	-
Conosytylis laxiflora	2	2	3	3	2	2	2	3
Opercularia hispidula	3	3	2	2	2	2	1	2
Lomandra sp.	2	-	-	-	-	-	-	-
Sp 199 [unknown herb]	1	-	-	-	-	-	-	-
Sp 28 Leucopogon propinquus	-	1	-	1	2	2	1	1
Stylidium amoenum	-	3	2	-	2	-	2	2
Scaevola calliptera	2	2	-	-	-	-	1	-
Taxandria parviceps	1	7	8	8	5	6	8	8
Persoonia longiflora	1	1	-	-	-	-	-	-
Corymbia calophylla	-	3	5	10	4	6	4	6
Dampiera linearis	2	1	-	2	2	2	2	-
Sp 201 Tetrarrhena laevis	1	1	1	1	1	2	-	2
Sp 202 Bossiaea linophylla	-	3	3	3	-	-	-	-
Hakea ruscifolia	-	-	-	-	2	2	-	1
Sp 204 Phlebocaryx ciliata	-	3	3	-	-	-	-	-
Pentapeltis peltigera	-	-	2	-	2	-	3	1
Adenanthos obovatus	-	-	4	2	-	2	-	2
Conostylis setigera	1	2	2	2	2	-	1	2
Banksia grandis	-	-	3	2	-	-	-	-
Sp 30 Lagurus ovatus	-	-	-	-	-	-	1	3
Gompholobium marginatum	1	2	1	1	-	-	2	1
Sp 75 Tetraria capillaris	1	-	2	3	2	2	1	-
Lepidosperma pubisquatmatum	1	-	1	-	2	2	-	2
Sp 206 Leptomeria sp.	-	-	2	-	-	-	-	-
Comesperma confertum	-	-	-	-	-	-	-	-
Agrostocrinum stypandroides	1	1	2	2	2	-	-	1
Cassytha racemosa [native variant]	-	-	-	3	-	1	-	-
Billardiera laxiflora	-	-	1	1	1	1	-	1
Hibbertia cunninghamii	-	1	-	1	1	1	2	3
Lagenophora huegelii	-	-	-	-	-	2	1	2
Gompholobium preissii	1	1	-	-	1	2	1	-
Tricoryne elatior	-	-	2	2	-	-	1	1
Sp 211 Austostipa sp.	-	-	-	-	-	-	-	-
Mesomelaena tetragona	-	-	-	2	4	2	3	2
Philotheca spicata	1	1	2	-	2	-	2	2
Xylomelon occidentale	-	-	-	-	5	1	-	-
Thelymitra aff. macrophylla	-	1	2	-	1	1	-	3
Cyathochaeta avenacea	3	1	2	-	2	-	-	-
Acacia pulchella	-	-	-	-	1	-	1	1
Daviesia inflata	-	-	-	-	3	-	-	-
Sp 182 herb	-	-	1	-	1	1	-	1
Xanthorrhoea brunonia	-	-	-	-	-	-	2	-
Elthranthera emarginata	-	2	1	-	2	2	1	-
Hakea amplexicaulis	-	-	-	-	-	-	2	-
Sp 217 Dampiera sp.	-	-	-	-	-	-	-	-
Grevillea trifida	-	-	-	-	-	-	2	-
Pericalymma ellpticum	-	-	-	-	-	-	2	-
Xanthosia candida	-	-	-	-	-	-	-	2
Platysace filiformis	-	-	-	-	-	-	-	-
Sp 220 Poaceae sp.*	-	-	-	-	-	-	-	-

Leucopogon propinqus	-	-	-	-	-	-	-	-
Thysanotus multifloris	1	-	-	-	-	-	-	-
**Briza maxima*	-	-	-	-	-	-	1	-
Gompholobium marginata	-	-	-	-	-	2	-	2
**Ehrharta loniflora.*	-	-	-	-	-	-	-	1
Acacia extensa	1	-	-	-	-	-	-	2
Samolus repens	-	2	1	1	1	-	1	2
Thysanotus tenuissima.	-	-	1	-	1	-	-	1
Drosera sp.	-	-	-	1	-	-	-	-
Sollya heterophylla	-	-	-	1	-	-	-	1
**Lolium sp.*	-	-	-	-	1	-	-	-
Trachymene pilosa	-	-	-	-	-	1	1	1
Patersonia occidentalis	-	-	-	-	-	1	-	1
Sphaerolobium sp.	-	-	-	-	-	-	1	-
Tetraria octandia?	-	-	-	-	-	-	3	3
Stylidium calcaratum	-	-	-	-	-	-	2	-

