

2001

Wetland vegetation monitoring, 2000/2001 (Salinity Action Plan)

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Report No

2001 – 07

Title

**Wetland Vegetation Monitoring 2000/2001
(Salinity Action Plan)**

**Prepared for the Department of Conservation and Land
Management**

By

B. Franke, R. Gurner and R. Froend

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1.0 INTRODUCTION

1.1 Objectives

This report represents the vegetation component of a project designed to provide ongoing monitoring of wetland salinity and biological resources in wetlands of the agricultural zone of south-west Western Australia. Maintenance of wetland biological diversity in the agricultural zone is one of the major objectives of the Salinity Action Plan. Due to their low position in the landscape, wetlands are the habitat most affected by salinisation.

The Wetland Monitoring Project has four specific objectives, only one of which is relevant to this report:

- 1) Analyse and report trends in salinity and depth of agricultural zone wetlands monitored by CALM since 1978.
- 2) Monitor salinity, depth and nutrient status of a broad range of wetlands.
- 3) Monitor waterbirds, fish, frogs and aquatic invertebrates in a sub-set of wetlands to measure any changes in fauna of the wetlands.
- 4) **Monitor floristic composition and tree health in the same sub-set of wetlands to measure any changes in flora occurring in, and around the wetlands.**

Work presented in this document is an integral part of the overall project and will specifically address the fourth objective. Information from other components of the project that address the remaining objectives, will be used to interpret change in the vegetation and the impact this may have on fauna.

Detailed objectives for the monitoring of wetland vegetation are as follows:

- 1) Establish permanent monitoring transects at a sub-set of wetlands (as determined by the Wetland Monitoring Project Team).
- 2) Identify native plant species within transects and monitor change in composition, species richness and diversity.
- 3) Quantify the importance of overstorey and understorey plant species within monitoring transects by assessing density and foliage cover, and monitor change.
- 4) Identify the physiognomy of wetland plant communities within the transects and monitor change.
- 5) Categorise wetland tree health within the transects and monitor change.
- 6) Monitor wetland plant population dynamics within transects by recording seedling recruitment, survival and population age/size class structure.
- 7) Identify the distribution of wetland plant populations within the transects relative to hydrological regime and salinity status, and monitor change.

1.2 Scope and Approach

The plan for vegetation monitoring involves triennial measurements of relevant parameters. Because of the need to incorporate results from the biological survey when selecting monitoring sites, the monitoring program will be phased in over a three year period. This will allow techniques to be validated and refined, if necessary, on a small set of wetlands in the first year. It is intended for the final set of 25 wetlands to represent a range of salinities and susceptibilities to secondary salinisation. Therefore, the 25 wetlands will consist of 5 categories with respect to salinity, with 5 representative wetlands (or replicates) in each category. This is summarised in the table below.

Category	Comment	N
Fresh	Freshwater wetlands with no immediate threat	5
Brackish↑ (improving)	'Brackish' wetlands where remedial works likely to improve quality	5
Brackish↓ (declining)	'Brackish' wetlands threatened by increased salinisation	5
2 ^o saline	2 ^o saline wetlands with long history of salinity but further change likely	5
1 ^o saline	Naturally saline or hypersaline wetlands where change may occur	5

In 2000 vegetation was reassessed at 8 wetlands:

Site	Category
Bryde	Brackish ↓
Coomalbidgup	Brackish ↓
Coyrecup	2° saline
Kulikup (Boyup Brook 18239)	Fresh
Noobijup	Brackish ↓
Toolibin	Brackish ↑
Towerrinning	Brackish ↑
Wheatfield	1° saline

The methodology used was specifically designed to address change in wetland vegetation floristics, physiognomy, individual plant vigour and population vigour and dynamics in response to long-term changes in hydrology and salinity. The various components of the methodology are as follows (detailed description of these components is given in the Section 2.0: Methods):

1) Transect establishment.

Between three and six permanently marked transects were established at each wetland. The location of each transect was determined using GPS and marked on maps for future reference. All location markers and tags are metal. Transects are made up of contiguous 20 x 20 m quadrats running perpendicular to the shoreline into upland vegetation. Each of the 20 x 20 m quadrats is divided into five 4 x 20 m quadrats. Photographs are taken each monitoring year from two marked reference points. Site data such as topographic position, slope, aspect, surface soil characteristics, litter and water depth are recorded.

2) Floristic composition, species richness and diversity.

Within each 4 x 20 m subplot of each 20 x 20 m quadrat all overstorey species and large understorey species (>1.5 m) are identified. All trees were tagged and given a unique reference number during transect establishment. Data for each overstorey subplot is kept distinct to determine gradient transitions. Understorey 4 x 4 m subplots focus on species < 1.5 m. Presence of seedlings of tree and large shrub species are recorded in overstorey sub-plots.

3) Density and foliage cover.

Density of overstorey and understorey species is determined for each subplot. Percentage foliage cover for each understorey species is determined by direct measurement (two foliage diameter measurements at right angles) of each individual within each 4 x 4 m subplot. The foliage cover of understorey species without distinct projected foliage area, such as sedges and rushes, is estimated as a percentage of the subplot area. Percentage canopy cover is determined for each 20 x 20 m quadrat.

4) Physiognomy.

Height ranges for each vegetation strata are measured within quadrats and subplots. Profile diagrams depicting vegetation structure were constructed for each transect in the first monitoring year.

5) Tree vigour.

The vigour of each individual tree within overstorey subplots is categorised according to a subjective scale of 1–5 based on estimates of the proportion of live canopy foliage.

6) Population dynamics.

Size class structure of key tree species is determined by measuring height and diameter at breast height (DBH) of each individual in each 20 x 20 m quadrat. Data are combined to develop size class frequency plots and illustrate population structure. Seedling recruitment events are recorded in the field when found.

7) Distribution of wetland plant communities, populations.

The different structural units of vegetation at each wetland were mapped from aerial photography and ground truthing at the time of transect establishment. Historical aerial photographs were examined and vegetation units mapped to determine changes in vegetation cover and distribution. At the transect

scale, distribution of plant populations or community types is related to hydrology and salinity. The ground level (in relation to the deepest point in the lake) at each end of each 4 x 20m overstorey subplot is measured using an auto level and staff. These relative levels will be converted to mAHD when the depth gauges at each wetland are surveyed. The elevational gradient along each transect can then be compared to wetland water levels (information from other CALM and WRC SAP projects) and the water regime determined for different positions on that transect. Where available, historical wetland water levels will be related to vegetation distribution to identify past impacts and explain current distributions.

Once sufficient information has been collected, water regime requirements and salinity tolerances of key wetland plant species will be identified and used to predict impacts and restoration criteria.

8) Physico-chemical parameters.

Transects are located adjacent to piezometers (if present) established as part of the Wetland Monitoring Project. Information on groundwater level and salinity is vital to the correct interpretation of vegetation change. Surface soil salinities at each transect are measured each monitoring year using an EM38 and validated with limited soil sampling and direct measurement (EC of 1:5 soil:water extracts). Information on water salinity and nutrients from other projects, once available, will be related to vegetation vigour and survival.

9) Database

All data collected as part of the Wetland Vegetation Monitoring Project will be databased using Microsoft Excel. Original field record forms will be archived and referenced to the digital database.

1.3 Outcomes

The first reassessment of transects at eight wetlands (Bryde, Coomalbidgup, Coyrecup, Kulikup, Noobijup, Toolibin, Towerrinning and Wheatfield) was undertaken in 2000. These transects were established in 1997, when the first assessment occurred. The floristic and structure data for the vegetation is complete and has been databased.

Between 1997 and 1999 the focus of the Project has been the establishment of transects and the development of an appropriate and effective monitoring structure and procedure. Population structure analysis and in particular, seedling establishment monitoring, has begun, however, it will not be complete until seedling presence and survival at all wetlands has been reassessed.

2.0 METHODS

2.1 Transect Site Selection

In 1997 the number and positioning of transects at each wetland was determined using 1:5000 aerial photographs and a preliminary site visit by Neil Gibson (CALM Wetland Monitoring – Vegetation Coordinator) and the ECU team. The sites were selected to be representative of both the vegetation communities and the physical characteristics of each wetland. Sites were generally located around the wetland basin, perpendicular to the water body, extending from the terrestrial vegetation to below the high water mark. On two wetlands (Coyrecup and Noobijup) sites were also located around drainage lines identified as areas undergoing significant change due to salinity. Three to five transects were established at each wetland.

2.2 Transect Design

Each transect consists of a series of contiguous 20 x 20 m quadrats, which are marked at each corner with a steel fence post. Tape measures and an optical square were used to ensure all plots were square and of equal size. For the eight wetlands reassessed, the transects consist of one to three contiguous plots depending on the width and composition of the vegetation surrounding the wetland, giving transect lengths of 20 to 60 m.

The quadrats are further divided into five 4 x 20 m plots for assessment of trees and large shrubs. Within each 4 x 20 m plot, a 4 x 4 m subplot is located at either the left or right side for assessment of all understorey plants (see Figure 2.1 below).

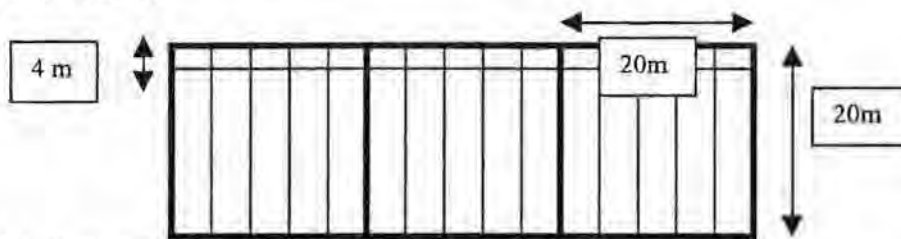


Figure 2.1: Transect Design.

To facilitate accurate re-monitoring of the understorey, a fence spreader is located every 20 m along the transect, 4 m in from the side where the 4 x 4m sub-plots were established. The 4 x 20 m and 4 x 4 m plots were not individually marked as it was felt that this made the transects too visible. An aluminium tag was attached to the top left fence post of each transect (furthest from the water body) indicating the site and transect number. Compass bearings were also taken from this point across and down the transect to enable the transect to be re-established in the event of fence posts being stolen. At lakes Towerrinning and Wheatfield the lowest ends of the transects were not staked as these areas were commonly used for recreation and it was felt that the presence of fence posts in the water could be hazardous. These posts can easily be replaced during monitoring by sighting from the upland plots. GPS readings were recorded for each transect at the tagged fence post.

2.3 Vegetation Monitoring

2.3.1 Tree Species

Within the 4 x 20 m plots all trees were tagged with an aluminium tag punched with a unique reference number. Tags were attached at breast height (approx. 1.5 m) with a galvanised roofing nail or a large loop of galvanised wire if the stem was too narrow to nail. For each tree within each plot the species, diameter at tag height and crown condition were recorded. Stem diameter was measured directly under the tag if nailed or at breast height if the tag was wired onto the tree unless otherwise noted in the data. 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 the populations. In the case of trees with multiple stems, the largest stem was used for the size class diagrams prepared for this report.

Crown assessment was carried out using a subjective three part scale where a score is recorded for crown density, dead branches and epicormic growth. Using diagrams for comparison, crown density is given a score out of nine, dead branches a score out of nine and epicormic growth a score out of five (Ladd, 1996) (Figure 2.2). The higher the overall score the better the condition of the tree. The number, species and height of tall shrubs (>1.5 m) and seedlings of trees were also recorded in the 4 x 20 m plots. At sites where seedling density was so

high that each seedling could not be individually counted (eg. Coomalbidgup Swamp), eleven 1 x 1m quadrats were randomly placed within the subplot and all seedlings within those quadrats were counted. The mean number of seedlings of each species was then averaged for the 1 x 1m quadrats and this number was multiplied by the area of the 4 x 20 m plot to give a total seedling count.

The transects reported on here were established in 1997/98 and some comparisons with the data collected at that time were possible. For each wetland these data were plotted and further summarised in table format for comparison.

Within each 20 x 20 m plot heights were measured with a clinometer and tape of each tree species. Percentage canopy cover for each tree species was determined for each 20 x 20 m plot by walking a 100 point grid (every 2 m across and 2 m along the plot). At each point the canopy was examined and any species with foliage projecting across this point was recorded giving a 100 point assessment of the canopy, which was directly converted to percentage cover for each species. A clinometer was used to ensure the user was looking directly into the canopy at a 90° angle.

2.3.2 Understorey Species

Within the 4 x 4 m sub-plots, all understorey plants were identified and percentage foliage cover determined by direct measurement (two foliage measurements at right angles) for species with a distinct foliage area, or percentage estimates for rushes and sedges. Height ranges for each species were also recorded.

Samples of each plant species were collected and returned for identification. Difficult to identify species were identified by CALM Woodvale staff. Species which are yet to be accurately identified are noted in the data by a question mark and, where necessary, further material will be collected in spring to assist in identification. Voucher specimens will be lodged with the WA Herbarium.

Understorey data collected in 1997/98 were also used for comparisons with the latest data. Plots and tables were drawn up for each wetland. Significant changes were highlighted and the following terms were used to summarise these comparisons for each transect plot:

- No Change: No change in species composition and cover values since 1997; or no change in species composition, but small variances in cover values (ie. variances of 1 to 20%).
- Little Change: Small changes in cover values (as above) plus small changes in species composition (eg. loss or addition of 1 to 3 species).
- (No Understorey): No understorey species recorded in 1997 and 2000.

Crown Assessment Procedure

Crown density

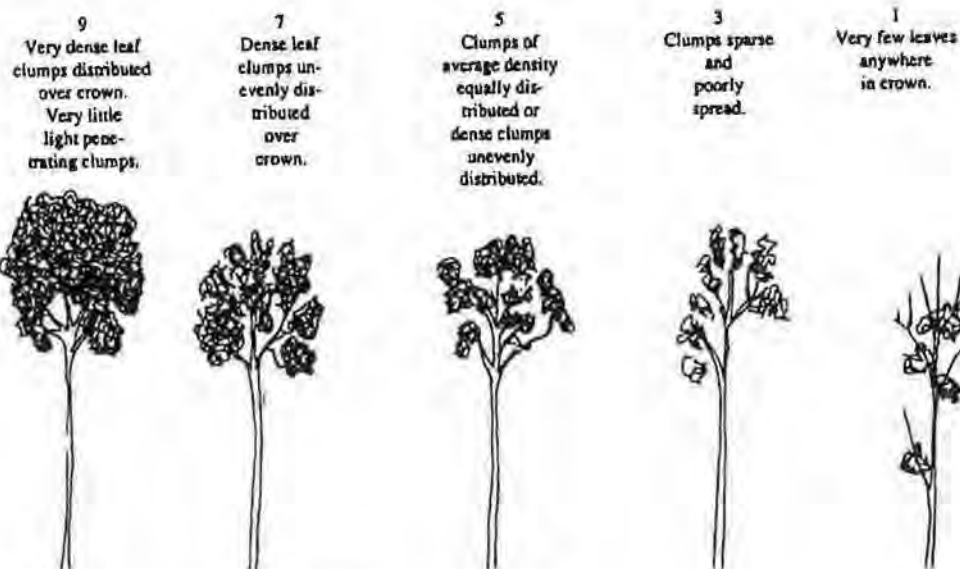


Figure 2.2a: Crown Assessment Procedure Diagrams. (Ladd, 1996).

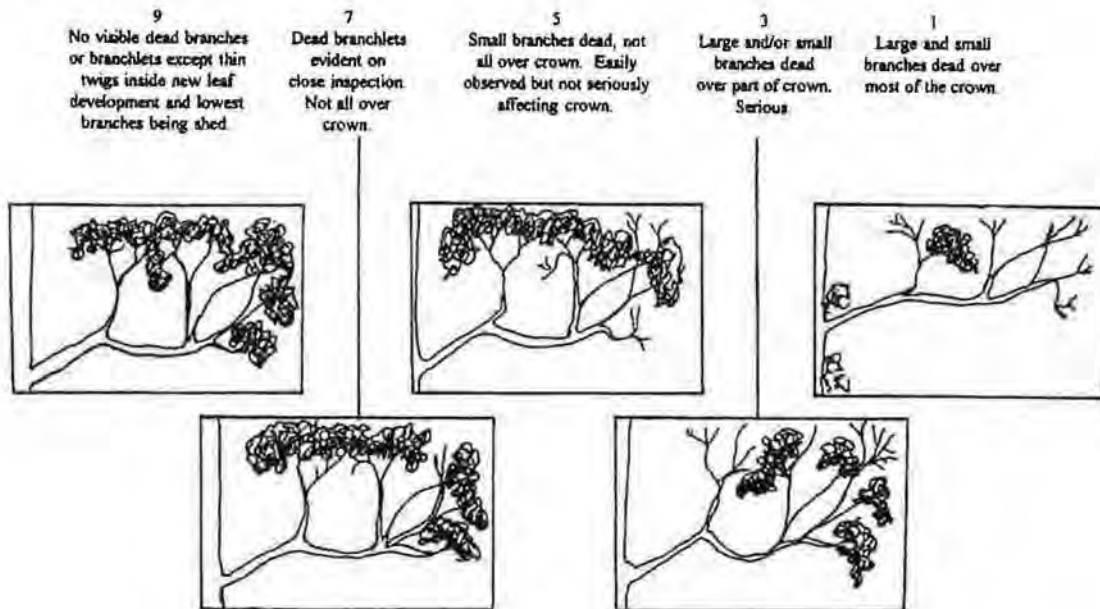
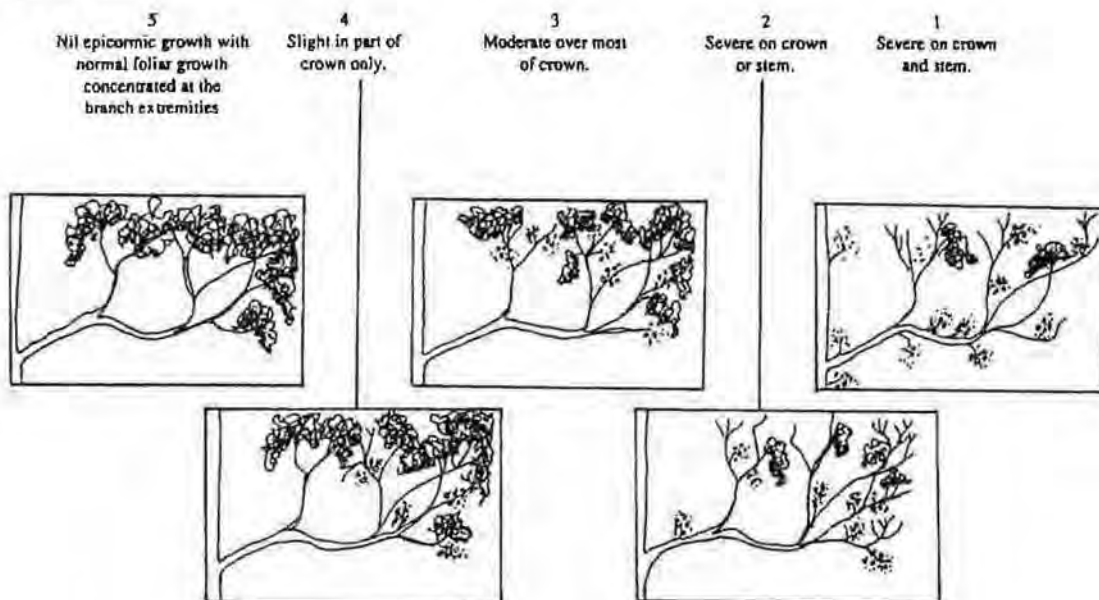
Dead branches*Epicormic growth*

Figure 2.2b: Crown Assessment Procedure Diagrams. (Ladd, 1996).

2.4 Physico-Chemical Parameters

Soil properties (field assessment of texture) and litter distribution was subjectively described for each 20 x 20 m plot of each transect. Three soil samples were also taken from each plot and analysed in the laboratory for conductivity by 1:5 soil water extraction, adgated for one hour and measured with a bench conductivity meter for calibration of the EM38.

EM38 measurements, which determine soil conductivity over 1-1.5m depths were taken at three points across each plot, every 4 m along the transect. Adequate distance was always allowed when measuring near the fence posts or other metallic objects in the plots. EM38 data was validated against direct conductivity measurement of the soil samples.

3.0 RESULTS

3.1 Lake Bryde

3.1.1 Description

Lake Bryde (33°21' S, 118°50' E) is an ephemeral wetland (C class reserve #28667) lying in a catchment more than 70% cleared of native vegetation (Watkins *et al.*, 1987). The lake has a main inflow channel at the southern end, which can also act as an outflow channel after periods of flooding. The lake can overflow during flooding events but will retain water for extended periods after floods.

Transect 1: (GPS: 50 669785 / 6307998) lies some 200 m north of the dam running from the top of the hill down the slope to the lakebed.

Transect 2: (GPS: 50 669752 / 6308525) approximately 750 m north of the dam located similarly to Transect 1.

Transect 3: (GPS: 50 670335 / 6308301) is located on the north-eastern side of the lake where the topography is much flatter than that of the western side.

Transect 4: (GPS: 50 670089 / 6307922) lies approximately 150 m north east of the inlet channel on a gradual slope.

3.1.2 Plant Communities

The upland vegetation sampled consists of a woodland of *Eucalyptus flocktoniae* – *Eucalyptus kondininensis* on the top of the ridge around the west side of the lake and on the flatter ground of the north and eastern sides. On the steep slope of the western side, dense *Melaleuca lanceolata*, *M. thyoidea*, *M. adnata*, and *M. lateriflora* subsp. *lateriflora* dominate the understorey. In the littoral zone, *Eucalyptus occidentalis* and stands of *Melaleuca strobophylla* and *M. halmaturorum** occur with distinct lines of saplings and seedlings of *E. occidentalis* and *M. strobophylla* distributed around the west side of the lake. Similarly on the eastern side, *E. occidentalis*, *M. halmaturorum* and *M. strobophylla* occur in the littoral zone, however, *M. lateriflora* subsp. *lateriflora* is the dominant tall shrub/small tree on the eastern side. *Muehlenbeckia horrida* subsp. *abdita*, which is endemic to Lake Bryde, occurs as an emergent across much of the lake basin.

**M. halmaturorum* was identified as *M. cuticularis* in 1997.

3.1.3 Population Structure and Tree Vigour

The size class distributions (Figure 3.1.1) show the *E. kondininensis* and *E. flocktoniae* populations to be relatively mature with few stems in the smaller size classes. No seedlings of these species were found in the study sites in both 1997 and 2000. The dominance of small stems and seedlings in the *E. occidentalis* and *M. strobophylla* populations reflect the large number of saplings and seedlings that occur on the western and northern sides of the lake. These numbers have been reduced since 1997 with a 65% and 17% loss respectively of individuals with a stem diameter of <2 – 5 cm. These seedlings and saplings are present in distinct lines around the lake and represent significant past recruitment events of these species. The pattern of establishment suggests germination has occurred in flotsam lines washed up at the corresponding high water mark, which probably provide ideal establishment conditions as well as a potential seed source. *M. cuticularis* seedlings were not found in any of the study plots in 1997 or 2000 (Table 3.1.1). Crown scores for all species are relatively high considering the high soil salinities, although many of the *M. halmaturorum* trees occurring in the shallows of the water were stressed possibly due to waterlogging and salinity. There has been no significant change in vigour of the overstorey since 1997, with only a few species, notably *E. flocktoniae*, *E. kondininensis* and *M. lateriflora* subsp. *lateriflora* experiencing a slight reduction in health, which may be due to the higher water levels and soil salinities recorded in 2000.

Table 3.1.1: Summary of Tree Data for Lake Bryde.

Species	Trees		Seedlings		Saplings		MCS (S.D)	
	1997	2000	1997	2000	1997	2000	1997	2000
<i>Eucalyptus flocktoniae</i>	124	123	0	0	2	1	13.9 (4.4)	11.3 (4.25)
<i>Eucalyptus occidentalis</i>	15	15	17	48	15	15	12.9 (4.5)	13.4 (4.03)
<i>Eucalyptus kondininensis</i>	42	41	0	0	0	0	13.5 (4.2)	12.7 (4.27)
<i>Melaleuca halmaturorum</i>	32	30	0	0	0	1	12.3 (2.7)	12.9 (3.58)
<i>Melaleuca strobophylla</i>	115	116	69	83	52	62	14.5 (3.1)	14.6 (3.75)
<i>Melaleuca lateriflora</i> subsp. <i>lateriflora</i>	41	40	0	11	24	62	12.9 (3.2)	11.2 (4.30)

MCS – Mean crown score

Few changes in understorey composition and cover were recorded. The introduced European herb (Hussey, Keighery, Cousens, Dood and Lloyd, 1997) *Centaureum erythraea* was found in Transect 1, quadrat 3A and Transect 4, quadrat 2E (Table 3.1.2, Figures 3.1.2a and d). The understorey species *Cassitha racemosa* has experienced a loss of cover along Transect 2, where it now occurs in only 3 quadrats as opposed to 8 in 1997 (Figure 3.1.2b). This has resulted in quadrats 1A-E and 2B and C being devoid of understorey cover. Flooding of quadrats at lower elevations (3A or B to E along all transects) has caused the complete loss of understorey cover along Transects 1 and 2 (Figures 3.1.2a and b). Quadrat 2D of Transect 3 shows the total loss of *Santalum acuminatum* (refer Table 3.1.2).

Table 3.1.2: Brief Summary of Changes to the Understorey at Lake Bryde Transects

Quadrat	Transect 1	Transect 2	Transect 3	Transect 4
1A	Little Change	Loss of 1 species, now no understorey	No Change	No Change
1B	Little Change	Loss of 1 species, now no understorey	No Change	Little Change
1C	Little Change	Loss of 1 species, now no understorey	No Change	Little Change
1D	Little Change	Loss of 1 species, now no understorey	No Change	Little Change
1E	Little Change	Loss of 1 species, now no understorey	No Change	Little Change
2A	Loss of 1 species, now no understorey	Little Change	Little Change	Little Change
2B	Little Change	Loss of 1 species, now no understorey	Little Change	Lost 1, gained 5 sp.
2C	Loss of 1 species, now no understorey	Loss of 1 species, now no understorey	No Change	Lost 2, gained 4 sp.
2D	Loss of 1 species, now no understorey	Little Change	<i>Santalum acuminatum</i> – 1997 53.6%, 2000 nil.	Little Change
2E	Little Change	Little Change	Little Change	Lost 2, gained 4 sp, 1 is introduced.
3A	Little change, but add. 1 introduced sp.	Loss of 1 species, now no understorey	Little Change	Little Change
3B	Loss of 1 species, now no understorey	(No Understorey)	(No Understorey)	(No Understorey)
3C	Loss of 1 species, now no understorey	Loss of 1 species, now no understorey	(No Understorey)	(No Understorey)
3D	Loss of 1 species, now no understorey	(No Understorey)	(No Understorey)	(No Understorey)
3E	(No Understorey)	(No Understorey)	(No Understorey)	(No Understorey)

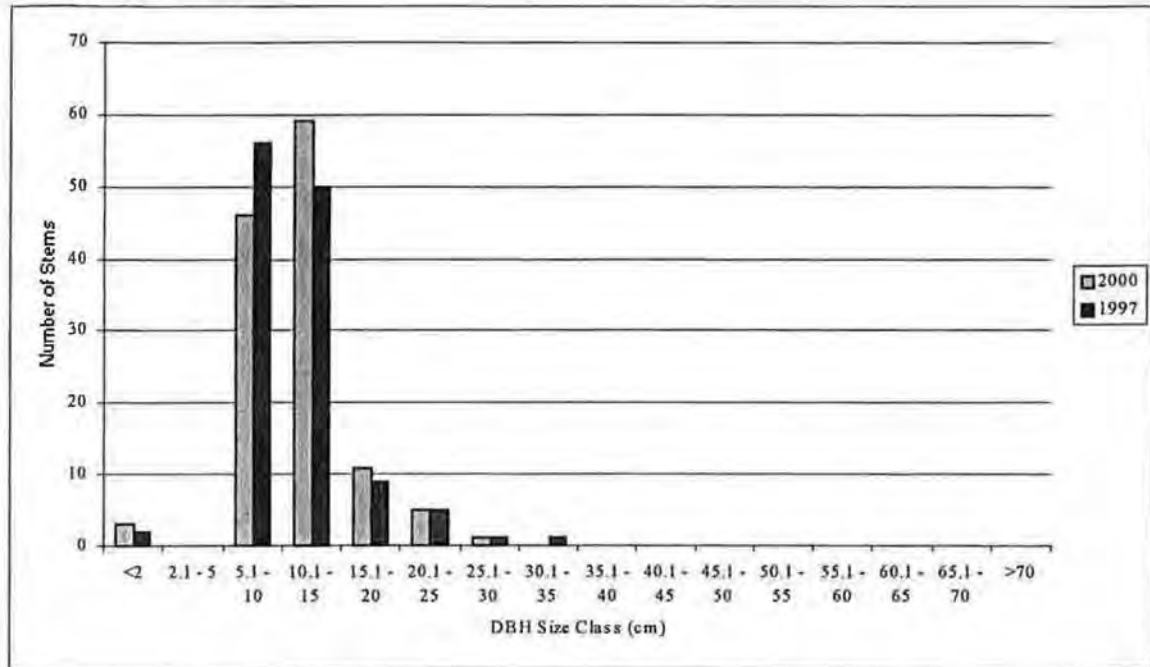
3.1.4 Soil Characteristics

Upslope soil salinities on the western side were generally quite low (65 to 90 mS/cm), however, salinity increased as elevation decreased with soils at the lowest elevations having conductivities as high as 390 mS/cm (Appendix 1). On the flatter eastern side, soil salinity was generally high (300 to 500 mS/cm) with the highest readings obtained at Transect 4, which is near the inflow channel. EM38 readings indicate that soil salinity has increased slightly since 1997 with the greatest rise occurring in the terrestrial zone.

3.1.5 Summary

Given the high soil salinities recorded at this lake in 1997 and the general increase in 2000, the littoral vegetation and the vegetation on the lower elevations could be expected to deteriorate, however, this has not been entirely the case. The retainment, and in some cases increased vigour of mature trees at Bryde on the elevated western side of the lake may be the result of a change in hydrological conditions. The increase in the numbers of seedlings and saplings for most species since 1997 could be due to more favourable hydrological conditions accompanied by a reduction in understorey competition and diversity, which has been reduced on all Transects since 1997. However, sustained vigour and increased tree recruitment is a characteristic of the wetland vegetation on the western side of the lake only. As mentioned in 1997, concern lies with the vegetation on the eastern side of the lake, which, due to the lower elevations and possibility of flooding during high rainfall years, is the most susceptible to increasing soil salinity. Wetland and littoral species on Transects 3 and 4 are under significant stress with a visible line of dead *M. halmaturorum* and *M. strobophylla* forming a band around the eastern bank. The lack of an understorey along the higher elevations of Transects 1 and 2 is of concern as it may indicate the development of unfavourable soil conditions and allow invasion by exotic species.

Eucalyptus flocktoniae



Eucalyptus occidentalis

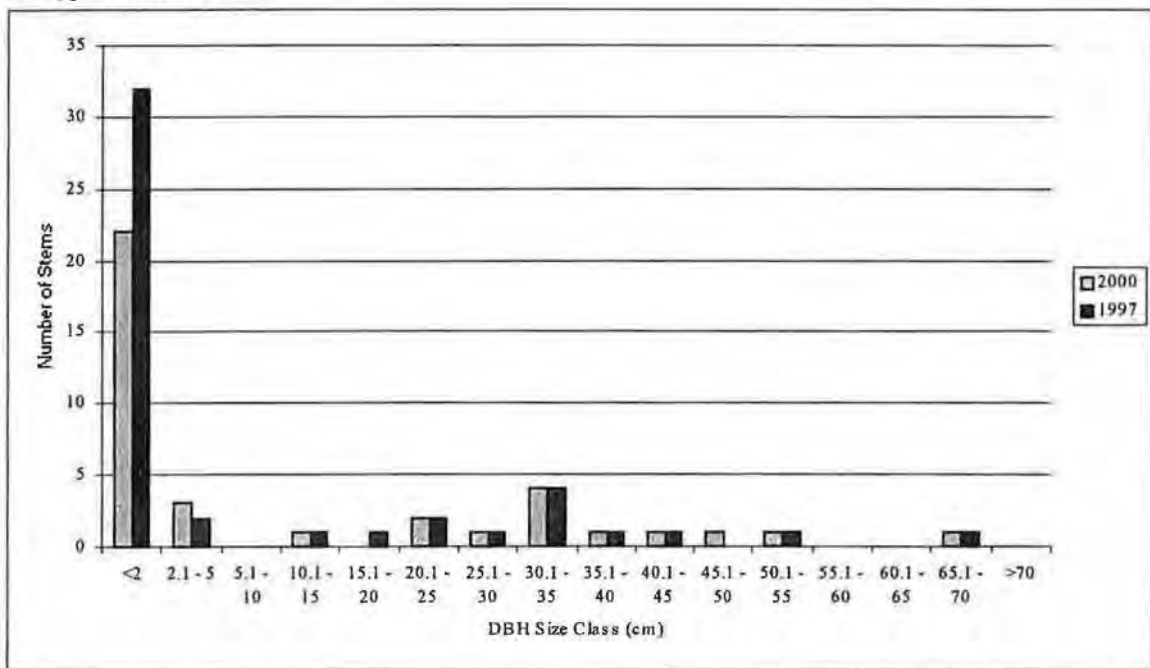
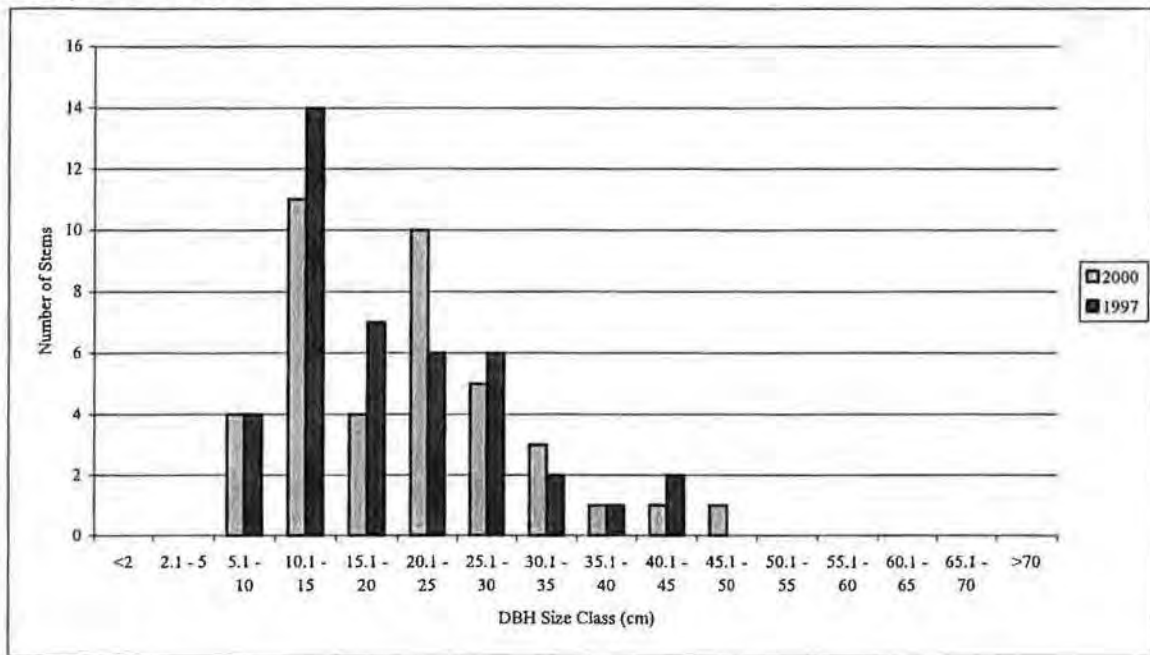


Figure 3.1.1: Size Class Distributions for *Eucalyptus flocktoniae*, *Eucalyptus occidentalis*, *Eucalyptus kondininensis*, *Melaleuca strobophylla*, *Melaleuca lateriflora* subs. *lateriflora* and *Melaleuca halmaturorum* at Lake Bryde.

Eucalyptus kondininensis



Melaleuca strobophylla

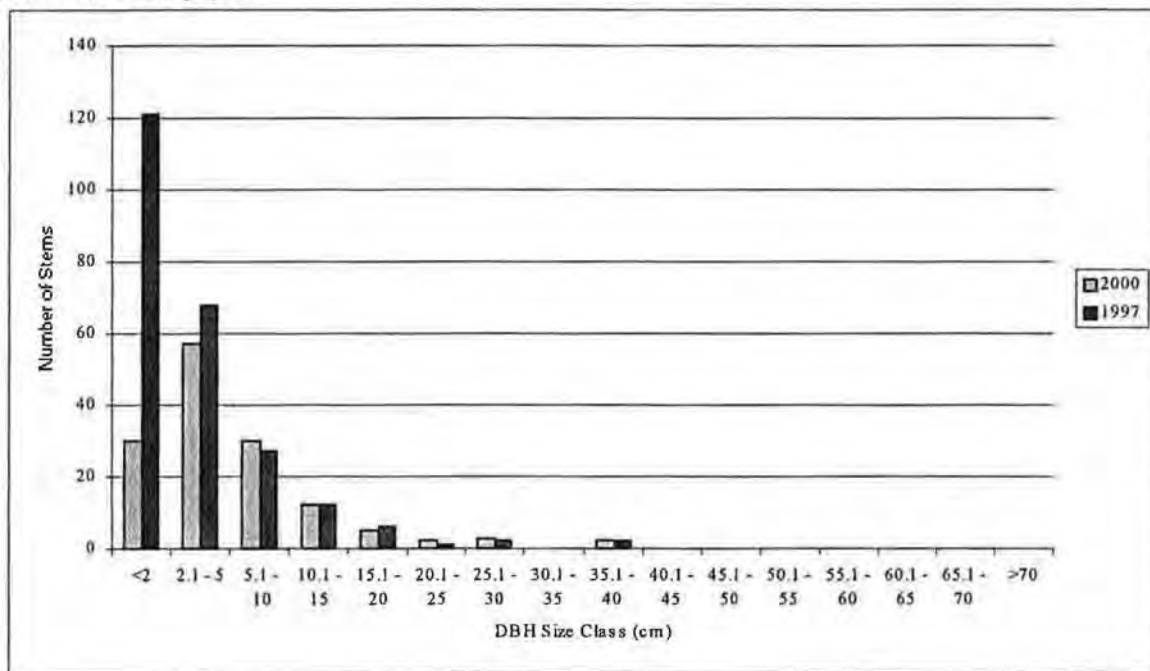
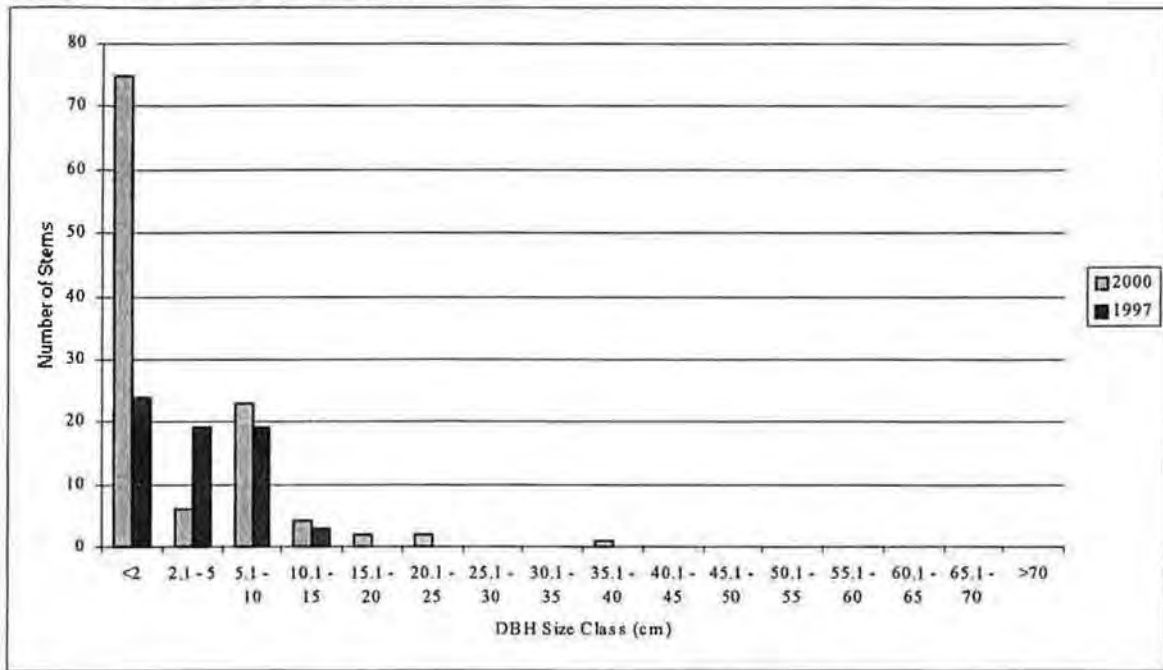


Figure 3.1.1 (cont.): Size Class Distributions for *Eucalyptus flocktoniae*, *Eucalyptus occidentalis*, *Eucalyptus kondininensis*, *Melaleuca strobophylla*, *Melaleuca lateriflora* subs. *lateriflora* and *Melaleuca halmaturorum* at Lake Bryde.

Melaleuca lateriflora subsp. *lateriflora*



Melaleuca halmaturorum

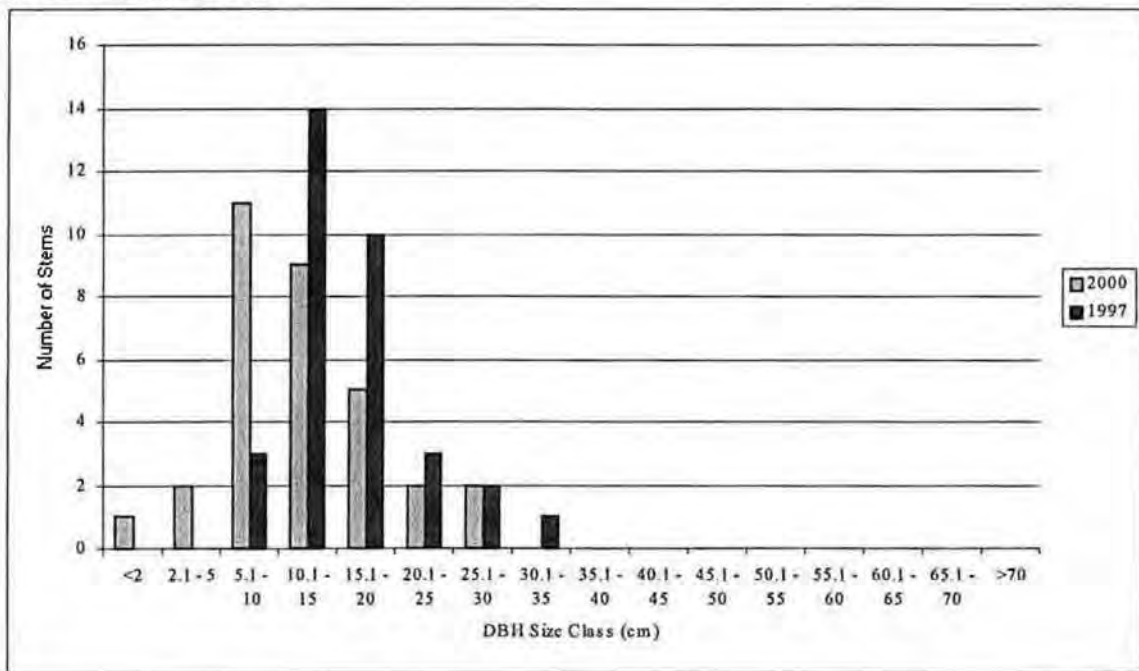
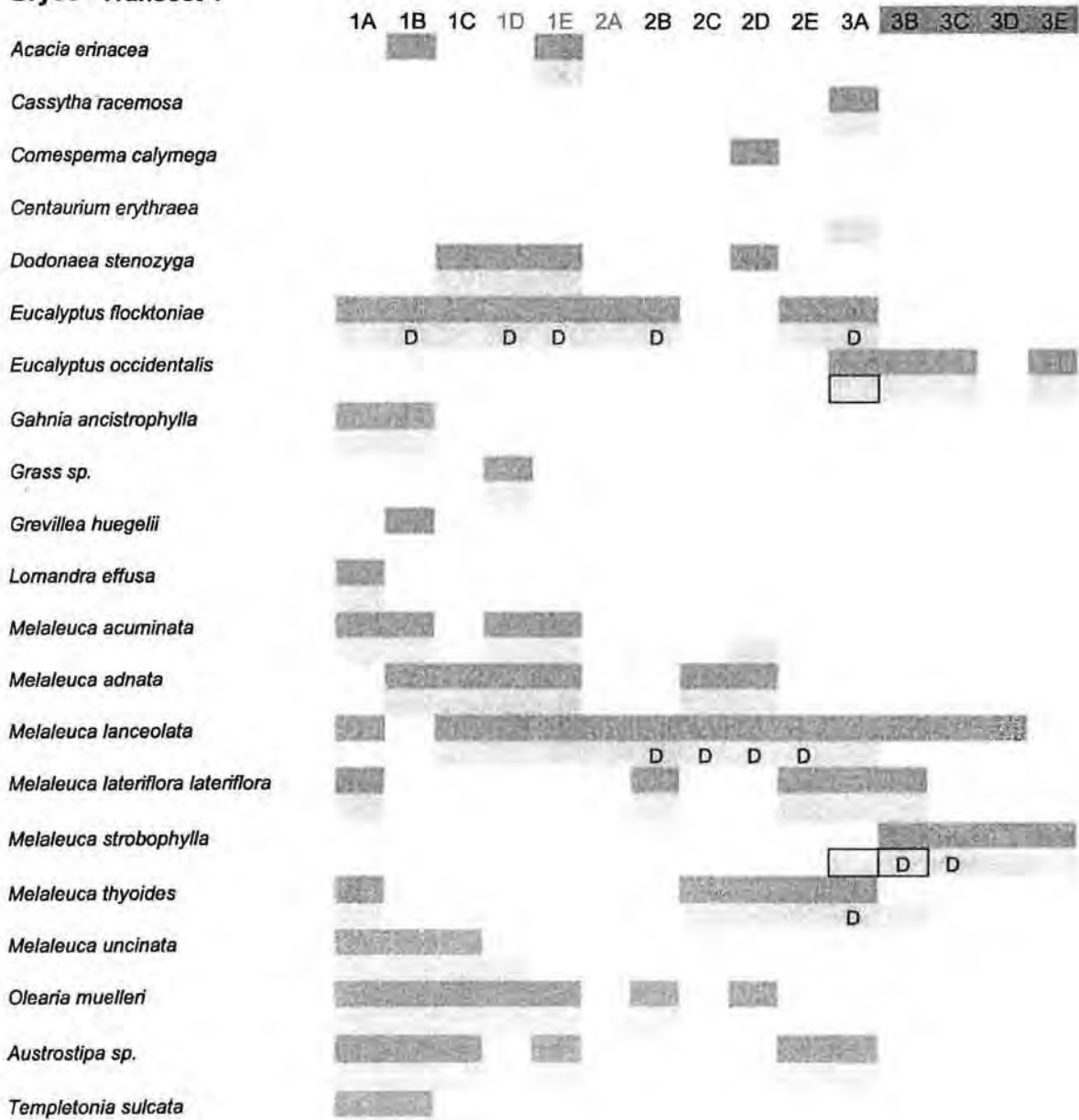


Figure 3.1.1 (cont.): Size Class Distributions for *Euacalyptus flocktoniae*, *Eucalyptus occidentalis*, *Eucalyptus kondininensis*, *Melaleuca strobophylla*, *Melaleuca lateriflora* subs. *lateriflora* and *Melaleuca halmaturorum* at Lake Bryde.

Bryde - Transect 1

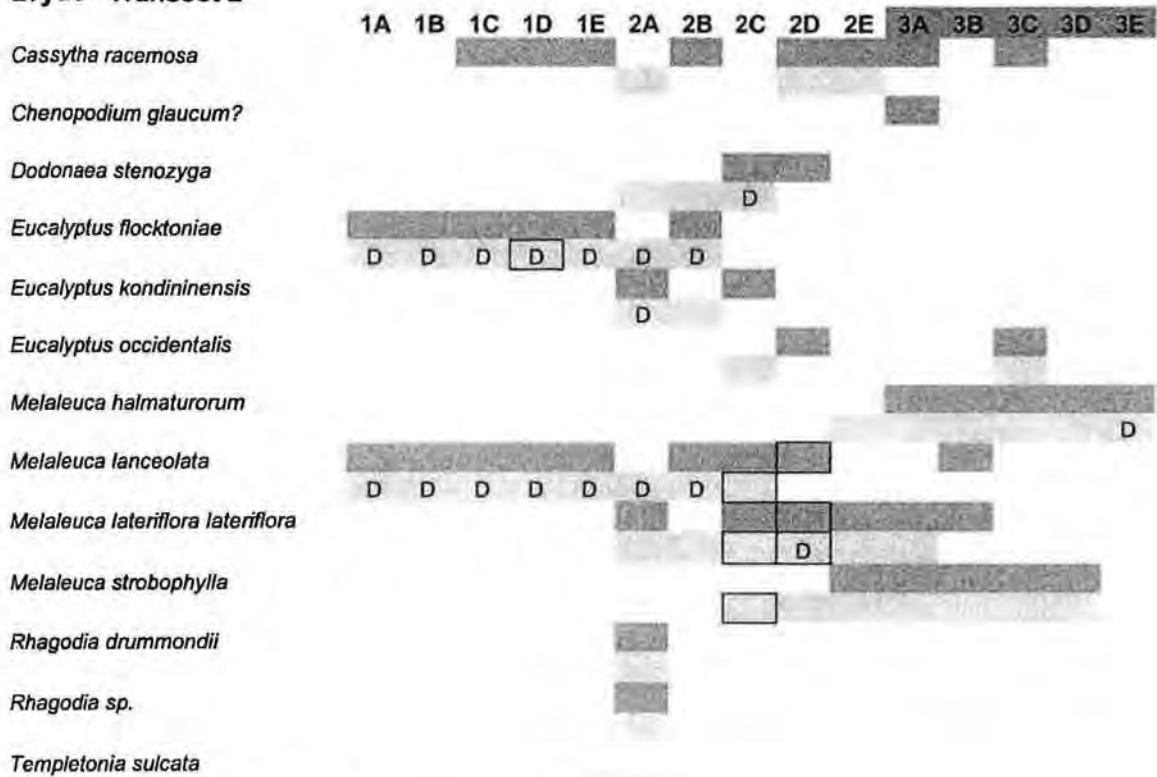


Note: 3B - 3E flooded

Legend: 1997
 2000
 Seedlings
 D = Dead

Figure 3.1.2a: Species Distribution along Bryde Transect 1 in 1997 and 2000.

Bryde - Transect 2

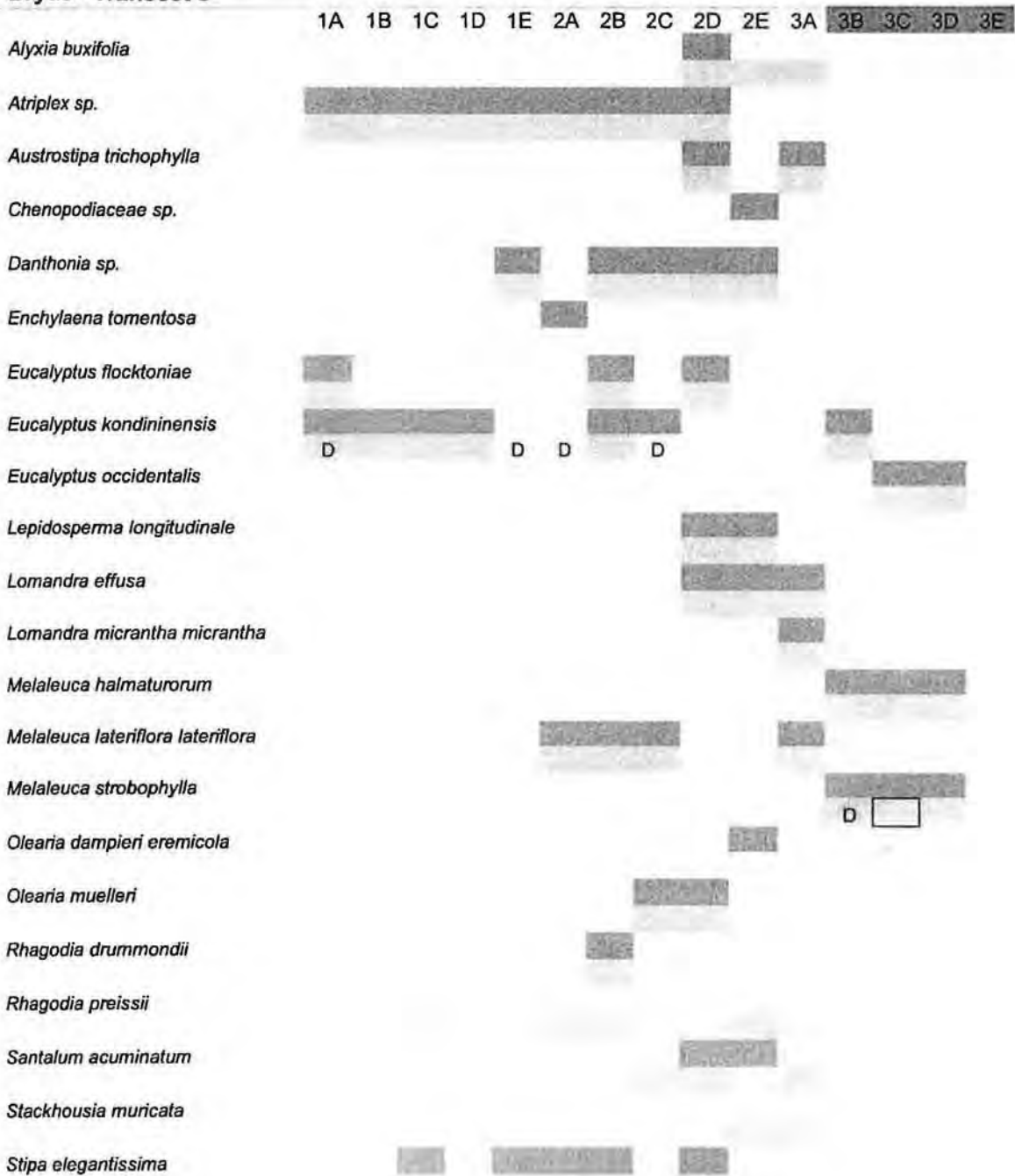


Legend: 1997
 2000
 Seedlings
 D = Dead

Note: 3A - 3E flooded

Figure 3.1.2b: Species Distribution along Bryde Transect 2 in 1997 and 2000.

Bryde - Transect 3



Legend: 1997
 2000
 Seedlings
 D = Dead
 Note: 3B - 3E flooded

Figure 3.1.2c: Species Distribution along Bryde Transect 3 in 1997 and 2000.

Bryde - Transect 4

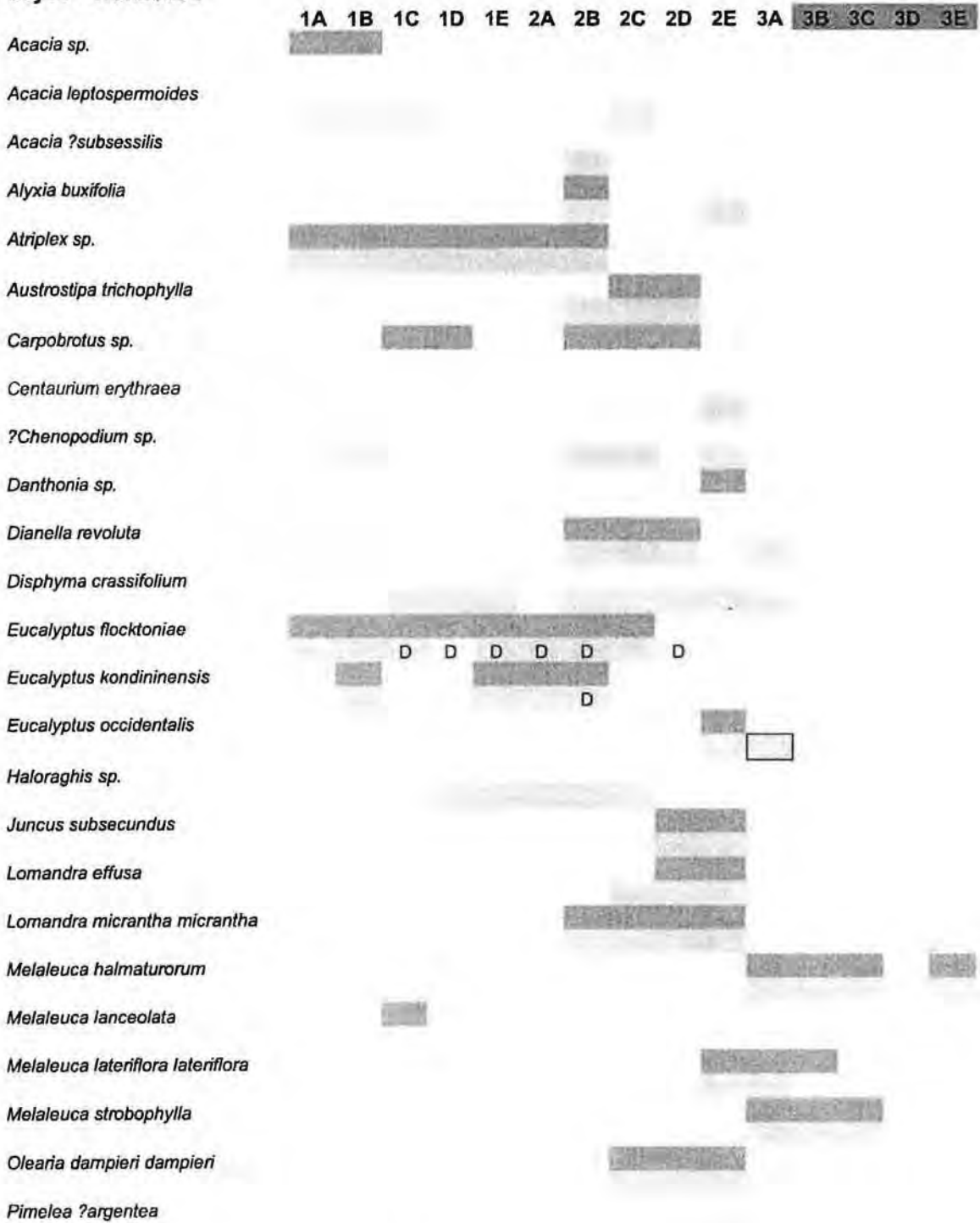


Figure 3.1.2d: Species Distribution along Bryde Transect 4 in 1997 and 2000.