2.2.5 Darradup Rd North

Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Hovea elliptica	3	-	2	1	1	-	3	3
Patersonia umbrosa	4	3	4	2	4	-	2	3
Platysace tenuissima	3	1	1	2	1	2	-	1
Acacia browniana	3	3	2	2	2	2	1	2
Stylidium amoenum	2	2	2	2	1	1	1	2
Lindsaea linearis	4	6	3	-	-	-	-	2
Pimelea spectabilis	3	2	2	1	-	1	2	1
Pentapeltis peltigera	1	2	2	1	1	2	2	1
Grevillea quercifolia	-	2	2	2	2	-	-	1
Taxandria parviceps	5	7	4	8	8	4	7	7
Adenanthos obovatus	2	-	1	1	-	3	3	3
Hakea amplexicaulis	3	2	2	2	2	2	1	3
Scaevola calliptera	3	-	1	1	1	1	1	1
Euclayptus marginata	4	8	4	5	5	4	7	9
Corymbia calophylla	5	-	5	5	6	3	6	5
Hibbertia cunninghamii	4	1	2	2	2	1	2	2
Bossiaea ornata	3	6	6	3	3	2	4	4
Lepidosperma pubisquatmatum	2	-	-	-	-	2	-	-
Cyathochaeta avenacea	3	-	1	2	2	-	-	-
Kingia australis	3	3	4	4	5	3	3	3
Thomasia folisa	2	3	3	2	1	3	3	3
Sp 75	4	3	3	3	2	2	3	3
Grevillea trifida	3	-	-	1	1	2	-	-
Hibbertia quadricolour	2	1	-	2	-	-	1	-
Sp 201 Poaceae sp.	2	2	2	1	-	-	2	1
Lomandra purpurea	1	-	-	1	1	-	1	1
Johnsonia lupinina	2	-	-	-	-	2	-	-
Gompholobium obovatum	-	-	1	-	1	1	2	-
Drosera erythrorhiza	-	3	1	-	-	1	2	2
Thelymitra aff. macrophylla	-	2	1	2	1	-	-	2
Sp 30 Poaceae sp.	-	-	-	1	1	1	-	1
Allocasuarina fraseriana	-	5	-	-	-	-	-	-
Sp 110 Epacridaceae sp.	-	1	1	-	1	-	-	-

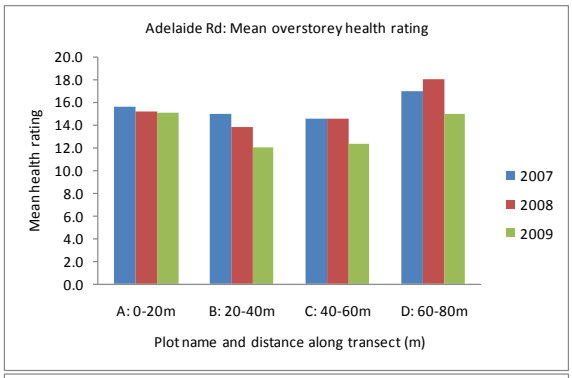
Billardiera laxiflora	*1*	-	-	*2*	*1*	-	*1*	*1*
Dampiera trigona	-	-	-	-	-	-	-	-
Agrostocrinum stypandroides	-	*1*	-	*1*	-	-	-	*1*
Isopogon sphaerocephalus	-	-	*1*	*1*	-	-	-	-
Desmocladus fascicularis	-	*2*	*1*	*1*	*3*	*2*	*2*	-
Samolus repens	-	*2*	-	-	-	-	*1*	-
Cassytha racemosa	-	-	-	-	-	-	-	-
Thysanotus multiflorus	-	-	*2*	*1*	*1*	-	*1*	*3*
Mesomelaena tetragona	-	-	*2*	-	-	*4*	-	-
Sphaerolobium grandiflorum	-	-	*1*	*1*	*2*	-	-	-
Sphaerolobium fornicatum	*2*	-	*1*	*2*	*3*	*1*	*2*	*2*
Boronia denticulata	-	-	*3*	*1*	*2*	*2*	*2*	-
Dampiera linearis	*1*	-	*1*	*2*	*1*	-	*1*	-
Hakea linearis	-	-	-	*2*	-	-	-	-
Sp 46 Leucopogon australis	-	-	-	*1*	*3*	-	-	-
Hypolaena exsulca	*2*	*3*	-	*2*	*2*	-	-	-
Anarthria prolifera	-	-	*1*	*2*	*3*	*1*	*2*	*2*
Dryandra lindleyana subsp. lindleyana	-	-	-	*2*	-	*1*	-	-
Platytheca sp.	*3*	*1*	*1*	*1*	*2*	-	*1*	*5*
Petrophile diversifolia	-	-	-	-	*2*	*1*	-	*3*
Sp 237 Lepidosperma squamatum	-	-	-	-	*1*	-	-	-
Trymalium floribundum	-	-	-	-	-	-	-	-
Acacia obovata	-	-	-	-	*1*	*1*	*1*	*2*
Hypocalymma angustifolium	-	-	-	-	-	*2*	*3*	*1*
Dasypogon bromeliifolius	-	-	-	-	-	*2*	*2*	-
Sp 275 Hibbertia sp.	-	-	-	-	*2*	*1*	-	*1*
Sp 182 ground plant	-	-	-	-	*1*	-	-	*1*
Conostylis setigera	-	*2*	-	*1*	*1*	*3*	*1*	-
Sp 134 Lomandra caespitosa	-	-	-	-	-	-	*1*	*1*
Sp 105	-	-	-	-	-	-	-	-
Sp 37 curly sedge	-	-	-	-	-	-	*1*	-
Sp 157 Thysanotus sp.	-	-	-	-	-	-	-	*2*
Xylomelon occidentale	-	-	-	-	-	-	-	-
Sp 134 Lomandra sp.	-	-	-	-	-	-	-	-
Leucopogon verticillatus	-	-	-	-	*2*	-	*2*	*1*
Levenhookia pusilla	*1*	-	-	-	-	-	-	-
Conospermum (purple)	*2*	-	-	-	-	-	-	-
Opercularia hispidula	-	*2*	*1*	*2*	*2*	-	*1*	*1*
Patersonia occidentalis	-	-	*2*	-	-	-	-	-
Stylidium repens	-	-	-	-	-	*2*	-	-
Stylidium sp (white)	-	-	*1*	-	-	*1*	*1*	-
Daviesia sp.	-	-	-	-	-	*1*	-	-
Chorizema diversifolium	-	-	-	-	*1*	-	-	-
Hypolaena pubescens	-	-	-	-	-	-	-	*2*

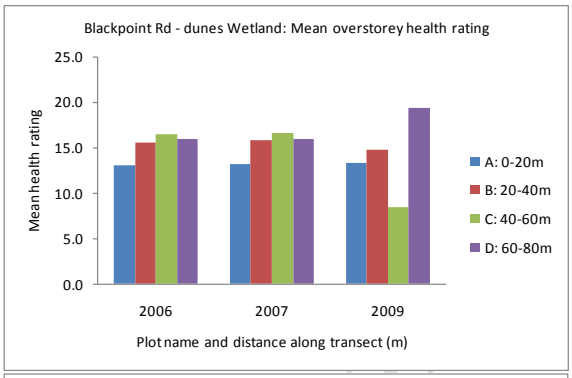
2.2.6 Scott Rd

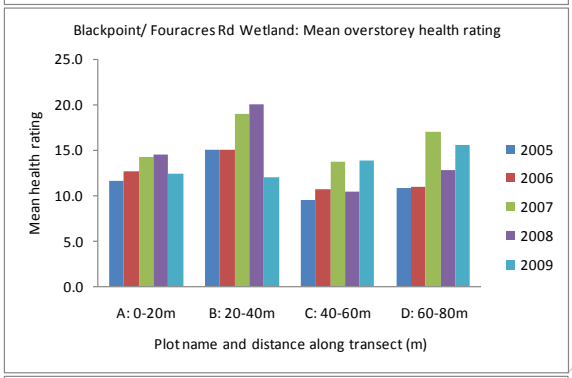
Species	***Cover and abundance***							
	A1	***A2***	***B1***	***B2***	***C1***	***C2***	***D1***	***D2***
Lindsaea linearis	*3*	*4*	*3*	*5*	*3*	*2*	*1*	*3*
Samolus repens	*1*	*2*	*1*	*2*	-	-	-	-
Lomandra caespitosa	*3*	*2*	-	-	-	-	-	-
Anarthria prolifera	*3*	*5*	*4*	*7*	*5*	*1*	*1*	*2*