Bryde - Transect 4 cont. 1A 1B 1C 1D 1E 2A 2B 2C 2D 2E 3A 3B 3C 3D 3E

Rhagodia drummondii [shaded] [shaded] [shaded]

Santalum acuminatum

Threlkeldia diffusa [shaded] [shaded] [shaded]

Legend: 1997 [shaded]
 2000 [white]
 Seedlings [bordered]
 D = Dead

Note: 3B - 3E flooded

Figure 3.1.2d cont.: Species Distribution along Bryde Transect 4 in 1997 and 2000.

3.2 Coomalbidgup Swamp

3.2.1 Description

Coomalbidgup Swamp is a C class reserve (#24633) situated approximately 45 km west of Esperance (33°42' S, 121°21' E). 97% of the Coomalbidgup catchment was cleared between 1947 and 1972, leaving only small areas of remnant vegetation along water courses and around wetland basins. A single inlet creek at the north-east of the lake drains an area of approximately 97 km². Due to increasing groundwater recharge and above average rainfall from 1986 to 1989, the swamp contained surface water for this entire period. During 1989 heavy winter rainfall caused severe flooding in the catchment and increased water levels in the swamp (Froend et al., 1994). By 1992 45% of the trees on the lake bed that were alive at the time of the 1989 flooding were dead due to the prolonged inundation. The peripheral dryland vegetation was reduced by as much as one half by 1992 due to the high water levels (Froend et al., 1994). By the time the current survey was conducted, all trees on the lake bed had died. Froend et al. (1994) class the swamp as fresh to brackish during 1992 when water levels were still elevated and suggest that salinity may be higher when water levels recede.

Transect 1: (GPS: 51 348529 / 6268588) is located at the north-west side, down slope from the gravel pit;

Transect 2: (GPS: 51 348417 / 6268559) on the west side approximately 900 m north along Coomalbidgup Road;

Transect 3: (GPS: 51 349497 / 6267954) on the south side 550 m east along South Coast Highway from the lake entrance.

Transect 4: (GPS: 51 349647 / 6268196) on the west side approximately 150 m north along the boundary fence and 70m west towards the lake.

3.2.2 Plant Communities

Prior to 1989 the swamp was characterised by stands of *Eucalyptus occidentalis* extending across the basin with a fringe of *Melaleuca cuticularis* grading into upland vegetation dominated by *Banksia speciosa*. The wetland basin now contains dead *E. occidentalis*, *M. cuticularis* and *B. speciosa* stems are restricted to the higher ground. A prominent feature of the wetland now is the prolific recruitment of *E. occidentalis* and *M. cuticularis* in distinct 'rings' around the fringe of the basin. These rings are likely to correspond with past high water levels where seed collects in 'flotsam' lines by wind action. Regeneration of the *B. speciosa* woodland was not evident in this survey, probably due to an absence of fire since the flooding, which reduced the area of these woodlands. Stands of regenerating *Melaleuca cuticularis* and *Eucalyptus occidentalis* occur in all transects and appear in aerial photographs to extend all the way around the lake basin. In Transects 1, 3 and 4 a distinct gap is apparent between the upland vegetation and the regeneration, where the upland vegetation was killed during flooding. These areas lack regeneration by the terrestrial vegetation and have been heavily invaded by annual weeds. The western and northern sides of the swamp consist of a woodland of *B. speciosa* and *Nuytsia floribunda* in the upland regions with an understorey dominated by *Leptospermum erubescens* and *Lepidosperma* sp. To the south a woodland of *E. occidentalis* extends upslope, eventually being replaced by a mixed shrubland of *Melaleuca* sp., *Hakea lissocarpa* and *Banksia media*. This shrubland continues on the high ground around the southern portion of the lake and along the eastern side. On the eastern side the overstorey of the lower elevations is dominated by a woodland of *E. occidentalis* and *M. cuticularis*.

3.2.3 Population Structure and Tree Vigour

The size class distributions (Figure 3.2.1) indicate the effect of flooding on the wetland vegetation. The loss of the majority of the mature *E. occidentalis* and *M. cuticularis* population can be seen in the relatively low number of larger stems measured.

Table 3.2.1: Summary of Tree Data for Coomalbidgup Swamp.

Species	Trees	Trees	Seedlings	Seedlings	MCS (S.D)	MCS (S.D)
	1997	2000	1997	2000	1997	2000
<i>Banksia speciosa</i>	73	70	0	0	13.4 (4.5)	15.7 (2.72)
<i>Eucalyptus occidentalis</i>	267	347	1371	609	14.0 (3.9)	15.4 (4.38)
<i>Melaleuca cuticularis</i>	65	75	8695	6227	12.7 (2.7)	15.5 (3.19)
<i>Acacia cyclops</i>	23	21	185	167	16.5 (3.1)	10.9 (4.36)

MCS - Mean crown score

The prolific regeneration is apparent in the large number of stems in the <2 cm diameter size class. Since 1997 30% of the *M. cuticularis* stems <2 cm in diameter and 55% of the *E. occidentalis* stems <2 cm in diameter have died. The *B. speciosa* population is a generally mature one with only 3 new seedlings being recorded in 2000. Mean crown scores have lifted for each species since 1997 except for *Acacia cyclops* (Table 3.2.1), which has experienced prolonged inundation by high water levels during winter/spring, indicating that perhaps the population of *A. cyclops* that dominates the littoral zone recruited there during favourable low water levels.

Table 3.2.2: Brief Summary of Changes to the Understorey at Coomalbidgup Swamp Transects

Quadrat	Transect 1	Transect 2	Transect 3	Transect 4
1A	Little Change.	Little change.	Little change.	Little change.
1B	No Change.	Little change.	Little change.	Little change.
1C	No Change.	No Change.	Little change.	Little change.
1D	Little change.	Little change.	Little change.	No Change.
1E	Little change.	Little change.	No Change.	No Change.
2A	No Change.	Little change.	Little change.	No Change.
2B	Little change.	No Change.	No Change.	No Change.
2C	Little change.	Little change.	Little change.	Little change.
2D	Little change.	Little change.	Little change.	Little change.
2E	Little change.	Little change.	Little change.	(No Understorey)
3A	<i>Conyza albida</i> (introd.) – 1997 4%, 2000 20%.	Lost 3 sp (incl. 1 intro), now no understorey.	Lost 1 species, now no understorey.	(No Understorey)
3B	Little change.	Lost 3 sp (incl. 1 intro), now no understorey.	Lost 4 species, now no understorey.	(No Understorey)
3C	Little change.	Lost 3 sp (incl. 1 intro), now no understorey.	Lost 5 species, now no understorey.	Lost 1 species, now no understorey.
3D	Lost 4 species, now no understorey.	Lost 3 sp (incl. 1 intro), now no understorey.	Lost 4 species, now no understorey.	Lost 3 species, now no understorey.
3E	Lost 3 species, now no understorey.	Lost 4 sp (incl. 1 intro), now no understorey.	Lost 4 species, now no understorey.	Lost 3 species, now no understorey.

Few changes in understorey composition and cover were recorded. The introduced American annual (Hussey, Keighery, Cousens, Dood and Lloyd, 1997) *Conyza albida* occurred in Transects 1 and 2 in 1997. It has increased its cover in Transect 1, quadrat 3A, but has disappeared from Transect 2 most likely due to prolonged inundation. Prolonged flooding of quadrats at lower elevations (3A to E) probably caused the complete loss of understorey cover along all transects (Table 3.2.2, Figures 3.2.2a to d).

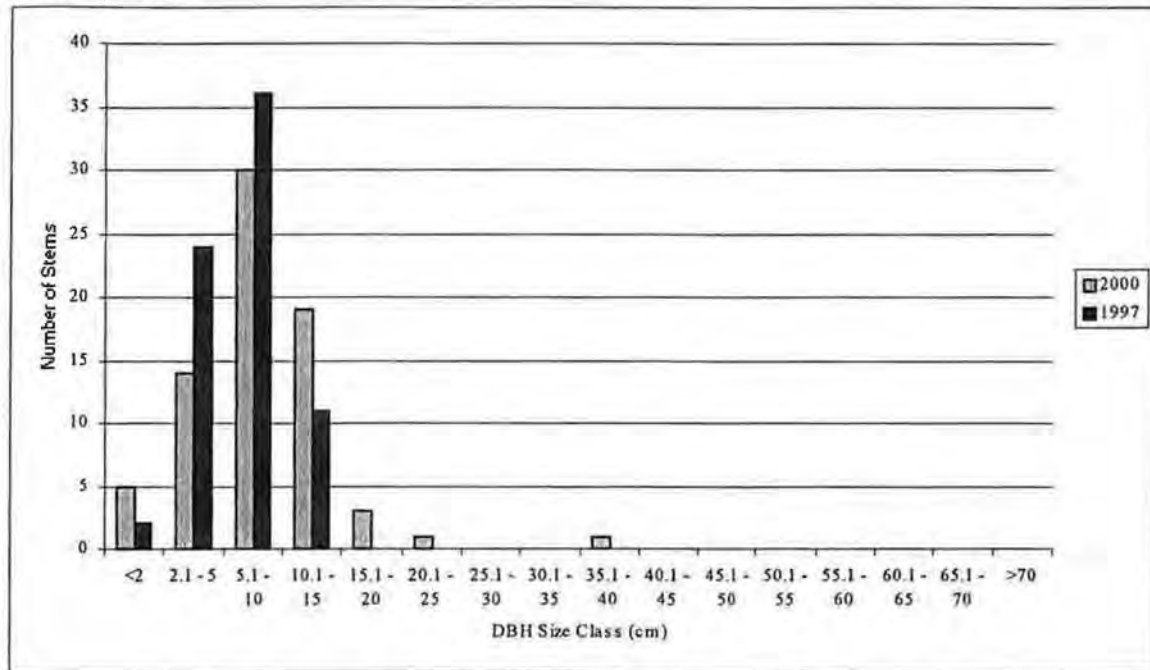
3.2.4 Soil Characteristics

Soil salinities of the four transects are very low. Transects 1 and 2 do not exceed 100 mS/cm and Transects 3 and 4 range between 44-166 mS/cm and 14-134 mS/cm respectively. 1997 EM38 data were not recorded due to a malfunction and therefore comparisons regarding increases or decreases in soil salinity can not be made. Soil textures of the upland areas were generally grey sand grading to grey/white sand in the littoral zone.

3.2.5 Summary

The vegetation of Coomalbidgup Swamp has been severely altered during the 1980's and early 1990's as a result of the change in catchment hydrology due to land clearing and higher than average rainfall. The distribution of the overstorey has changed and large areas of dryland vegetation have been lost. Froend et al., (1994) indicate that the loss of this dryland vegetation reduces the buffer around the wetland exposing the swamp to increased disturbance and runoff. Composition of the regenerating peripheral vegetation may also differ from the pre-flooding condition depending upon disturbance such as fire, necessary for *B. speciosa* recruitment. The persistence and regeneration of the tree species and colonisation of the lake bed by these species is dependent on the hydrological regime of the altered catchment. Although there has been a substantial reduction in the number of seedlings of *M. cuticularis* and *E. occidentalis* since monitoring occurred in 1997, which is largely due to competitive effects, mature individuals have remained healthy and many new trees were found to have made large diameter gains, for example *B. speciosa* and *E. occidentalis*. As long as soil salinities remain low, large recruitment events occur, and understorey diversity and seedling establishment can be maintained, the vegetation of Coomalbidgup Swamp will remain in relatively good condition.

Banksia speciosa



Eucalyptus occidentalis

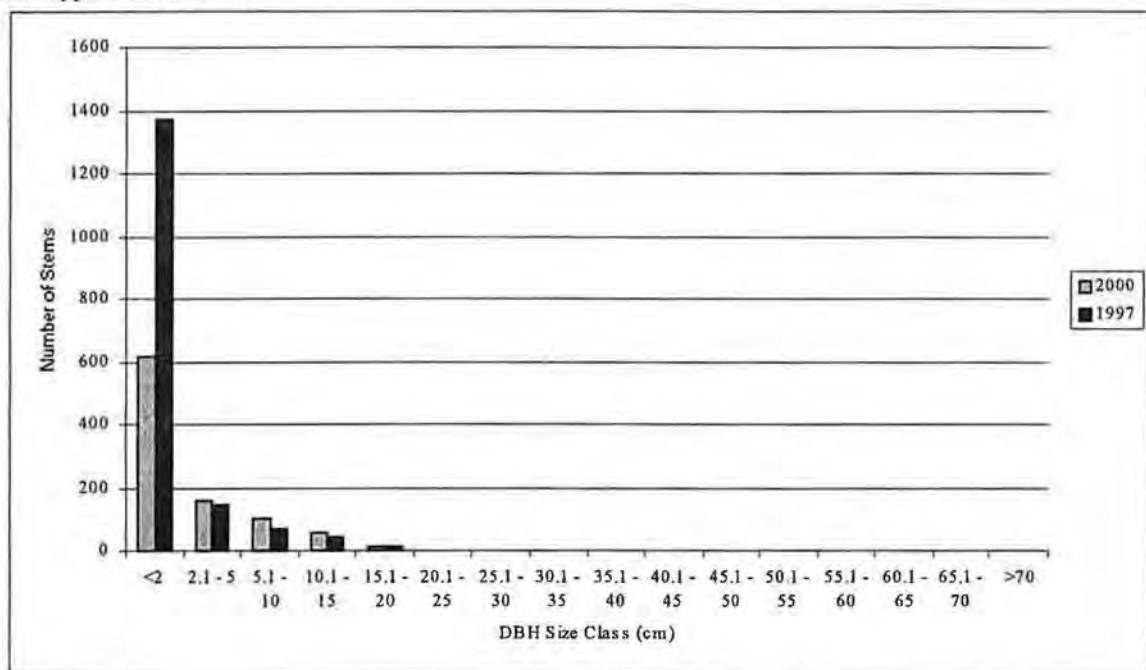
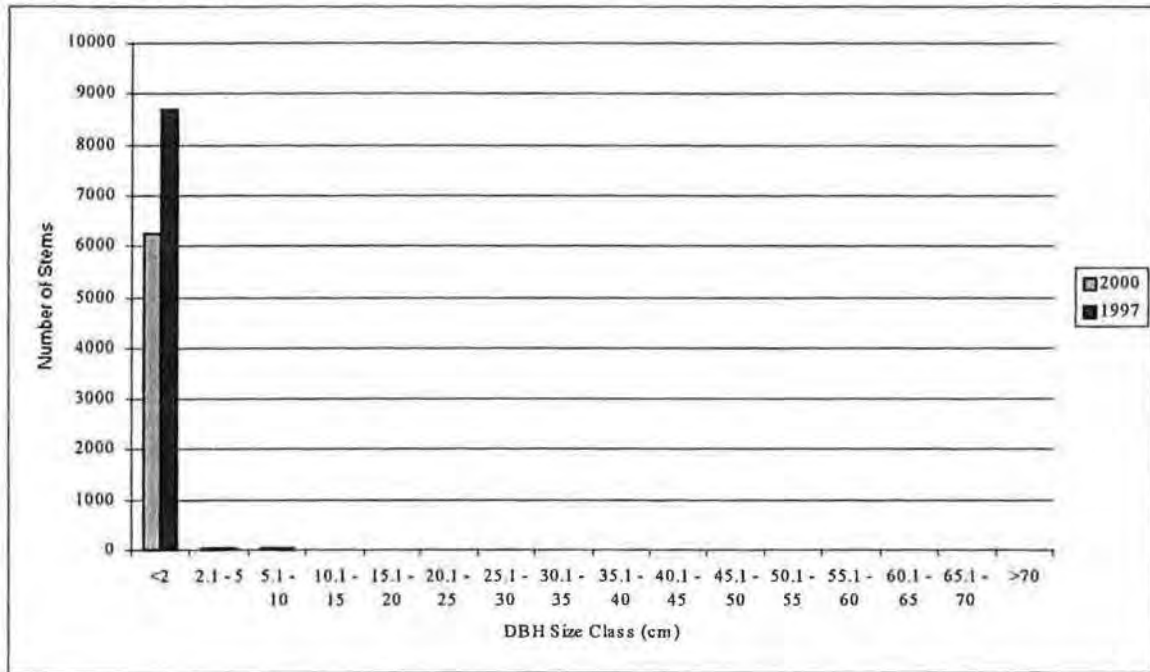


Figure 3.2.1: Size Class Distributions for *Banksia speciosa*, *Eucalyptus occidentalis*, *Melaleuca cuticularis* and *Acacia cyclops* at Coomalbidgup Swamp.

Melaleuca cuticularis



Acacia cyclops

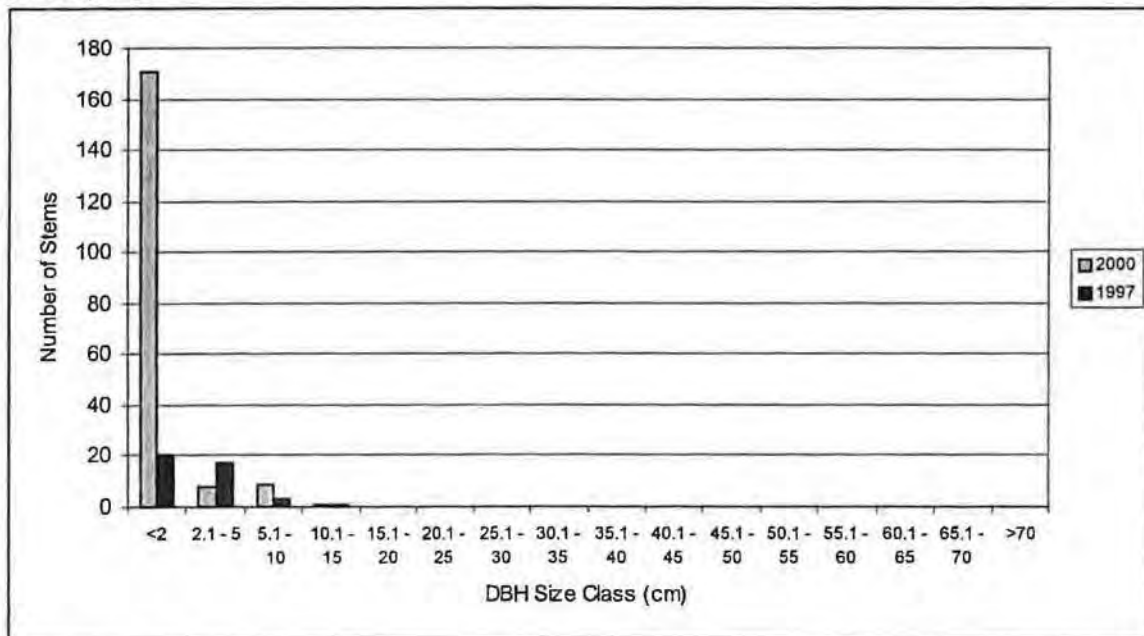


Figure 3.2.1 (cont.): Size Class Distributions for *Banksia speciosa*, *Eucalyptus occidentalis*, *Melaleuca cuticularis* and *Acacia cyclops* at Coomalbidgup Swamp.

Coomalbidgup - Transect 1

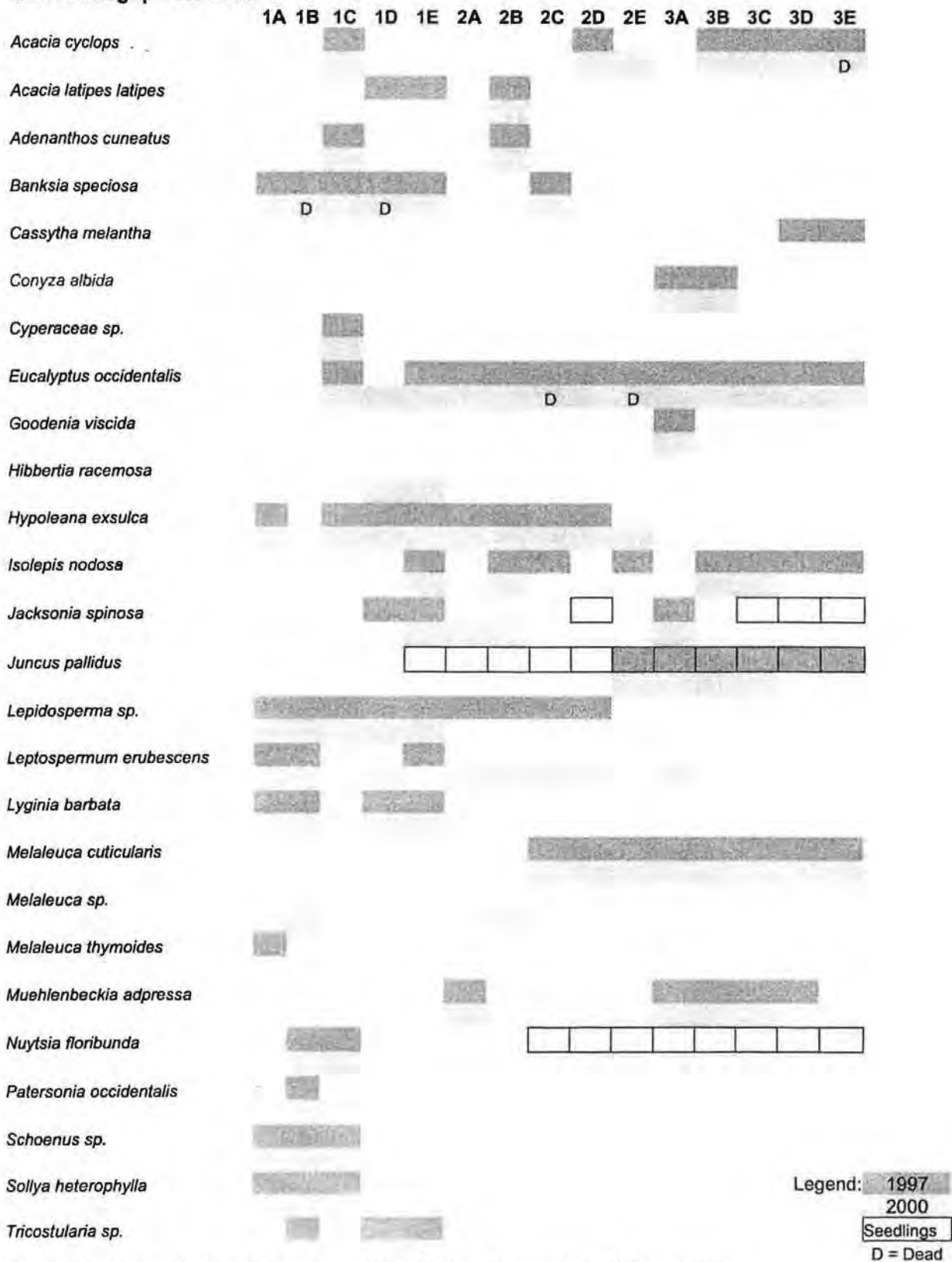


Figure 3.2.2a: Species Distribution along Coomalbidgup Transect 1 in 1997 and 2000.

Coomalbidgup - Transect 2

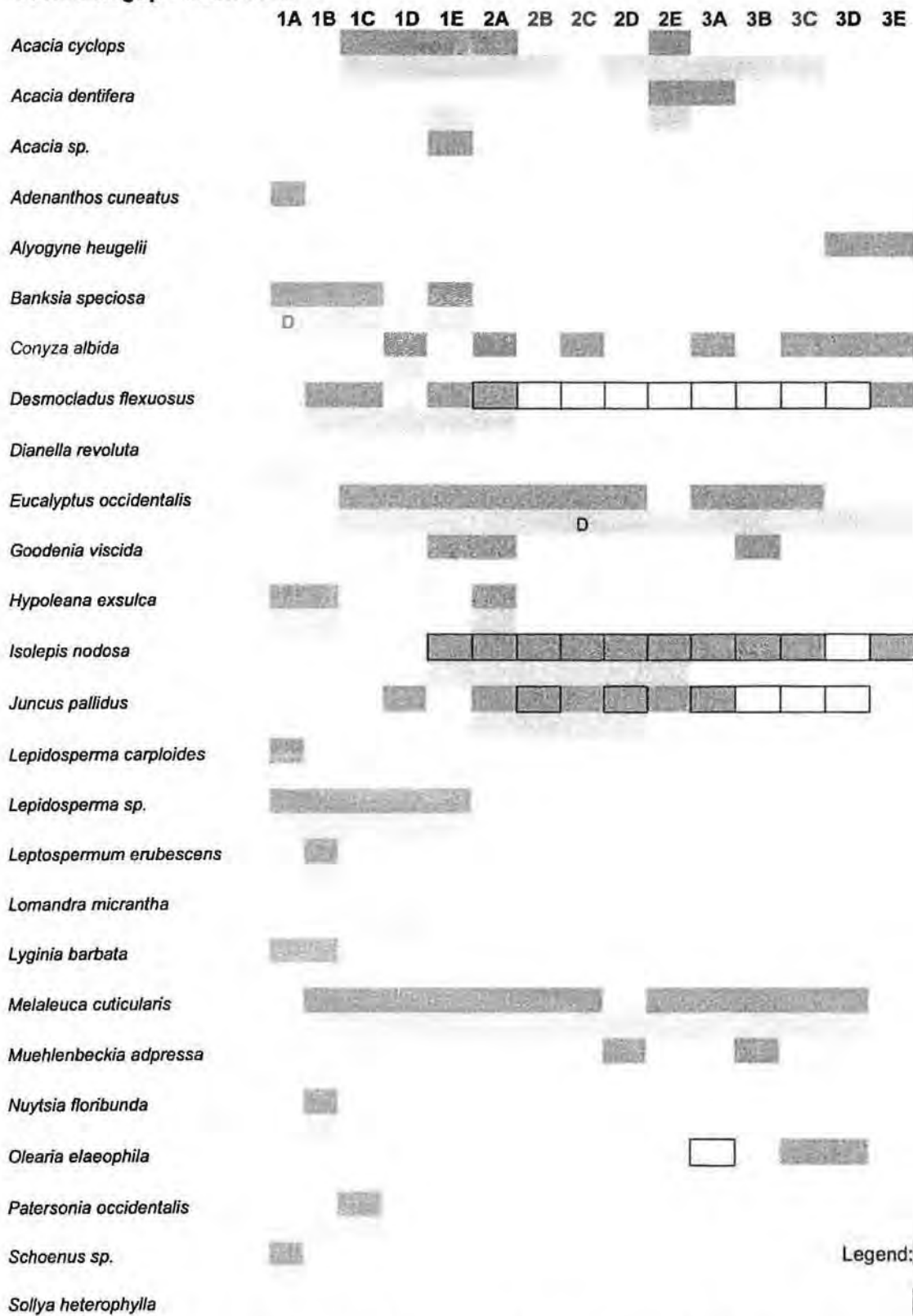
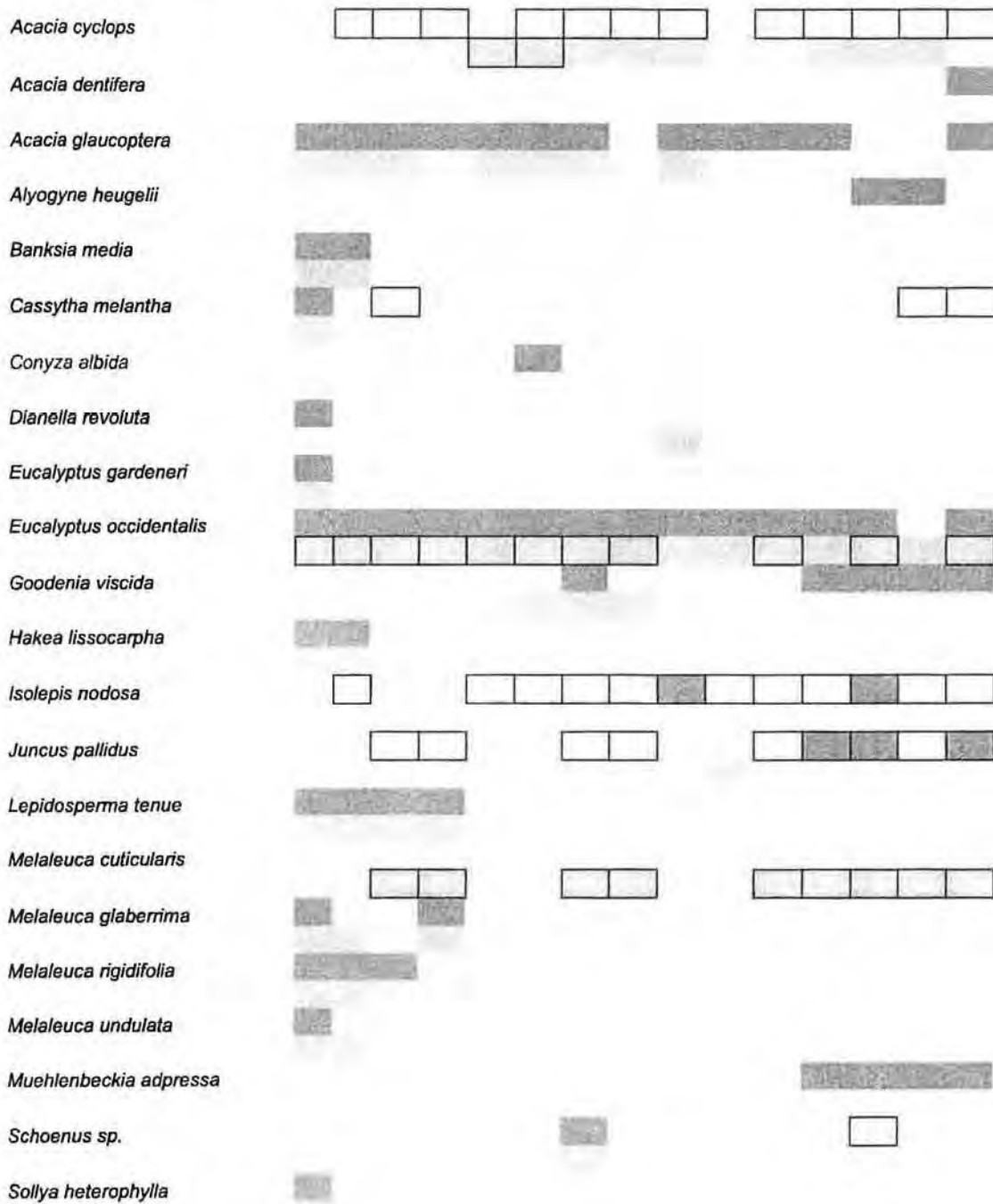


Figure 3.2.2b: Species Distribution along Coomalbidgup Transect 2 in 1997 and 2000.

Coomalbidgup - Transect 3

1A 1B 1C 1D 1E 2A 2B 2C 2D 2E 3A 3B 3C 3D 3E

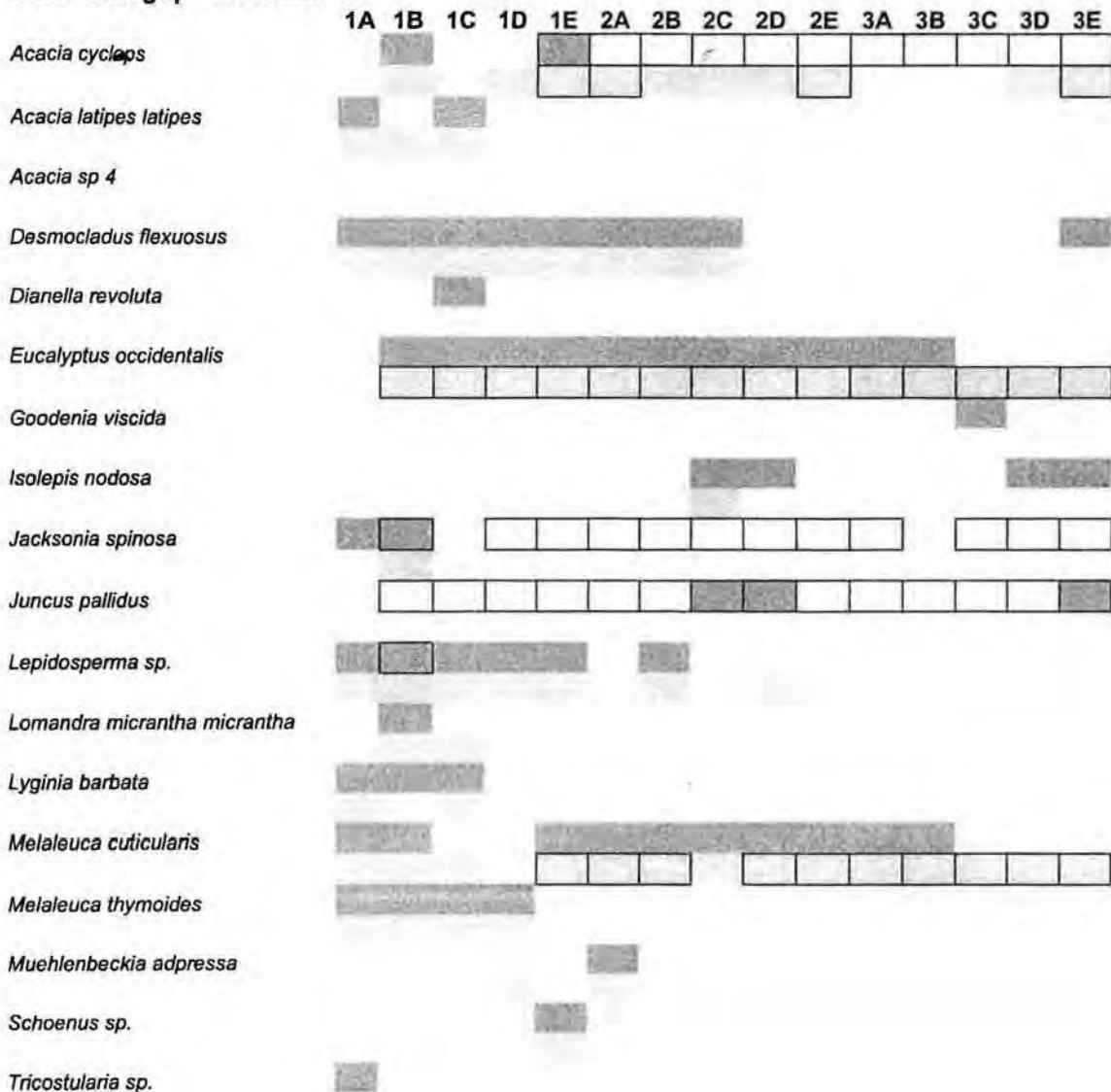
Legend: 1997
2000
Seedlings
D = Dead



Legend: 1997
 2000
 Seedlings
 D = Dead

Figure 3.2.2c: Species Distribution along Coomalbidgup Transect 3 in 1997 and 2000.

Coomalbidgup - Transect 4



Legend: 1997
 2000
 Seedlings
 D = Dead

Figure 3.2.2d: Species Distribution along Coomalbidgup Transect 4 in 1997 and 2000.

3.3 Lake Coyrecup

3.3.1 Description

Lake Coyrecup Nature Reserve (A class #28552, 33°43' S, 117°50' E) lies approximately 25 km east of Katanning in the upper part of the Coblinine River drainage system (ANCA, 1996). The majority of the catchment is cleared and inflow occurs mainly via the large stream channel at the east of the reserve. The lake is hyposaline and near permanent, drying in only five out of fourteen years of monitoring (ANCA, 1996). Also included in this survey were the adjacent reserves number 26020 and Location Numbers 6904 and 9270. Reserve 26020 is a near pristine remnant, which an illegally constructed drain runs through, eventually joining up with the main stream channel. Location Numbers 6904 and 9270 are areas of re-purchased land, which have been grazed in the past (Lyons, 1988).

- Transect 1:** (GPS: 50 578606 / 6270394) lies in Reserve Location 6904 on a small dampland east of Coyrecup Lake and extends for 60 m from the terrestrial vegetation onto the dampland basin.
- Transect 2:** (GPS: 50 578360 / 6270161) runs for 60 m on the east side of the lake from the ridge down onto Coyrecup Lake.
- Transect 3:** (GPS: 50 578253 / 6269462) lies on the east side of the lake approximately 200 m north of the main inlet stream, running from the side of the ridge down to Coyrecup Lake.
- Transect 4:** (GPS: 50 580072 / 6269672) was established in Reserve 26020 approximately 20 m east of the end of the constructed drain and extends for 40m from the edge of the drainage area into the mixed *Melaleuca* low forest.
- Transect 5:** (GPS: 50 580451 / 6269640) runs north/south for 40 m approximately half way down the constructed drain in the *Melaleuca* low forest.

3.3.2 Plant Communities

A detailed description of the plant communities of Coyrecup Lake and associated reserves is provided by Lyons (1988). Understorey composition was generally species poor with introduced annuals dominating the sites around the lake and dampland. Transects 2 and 3 sample the *Eucalyptus loxophleba*, *Allocasuarina huegeliana*, *Acacia acuminata* woodland of the ridge east of the lake and follow the gradient down into the *Casuarina obesa* woodland that fringes the lake. *Melaleuca halmaturorum* is the dominant tree species of the lake basin with a predominantly *Halosarcia pergranulata* understorey. The western side of the dampland (Transect 1) has a *Banksia prionotes* woodland on the highest ground grading to an *Acacia huegeliana*-*A. acuminata* woodland on the slope surrounding the dampland. Around the fringe of the basin is a *Eucalyptus occidentalis* woodland with an understorey of *Melaleuca hamulosa*, *M. lateriflora* and *M. uncinata*. The dampland basin supports a woodland of *Casuarina obesa* and *Melaleuca strobophylla*. Dense stands of juvenile *M. strobophylla* and occasional *C. obesa* seedlings occur around the fringe of the dampland. The vegetation around the drain in reserve 26020 is predominantly a *Melaleuca* mixed low forest with a *E. loxophleba* woodland on the higher ground at the south-west end of the drain. *Halosarcia pergranulata* is the dominant understorey species of the drain and surrounding areas.

3.3.3 Population Structure and Tree Vigour

The vegetation of Lake Coyrecup and the surrounding reserves was in generally good condition (Table 3.3.1), however, trees and understorey species associated with wetland basins and drains were showing signs of stress due to the increasing salinity. The *Melaleuca* species of the low forest (*Melaleuca acuminata*, *M. adenostyla* and *M. lateriflora*) around the drain in reserve 26020 are showing obvious signs of stress as are the *M. halmaturorum* stems on Lake Coyrecup. The more salt tolerant *Casuarina obesa* and *M. strobophylla* are in good health. The low mean crown score for the *M. strobophylla* probably reflects the high competition for resources in the dense stands of regeneration (particularly in Transect 1) rather than stress due to salinity or waterlogging. *Allocasuarina huegeliana* was the only species to record a significant reduction in vigour since 1997. All other species recorded an increase in vigour (MCS) since 2000, however, a greater variability in the standard deviation of the Mean Crown Score should be noted. The most significant recruitment of trees is evident in the dampland to the east of Coyrecup Lake. Of the 427 *M. strobophylla* saplings that were surveyed in 1997, 332 remain (Table 3.3.1, Figure 3.3.1). These occur around the fringe of the dampland in dense rings suggesting germination and establishment has occurred at one or more past high water marks. No seedlings or tall shrubs were observed around the drainage line in reserve 26020 or on Lake Coyrecup. Populations of the major overstorey species present at Lake Coyrecup and the surrounding reserves consist predominately of young individuals between the 2.1-5 cm and 5.1-10 cm diameter size classes with few individuals represented in the larger classes. *E.*

loxophleba is the exception with no seedlings or young individuals recorded in either 1997 or 2000 (Table 3.3.1). In the three years since 1997 there have been no significant changes in the population structure of the major overstorey species at this wetland.

Table 3.3.1: Summary of Lake Coyrecup Tree Data.

Species	Trees		Seedlings		Saplings		MCS (S.D)	
	1997	2000	1997	2000	1997	2000	1997	2000
<i>Allocasuarina huegeliana</i>	24	18	0	0	0	0	10.1 (3.9)	7.72 (4.54)
<i>Acacia acuminata</i>	65	63	8	11	0	0	14 (3.4)	15 (4.25)
<i>Banksia prionotes</i>	8	7	0	0	0	0	16.5 (2.1)	16.7 (2.92)
<i>Melaleuca strobophylla</i>	76	46	0	8	427	332	10.7 (3.3)	11.9 (3.83)
<i>Eucalyptus occidentalis</i>	17	12	0	0	0	0	12.6 (5.3)	16.3 (4.73)
<i>Eucalyptus loxophleba</i>	19	19	1	0	0	0	12.2 (3.7)	12.9 (4.28)
<i>Casuarina obesa</i>	130	123	1	1	3	6	14.5 (2.7)	16.3 (2.71)
<i>Melaleuca uncinata</i>	19	17	0	0	2	2	16.3 (2.8)	19.2 (4.47)
<i>Melaleuca acuminata</i>	65	58	0	0	11	12	11.6 (2.5)	15.2 (3.50)
<i>Melaleuca lateriflora</i>	8	8	0	10	48	41	11.8 (1.0)	15.2 (2.91)
<i>Melaleuca hamulosa</i>	16	16	0	0	3	4	13.9 (2.1)	15.7 (1.77)
<i>Melaleuca halmaturorum</i>	36	30	0	0	2	2	11.9 (3.0)	12.6 (5.8)
<i>Melaleuca adenostyla</i>	59	54	0	0	6	6	11.7 (2.4)	13 (4.18)
<i>Santalum acuminatum</i>	2	2	0	0	0	0	13.0 (0.0)	13 (0.0)

MCS – Mean crown score

Few changes in understorey composition and cover were recorded for Transects 3, 4 and 5, with the loss of 4 species in quadrat 1C of Transect 3 being the most significant change, as no new species were recruited into the quadrat either (Table 3.3.2). Transect 1, quadrats 1A to E lost between 3 and 5 species, leaving these quadrats without an understorey. Transect 2, quadrats 1A and B have now also lost their understorey. It is worth noting that a species of *Carpobrotus* (not identified yet) has been recorded in a number of quadrats along Transects 3, 4 and 5 (T3: 1B – 3A + 3E, T4: 1C – 2D, T5: 1A + 2E). It is not yet known whether this species is a native or an exotic member of that genus, however, it appears to be flourishing (Figures 3.3.2a to e).

Table 3.3.2: Brief Summary of Changes to the Understorey at Lake Coyrecup Transects.

Quadrat	Transect 1	Transect 2	Transect 3	Transect 4	Transect 5
1A	Lost 4 sp, now no understorey.	Lost 1 sp, now no understorey.	Little change.	No Change.	Little change.
1B	Lost 5 sp, now no understorey.	Lost 1 sp, now no understorey.	Little change.	No Change.	Little change.
1C	Lost 3 sp, now no understorey.	(No Understorey)	Lost 4 species.	No Change.	No Change.
1D	Lost 4 sp, now no understorey.	No Change.	Little change.	No Change.	Little change.
1E	Lost 4 sp, now no understorey.	Little change.	Little change.	No Change.	Little change.
2A	Little change.	No Change.	Little change.	Little change.	Little change.
2B	Little change.	(No Understorey)	Little change.	Little change.	Little change.
2C	Little change.	Lost 1 sp, now no understorey.	Little change.	Little change.	Little change.
2D	Little change.	No Change.	Little change.	Little change.	Little change.
2E	(No Understorey)	No Change.	Little change.	Little change.	Little change.
3A	(No Understorey)	No Change.	Little change.		
3B	(No Understorey)	No Change.	Little change.		
3C	(No Understorey)	No Change.	Little change.		
3D	(No Understorey)	No Change.	No Change.		
3E	(No Understorey)	No Change.	Little change.		

3.3.4 Soil Characteristics

Highest soil conductivities were found on the Coyrecup lake bed at Transect 2 near the main inlet channel (447-500 mS/cm). Conductivities around the drain in reserve 26020 were also generally high (approximately 400 mS/cm). The basin of the dampland, which does not receive inflow from the drain or the stream channel, had lower conductivities at around 300 mS/cm, which has remained stable since 1997. Soil salinity of the upland areas was generally low (appendix 1). Soil textures of the upland areas were generally grey to brown sands grading to sandy silts in the wetland basins and drains.

3.3.5 Summary

With increasingly saline runoff and groundwater from the surrounding catchment, the vegetation of the wetland basin and littoral zone is deteriorating and is likely to continue to decline. The drainage areas of reserve 26020, particularly around the illegally constructed drain, contain high soil salinities and the associated vegetation exhibits signs of stress. Soil salinity and the area of stressed vegetation is likely to keep increasing as salt is mobilised by runoff from the adjacent farmland. The dampland to the east of Lake Coyrecup has a fairly high soil salinity, which may also increase if groundwater salinity continues to rise. Although the decline in tree numbers since 1997 has been minimal for most species, poor recruitment is likely to hinder the success of future populations if the widespread detrimental effects of farming, salinity and waterlogging continue. The large decline of *M. strobophylla* trees and saplings recorded in Transect 1 may be due to the increases in soil salinity recorded in 2000 and competition for limited resources. The general decline of understorey species along all Coyrecup transects is another indication of the development of unfavourable soil conditions.

Allocasuarina huegeliana

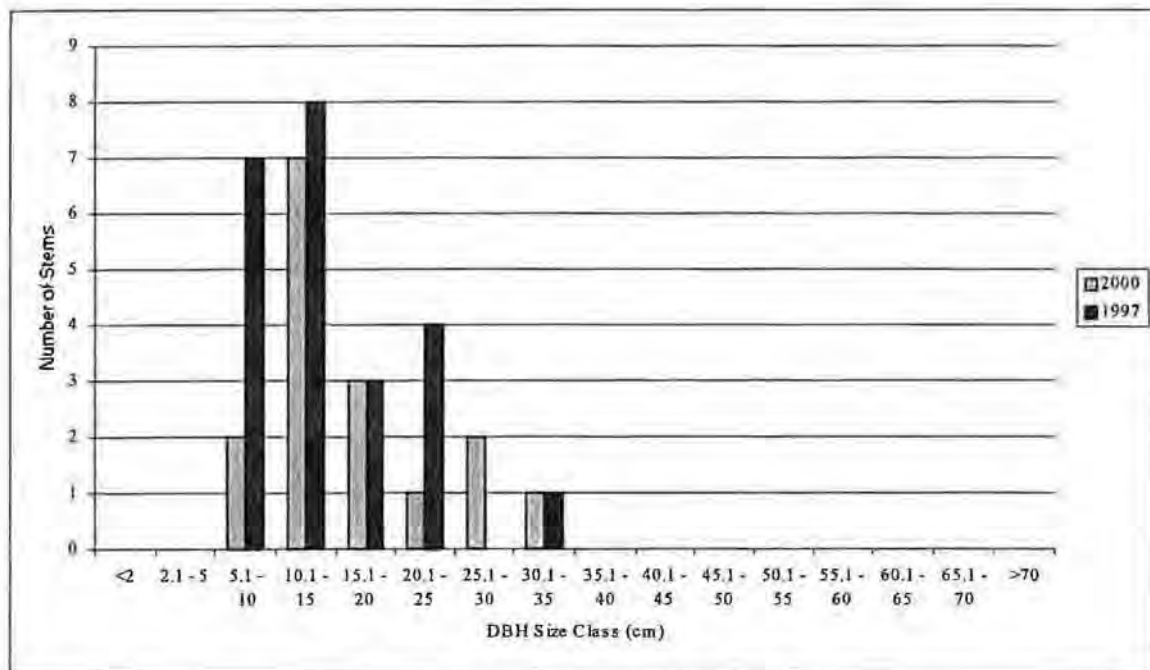
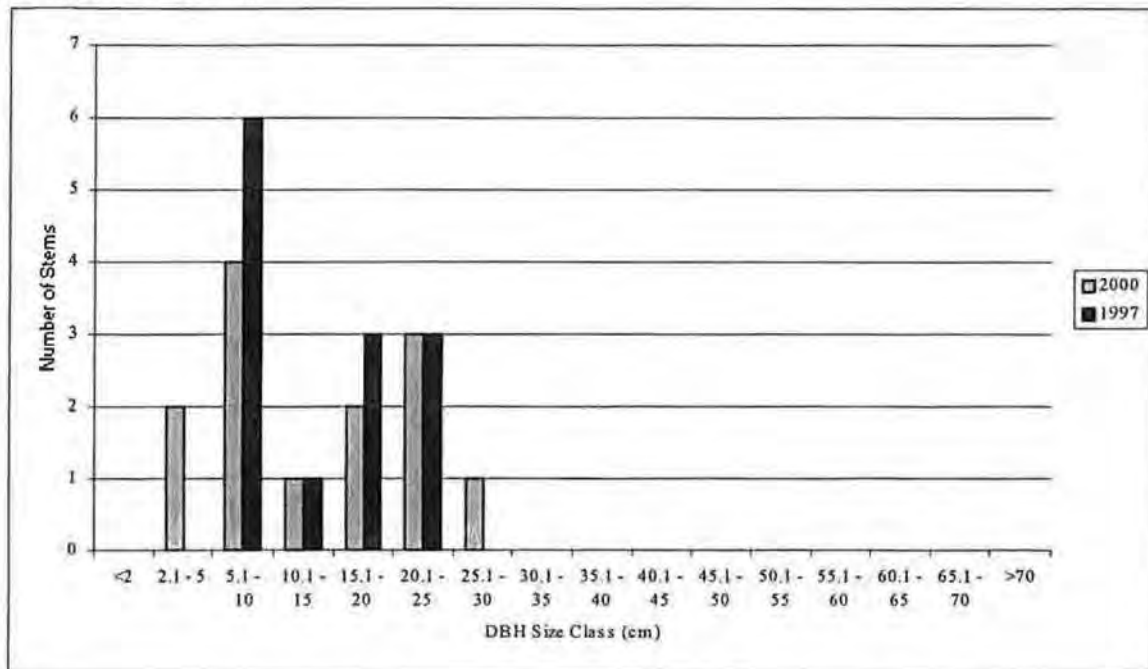


Figure 3.3.1: Size Class Distributions of *Allocasuarina huegeliana*, *Eucalyptus occidentalis*, *Acacia acuminata*, *Eucalyptus loxophleba*, *Casuarina obesa*, *Melaleuca strobophylla*, *Melaleuca acuminata*, *Melaleuca halmaturorum* and *Melaleuca adenostyla* for Coyrecup Lake.

Eucalyptus occidentalis



Acacia acuminata

N.B. Due to differences in size class categorisation, data for the <2 and 2.1-5 size classes can not be shown for 1997.

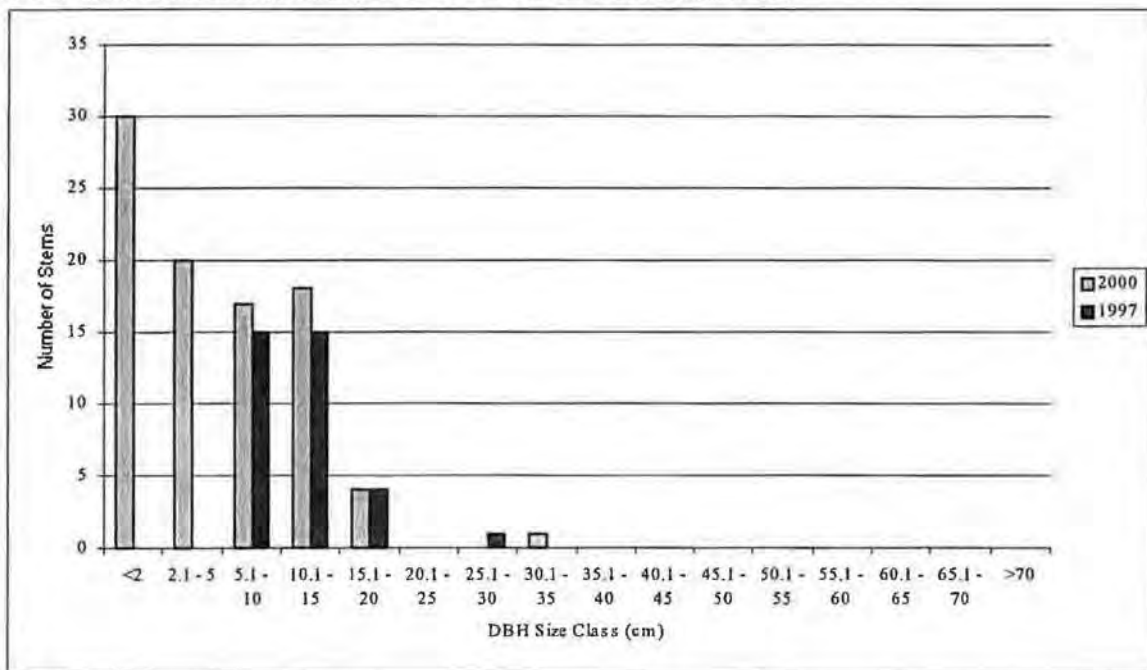
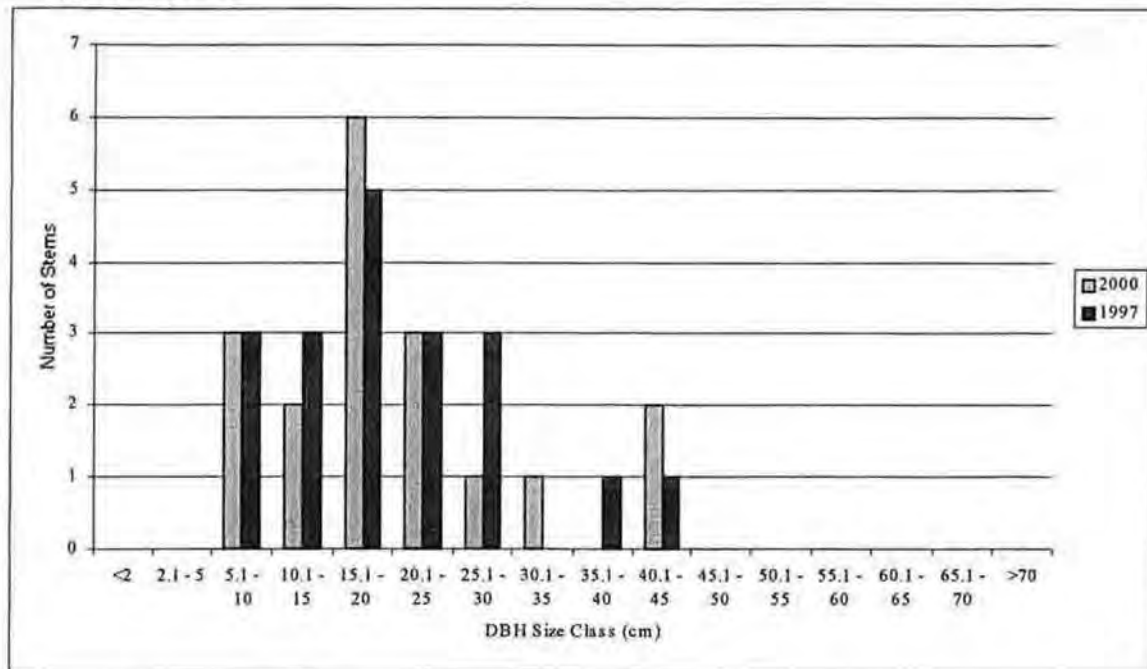


Figure 3.3.1 (cont.): Size Class Distributions of *Allocasuarina huegeliana*, *Eucalyptus occidentalis*, *Acacia acuminata*, *Eucalyptus loxophleba*, *Casuarina obesa*, *Melaleuca strobophylla*, *Melaleuca acuminata*, *Melaleuca halmaturorum* and *Melaleuca adenostyla* for Coyrecup Lake.