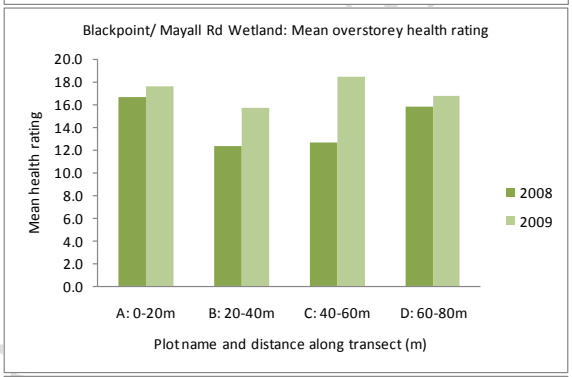
Xanthorrhoea brunonis	3	1	-	1	2	-	-	-
Platysace filiformis	2	-	2	-	2	-	-	-
Dampiera linearis	2	2	2	2	1	1	-	1
Agonis flexuosa	3	-	-	-	-	-	-	-
Taxandria parviceps	4	7	6	9	10	10	10	8
Acacia extensa	3	3	3	3	3	-	3	-
Adenanthos obovatus	2	-	-	-	-	-	-	-
Stylidium scandens	-	1	-	-	2	-	-	-
Dasypogon bromeliifolius	3	-	2	-	3	-	-	-
Hypocalymma robustum	1	1	1	-	1	-	-	-
Hypolaena exculsa	2	-	2	2	2	-	2	-
Anarthria scabra	10	5	7	5	6	-	-	-
Andersonia caerula	1	2	1	-	1	-	-	1
Bossiaea praetermisa	2	-	2	-	2	-	-	-
Johnsonia lupinia	2	-	2	3	2	4	4	5
Eucalyptus marginata	7	3	2	7	2	-	-	-
Melaleuca thymoides	2	-	-	-	-	-	-	-
Corymbia calophylla	7	5	9	5	2	2	2	2
Platytheca galioides	2	2	1	-	-	-	-	-
Gompholobium tomentosum	1	-	1	-	-	-	-	-
Macrozamia riedlei	1	1	1	-	-	-	-	-
Pultenaea reticulata	-	-	-	-	2	-	-	-
Agrostocrinum stypandroides	1	-	-	-	-	-	-	-
Scaevola calliptera	-	1	1	2	1	1	-	1
Cassytha racemosa	-		-	1	1	-	1	-
Xanthorrhoea preissii	-	3	4	-	2	4	3	5
Opercularia hispidula	1	-	-	-	-	-	-	-
Patersonia occidentalis	2	2	-	-	-	-	-	-
Sp 147 Acacia semitrullata P4.	-	3	-	4	3	1	-	2
Stylidium repens	-	2	-	-	-	-	-	-
Trymalium floribundum	-	1	-	-	-	-	-	-
Sp 151 Leucopogon sp.	-	-	3	3	2	-	-	-
Petrophile linearis	-	-	1	-	-	-	-	-
Melaleuca preissiana	-	-	-	3	-	1	-	-
Conostylis laxiflora	-	-	-	-	-	3	2	2
Pericalymma ellipticum	-	-	-	-	-	1	-	-
Sp 126 Eutaxia epacridoides	-	-	-	-		1	2	1
Boronia crenulata	-	-	-	-	1	-	2	3
Pimelea spectabilis	-	-	-	-	-	-	-	1
Hovea elliptica	-	-	-	-	-	-	-	1
Sp 46 Leucopogon propinquus	-	-	-	1	1	-	-	1
Levenhookia pauciflora	-	-	-	-	-	-	-	1
Jacksonia horrida	1	-	-	-	-	1	1	1
Drosera stelliflora	-	-	-	-	-	-	-	-
Mesomelaena graciliceps	1	-	-	1	3	-	-	-
Orchid (white)	-	-	1	-	-	1	-	-
Drosera sp.	-	-	-	1	1	-	-	-
Billardiera laxiflora	-	-	-	-	-	-	1	-
Cyathochaeta avenacea	-	-	-	-	-	-	2	-

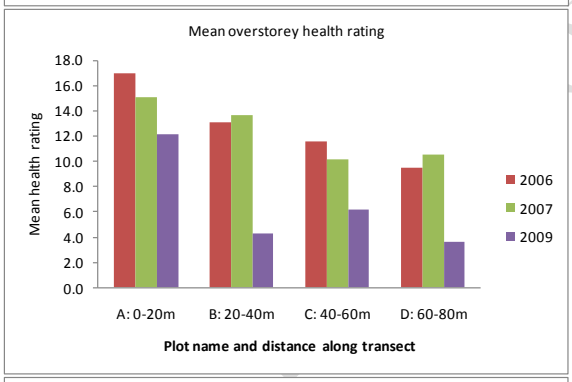
Appendix 3: Mean canopy health of overstorey species.