Eucalyptus loxophleba



Casuarina obesa

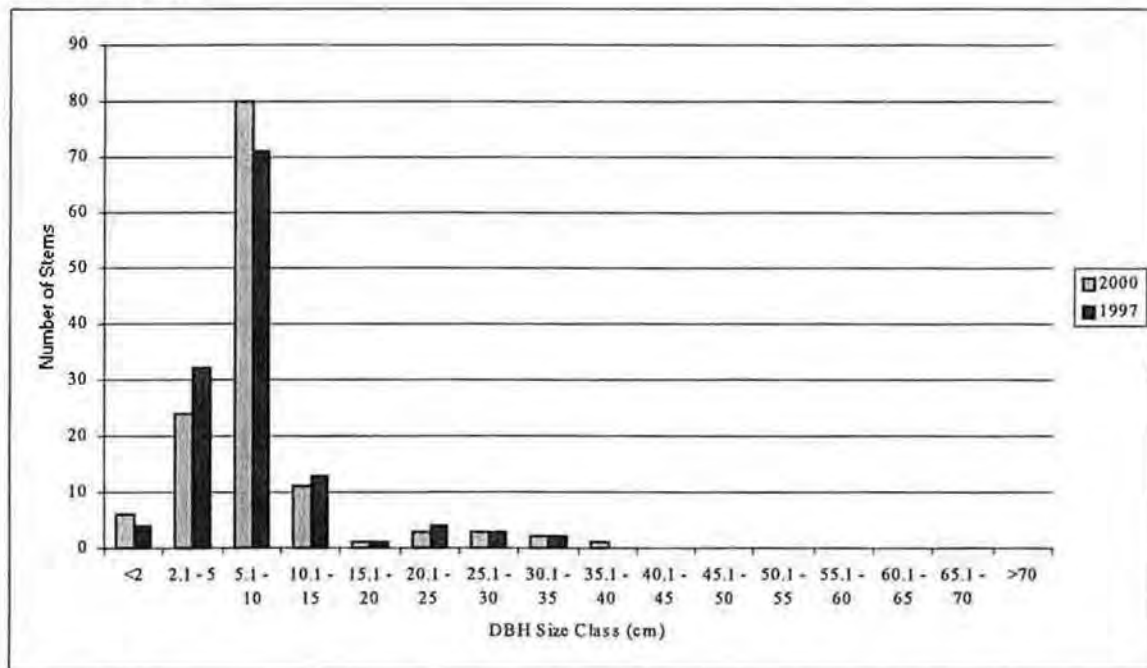
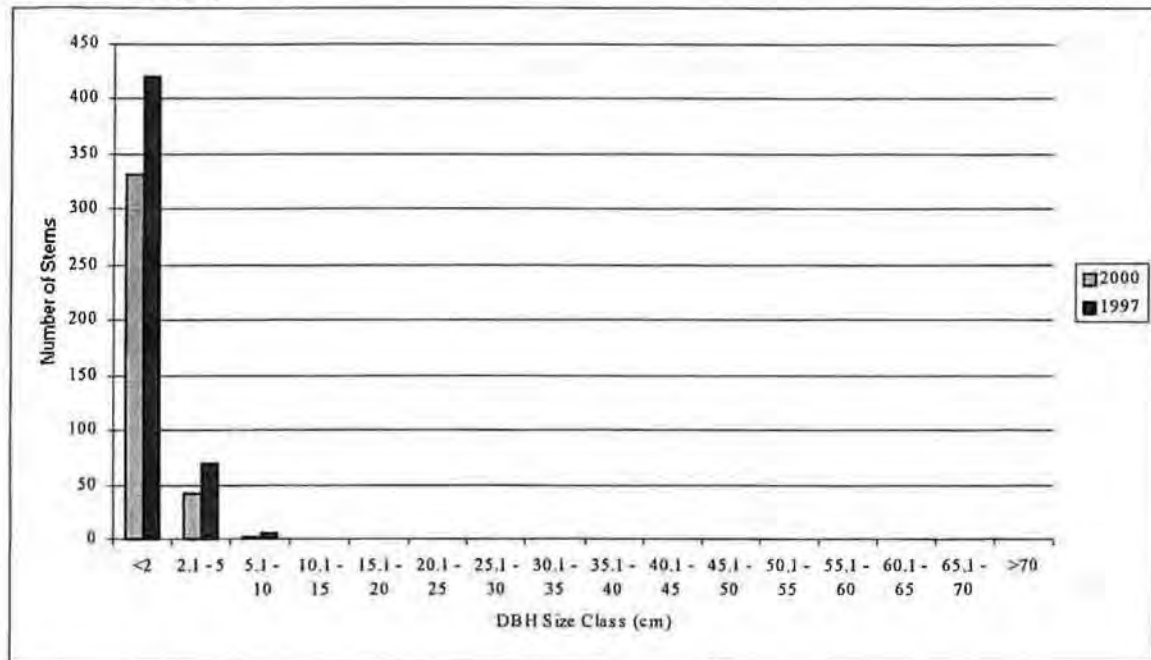


Figure 3.3.1 (cont.): Size Class Distributions of *Allocasuarina huegeliana*, *Eucalyptus occidentalis*, *Acacia acuminata*, *Eucalyptus loxophleba*, *Casuarina obesa*, *Melaleuca strobophylla*, *Melaleuca acuminata*, *Melaleuca halmaturorum* and *Melaleuca adenostyla* for Coyrecup Lake.

Melaleuca strobophylla



Melaleuca acuminata

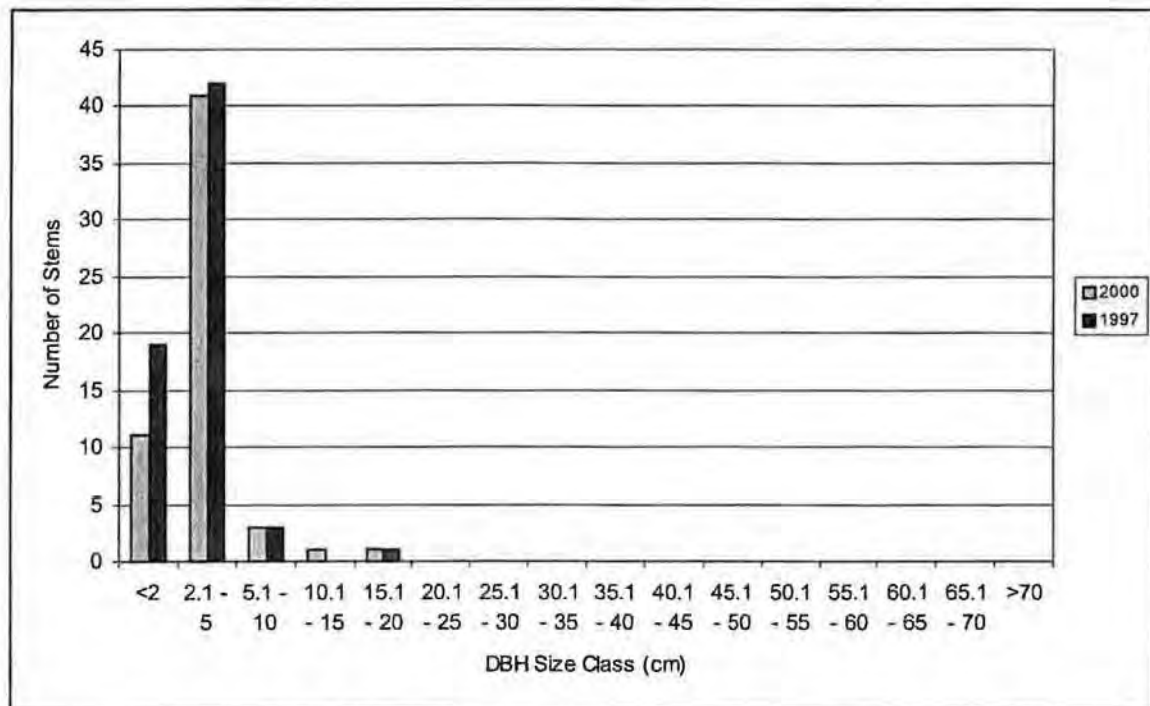
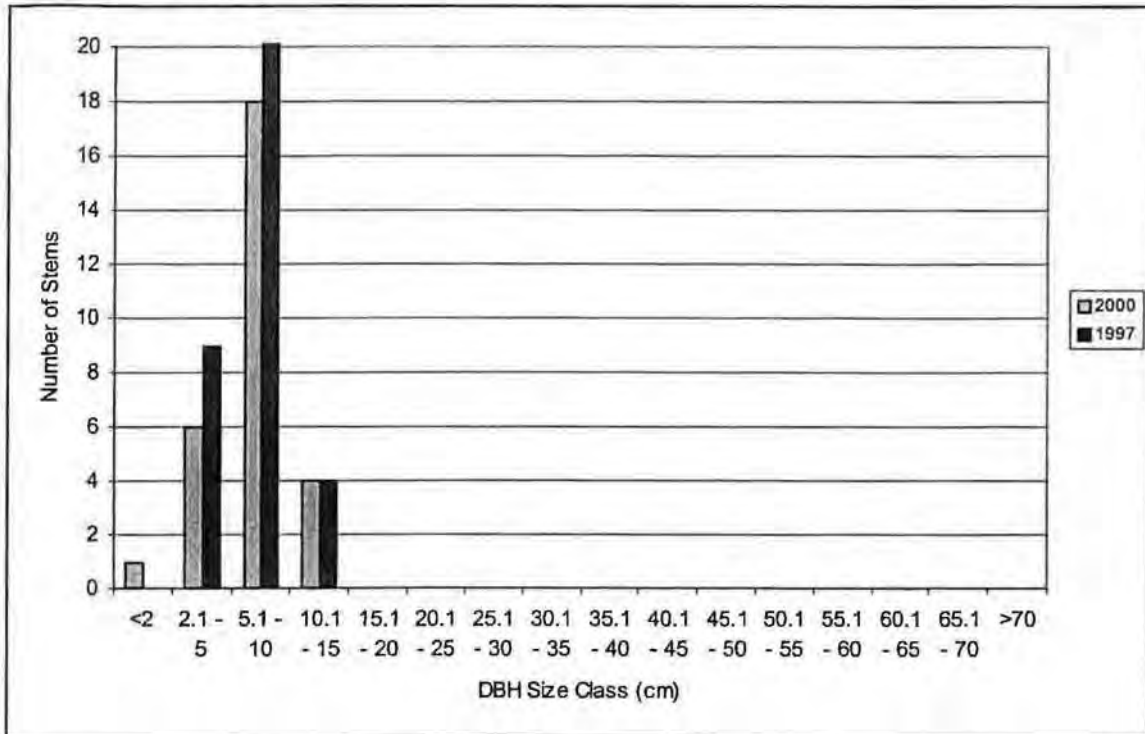


Figure 3.3.1 (cont.): Size Class Distributions of *Allocasuarina huegeliana*, *Eucalyptus occidentalis*, *Acacia acuminata*, *Eucalyptus loxophleba*, *Casuarina obesa*, *Melaleuca strobophylla*, *Melaleuca acuminata*, *Melaleuca halmaturorum* and *Melaleuca adenostyla* for Coyrecup Lake.

Melaleuca halmaturorum



Melaleuca adenostyla

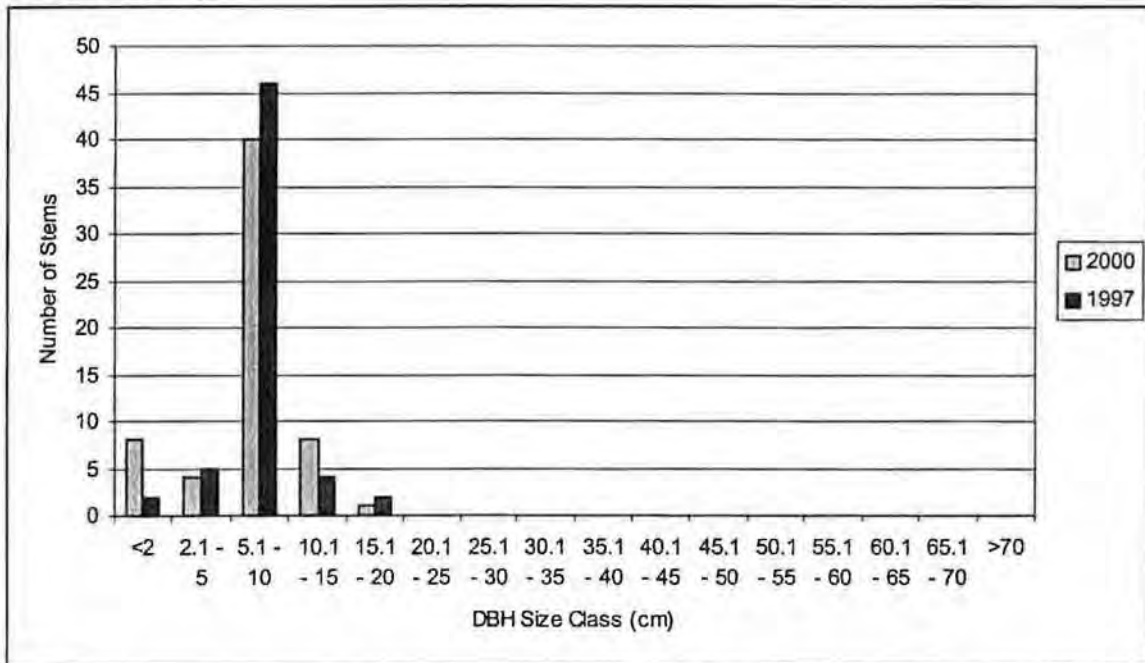
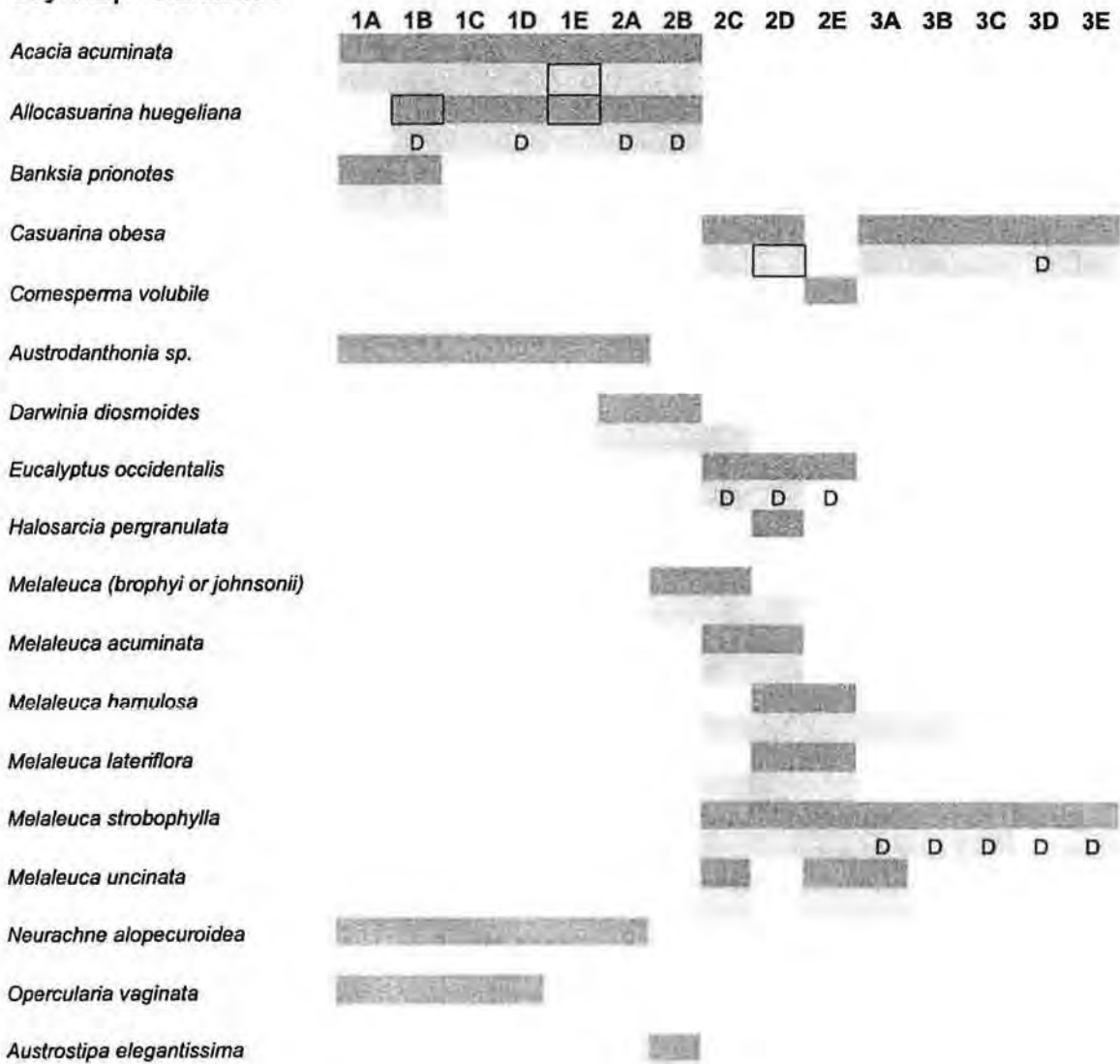


Figure 3.3.1 (cont.): Size Class Distributions of *Allocasuarina huegeliana*, *Eucalyptus occidentalis*, *Acacia acuminata*, *Eucalyptus loxophleba*, *Casuarina obesa*, *Melaleuca strobophylla*, *Melaleuca acuminata*, *Melaleuca halmaturorum* and *Melaleuca adenostyla* for Coyrecup Lake.

Coyrecup - Transect 1



Legend: 1997
 2000
 Seedlings
 D = Dead

Figure 3.3.2a: Species Distribution along Coyrecup Transect 1 in 1997 and 2000.

Coyrecup - Transect 2

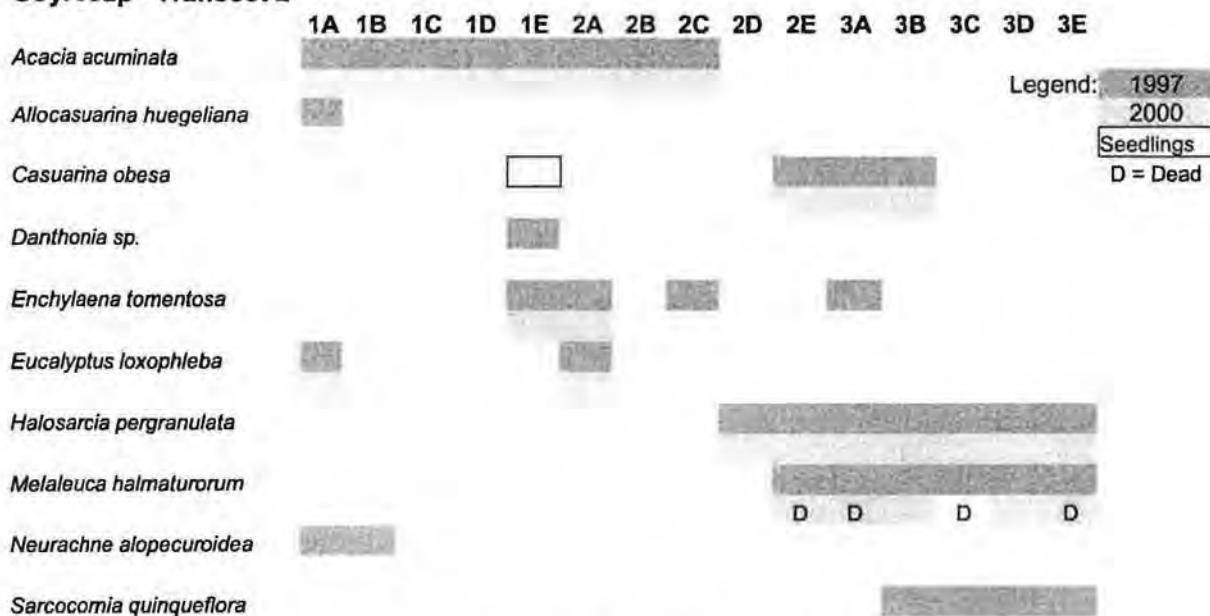


Figure 3.3.2b: Species Distribution along Coyrecup Transect 2 in 1997 and 2000.

Coyrecup - Transect 3

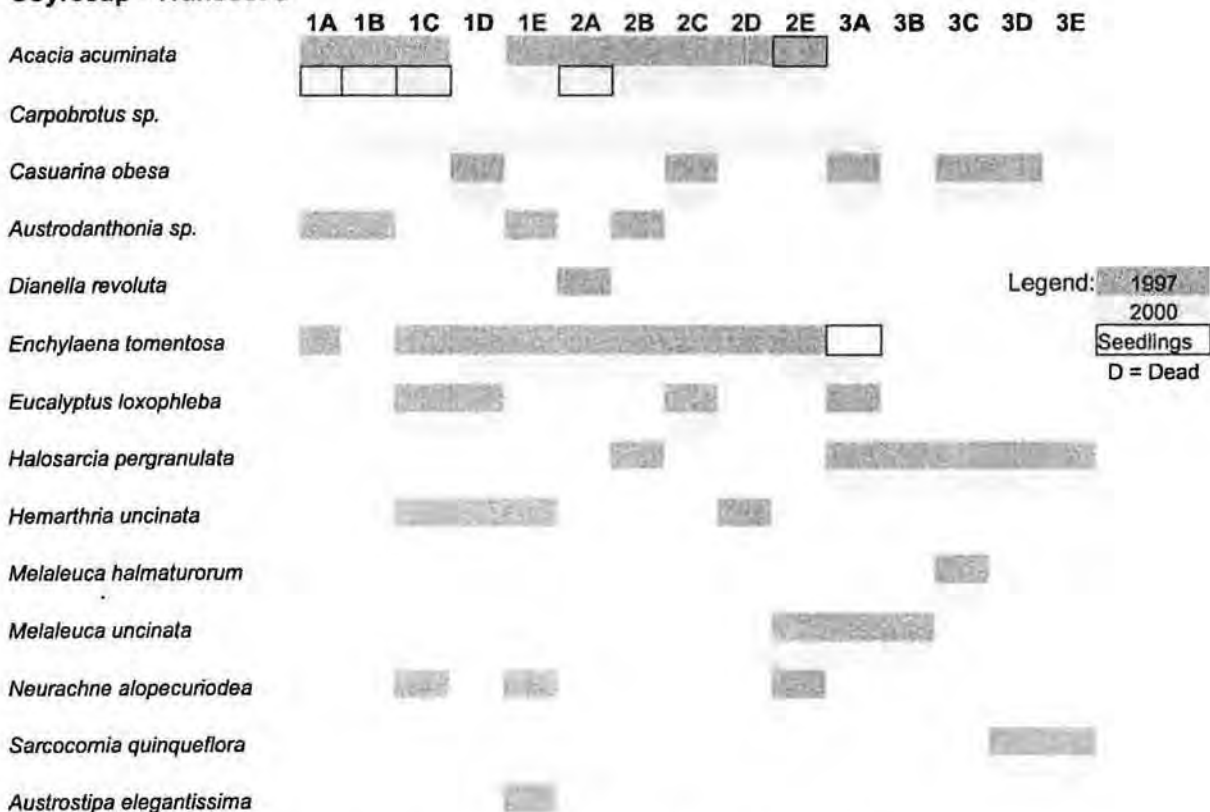


Figure 3.3.2c: Species Distribution along Coyrecup Transect 3 in 1997 and 2000.

Coyrecup - Transect 4

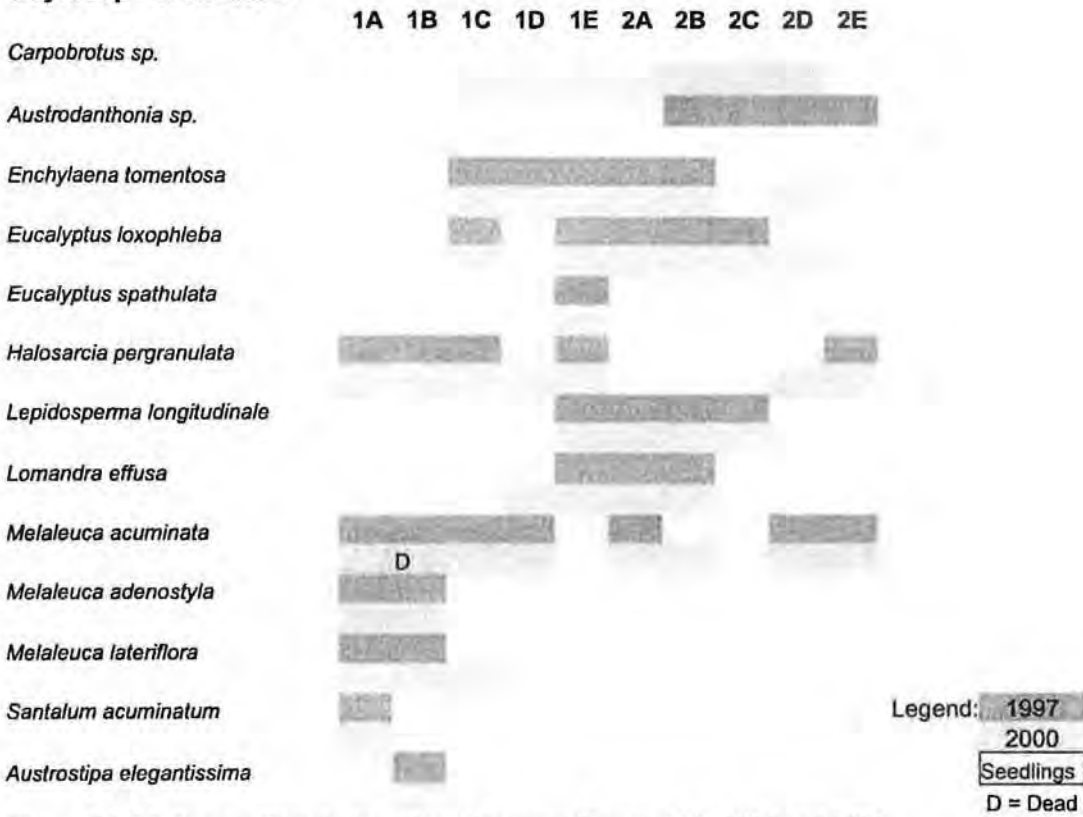


Figure 3.3.2d: Species Distribution along Coyrecup Transect 4 in 1997 and 2000.

Coyrecup - Transect 5

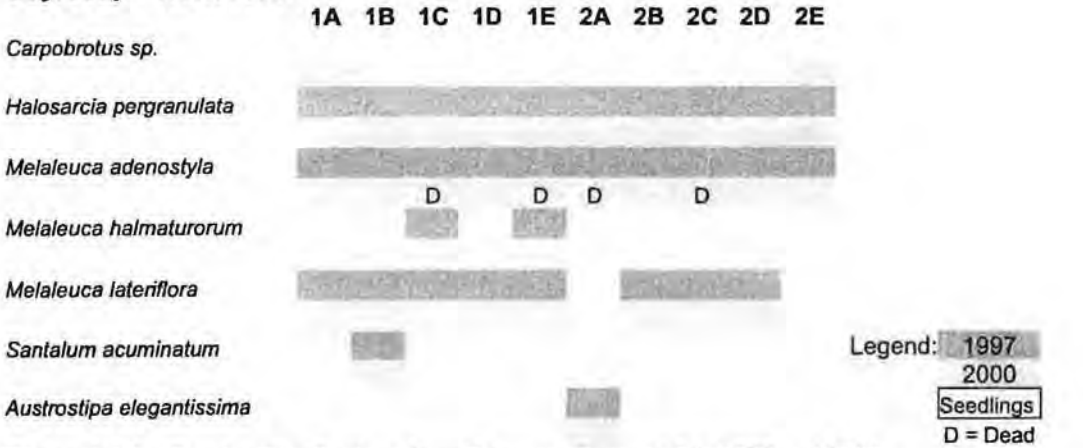


Figure 3.3.2e: Species Distribution along Coyrecup Transect 5 in 1997 and 2000.

3.4 Lake Kulikup

3.4.1 Description

Kulikup Lake Nature Reserve (A class #18239) is an ephemeral wetland lying approximately 30 km east of Boyup Brook (33°49' S, 116°40' E). Inspection of aerial photography suggests inflow to the lake comes from a broad channel at the north of the reserve draining surrounding farmland and overflow from adjacent wetlands to the west. No obvious outflow point is apparent. Disturbances to the reserve include a disused gravel pit at the eastern side, a rail easement to the south, a disused tip at the north and anecdotal evidence that the edge of the wetland basin was used as a horse racing course in the 1940/50's.

- Transect 1:** (GPS: 50 469645 / 6257255) lies on the eastern side of the lake, approximately 30 m south of the northern edge of the disused gravel pit and runs for 60 m from the terrestrial vegetation out into the *Baumea articulata* of the lake basin.
- Transect 2:** (GPS: 50 469104 / 6257016) is situated on the south-western side of the lake, extending for 60 m from the terrestrial vegetation onto the lake basin.
- Transect 3:** (GPS: 50 469498 / 6256781) is placed similarly to the previous transect on the south-eastern side of the lake.
- Transect 4:** (GPS: 50 469339 / 6257249) is located in the *Melaleuca* woodland in the inlet and runs for 40 m from within the inlet onto the lake bed.

3.4.2 Plant Communities

The upslope areas of the reserve support a *Eucalyptus wandoo* – *Eucalyptus decipiens* woodland with an understorey dominated by *Desmocladius asper*, *Conostylis aculeata*, *Hakea lissocarpa* and *Baumea* sp. On the western side, *Melaleuca raphiophylla* is present in the understorey on the upslope regions. The littoral zone comprises a woodland of *Melaleuca cuticularis* with an understorey of *Baumea* sp. and *Baumea juncea*. The lake basin is entirely covered in *Baumea articulata*.

3.4.3 Population Structure and Tree Vigour

The vegetation communities of the upland, littoral and wetland basin areas of Lake Kulikup are in good condition with no evidence of stress due to salinity or waterlogging. Mean crown scores continue to be relatively high for the 4 overstorey species present within the transects (*E. wandoo*, *E. decipiens*, *M. cuticularis* and *M. raphiophylla*) with increases recorded for each species (Figure 3.4.1). Since 1997 there has been significant recruitment with an additional 170 seedlings recorded in 2000. Survival of *M. cuticularis* seedlings and saplings is evident in the bands formed around the wetland (Table 3.4.1). In addition 2 *E. wandoo* seedlings, 6 *E. decipiens* seedlings and 47 *M. raphiophylla* seedlings were found, none of which were recorded during the 1997 monitoring period. A large percentage of the populations of *M. raphiophylla*, *M. cuticularis* and *E. decipiens* are young trees (<2 and 5.1-10 cm diameter size classes) with only a few individuals recorded having a diameter greater than 15 cm. Only *M. cuticularis* has some individuals within the larger size classes (Figure 3.4.1). The population of *E. wandoo* shows a more even distribution across size classes, with more individuals in the larger size classes (Figure 3.4.1). The low soil and sediment salinities measured are also evident in the continued dense cover of *Baumea articulata* across the wetland basin.

Table 3.4.1: Summary of Kulikup Lake Tree Data

Species	Trees	Trees	Seedlings	Seedlings	MCS (S.D)	MCS (S.D)
	1997	2000	1997	2000	1997	2000
<i>Eucalyptus wandoo</i>	17	17	0	2	15 (3.1)	17.8 (2.3)
<i>Eucalyptus decipiens</i>	22	21	0	6	11.9 (3.4)	14 (2.8)
<i>Melaleuca cuticularis</i>	324	321	14	184	14.7 (2.6)	16.5 (3.04)
<i>Melaleuca raphiophylla</i>	38	38	0	47	14.4 (1.9)	16.2 (1.89)

MCS – Mean crown score

Few changes in understorey composition and cover were recorded for Transects 1 and 4, with the large loss in cover by *Meeboldina cana* in quadrat 1A of Transect 4 being the most significant change (Table 3.4.2). Transects 2 and 3 showed significant differences in species composition (T2: 1A – 2B, T3: 1A – 2B). Species such as *Desmocladius asper*, *Schoenus submicrostachyus* and *Lepidosperma longitudinale* show large reductions in cover values along Transect 3. These changes and cover reductions are most probably due to seasonal factors or possibly differences in the timing and/or amount of rainfall. Species diversity along all Kulikup transects remains high and indicates a healthy vegetation community. It should be noted that the introduced American grass species (Hussey, Keighery, Cousens, Dood and Lloyd, 1997) *Briza maxima* has appeared in several quadrats (T2: 1A – 2C, T3: 1A-C, 1E – 2C – see Figures 3.4.2a - d).

Table 3.4.2: Brief Summary of Changes to the Understorey at Lake Kulikup Transects

Quadrat	Transect 1	Transect 2	Transect 3	Transect 4
1A	Little Change.	Lost 6, gained 5 sp, 1 introduced.	Lost 8, gained 4 sp, 1 introduced.	<i>Meeboldina cana</i> – 1997 20%, 2000 1.5%.
1B	Little Change.	Lost 4, gained 4 sp, 1 is introduced.	Lost 5, gained 6 sp. 1 introduced. <i>Desmocladius asper</i> – 1997 40%, 2000 8%.	Little Change.
1C	Little Change.	Lost 2, gained 6 sp, 1 is introduced.	Lost 4, gained 5 sp, 1 is introduced.	Little Change.
1D	Little Change.	Lost 4, gained 1 sp, which is introduced.	Lost 7, gained 6 sp. <i>Schoenus submicrostachyus</i> – 1997 30%, 2000 nil.	Little Change.
1E	No Change.	Lost 5, gained 6 sp, 1 is introduced.	Lost 7, gained 8 sp, 1 is introduced.	No Change.
2A	No Change.	Lost 5, gained 3 sp, 1 is introduced.	Lost 2, gained 6 sp, 1 is introduced.	Little Change.
2B	Little Change.	Lost 4, gained 5 sp, 1 is introduced.	<i>Lepidosperma longitudinale</i> – 1997 40%, 2000 nil.	No Change.
2C	Little Change.	Little change, but add. 1 introduced sp.	Little change, but add. 1 introduced sp.	No Change.
2D	No Change.	Little Change.	Little Change.	No Change.
2E	No Change.	Little Change.	Little Change.	No Change.
3A	No Change.	Little Change.	Little Change.	
3B	No Change.	Little Change.	No Change.	
3C	No Change.	Little Change.	No Change.	
3D	No Change.	Little Change.	Little Change.	
3E	No Change.	Little Change.	No Change.	

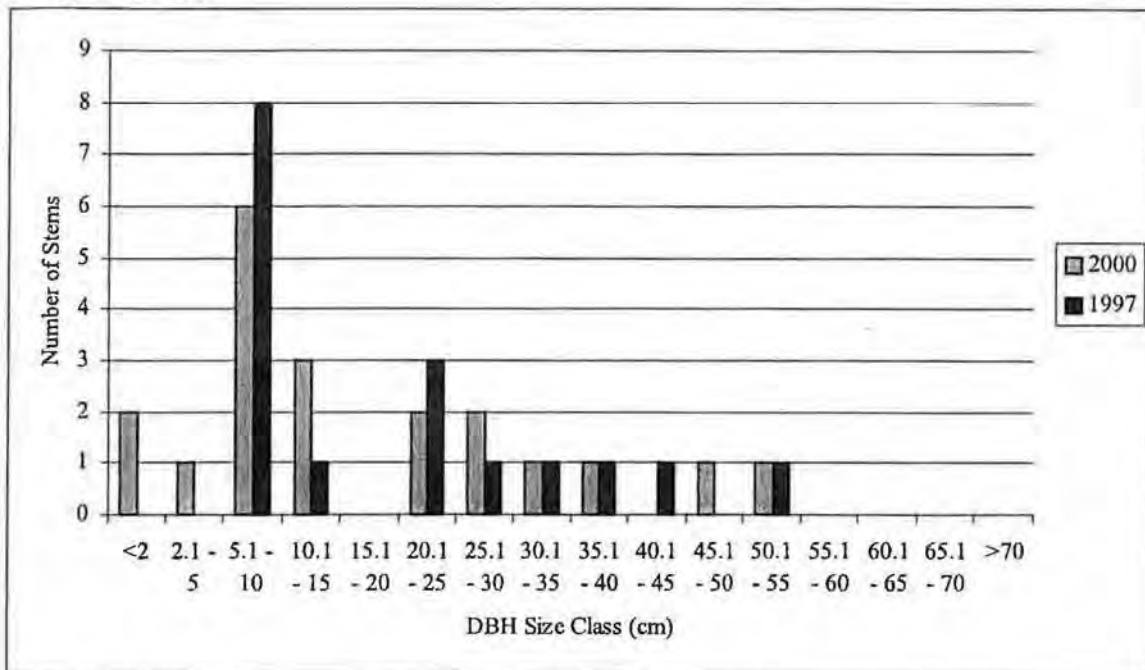
3.4.4 Soil Characteristics

Soil salinity is low both in the upland regions and on the lake basin of this wetland (Appendix 1) although there has been a moderate increase in the salinity of soils near the lake bed and on lower slopes since 1997. During monitoring in 2000 the lower slopes and the lake bed experienced soil salinities well over 100 mS/cm compared to 30-40 mS/cm recorded in 1997. Soils are generally grey/brown sands on the slopes around the lake becoming dark silty sands in the littoral zone. Ironstone is present on the slopes of the western side of the lake. The soils of the inlet channel are very organic dark silts and sandy silt.

3.4.5 Summary

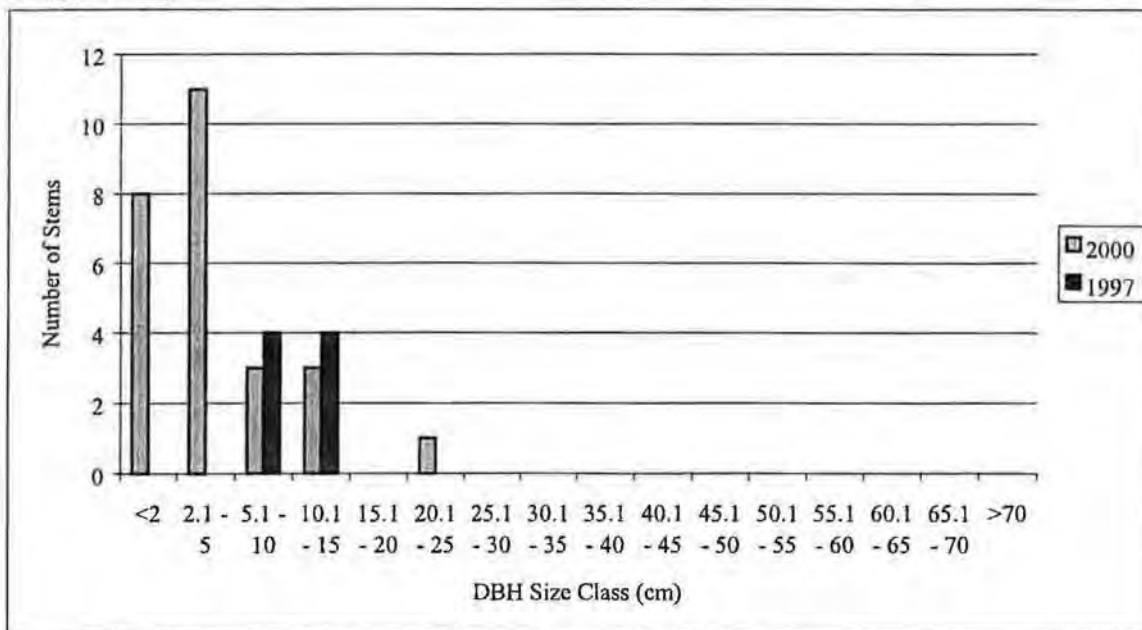
Lake Kulikup is currently unaffected by secondary salinisation and supports upland and littoral vegetation in very good condition, with the mean crown score for each overstorey species increasing since 1997. As in 1997, the lake has the lowest soil salinities of all the lakes surveyed, with a slight increase in soil salinities recorded in 2000. Some natural regeneration of the bushland is occurring at the old tip site to the north of the lake and the disused gravel pit is to be rehabilitated by the Central Forests Region CALM office. The high diversity of understorey species, the wide and dense lake bed coverage of *Baumea articulata*, the wider variety in tree ages and the prolific recruitment of wetland trees *M. cuticularis* and *M. raphiophylla* are all indications that this wetland continues to be healthy.

Eucalyptus wandoo



N.B. Due to differences in size class categorisation, data for the <2 and 2.1 - 5 size classes can not be shown for 1997.

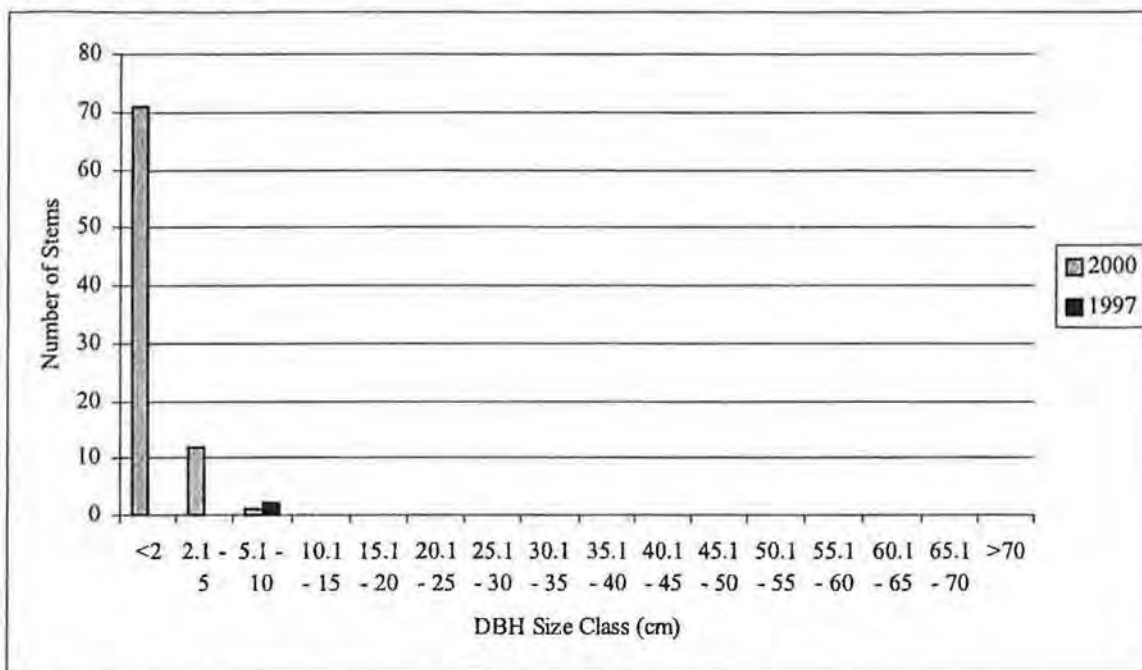
Eucalyptus decipiens



N.B. Due to differences in size class categorisation, data for the <2 and 2.1 - 5 size classes can not be shown for 1997.

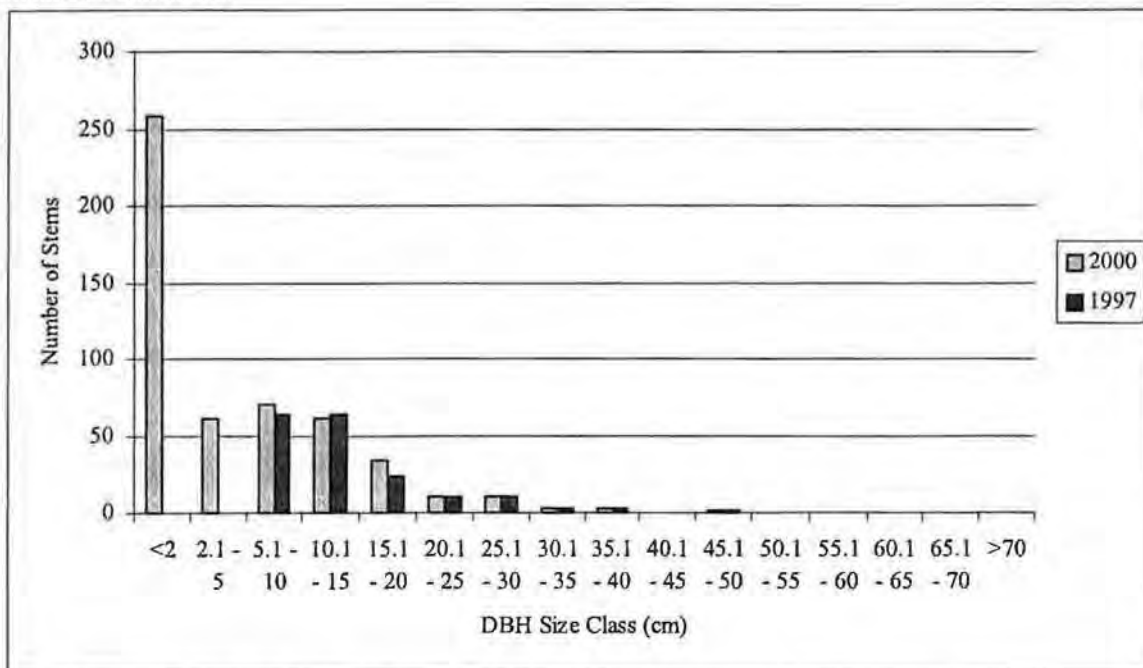
Figure 3.4.1: Size Class Distributions of *E. wandoo*, *E. decipiens*, *M. raphiophylla* and *M. cuticularis* for Lake Kulikup.

Melaleuca raphiophylla



N.B. Due to differences in size class categorisation, data for the <2 and 2.1 - 5 size classes can not be shown for 1997.

Melaleuca cuticularis



N.B. Due to differences in size class categorisation, data for the <2 and 2.1 - 5 size classes can not be shown for 1997.

Figure 3.4.1 (cont.): Size Class Distributions of *E. wandoo*, *E. decipiens*, *M. raphiophylla* and *M. cuticularis* for Lake Kulikup.

Kulikup - Transect 1

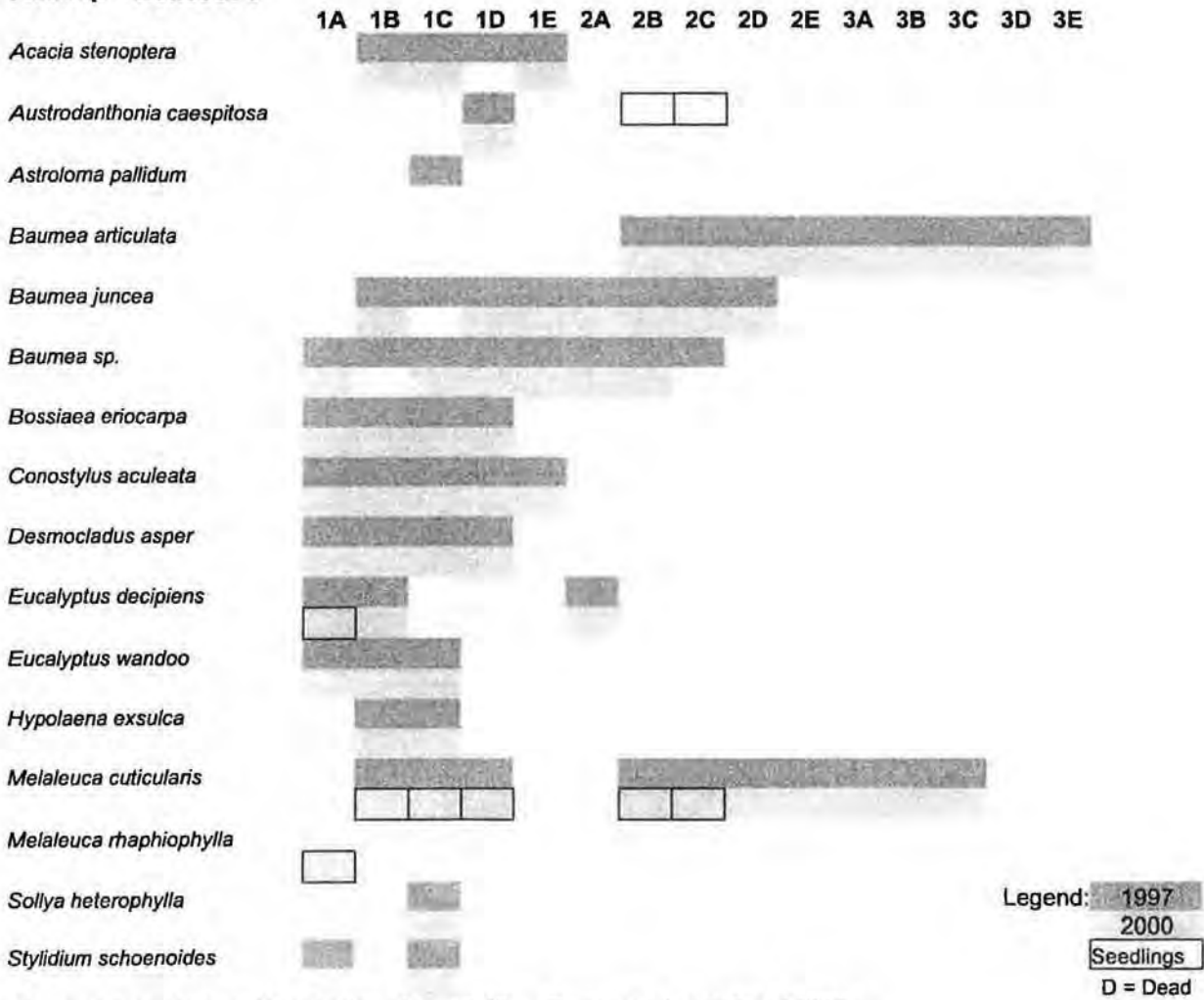


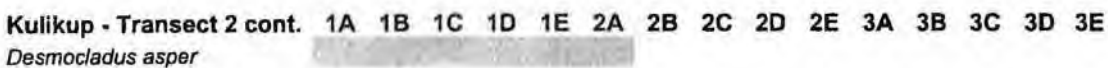
Figure 3.4.2a: Species Distribution along Kulikup Transect 1 in 1997 and 2000.

Kulikup - Transect 2



Figure 3.4.2b: Species Distribution along Kulikup Transect 2 in 1997 and 2000.

Kulikup - Transect 2 cont.



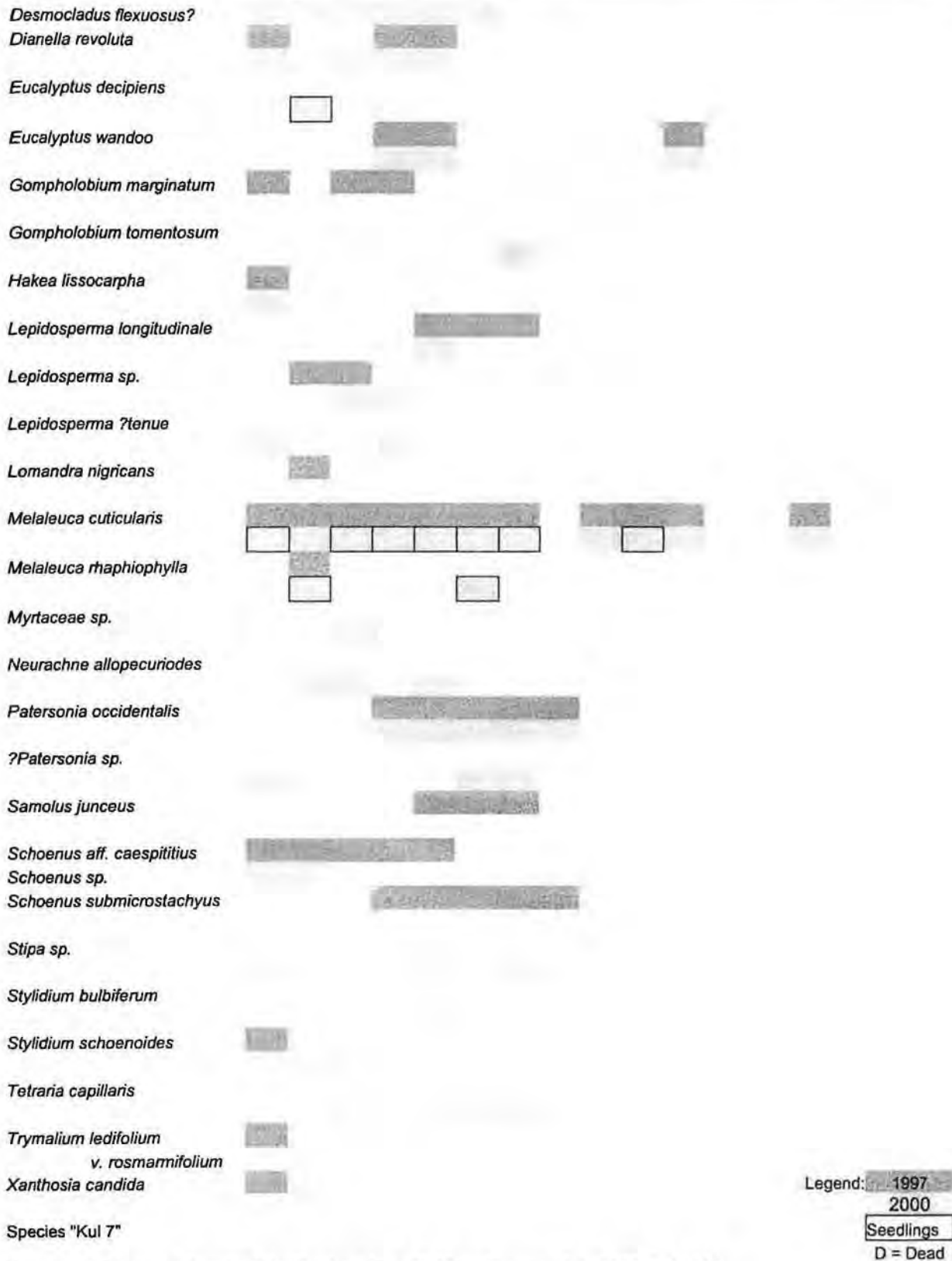


Figure 3.4.2b cont.: Species Distribution along Kulikup Transect 2 in 1997 and 2000.

Kulikup - Transect 3

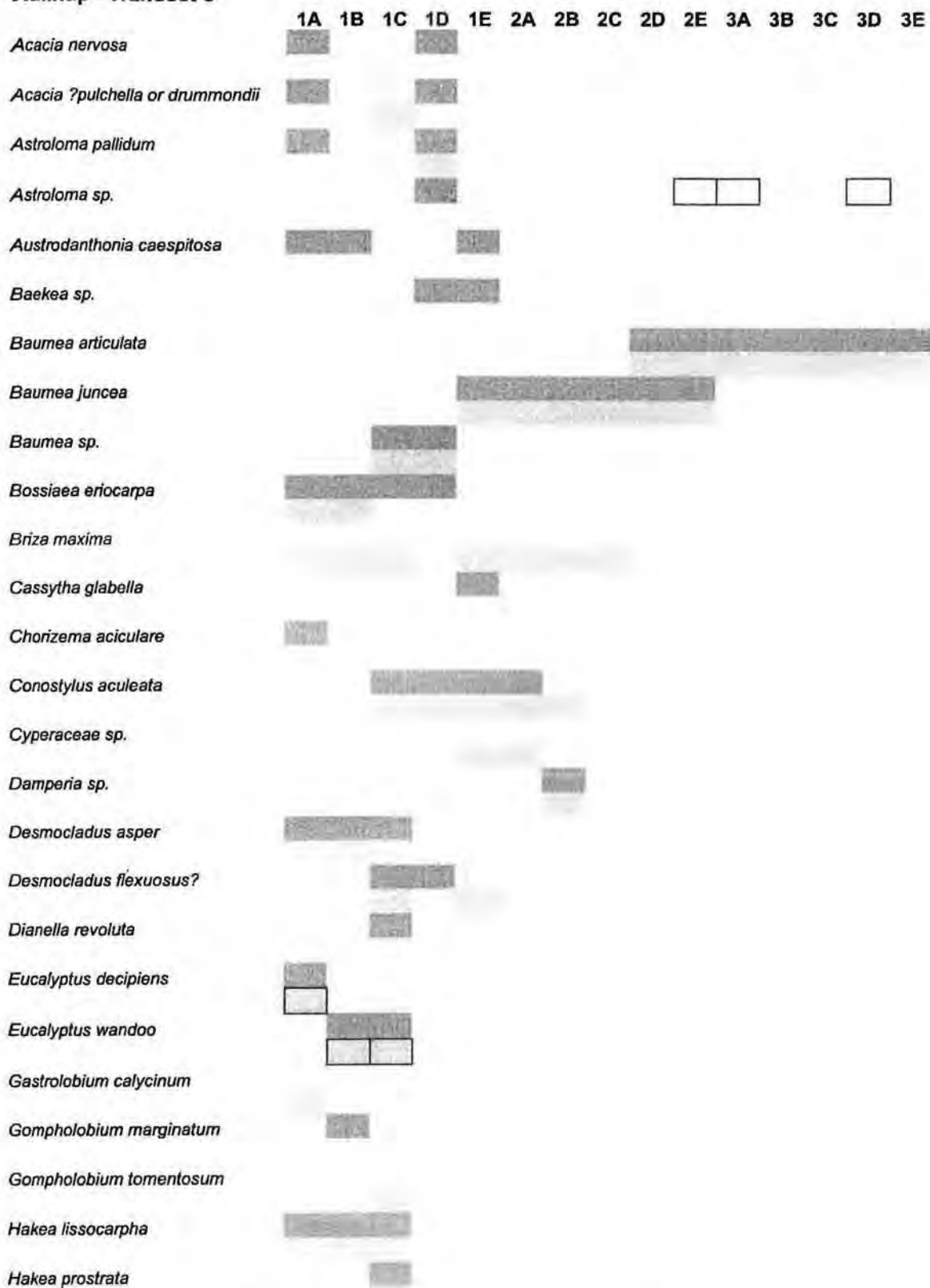
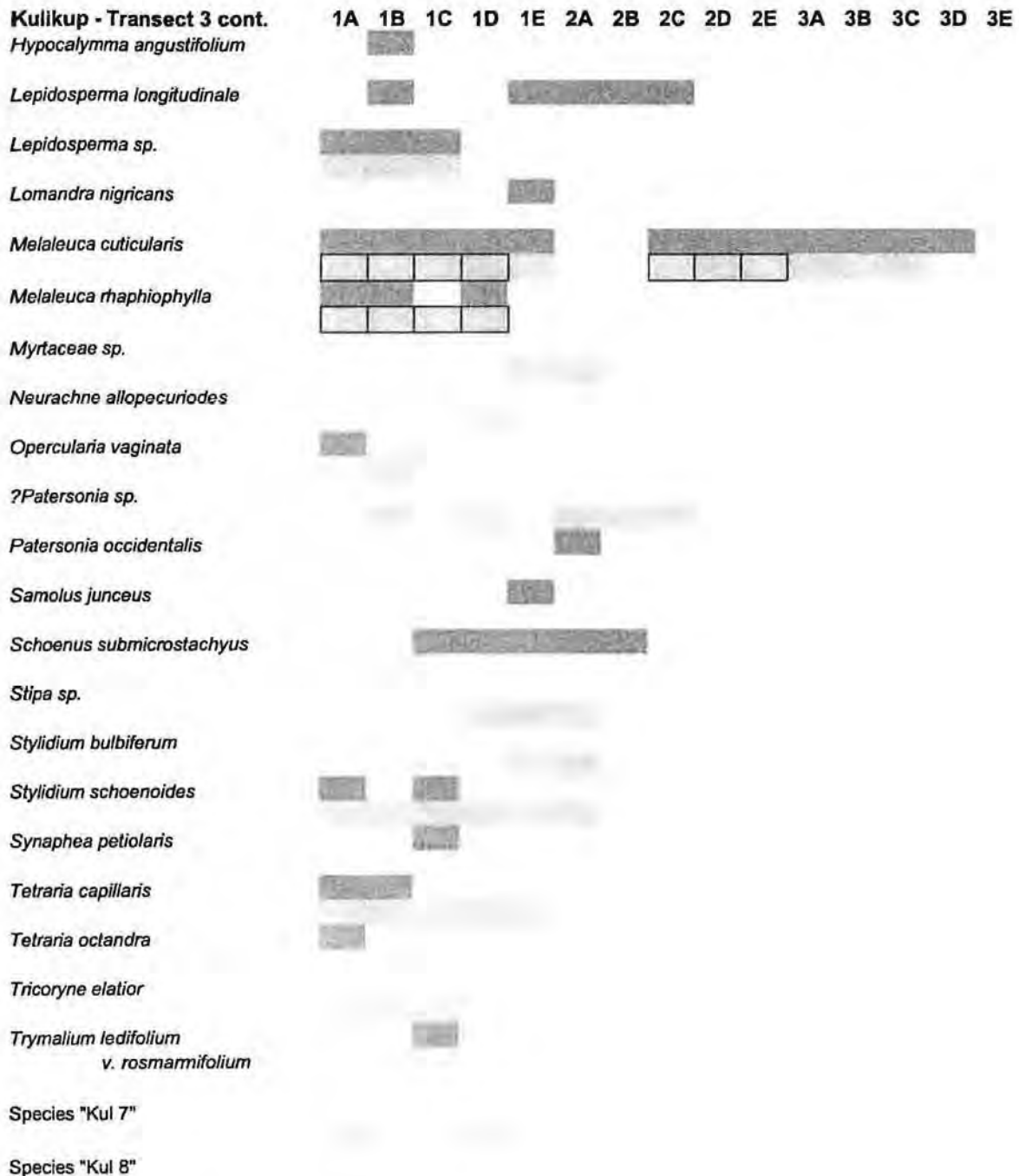


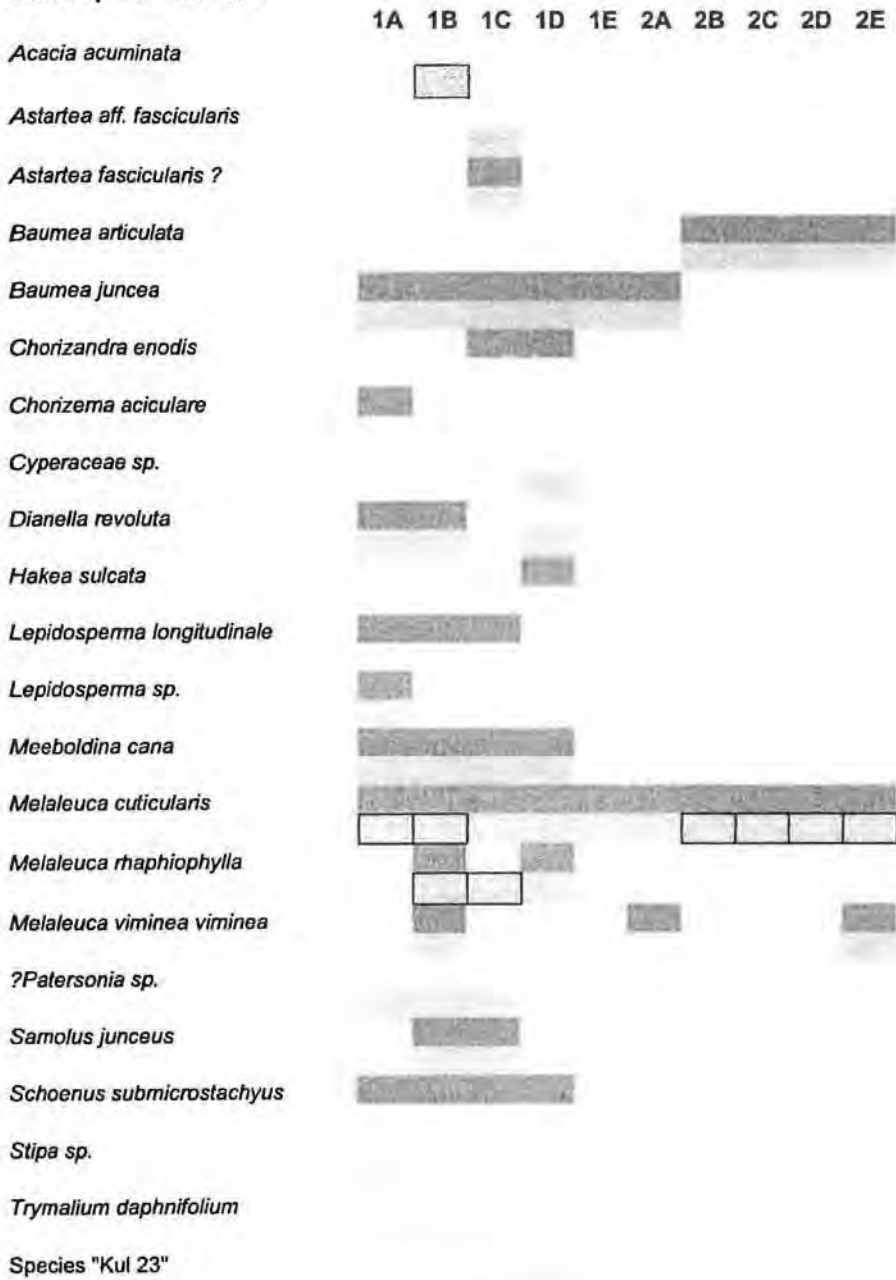
Figure 3.4.2c: Species Distribution along Kulikup Transect 3 in 1997 and 2000.



Legend: 1997
2000
Seedlings
D = Dead

Figure 3.4.2c cont.: Species Distribution along Kulikup Transect 3 in 1997 and 2000.

Kulicup - Transect 4



Legend: 1997
2000
Seedlings
D = Dead

Figure 3.4.2d: Species Distribution along Kulicup Transect 4 in 1997 and 2000.

3.5 Noobijup Lake

3.5.1 Description

Noobijup Lake Nature Reserve (A class #26680, 34°24' S, 116°46' E) is located in the Lake Muir catchment and covers an area of 183 ha, with around one third of this as wetland basin. The catchment immediately surrounding the lake has been substantially altered by road construction along the northern boundary and extensive clearing of native vegetation for farming. As a result of increasing groundwater levels, a saline seep has developed on the western side of the reserve and is encroaching towards the wetland basin. The inlet channel at the southern end of the wetland drains large areas of the cleared catchment and is also thought to be increasingly saline. Ryder, (unpublished data, 1998) reports water levels varying from 1.2 m to 0.4 m with a much lower seasonal trend than other wetlands in the catchment. A clay layer around 1.2 m below the sediment surface may indicate the wetland is perched. The reserve was subjected to a prescription burn in spring 1986 and no evidence of further fires is apparent.

- Transect 1:** (GPS: 50 479875 / 6193127) is positioned running north-south in the shrubland adjacent to the salt seep on the western side of the reserve.
- Transect 2:** (GPS: 50 479989 / 6193251) is situated directly towards the lake from transect 1 running for 40 m up the slope of the ridge around the western edge of the lake.
- Transect 3:** (GPS: 50 48419 / 6193621) is accessed from Noobijup Rd approximately 550 m west of the eastern boundary road. It lies on fairly flat ground and consists of three 20 x 20 m plots and extends out into the *Baumea articulata* community in the lake.
- Transect 4:** (GPS: 50 480428 / 6192169) runs for 60 m from the terrestrial vegetation down into the lake and is positioned 60 m east of the inlet drain.
- Transect 5:** (GPS: 50 480674 / 6192457) is accessed from the track on the eastern side of the lake and extends for 60 m from the terrestrial vegetation into the lake.

3.5.2 Plant Communities

The dryland areas of the reserve are dominated by a *Eucalyptus marginata* – *Corymbia calophylla* woodland with an understorey dominated by *Xanthorrhoea* sp, *Macrozamia riedlei*, *Bossiaea linophylla*, *Leucopogon* sp. and *Lomandra* sp. The shrubland associated with the seep on the western side of the reserve is dominated by *Calothamnus lateralis*, *Melaleuca radula*, *M. viminea* subsp *viminea*, *Astartea fascicularis* and *Lepidosperma longitudinale*. The littoral zone of the wetland basin has an overstorey of *Melaleuca raphiophylla*, *Eucalyptus rudis*, *Banksia littoralis* and *Viminaria juncea* with an understorey of *Lepidosperma longitudinale*, *Baumea juncea*, *B. arthropophylla* and *B. articulata*. The *B. arthropophylla* and *B. articulata* continues out up to 150 m into the water body. The condition of the rushes, littoral vegetation and the shrubland around the seep is declining presumably due to the effects of increasing salinity.

3.5.3 Population Structure and Tree Vigour

The trees of the upland vegetation were in excellent condition (Table 3.5.1). Although a few very large individuals (>70 cm DBH) were recorded, the majority of the overstorey population remains in the 5-15 cm diameter size classes (Figure 3.5.1). The population structure and vigour of the overstorey species has not changed significantly since 1997, with *Viminaria juncea* being the exception. Seedlings of both *C. calophylla* and *E. marginata* were present in the transects, with 74 more seedlings/saplings of *C. calophylla* recorded than in 1997. As in 1997 *M. raphiophylla* individuals located in the littoral zone are showing considerable signs of stress, which may be due to the increasing salinity of the lake water (mean crown score 10.3). The small sample of *E. rudis* trees are still in good condition (mean crown score of 13.3) however, many trees were observed with

Table 3.5.1: Summary of Tree Data for Noobijup Lake.

Species	Trees	Trees	Seedlings	Seedlings	Saplings	Saplings	MCS (S.D)	MCS (S.D)
	1997	2000	1997	2000	1997	2000	1997	2000
<i>Corymbia calophylla</i>	247	245	232	218	0	60	13.6 (3.0)	15.0 (3.80)
<i>Eucalyptus marginata</i>	60	59	0	0	0	0	13.1 (2.8)	15.3 (4.1)
<i>Eucalyptus rudis</i>	3	3	1	0	0	0	14 (2.6)	13.3 (3.2)
<i>Acacia cyclops</i>	6	7	0	0	2	2	11.3 (3.4)	10.1 (7.3)
<i>Melaleuca raphiophylla</i>	28	28	2	8	1	1	9.7 (4.2)	10.3 (5.8)
<i>Banksia littoralis</i>	12	12	3	3	0	0	15.1 (2.5)	18 (2.6)
<i>Viminaria juncea</i>	72	41	0	0	0	0	6.4 (2.4)	4.7 (3.0)

MCS – Mean crown score

poor crown condition outside the study plots. The greatest loss in vigour has been experienced by the *V. juncea* population, where 40% of the population has died since 1997. Many extra individuals of *E. occidentalis* and *M. cuticularis* have been tagged during this monitoring period due to large increases in growth of seedlings/saplings.

Table 3.5.2: Brief Summary of Changes to the Understorey at Lake Noobijup Transects

Quadrat	Transect 1	Transect 2	Transect 3	Transect 4	Transect 5
1A	No Change.	Gained 6 sp.	Gained 5 sp.	Lost 1, gained 7 species.	Lost 2, gained 4 species.
1B	Little Change.	Lost 2, gained 6 species.	Lost 2, gained 9 species.	Lost 1, gained 4 species.	Gained 5 species.
1C	Little Change.	Lost 2, gained 4 species.	Lost 1, gained 7 species.	Little Change.	Lost 1, gained 8 species. <i>Macrozamia riedlei</i> – 1997 55.5%, 2000 20%
1D	Little Change.	Lost 3, gained 7 species.	Lost 2, gained 7 species.	Lost 1, gained 6 species.	Gained 6 species.
1E	Little Change.	Gained 7 sp.	Lost 3, gained 5 species.	Lost 1, gained 5 sp. <i>Tetraria capillaris</i> – 1997 25%, 2000 1%.	Gained 8 species.
2A	No Change.	Gained 4 sp.	Little Change.	Lost 2, gained 5 sp. <i>Macrozamia riedlei</i> – 1997 19%, 2000 5%. <i>Tetraria capillaris</i> – 1997 15%, 2000 0.1%	Lost 1, gained 6 species.
2B	Little Change.	Lost 1, gained 4 species.	Lost 4, gained 6 species.	Little Change.	<i>Agonis parviceps</i> – 1997 1%, 2000 75%.
2C	Little Change.	Lost 1, gained 10 species.	Lost 1, gained 4 species.	Lost 2, gained 4 species.	Lost 2?, gained 5 species.
2D	Lost 4, gained 1 species.	Lost 3, gained 9 species.	Little change, but add. 1 introd. species?	Little change, but add. 1 introd. species?	<i>Hibbertia amplexicaulis</i> – 1997 51.1%, 2000 0.5%.
2E	Little Change.	Lost 4, gained 9 species.	Little Change.	<i>Baumea juncea</i> – 1997 50%, 2000 80%	Little Change.
3A			Little Change.	<i>Baumea juncea</i> – 1997 50%, 2000 15%	<i>Baumea articulata</i> – 1997 5%, 2000 35%. Lost <i>B. arthrophylla</i> , gained <i>Villarsia</i> sp + <i>Triglochin</i> sp.
3B			Little Change.	Lost <i>B. arthrophylla</i> , gained <i>Triglochin</i> sp.	<i>Baumea articulata</i> – 1997 20%, 2000 35%. Lost <i>B. arthrophylla</i> , gained <i>Villarsia</i> sp + <i>Triglochin</i> sp.
3C			Little Change.	Lost <i>B. arthrophylla</i> , gained <i>Triglochin</i> sp.	<i>Baumea arthrophylla</i> – 1997 40%, 2000 5%.
3D			Little Change.	Lost <i>B. arthrophylla</i> , gained <i>Triglochin</i> sp.	Little Change.
3E			Little Change.	Lost <i>B. arthrophylla</i> , gained <i>Triglochin</i> sp.	<i>Baumea arthrophylla</i> – 1997 35%, 2000 10%.

Changes recorded in understorey composition and cover may largely be due to seasonal factors or possibly differences in the timing and/or amount of rainfall. Some species showed a significant reduction in cover, most notably *Macrozamia riedlei* (T4: 2A, T5: 1C), *Tetraria capillaris* (T4: 1E and 2A) and *Hibbertia amplexicaulis* (T5: 2D). *Baumea arthrophylla* was lost or significantly declined in lower elevation quadrats of Transects 4 and 5 and may have been replaced by *Triglochin* species. However, new species have also been recorded, for example *Bossiaea linophylla* (T2: 1A – 3E, T3: 2A-D and T5: 1A – 2D), *Scaevola striata* (T2: 1A – 3E) and *Tricoryne humilis* (T3: 1A – 2C). Species diversity along all Noobijup transects remains high and indicates a healthy vegetation community. It should be noted that a small number of *Physalis minima* have been recorded in Transects 3 and 4 (Table 3.5.2 and Figures 3.5.2a to e). This species may be an exotic in the Noobijup area (Hussey, Keighery, Cousens, Dood and Lloyd, 1997)

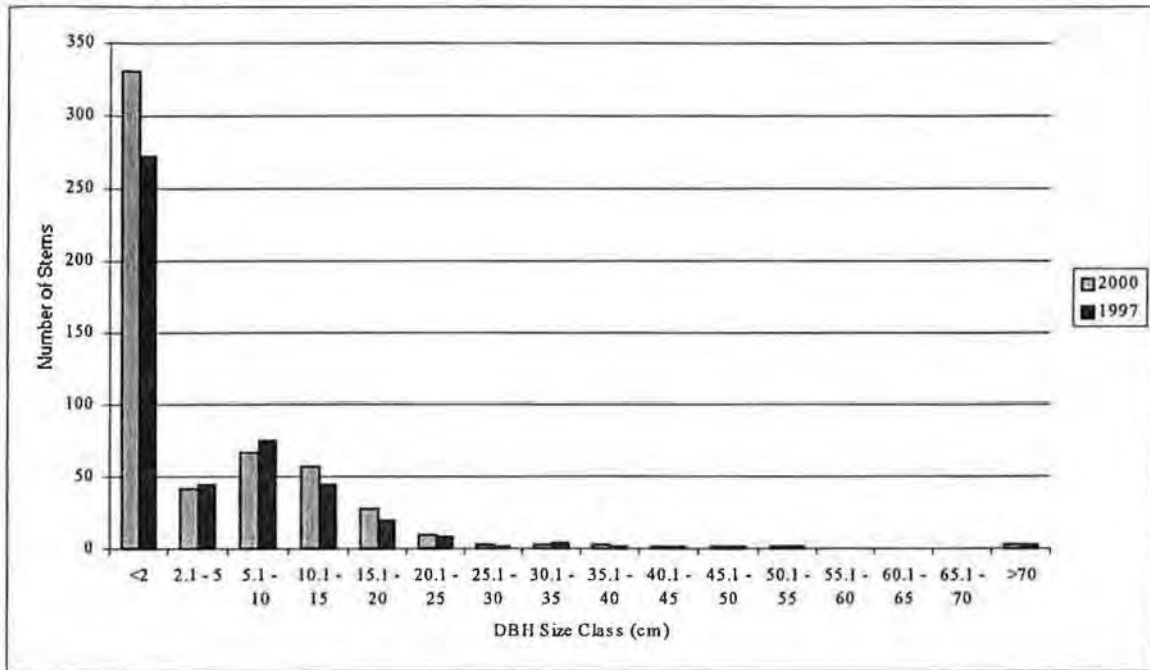
3.5.4 Soil Characteristics

Soil salinity has increased slightly since 1997. Soil salinity ranged from 15 mS/cm in the upland regions through to 473 mS/cm in the shrubland adjacent to the salt seep compared to 5 mS/cm and 325 mS/cm recorded in the same locations in 1997 (Appendix 1). The transects around the wetland basin show very low salinities in the upland regions with a gradual increase in the soils toward the wetland. Higher salinity was found in the soils adjacent to the littoral zone (145 to 208 mS/cm). Transect 2 showed a similar pattern on the western ridge with salinity increasing at the bottom of the slope near the seep.

3.5.5 Summary

Currently, the vegetation of the Noobijup Lake Nature Reserve is in good condition with the highest species diversity of all the wetlands recorded in the 1997 and 2000 monitoring periods. Although inputs of saline water from the seep on the western side and the inlet channel at the southern end have likely increased since 1997, the condition of the littoral vegetation has not significantly deteriorated, however, the reduction in coverage and density of *Baumea articulata* and *B. arthropphylla* may be due to changes in the lake's hydrological regime. Large areas of the shrubland around the western seep have already been lost and the high salinities appear to be encroaching both northwards and to the west. The vegetation on the eastern side of the western ridge is currently in good condition, however, some dying stems can be seen on the slope, which may suggest saline groundwater is moving towards the ridge. A high diversity of understorey species and the good condition of the overstorey species have again been recorded during the 2000 survey. Of concern is the low recruitment rate and establishment success of some of the wetland and terrestrial tree species. Inspection of the aerial photograph shows a high incidence of plant deaths on and around the drains on the private property to the south of the reserve that feed into the southern inlet channel. This saline flow has effected the vegetation of the reserve up to the access track and is likely to cause further damage in the reserve over time.

Corymbia calophylla



Eucalyptus marginata

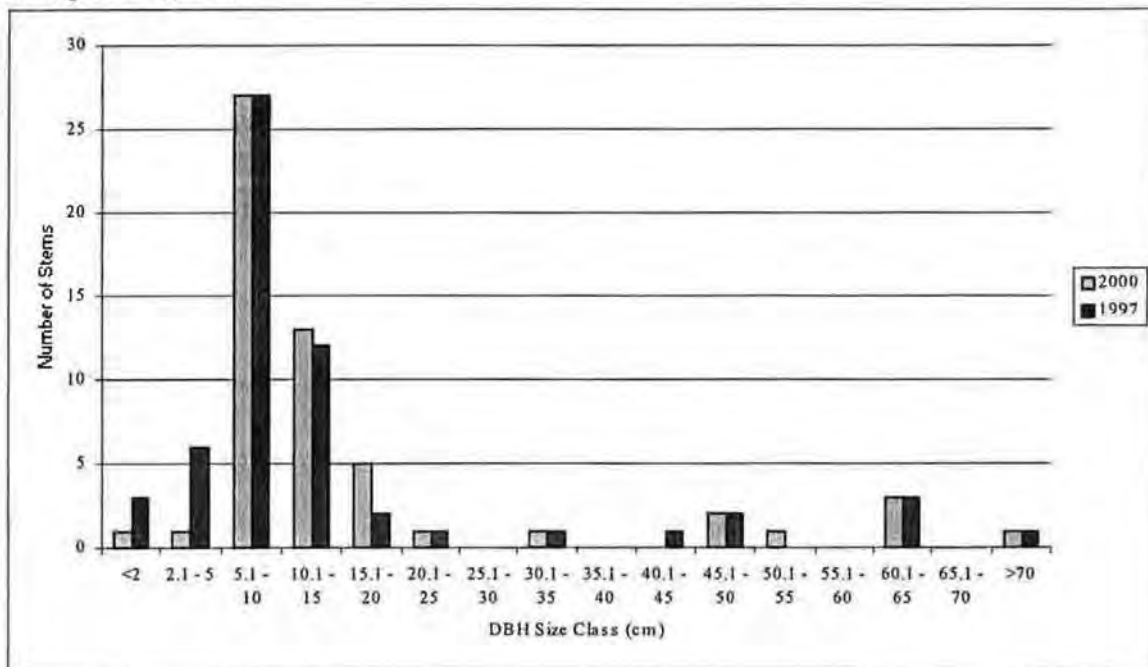
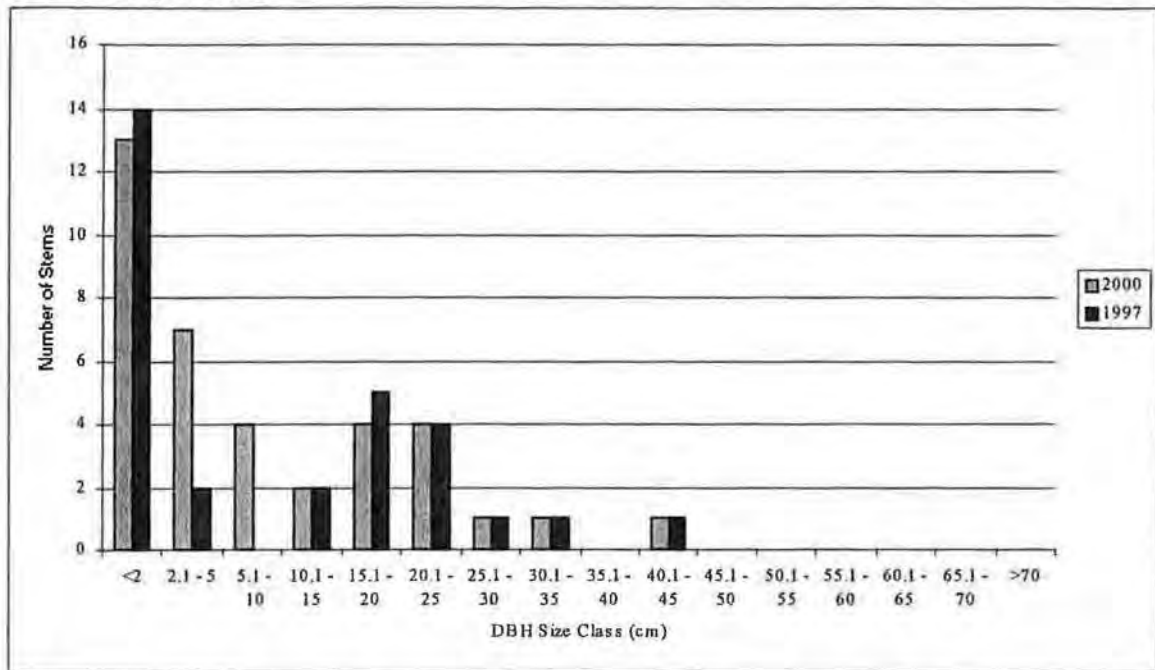


Figure 3.5.1: Size Class Distributions for *Corymbia calophylla*, *Eucalyptus marginata*, *Melaleuca rhapsiophylla*, *Banksia littoralis* and *Viminaria juncea* at Noobijup Lake.

Melaleuca raphiophylla



Banksia littoralis

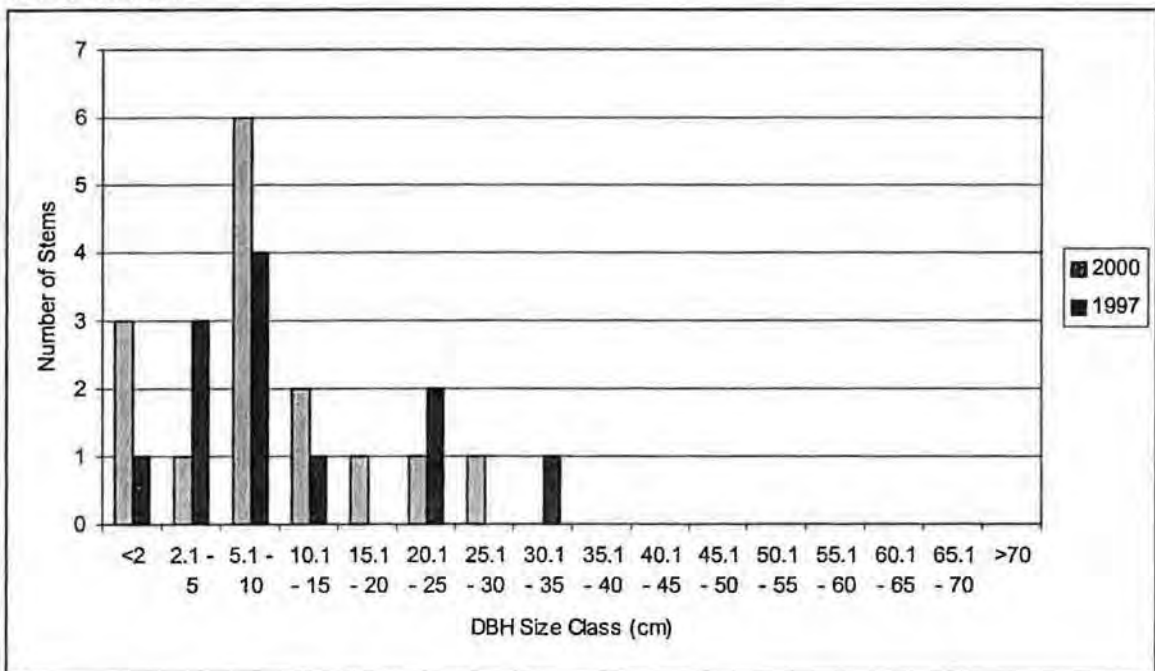


Figure 3.5.1(cont.): Size Class Distributions for *Corymbia calophylla*, *Eucalyptus marginata*, *Melaleuca raphiophylla*, *Banksia littoralis* and *Viminaria juncea* at Noobijup Lake.

Viminaria juncea

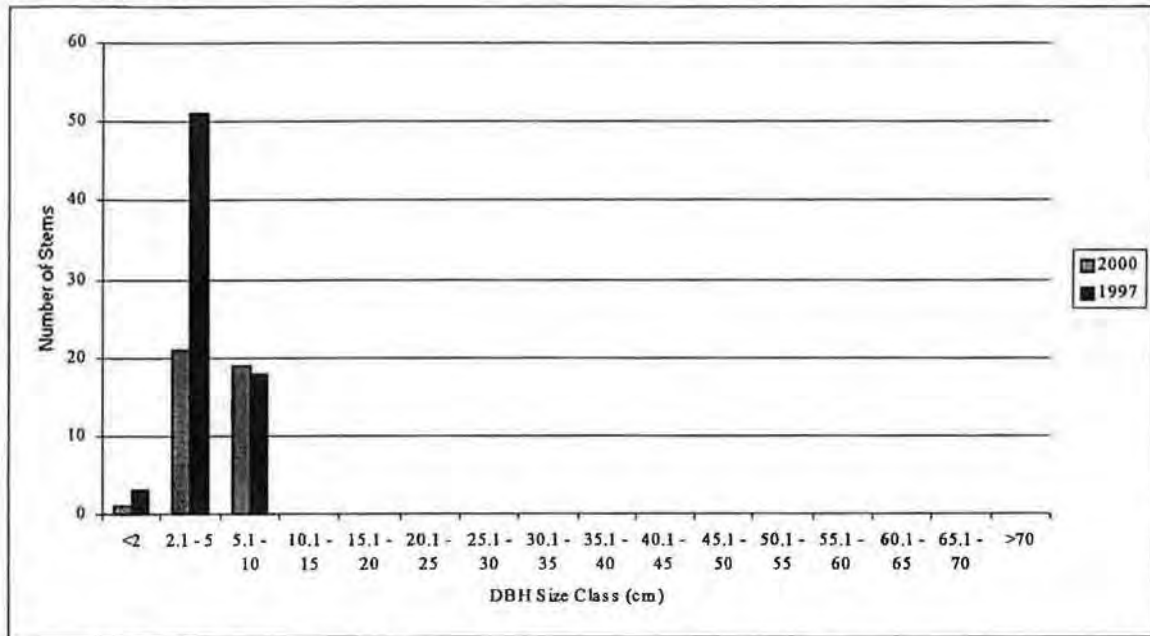


Figure 3.5.1(cont.): Size Class Distributions for *Corymbia calophylla*, *Eucalyptus marginata*, *Melaleuca raphiophylla*, *Banksia littoralis* and *Viminaria juncea* at Noobijup Lake.

Noobijup - Transect 1

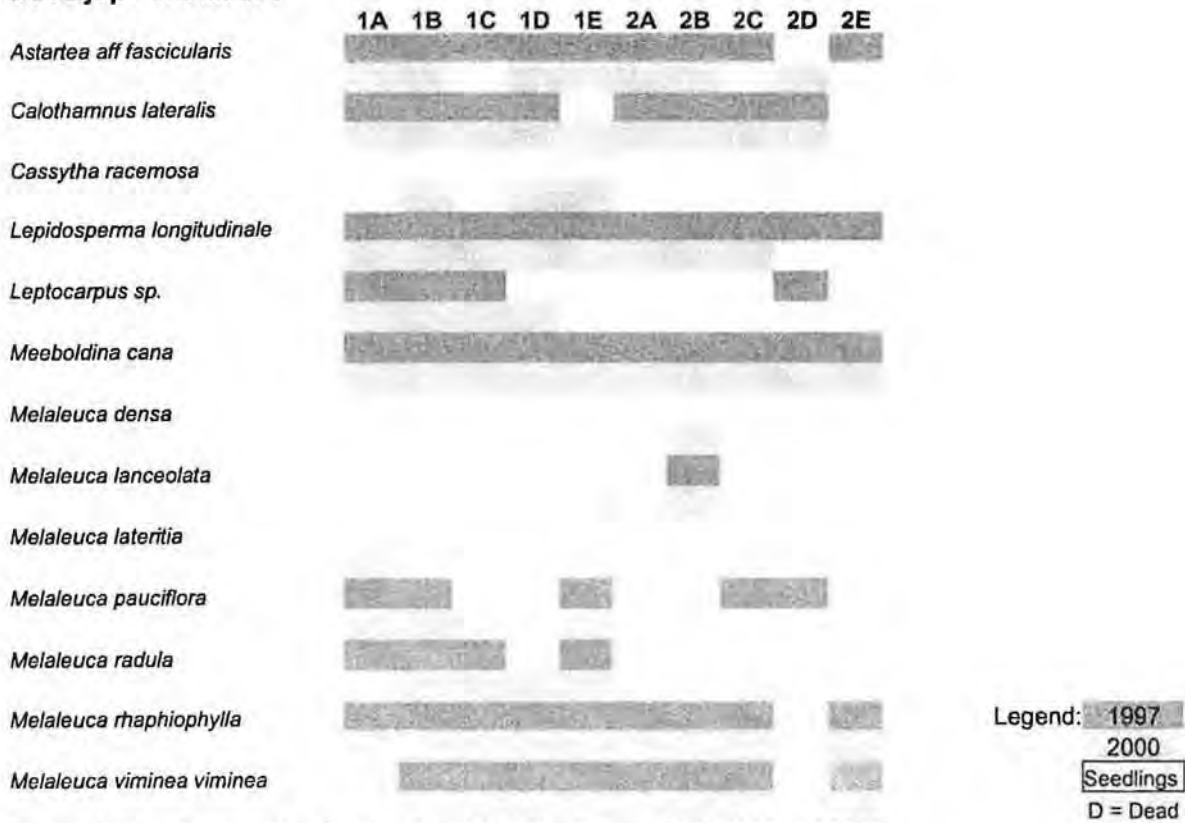


Figure 3.5.2a: Species Distribution along Noobijup Transect 1 in 1997 and 2000.

Noobijup - Transect 2

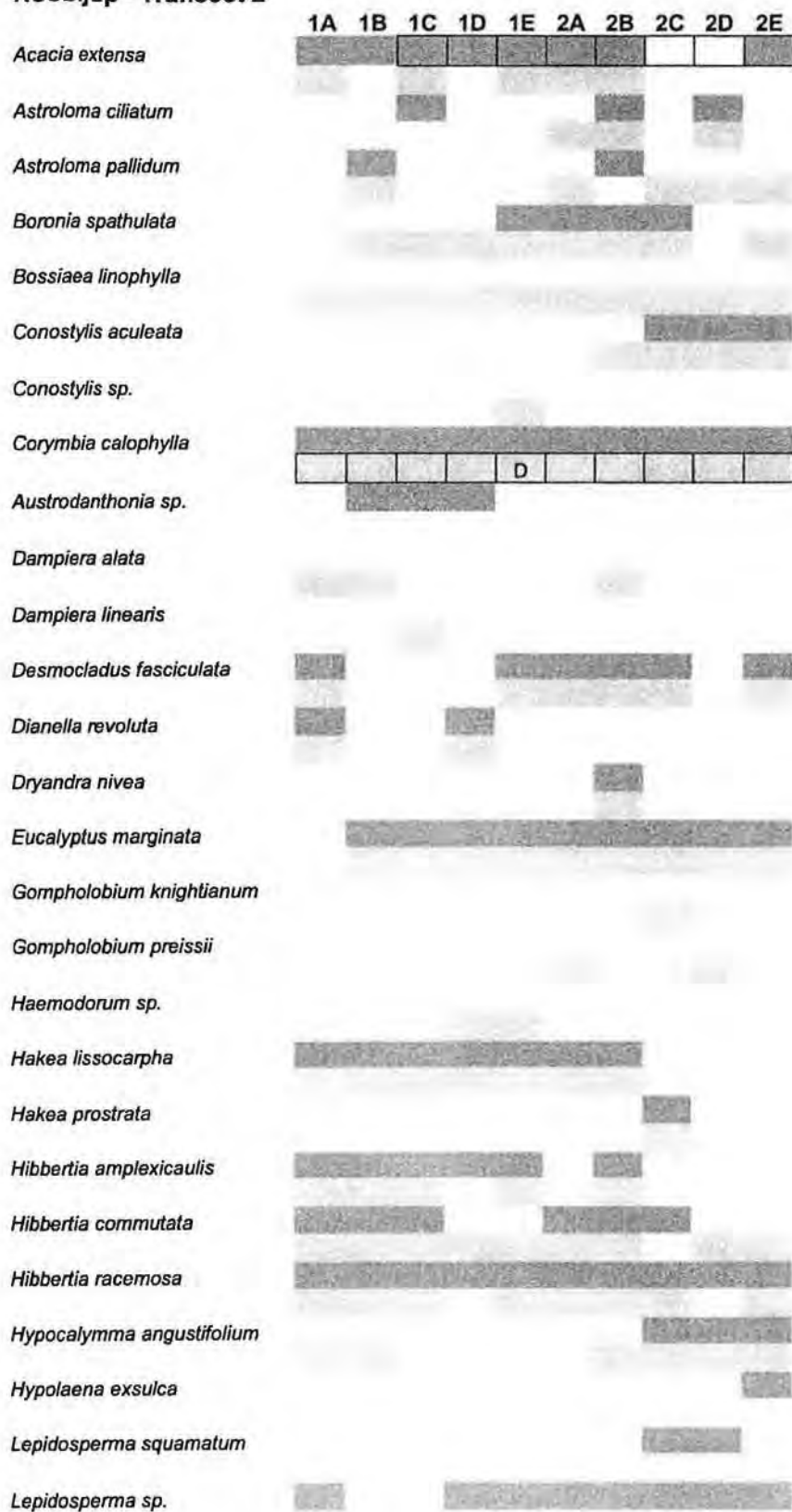


Figure 3.5.2b: Species Distribution along Noobijup Transect 2 in 1997 and 2000.

**Noobijup - Transect 2
cont.**

Leucopogon propinquus

Leucopogon revolutus

Logania serpyllifolia

Lomandra nigricans

Lomandra sericea

Loxocarya sp.

Lyginia barbata

Microlaena stipoides

Opercularia hispidula

Scaevola striata

Sollya heterophylla

Stylidium repens

Stylidium spathulatum

Synapheae sp.

Tetralia octandra

Tetrarrhena laevis

Tricoryne humilis

Trymalium floribundum

Xanthorrhoea preissii

Xanthosia huegelii

Xanthosia sp.

1A 1B 1C 1D 1E 2A 2B 2C 2D 2E



Legend: 1997
2000
Seedlings
D = Dead

Figure 3.5.2b cont.: Species Distribution along Noobijup Transect 2 in 1997 and 2000.

Noobijup - Transect 3

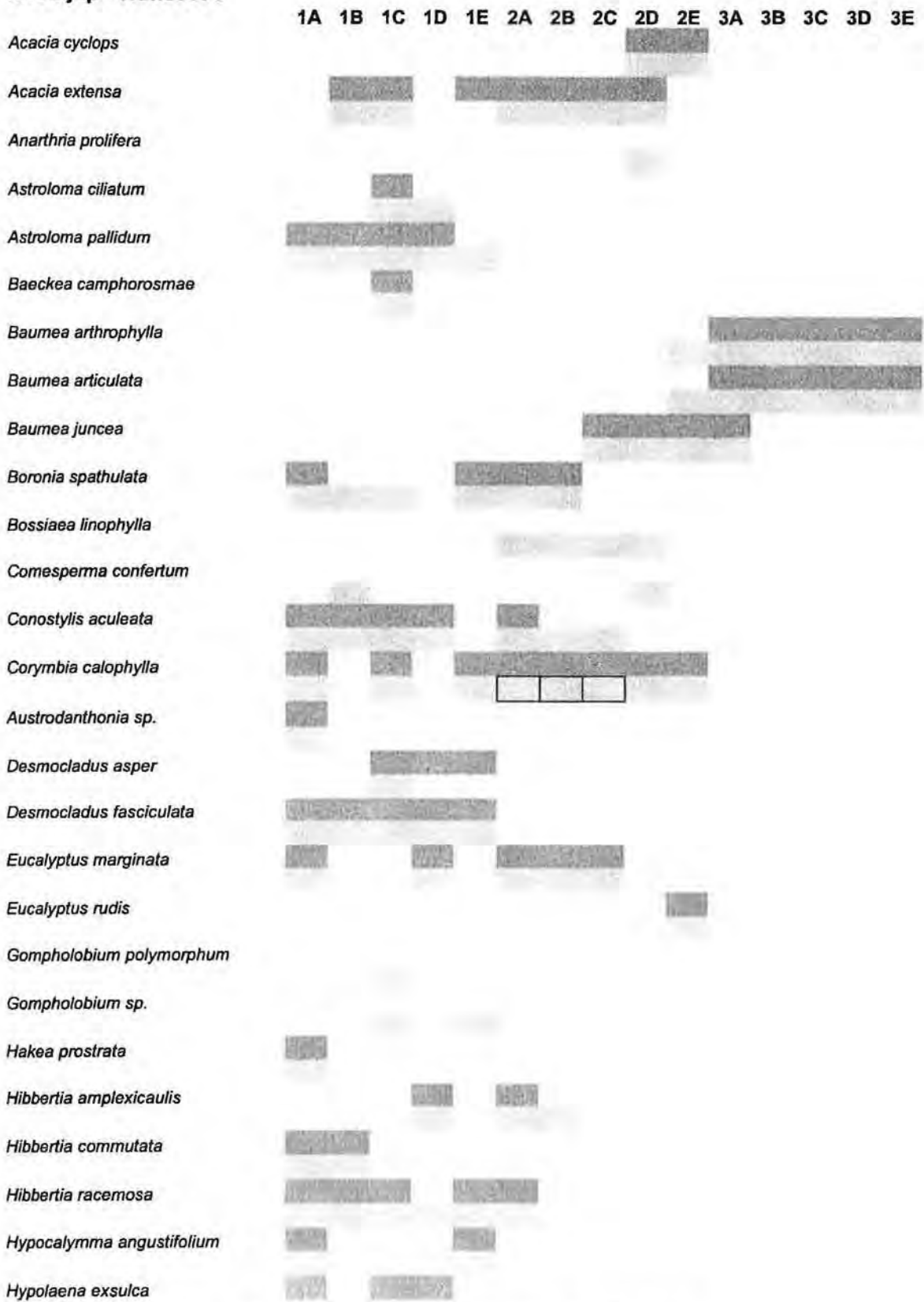


Figure 3.5.2c: Species Distribution along Noobijup Transect 3 in 1997 and 2000.



Figure 3.5.2c cont.: Species Distribution along Noobijup Transect 3 in 1997 and 2000.

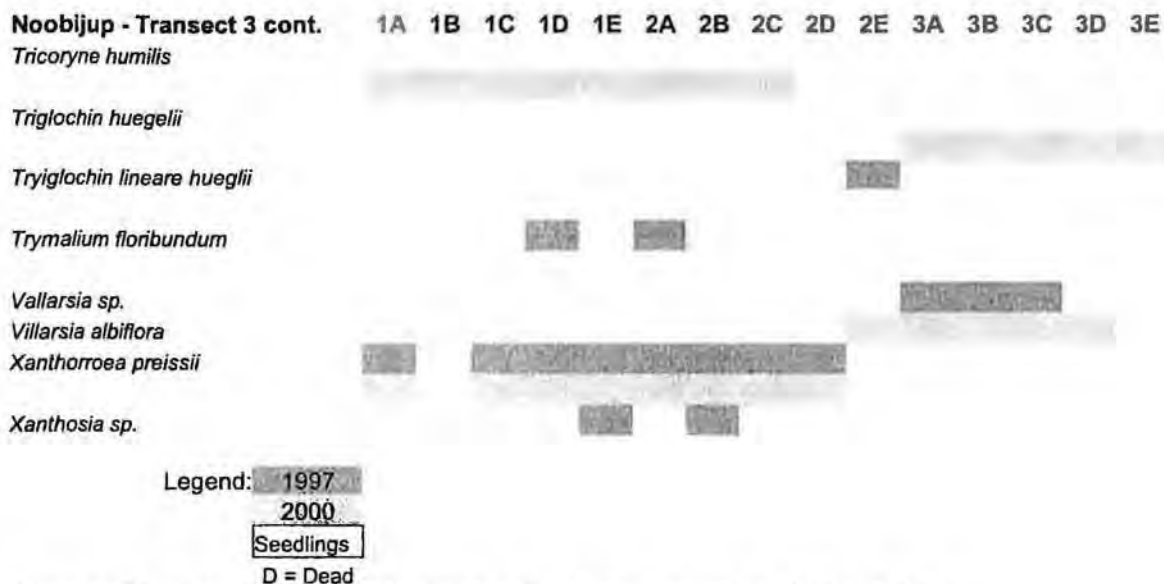


Figure 3.5.2c cont.: Species Distribution along Noobijup Transect 3 in 1997 and 2000.

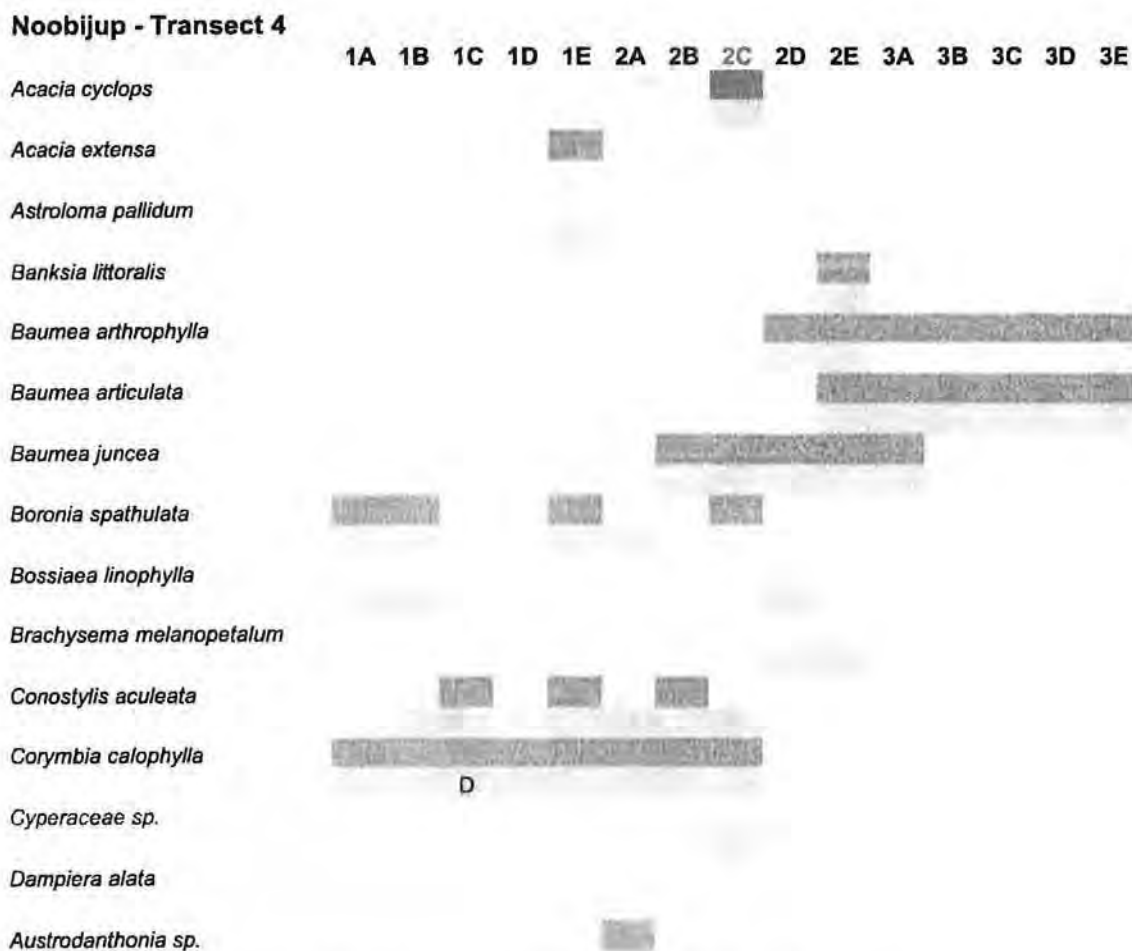


Figure 3.5.2d: Species Distribution along Noobijup Transect 4 in 1997 and 2000.

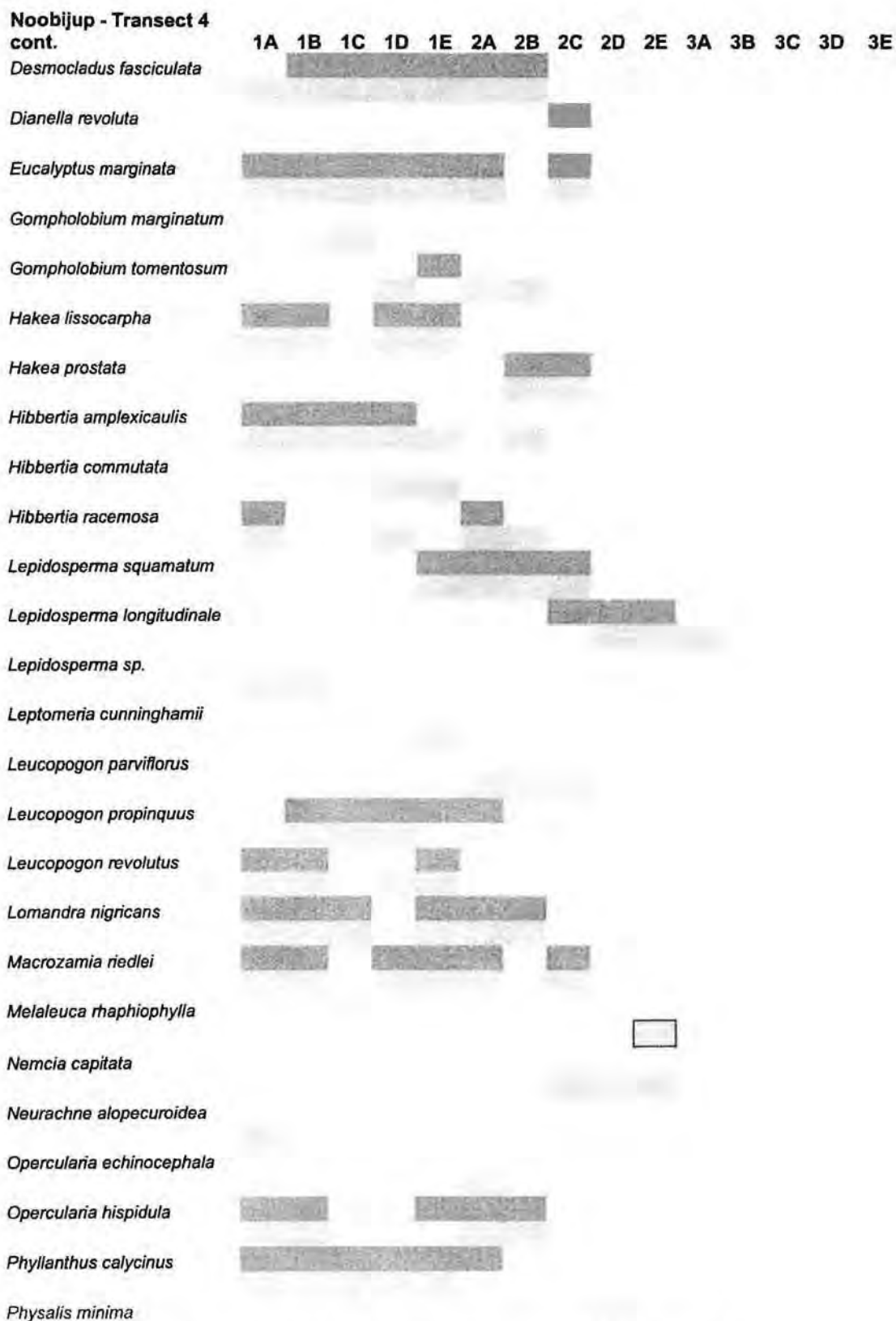


Figure 3.5.2d cont.: Species Distribution along Noobijup Transect 4 in 1997 and 2000.

**Noobijup - Transect 4
cont.**



Legend: 1997
2000
Seedlings
D = Dead

Figure 3.5.2d cont.: Species Distribution along Noobijup Transect 4 in 1997 and 2000.

Noobijup - Transect 5

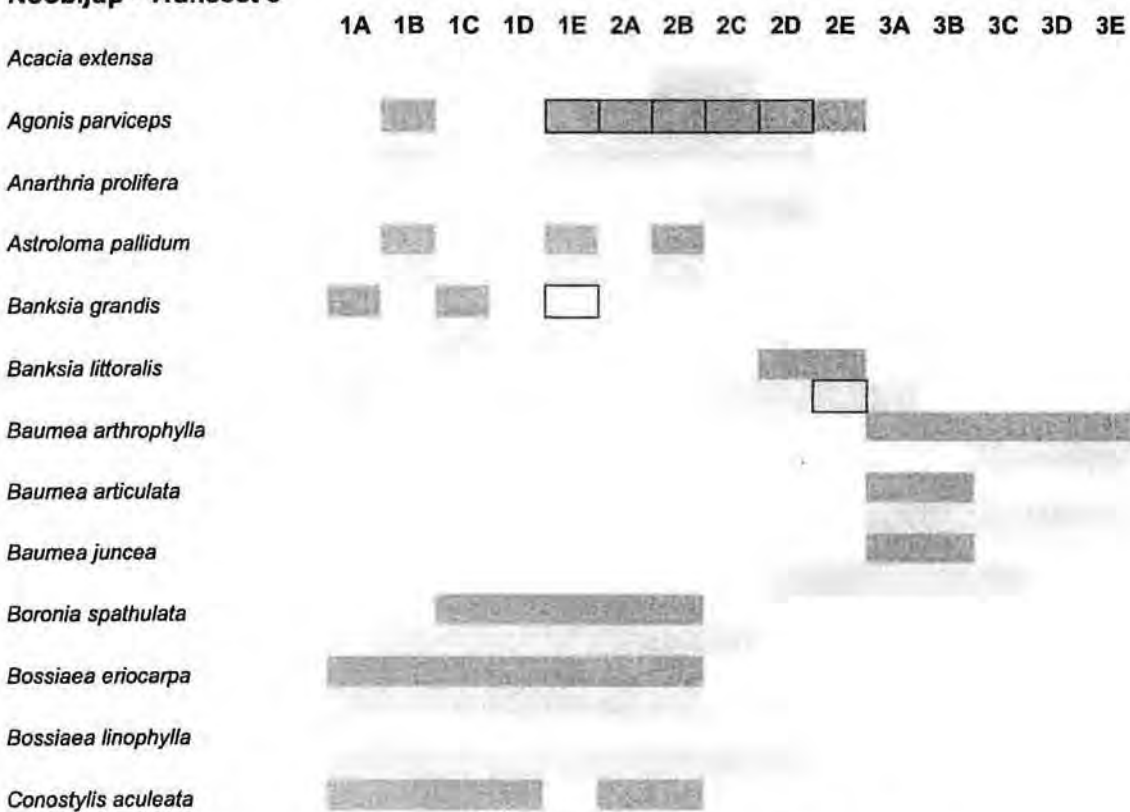


Figure 3.5.2e: Species Distribution along Noobijup Transect 5 in 1997 and 2000.