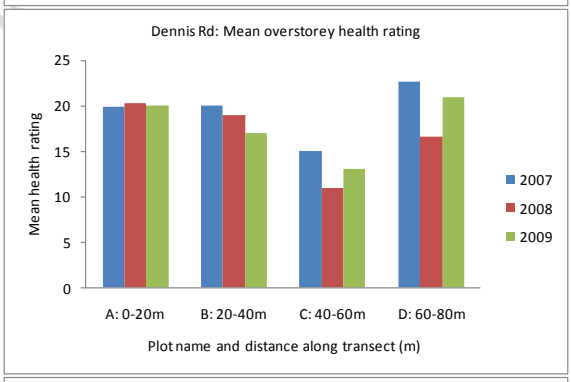


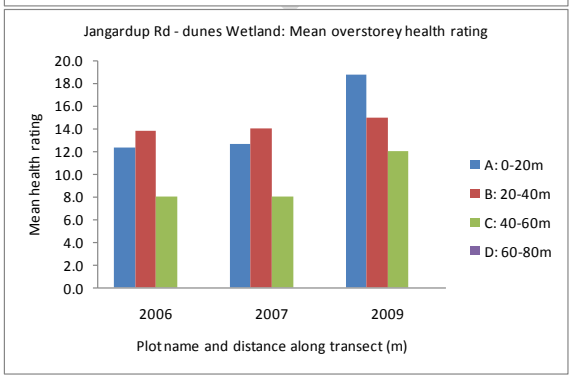


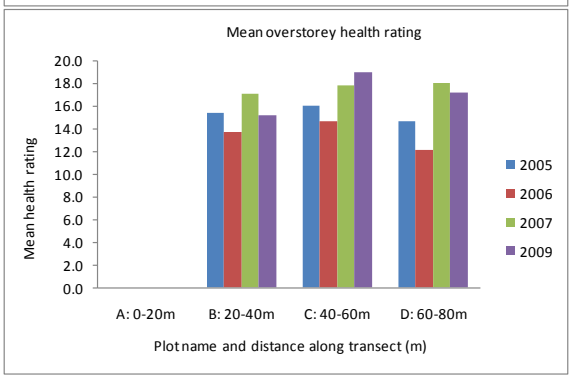


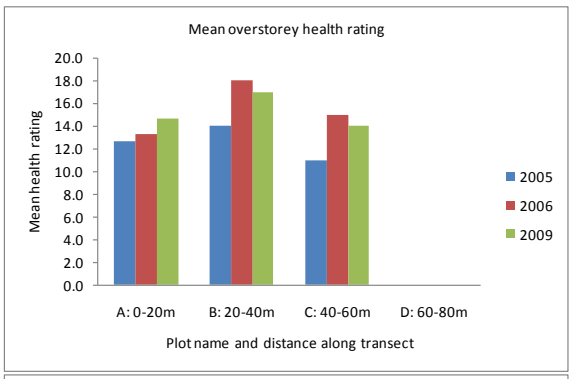


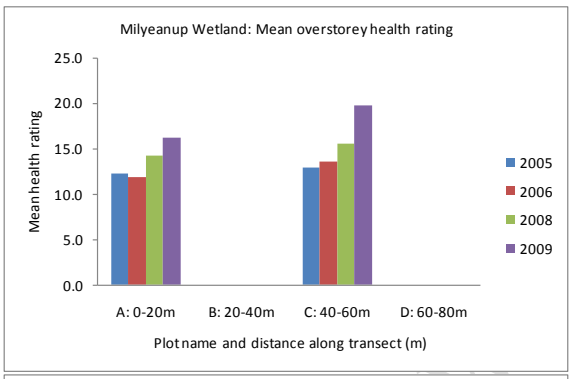


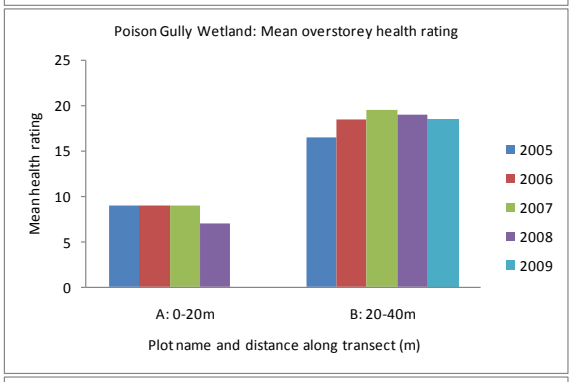


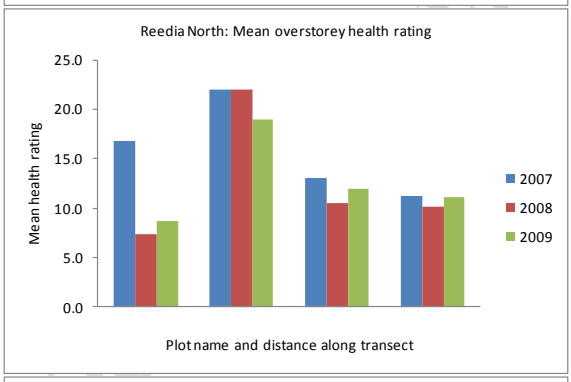




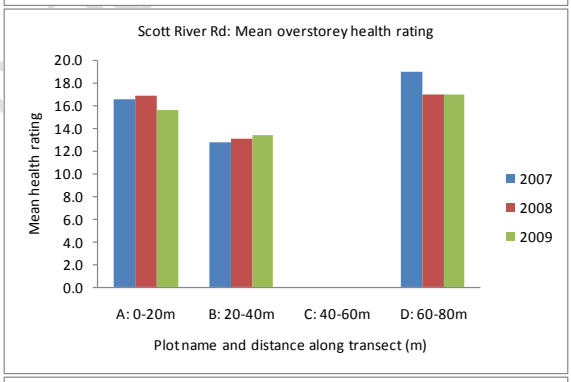

Mean overstorey health rating
Mean health rating
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
A: 0-20m
B: 20-40m
C: 40-60m
D: 60-80m