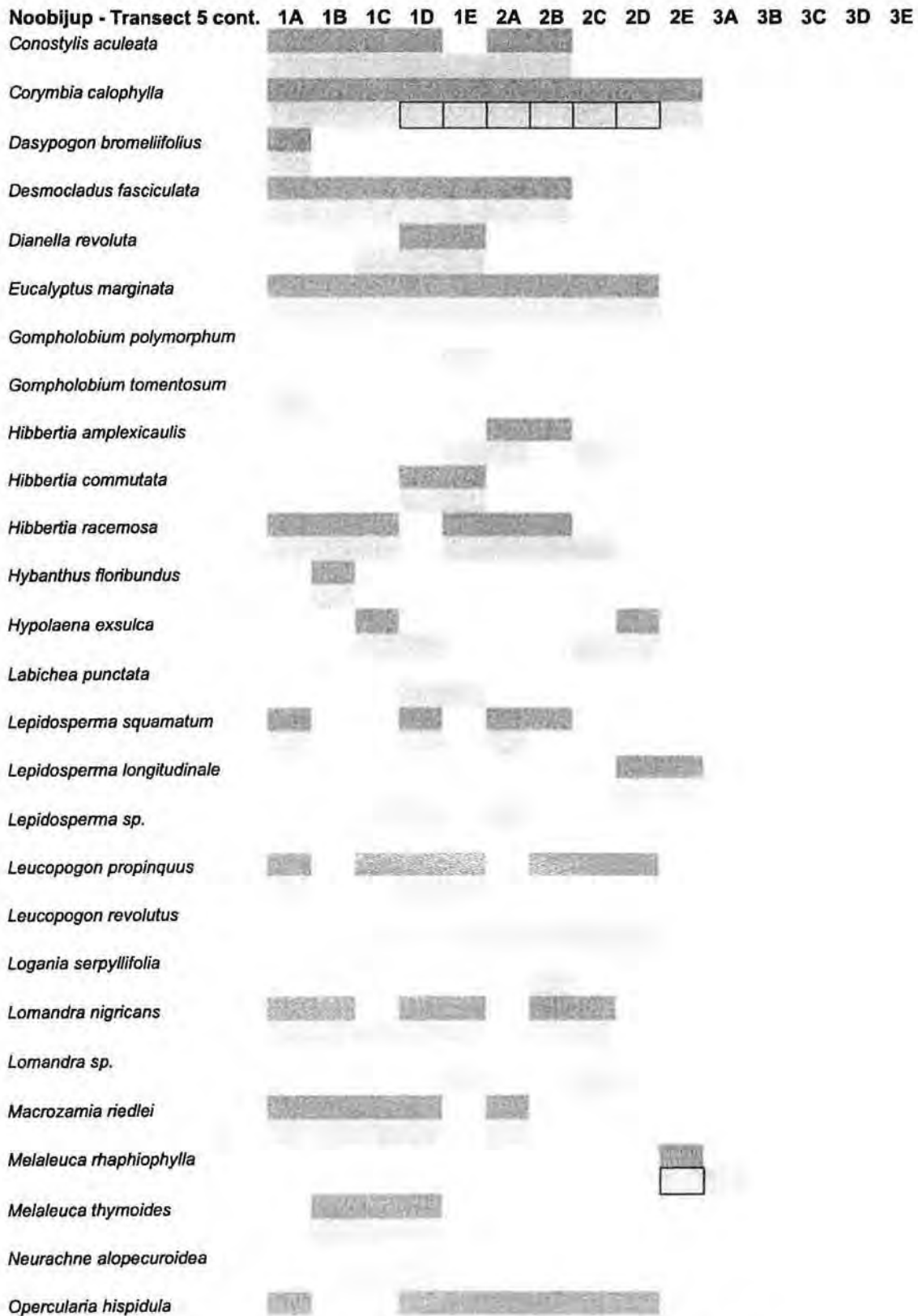
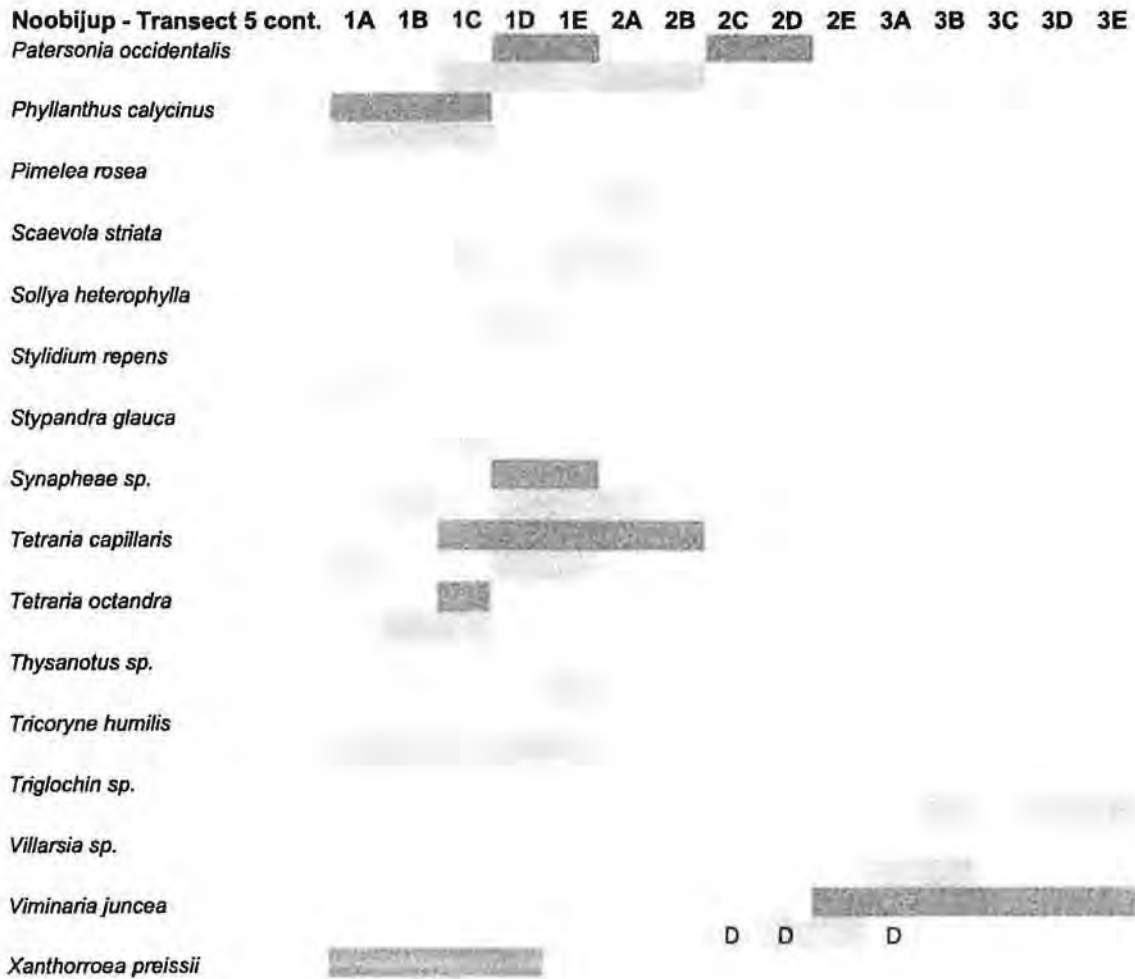


Figure 3.5.2e cont.: Species Distribution along Noobijup Transect 5 in 1997 and 2000.



Legend: 1997
 2000
 Seedlings
 D = Dead

Figure 3.5.2e cont.: Species Distribution along Noobijup Transect 5 in 1997 and 2000.

3.6 Lake Toolibin

3.6.1 Description

Lake Toolibin Nature Reserve (A class #24556, 32°56' S, 117°11' E) lies in the Northern Arthur River catchment at the head of a chain of lakes forming the headwaters of the Northern Arthur River. The majority of land within the catchment was cleared by the 1950s with evidence of salinity and waterlogging appearing in some lakes as early as the 1920s (NARWC, 1992). During this time Lake Toolibin has remained comparatively fresh while other lakes have been severely affected by secondary salinisation (Froend et al., 1987). In the early 1970s, stressed and dead trees were reported in parts of Lake Toolibin when surface salt crusting first became evident (Froend et al., 1987). Since this time there has been a general decline in the health of the *Casuarina obesa* – *Melaleuca strobophylla* stands on the lake bed (Froend et al., 1987; Matiske, 1993). Along with catchment revegetation and drainage works aimed at reducing salinities in the Northern Arthur River, a diversion channel was constructed along the western boundary of the lake in 1994/95 to divert saline flows around the lake, protecting both Toolibin and Walbyring lakes (Froend et al., 1996).

- Transect 1:** (GPS: 50 556840 / 6356371) is located in the south-west corner of the lake on the lake bed. Extending for 40 m, the transect lies in a *C. obesa* – *M. strobophylla* woodland occurring in a broad area of gilgai mounds.
- Transect 2:** (GPS: 50 556855 / 6357750) lies in the north-west area of the lake, extending for 60 m from within a *C. obesa* – *M. strobophylla* woodland into the open area, which dominates the east side of the lake.
- Transect 3:** (GPS: 50 557488 / 6357073) is located along approximately the same coordinates as a transect established by R. Froend in 1983 on the eastern side of the lake consisting of three 20 x 20 m plots extending from the upland vegetation onto the lake bed.
- Transect 4:** (GPS: 50 556032 / 6356762) occupies the area of gilgai mounds in the south-west corner of the lake characterised by dense stands of *C. obesa* restricted to the mounds. The transect is 40 m long and samples dense stands of trees and open ground between the mounds.

3.6.2 Plant Communities

With the loss of the Eucalypt trees due to increasing salinity and waterlogging, only two tree species remain on the lake bed; *C. obesa* and *M. strobophylla* (Froend et al., 1996). These species occur in woodlands across the lake bed, often restricted to the gilgai mounds. The understorey consists of halophytic species with some annual weeds occurring towards the perimeter of the lake bed. The upland vegetation is highly modified on the western and southern sides due to the construction of the drain and revegetation of cleared areas. The eastern and northern sides are dominated by a woodland of *Eucalyptus loxophleba* – *Acacia acuminata*. A full description of the plant communities of the reserve is provided by Matiske (1993).

3.6.3 Population Structure and Tree Vigour

An absence of seedlings of *C. obesa* and to a lesser extent *M. strobophylla* has been noted on the reserve previously. As in 1997, size class distribution data for 2000 (Figure 3.6.1) still shows the populations of these species to be dominated by stems in the 5 to 15 cm diameter size classes with some juveniles (typically <2 cm - <10 cm in height) present. More importantly, there has been a significant loss of these individuals since initial monitoring in 1997 (Table 3.6.1). Mean Crown Scores for both species were fairly low, reflecting the stresses of high soil salinities (Froend et al., 1987). Vigour of the overstorey species has not changed significantly since 1997.

Table 3.6.1: Summary of Tree Data for Lake Toolibin.

Species	Trees	Trees	Seedlings	Seedlings	MCS (S.D)	MCS (S.D)
	1997	2000	1997	2000	1997	2000
<i>Casuarina obesa</i>	379	357	40	22	8.9 (4.5)	9.2 (7.7)
<i>Melaleuca strobophylla</i>	78	74	33	6	10.7 (4.0)	12.1 (2.7)
<i>Acacia acuminata</i>	4	4	0	0	13 (2.3)	13.7 (0.95)
<i>Eucalyptus rudis</i>	1	2	0	0	4 (0)	7.5 (0.0)

MCS – Mean crown score

Few significant changes in understorey composition and cover were recorded at Lake Toolibin (Table 3.6.2). It is interesting to note that *Halosarcia lepidosperma* has appeared in Transects 1, 2 and 4. *H. pergranulata* has been almost completely lost from Transect 3, however, it gained a foothold on Transect 1 (2E) and has appeared throughout quadrats 1A to E and 2B and C of Transect 2 (Figures 3.6.2a to d).

Table 3.6.2: Brief Summary of Changes to the Understorey at Lake Toolibin Transects.

Quadrat	Transect 1	Transect 2	Transect 3	Transect 4
1A	No Change.	Gained 1 - <i>Halosarcia pergranulata</i>	No Change?	No Change.
1B	No Change.	Gained 1 - <i>Halosarcia pergranulata</i>	No Change?	No Change.
1C	No Change.	Gained 1 - <i>Halosarcia pergranulata</i>	No Change?	Little Change.
1D	No Change.	Gained 1 - <i>Halosarcia pergranulata</i>	No Change?	No Change.
1E	(No Understorey)	Gained 2, incl. <i>H. pergranulata</i>	No Change?	New understorey of <i>H. lepidosperma</i>
2A	Little Change.	Gained 1 - <i>H. lepidosperma</i>	No Change.	New understorey of <i>H. lepidosperma</i>
2B	Little Change.	Lost 1, gained <i>H. pergranulata</i>	No Change.	Little Change.
2C	Little Change.	Lost 1, gained <i>H. pergranulata</i>	No Change.	Little Change.
2D	Little Change.	Lost 1, gained <i>H. lepidosperma</i>	<i>Halosarcia pergranulata</i> 1997 50% 2000 10%	Little Change.
2E	New understorey of <i>H. lepidosperma</i>	Lost 1, gained <i>H. lepidosperma</i>	Lost <i>H. pergranulata</i> .	Gained 1 - <i>H. pergranulata</i>
3A		New understorey of <i>H. lepidosperma</i>	Little Change.	
3B		(No Understorey)	Lost <i>H. pergranulata</i> .	
3C		New understorey of <i>H. lepidosperma</i>	Lost <i>H. pergranulata</i> .	
3D		Lost 1, gained <i>H. lepidosperma</i>	Lost <i>H. pergranulata</i> . (1997 41%)	
3E		(No Understorey)	Lost <i>H. pergranulata</i> .	

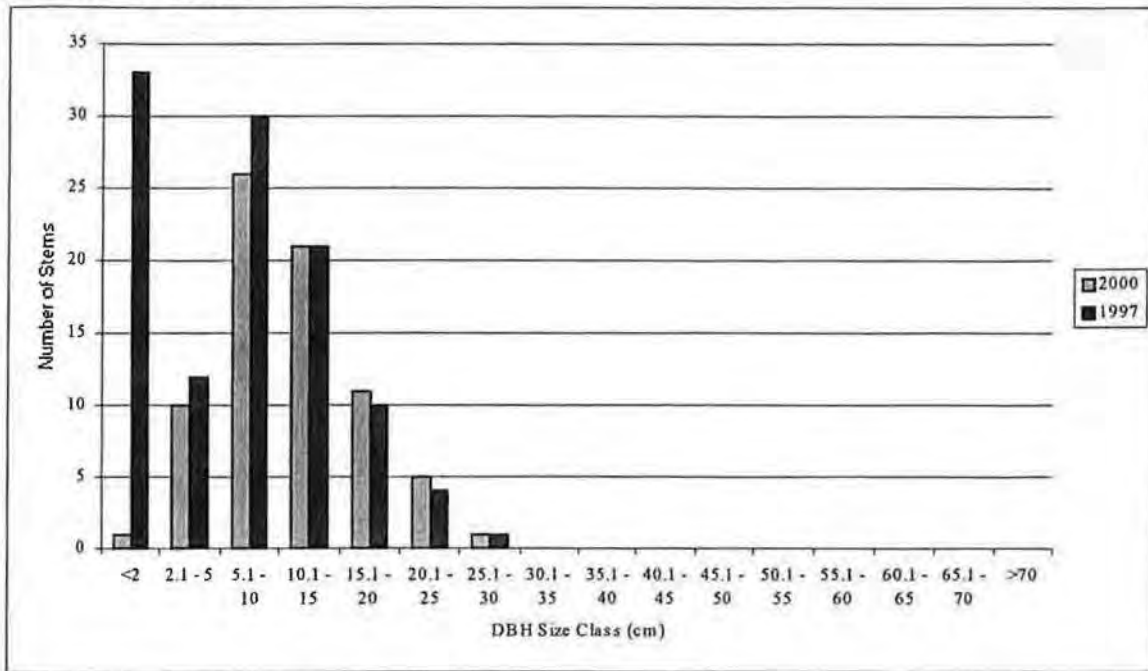
3.6.4 Soil Characteristics

Soil salinities have declined mildly since 1997, with a range of 18 mS/cm at the highest point on the lake fringe of Transect 3 to 744 mS/cm in a depression on Transect 4, compared to 28 mS/cm and 794 mS/cm recorded in similar locations in 1997 (Appendix 1). Salinity is highest on the south-western area of the lake bed where salt seepage has been recorded in the past (Froend et al., 1996). Similar levels of salinity are recorded in Transects 2 and 3 on the eastern side of the lake. Relatively low conductivity was recorded in Transect 1 at the south-eastern side of the lake (77-201 mS/cm). A general trend of lower salinity on the gilgai mounds and higher salinity in depressions is apparent when the profile data and EM38 data is compared. Seedlings were found in the lowest and highest soil salinity areas, although reductions in vigour since 1997 were evident.

3.6.5 Summary

The general decline in the health of the vegetation of the lake described by Froend et al. (1996) has led to the loss of the Eucalypt overstorey, leaving a stressed *C. obesa* and *M. strobophylla* population. While the results show the population is not senescent, concern over the recruitment potential has been expressed. Ogden (1997) hypothesised that the current *C. obesa* population may be the result of periodic mass recruitment events, which, under the current salinity status and hydrological regime, may be unlikely to occur again. At the same time, a low level of 'background' recruitment may contribute to the population although the lack of saplings on the lake suggests that these seedlings are not persisting. The seedlings found in the study sites are likely to fit into the latter category of recruitment and 2000 data suggests that these will not persist to maturity. With improving soil salinity and groundwater levels as a result of the remediation works, more successful recruitment events are possible. The upland vegetation of the lake fringe has a very species poor understorey dominated by annual plants. Mattiske (1993) states that the *E. loxophleba* - *A. acuminata* woodland of the lake fringe has declined during the study period (1977-1993) with only the occasional *A. acuminata* seedling appearing. The understorey continues to be dominated by *Halosarcia* species (samphires), which indicate relatively saline site conditions.

Melaleuca strobophylla



Casuarina obesa

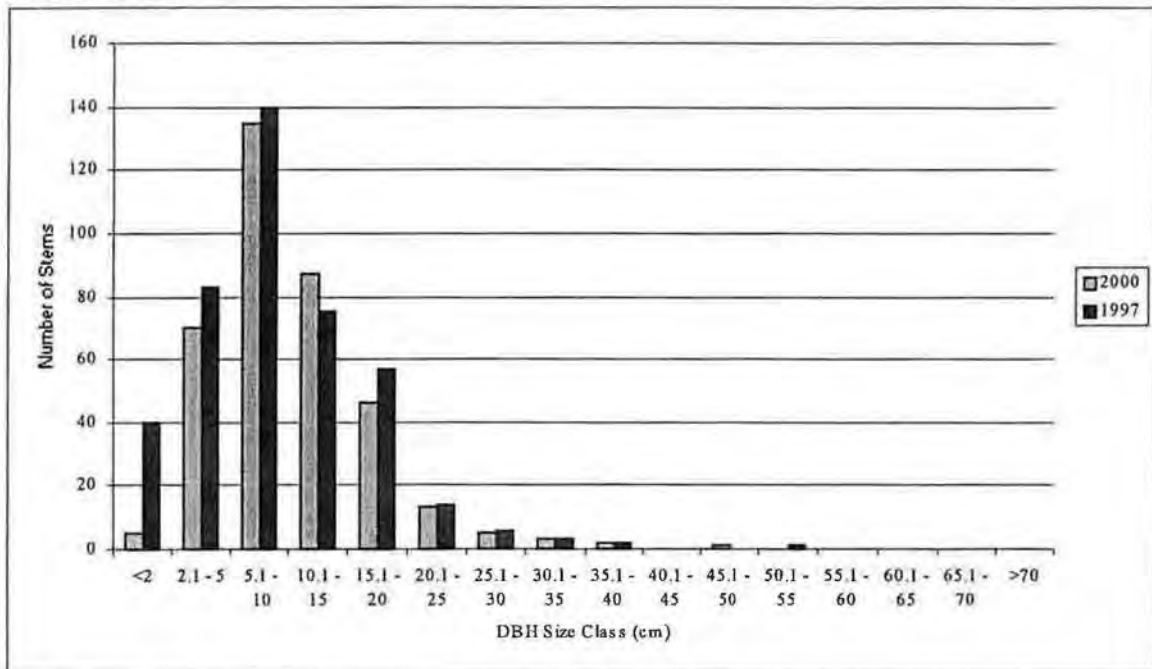


Figure 3.6.1: Size Class Distributions of *Melaleuca strobophylla* and *Casuarina obesa* at Lake Toolibin

Toolibin - Transect 1

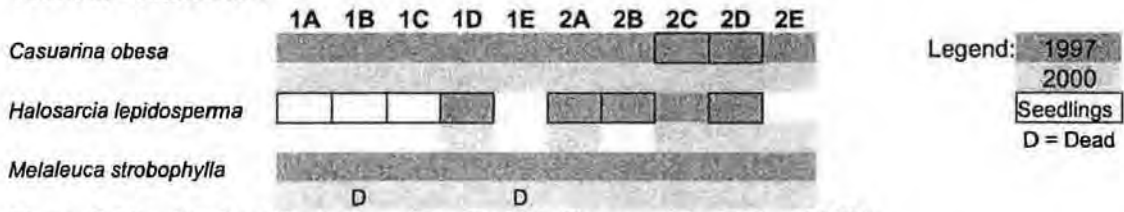


Figure 3.6.2a: Species Distribution along Toolibin Transect 1 in 1997 and 2000.

Toolibin - Transect 2

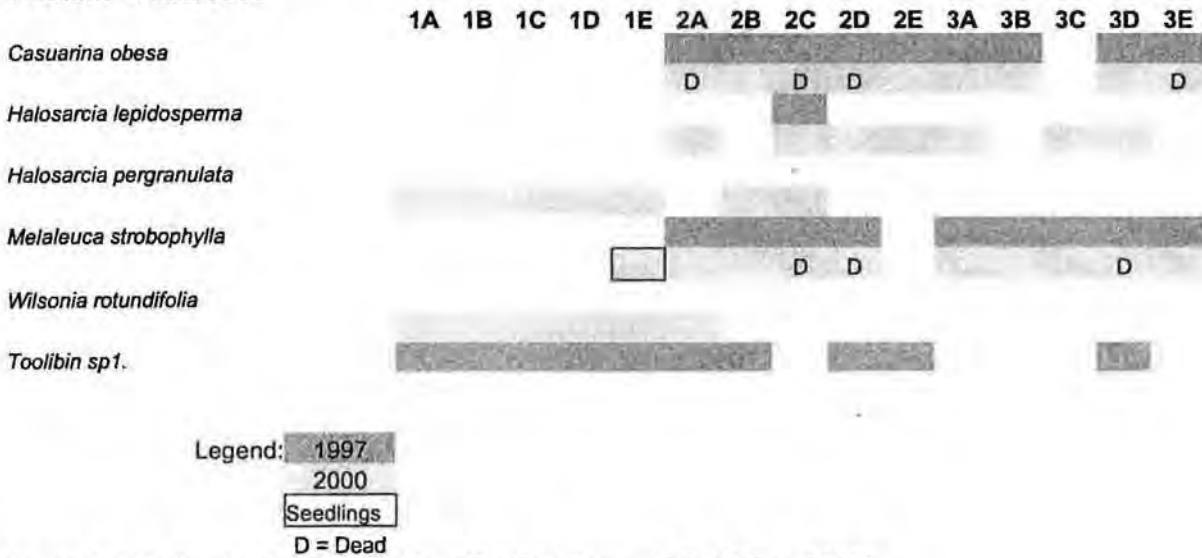


Figure 3.6.2b: Species Distribution along Toolibin Transect 2 in 1997 and 2000.

Toolibin - Transect 3

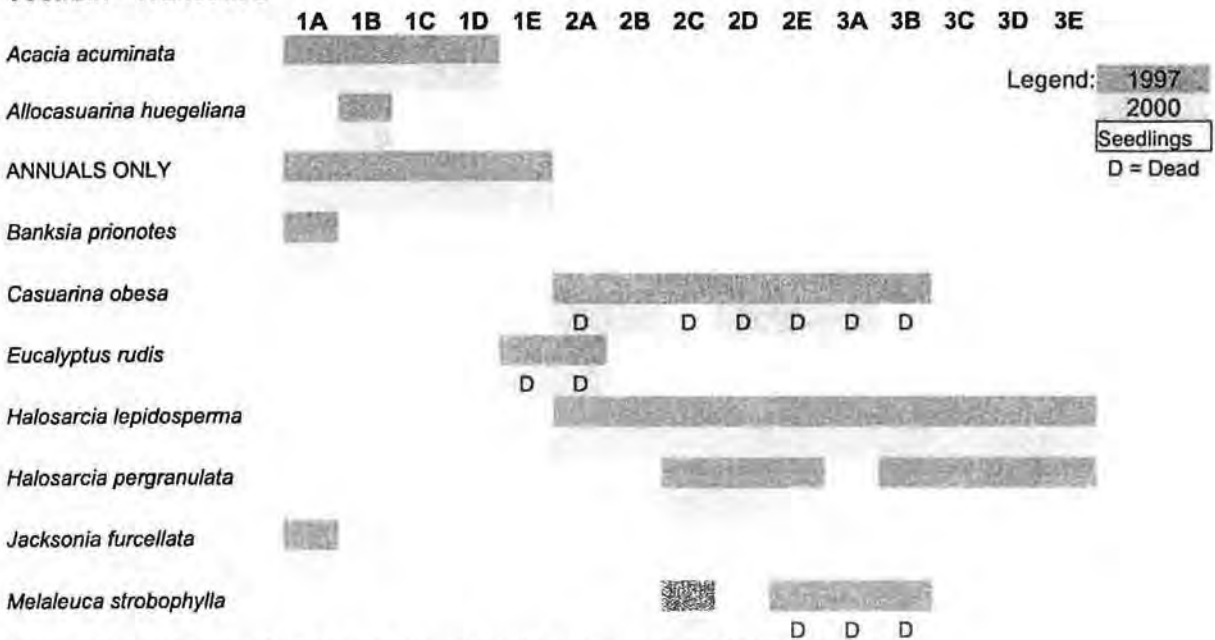


Figure 3.6.2c: Species Distribution along Toolibin Transect 3 in 1997 and 2000.

Toolibin - Transect 4

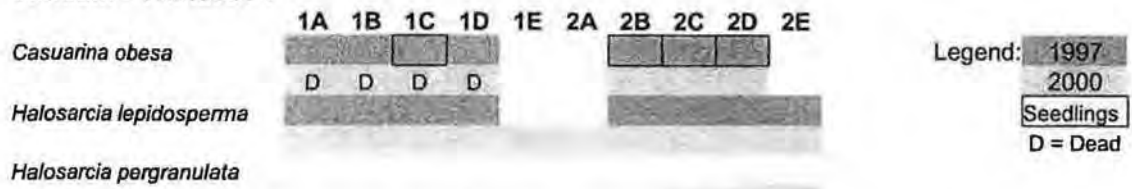


Figure 3.6.2d: Species Distribution along Toolibin Transect 4 in 1997 and 2000.

3.7 Lake Towerrinning

3.7.1 Description

Lake Towerrinning, a class A Nature Reserve (#24917), situated 32 km south of Darkan (33°35' S, 116°48' E), is a permanent wetland currently classified as brackish with improving water quality. Froend *et al.* (1991) provide a description of the decline in water quality and the surrounding vegetation from the 1960s to the mid 1980s. Agricultural clearing reduced the vegetation to a narrow peripheral band, which in turn was severely affected by increasing soil salinity and flooding. Recent modifications to the drainage of the lake by the Department of Agriculture have resulted in an improvement in water quality.

Transect location at this wetland was restricted by the lack of remnant vegetation. On the eastern side of the lake, fringing vegetation is restricted to one short, narrow band adjacent to the public car park. This area was not included in the survey due to its proximity to public access areas. The remaining vegetation is predominantly restricted to the western side of the lake around the major inlet channel. Three transects are located in this vegetation remnant.

Transects 1 and 3 are located on the property of Ian and Theresa Pearce.

Transect 1: (GPS: 50 479191 / 6284239) extends for 40 m on the southern end of the peninsula separating the lake from the inlet swamp.

Transect 2: (GPS: 50 479235 / 6284507) is located on the Abbott's property approximately 100 m east of Transect 1 and consists of one 20 x 20 m plot located in the narrow band of remnant vegetation around the north-western edge of the lake.

Transect 3: (GPS: 50 479347 / 6284490) is situated on the northern side of the inlet swamp and consists of only one 20 x 20 m plot.

3.7.2 Plant Communities

The narrow band of vegetation that remains around the lake inlet is predominantly *Melaleuca raphiophylla* and *Eucalyptus rudis* woodland. This vegetation type occupies the relatively shallow gradient of the lake and inlet perimeter. Partially submerged dead *Melaleuca raphiophylla* stems are present below the high water line. Understorey composition is dominated by *Lepidosperma longitudinale* in Transects 1 and 2 with no perennial understorey species present, except *Baumea juncea* in Transect 3. Transects 1 and 2 are generally protected from grazing, however, Transect 3 is accessed by cattle and is also burnt regularly by the landowner.

3.7.3 Population Structure and Tree Vigour

The size class distributions (Figure 3.7.1) indicate that there has been no significant change in the *E. rudis* population since 1997, which consists predominantly of stems under 20 cm in diameter with only two individuals greater than 30 cm. Since 1997 some stems have grown and are now part of the next size class. A small number of 'young' stems (<5 cm) are present along all transects with two additional seedlings being recorded in 2000. The low numbers of *E. rudis* seedlings and saplings that have established at Lake Towerrinning during the 3-year period between 1997 and 2000 indicate that recruitment of this wetland species is being hindered. Although only a small number of *M. raphiophylla* stems were originally sampled in 1997 a more even spread of sizes is apparent (Figure. 3.7.1) Only 3 of the 42 recorded *M. raphiophylla* seedlings were lost in the upper portion of Transects 1 and 2 since 1997. The vigour of both overstorey species, *E. rudis* and *M. raphiophylla*, has neither declined nor improved significantly since 1997, with the only noticeable change being a higher standard deviation of the Mean Crown Score in 2000 (Table 3.7.1). Individuals of *E. rudis* were generally in poor condition with a Mean Crown Score of 5.8. Seven of the tagged *E. rudis* trees have died since 1997. The more salt tolerant *M. raphiophylla* had a higher crown score, however, most individuals occurring at or below the water line were dead.

Table 3.7.1: Summary of Lake Towerrinning Tree Data

Species	Trees		Seedlings		Saplings		MCS (S.D)	
	1997	2000	1997	2000	1997	2000	1997	2000
<i>Eucalyptus rudis</i>	58	52	4	1	0	3	5.7 (2.6)	5.8 (3.3)
<i>Melaleuca raphiophylla</i>	30	30	42	37	0	2	12.5 (3.4)	12.6 (4.3)

MCS – Mean crown score

Few changes in understorey composition and cover were recorded at Lake Towerrinning. Most notable is the significant reduction in cover experienced by *Lepidosperma longitundinale* in quadrats 2A, B and C of Transect 1.

Table 3.7.2: Brief Summary of Changes to the Understorey at Lake Towerrinning Transects

Quadrat	Transect 1	Transect 2	Transect 3
1A	Lost 1 sp, now no understorey.	No Change.	(No Understorey)
1B	Little Change.	No Change.	(No Understorey)
1C	Little Change.	No Change.	(No Understorey)
1D	Little Change.	(No Understorey)	Little Change.
1E	Little Change.	(No Understorey)	(No Understorey)
2A	<i>Lepidosperma longitundinale</i> – 1997 45%, 2000 10%		
2B	<i>Lepidosperma longitundinale</i> – 1997 55%, 2000 5%		
2C	<i>Lepidosperma longitundinale</i> – 1997 90%, 2000 60%		
2D	No Change.		
2E	No Change.		

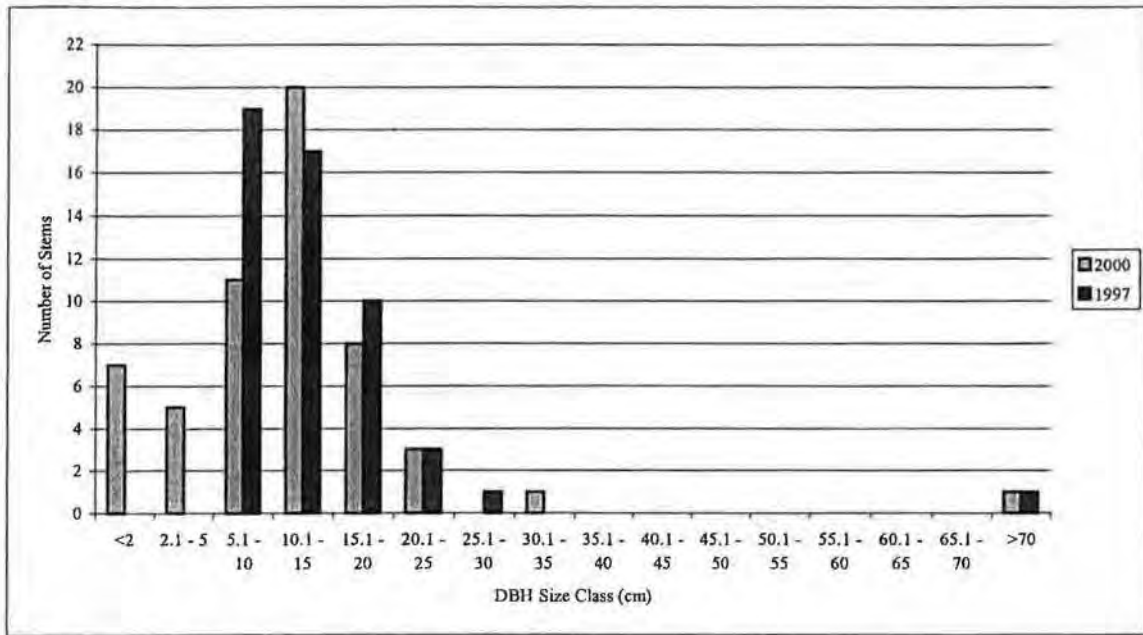
3.7.4 Soil Characteristics

The EM38 data (Appendix 1) shows an increase in soil salinity with a decrease in elevation. The highest salinities are found along Transect 1, which is located at a low elevation on a very shallow gradient. Generally, salinity ranges have increased moderately since 1997 at each transect. For example, EC measurements at Transect 1 ranged from 41 and 254 mS/cm in 1997 and from 69 and 324 mS/cm during the 2000 monitoring period. Similar, but not as significant trends are apparent for Transect 2: 35-227 mS/cm (1997), 32-238 mS/cm (2000) and Transect 3: 32-128 mS/cm (1997), 32-192 mS/cm (2000). Soils are brown sands grading to coarse sands at the water line.

3.7.5 Summary

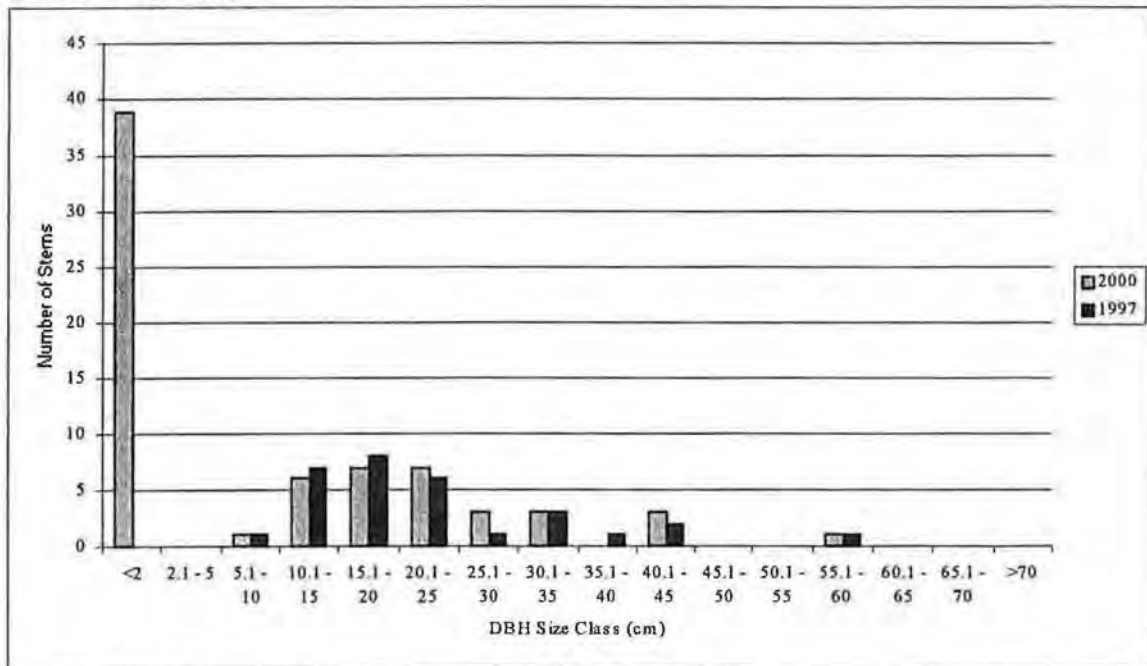
The decline in the vegetation of Lake Towerrinning due to clearing and the effects of salinity and increased waterlogging as described by Froend *et al.* (1991) appears to have continued up to the present time. The condition of the trees at the lake continues to be poor and suggests considerable stress due to salinity. *Baumea articulata* still occurs in only one small patch (approximately 2 x 2 m) at the inlet channel. The narrow band of remnant vegetation continues to be accessible to cattle and at least some of this is burnt regularly by the landowner. This, together with relatively high soil salinities, explains the general paucity and continued decline of understorey species. Some regeneration of *M. raphiophylla* is apparent at the western side of the lake where approximately 40 seedlings were located. This recruitment may be the result of conditions following unusually high water levels some three to four years ago. Although there was no significant change in the vigour of the *E. rudis* population since 1997, the absence of seedlings during both monitoring periods is of concern. The many disturbances to this lake including water skiing, camping, grazing and farming may cause further decline of the already susceptible and aging population of *E. rudis*.

Eucalyptus rudis



N.B. Due to differences in size class categorisation, only data between 5.1-10 and >70 is shown for 1997.

Melaleuca raphiophylla



N.B. Due to differences in size class categorisation, only data between 5.1-10 and >70 is shown for 1997.

Figure 3.7.1: Size Class Distributions of *Eucalyptus rudis* and *Melaleuca raphiophylla* for Lake Towerrinning.

Towerrinning - Transect 1

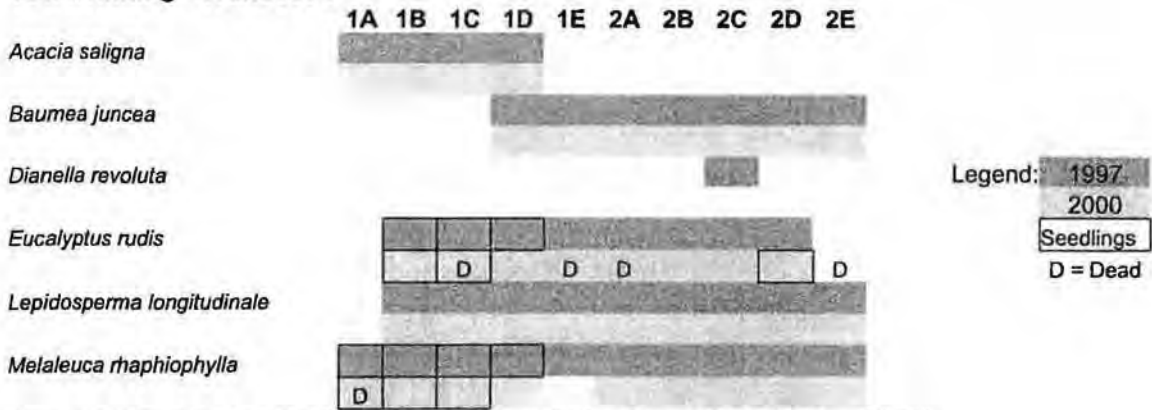


Figure 3.7.2a: Species Distribution along Towerrinning Transect 1 in 1997 and 2000.

Towerrinning Transect 2

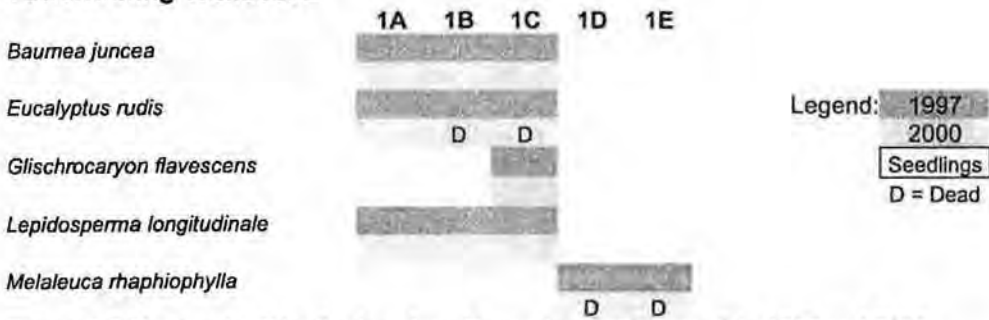


Figure 3.7.2b: Species Distribution along Towerrinning Transect 2 in 1997 and 2000.

Towerrinning Transect 3

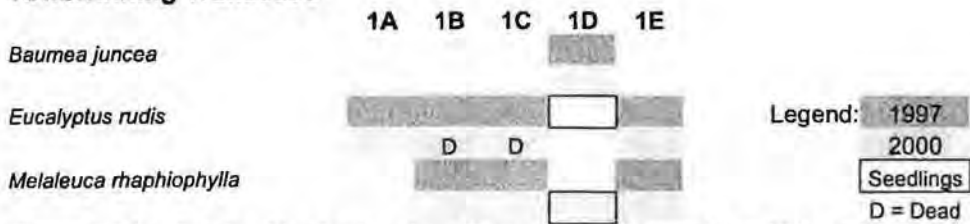


Figure 3.7.2c: Species Distribution along Towerrinning Transect 3 in 1997 and 2000.

3.8 Wheatfield Lake

3.8.1 Description

Lake Wheatfield in the Lake Warden A class Nature Reserve (#32257, 33°48' S, 121°46' E) is the eastern most lake on the Coramup Creek watercourse of the Lake Warden System, immediately north of the town of Esperance. The lake is classified as subhaline to hyposaline and was probably to some extent saline prior to catchment clearing (ANCA, 1996). The lake receives inflow from Coramup Creek and in wetter years outflows through to the lakes further down in the chain. Lake Wheatfield is probably permanent, however, water levels were getting very low when the 1997/98 survey was conducted in late summer.

Transect 1: (GPS: 51 400907 / 6258753) lies on the northern side of the lake approximately 30 m west of the car park and extends from the terrestrial vegetation down to the lake edge.

Transect 2: (GPS: 51 401002 / 6258523) is situated on the eastern side, approximately 50 m south east of the car park and is placed similarly to Transect 1.

Transect 3: (GPS: 51 400429 / 6258126) was established in the *Melaleuca cuticularis* woodland on the southern side of the lake and is reached by walking approximately 500 m west along the track beginning at the cleared area on Fisheries Road.

Transect 4: (GPS: 51 400148 / 6258631) lies approximately 200 m down the north outlet channel, on the south side of the channel (across the water).

3.8.2 Plant Communities

The northern, eastern and southern areas of the reserve around the main body of the lake consist of a woodland of *Banksia speciosa* with an understorey of a yet to be identified *Myrtaceae* species and *Darwinia diosmoides*. Towards the wetland basin a short, steep slope leads down to a *Melaleuca cuticularis* woodland in the littoral zone with scattered sedges such as *Isolepis nodosa* and *Baumea juncea*. The northern site near the inflow creek (Transect 1) was dominated by *Melaleuca cuticularis* and *Spyridium globulosum* with *Sarcocornia quinqueflora* at lower elevations. On the northern side and around the outflow channel dense stands of *Melaleuca brevifolia* occur on the steep slope directly up from the wetland basin. On the island created by the outflow channels, *Eucalyptus incrassata* and scattered *E. occidentalis* occur as an open woodland with an understorey of *Leucopogon revolutus*, *Labichea lanceolata* and *Baumea juncea*.

3.8.3 Population Structure and Tree Vigour

The increasing salinity of the lake water is reflected in the condition of the *M. cuticularis* trees in the littoral zone, which are showing some signs of stress, with a reduction in vigour since 1997 (Mean Crown Score of 12.2 in 1997 and 10.2 in 2000 – Table 3.8.1). Upslope of this area, the vegetation appears relatively unaffected. Some disturbances are apparent around the lake such as tracks and roads, which have assisted weed invasion. Seedling numbers are very low at this wetland. Only one *Eucalyptus incrassata* seedling and one *B. speciosa* seedling was recorded in the study plots during 2000 monitoring and no *M. cuticularis* seedlings have been surveyed around the wetland basin during either monitoring occasion (Table 3.8.1, Figure 3.8.1). 55 *M. brevifolia* seedlings were located in Transect 4 in 1997, only 6 of which have since died.

Table 3.8.1: Summary of Tree Data for Wheatfield Lake.

Species	Trees	Trees	Seedlings	Seedlings	Saplings	Saplings	MCS (S.D)	MCS (S.D)
	1997	2000	1997	2000	1997	2000	1997	2000
<i>Melaleuca cuticularis</i>	123	122	0	0	0	0	12.2 (3.2)	10.2 (3.39)
<i>Spyridium globulosum</i>	38	41	4	0	0	4	12.9 (2.8)	14.4 (2.64)
<i>Eucalyptus ?incrassata</i>	67	61	0	1	0	0	8.3 (3.9)	8.6 (3.82)
<i>Acacia saligna</i>	8	7	4	0	0	4	11.4 (2.3)	15.9 (4.4)
<i>Melaleuca brevifolia</i>	118	116	55	49	0	0	13.1 (2.6)	14.1 (2.86)
<i>Banksia speciosa</i>	60	54	0	1	0	0	13.7 (3.4)	18 (2.39)
<i>Eucalyptus occidentalis</i>	2	2	0	0	0	0	9.5 (2.1)	9.5 (3.53)
<i>Nuytsia floribunda</i>	1	0	0	0	0	0	3 (0)	0

MCS – Mean crown score

Changes in understorey composition and cover recorded at Lake Wheatfield where insignificant for Transects 2 and 4. Transect 3 was completely flooded at the time of the monitoring visit and no understorey remained as a result. Changes along Transect 1 include the loss of the introduced American semi-aquatic grass species *Paspalum vaginatum* (Saltwater Couch – quadrats 2B, C and D) and the significant reduction in cover of *Gahnia trifida* (1B).

Table 3.8.2: Brief Summary of Changes to the Understorey at Lake Wheatfield Transects.

Quadrat	Transect 1	Transect 2	Transect 3	Transect 4
1A	Lost 3 (incl. <i>J. kraussii</i>), now no understorey.	Little Change.	Lost 3, now no understorey	No Change.
1B	<i>Gahnia trifida</i> – 1997 60%, 2000 7% <i>Juncus kraussii</i> – 1997 0.5%, 2000 15%	Little Change.	Lost 3, now no understorey	No Change.
1C	Little Change.	Little Change.	Lost 3, now no understorey	Little Change.
1D	Lost 2, gained 4 sp.	Little Change.	Lost 2, now no understorey	Little Change.
1E	Little Change.	Little Change.	Lost 2, now no understorey	Little Change.
2A	Little Change.	Little Change.	Lost 2, now no understorey	Little Change.
2B	<i>Paspalum vaginatum</i> (introduced) – 1997 40%, 2000 nil	Little Change.	Lost 1, now no understorey	Little Change.
2C	<i>Paspalum vaginatum</i> (introduced) – 1997 30%, 2000 nil	Lost 4, now no understorey	(No Understorey)	Lost 3, now no understorey
2D	Lost 2 (incl. 1 introd.), now no understorey	(No Understorey)	(No Understorey)	(No Understorey)
2E	Lost 1, now no understorey	(No Understorey)	(No Understorey)	(No Understorey)

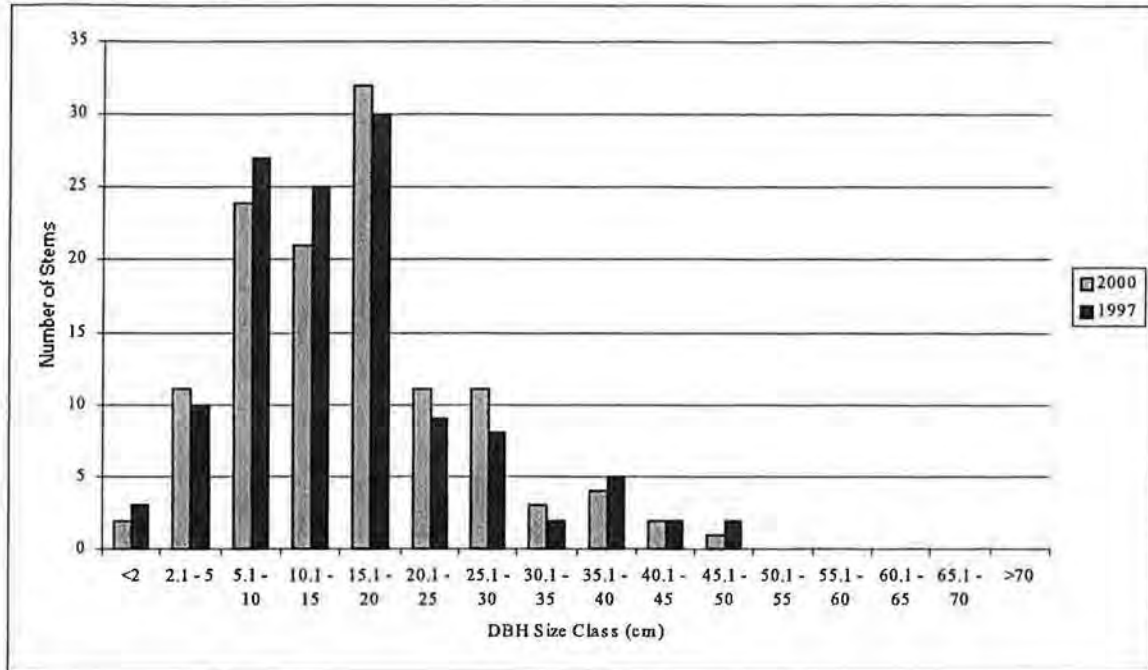
3.8.4 Soil Characteristics

Soil salinities range between 180 – 400 mS/cm on Transects 1 and 4, whilst the more elevated Transect 2 experienced a range of 14 – 148 mS/cm. EM38 data were not recorded for Transect 3 due to inundation. Comparisons between 1997 and 2000 EM38 data cannot be undertaken due to a malfunction during 1997 monitoring, which resulted in a lack of useful data.

3.8.5 Summary

It is apparent that increasing salinity at Lake Wheatfield is causing stress in the *Melaleuca cuticularis* woodland of the littoral zone. Seedlings or young individuals of this species were not recorded in either the 1997 or 2000 monitoring survey. Their absence may adversely affect the sustainability of this community in the long-term if salinity and waterlogging continue to increase. In light of this the existing vegetation remains in relatively good condition with the surveyed population of *M. brevifolia* retaining vigour and all but 6 of the seedlings first recorded in 1997. Upland vegetation (*B. speciosa*, *A. saligna* and *Spyridium globulosum*) appears unaffected by the high salinity of the lake water, however, one area at the north of the lake contains significant numbers of dead *Banksia speciosa* individuals, which has been identified by Neil Gibson as a possible result of an outbreak of *Phytophthora*. The understorey diversity has significantly declined and weed invasion in the general vicinity has increased since 1997, which could be due to the ease of access to the lake for recreational activities (eg. fishing).

Melaleuca cuticularis



Banksia speciosa

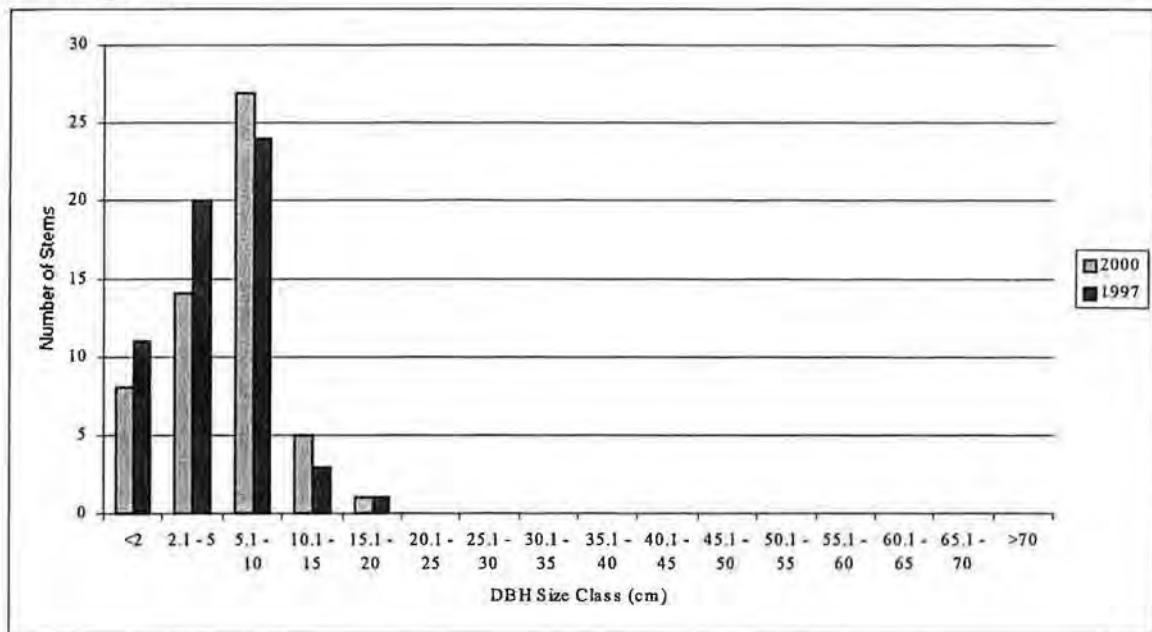
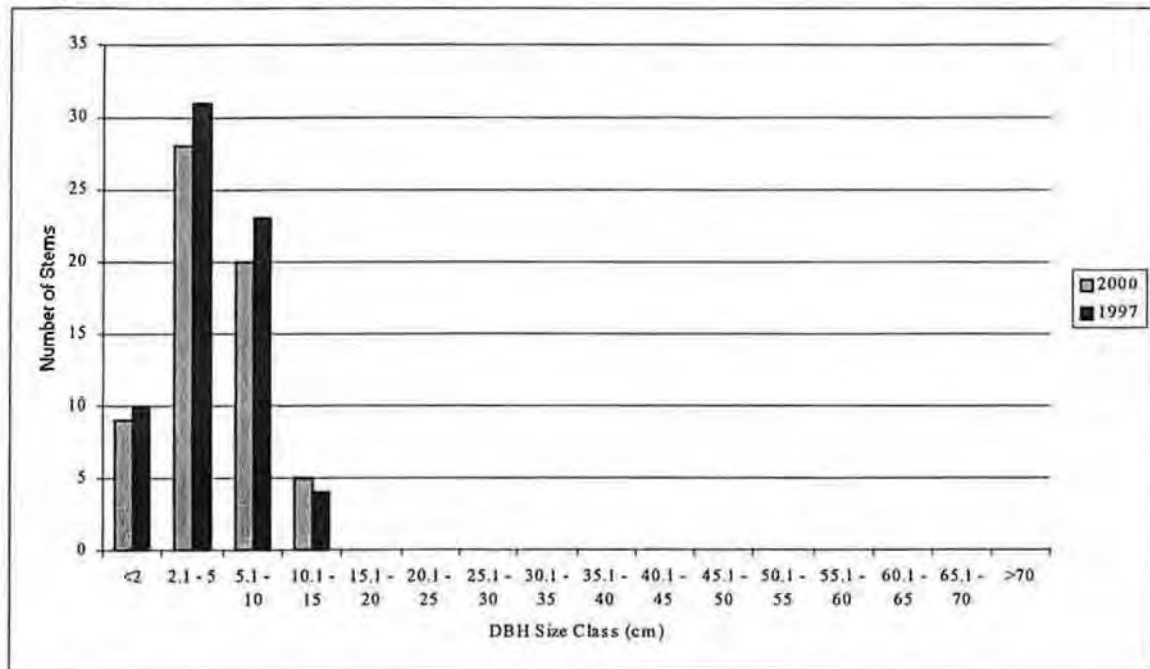


Figure 3.8.1: Size Class Distributions for *Melaleuca cuticularis*, *Banksia speciosa*, *Eucalyptus incrassata*?, *Spyridium globulosum* and *Melaleuca brevifolia* at Lake Wheatfield.

Eucalyptus incrassata?