Plot name and distance along transect
2005
2006
2009

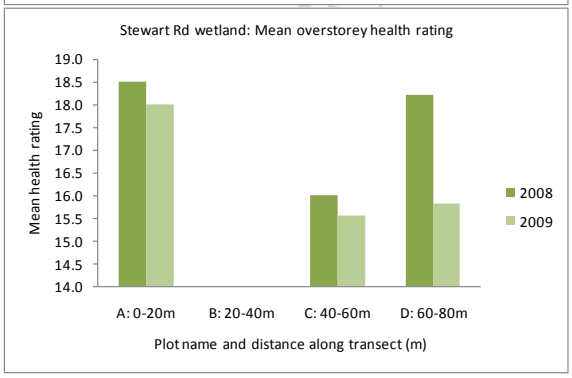

Milyeanup Wetland: Mean overstorey health rating
Mean health rating
25.0
20.0
15.0
10.0
5.0
0.0
A: 0-20m
B: 20-40m
C: 40-60m
D: 60-80m
Plot name and distance along transect (m)
2005
2006
2008
2009

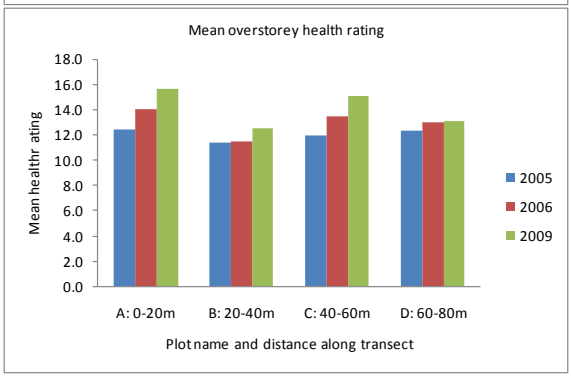

Poison Gully Wetland: Mean overstorey health rating
Mean health rating
25
20
15
10
5
0
A: 0-20m
B: 20-40m
Plot name and distance along transect (m)
2005
2006
2007
2008
2009

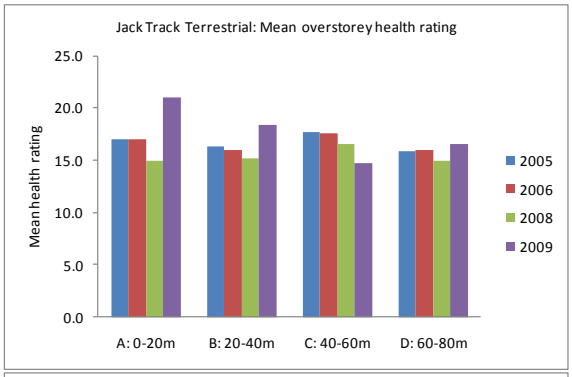

Reedia North: Mean overstorey health rating
Mean health rating
25.0
20.0
15.0
10.0
5.0
0.0
Plot name and distance along transect
2007
2008
2009

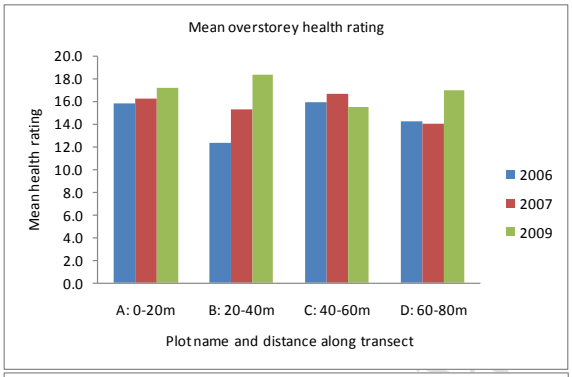

Reedia South: Mean overstorey health rating
Mean health rating
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Plot name and distance along transect (m)
2007
2008
2009

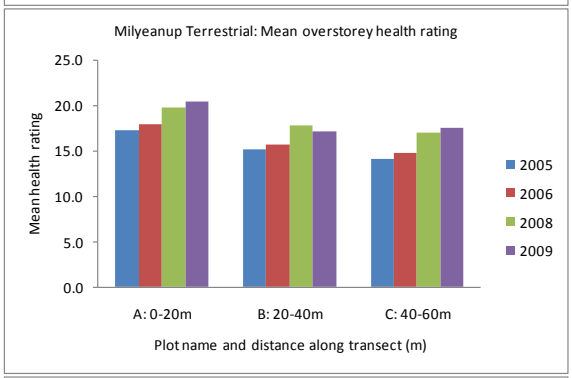

Scott River Rd: Mean overstorey health rating
Mean health rating
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
A: 0-20m
B: 20-40m
C: 40-60m
D: 60-80m
Plot name and distance along transect (m)
2007
2008
2009

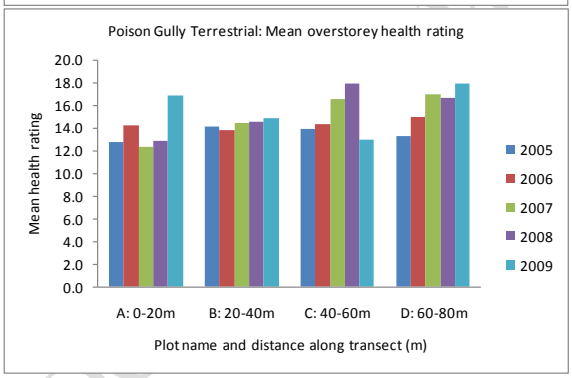

Stewart Rd wetland: Mean overstorey health rating
Mean health rating
19.0
18.5
18.0
17.5
17.0
16.5
16.0
15.5
15.0
14.5
14.0
A: 0-20m
B: 20-40m
C: 40-60m
D: 60-80m
Plot name and distance along transect (m)
2008
2009

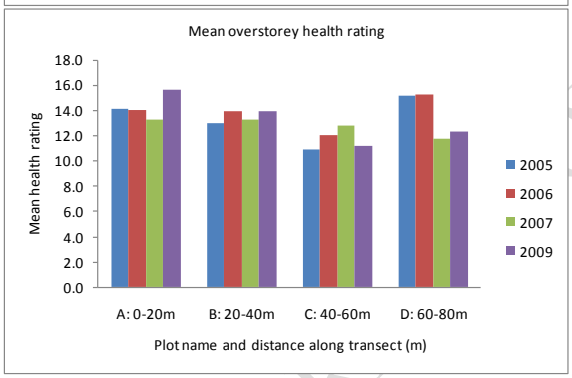

Mean overstorey health rating
Mean healthr ating
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
A: 0-20m
B: 20-40m
C: 40-60m
D: 60-80m
Plot name and distance along transect
2005
2006
2009