Spyridium globulosum

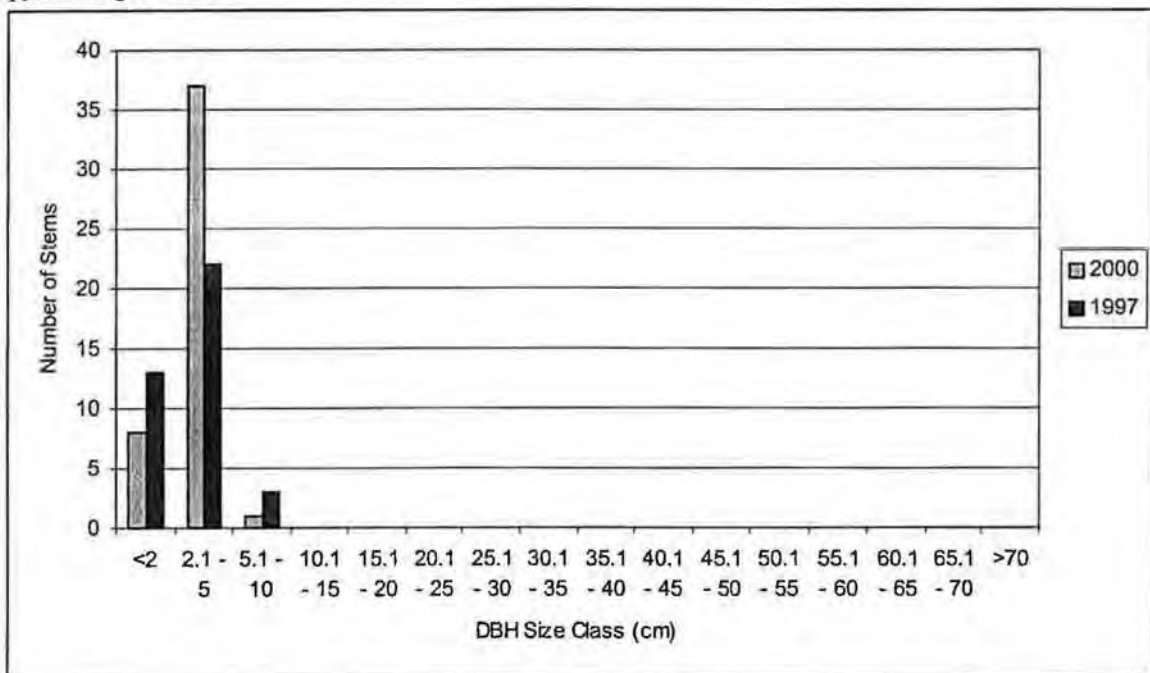


Figure 3.8.1 (cont): Size Class Distributions for *Melaleuca cuticularis*, *Banksia speciosa*, *Eucalyptus incrassata?*, *Spyridium globulosum* and *Melaleuca brevifolia* at Lake Wheatfield.

Melaleuca brevifolia

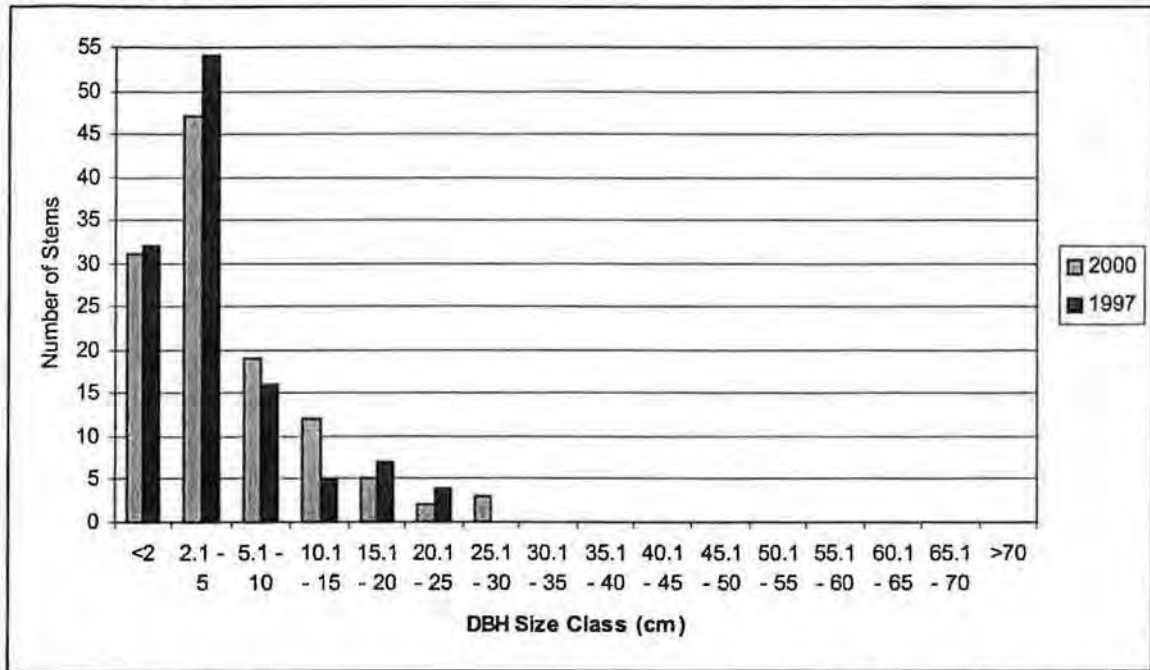


Figure 3.8.1 (cont): Size Class Distributions for *Melaleuca cuticularis*, *Banksia speciosa*, *Eucalyptus incrassata?*, *Spyridium globulosum* and *Melaleuca brevifolia* at Lake Wheatfield.

Wheatfield - Transect 1

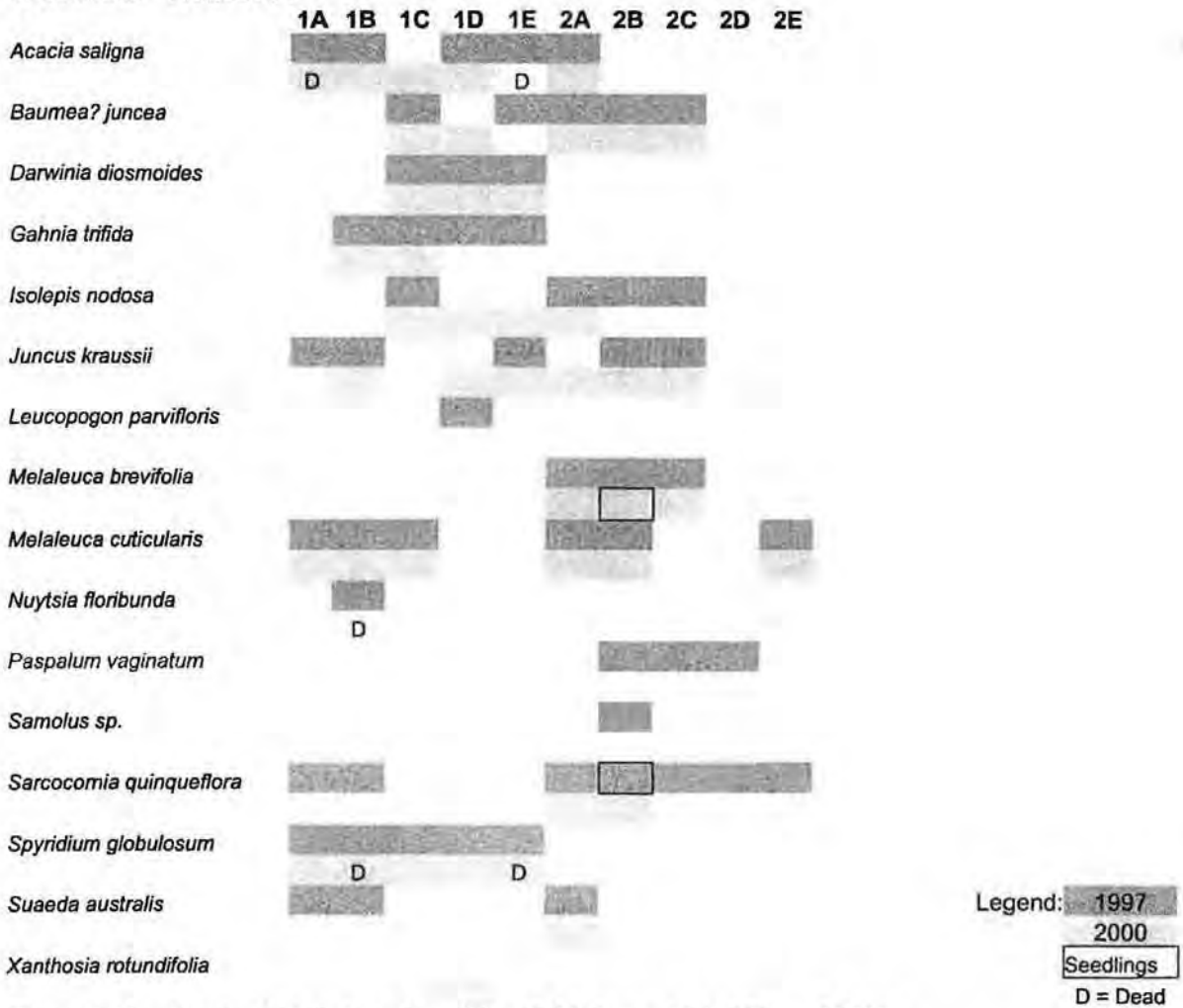
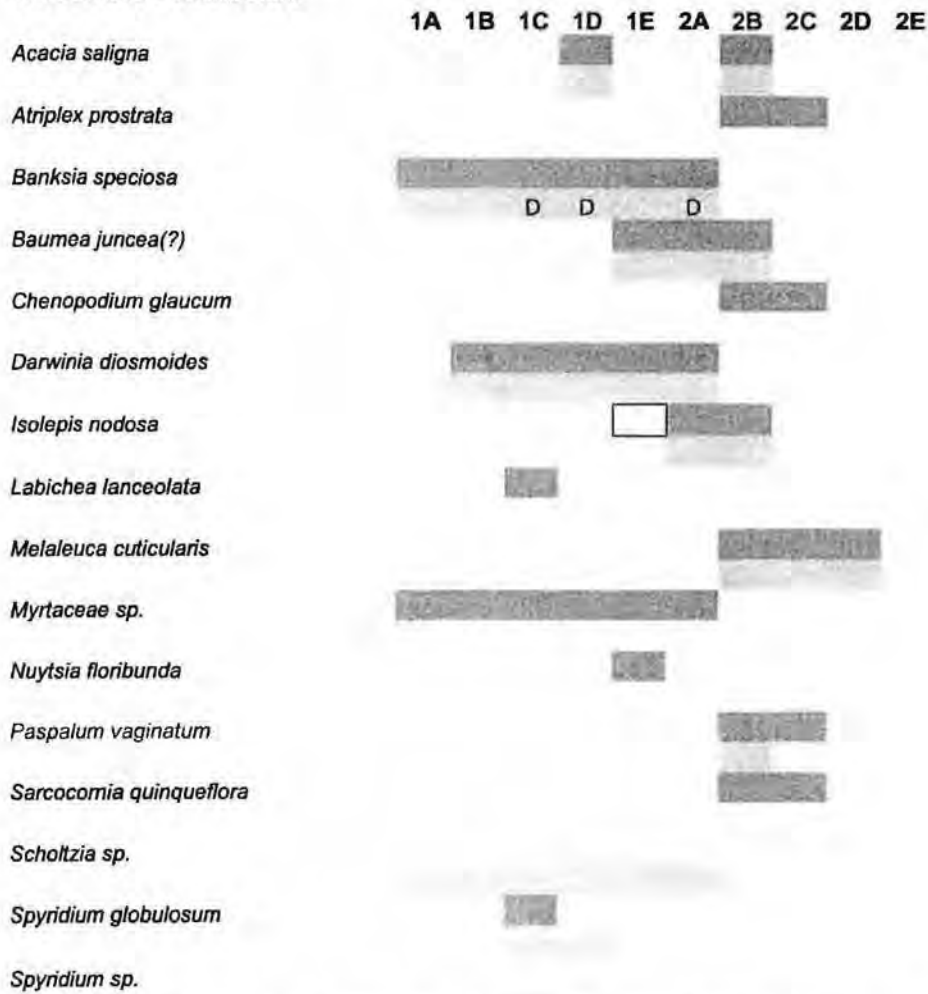


Figure 3.8.2a: Species Distribution along Wheatfield Transect 1 in 1997 and 2000.

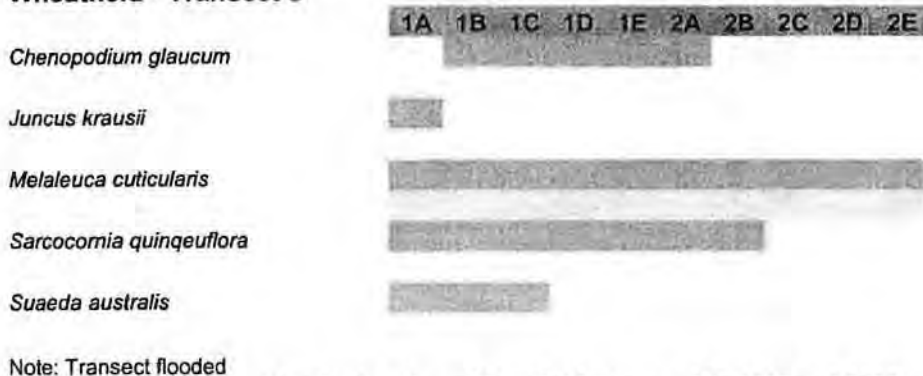
Wheatfield - Transect 2



Legend: 1997
2000
Seedlings
D = Dead

Figure 3.8.2b: Species Distribution along Wheatfield Transect 2 in 1997 and 2000.

Wheatfield - Transect 3



Legend: 1997
2000
Seedlings
D = Dead

Note: Transect flooded

Figure 3.8.2c: Species Distribution along Wheatfield Transect 3 in 1997 and 2000.

Wheatfield - Transect 4

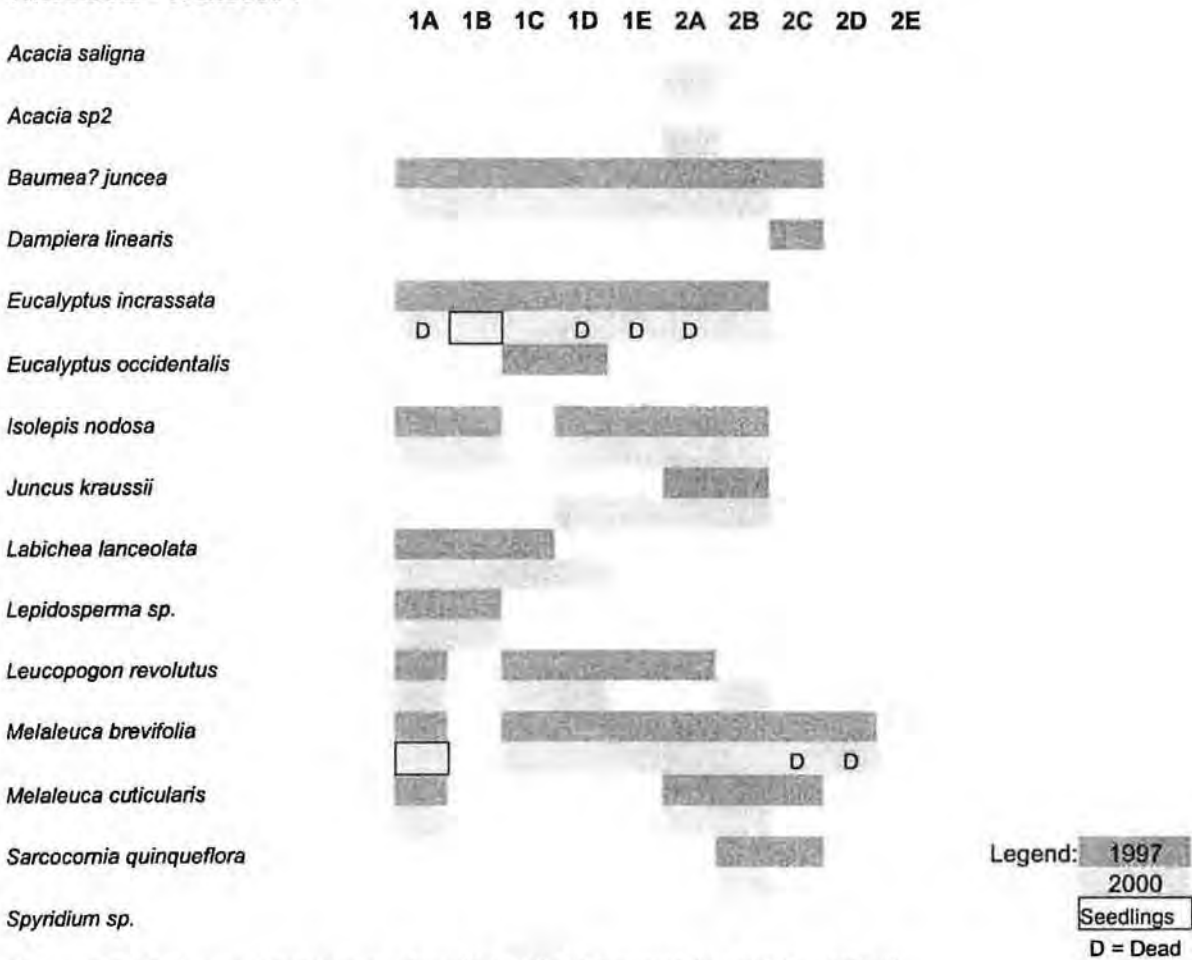


Figure 3.8.2d: Species Distribution along Wheatfield Transect 4 in 1997 and 2000.

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APPENDICES

Appendix 1 EM38 Soil Conductivity Data (mS/cm) and Soil Field Assessments.

Appendix 2 Transect Overstorey Data

Appendix 3 Transect Understorey Data

Appendix 4 Understorey Species and Percentage Cover Comparisons,
1997 and 2000

APPENDIX 1

EM38 Soil Conductivity Data (mS/cm) and Soil Field Assessments.

EM38 Data (mS/cm)

BRYDE - Transect 1

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	98	65	93	63	96	68	Brown sand
4	101	63	98	56	107	67	
8	106	73	113	75	138	94	
12	109	67	126	85	127	90	
16	122	85	146	96	126	77	
20	101	60	146	96	122	80	
24	103	60	119	72	117	73	Grey sand/clay
28	143	84	140	86	141	87	
30	200	134	214	140	179	119	
36	237	157	233	165	232	180	
40	251	167	279	209	259	196	White sand overlying clay
44	395	299	373	278	371	322	
48	451	349	water	water	407	390	
52	water	water	↓	↓	water	water	
56	↓	↓	↓	↓	↓	↓	
60	↓	↓	↓	↓	↓	↓	

BRYDE - Transect 2

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	82	60	83	50	92	65	Brown sand
4	92	57	75	47	90	53	
8	87	53	73	47	83	52	
12	87	54	80	46	72	50	
16	118	69	136	84	92	57	
20	181	125	211	130	161	105	
24	224	167	271	208	184	116	Brown/white sand
28	315	270	336	238	253	189	
32	341	248	379	257	320	208	
36	water	water	water	water	360	285	
40	↓	↓	↓	↓	water	water	White sand
44	↓	↓	↓	↓	↓	↓	
48	↓	↓	↓	↓	↓	↓	
52	↓	↓	↓	↓	↓	↓	
56	↓	↓	↓	↓	↓	↓	
60	↓	↓	↓	↓	↓	↓	

BRYDE - Transect 3

Distance (m)	Distance Across (m)						Field Texture	
	0		10		20			
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal		
0	189	116	210	134	231	164	Brown sand	
4	175	110	238	155	333	216		
8	136	83	281	193	335	233		
12	203	136	319	226	358	240		
16	291	175	358	218	455	294		
20	405	310	389	292	391	334		
24	522	354	412	312	415	307		
28	431	318	394	277	429	314		Brown sand
32	398	287	376	290	399	294		
36	418	290	349	241	248	230		
40	310	230	245	175	311	203		
44	182	130	184	128	197	151		White sand
48	180	145	176	142	185	149		
52	water	water	water	water	water	water		
56	↓	↓	↓	↓	↓	↓		
60								

BRYDE - Transect 4

Distance (m)	Distance Across (m)						Field Texture	
	0		10		20			
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal		
0	411	325	357	262	415	276	Brown loam	
4	376	276	381	272	349	270		
8	392	278	364	284	290	210		
12	470	337	429	315	340	267		
16	475	338	421	301	449	370		
20	528	419	404	260	419	326		
24	524	421	416	293	425	385		
28	439	312	379	250	400	370		Brown loam
32	255	151	282	173	303	193		
36	204	120	216	122	220	135		
40	295	185	268	164	354	232		
44	381	264	460	320	437	300		White sand
48	water	water	water	water	water	water		
52	↓	↓	↓	↓	↓	↓		
56								
60								

EM38 Data

COOMALBIDGUP - Transect 1

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	12.8	8.4	15.4	8.6	19.2	10.2	Grey sand
4	12.7	7.6	15.2	7.2	13.6	5.9	
8	13.2	6.9	14.3	8	12.5	6.7	
12	10.9	7	14.2	5.8	10.4	4.7	
16	14.8	8.7	14	8.4	9	3.1	
20	15.5	9.1	14.9	7.5	6.8	3.3	
24	16.9	8.7	15.2	8	7.1	2.8	Grey/white sand
28	23.3	13.3	15.7	8	10.2	6.6	
30	35.4	20.4	19.8	10.3	12.5	7.8	
36	62.7	57.9	25.8	15.7	14.9	10.1	
40	74.7	80.8	44.9	35.3	23.1	15.2	Grey sand
44	water	water	70.7	69.1	55.8	50.5	
48			water	water	63.5	71.9	
52	↓	↓			water	water	
56	↓	↓	↓	↓	↓	↓	
60	↓	↓	↓	↓	↓	↓	

COOMALBIDGUP - Transect 2

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	22.9	17.1	10.8	7.4	14.9	6	Grey sand
4	20.3	10.8	12.4	7.3	12.9	6.8	
8	21.3	13.3	15.3	8.2	13.2	7.1	
12	25.2	14.7	18.6	10.7	15.5	7.6	
16	28.6	16.1	21.5	11.8	17	10.1	
20	39.4	22.6	25.1	16.5	20.7	11.9	
24	54.6	35.5	35.8	21.3	26.4	13.8	Grey/white sand
28	72.6	80.8	56.8	41.5	46.4	29	
30	91.4	88.3	76.5	91.3	71.6	74.4	
36	water	water	water	water	92.2	91.7	
40	↓	↓	↓	↓	water	water	Grey sand
44	↓	↓	↓	↓	↓	↓	
48	↓	↓	↓	↓	↓	↓	
52	↓	↓	↓	↓	↓	↓	
56	↓	↓	↓	↓	↓	↓	
60	↓	↓	↓	↓	↓	↓	

COOMALBIDGUP - Transect 3

Distance (m)	Distance Across (m)						Field Texture	
	0		10		20			
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal		
0	143	98	123	74	112	65.5	Grey sand	
4	136	82.1	104	60	94	61.7		
8	113	66.3	99	63	88.5	54.5		
12	94.4	57.5	85	50	82.1	50.9		
16	79.8	47.2	77	48	83.8	53.2		
20	71.3	46.3	77	48	83.4	55.4		
24	84.2	49.8	80	44	83.6	53.4		
28	118	77.5	101	58	91.7	57.9		Grey/white sand
30	159	113	129	78	128	80.3		
36	171	133	145	92	135	90.8		
40	water	water	203	166	150	121	Grey sand	
44	↓	↓	water	water	water	water		
48			↓	↓	↓	↓		
52								
56								
60								

COOMALBIDGUP - Transect 4

Distance (m)	Distance Across (m)						Field Texture	
	0		10		20			
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal		
0	33	21.3	31.6	18.9	35.6	21.1	Grey sand	
4	31.9	18.6	25.9	14.7	26.5	19.3		
8	31.7	19.3	32	17.3	27.8	18.3		
12	34.3	20.6	35	19.7	32.6	19		
16	38.8	23	37.2	21.5	34.5	20.2		
20	45	27.1	41.8	24.4	40.5	23.4		
24	51	29	51	33.4	51.3	29.9		
28	56.9	35	66.5	34.4	62.4	36.3		Grey/white sand
30	74.9	43.9	92.8	68	84.7	53.8		
36	92.5	90.2	117.4	88.6	112.6	91.7		
40	115.3	114.8	118.8	103.9	134	113	Grey sand	
44	120.8	102.6	water	water	water	water		
48	water	water	↓	↓	↓	↓		
52								
56								
60								

EM38 Data

COYRECUP - Transect 1

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	61	52	62	52	64	52	Brown sand
4	63	51	65	52	66	54	
8	68	53	79	57	71	53	
12	76	57	89	64	77	61	
16	85	62	98	71	90	65	
20	92	67	108	71	119	82	
24	111	77	122	185	136	92	Brown sand
28	129	86	149	97	147	95	
30	162	102	203	134	180	116	
36	210	135	262	170	284	193	
40	258	173	311	186	331	206	Grey sandy silt
44	320	213	328	194	301	195	
48	362	255	369	245	338	250	
52	345	225	386	254	352	256	
56	422	310	437	292	482	360	
60	403	281	561	268	436	322	

COYRECUP - Transect 2

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	23	13	29	16	29	10	Grey sand
4	33	16	34	18	35	18	
8	39	21	40	22	43	22	
12	48	25	47	23	53	30	
16	64	35	60	33	58	32	
20	63	35	73	40	67	36	
24	80	42	84	44	95	54	Grey sand
28	101	56	99	55	111	66	
30	145	79	123	70	132	73	
36	411	275	414	270	386	268	
40	530	375	565	387	526	390	Grey sand overlying sandy clay
44	536	358	608	440	600	463	
48	585	412	573	419	646	459	
52	686	500	602	450	625	451	
56	610	447	626	459	645	451	
60	614	414	604	408	624	498	

COYRECUP - Transect 3

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	55	31	55	29	53	26	Brown sand
4	69	37	62	33	64	35	
8	83	45	80	47	83	46	
12	94	54	97	54	92	50	
16	110	60	113	61	109	63	
20	115	60	128	74	125	72	
24	133	75	135	78	132	76	
28	125	67	144	86	132	77	
30	120	60	136	80	129	73	
36	118	65	124	68	123	70	
40	130	74	120	65	116	65	
44	163	90	147	89	166	96	
48	368	223	309	213	391	260	Brown/grey sand to sandy silt
52	479	340	459	307	542	418	
56	508	361	518	386	565	448	
60	552	416	572	458	573	445	

COYRECUP - Transect 4

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	663	482	598	493	588	512	Brown sand
4	619	538	529	387	511	412	
8	575	440	488	377	425	370	
12	398	273	423	328	271	174	
16	339	249	375	250	288	186	
20	315	220	281	175	288	195	
24	327	217	260	158	261	170	
28	298	182	293	183	310	206	
30	344	255	313	215	412	289	
36	415	343	348	247	443	344	
40	540	405	502	461	564	465	
44							
48							
52							
56							
60							

COYRECUP - Transect 5

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	470	321	533	378	540	395	Dark sand
4	509	314	484	380	594	333	
8	558	452	608	437	542	386	
12	501	354	582	483	579	383	
16	460	302	487	339	530	352	
20	396	307	455	291	498	335	
24	484	307	514	399	529	348	
28	519	407	488	299	512	346	
30	486	320	528	399	552	485	
36	458	366	557	445	517	346	
40	461	345	548	436	516	436	Brown sandy clay
44							
48							
52							
56							
60							

EM38 Data

KULIKUP - Transect 1

Distance (m)	Distance Across (m)						Field Texture	
	0		10		20			
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal		
0	50	25	48	22	34	16	Grey sand	
4	82	45	64	33	48	18		
8	93	47	81	40	59	28		
12	89	47	88	45	76	35		
16	94	50	112	60	101	54		
20	104	72	131	91	110	63		
24	104	72	137	92	136	75		
28	111	92	130	92	152	106		Grey silt
30	water	water	116	91	134	96		
36	↓	↓	water	water	water	water		
40	↓	↓	↓	↓	↓	↓		
44	↓	↓	↓	↓	↓	↓		
48	↓	↓	↓	↓	↓	↓		
52	↓	↓	↓	↓	↓	↓	Grey silt/clay	
56	↓	↓	↓	↓	↓	↓		
60	↓	↓	↓	↓	↓	↓		

KULIKUP - Transect 2

Distance (m)	Distance Across (m)						Field Texture	
	0		10		20			
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal		
0	105	37	120	65	77	52	Dark organic sand with ironstone	
4	108	60	119	75	95	48		
8	116	70	122	74	112	66		
12	114	66	112	67	123	78		
16	126	74	97	60	125	72		
20	143	87	101	60	130	76		
24	134	75	116	64	129	77		
28	162	99	152	93	144	86		Grey sand/silt
30	157	99	158	101	123	80		
36	156	108	122	77	103	61		
40	water	water	water	water	96	67		
44	↓	↓	↓	↓	water	water		
48	↓	↓	↓	↓	↓	↓		
52	↓	↓	↓	↓	↓	↓	Grey silt/clay	
56	↓	↓	↓	↓	↓	↓		
60	↓	↓	↓	↓	↓	↓		

KULIKUP - Transect 3

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	53	30	70	39	74	43	Brown sandy loam
4	83	48	95	57	98	54	
8	119	67	116	68	134	73	
12	154	82	133	78	160	94	
16	215	125	101	95	144	81	
20	157	93	171	103	100	55	
24	151	88	155	91	109	64	Black sand/silt
28	148	92	142	90	129	78	
30	150	109	147	101	192	134	
36	water	water	185	141	190	138	Grey silt/clay
40	↓	↓	water	water	water	water	
44			↓	↓	↓	↓	
48							
52							
60							

KULIKUP - Transect 4

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	164	109	166	108	114	69	Black silt/clay
4	148	101	164	102	106	64	
8	127	99	129	93	100	59	
12	118	91	109	82	99	69	
16	water	water	104	87	91	68	
20	↓	↓	water	water	85	77	
24			↓	↓	water	water	Black silt/clay
28					↓	↓	
30							
36							
40							
60							

EM38 Data

NOOBIJUP - Transect 1

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	411	429	383	329	225	140	Dark Sandy/ Clay
4	430	450	367	346	312	212	
8	412	415	337	359	320	216	
12	389	354	352	305	301	244	
16	381	361	384	290	315	215	
20	366	371	313	350	261	288	
24	366	351	329	369	309	383	
28	387	343	328	334	309	379	
30	393	429	309	464	368	460	
36	343	438	339	423	331	473	
40	365	333	456	598	343	612	
44							
48							
52							
56							
60							

NOOBIJUP - Transect 2

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	100	61	112	57	122	62	Laterite Laterite/organic sand
4	109	67	115	61	119	61	
8	112	60	128	60	114	53	
12	122	60	127	64	122	58	
16	126	62	132	97	137	64	
20	139	78	151	62	125	100	
24	124	68	125	75	121	74	
28	114	74	106	77	164	67	
30	107	75	110	79	98	67	
36	107	79	113	80	100	71	
40	123	91	117	87	115	83	
44							
48							
52							
56							
60							

NOOBIJUP - Transect 3

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	76	59	73	58	70	55	Brown sand Brown sand grading to peat
4	77	61	72	57	68	54	
8	77	59	70	56	67	54	
12	77	62	70	55	68	55	
16	80	62	72	58	74	58	
20	81	63	80	60	83	64	
24	95	66	96	73	100	73	
28	109	76	144	101	122	91	
30	143	96	160	123	141	109	
36	192	145	186	137	184	152	
40	244	208	water	water	water	water	
44	water	water	↓	↓	↓	↓	
48	↓	↓	↓	↓	↓	↓	
52	↓	↓	↓	↓	↓	↓	
56	↓	↓	↓	↓	↓	↓	
60	↓	↓	↓	↓	↓	↓	

NOOBIJUP - Transect 4

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	80.4	61	74.5	61.1	52.4	51	Brown sand/laterite Brown sand grading to peat
4	78	59	72	64.8	56.1	57.9	
8	85.1	53.4	65.6	59.2	60.7	53.7	
12	87.7	54.8	85.4	66.7	49.9	65.7	
16	90.8	67.6	81.5	61.4	62.1	55.7	
20	103	75	96.2	70	87.6	67.1	
24	128	91	111	79	104	80	
28	150	118	122	89	120	88	
30	185	150	158	120	144	124	
36	182	145	190	166	158	137	
40	water	water	175	122	153	125	
44	↓	↓	water	water	water	water	
48	↓	↓	↓	↓	↓	↓	
52	↓	↓	↓	↓	↓	↓	
56	↓	↓	↓	↓	↓	↓	
60	↓	↓	↓	↓	↓	↓	

NOOBIJUP - Transect 5

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	77	15	55	45	57	47	Brown sand
4	54	45	57	47	55	46	
8	57	47	57	45	54	46	
12	58	47	58	47	56	46	
16	60	49	60	48	59	48	
20	66	53	66	52	64	51	
24	73	67	72	55	74	57	
28	79	50	80	51	85	62	
30	91	67	110	77	102	73	
36	129	93	168	151	172	157	
40	207	186	235	190	water	water	Brown sand grading to peat
44	water	water	water	water	↓	↓	
48	↓	↓	↓	↓	↓	↓	
52	↓	↓	↓	↓	↓	↓	
56	↓	↓	↓	↓	↓	↓	
60	↓	↓	↓	↓	↓	↓	

EM38 Data

TOOLIBIN - Transect 1

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	279	180	234	156	298	201	Grey sandy silt
4	258	180	243	154	281	176	
8	270	167	257	173	261	165	
12	188	132	241	169	222	133	
16	169	108	211	132	195	121	
20	169	111	151	106	155	110	
24	174	110	151	98	133	77	
28	170	115	157	98	129	84	
30	169	121	162	104	144	90	
36	206	141	156	98	237	158	
40	259	152	206	131	287	181	
44							
48							
52							
56							
60							

TOOLIBIN - Transect 2

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	617	514	605	447	625	464	Sandy loam on mounds
4	619	477	584	452	583	446	
8	624	472	578	416	545	417	
12	704	528	554	401	520	388	
16	615	505	656	511	544	384	
20	559	456	640	514	597	421	
24	595	471	552	367	476	359	
28	626	478	576	495	528	422	
30	565	412	615	488	565	432	
36	577	404	723	507	573	413	
40	584	476	663	449	572	414	
44	628	567	598	458	515	351	
48	655	568	537	410	381	248	
52	645	593	518	356	366	244	
56	610	488	612	440	383	259	
60	483	362	572	429	476	372	

TOOLIBIN - Transect 3

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	48	26	38	21	35	18	Yellow/brown sand
4	57	30	50	24	42	21	
8	70	38	62	33	54	27	
12	91	49	85	47	68	36	
16	120	68	121	68	94	50	
20	189	117	180	107	160	90	Dark sandy loam
24	291	193	282	187	231	141	
28	383	251	418	290	358	245	
30	444	309	444	320	392	294	
36	487	327	503	380	434	317	
40	552	406	525	387	462	332	Grey silt/clay
44	643	492	611	491	565	419	
48	668	530	702	576	647	479	
52	745	564	823	689	738	559	
56	742	581	807	654	733	577	
60	738	620	736	600	622	477	

TOOLIBIN - Transect 4

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	675	661	547	464	616	491	Dark loam on mounds
4	726	707	636	597	660	523	
8	643	652	609	483	674	534	
12	632	578	674	661	730	648	
16	769	744	625	593	810	688	
20	707	610	679	660	800	651	Clay in depressions
24	694	624	733	591	726	673	
28	763	621	682	615	654	569	
30	663	620	679	588	742	660	
36	701	623	755	637	701	641	
40	666	579	677	596	753	565	
44							
48							
52							
56							
60							

EM38 Data

TOWERRINNING - Transect 1

Distance (m)	Distance Across (m)						Field Texture	
	0		10		20			
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal		
0	324	273	196	131	270	193	Brown sand	
4	212	160	186	128	191	134		
8	177	126	177	122	188	124		
12	168	115	180	135	186	130		
16	155	95	147	96	172	108		
20	131	81	139	85	149	96		
24	133	82	150	91	135	81		
28	150	97	159	100	125	75		
30	218	161	231	164	118	69		Coarse brown sand
36	248	232	water	water	137	88		
40	water	water	water	water	240	197		
44								
48								
52								
56								
60								

TOWERRINNING - Transect 2

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	45	32	57	37	63	39	Brown sand
4	63	43	65	43	72	47	
8	85	72	91	69	98	70	
12	137	119	118	96	145	110	
16	182	186	192	196	238	234	
20	water	water	water	water	water	water	
24							
28							
32							
36							
40							
44							
48							
52							
56							
60							

TOWERRINNING - Transect 3

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	63	43	58	40	36	35	Brown sand
4	64	44	58	44	43	32	
8	66	46	63	43	57	45	
12	68	45	79	59	70	57	
16	72	52	110	90	81	69	
20	122	94	143	192	124	129	
24							
28							
32							
36							
40							
44							
48							
52							
56							
60							

EM38 Data

WHEATFIELD - Transect 1

Distance (m)	Distance Across (m)						Field Texture	
	0		10		20			
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal		
0	water	water	324	297	238	199	White sand	
4	water	water	239	230	180	130		
8	274	235	185	146	161	119		
12	188	148	168	136	137	90		
16	185	142	121	76	126	84		
20	236	223	158	112	141	93		
24	257	244	206	217	180	148		
28	242	225	223	198	204	194		
30	water	water	water	water	water	water		Black/grey Sand
36	↓	↓	↓	↓	↓	↓		
40								
44								
48								
52								
56								
60								

WHEATFIELD - Transect 2

Distance (m)	Distance Across (m)						Field Texture	
	0		10		20			
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal		
0	39	20	38	19	42	15	Grey Sand	
4	34	19	33	17	25	15		
8	32	17	25	14	26	14		
12	32	17	23	14	26	15		
16	46	25	37	19	40	21		
20	79	40	60	35	128	49		
24	157	107	115	74	196	148		
28	water	water	water	water	water	water		White Sand
30	↓	↓	↓	↓	↓	↓		
36								
40								
44								
48								
52								
56								
60								

WHEATFIELD - Transect 3

Distance (m)	Distance Across (m)						Field Texture
	0		10		20		
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	
0	water	water	water	water	water	water	Grey Silty Clay
4	↓	↓	↓	↓	↓	↓	
8							
12							
16							
20							
24							
28							
30							
36							
40							
44							
48							
52							
56							
60							

WHEATFIELD - Transect 4

Distance (m)	Distance Across (m)						Field Texture	
	0		10		20			
	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal		
0	486	449	455	394	342	278	White Sand with Sandstone outcrops	
4	358	274	338	254	304	217		
8	265	183	252	164	303	214		
12	260	169	248	156	287	201		
16	267	165	262	174	286	198		
20	296	218	281	173	306	257		
24	378	329	275	211	286	259		
28	water	water	water	water	313	386		White Sand with Sandstone outcrops on slope
30	↓	↓	↓	↓	water	water		
36								
40								
44								
48								
52								
56								
60								

APPENDIX 2

Transect Overstorey Data

BRYDE - Transect 1

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)	
1A	<i>Eucalyptus flocktoniae</i>	1568	6.85	1.5 - 2.5	10	
	<i>Eucalyptus flocktoniae</i>	1569	7		11	
	<i>Eucalyptus flocktoniae</i>	1570	8.45		13	
	<i>Eucalyptus flocktoniae</i>	1571	8.35		15	
	<i>Eucalyptus flocktoniae</i>	1572	7.65		9	
	<i>Melaleuca uncinata</i>	x18	multiple <2		0.5 - 2.5	Healthy
	<i>Melaleuca lateriflora lateriflora</i>	x1	<2		1.75	Healthy
	<i>Melaleuca acuminata</i>	x1			2.3	Healthy
	<i>Melaleuca lanceolata</i>	x1			1.75	Healthy
1B	<i>Eucalyptus flocktoniae</i>	1573	15.75	0.4 - 1.7	15	
	<i>Eucalyptus flocktoniae</i>	1574	9.05		8	
	<i>Eucalyptus flocktoniae</i>	1575	10.4		3	
	<i>Eucalyptus flocktoniae</i>	1576	23.65		11	
	<i>Eucalyptus flocktoniae</i>	1577	<2, <2		3	
	<i>Eucalyptus flocktoniae</i>	1578	<2		9	
	<i>Eucalyptus flocktoniae</i>	1579	12.75		17	
	<i>Eucalyptus flocktoniae</i>	1580	9.85		14	
	<i>Eucalyptus flocktoniae</i>	1581	12.3		15	
	<i>Eucalyptus flocktoniae</i>	1582	15.8		19	
	<i>Eucalyptus flocktoniae</i>	1583	12.65		15	
	<i>Eucalyptus flocktoniae</i>	1584	8.35		12	
	<i>Eucalyptus flocktoniae</i>	x3	dead			
	<i>Melaleuca uncinata</i>	x11	multiple <2		0.4 - 1.7	Healthy
	<i>Melaleuca adnata</i>	x3			2.3	Healthy
	<i>Melaleuca acuminata</i>	x3			2.5	Healthy
<i>Templetonia sulcata</i>	x11		1.7	Healthy		
1C	<i>Eucalyptus flocktoniae</i>	1585	12.5	1.5 - 1.85	15	
	<i>Eucalyptus flocktoniae</i>	1586	12		12	
	<i>Eucalyptus flocktoniae</i>	1587	7.8		8	
	<i>Eucalyptus flocktoniae</i>	1588	10.55		15	
	<i>Eucalyptus flocktoniae</i>	1589	9.9		12	
	<i>Melaleuca uncinata</i>	x1	multiple <2		1.7	Healthy
	<i>Dodonaea stenozgya</i>	x2			1.5 - 1.85	Healthy
	<i>Melaleuca adnata</i>	x13			1.5 - 2	Healthy
<i>Melaleuca lanceolata</i>	x10		1.8 - 2.75	Healthy		
1D	<i>Eucalyptus flocktoniae</i>	1590	7.05	1.5 - 1.8	9	
	<i>Eucalyptus flocktoniae</i>	1591	12.4		14	
	<i>Eucalyptus flocktoniae</i>	1592	10.3		13	
	<i>Eucalyptus flocktoniae</i>	1593	8.9		12	
	<i>Eucalyptus flocktoniae</i>	1594	9.85		12	
	<i>Eucalyptus flocktoniae</i>	1595	8.1		13	
	<i>Eucalyptus flocktoniae</i>	x2	dead			
	<i>Dodonaea stenozgya</i>	x3			1.5 - 1.8	Healthy
	<i>Melaleuca acuminata</i>	x2			1.7 - 2.2	Healthy
	<i>Melaleuca uncinata</i>	x1	multiple <2		1.2	Healthy
	<i>Melaleuca adnata</i>	x3			1.7 - 2	Stressed
<i>Melaleuca lanceolata</i>	x11		1.5 - 3	Healthy		

1E	<i>Eucalyptus flocktoniae</i>	1596	13.65		14
	<i>Eucalyptus flocktoniae</i>	1597	11		3
	<i>Eucalyptus flocktoniae</i>	x2	dead		
	<i>Dodonaea stenozyga</i>	x1		1.8	Healthy
	<i>Melaleuca acuminata</i>	x2		1.8 - 2.2	Healthy
	<i>Melaleuca adnata</i>	x1		1.8	Stressed
	<i>Melaleuca lanceolata</i>	x25		1.7 - 3.2	Healthy
2A	<i>Eucalyptus flocktoniae</i>	1598	13.9, 10.75		17
	<i>Eucalyptus flocktoniae</i>	1599	21.85		15
	<i>Eucalyptus flocktoniae</i>	1600	13.5		15
	<i>Eucalyptus flocktoniae</i>	1601	11.1		13
	<i>Melaleuca lanceolata</i>	x37		0.4 - 3	Healthy
2B	<i>Eucalyptus flocktoniae</i>	1602	12.05		17
	<i>Eucalyptus flocktoniae</i>	1603	18.4		14
	<i>Eucalyptus flocktoniae</i>	1604	14.1		10
	<i>Eucalyptus flocktoniae</i>	1605	23.5		10
	<i>Eucalyptus flocktoniae</i>	1606	20.3		12
	<i>Eucalyptus flocktoniae</i>	x2	dead		
	<i>Melaleuca lateriflora lateriflora</i>	x1	<2	1.7	Healthy
	<i>Melaleuca lanceolata</i>	x79		0.5 - 2.5	Healthy
2C	<i>Melaleuca adnata</i>	x2		1.7 - 2.2	Healthy
	<i>Melaleuca lanceolata</i>	x422		0.5 - 3.5	Healthy
	<i>Melaleuca lanceolata</i>	x21	dead		
	<i>Melaleuca thyoides</i>	x2		2.5 - 3	Healthy
2D	<i>Melaleuca thyoides</i>	x3		2.5 - 3	Healthy
	<i>Melaleuca adnata</i>	x4		1.6 - 2.2	Healthy
	<i>Melaleuca acuminata</i>	x2		1.8	Healthy
	<i>Melaleuca lanceolata</i>	x324		0.5 - 3.2	Healthy
	<i>Melaleuca lanceolata</i>	x49	dead		
2E	<i>Eucalyptus flocktoniae</i>	1607	16.15		19
	<i>Melaleuca thyoides</i>	x11		1.5 - 3.2	Healthy
	<i>Melaleuca lateriflora lateriflora</i>	x2	<2	2	Healthy
	<i>Melaleuca lanceolata</i>	x159		0.5 - 3.2	Healthy
	<i>Melaleuca lanceolata</i>	x18	dead		
3A	<i>Eucalyptus flocktoniae</i>	1608	17.6		13
	<i>Eucalyptus flocktoniae</i>	1609	14.3		13
	<i>Eucalyptus flocktoniae</i>	x16	dead		
	<i>Melaleuca lateriflora lateriflora</i>	x16	<2	0.8 - 4	Healthy
	<i>Melaleuca thyoides</i>	x20		1.5 - 3	Healthy
	<i>Melaleuca thyoides</i>	x3	dead		
	<i>Melaleuca lanceolata</i>	x38		1.5 - 3.5	Healthy
	<i>Eucalyptus occidentalis</i>	x41	<2 - seedling	1.5 - 3.8	Stressed
	<i>Melaleuca strobophylla</i>	x2	<2 - seedling	1.2	Healthy
3B	<i>Eucalyptus occidentalis</i>	1610	20.45, 10.7		15
	<i>Eucalyptus occidentalis</i>	1611	12.1		3
	<i>Eucalyptus occidentalis</i>	1612	29.7		19
	<i>Melaleuca strobophylla</i>	1613	4		15
	<i>Melaleuca strobophylla</i>	1614	4.1		11

	<i>Melaleuca strobophylla</i>	1615	4.85		15
	<i>Melaleuca strobophylla</i>	1616	3.8		17
	<i>Melaleuca strobophylla</i>	1617	2.2		17
	<i>Melaleuca strobophylla</i>	x25	<2 - seedling	1.5 - 3	Healthy
	<i>Melaleuca strobophylla</i>	x3	dead		
	<i>Melaleuca thyoidea</i>	x3		1.2 - 3	Healthy
	<i>Melaleuca lateriflora lateriflora</i>	x5	<2	2 - 2.5	Healthy
3 C	<i>Eucalyptus occidentalis</i>	1618	17.1, 38.5, 15.4		17
	<i>Eucalyptus occidentalis</i>	1619	31, 25.5		15
	<i>Eucalyptus occidentalis</i>	1620	21.5, 31, 18.2		13
	<i>Eucalyptus occidentalis</i>	1621	21, 18.3		9
	<i>Melaleuca strobophylla</i>	1622	6.7		19
	<i>Melaleuca strobophylla</i>	1623	5.6		15
	<i>Melaleuca strobophylla</i>	1624	2.5		15
	<i>Melaleuca strobophylla</i>	1625	2.5		15
	<i>Melaleuca strobophylla</i>	1626	4.6		15
	<i>Melaleuca strobophylla</i>	1627	2.7		13
	<i>Melaleuca strobophylla</i>	1629	3.5, 4.9, 3.9, 3, 4, 2.8		19
	<i>Melaleuca strobophylla</i>	1628	4.7, 4		15
	<i>Melaleuca strobophylla</i>	1630	2.2, 2.4, 6.7, 3.3, 5.5		15
	<i>Melaleuca strobophylla</i>	1631	6.8, 2.8		19
	<i>Melaleuca strobophylla</i>	1632	5		15
	<i>Melaleuca strobophylla</i>	1633	3.1		17
	<i>Melaleuca strobophylla</i>	1634	3.4		15
	<i>Melaleuca strobophylla</i>	1635	2.8		15
	<i>Melaleuca strobophylla</i>	1636	4.5		19
	<i>Melaleuca strobophylla</i>	1637	3.5		17
	<i>Melaleuca strobophylla</i>	1638	3.4		15
	<i>Melaleuca strobophylla</i>	1639	2.8		15
	<i>Melaleuca strobophylla</i>	1640	5.8, 6.2		19
	<i>Melaleuca strobophylla</i>	1641	3.6, 3.2, 2.3, <2 x 6		13
	<i>Melaleuca strobophylla</i>	1642	3		11
	<i>Melaleuca strobophylla</i>	1643	4.4		11
	<i>Melaleuca strobophylla</i>	1644	4.1		19
	<i>Melaleuca strobophylla</i>	1645	3		15
	<i>Melaleuca strobophylla</i>	1646	7.3, 3		17
	<i>Melaleuca strobophylla</i>	1647	3.7		19
	<i>Melaleuca strobophylla</i>	1648	dead		
	<i>Melaleuca strobophylla</i>	1649	5		19
	<i>Melaleuca strobophylla</i>	1650	4.2, <2, <2		15
	<i>Melaleuca strobophylla</i>	1651	3.2		15
	<i>Melaleuca strobophylla</i>	1652	3.3		15
	<i>Melaleuca strobophylla</i>	1653	2.9		11
	<i>Melaleuca strobophylla</i>	1654	dead		
	<i>Melaleuca strobophylla</i>	1655	2.9		15
	<i>Melaleuca strobophylla</i>	1656	4.9		15
	<i>Melaleuca strobophylla</i>	1657	3.3		19
	<i>Melaleuca strobophylla</i>	1658	6.5		17
	<i>Melaleuca strobophylla</i>	1659	dead		
	<i>Melaleuca strobophylla</i>	1660	5.65		17
	<i>Melaleuca strobophylla</i>	1661	<2 x 5, dead		15
	<i>Melaleuca strobophylla</i>	1662	4.3, 3		17
	<i>Melaleuca strobophylla</i>	1663	4		15
	<i>Melaleuca strobophylla</i>	1664	3.3, 2.5, <2, <2, <2		15
	<i>Melaleuca strobophylla</i>	x45	<2	3 - 4.2	Healthy

3 D	<i>Melaleuca strobophylla</i>	1665	4.2		19
	<i>Melaleuca strobophylla</i>	1666	6, 3.4, 4.4, <, 4.2		21
	<i>Melaleuca strobophylla</i>	1667	5, 4.2		15
	<i>Melaleuca strobophylla</i>	1668	6		19
	<i>Melaleuca strobophylla</i>	1669	11.1		19
	<i>Melaleuca strobophylla</i>	1670	6.4		17
	<i>Melaleuca strobophylla</i>	1671	13		19
	<i>Melaleuca strobophylla</i>	1672	3.3, 4, 2.8, 2.5, 5.45		15
	<i>Melaleuca strobophylla</i>	1673	5.7		13
	<i>Melaleuca strobophylla</i>	1674	3, 3.4, 2.7, 3.2		19
	<i>Melaleuca strobophylla</i>	1675	3.5, 3, 3.7		21
3 E	<i>Melaleuca strobophylla</i>	1676	7.9, 3.4, 6.4, 9.6, 5.5		21
	<i>Eucalyptus occidentalis</i>	1677	41, 22, 21.8, 24.5		14

BRYDE - Transect 2

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1A	<i>Eucalyptus flocktoniae</i>	1678	13.6		15
	<i>Eucalyptus flocktoniae</i>	1679	14.15		15
	<i>Eucalyptus flocktoniae</i>	1680	12		14
	<i>Eucalyptus flocktoniae</i>	1681	10.05		17
	<i>Eucalyptus flocktoniae</i>	1682	11.65		17
	<i>Eucalyptus flocktoniae</i>	1683	10.8		15
	<i>Eucalyptus flocktoniae</i>	1684	8.95		9
	<i>Eucalyptus flocktoniae</i>	1685	8.25		13
	<i>Eucalyptus flocktoniae</i>	x2	dead		
	<i>Melaleuca lanceolata</i>	x270		0.5 - 2.5	Healthy
	<i>Melaleuca lanceolata</i>	x18	dead		
1B	<i>Eucalyptus flocktoniae</i>	1686	8.45		9
	<i>Eucalyptus flocktoniae</i>	1687	13.75		16
	<i>Eucalyptus flocktoniae</i>	1688	9.4		10
	<i>Eucalyptus flocktoniae</i>	1689	12		9
	<i>Eucalyptus flocktoniae</i>	1690	7.7		3
	<i>Eucalyptus flocktoniae</i>	1691	13.35		15
	<i>Eucalyptus flocktoniae</i>	1692	12.15		15
	<i>Eucalyptus flocktoniae</i>	1693	8.65		15
	<i>Eucalyptus flocktoniae</i>	1694	8		9
	<i>Eucalyptus flocktoniae</i>	1695	8.4		9
	<i>Eucalyptus flocktoniae</i>	1696	7.25		8
	<i>Eucalyptus flocktoniae</i>	x1	dead		
	<i>Melaleuca lanceolata</i>	x233		0.4 - 2.6	Healthy
	<i>Melaleuca lanceolata</i>	x6	dead		
1C	<i>Eucalyptus flocktoniae</i>	1697	10.7		9
	<i>Eucalyptus flocktoniae</i>	1698	17.15		19
	<i>Eucalyptus flocktoniae</i>	1699	10.85		15
	<i>Eucalyptus flocktoniae</i>	1700	8.4		5
	<i>Eucalyptus flocktoniae</i>	1701	10.8		14
	<i>Eucalyptus flocktoniae</i>	1702	10.6		14
	<i>Eucalyptus flocktoniae</i>	1703	6.25		3
	<i>Eucalyptus flocktoniae</i>	x2	dead		

	<i>Melaleuca lanceolata</i>	x252		0.3 - 2.7	Healthy
	<i>Melaleuca lanceolata</i>	x11	dead		
1D	<i>Eucalyptus stocktoniae</i>	1704	9.85		12
	<i>Eucalyptus stocktoniae</i>	1705	9.95		9
	<i>Eucalyptus stocktoniae</i>	1706	8.9		3
	<i>Eucalyptus stocktoniae</i>	1707	8.55		3
	<i>Eucalyptus stocktoniae</i>	1708	14.45		19
	<i>Eucalyptus stocktoniae</i>	1709	8.25		8
	<i>Eucalyptus stocktoniae</i>	1710	8.3		9
	<i>Eucalyptus stocktoniae</i>	1711	8.85		9
	<i>Eucalyptus stocktoniae</i>	1712	10.3		12
	<i>Eucalyptus stocktoniae</i>	1713	8.35		9
	<i>Eucalyptus stocktoniae</i>	1714	9.95		8
	<i>Eucalyptus stocktoniae</i>	1715	11.05		11
	<i>Eucalyptus stocktoniae</i>	1716	6.35		3
	<i>Eucalyptus stocktoniae</i>	x1	<2 - seedling	1.7	Stressed
	<i>Eucalyptus stocktoniae</i>	x4	dead		
	<i>Melaleuca lanceolata</i>	x148		0.3 - 2.2	Healthy
	<i>Melaleuca lanceolata</i>	x3	dead		
1E	<i>Eucalyptus stocktoniae</i>	1717	11.3		3
	<i>Eucalyptus stocktoniae</i>	1718	10.85		9
	<i>Eucalyptus stocktoniae</i>	1719	19.1		17
	<i>Eucalyptus stocktoniae</i>	1720	8.05		3
	<i>Eucalyptus stocktoniae</i>	1721	10.1		9
	<i>Eucalyptus stocktoniae</i>	1722	10.5		11
	<i>Eucalyptus stocktoniae</i>	1723	10.45		9
	<i>Eucalyptus stocktoniae</i>	1724	7.5		3
	<i>Eucalyptus stocktoniae</i>	1725	10.3		9
	<i>Eucalyptus stocktoniae</i>	1726	12.4		12
	<i>Eucalyptus stocktoniae</i>	1727	10.8		9
	<i>Eucalyptus stocktoniae</i>	1728	18.6		19
	<i>Eucalyptus stocktoniae</i>	x3	dead		
	<i>Melaleuca lanceolata</i>	x256		0.4 - 2.6	Healthy
	<i>Melaleuca lanceolata</i>	x6	dead		
	<i>Templetonia sulcata</i>	x2		0.5	Healthy
2A	<i>Eucalyptus kondininensis</i>	1729	6.3		3
	<i>Eucalyptus kondininensis</i>	1730	10.4		6
	<i>Eucalyptus kondininensis</i>	1731	21.4		18
	<i>Eucalyptus stocktoniae</i>	1732	dead		
	<i>Eucalyptus stocktoniae</i>	1733	12.8		12
	<i>Eucalyptus kondininensis</i>	1734	21.2		17
	<i>Eucalyptus stocktoniae</i>	1735	14.2		15
	<i>Eucalyptus stocktoniae</i>	1736	12.1		15
	<i>Eucalyptus stocktoniae</i>	x8	dead		
	<i>Eucalyptus kondininensis</i>	x3	dead		
	<i>Templetonia sulcata</i>	x1		0.5	Healthy
	<i>Melaleuca lateriflora lateriflora</i>	x1	<2	2	Healthy
	<i>Dodonaea stenozyga</i>	x1		2.8	Very stressed
	<i>Melaleuca lanceolata</i>	x134		0.4 - 3.1	Healthy
	<i>Melaleuca lanceolata</i>	x11	dead		
2B	<i>Eucalyptus kondininensis</i>	1737	21.2		15
	<i>Eucalyptus kondininensis</i>	1738	11		7

	<i>Eucalyptus kondininensis</i>	1739	22		17
	<i>Eucalyptus kondininensis</i>	1740	13.5		8
	<i>Eucalyptus kondininensis</i>	1741	22		15
	<i>Eucalyptus flocktoniae</i>	1742	10.4		10
	<i>Eucalyptus flocktoniae</i>	1743	12.4		18
	<i>Eucalyptus flocktoniae</i>	x4	dead		
	<i>Melaleuca lateriflora lateriflora</i>	x5	<2	1.6 - 2.6	Healthy
	<i>Dodonaea stenozyga</i>	x6		2.1 - 3	Healthy
	<i>Melaleuca lanceolata</i>	x39		1 - 3.1	Healthy
	<i>Melaleuca lanceolata</i>	x6	dead		
2C	<i>Eucalyptus occidentalis</i>	660	2.6	3.6	19
	<i>Eucalyptus occidentalis</i>	1744	4		15
	<i>Eucalyptus occidentalis</i>	1745	4.8		15
	<i>Melaleuca lateriflora lateriflora</i>	1746	3.1, 3.35, 3.7, <2, <2, <2		15
	<i>Melaleuca lateriflora lateriflora</i>	1747	4.2, 2, 2.05		15
	<i>Melaleuca lateriflora lateriflora</i>	1748	3.7, 3.4, 3.9, 2.8		15
	<i>Melaleuca lanceolata</i>	1749	11.4 - basal		17
	<i>Melaleuca lateriflora lateriflora</i>	1750	10.2 - basal		17
	<i>Melaleuca lateriflora lateriflora</i>	1751	6.9 - basal		15
	<i>Dodonaea stenozyga</i>	x3		2.1 - 3	Stressed
	<i>Dodonaea stenozyga</i>	x3	dead		
	<i>Melaleuca lateriflora lateriflora</i>	x35	<2 - seedling	1.1 - 3	Healthy
	<i>Melaleuca lanceolata</i>	x3	<2 - seedling	1.1 - 3	Healthy
	<i>Eucalyptus occidentalis</i>	x17	<2 - seedling	0.1 - 3	Healthy
	<i>Melaleuca strobophylla</i>	x70	<2 - seedling	0.2 - 2.2	Healthy
2D	<i>Melaleuca lateriflora lateriflora</i>	1752	8.1, 7, 3.3, 4.3, 6.5, 4.15		12
	<i>Melaleuca lateriflora lateriflora</i>	1753	5.1, 4.55, 5.4, 4.7		12
	<i>Melaleuca lateriflora lateriflora</i>	1754	9.1, 6.2, 6.2, 3.6, 2.5		12
	<i>Melaleuca lateriflora lateriflora</i>	1755	5.5, 4.9		8
	<i>Melaleuca lateriflora lateriflora</i>	1756	5.5		9
	<i>Melaleuca lateriflora lateriflora</i>	1757	dead		
	<i>Melaleuca lateriflora lateriflora</i>	1758	3.5, 3.9		3
	<i>Melaleuca lateriflora lateriflora</i>	1759	5.5, 5.2, 7.7		9
	<i>Melaleuca lateriflora lateriflora</i>	1760	5.15, 5.8		8
	<i>Melaleuca strobophylla</i>	1761	5.7, 2.75, 5.4		12
	<i>Melaleuca lateriflora lateriflora</i>	1762	4.5, 6.3, 6.25		3
	<i>Melaleuca lateriflora lateriflora</i>	1763	4.7, 5.5, 6.9, 5.3		9
	<i>Melaleuca lateriflora lateriflora</i>	1764	4.65, 10.7		3
	<i>Melaleuca lateriflora lateriflora</i>	1765	6.3, 4.85, 6.42		9
	<i>Melaleuca lateriflora lateriflora</i>	x6	<2 - seedling	2.5 - 4	Stressed
	<i>Melaleuca lateriflora lateriflora</i>	x8	dead		
2 E	<i>Melaleuca strobophylla</i>	1766	3		15
	<i>Melaleuca strobophylla</i>	1767	3.5, 2.8		13
	<i>Melaleuca strobophylla</i>	1768	3, 2.2		13
	<i>Melaleuca halmaturorum</i>	1769	4.9		15
	<i>Melaleuca lateriflora lateriflora</i>	1770	3, 2.9, 3.3, 3.4, 4.8, <2, <2		11
	<i>Melaleuca lateriflora lateriflora</i>	1771	5.1		11
	<i>Melaleuca strobophylla</i>	1000	4.05		19
	<i>Melaleuca lateriflora lateriflora</i>	1773	4, 3.5		9
	<i>Melaleuca lateriflora lateriflora</i>	1774	4.7, 6.9		9
	<i>Melaleuca lateriflora lateriflora</i>	1775	5.1		13
	<i>Melaleuca lateriflora lateriflora</i>	1776	5.3, 5.5		7
	<i>Melaleuca lateriflora lateriflora</i>	1777	6		15

	<i>Melaleuca lateriflora lateriflora</i>	1778	8.8, 4.7		13
	<i>Melaleuca lateriflora lateriflora</i>	1779	6		11
3 A	<i>Melaleuca strobophylla</i>	1780	5.5		17
	<i>Melaleuca strobophylla</i>	1781	9.8		19
	<i>Melaleuca strobophylla</i>	1782	6		19
	<i>Melaleuca halmaturorum</i>	1783	6		9
	<i>Melaleuca halmaturorum</i>	1784	5.8, 3.3		7
	<i>Melaleuca strobophylla</i>	1785	9.5		21
	<i>Melaleuca strobophylla</i>	1786	4.5, 2.5, 3.4		21
	<i>Melaleuca strobophylla</i>	1787	3.8		19
	<i>Melaleuca strobophylla</i>	1788	3.7		19
	<i>Melaleuca strobophylla</i>	1789	3.6		19
	<i>Melaleuca strobophylla</i>	1790	3.3		19
	<i>Melaleuca lateriflora lateriflora</i>	1791	5.2, 3.8		11
	<i>Melaleuca strobophylla</i>	951	3.7		19
3 B	<i>Melaleuca strobophylla</i>	1792	5.1, 6		15
	<i>Melaleuca strobophylla</i>	1793	4.8		15
	<i>Melaleuca strobophylla</i>	1794	4.3		13
	<i>Melaleuca strobophylla</i>	1795	3.6, 3.7		13
	<i>Melaleuca strobophylla</i>	1796	3.7, 3.5		15
	<i>Melaleuca strobophylla</i>	1797	3.5, 3.3, 2.5, 2.2, 3		11
	<i>Melaleuca strobophylla</i>	1798	3.1		15
	<i>Melaleuca strobophylla</i>	952	5.2		19
	<i>Melaleuca strobophylla</i>	1800	7.2		19
	<i>Melaleuca strobophylla</i>	1801	8.4, 13.5, 3, 6, 18, 6, 3.5		19
	<i>Melaleuca strobophylla</i>	1802	12.8		19
	<i>Melaleuca halmaturorum</i>	1803	8.4, 9		19
3 C	<i>Melaleuca strobophylla</i>	1804	19.5, 6		19
	<i>Melaleuca strobophylla</i>	1805	4.4		13
	<i>Melaleuca strobophylla</i>	1806	4.7, 5.5, 3.8, 2.8		15
	<i>Melaleuca strobophylla</i>	1807	5.4		15
	<i>Eucalyptus occidentalis</i>	1808	30.7		19
	<i>Melaleuca strobophylla</i>	1809	5.6, 7.7		19
	<i>Melaleuca halmaturorum</i>	1810	4.9, 4.3, 2.6, 3, 3.8, 3, 4.7, 4.3, 5.2		17
3 D	<i>Melaleuca halmaturorum</i>	1811	8.3		13
	<i>Melaleuca halmaturorum</i>	1812	9.2, 5.7		11
	<i>Melaleuca halmaturorum</i>	1813	7.2		11
	<i>Melaleuca strobophylla</i>	1814	27.9		19
	<i>Melaleuca halmaturorum</i>	1815	10.4, 11.5		11
	<i>Melaleuca strobophylla</i>	1816	36.2		23
	<i>Melaleuca halmaturorum</i>	1817	11, 8		11
3 E	<i>Melaleuca halmaturorum</i>	1818	25.5		15
	<i>Melaleuca halmaturorum</i>	1819	8.8		13
	<i>Melaleuca halmaturorum</i>	1820	dead		
	<i>Melaleuca halmaturorum</i>	1821	11		11
	<i>Melaleuca halmaturorum</i>	1822	11, 16, 9.7		3
	<i>Melaleuca halmaturorum</i>	1823	7.9, 8.1, 16.4		9

BRYDE - Transect 3

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Eucalyptus flocktoniae</i>	1824	10.35		14
	<i>Eucalyptus kondininensis</i>	1825	42.1		14
	<i>Eucalyptus kondininensis</i>	1826	27.5		16
	<i>Eucalyptus kondininensis</i>	x2	dead		
1 B	<i>Eucalyptus kondininensis</i>	1827	29		13
	<i>Eucalyptus kondininensis</i>	x1	dead		
1 C	<i>Eucalyptus kondininensis</i>	1828	45.5		5
	<i>Eucalyptus kondininensis</i>	1829	25.15		15
	<i>Eucalyptus kondininensis</i>	1830	11		9
	<i>Eucalyptus kondininensis</i>	1831	23.3		17
1 D	<i>Eucalyptus kondininensis</i>	1832	19		12
	<i>Eucalyptus kondininensis</i>	1833	31.1		17
	<i>Eucalyptus kondininensis</i>	1834	15.8, 12.8		10
1 E	<i>Eucalyptus kondininensis</i>	x1	dead		
2 A	<i>Melaleuca lateriflora lateriflora</i>	1835	11.5, 4.8, 11.7, 6.7, 8.1, 6.8, 7.1, 4.2 7.6, 5.1, 4, 7.3, 5.4, 5.5, multiple <2		19
	<i>Eucalyptus kondininensis</i>	x1	dead		
2 B	<i>Melaleuca lateriflora lateriflora</i>	1836	6.5, 4.2, 5.2, 10.5, 7, 3.6, 2.6, 2.8, 4.2, 3.8, 4.5, 6.5, 3.4, 3.5, multiple <2		13
	<i>Eucalyptus flocktoniae</i>	1837	33.3		9
	<i>Melaleuca lateriflora lateriflora</i>	1838	6, 4.5, 5.5, 6.35, 6.45, 5, 2.95, 7.5		3
	<i>Eucalyptus kondininensis</i>	1839	39		15
	<i>Eucalyptus kondininensis</i>	1840	26.2		12
	<i>Melaleuca lateriflora lateriflora</i>	x1	<2	3	Slightly stressed
2 C	<i>Melaleuca lateriflora lateriflora</i>	1841	3.9, 4.9, 5.6		9
	<i>Melaleuca lateriflora lateriflora</i>	1842	7.3, 9.1, 5.1, 18.3, multiple <2		9
	<i>Eucalyptus kondininensis</i>	1843	29.7		15
	<i>Eucalyptus kondininensis</i>	x1	dead		
	<i>Santalum acuminatum</i>	x1		2	Stressed
2 D	<i>Eucalyptus flocktoniae</i>	1844	29.5		8
	<i>Santalum acuminatum</i>	1845	11.3 - basal		15
	<i>Alyxia buxifolia</i>	x1		2.2	
2 E	<i>Alyxia buxifolia</i>	x1		2	Slightly stressed
3 A	<i>Alyxia buxifolia</i>	x1		2	Healthy
	<i>Santalum acuminatum</i>	1846	3.05		15
	<i>Melaleuca lateriflora lateriflora</i>	1847	4.1, 7.5, 4.9, 3.2		9
3 B	<i>Eucalyptus kondininensis</i>	1848	31.5		14
	<i>Melaleuca strobophylla</i>	1849	7.2		9
	<i>Melaleuca halmaturorum</i>	1877	<2		3
	<i>Melaleuca strobophylla</i>	1850	7.4		3
	<i>Melaleuca strobophylla</i>	1851	8.7		3

	<i>Melaleuca strobophylla</i>	1852	8.4		9
	<i>Melaleuca strobophylla</i>	1853	8.4		9
	<i>Melaleuca strobophylla</i>	1854	10.95		9
	<i>Melaleuca strobophylla</i>	1855	11.8		11
	<i>Melaleuca strobophylla</i>	1856	8.2, 6.1		7
	<i>Melaleuca strobophylla</i>	1857	9.35		7
	<i>Melaleuca strobophylla</i>	1858	10.7		9
	<i>Melaleuca strobophylla</i>	1859	8.9		9
	<i>Melaleuca strobophylla</i>	1860	15.8, 19.6		13
	<i>Melaleuca strobophylla</i>	1878	12.05		12
	<i>Melaleuca strobophylla</i>	x2	dead		
3 C	<i>Melaleuca strobophylla</i>	1861	27.7		15
	<i>Eucalyptus occidentalis</i>	1862	32.4		17
	<i>Melaleuca strobophylla</i>	1863	19.4		17
	<i>Melaleuca halmaturorum</i>	1864	18.2, 4.8, 3, 6.5, 7.1, 3.5, 2.8, <2 x 5		19
	<i>Melaleuca strobophylla</i>	1865	10.8		17
	<i>Melaleuca strobophylla</i>	1866	10.8, 12.1		17
	<i>Melaleuca strobophylla</i>	1867	8.1, 11.1		11
	<i>Melaleuca halmaturorum</i>	1868	14, 5.3		11
	<i>Melaleuca strobophylla</i>	1869	17.6		19
	<i>Melaleuca strobophylla</i>	1870	4.4, 10.1		17
	<i>Melaleuca halmaturorum</i>	1871	22.9		17
	<i>Melaleuca strobophylla</i>	x3	<2 - seedlings	1.5	Healthy
3 D	<i>Melaleuca halmaturorum</i>	1872	7.1, 12.2, 15.5, 5.1		11
	<i>Eucalyptus occidentalis</i>	1873	45.3		17
	<i>Melaleuca halmaturorum</i>	1874	15.7, 10.6		11
	<i>Melaleuca strobophylla</i>	1875	8, 7, 11.5, 13		19
	<i>Melaleuca strobophylla</i>	1876	37.9		17
3 E	NO TREES				

BRYDE - Transect 4

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Eucalyptus flocktoniae</i>	1879	17.9		15
	<i>Eucalyptus flocktoniae</i>	1880	11.8		15
1 B	<i>Eucalyptus kondininensis</i>	1881	20.7		14
	<i>Eucalyptus kondininensis</i>	1882	8.7		8
	<i>Eucalyptus kondininensis</i>	1883	12.5		9
	<i>Eucalyptus kondininensis</i>	1884	11.6		3
	<i>Eucalyptus flocktoniae</i>	1885	7.1		6
	<i>Eucalyptus flocktoniae</i>	1886	8.35		8
	<i>Eucalyptus kondininensis</i>	1887	13.4		9
1 C	<i>Eucalyptus flocktoniae</i>	1888	15		15
	<i>Eucalyptus flocktoniae</i>	x1	dead		
1 D	<i>Eucalyptus flocktoniae</i>	1889	dead		
1 E	<i>Eucalyptus kondininensis</i>	1890	14.5		13
	<i>Eucalyptus kondininensis</i>	1891	13.05		13

	<i>Eucalyptus flocktoniae</i>	1892	10.8		15
	<i>Eucalyptus flocktoniae</i>	1893	16.75		17
	<i>Eucalyptus flocktoniae</i>		dead		
2 A	<i>Eucalyptus flocktoniae</i>	1894	13.2		15
	<i>Eucalyptus flocktoniae</i>	1895	9		9
	<i>Eucalyptus flocktoniae</i>	1896	7.8		7
	<i>Eucalyptus flocktoniae</i>	1897	9.85		9
	<i>Eucalyptus kondininensis</i>	1898	15.5		15
	<i>Eucalyptus kondininensis</i>	1899	14.7		15
	<i>Eucalyptus kondininensis</i>	1900	21.55		17
	<i>Eucalyptus flocktoniae</i>	1901	9.25		3
	<i>Eucalyptus flocktoniae</i>	x1	dead		
2 B	<i>Eucalyptus flocktoniae</i>	1902	13.95, 13.35		9
	<i>Eucalyptus flocktoniae</i>	1903	15.05		9
	<i>Eucalyptus flocktoniae</i>	1904	15.8		12
	<i>Eucalyptus kondininensis</i>	1905	31.5		21
	<i>Eucalyptus kondininensis</i>	1906	9.85		13
	<i>Eucalyptus kondininensis</i>	1907	22.7		16
	<i>Eucalyptus kondininensis</i>	1908	17.35		15
	<i>Eucalyptus flocktoniae</i>	1909	8		9
	<i>Eucalyptus kondininensis</i>	1910	8.8		9
	<i>Eucalyptus flocktoniae</i>	1911	11.8		3
	<i>Eucalyptus kondininensis</i>	1912	13.5		9
	<i>Eucalyptus kondininensis</i>	1913	20.9		17
	<i>Eucalyptus flocktoniae</i>	x7	dead		
	<i>Eucalyptus kondininensis</i>	x1	dead		
2 C	<i>Eucalyptus flocktoniae</i>	1914	21		6
	<i>Eucalyptus flocktoniae</i>	1915	12.2		9
	<i>Eucalyptus flocktoniae</i>	1916	10.35		9
	<i>Eucalyptus flocktoniae</i>	1917	12.9		13
	<i>Eucalyptus flocktoniae</i>	1918	6.1		3
	<i>Eucalyptus flocktoniae</i>	1919	11.55		13
	<i>Eucalyptus flocktoniae</i>	1920	9.6		9
2 D	<i>Eucalyptus flocktoniae</i>	x1	dead		
	<i>Santalum acuminatum</i>	x1		2.2	Slightly stressed
2 E	<i>Eucalyptus occidentalis</i>	1921	67.9		13
	<i>Melaleuca lateriflora lateriflora</i>	1922	37.45 - basal		15
	<i>Eucalyptus occidentalis</i>	1923	54.2		15
3 A	<i>Melaleuca lateriflora lateriflora</i>	1924	16 - basal		17
	<i>Melaleuca lateriflora lateriflora</i>	1925	9.4 - basal		19
	<i>Melaleuca lateriflora lateriflora</i>	1926	24.4 - basal		15
	<i>Melaleuca lateriflora lateriflora</i>	1927	23.5 - basal		19
	<i>Melaleuca lateriflora lateriflora</i>	1928	multiple <2		9
	<i>Melaleuca lateriflora lateriflora</i>	1929	multiple <2		9
	<i>Melaleuca strobophylla</i>	1930	15.5, 29.4, 10.5, 24.5		19
	<i>Melaleuca halmaturorum</i>	1931	9.2, 11.05		10
	<i>Eucalyptus occidentalis</i>	x5	<2 - seedlings	0.05	Healthy
3 B	<i>Melaleuca halmaturorum</i>	1932	5.4, 5.8, 3.5, 4.1, 3.5		15
	<i>Melaleuca halmaturorum</i>	1933	13.4 - basal		15

	<i>Melaleuca strobophylla</i>	1934	21.4		19
3 C	<i>Melaleuca strobophylla</i>	1935	15.2, 22.5, 16.8		21
	<i>Melaleuca halmaturorum</i>	1936	3.1, 2.9, multiple <2		15
	<i>Melaleuca halmaturorum</i>	1937	25.4		17
	<i>Melaleuca halmaturorum</i>	1938	4.3, 4.3, 5.2, 5, 5.1, 4, 8.5, 9, 4.4, 8.9, 3.5, 4.1		15
3 D	NO TREES				
3 E	<i>Melaleuca halmaturorum</i>	1939	23.5, 7.1, 11, 14, 10.3, 8.3, 8, 7.5		15
	<i>Melaleuca halmaturorum</i>	1940	10.9, 14, 7.2, 7.3		13
	<i>Melaleuca halmaturorum</i>	1941	dead		
	<i>Melaleuca halmaturorum</i>	1942	6.3, 8.6, 5.3		13
	<i>Melaleuca halmaturorum</i>	1943	14.1, 8.8, 5.3		17
	<i>Melaleuca halmaturorum</i>	1944	6.5, 7.2, 3.9, 4.6, 11.5, 15.3, 8.3, 7.9, 5.8		11

COOMALBIDGUP - Transect 1

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Banksia speciosa</i>	701	12.8, 10.4, 10.75		19
	<i>Banksia speciosa</i>	703	37., 4.3, 3.5		13
	<i>Banksia speciosa</i>	704	8.05, 11., 10.7, 5.8, 3.95, 4.3		19
	<i>Banksia speciosa</i>	705	10.1		15
	<i>Banksia speciosa</i>	706	12.9, 12.65, 10.45		21
	<i>Banksia speciosa</i>	707	6.2, 4.55		15
	<i>Banksia speciosa</i>	708	3.45, 9.2, 2.65, 6.85, 3.8, 4.5		15
	<i>Banksia speciosa</i>	709	2.8, 2.7		13
	<i>Banksia speciosa</i>	710	7.4, 4.4, 4.5		17
	<i>Banksia speciosa</i>	711	9.25		15
	<i>Banksia speciosa</i>	712	8.2, 4.1		15
	<i>Banksia speciosa</i>	713	6.2, 3.45, 3.6		15
	<i>Banksia speciosa</i>	714	4.45, 5		13
	1 B	<i>Banksia speciosa</i>	715	9.7, 4.4, 7.4	
<i>Nuytsia floribunda</i>		716	11.2		9
<i>Nuytsia floribunda</i>		717	15		9
<i>Nuytsia floribunda</i>		718	11.4, 11.1, 7.7		13
<i>Nuytsia floribunda</i>		719	15.1, 10.9, 8.9		15
<i>Nuytsia floribunda</i>		720	19.7		15
<i>Melaleuca sp.</i>		721	<2		Healthy
<i>Banksia speciosa</i>		722	10.8, 4, 3, <2, 2.5		15
<i>Banksia speciosa</i>		723	dead		
<i>Banksia speciosa</i>		724	2.7		11
<i>Banksia speciosa</i>		725	2.8		9
<i>Banksia speciosa</i>		726	7.9, 11, 11.2		17
<i>Banksia speciosa</i>		727	6, 11.7, 3.2, 5.3		15
<i>Banksia speciosa</i>		728	3.5, 4		11
<i>Banksia speciosa</i>		729	3.3, 3, 5.6		13
<i>Banksia speciosa</i>		730	8.9		15
<i>Banksia speciosa</i>		731	dead		
<i>Banksia speciosa</i>		732	14.1		15
<i>Banksia speciosa</i>		733	2.3, 3.8		13
<i>Banksia speciosa</i>		734	5.85, 7.3		11
1 C	<i>Nuytsia floribunda</i>	735	10.7		14
	<i>Banksia speciosa</i>	736	13.2		15
	<i>Banksia speciosa</i>	737	10.4, 10.95, 6.1, 10.1		19
	<i>Banksia speciosa</i>	738	13.6, 6.5, 7		15
	<i>Banksia speciosa</i>	739	11.1, 5.2, 6		15
	<i>Banksia speciosa</i>	740	15.8		19
	<i>Acacia cyclops</i>	741	5.5		15
	<i>Eucalyptus occidentalis</i>	742	14.4		19
	<i>Eucalyptus occidentalis</i>	743	7.8, 14.6		19
	<i>Banksia speciosa</i>	744	13.1, 7.4, 5.3		15
	<i>Nuytsia floribunda</i>	745	8.9		11
	<i>Nuytsia floribunda</i>	746	6.9, 7.1, 7.3		15
	<i>Banksia speciosa</i>	747	11.3		17
	<i>Banksia speciosa</i>	748	8.3		15
1 D	<i>Banksia speciosa</i>	749	6.5, 3.5, 3.5, 4.6		11
	<i>Banksia speciosa</i>	750	4.4, 9.2, 7.8, 5.4, 5.1, 6.6, 11.2		19

	<i>Banksia speciosa</i>	751	11.3, 6.5, 8.7, 4.1		19
	<i>Banksia speciosa</i>	752	2.9, 2.9, 2.5, <2 x 4		13
	<i>Banksia speciosa</i>	753	4.9, 8.3, 8.1		19
	<i>Banksia speciosa</i>	754	6.8, 7.2, 3.5, 7.8, 3.1, 8		17
	<i>Banksia speciosa</i>	755	11.7, 10.3, 3.7, 3.5, 7.1		17
	<i>Banksia speciosa</i>	756	dead		
	<i>Eucalyptus occidentalis</i>	663	3.4		19
1 E	<i>Eucalyptus occidentalis</i>	757	7.3		17
	<i>Banksia speciosa</i>	758	10, 21.9		19
	<i>Eucalyptus occidentalis</i>	759	7.9		17
	<i>Eucalyptus occidentalis</i>	760	5.9		13
	<i>Eucalyptus occidentalis</i>	761	4		15
	<i>Eucalyptus occidentalis</i>	664	2.9		15
	<i>Eucalyptus occidentalis</i>	x4	<2	1.7 - 2.9	Healthy
2 A	<i>Eucalyptus occidentalis</i>	762	4.2		15
	<i>Eucalyptus occidentalis</i>	763	3.3		11
	<i>Eucalyptus occidentalis</i>	764	5.1		15
	<i>Eucalyptus occidentalis</i>	665	2.6		15
	<i>Eucalyptus occidentalis</i>	666	2.5		10
2 B	<i>Eucalyptus occidentalis</i>	765	5.9		19
	<i>Eucalyptus occidentalis</i>	766	3.65		15
	<i>Eucalyptus occidentalis</i>	767	6		15
	<i>Eucalyptus occidentalis</i>	768	7.9		19
	<i>Eucalyptus occidentalis</i>	667	3.5		15
	<i>Eucalyptus occidentalis</i>	668	3.5		15
	<i>Eucalyptus occidentalis</i>	669	5.3		15
	<i>Eucalyptus occidentalis</i>	x4	<2	1.2 - 2.9	Slightly stressed
	<i>Melaleuca sp.</i>	x1	<2	0.4	Healthy
2 C	<i>Eucalyptus occidentalis</i>	769	dead		
	<i>Eucalyptus occidentalis</i>	770	4.4		15
	<i>Eucalyptus occidentalis</i>	771	5		15
	<i>Eucalyptus occidentalis</i>	772	14.1		19
	<i>Eucalyptus occidentalis</i>	673	3.6		13
	<i>Eucalyptus occidentalis</i>	671	2.8		15
	<i>Eucalyptus occidentalis</i>	672	2.9		15
	<i>Eucalyptus occidentalis</i>	670	2.6		15
	<i>Eucalyptus occidentalis</i>	674	3.5		11
	<i>Eucalyptus occidentalis</i>	675	2.6		11
	<i>Eucalyptus occidentalis</i>	x6	<2	2.1 - 3.1	Healthy
	<i>Banksia speciosa</i>	x3	<2	2.4	19
	<i>Melaleuca cuticularis</i>	x4	<2	1.1 - 1.7	Healthy
2 D	<i>Eucalyptus occidentalis</i>	773	4.4		15
	<i>Eucalyptus occidentalis</i>	769	4.7		17
	<i>Eucalyptus occidentalis</i>	774	5.3		15
	<i>Eucalyptus occidentalis</i>	775	9.2		19
	<i>Eucalyptus occidentalis</i>	776	11.3		19
	<i>Eucalyptus occidentalis</i>	777	3.8		13
	<i>Eucalyptus occidentalis</i>	778	6.5		11
	<i>Eucalyptus occidentalis</i>	779	7		15
	<i>Eucalyptus occidentalis</i>	780	5.45		11
	<i>Eucalyptus occidentalis</i>	781	3.7		13

	<i>Eucalyptus occidentalis</i>	782	5.4		11
	<i>Eucalyptus occidentalis</i>	783	6.5		15
	<i>Eucalyptus occidentalis</i>	784	11.5		17
	<i>Eucalyptus occidentalis</i>	785	4.7		13
	<i>Eucalyptus occidentalis</i>	786	7.2, 6		19
	<i>Eucalyptus occidentalis</i>	787	3.5, 3		13
	<i>Eucalyptus occidentalis</i>	788	4.9		15
	<i>Melaleuca cuticularis</i>	683	3.05		15
	<i>Eucalyptus occidentalis</i>	680	3		11
	<i>Eucalyptus occidentalis</i>	679	2.5		7
	<i>Eucalyptus occidentalis</i>	678	3		13
	<i>Eucalyptus occidentalis</i>	676	3.4		15
	<i>Eucalyptus occidentalis</i>	677	3.4		13
	<i>Melaleuca cuticularis</i>	682	3.7, 2.9, 2.8, <2		15
	<i>Eucalyptus occidentalis</i>	x5	<2	1 - 1.3	Healthy
	<i>Acacia cyclops</i>	x3	<2	0.4 - 2.5	Healthy
	<i>Melaleuca cuticularis</i>	x49	<2	0.5 - 3	40 Healthy, 9 slightly stressed
2 E	<i>Eucalyptus occidentalis</i>	789	8		15
	<i>Eucalyptus occidentalis</i>	790	dead		
	<i>Eucalyptus occidentalis</i>	791	4.4		15
	<i>Eucalyptus occidentalis</i>	792	3.6		4
	<i>Eucalyptus occidentalis</i>	793	6.85		15
	<i>Eucalyptus occidentalis</i>	795	3.4		11
	<i>Eucalyptus occidentalis</i>	794	8.9		19
	<i>Eucalyptus occidentalis</i>	797	4		13
	<i>Eucalyptus occidentalis</i>	796	5.7		13
	<i>Eucalyptus occidentalis</i>	799	3.7		11
	<i>Eucalyptus occidentalis</i>	798	9.2		17
	<i>Eucalyptus occidentalis</i>	800	5.8		13
	<i>Eucalyptus occidentalis</i>	681	3		6
	<i>Eucalyptus occidentalis</i>	684	2.8		11
	<i>Melaleuca cuticularis</i>	685	3.8		17
	<i>Eucalyptus occidentalis</i>	686	2.55		17
	<i>Eucalyptus occidentalis</i>	687	3		19
	<i>Eucalyptus occidentalis</i>	689	3.25		13
	<i>Eucalyptus occidentalis</i>	688	4.35		19
	<i>Eucalyptus occidentalis</i>	x24	<2	0.3 - 2.8	12 Healthy, 12 slightly stressed
	<i>Melaleuca cuticularis</i>	x77	<2	1.5 - 3.8	Healthy
	<i>Acacia cyclops</i>	x2	<2	0.3 - 1.9	Healthy
3 A	<i>Eucalyptus occidentalis</i>	802	4.7		13
	<i>Eucalyptus occidentalis</i>	803	4.8		15
	<i>Eucalyptus occidentalis</i>	801	13.7		19
	<i>Eucalyptus occidentalis</i>	698	2.4		11
	<i>Melaleuca cuticularis</i>	700	2.9, 3		19
	<i>Eucalyptus occidentalis</i>	699	4		11
	<i>Eucalyptus occidentalis</i>	697	3.4		15
	<i>Eucalyptus occidentalis</i>	695	2.7		9
	<i>Eucalyptus occidentalis</i>	694	4.5		15
	<i>Eucalyptus occidentalis</i>	696	3.8		15
	<i>Eucalyptus occidentalis</i>	x20	<2	0.6 - 2.8	Healthy
	<i>Melaleuca cuticularis</i>	x39	<2	1.4 - 3.2	Healthy

	<i>Eucalyptus occidentalis</i>	782	5.4		11
	<i>Eucalyptus occidentalis</i>	783	6.5		15
	<i>Eucalyptus occidentalis</i>	784	11.5		17
	<i>Eucalyptus occidentalis</i>	785	4.7		13
	<i>Eucalyptus occidentalis</i>	786	7.2, 6		19
	<i>Eucalyptus occidentalis</i>	787	3.5, 3		13
	<i>Eucalyptus occidentalis</i>	788	4.9		15
	<i>Melaleuca cuticularis</i>	683	3.05		15
	<i>Eucalyptus occidentalis</i>	680	3		11
	<i>Eucalyptus occidentalis</i>	679	2.5		7
	<i>Eucalyptus occidentalis</i>	678	3		13
	<i>Eucalyptus occidentalis</i>	676	3.4		15
	<i>Eucalyptus occidentalis</i>	677	3.4		13
	<i>Melaleuca cuticularis</i>	682	3.7, 2.9, 2.8, <2		15
	<i>Eucalyptus occidentalis</i>	x5	<2	1 - 1.3	Healthy
	<i>Acacia cyclops</i>	x3	<2	0.4 - 2.5	Healthy
	<i>Melaleuca cuticularis</i>	x49	<2	0.5 - 3	40 Healthy, 9 slightly stressed
2 E	<i>Eucalyptus occidentalis</i>	789	8		15
	<i>Eucalyptus occidentalis</i>	790	dead		
	<i>Eucalyptus occidentalis</i>	791	4.4		15
	<i>Eucalyptus occidentalis</i>	792	3.6		4
	<i>Eucalyptus occidentalis</i>	793	6.85		15
	<i>Eucalyptus occidentalis</i>	795	3.4		11
	<i>Eucalyptus occidentalis</i>	794	8.9		19
	<i>Eucalyptus occidentalis</i>	797	4		13
	<i>Eucalyptus occidentalis</i>	796	5.7		13
	<i>Eucalyptus occidentalis</i>	799	3.7		11
	<i>Eucalyptus occidentalis</i>	798	9.2		17
	<i>Eucalyptus occidentalis</i>	800	5.8		13
	<i>Eucalyptus occidentalis</i>	681	3		6
	<i>Eucalyptus occidentalis</i>	684	2.8		11
	<i>Melaleuca cuticularis</i>	685	3.8		17
	<i>Eucalyptus occidentalis</i>	686	2.55		17
	<i>Eucalyptus occidentalis</i>	687	3		19
	<i>Eucalyptus occidentalis</i>	689	3.25		13
	<i>Eucalyptus occidentalis</i>	688	4.35		19
	<i>Eucalyptus occidentalis</i>	x24	<2	0.3 - 2.8	12 Healthy, 12 slightly stressed
	<i>Melaleuca cuticularis</i>	x77	<2	1.5 - 3.8	Healthy
	<i>Acacia cyclops</i>	x2	<2	0.3 - 1.9	Healthy
3 A	<i>Eucalyptus occidentalis</i>	802	4.7		13
	<i>Eucalyptus occidentalis</i>	803	4.8		15
	<i>Eucalyptus occidentalis</i>	801	13.7		19
	<i>Eucalyptus occidentalis</i>	698	2.4		11
	<i>Melaleuca cuticularis</i>	700	2.9, 3		19
	<i>Eucalyptus occidentalis</i>	699	4		11
	<i>Eucalyptus occidentalis</i>	697	3.4		15
	<i>Eucalyptus occidentalis</i>	695	2.7		9
	<i>Eucalyptus occidentalis</i>	694	4.5		15
	<i>Eucalyptus occidentalis</i>	696	3.8		15
	<i>Eucalyptus occidentalis</i>	x20	<2	0.6 - 2.8	Healthy
	<i>Melaleuca cuticularis</i>	x39	<2	1.4 - 3.2	Healthy

3 B	<i>Eucalyptus occidentalis</i>	804	5		17
	<i>Eucalyptus occidentalis</i>	805	3.5		11
	<i>Eucalyptus occidentalis</i>	806	5.7		19
	<i>Eucalyptus occidentalis</i>	807	5.5		17
	<i>Eucalyptus occidentalis</i>	808	6		15
	<i>Eucalyptus occidentalis</i>	809	6		15
	<i>Eucalyptus occidentalis</i>	810	4.5		15
	<i>Eucalyptus occidentalis</i>	690	3.8		13
	<i>Eucalyptus occidentalis</i>	693	3.75		15
	<i>Eucalyptus occidentalis</i>	691	3.6		15
	<i>Melaleuca cuticularis</i>	692	3.2		11
	<i>Melaleuca cuticularis</i>	902	4.9		17
	<i>Eucalyptus occidentalis</i>	903	3.3		15
	<i>Acacia cyclops</i>	811	multiple <2		11
	<i>Eucalyptus occidentalis</i>	x31	<2	0.5 - 3	Healthy
<i>Melaleuca cuticularis</i>	x106	<2	1.8 - 3.5	Healthy	
3 C	<i>Acacia cyclops</i>	812	3.1, 3.3, 3.7, 3.8, <2 x 5		13
	<i>Eucalyptus occidentalis</i>	813	3.7		11
	<i>Eucalyptus occidentalis</i>	814	2.9		11
	<i>Eucalyptus occidentalis</i>	815	3.1		6
	<i>Eucalyptus occidentalis</i>	816	6.9		15
	<i>Eucalyptus occidentalis</i>	817	6.4		15
	<i>Eucalyptus occidentalis</i>	818	4.5		15
	<i>Eucalyptus occidentalis</i>	819	6.2		15
	<i>Eucalyptus occidentalis</i>	904	3.9		17
	<i>Eucalyptus occidentalis</i>	x8	<2	1 - 2.8	Healthy
	<i>Melaleuca cuticularis</i>	x68	<2	1.5 - 3	Healthy
3 D	<i>Eucalyptus occidentalis</i>	820	4.1		13
	<i>Eucalyptus occidentalis</i>	821	3.3		9
	<i>Acacia cyclops</i>	822	<2 x 14		7
	<i>Eucalyptus occidentalis</i>	823	5.4, 2		15
	<i>Acacia cyclops</i>	824	4.5, <2 x 5		9
	<i>Acacia cyclops</i>	825	2.3, <2 x 4		7
	<i>Acacia cyclops</i>	826	3.6, <2 x 7		7
	<i>Acacia cyclops</i>	827	2.5, 3.1, <2 x 4		9
	<i>Acacia cyclops</i>	828	2.8, <2 x 5		9
	<i>Acacia cyclops</i>	829	3.1, 3.8, <2 x 5		7
	<i>Melaleuca cuticularis</i>	x19	<2	1 - 2.8	12 Healthy, 7 slightly stressed
	<i>Eucalyptus occidentalis</i>	x7	<2	1.3 - 2.5	Healthy
	<i>Acacia cyclops</i>	x4	<2	1.5 - 2.5	4 Stressed
3 E	<i>Acacia cyclops</i>	830	3.9, <2 x 5		3
	<i>Acacia cyclops</i>	831	2.1, 2.1, <2		3
	<i>Acacia cyclops</i>	832	dead		
	<i>Eucalyptus occidentalis</i>	x3	<2	2.8	Healthy
	<i>Melaleuca cuticularis</i>	x3	<2	2	Healthy

COOMALBIDGUP - Transect 2

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Banksia speciosa</i>	833	5.95		15

	<i>Banksia speciosa</i>	834	8.2, 6.2, 7.75		17
	<i>Banksia speciosa</i>	835	2.85, 2.55, <2, <2		11
	<i>Banksia speciosa</i>	836	5.45		15
	<i>Banksia speciosa</i>	837	13.2, 6.4		19
	<i>Banksia speciosa</i>	838	15.4, 5.9		19
	<i>Banksia speciosa</i>	839	dead		
	<i>Banksia speciosa</i>	840	<2		17
	<i>Banksia speciosa</i>	841	4.8, 3.65		15
	<i>Banksia speciosa</i>	842	fallen - <2		13
	<i>Banksia speciosa</i>	843	7.85		17
	<i>Banksia speciosa</i>	844	7, 4.35		19
	<i>Banksia speciosa</i>	845	6, <2 x 6		15
	<i>Banksia speciosa</i>	846	17, 7.5, 10.7		19
	<i>Banksia speciosa</i>	847	2.8, 3.2		15
	<i>Banksia speciosa</i>	848	6.1, 3.4		19
	<i>Banksia speciosa</i>	856	5.4, 4.6		15
I B	<i>Melaleuca cuticularis</i>	849	13.5, 10.5		10
	<i>Banksia speciosa</i>	850	8.05, 5.7		19
	<i>Banksia speciosa</i>	851	7.55, 6.45, 3.05		21
	<i>Banksia speciosa</i>	852	4, <2, <2		17
	<i>Nuytsia floribunda</i>	853	25.8		19
	<i>Nuytsia floribunda</i>	854	6.2, 8		15
	<i>Banksia speciosa</i>	855	4, 4.3, 10.35		17
	<i>Banksia speciosa</i>	857	4, 5.7, 5.2, 7.45		17
	<i>Banksia speciosa</i>	858	5.7, 4.85		15
	<i>Banksia speciosa</i>	859	3.85, 2.9		11
	<i>Banksia speciosa</i>	909	4.45, <2, <2, <2		17
I C	<i>Banksia speciosa</i>	860	6.2, 5, <2, <2, <2		19
	<i>Banksia speciosa</i>	861	6, 3.1, 2.8		17
	<i>Banksia speciosa</i>	862	7.1, 6.3, 3.1		17
	<i>Banksia speciosa</i>	863	8.6, 4.4, 4.3, 7.7		11
	<i>Melaleuca cuticularis</i>	864	15.6		13
	<i>Eucalyptus occidentalis</i>	865	20.4		15
	<i>Acacia cyclops</i>	866	12.1		13
	<i>Eucalyptus occidentalis</i>	867	14.3, 9		13
I D	<i>Eucalyptus occidentalis</i>	868	4.75		19
	<i>Eucalyptus occidentalis</i>	869	6.9		19
	<i>Melaleuca cuticularis</i>	874	7.5, 11.7		13
	<i>Eucalyptus occidentalis</i>	870	12		17
	<i>Eucalyptus occidentalis</i>	871	16.7, 16.35		17
	<i>Acacia cyclops</i>	872	<2 x 6		17
	<i>Eucalyptus occidentalis</i>	x3	<2	2.5	Healthy
I E	<i>Acacia dentifera</i>	873	14.3		15
	<i>Eucalyptus occidentalis</i>	875	2.95		8
	<i>Eucalyptus occidentalis</i>	876	4.3		19
	<i>Acacia cyclops</i>	877	6.5, 6		13
	<i>Melaleuca cuticularis</i>	878	16.8		9
	<i>Eucalyptus occidentalis</i>	879	2.9		11
	<i>Banksia speciosa</i>	880	4.4, 4.8, <2		13
	<i>Eucalyptus occidentalis</i>	881	4.4		15
	<i>Eucalyptus occidentalis</i>	882	3.2		13
	<i>Eucalyptus occidentalis</i>	883	5.1		15

	<i>Acacia cyclops</i>	884	6, 3.1, 3.1, <2, <2, <2		17
	<i>Eucalyptus occidentalis</i>	885	17.7		17
	<i>Acacia cyclops</i>	886	7.4, 6.2, 3.4, 3.5		15
	<i>Melaleuca cuticularis</i>	887	2.7		11
	<i>Eucalyptus occidentalis</i>	x15	<2	0.5 - 2.2	8 Slightly stressed, 7 healthy
	<i>Melaleuca cuticularis</i>	x1	<2	0.4	Healthy
2 A	<i>Acacia cyclops</i>	888	5.5, 2.8, <2, <2		17
	<i>Eucalyptus occidentalis</i>	889	17.7, 14, 13.5		19
	<i>Melaleuca cuticularis</i>	890	6.7		13
	<i>Eucalyptus occidentalis</i>	891	3.7		11
	<i>Eucalyptus occidentalis</i>	892	14, 12.2		13
	<i>Eucalyptus occidentalis</i>	x7	<2	1.2 - 2	Healthy
	<i>Melaleuca cuticularis</i>	x31	<2	0.7 - 1.7	8 Healthy, 20 slightly stressed, 3 stressed
2 B	<i>Melaleuca cuticularis</i>	893	9.7, 7.6, 11.6		15
	<i>Melaleuca cuticularis</i>	894	4.9, 4.2		12
	<i>Melaleuca cuticularis</i>	895	6.5, 2.8, 3.5, <2		13
	<i>Eucalyptus occidentalis</i>	896	3		11
	<i>Eucalyptus occidentalis</i>	898	2.7		11
	<i>Eucalyptus occidentalis</i>	897	3.9		15
	<i>Eucalyptus occidentalis</i>	899	6		17
	<i>Eucalyptus occidentalis</i>	900	5		15
	<i>Melaleuca cuticularis</i>	901	5.1 - partly fallen		11
	<i>Melaleuca cuticularis</i>	902	4.8		13
	<i>Melaleuca cuticularis</i>	903	fallen		7
	<i>Melaleuca cuticularis</i>	904	11.1		13
	<i>Melaleuca cuticularis</i>	905	7.2, 4.2, 3.9		13
	<i>Melaleuca cuticularis</i>	x31	<2	1 - 2.1	25 Healthy, 6 stressed
	<i>Eucalyptus occidentalis</i>	x12	<2	1.5 - 2.3	Healthy
		<i>Acacia cyclops</i>	x4	<2	1.9 - 2.7
2 C	<i>Eucalyptus occidentalis</i>	907	3.4		11
	<i>Eucalyptus occidentalis</i>	908	3.3		13
	<i>Eucalyptus occidentalis</i>	909	2.8		10
	<i>Eucalyptus occidentalis</i>	910	4		17
	<i>Eucalyptus occidentalis</i>	911	3.6		15
	<i>Eucalyptus occidentalis</i>	912	4.2		15
	<i>Melaleuca cuticularis</i>	913	8, 5.1, 4.1		13
	<i>Eucalyptus occidentalis</i>	914	dead		
	<i>Melaleuca cuticularis</i>	915	8, 2.9		15
	<i>Melaleuca cuticularis</i>	916	3.1		11
	<i>Eucalyptus occidentalis</i>	917	4.1		17
	<i>Eucalyptus occidentalis</i>	918	3.4		15
	<i>Eucalyptus occidentalis</i>	919	4		15
	<i>Melaleuca cuticularis</i>	920	5.1, 2.5		13
	<i>Melaleuca cuticularis</i>	921	7.5, 5.2, 3.9, 7		13
	<i>Eucalyptus occidentalis</i>	914	3.6		17
	<i>Eucalyptus occidentalis</i>	913	3.7		15
<i>Eucalyptus occidentalis</i>	x35	<2	1 - 2.8	Healthy	
<i>Melaleuca cuticularis</i>	x5	<2	1.1 - 1.6	Healthy	
2 D	<i>Eucalyptus occidentalis</i>	922	2.85		15
	<i>Eucalyptus occidentalis</i>	923	4.6		17

	<i>Eucalyptus occidentalis</i>	912	2.7		15
	<i>Eucalyptus occidentalis</i>	911	2.8		19
	<i>Eucalyptus occidentalis</i>	910	2.5		19
	<i>Eucalyptus occidentalis</i>	908	2.2		11
	<i>Eucalyptus occidentalis</i>	x34	<2	1.2 - 2.8	Healthy
	<i>Acacia cyclops</i>	x34	<2	1.8 - 2.8	Healthy
	<i>Melaleuca cuticularis</i>	x13	<2	0.9 - 1.8	Healthy
2 E	<i>Melaleuca cuticularis</i>	924	3, 2.6		11
	<i>Melaleuca cuticularis</i>	925	12.6		15
	<i>Melaleuca cuticularis</i>	926	7.4		15
	<i>Melaleuca cuticularis</i>	927	7		15
	<i>Melaleuca cuticularis</i>	928	11.5		13
	<i>Melaleuca cuticularis</i>	929	9.5		13
	<i>Melaleuca cuticularis</i>	930	11		15
	<i>Melaleuca cuticularis</i>	931	15.7		15
	<i>Acacia cyclops</i>	932	9.5, 6, 5.5		11
	<i>Melaleuca cuticularis</i>	933	13.5		15
	<i>Melaleuca cuticularis</i>	934	9.5		15
	<i>Acacia cyclops</i>	935	6		11
	<i>Eucalyptus occidentalis</i>	905	3		21
	<i>Eucalyptus occidentalis</i>	907	2.5		15
	<i>Eucalyptus occidentalis</i>	906	2.4		7
	<i>Eucalyptus occidentalis</i>	x35	<2	1 - 2.6	Healthy
	<i>Melaleuca cuticularis</i>	x33	<2	1 - 1.8	20 Healthy, 13 slightly stressed
	<i>Acacia dentifera</i>	x2	<2	1.8	Healthy
3 A	<i>Melaleuca cuticularis</i>	936	8.7		13
	<i>Eucalyptus occidentalis</i>	937	5.5		17
	<i>Eucalyptus occidentalis</i>	938	14.8		15
	<i>Melaleuca cuticularis</i>	939	39.9		15
	<i>Eucalyptus occidentalis</i>	940	6.3		19
	<i>Eucalyptus occidentalis</i>	941	5.5		17
	<i>Eucalyptus occidentalis</i>	942	4.7		19
	<i>Eucalyptus occidentalis</i>	943	7.3		19
	<i>Eucalyptus occidentalis</i>	944	4.5		19
	<i>Eucalyptus occidentalis</i>	915	4.2		19
	<i>Eucalyptus occidentalis</i>	917	3.4		17
	<i>Eucalyptus occidentalis</i>	916	3.05		15
	<i>Eucalyptus occidentalis</i>	918	4.8		19
	<i>Eucalyptus occidentalis</i>	919	3.7		17
	<i>Eucalyptus occidentalis</i>	x10	<2	1 - 2.5	Healthy
	<i>Melaleuca cuticularis</i>	x36	<2	1 - 2.0	30 Healthy. 6 stressed
		<i>Acacia cyclops</i>	x7	<2	2 - 2.9
3 B	<i>Eucalyptus occidentalis</i>	945	6.25		15
	<i>Eucalyptus occidentalis</i>	946	4.7		15
	<i>Melaleuca cuticularis</i>	947	27.75		19
	<i>Eucalyptus occidentalis</i>	948	6.2		19
	<i>Eucalyptus occidentalis</i>	921	6.2		19
	<i>Eucalyptus occidentalis</i>	920	5.3		19
	<i>Eucalyptus occidentalis</i>	922	5.7		19
	<i>Eucalyptus occidentalis</i>	x3	<2	2.2 - 2.8	Slightly stressed
	<i>Melaleuca cuticularis</i>	x2	<2	2	Healthy
	<i>Acacia cyclops</i>	x3	<2	2.5	Stressed

3 C	<i>Eucalyptus occidentalis</i>	949	6.5		19
	<i>Melaleuca cuticularis</i>	950	13		13
	<i>Melaleuca cuticularis</i>	951	10, 5.7, 14.7		15
	<i>Eucalyptus occidentalis</i>	923	4.7		19
	<i>Eucalyptus occidentalis</i>	924	4.1		15
	<i>Eucalyptus occidentalis</i>	925	4.5		17
	<i>Eucalyptus occidentalis</i>	926	3.75		19
	<i>Eucalyptus occidentalis</i>	927	6.4		19
	<i>Eucalyptus occidentalis</i>	928	5.3		17
	<i>Eucalyptus occidentalis</i>	929	4.7		15
	<i>Eucalyptus occidentalis</i>	930	4.2		15
	<i>Melaleuca cuticularis</i>	x12	<2	1.5 - 2.8	Healthy
	<i>Eucalyptus occidentalis</i>	x11	<2	1.5 - 2.9	Healthy
<i>Acacia cyclops</i>	x2	<2	3	Slightly stressed	
3 D	<i>Melaleuca cuticularis</i>	952	7.05, 9.1, 5.4		15
	<i>Melaleuca cuticularis</i>	x14	<2	2	10 Healthy, 4 slightly stressed
	<i>Eucalyptus occidentalis</i>	x3	<2	2 - 3.5	Healthy
3 E	<i>Eucalyptus occidentalis</i>	x1	<2	3.5	Healthy

COOMALBIDGUP - Transect 3

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Eucalyptus occidentalis</i>	953	8.85		21
	<i>Eucalyptus gardeneri</i>	954	4.9		15
	<i>Eucalyptus occidentalis</i>	955	2.55		17
	<i>Eucalyptus occidentalis</i>	956	4.65		19
	<i>Eucalyptus occidentalis</i>	957	7.7		21
	<i>Eucalyptus occidentalis</i>	958	8.9		21
	<i>Eucalyptus occidentalis</i>	959	8.8		19
	<i>Eucalyptus occidentalis</i>	960	3		13
	<i>Eucalyptus occidentalis</i>	961	3.8		15
	<i>Eucalyptus occidentalis</i>	962	5.2		17
	<i>Eucalyptus occidentalis</i>	x2	<2 - seedlings	1 - 1.5	Healthy
	1 B	<i>Eucalyptus occidentalis</i>	963	2.7	
<i>Eucalyptus occidentalis</i>		964	<2		15
<i>Eucalyptus occidentalis</i>		965	4.5		15
<i>Eucalyptus occidentalis</i>		966	4.6		15
<i>Eucalyptus occidentalis</i>		968	6, 9.2		17
<i>Eucalyptus occidentalis</i>		967	4.85		13
<i>Eucalyptus occidentalis</i>		969	7.85		19
<i>Eucalyptus occidentalis</i>		970	2.5		15
<i>Eucalyptus occidentalis</i>		971	<2		15
<i>Eucalyptus occidentalis</i>		x3	<2 - seedlings	1.2 - 2.2	Healthy
1 C		<i>Eucalyptus occidentalis</i>	972	3.7	
	<i>Eucalyptus occidentalis</i>	973	2.5		15
	<i>Eucalyptus occidentalis</i>	974	4.45		17
	<i>Eucalyptus occidentalis</i>	975	5		19
	<i>Eucalyptus occidentalis</i>	976	2.6		15

	<i>Eucalyptus occidentalis</i>	977	2.85		13
	<i>Eucalyptus occidentalis</i>	978	3.1		15
	<i>Eucalyptus occidentalis</i>	979	3.45		19
	<i>Eucalyptus occidentalis</i>	980	4.2		19
	<i>Eucalyptus occidentalis</i>	981	3		15
	<i>Eucalyptus occidentalis</i>	982	5.3		19
	<i>Eucalyptus occidentalis</i>	983	2.7		11
	<i>Eucalyptus occidentalis</i>	985	5.5		17
	<i>Eucalyptus occidentalis</i>	984	3.45		15
	<i>Eucalyptus occidentalis</i>	986	5.45, 3.1		19
	<i>Eucalyptus occidentalis</i>	987	5.15		19
	<i>Eucalyptus occidentalis</i>	988	2.9		15
	<i>Eucalyptus occidentalis</i>	x25	<2 - seedlings	0.8 - 2.8	Healthy
	<i>Melaleuca cuticularis</i>	x10	<2 - seedlings	0.3 - 0.9	Healthy
	<i>Acacia glaucoptera</i>	x1	<2	2.3	21
1 D	<i>Eucalyptus occidentalis</i>	989	17.7, 3.5		21
	<i>Eucalyptus occidentalis</i>	990	5.7, 12.45		21
	<i>Eucalyptus occidentalis</i>	991	2.7		11
	<i>Eucalyptus occidentalis</i>	992	3.35		13
	<i>Eucalyptus occidentalis</i>	993	2.95		15
	<i>Eucalyptus occidentalis</i>	994	5.35		19
	<i>Eucalyptus occidentalis</i>	995	4.9		19
	<i>Eucalyptus occidentalis</i>	996	3.2		15
	<i>Eucalyptus occidentalis</i>	997	6.95		19
	<i>Eucalyptus occidentalis</i>	998	2.5		11
	<i>Eucalyptus occidentalis</i>	x40	<2 - seedlings	0.5 - 2.1	Healthy
	<i>Melaleuca cuticularis</i>	x27	<2 - seedlings	0.2 - 1.2	Healthy
1 E	<i>Eucalyptus occidentalis</i>	999	11.7		21
	<i>Eucalyptus occidentalis</i>	1000	9.6, 3		21
	<i>Eucalyptus occidentalis</i>	1001	11.2, 16.9, 15.2, 15.75, 12.5		21
	<i>Eucalyptus occidentalis</i>	1002	3.4, 2.8		8
	<i>Acacia cyclops</i>	x2	<2 - seedlings	0.6 - 0.9	Healthy
	<i>Eucalyptus occidentalis</i>	x1	<2 - seedlings	2.2	Very stressed
2 A	<i>Eucalyptus occidentalis</i>	1003	10.4, 4.15		21
	<i>Eucalyptus occidentalis</i>	1004	6.3, 8.8, 8.9, 8.3, 13.3		17
	<i>Eucalyptus occidentalis</i>	1005	8.3		15
	<i>Eucalyptus occidentalis</i>	1006	11.4, 6.1, 15.4		21
	<i>Eucalyptus occidentalis</i>	1008	8.7, 10.3, 6.4		15
	<i>Eucalyptus occidentalis</i>	1007	8.1, 4.1, 5.5, 7.9, 4.8		15
	<i>Eucalyptus occidentalis</i>	x3	<2 - seedlings	1.8	Healthy
	<i>Acacia cyclops</i>	x3	<2 - seedlings	1.5	Healthy
2 B	<i>Eucalyptus occidentalis</i>	1009	5.5		7
	<i>Eucalyptus occidentalis</i>	1010	12.4, 12.1, 9.8		21
	<i>Eucalyptus occidentalis</i>	1011	9.8, 4.3, 4.5		15
	<i>Eucalyptus occidentalis</i>	1012	7.8		15
	<i>Eucalyptus occidentalis</i>	1013	3		3
	<i>Eucalyptus occidentalis</i>	1014	4.7, 3.6		9
	<i>Eucalyptus occidentalis</i>	1015	7.2, 8.2, 8.2		19
	<i>Eucalyptus occidentalis</i>	1016	8.8, 10.4, 7.2, 7.2		17
	<i>Eucalyptus occidentalis</i>	1017	7.3, 7.9		15
	<i>Eucalyptus occidentalis</i>	1018	2.5, <2		3
	<i>Eucalyptus occidentalis</i>	1019	4.4		7