Jack Track Terrestrial: Mean overstorey health rating
Mean health rating
25.0
20.0
15.0
10.0
5.0
0.0
A: 0-20m
B: 20-40m
C: 40-60m
D: 60-80m
2005
2006
2008
2009


Mean overstorey health rating
Mean health rating
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
A: 0-20m
B: 20-40m
C: 40-60m
D: 60-80m
Plot name and distance along transect
2006
2007
2009


Milyeanup Terrestrial: Mean overstorey health rating
Mean health rating
25.0
20.0
15.0
10.0
5.0
0.0
A: 0-20m
B: 20-40m
C: 40-60m
Plot name and distance along transect (m)
2005
2006
2008
2009


Poison Gully Terrestrial: Mean overstorey health rating
Mean health rating
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
A: 0-20m
B: 20-40m
C: 40-60m
D: 60-80m
Plot name and distance along transect (m)
2005
2006
2007
2008
2009


Mean overstorey health rating
Mean health rating
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
A: 0-20m
B: 20-40m
C: 40-60m
D: 60-80m
Plot name and distance along transect (m)
2005
2006
2007
2009

Appendix 4: GPS locations of all Sites

Site					
Adelaide Rd (Upper Margaret)	0m	50 350230 E	Darradup Rd North terrestrial (BP42)	0m	
		62 52053 N			
	80m	50 350250 E		80m	
		62 52134 N			
Blackpoint Rd Terrestrial	0m	50 377804 E	Darradup Rd West Wetland	0m	50 383494 E
		62 05051 N			6215758 N
	80m	50 377854 E		80m	50 383482 E
		62 04984 N			6215687N
Blackpoint Rd Wetland	0m	50 373925 E	Dennis Rd (Scott Nth)	0m	50 345412 E
		6202502 N			62 15434 N
	80m	50 373999 E		80m	50 345455 E
		6202375 N			62 15498 N
Blackpoint/ Fouracres Rd Terrestrial	0m	50 374672 E	Jack Track Terrestrial	0m	50 367277 E
		6202799 N			6206783 N
	80m			80m	50 367332 E
					6206842 N
Blackpoint/ Fouracres Rd Wetland	0m	50 374663 E	Lake Jasper East	0m	underwater
		6202770 N			
	80m	50 374727 E		80m	50 379705 E
		6202716 N			6190418 N
Blackpoint Rd base of dunes	0m	50 367695 E	Lake Jasper South (SC21)	0m	50 377324 E
		6196829 N			6190682 N
	80m	50 367625 E		80m	
		6196850 N			
Blackpoint Rd - Dunes	0m	50 367279 E	Longbottom Rd Terr.	0m	50 371556 E
		6196132 N			6229253 N
	80m	50 367221 E		80m	50 371553 E
		6196117 N			6229193 N
Blackpoint/ Mayall Rd Wetland	0m	50 371593 E	Longbottom Rd wetland	0m	50 371559 E
		6199912 N			6229301 N
	80m	50 371529 E		80m	50 371638 E
		6199866 N			6229350 N
Darradup Rd East Terrestrial	0m	50384148 E	Milyeanup Terrestrial	0m	50 372339 E
		6215590 N			6228264 N
	80m			80m	50 372299 E
					62228225 N
Darradup Rd East Wetland	0m	50 384052 E	Milyeanup Wetland	0m	50 372373 E
		6215595 N			6228313 N
	80m			80m	50 372329 E
					6228264 N

Pneumonia Rd	0m	50 382525 E
		61 98766 N
	80m	50 382562 E
		61 98837 N
Poison Gully Terrest.	0m	50 366688 E
		6223564 N
	80m	50 366634 E
		6223507 N
Poison Gully Wetland	0m	50 366726 E
		6223574 N
	80m	50 366687
		6223565 N
Reedia North	0m	50 346045 E
		62 28717 N
	80m	50 346130 E
		62 28713 N
Reedia Sth	0m	50 344917 E
		62 24274 N
	80m	50 344866 E
		62 24217 N
Scott Rd (SC22)	0m	50 383669 E
		6189277N
	80m	50 383615E
		6189246 N
Scott River Rd (Scott Sth)	0m	50 340691 E
		6208371 N
	80m	50 340703 E
		6208445 N
Stewart Rd Terrestrial (BP20)	0m	50 371398 E
		6212835 N
	80m	50 371406 E
		6212902 N
Stewart Rd Wetland	0m	50 372011 E
		6212200 N
	80m	50 371942 E
		6212233N