	<i>Eucalyptus occidentalis</i>	1020	9.2		17	
	<i>Eucalyptus occidentalis</i>	x3	<2 - seedlings	0.7	Healthy	
	<i>Melaleuca cuticularis</i>	x143	<2 - seedlings	0.4	Healthy	
	<i>Acacia cyclops</i>	x1	<2	1.3	Healthy	
2 C	<i>Eucalyptus occidentalis</i>	1021	18.2, 11, 10.6, 14.1, 4.8, 4.6		23	
	<i>Eucalyptus occidentalis</i>	1022	8.2		15	
	<i>Eucalyptus occidentalis</i>	1023	9.8		15	
	<i>Eucalyptus occidentalis</i>	1024	12.2, 7.3		19	
	<i>Eucalyptus occidentalis</i>	1025	3.5, 3.7		3	
	<i>Eucalyptus occidentalis</i>	1026	6.4		15	
	<i>Eucalyptus occidentalis</i>	1027	6.9, 11.4		21	
	<i>Eucalyptus occidentalis</i>	1028	9.6, 10		19	
	<i>Eucalyptus occidentalis</i>	1029	3.6		3	
	<i>Eucalyptus occidentalis</i>	1030	3.3		9	
	<i>Eucalyptus occidentalis</i>	1031	11.7, 5.9		17	
	<i>Eucalyptus occidentalis</i>	1032	4		3	
	<i>Eucalyptus occidentalis</i>	1033	13.5, 4.4, 3.6, 5		17	
	<i>Eucalyptus occidentalis</i>	1034	5.7		3	
	<i>Eucalyptus occidentalis</i>	1035	9.4, 10.4, 11.5		19	
	<i>Eucalyptus occidentalis</i>	1036	8.6		15	
		<i>Eucalyptus occidentalis</i>	x2	<2 - seedlings	0.5	Slightly stressed
		<i>Melaleuca cuticularis</i>	x98	<2 - seedlings	0.5	Healthy
	<i>Acacia cyclops</i>	x3	<2	1.4	Healthy	
2 D	<i>Eucalyptus occidentalis</i>	1037	14.9, 6.4, 13.4, 9.4		21	
	<i>Eucalyptus occidentalis</i>	1038	9.4, 5.3, 7.9		14	
	<i>Eucalyptus occidentalis</i>	1039	11.3		19	
	<i>Eucalyptus occidentalis</i>	1040	4.4		10	
	<i>Eucalyptus occidentalis</i>	1041	6, 10.1		14	
	<i>Eucalyptus occidentalis</i>	1042	8.7, 7.2		17	
	<i>Eucalyptus occidentalis</i>	1043	6.5, 6, 4.2		13	
	<i>Eucalyptus occidentalis</i>	1044	3.9, 3.5, 3.4, 4.5, 4.3		6	
	<i>Eucalyptus occidentalis</i>	1045	3.5		4	
	<i>Eucalyptus occidentalis</i>	1046	5.5		9	
	<i>Acacia cyclops</i>	x1	<2	1.1	Healthy	
2 E	<i>Eucalyptus occidentalis</i>	1047	6.5		10	
	<i>Eucalyptus occidentalis</i>	1048	7.3		15	
	<i>Eucalyptus occidentalis</i>	1049	10.5, 9.1, 10.4		17	
	<i>Eucalyptus occidentalis</i>	1050	12.7, 10.9, 10.5		19	
	<i>Eucalyptus occidentalis</i>	1051	11, 15.1		17	
	<i>Eucalyptus occidentalis</i>	1052	6.7, 5.35		8	
	<i>Eucalyptus occidentalis</i>	1053	3		5	
	<i>Eucalyptus occidentalis</i>	1054	4.8		5	
3 A	<i>Eucalyptus occidentalis</i>	1055	14.6, 12.5		21	
	<i>Eucalyptus occidentalis</i>	1056	9.3, 8.7, 4.9		17	
	<i>Eucalyptus occidentalis</i>	1057	13.7, 5.1, 6.1		16	
	<i>Eucalyptus occidentalis</i>	1058	3.7, 3.2		3	
	<i>Eucalyptus occidentalis</i>	1059	12.2, 8		16	
	<i>Eucalyptus occidentalis</i>	1060	11.5, 9.5		19	
	<i>Eucalyptus occidentalis</i>	1061	12.6		19	
	<i>Eucalyptus occidentalis</i>	1062	10, 8.9		13	
		<i>Eucalyptus occidentalis</i>	x4	<2 - seedlings	0.6 - 1.8	Slightly stressed
		<i>Melaleuca cuticularis</i>	x13	<2 - seedlings	0.5 - 1.1	Healthy

	<i>Acacia cyclops</i>	x1	<2	0.7	Healthy
3 B	<i>Eucalyptus occidentalis</i>	1063	10.4, 6.9, 9.5		15
	<i>Eucalyptus occidentalis</i>	1064	16.9, 16.4, 9.7, 16.7, 12.1		16
	<i>Eucalyptus occidentalis</i>	1065	10.6, 5.4		14
	<i>Eucalyptus occidentalis</i>	998	12.3, 11.5		19
	<i>Eucalyptus occidentalis</i>	1067	12.4, 8, 11, 11.3		18
	<i>Eucalyptus occidentalis</i>	1068	8		16
	<i>Eucalyptus occidentalis</i>	1069	7		15
	<i>Melaleuca cuticularis</i>	x100	<2 - seedlings	0.5 - 1.8	Healthy
	<i>Acacia cyclops</i>	x6	<2	1.8	Healthy
3 C	<i>Eucalyptus occidentalis</i>	932	9.7, 12		14
	<i>Eucalyptus occidentalis</i>	x1	<2 - seedlings	1.5	Healthy
	<i>Melaleuca cuticularis</i>	x118	<2 - seedlings	1.3 - 2.1	Healthy
	<i>Acacia cyclops</i>	x2	<2	1.8	Healthy
3 D	<i>Acacia cyclops</i>	x14	<2	2 - 3.0	Slightly stressed
	<i>Eucalyptus occidentalis</i>	931	4.9		15
	<i>Eucalyptus occidentalis</i>	x10	<2	1.2 - 3.5	Healthy
	<i>Melaleuca cuticularis</i>	x19	<2	1.5 - 2.3	Healthy
3 E	<i>Eucalyptus occidentalis</i>	1071	9.5, 12.2		16
	<i>Eucalyptus occidentalis</i>	934	11.4, 8.3		19
	<i>Eucalyptus occidentalis</i>	x8	<2 - seedlings	1.8 - 2.8	Healthy
	<i>Melaleuca cuticularis</i>	x11	<2 - seedlings	1.5 - 2.5	Healthy

COOMALBIDGUP - Transect 4

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Melaleuca cuticularis</i>	1073	3.45		15
1 B	<i>Melaleuca cuticularis</i>	1074	10.5, 12		15
	<i>Melaleuca cuticularis</i>	1075	<2		13
	<i>Melaleuca cuticularis</i>	1076	3.2		17
	<i>Melaleuca cuticularis</i>	1077	6.1, 4.9		15
	<i>Acacia cyclops</i>	1078	6, multiple <2		13
	<i>Eucalyptus occidentalis</i>	1079	13.15, 13.3		21
	<i>Eucalyptus occidentalis</i>	1080	18.9, 16.7, 12.6, 13.2		19
	<i>Melaleuca cuticularis</i>	1081	6.5, multiple <2		15
	<i>Melaleuca cuticularis</i>	1082	14.35, 11.95		19
	<i>Acacia cyclops</i>	x1	<2	1.75	Healthy
<i>Eucalyptus occidentalis</i>	x1	<2 - seedlings	0.6	Slightly stressed	
1 C	<i>Melaleuca cuticularis</i>	1083	5.5, 2.5, 7.6		19
	<i>Eucalyptus occidentalis</i>	x11	<2 - seedlings	0.8 - 2.4	Healthy
1 D	<i>Eucalyptus occidentalis</i>	1084	15		21
	<i>Eucalyptus occidentalis</i>	1085	17.3, 8.45, 11.65		19
	<i>Eucalyptus occidentalis</i>	1086	3.7		19
	<i>Eucalyptus occidentalis</i>	1087	12.8, 10.85		19
	<i>Eucalyptus occidentalis</i>	x8	<2 - seedlings	0.8 - 2.8	Healthy
	<i>Acacia cyclops</i>	x1	multiple <2	3	Healthy

1 E	<i>Eucalyptus occidentalis</i>	1088	14.1, 10.1, 8.9		21
	<i>Eucalyptus occidentalis</i>	1089	12.1, 6.2		17
	<i>Acacia cyclops</i>	1090	4.35, 6.9		17
	<i>Melaleuca cuticularis</i>	1091	7.55, 8, 2.35, multiple <2		19
	<i>Melaleuca cuticularis</i>	1092	5.1, 5.9, 2.55, <2, <2		19
	<i>Eucalyptus occidentalis</i>	1093	7		8
	<i>Eucalyptus occidentalis</i>	1094	12.6, 9.35, 13.45		19
	<i>Eucalyptus occidentalis</i>	1095	6.3		3
	<i>Melaleuca cuticularis</i>	1096	5.7, 4.05		17
	<i>Melaleuca cuticularis</i>	x1	<2 - seedling	1.2	Healthy
	<i>Eucalyptus occidentalis</i>	x33	<2 - seedlings	0.5 - 2.5	Healthy
<i>Acacia cyclops</i>	x3	<2 - seedlings	0.8 - 2.2	Healthy	
2 A	<i>Melaleuca cuticularis</i>	1097	3.85		19
	<i>Melaleuca cuticularis</i>	1098	5.8		21
	<i>Eucalyptus occidentalis</i>	1099	5.9		11
	<i>Eucalyptus occidentalis</i>	1100	12, 10, 11.75, 7.1		17
	<i>Eucalyptus occidentalis</i>	1101	3.8		3
	<i>Eucalyptus occidentalis</i>	1102	12.45, 9.25, 5.6		17
	<i>Melaleuca cuticularis</i>	1103	8.15, 2.75		19
	<i>Eucalyptus occidentalis</i>	1104	11, 9		19
	<i>Eucalyptus occidentalis</i>	1105	4.5		10
	<i>Melaleuca cuticularis</i>	1106	2.5, <2, <2, <2		11
	<i>Eucalyptus occidentalis</i>	1107	3.6		15
	<i>Melaleuca cuticularis</i>	1108	5.75, 4.9		19
	<i>Melaleuca cuticularis</i>	1109	3.9, 9.45, 2.8, 3.3		17
	<i>Eucalyptus occidentalis</i>	x11	<2 - seedlings	0.5 - 2.3	Healthy
	<i>Melaleuca cuticularis</i>	x2	<2 - seedlings	1.2 - 2.3	Healthy
<i>Acacia cyclops</i>	x2	<2 - seedlings	1.8	Slightly stressed	
2 B	<i>Eucalyptus occidentalis</i>	1110	11		19
	<i>Eucalyptus occidentalis</i>	1111	14.1, 12.5, 11.3		19
	<i>Melaleuca cuticularis</i>	1112	7.8, 3.3		19
	<i>Melaleuca cuticularis</i>	1113	6.8		17
	<i>Melaleuca cuticularis</i>	1114	3.4		15
	<i>Eucalyptus occidentalis</i>	1115	9.5, 6.4, 5.2		15
	<i>Melaleuca cuticularis</i>	1116	3.5		17
	<i>Melaleuca cuticularis</i>	1117	6.3, 3.4, 5		17
	<i>Eucalyptus occidentalis</i>	x7	<2 - seedlings	1.1 - 2.8	Healthy
	<i>Melaleuca cuticularis</i>	x14	<2 - seedlings	0.5 - 1.5	Healthy
<i>Acacia cyclops</i>	x14	multiple <2	2.2	Healthy	
2 C	<i>Eucalyptus occidentalis</i>	F548	15.2, 17.7, 13.1, 14.6		21
	<i>Melaleuca cuticularis</i>	1118	3.9, 2.1		21
	<i>Eucalyptus occidentalis</i>	1119	14.4, 8.5		19
	<i>Eucalyptus occidentalis</i>	1120	7.5, 6.3		19
	<i>Melaleuca cuticularis</i>	1121	4.3		21
	<i>Eucalyptus occidentalis</i>	1122	5.9		19
	<i>Eucalyptus occidentalis</i>	1123	5.9		19
	<i>Melaleuca cuticularis</i>	x375	<2 - seedlings	0.5 - 1.8	60% Healthy, 30% stressed, 20% stressed
	<i>Eucalyptus occidentalis</i>	x11	<2 - seedlings	0.3 - 1.5	Stressed
<i>Acacia cyclops</i>	x11	<2	2.8	Healthy	
2 D	<i>Eucalyptus occidentalis</i>	1124	15.2, 13.8		21
	<i>Melaleuca cuticularis</i>	1125	2.8, 4.7		19

	<i>Eucalyptus occidentalis</i>	1126	15, 11.4		21
	<i>Melaleuca cuticularis</i>	1127	3.9		19
	<i>Eucalyptus occidentalis</i>	1128	5.8, 5.05		17
	<i>Eucalyptus occidentalis</i>	1129	4.6		12
	<i>Eucalyptus occidentalis</i>	1130	4.7		10
	<i>Eucalyptus occidentalis</i>	1131	12.5, 10.5, 8.9		21
	<i>Eucalyptus occidentalis</i>	1132	10.7, 11.1		19
	<i>Melaleuca cuticularis</i>	x86	<2 - seedlings	0.4 - 1.9	80% Healthy, 20% stressed
	<i>Eucalyptus occidentalis</i>	x5	<2 - seedlings	0.5 - 2.5	Slightly stressed
	<i>Acacia cyclops</i>	x2	multiple <2	1.5	Healthy
2 E	<i>Eucalyptus occidentalis</i>	1134	12.1, 16.1, 12.4, 5.7		21
	<i>Eucalyptus occidentalis</i>	1133	11.3		19
	<i>Eucalyptus occidentalis</i>	1135	14.6		21
	<i>Melaleuca cuticularis</i>	1136	4.8		19
	<i>Melaleuca cuticularis</i>	1137	5.7		19
	<i>Melaleuca cuticularis</i>	1138	3.7, 5.1		19
	<i>Melaleuca cuticularis</i>	1139	3.9		19
	<i>Eucalyptus occidentalis</i>	1140	12.9, 6.2		19
	<i>Eucalyptus occidentalis</i>	1141	15.4, 15.9		21
	<i>Melaleuca cuticularis</i>	1142	30.4		23
	<i>Melaleuca cuticularis</i>	x1	<2 - seedling	0.3	Slightly stressed
	<i>Acacia cyclops</i>	x3	<2 - seedlings	0.5	Healthy
	<i>Eucalyptus occidentalis</i>	x2	<2 - seedlings	0.5	Slightly stressed
3 A	<i>Eucalyptus occidentalis</i>	1143	13.9, 11.8, 14.8, 13.5		17
	<i>Melaleuca cuticularis</i>	1144	6.3		17
	<i>Eucalyptus occidentalis</i>	x4	<2 - seedlings	0.5	Healthy
	<i>Melaleuca cuticularis</i>	x19	<2 - seedlings	0.5 - 1	Healthy
3 B	<i>Eucalyptus occidentalis</i>	1145	5.3		9
	<i>Melaleuca cuticularis</i>	1146	6.8, 5.2		15
	<i>Melaleuca cuticularis</i>	1147	10.1		19
	<i>Melaleuca cuticularis</i>	x1630	<2 - seedlings	0.5 - 2	Healthy
	<i>Eucalyptus occidentalis</i>	x2	<2 - seedlings	0.5 - 1.2	Healthy
3 C	<i>Melaleuca cuticularis</i>	x2867	<2 - seedlings	0.3 - 2.2	Healthy
	<i>Eucalyptus occidentalis</i>	x50	<2 - seedlings	1.5 - 2.8	Healthy
3 D	<i>Melaleuca cuticularis</i>	x91	<2 - seedlings	0.2 - 1	Healthy
	<i>Eucalyptus occidentalis</i>	x61	<2 - seedlings	0.4 - 3	Healthy
	<i>Acacia cyclops</i>	x5	multiple <2	2.5	40% Slightly stressed, 60% dead
	<i>Eucalyptus occidentalis</i>	999	3.6		19
	<i>Eucalyptus occidentalis</i>	933	4.9		21
	<i>Eucalyptus occidentalis</i>	935	4.4		19
	<i>Eucalyptus occidentalis</i>	936	6		19
	<i>Eucalyptus occidentalis</i>	937	3.8, 2.15		19
	<i>Eucalyptus occidentalis</i>	938	3.8, 5		19
	<i>Eucalyptus occidentalis</i>	939	3.7		15
	<i>Eucalyptus occidentalis</i>	940	4.6		19
	<i>Eucalyptus occidentalis</i>	941	8.1		21
	<i>Eucalyptus occidentalis</i>	942	4.6		19
	<i>Eucalyptus occidentalis</i>	943	6.1		19
	<i>Eucalyptus occidentalis</i>	944	3.2		19
	<i>Eucalyptus occidentalis</i>	945	3.9		19

	<i>Eucalyptus occidentalis</i>	946	3.8, 2.2		19
	<i>Eucalyptus occidentalis</i>	947	4.1		19
	<i>Eucalyptus occidentalis</i>	948	4.3		15
3 E	<i>Eucalyptus occidentalis</i>	x24	<2 - seedlings	0.4 - 2	Healthy
	<i>Melaleuca cuticularis</i>	x73	<2 - seedlings	0.1 - 1.3	Healthy
	<i>Acacia cyclops</i>	x32	<2 - seedlings	0.4 - 2.2	50% Dead, 50% stressed
	<i>Eucalyptus occidentalis</i>	949	3.6		15
	<i>Eucalyptus occidentalis</i>	950	3.9, <2		17

COYRECUP - Transect 1

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Banksia prionotes</i>	1945	3.35, 23.3, 10.6		15
	<i>Acacia acuminata</i>	1946	2.4		11
	<i>Banksia prionotes</i>	1947	10.7		19
	<i>Banksia prionotes</i>	1948	6.55		19
	<i>Banksia prionotes</i>	1949	3.85		11
1 B	<i>Banksia prionotes</i>	1950	10.95, 4.65, <2, 2.4		19
	<i>Banksia prionotes</i>	1951	7.5, 5.7, <2		17
	<i>Acacia acuminata</i>	1952	9.1		13
	<i>Allocasuarina huegeliana</i>	1953	dead		
	<i>Banksia prionotes</i>	1954	9.95		17
	<i>Allocasuarina huegeliana</i>	1955	13.7		3
	<i>Banksia prionotes</i>	1956	6.2, 3.1		15
1 C	<i>Allocasuarina huegeliana</i>	1957	25.2		3
	<i>Acacia acuminata</i>	1958	15.1		19
	<i>Allocasuarina huegeliana</i>	1959	15, 11.05		13
	<i>Acacia acuminata</i>	1960	3.75		11
	<i>Acacia acuminata</i>	1961	3.3		15
	<i>Acacia acuminata</i>	1962	13		17
1 D	<i>Allocasuarina huegeliana</i>	1963	18.6		8
	<i>Allocasuarina huegeliana</i>	1964	11.8		3
	<i>Allocasuarina huegeliana</i>	1965	dead		3
	<i>Allocasuarina huegeliana</i>	1966	22		11
	<i>Acacia acuminata</i>	1967	13.8		19
1 E	<i>Allocasuarina huegeliana</i>	1968	21.65		11
	<i>Allocasuarina huegeliana</i>	1969	11		8
	<i>Acacia acuminata</i>	1970	4.55		15
	<i>Acacia acuminata</i>	1971	4.95		17
	<i>Acacia acuminata</i>	1972	4.1		6
	<i>Acacia acuminata</i>	1973	11.6		19
	<i>Acacia acuminata</i>	x1	<2 - seedling	2.8	Healthy
2 A	<i>Allocasuarina huegeliana</i>	1974	dead		3
	<i>Allocasuarina huegeliana</i>	1975	6.65		3
	<i>Allocasuarina huegeliana</i>	1976	15.25		9
	<i>Allocasuarina huegeliana</i>	1977	11.1		17
	<i>Acacia acuminata</i>	1978	3.1		15
	<i>Acacia acuminata</i>	1979	3.7, <2		8
	<i>Acacia acuminata</i>	1980	7.4		13
	<i>Acacia acuminata</i>	1981	10.6		17
2 B	<i>Allocasuarina huegeliana</i>	1982	dead		
	<i>Allocasuarina huegeliana</i>	1983	dead		
	<i>Allocasuarina huegeliana</i>	1984	7.8		8
	<i>Allocasuarina huegeliana</i>	1985	dead		
	<i>Acacia acuminata</i>	1986	4.2		17
	<i>Allocasuarina huegeliana</i>	1987	dead		
	<i>Allocasuarina huegeliana</i>	1988	dead		
	<i>Acacia acuminata</i>	1989	8.7		17

	<i>Acacia acuminata</i>	1990	4.1		13
	<i>Acacia acuminata</i>	1991	11.65		13
2 C	<i>Casuarina obesa</i>	1992	2.9		15
	<i>Melaleuca strobophylla</i>	1993	3.3		19
	<i>Eucalyptus occidentalis</i>	1994	25.2		23
	<i>Eucalyptus occidentalis</i>	1995	9.2		15
	<i>Eucalyptus occidentalis</i>	1996	24.45		21
	<i>Casuarina obesa</i>	1997	8.9		8
	<i>Melaleuca strobophylla</i>	1998	3.8		13
	<i>Eucalyptus occidentalis</i>	1999	6.6		11
	<i>Eucalyptus occidentalis</i>	2000	20.6		19
	<i>Eucalyptus occidentalis</i>	2001	15.9		17
	<i>Eucalyptus occidentalis</i>	2002	dead		
	<i>Casuarina obesa</i>	2003	5.3		19
	<i>Eucalyptus occidentalis</i>	2004	4		10
	<i>Casuarina obesa</i>	2005	5.3		19
	<i>Melaleuca uncinata</i>	2006	6.7, 2.9, 2.6, <2, <2		15
	<i>Eucalyptus occidentalis</i>	2007	5.5		11
	<i>M. (johnsonii or brophyi)</i>	x8	<2	1.8 - 2.5	Slightly stressed
	<i>Melaleuca acuminata</i>	x1	<2	3	Healthy
	<i>Melaleuca lateriflora</i>	x3	<2	0.8 - 1.9	Healthy
	<i>Darwinia diosmoides</i>	x1	<2	2.2	Healthy
<i>Melaleuca strobophylla</i>	x10	<2	0.9 - 2.8	Healthy	
2 D	<i>Eucalyptus occidentalis</i>	2008	12.5		15
	<i>Eucalyptus occidentalis</i>	2023	dead		
	<i>Eucalyptus occidentalis</i>	2009	dead		
	<i>Eucalyptus occidentalis</i>	2010	8.6, 5		13
	<i>Melaleuca hamulosa</i>	2011	2.6, 2.45, 3.5		17
	<i>Melaleuca hamulosa</i>	2012	5.85, 6.5, 2.5, 2.6		19
	<i>Eucalyptus occidentalis</i>	2013	16.5		21
	<i>Melaleuca strobophylla</i>	2014	3.8		15
	<i>Melaleuca strobophylla</i>	2015	3.9		15
	<i>Melaleuca strobophylla</i>	2016	3.6		13
	<i>Casuarina obesa</i>	2017	6.8		17
	<i>Melaleuca strobophylla</i>	2018	3.7		13
	<i>Melaleuca strobophylla</i>	2019	2.7		15
	<i>Melaleuca strobophylla</i>	2020	3.15		15
	<i>Eucalyptus occidentalis</i>	2021	25, 7.7		21
	<i>Melaleuca strobophylla</i>	2022	2.2, <2		7
	<i>Melaleuca strobophylla</i>	x34	<2	1.7 - 3.2	Slightly stressed
	<i>Melaleuca lateriflora</i>	x4	<2	1.2 - 2.5	Healthy
	<i>Melaleuca acuminata</i>	x12	<2	2.1 - 3.2	Healthy
	<i>Casuarina obesa</i>	x3	<2 - seedling	0.9 - 2.4	Healthy
<i>M. (johnsonii or brophyi)</i>	x7	<2	1.5 - 2	Slightly stressed	
<i>Melaleuca hamulosa</i>	x2	<2	1.8	Healthy	
2 E	<i>Melaleuca hamulosa</i>	2024	3.1, 2.6, 2.3, 2.5, 2.2, 3.5, 4.15, 3.45, 2.4, 4.2, 4.7, <2 x 5		17
	<i>Melaleuca hamulosa</i>	2025	2.8, 2.5, <2 x 5		15
	<i>Melaleuca hamulosa</i>	2026	3, 2.9, <2 x 20		17
	<i>Melaleuca hamulosa</i>	2027	6.7, 4.8, 2.3, 4.5, 5.9, 3.85, 4.7, 3.8, 4.5, 4.4, 4.1, 4.7, 4.5, 4.4		13
	<i>Eucalyptus occidentalis</i>	2028	4.7		11
	<i>Melaleuca hamulosa</i>	2029	2.7, 3.8, 2.45		17

	<i>Melaleuca strobophylla</i>	2030	2		13
	<i>Melaleuca hamulosa</i>	2031	4.2, 2.8, 2.4, 3.8, 3.9, 2.4, 2.8, <2 x 6, 2.8, 2.9, 3.2		17
	<i>Melaleuca hamulosa</i>	2032	2.8, 2.3, 3.1, 2.5, 2.3, <2 x 3		15
	<i>Eucalyptus occidentalis</i>	2033	dead		
	<i>Melaleuca hamulosa</i>	2034	3.05, 2.8, 2.5, 4.5		15
	<i>Melaleuca hamulosa</i>	2035	3.4, <2		17
	<i>Melaleuca hamulosa</i>	2036	3.15, 2.7, 3.4, 3.7		15
	<i>Melaleuca hamulosa</i>	2037	2.9, 2.8		13
	<i>Melaleuca hamulosa</i>	2038	3.6, 2.9, 4.5, 4.3, 4.4, 2.8, 3.3		17
	<i>Melaleuca hamulosa</i>	2039	3.05, 3.8, 3, 2.3, <2, <2		15
	<i>Melaleuca strobophylla</i>	x96	<2	1.5 - 3	Stressed
	<i>Melaleuca lateriflora</i>	x2	<2	1.2	Healthy
	<i>Melaleuca hamulosa</i>	x1	<2	2	Healthy
	<i>Melaleuca uncinata</i>	x2	<2	3	Healthy
3 A	<i>Casuarina obesa</i>	2040	7.8		19
	<i>Melaleuca strobophylla</i>	2041	dead		
	<i>Casuarina obesa</i>	2042	7.2		19
	<i>Melaleuca strobophylla</i>	2043	dead		
	<i>Melaleuca strobophylla</i>	2044	2.5		15
	<i>Melaleuca strobophylla</i>	2045	2.5		3
	<i>Melaleuca strobophylla</i>	2046	2.8		13
	<i>Melaleuca strobophylla</i>	2047	dead		
	<i>Melaleuca strobophylla</i>	2048	2.3		15
	<i>Melaleuca strobophylla</i>	2049	3.7		17
	<i>Casuarina obesa</i>	2050	5.9		17
	<i>Melaleuca strobophylla</i>	2051	dead		
	<i>Melaleuca strobophylla</i>	2052	dead		
	<i>Melaleuca strobophylla</i>	2053	dead		
	<i>Melaleuca strobophylla</i>	2054	2.05		5
	<i>Melaleuca strobophylla</i>	2055	2.7		13
	<i>Melaleuca hamulosa</i>	2056	3.5, 3.7, 3.5, 3, 2.7, 3, 2.5		13
	<i>Melaleuca uncinata</i>	2057	2.9, <2 x 6		3
	<i>Melaleuca strobophylla</i>	x124	<2	2.2	Stressed
3 B	<i>Melaleuca strobophylla</i>	2058	dead		
	<i>Casuarina obesa</i>	2059	3.9		15
	<i>Casuarina obesa</i>	2060	7.1, 4.8		17
	<i>Casuarina obesa</i>	2061	6.5		19
	<i>Melaleuca strobophylla</i>	2062	2.6		11
	<i>Melaleuca strobophylla</i>	2063	dead		
	<i>Melaleuca strobophylla</i>	2064	dead		
	<i>Melaleuca strobophylla</i>	2065	dead		
	<i>Melaleuca strobophylla</i>	2066	dead		
	<i>Casuarina obesa</i>	2067	8.95, 4		19
	<i>Casuarina obesa</i>	2068	5.1		15
	<i>Melaleuca strobophylla</i>	2069	dead		
	<i>Casuarina obesa</i>	2070	5.2		17
	<i>Casuarina obesa</i>	2071	3.9		15
	<i>Casuarina obesa</i>	2072	8		17
	<i>Casuarina obesa</i>	2073	6		17
	<i>Melaleuca strobophylla</i>	2074	dead		
	<i>Casuarina obesa</i>	2075	3.9		19
	<i>Casuarina obesa</i>	2076	4.5		17
	<i>Casuarina obesa</i>	2077	5.4		17

	<i>Casuarina obesa</i>	2078	3		17
	<i>Casuarina obesa</i>	2079	6.4		17
	<i>Melaleuca strobophylla</i>	2080	2.6		3
	<i>Melaleuca strobophylla</i>	2081	2.05, <2		13
	<i>Casuarina obesa</i>	2082	2.8		17
	<i>Melaleuca strobophylla</i>	2083	2.4		9
	<i>Casuarina obesa</i>	2084	7.75		17
	<i>Casuarina obesa</i>	2085	5.4, 4.1		19
	<i>Melaleuca strobophylla</i>	2086	3.7		11
	<i>Melaleuca strobophylla</i>	2087	3.1, 2.8		11
	<i>Casuarina obesa</i>	2088	3.7		19
	<i>Casuarina obesa</i>	2089	7		19
	<i>Casuarina obesa</i>	2090	7.2		17
	<i>Melaleuca strobophylla</i>	2091	3.5		11
	<i>Casuarina obesa</i>	2092	3.4		15
	<i>Melaleuca strobophylla</i>	2093	2.3, <2		9
	<i>Casuarina obesa</i>	2094	5.7		17
	<i>Melaleuca strobophylla</i>	2095	2.5		13
	<i>Melaleuca strobophylla</i>	2096	dead		
	<i>Melaleuca strobophylla</i>	2097	2.45		13
	<i>Melaleuca strobophylla</i>	2098	2.35		15
	<i>Casuarina obesa</i>	2099	6.8		15
	<i>Casuarina obesa</i>	2100	5.4		19
	<i>Melaleuca strobophylla</i>	2101	2.8, <2		13
	<i>Melaleuca strobophylla</i>	2102	dead		
	<i>Casuarina obesa</i>	2103	3.6		15
	<i>Casuarina obesa</i>	2104	7.6		15
	<i>Melaleuca strobophylla</i>	2105	2.9		11
	<i>Casuarina obesa</i>	2106	4.35		15
	<i>Melaleuca strobophylla</i>	2107	dead		
	<i>Melaleuca strobophylla</i>	2108	3.2		13
	<i>Melaleuca strobophylla</i>	2109	dead		
	<i>Casuarina obesa</i>	2110	5.5		17
	<i>Melaleuca strobophylla</i>	2111	3		3
	<i>Melaleuca strobophylla</i>	2112	dead		
	<i>Melaleuca strobophylla</i>	2113	dead		
	<i>Melaleuca strobophylla</i>	2114	2.4		13
	<i>Melaleuca hamulosa</i>	x1	<2	3	Healthy
	<i>Melaleuca strobophylla</i>	x62	<2	2.3 - 4	Stressed
	<i>Casuarina obesa</i>	x3	<2	0.8 - 2.7	Healthy
3 C	<i>Casuarina obesa</i>	2115	10, 10		17
	<i>Casuarina obesa</i>	2116	9.6		17
	<i>Casuarina obesa</i>	2117	9.9		17
	<i>Casuarina obesa</i>	2118	8.55		17
	<i>Casuarina obesa</i>	2119	7.2		17
	<i>Casuarina obesa</i>	2120	5.2		17
	<i>Casuarina obesa</i>	2121	5.3		15
	<i>Casuarina obesa</i>	2122	3.4		15
	<i>Melaleuca strobophylla</i>	2123	dead		
	<i>Casuarina obesa</i>	2124	6.9		15
	<i>Casuarina obesa</i>	2125	7.2		17
	<i>Casuarina obesa</i>	2126	9		19
	<i>Casuarina obesa</i>	2127	8.1		19
	<i>Melaleuca strobophylla</i>	2128	2.6		9
	<i>Casuarina obesa</i>	2129	6.9		15

	<i>Melaleuca strobophylla</i>	2130	dead		
	<i>Casuarina obesa</i>	2131	6.5		19
	<i>Casuarina obesa</i>	2132	5.4		17
	<i>Casuarina obesa</i>	2133	7.2		17
	<i>Melaleuca strobophylla</i>	2134	dead		
	<i>Casuarina obesa</i>	2135	4		17
	<i>Casuarina obesa</i>	2136	6.2		17
	<i>Casuarina obesa</i>	2137	8		19
	<i>Casuarina obesa</i>	2138	4.1		15
	<i>Melaleuca strobophylla</i>	2139	3.2, 2.1		15
	<i>Casuarina obesa</i>	2140	8.35		17
	<i>Melaleuca strobophylla</i>	2141	<2		11
	<i>Casuarina obesa</i>	2142	2.4, 2		15
	<i>Casuarina obesa</i>	2143	4.4, 3.2		11
	<i>Casuarina obesa</i>	2144	5.7		15
	<i>Casuarina obesa</i>	2145	5.7		15
	<i>Casuarina obesa</i>	2146	6.25		17
	<i>Casuarina obesa</i>	2147	10.5		19
	<i>Casuarina obesa</i>	2148	6.4		17
	<i>Casuarina obesa</i>	2149	5.25		17
	<i>Melaleuca strobophylla</i>	2150	dead		
	<i>Melaleuca strobophylla</i>	2151	2.6		9
	<i>Melaleuca strobophylla</i>	2152	dead		
	<i>Casuarina obesa</i>	2153	6.95		19
	<i>Melaleuca strobophylla</i>	2154	dead		
	<i>Melaleuca strobophylla</i>	2155	dead		
	<i>Melaleuca strobophylla</i>	2156	dead		
	<i>Casuarina obesa</i>	2157	6.2		19
	<i>Casuarina obesa</i>	2158	5.3		15
	<i>Melaleuca strobophylla</i>	2159	3.5, 2.8, 5.2, 3.2		13
	<i>Melaleuca strobophylla</i>	2160	3.9, 3.9		15
	<i>Casuarina obesa</i>	2161	2.6		19
	<i>Casuarina obesa</i>	2162	7		17
	<i>Melaleuca strobophylla</i>	2163	5.5		15
	<i>Casuarina obesa</i>	2164	4.6		17
	<i>Melaleuca strobophylla</i>	2165	4.6		15
	<i>Casuarina obesa</i>	2166	7, 5.8		17
	<i>Casuarina obesa</i>	2167	9.5		17
	<i>Melaleuca strobophylla</i>	2168	4.4, 3.6		3
	<i>Melaleuca strobophylla</i>	x15	<2	2.2 - 3.4	Stressed
	<i>Casuarina obesa</i>	x1	<2	2	Healthy
3 D	<i>Casuarina obesa</i>	2169	8		19
	<i>Casuarina obesa</i>	2170	10.5		15
	<i>Melaleuca strobophylla</i>	2171	dead		
	<i>Casuarina obesa</i>	2172	6.2		11
	<i>Casuarina obesa</i>	2173	5.75		17
	<i>Melaleuca strobophylla</i>	2174	dead		
	<i>Casuarina obesa</i>	2175	5.5		15
	<i>Casuarina obesa</i>	2176	8.4		17
	<i>Casuarina obesa</i>	2177	6.8		17
	<i>Casuarina obesa</i>	2178	6.9		15
	<i>Casuarina obesa</i>	2179	8.3		17
	<i>Casuarina obesa</i>	2180	7.4, 6.3		17
	<i>Casuarina obesa</i>	2181	dead		
	<i>Casuarina obesa</i>	2182	13		11

	<i>Casuarina obesa</i>	2183	7.55, 6		13
	<i>Casuarina obesa</i>	2184	7.25, 6.8		17
	<i>Casuarina obesa</i>	2185	11.85		17
	<i>Casuarina obesa</i>	2186	11		15
	<i>Casuarina obesa</i>	2187	9.05		17
	<i>Casuarina obesa</i>	2189	10		15
3 E	<i>Casuarina obesa</i>	2188	6.6		15
	<i>Melaleuca strobophylla</i>	2190	dead		
	<i>Casuarina obesa</i>	2191	8.05		15
	<i>Melaleuca strobophylla</i>	2192	3.8, 2.4		17
	<i>Casuarina obesa</i>	2193	6.85, 4.25		19
	<i>Melaleuca strobophylla</i>	2194	3.2		13
	<i>Melaleuca strobophylla</i>	2195	2.8, <2		9
	<i>Casuarina obesa</i>	2196	3.7, 2.7		13
	<i>Casuarina obesa</i>	2197	8.05		15
	<i>Casuarina obesa</i>	2198	8.5		17
	<i>Casuarina obesa</i>	2199	7.9		17
	<i>Melaleuca strobophylla</i>	2200	3.6, 2.5, 2.7, <2, <2		12
	<i>Casuarina obesa</i>	2201	4.7		17
	<i>Casuarina obesa</i>	2202	13.2		19
	<i>Casuarina obesa</i>	2203	10		13
	<i>Casuarina obesa</i>	2204	6.9, 4.5		17
	<i>Casuarina obesa</i>	2205	4.5		15
	<i>Casuarina obesa</i>	2206	14		19
	<i>Casuarina obesa</i>	2207	11.9		13
	<i>Casuarina obesa</i>	2208	9.5		15
	<i>Casuarina obesa</i>	2209	7.1		15
	<i>Casuarina obesa</i>	2210	9.8		13
	<i>Casuarina obesa</i>	2211	14		17
	<i>Casuarina obesa</i>	2212	14.15		17
<i>Casuarina obesa</i>	2213	5.85		17	
<i>Casuarina obesa</i>	2214	11.7, 4		19	

COYRECUP - Transect 2

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Eucalyptus loxophleba</i>	2216	26.2, 26.9, 11.05, 9.3, 9.55		14
	<i>Allocasuarina huegeliana</i>	2215	14.95		3
	<i>Acacia acuminata</i>	2217	<2 x 3		17
	<i>Allocasuarina huegeliana</i>	2218	32.2		9
	<i>Allocasuarina huegeliana</i>	2219	11		15
	<i>Allocasuarina huegeliana</i>	2220	15.15		9
	<i>Acacia acuminata</i>	2221	4.75		15
	<i>Acacia acuminata</i>	2222	dead		
1 B	<i>Acacia acuminata</i>	2223	8.4		15
	<i>Acacia acuminata</i>	2224	7		19
	<i>Acacia acuminata</i>	2225	3.5		17
	<i>Acacia acuminata</i>	2226	3.3		13
	<i>Acacia acuminata</i>	2227	10.05, 9.1		17
1 C	<i>Acacia acuminata</i>	2228	12.8		19
	<i>Acacia acuminata</i>	2229	14.2		15

	<i>Acacia acuminata</i>	2230	13.1		21
	<i>Acacia acuminata</i>	2231	6.2		19
1 D	<i>Acacia acuminata</i>	2232	12.9		17
1 E	<i>Acacia acuminata</i>	2233	3.8, 2.6, 6, 2.4		17
	<i>Acacia acuminata</i>	2234	9.7		17
2 A	<i>Eucalyptus loxophleba</i>	2235	29.8, 22.6, 27.8		15
	<i>Acacia acuminata</i>	2236	6.6		13
	<i>Acacia acuminata</i>	2237	7		11
	<i>Acacia acuminata</i>	2238	15.35		3
	<i>Acacia acuminata</i>	2239	7.1, 10.85, 7		15
	<i>Acacia acuminata</i>	2240	10.8, 10.05		15
	<i>Eucalyptus loxophleba</i>	2241	18.4, 9.8		21
	<i>Acacia acuminata</i>	2242	14.3, 15.75		17
2 B	<i>Acacia acuminata</i>	2243	11		17
	<i>Acacia acuminata</i>	2285	10.25		19
	<i>Acacia acuminata</i>	2286	3.25		17
2 C	<i>Acacia acuminata</i>	2244	3.6, 4.6, 5.15		3
	<i>Acacia acuminata</i>	2287	17.6		19
2 D	NO TREES				
2 E	<i>Melaleuca halmaturorum</i>	2245	5.1, 3		17
	<i>Melaleuca halmaturorum</i>	2246	3.7, <2 x 5		17
	<i>Melaleuca halmaturorum</i>	2247	dead		
	<i>Melaleuca halmaturorum</i>	2248	4.85		15
	<i>Casuarina obesa</i>	2249	33, 32.45		13
	<i>Melaleuca halmaturorum</i>	2250	dead		
	<i>Melaleuca halmaturorum</i>	2251	10, 6.8		11
	<i>Melaleuca halmaturorum</i>	2252	4.4, 4.7, 5.6, 6.3, 5.25, 6.5, 5.1, 5		13
3 A	<i>Melaleuca halmaturorum</i>	2253	dead		
	<i>Melaleuca halmaturorum</i>	2254	3.35, 4.8, 5.45		15
	<i>Melaleuca halmaturorum</i>	2255	dead		3
	<i>Melaleuca halmaturorum</i>	2256	dead		9
	<i>Melaleuca halmaturorum</i>	2257	8.2		8
	<i>Melaleuca halmaturorum</i>	2258	3.3, 3.85, 3.2, 3		5
	<i>Casuarina obesa</i>	2259	26.95, 18.3		19
3 B	<i>Casuarina obesa</i>	2260	22.05, 15.4		11
	<i>Casuarina obesa</i>	2261	7.3		3
	<i>Melaleuca halmaturorum</i>	2262	6.7, 4.15, 4, <2, 2.2		11
	<i>Melaleuca halmaturorum</i>	2263	2.4		3
	<i>Melaleuca halmaturorum</i>	2264	5.5		3
	<i>Casuarina obesa</i>	2265	9.7		3
	<i>Melaleuca halmaturorum</i>	2266	5, 3.4, 2.7, 2.6, 2.5, 2.5, <2 x 11		15
	<i>Melaleuca halmaturorum</i>	2267	10, 3.9, 7.4, 3.75, 2.9, <2		17
3 C	<i>Melaleuca halmaturorum</i>	2268	dead		
3 D	<i>Melaleuca halmaturorum</i>	2269	9.8, 7.1, 4.35, 6.35, 4.7, 3.8		19
	<i>Melaleuca halmaturorum</i>	2270	4.55, 3.3, 5, 4.2, 3.7, 3.6, 3.4, 5.6,		21

	<i>Melaleuca halmaturorum</i>	2271	6.4, 4.7 5.9		19
	<i>Melaleuca halmaturorum</i>	2272	4.95, 4.3		11
	<i>Melaleuca halmaturorum</i>	2273	3.8, 3.8, 6.7, 5.8, <2, <2		13
	<i>Melaleuca halmaturorum</i>	2274	8.8, 7.7, 7, 5.8		17
	<i>Melaleuca halmaturorum</i>	2275	10.4, 4.6, 3.65, 2.4, 2, <2 x 4		19
	<i>Melaleuca halmaturorum</i>	2276	5.4, <2		19
	<i>Melaleuca halmaturorum</i>	2277	4.3, 6.9, 4.5		21
	<i>Melaleuca halmaturorum</i>	2278	5.8, 5, 10.5, 4.7, 2.55		15
3 E	<i>Melaleuca halmaturorum</i>	2279	11.5, 5.45		8
	<i>Melaleuca halmaturorum</i>	2280	3, 6, 4.5		3
	<i>Melaleuca halmaturorum</i>	2281	5.6		7
	<i>Melaleuca halmaturorum</i>	2282	dead		
	<i>Melaleuca halmaturorum</i>	2283	dead		
	<i>Melaleuca halmaturorum</i>	2284	5.4, 4.5, 2.6, 4		7

COYRECUP - Transect 3

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Acacia acuminata</i>	2292	<2, <2, <2, <2		21
	<i>Acacia acuminata</i>	2291	<2, <2		17
	<i>Acacia acuminata</i>	2290	3.9		15
	<i>Acacia acuminata</i>	2289	<2, <2, <2, <2, <2		3
	<i>Acacia acuminata</i>	2288	3.3, <2		9
	<i>Acacia acuminata</i>	2332	6		17
	<i>Acacia acuminata</i>	x3	<2 - seedlings	0.3 - 0.6	Healthy
1 B	<i>Acacia acuminata</i>	2293	2		17
	<i>Acacia acuminata</i>	x3	<2 - seedlings	0.5 - 1.5	Healthy
1 C	<i>Eucalyptus loxophleba</i>	2294	42.6		19
	<i>Acacia acuminata</i>	2333	14		15
	<i>Acacia acuminata</i>	x8	<2 - seedlings	0.9 - 1.5	Healthy
1 D	<i>Casuarina obesa</i>	2295	26.05		19
	<i>Eucalyptus loxophleba</i>	2296	31.15, 41.5, 32.7		16
1 E	<i>Acacia acuminata</i>	2334	5.95		19
2 A	<i>Acacia acuminata</i>	2297	25.9, 9.2, 7.5, 4.9		17
	<i>Acacia acuminata</i>	2298	13.85		17
	<i>Acacia acuminata</i>	2299	5.25		7
	<i>Acacia acuminata</i>	2300	10.6, 8.4		17
	<i>Acacia acuminata</i>	x4	<2 - seedlings	0.9 - 1.8	Healthy
2 B	<i>Acacia acuminata</i>	2301	12.9		17
	<i>Acacia acuminata</i>	2302	2.5, <2, <2, <2		15
	<i>Acacia acuminata</i>	2303	5.55		17
2 C	<i>Eucalyptus loxophleba</i>	2304	22.55, 17.2		19
	<i>Eucalyptus loxophleba</i>	2305	32.5		17
	<i>Acacia acuminata</i>	2306	2.55		11
	<i>Casuarina obesa</i>	2307	25.85, 28.7		19

	<i>Casuarina obesa</i>	2308	36.5		21
2 D	<i>Acacia acuminata</i>	2309	6, 10.7		15
	<i>Acacia acuminata</i>	2310	2.8		9
	<i>Acacia acuminata</i>	x1	<2 - seedlings	0.9	Healthy
2 E	<i>Acacia acuminata</i>	2311	6.4, 2.4, 4.4, 3.95, <2		21
	<i>Melaleuca uncinata</i>	2312	2.5, 2.2, 2.45, multiple <2		21
	<i>Melaleuca uncinata</i>	2313	Multiple <2		19
	<i>Acacia acuminata</i>	x6	<2 - seedlings	0.5 - 1.5	Healthy
3 A	<i>Melaleuca uncinata</i>	2314	17.5 - Basal		21
	<i>Melaleuca uncinata</i>	2315	13.5 - Basal		21
	<i>Melaleuca uncinata</i>	2316	7.1 - Basal		21
	<i>Melaleuca uncinata</i>	2317	7.5 - Basal		21
	<i>Casuarina obesa</i>	2318	30.9		17
	<i>Melaleuca uncinata</i>	2319	14.6 - Basal		21
	<i>Melaleuca uncinata</i>	2320	7.8 - Basal		21
	<i>Melaleuca uncinata</i>	2321	5.5 - Basal		21
	<i>Melaleuca uncinata</i>	2322	7.5 - Basal		21
	<i>Melaleuca uncinata</i>	2323	13.2 - Basal		21
	<i>Melaleuca uncinata</i>	2324	10.4 - Basal		21
	<i>Melaleuca uncinata</i>	2325	5 - Basal		15
	<i>Melaleuca uncinata</i>	2326	9.8 - Basal		19
	<i>Melaleuca uncinata</i>	2327	15.5 - Basal		21
3 B	<i>Melaleuca uncinata</i>	2335	11 - Basal		19
3 C	<i>Casuarina obesa</i>	2328	21.5		17
	<i>Casuarina obesa</i>	2329	22.15		15
	<i>Melaleuca halmaturorum</i>	2330	6.3, 7.85, 7.95, 3.9, 3.9		17
3 D	<i>Casuarina obesa</i>	2331	17.25		15
3 E	NO TREES				

COYRECUP - Transect 4

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Melaleuca adenostyla</i>	2336	3, 3.6, 3.35, 2.9		17
	<i>Melaleuca adenostyla</i>	2337	Multiple <2		19
	<i>Santalum acuminatum</i>	2338	9.8		15
	<i>Melaleuca adenostyla</i>	2339	3.15		19
	<i>Melaleuca lateriflora</i>	2340	15.5 - Basal		15
	<i>Melaleuca lateriflora</i>	2342	21 - Basal		19
	<i>Melaleuca acuminata</i>	2343	<2		19
	<i>Melaleuca lateriflora</i>	2341	17.5 - Basal		15
	<i>Melaleuca lateriflora</i>	2344	23 - Basal		17
1 B	<i>Melaleuca acuminata</i>	2345	<2		3
	<i>Melaleuca acuminata</i>	2346	3.15, 3.8, <2, <2, <2, <2		13
	<i>Melaleuca acuminata</i>	2347	2.9		19
	<i>Melaleuca acuminata</i>	2348	dead		9
	<i>Melaleuca acuminata</i>	2349	4.1		19

	<i>Melaleuca acuminata</i>	2350	2.55		15
	<i>Melaleuca acuminata</i>	2351	<2, <2		9
	<i>Melaleuca acuminata</i>	2352	4.4, 2.85		17
	<i>Melaleuca acuminata</i>	2353	<2		15
	<i>Melaleuca acuminata</i>	2354	<2		15
	<i>Melaleuca acuminata</i>	2355	2.6		17
	<i>Melaleuca adenostyla</i>	2356	Multiple <2		19
	<i>Melaleuca acuminata</i>	2357	<2		9
	<i>Melaleuca acuminata</i>	2358	2.8		15
	<i>Melaleuca acuminata</i>	2359	2.6, <2, <2		19
	<i>Melaleuca acuminata</i>	2360	2.2, 2.2, 2.1, <2 x 6		17
	<i>Melaleuca acuminata</i>	2361	<2 x 10		9
	<i>Melaleuca acuminata</i>	2363	18.2		8
	<i>Melaleuca lateriflora</i>	2362	31.1 - Basal		19
1 C	<i>Melaleuca acuminata</i>	2364	3.9, 2.9, 2.7, 2.4, 2.9, 2.5, 2.75		19
	<i>Melaleuca acuminata</i>	2365	7, 2.3		19
	<i>Melaleuca acuminata</i>	2366	3.7, <2, <2		13
	<i>Melaleuca acuminata</i>	2367	4.5, 2.2, 4.5, <2 x 8		15
	<i>Melaleuca acuminata</i>	2368	3.4		15
	<i>Melaleuca acuminata</i>	2369	3.6		19
	<i>Melaleuca acuminata</i>	2370	3.8, multiple <2		19
	<i>Eucalyptus loxophleba</i>	2371	7.8, 8.5		13
1 D	<i>Melaleuca acuminata</i>	2372	Multiple <2		17
	<i>Melaleuca acuminata</i>	2373	Multiple <2		15
1 E	<i>Eucalyptus loxophleba</i>	2374	11.8, 10		8
	<i>Eucalyptus loxophleba</i>	2375	14.3, 15.5, 21.15		8
	<i>Eucalyptus spathulata</i>	2376	7.55, 8.8		14
2 A	<i>Eucalyptus loxophleba</i>	2377	24.3		13
	<i>Melaleuca acuminata</i>	2378	3.1, multiple <2		19
	<i>Melaleuca acuminata</i>	2379	2.8, 3.45, 2.8, 4.2, 2.9, 4.15		15
2 B	<i>Eucalyptus loxophleba</i>	2380	18.9, 16.2, 11.7		13
	<i>Eucalyptus loxophleba</i>	2381	15.5, 11.2		9
	<i>Eucalyptus loxophleba</i>	2382	15, 12.9, 16.6		12
	<i>Eucalyptus loxophleba</i>	2383	7, 6.5, 14.7		7
	<i>Eucalyptus loxophleba</i>	2384	7.2		15
2 C	<i>Eucalyptus loxophleba</i>	2385	10.2, 9.15, 10.45, 9.9, 8.5, 19		8
	<i>Eucalyptus loxophleba</i>	2386	19		9
2 D	<i>Melaleuca acuminata</i>	2387	3.3, 3.8, 2.8		15
	<i>Melaleuca acuminata</i>	2388	2.8, 2.1, 2.2		15
	<i>Melaleuca acuminata</i>	2389	2.2, 2.45, <2 x 8		17
	<i>Melaleuca acuminata</i>	2390	<2 x 6		17
	<i>Melaleuca acuminata</i>	2391	Multiple <2		13
	<i>Eucalyptus loxophleba</i>	2392	5.95		9
	<i>Melaleuca acuminata</i>	2393	5.4, <2		15
	<i>Melaleuca acuminata</i>	2394	4, 3.2, 2.1		15
	<i>Melaleuca acuminata</i>	2395	3.1, 3.4, 2.45		15
	<i>Melaleuca acuminata</i>	2396	4.15, 2.85		15
	<i>Melaleuca acuminata</i>	2397	3.2, 2.95, 2.75, <2 x 4		11
	<i>Melaleuca acuminata</i>	2398	13.8 - Basal		11

	<i>Melaleuca uncinata</i>	2399	13.8 - Basal		19
	<i>Melaleuca acuminata</i>	2400	8.6, 4.8, 6, 4.35, 3.4, 2.8		14
2 E	<i>Melaleuca acuminata</i>	2401	2.3, 3.1, 2.1, 2.75, 2, 2.45		17
	<i>Melaleuca acuminata</i>	2402	3, <2		9
	<i>Melaleuca acuminata</i>	2403	2.95, 2.45, 2.65		17
	<i>Melaleuca acuminata</i>	2404	<2		17
	<i>Melaleuca acuminata</i>	2405	2.7		13
	<i>Melaleuca acuminata</i>	2406	3, 2.2, 2.5		15
	<i>Melaleuca acuminata</i>	2407	2.2		17
	<i>Melaleuca acuminata</i>	2410	2.6, <2		17
	<i>Melaleuca acuminata</i>	2409	2.8		19
	<i>Melaleuca acuminata</i>	2408	2.2, 3.6		19
	<i>Melaleuca acuminata</i>	2411	3.05, 2.8, 3.6		19
	<i>Melaleuca acuminata</i>	2412	2.25, multiple <2		17
	<i>Melaleuca acuminata</i>	2413	2.4, 2.1, 2.1, <2 x 7		15
	<i>Melaleuca acuminata</i>	2414	2.8, <2		19
	<i>Melaleuca acuminata</i>	2415	3.5, 2.5, <2, <2		19
<i>Melaleuca acuminata</i>	2416	4.15		13	
<i>Melaleuca acuminata</i>	2417	2.5, <2, 2.5		9	
<i>Melaleuca acuminata</i>	2418	4.2, 2.55, 3.1		13	

COYRECUP - Transect 5

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	<i>Melaleuca adenostyla</i>	2419	9.05		11
	<i>Melaleuca adenostyla</i>	x2	<2	1.6 - 2.4	Healthy
	<i>Melaleuca lateriflora</i>	x5	<2	2 - 2.8	Healthy
1 B	<i>Santalum acuminatum</i>	2420	8.5, 17.7, 6.6, 10.9		11
	<i>Melaleuca adenostyla</i>	2421	10.6, 10.1		9
	<i>Melaleuca lateriflora</i>	x6	<2	1.5 - 2.5	Healthy
	<i>Melaleuca adenostyla</i>	x2	<2	2	Healthy
1 C	<i>Melaleuca adenostyla</i>	2422	8.4, 8.8		9
	<i>Melaleuca adenostyla</i>	2423	dead		
	<i>Melaleuca adenostyla</i>	2424	5.2, 4.6		3
	<i>Melaleuca halmaturorum</i>	x1	<2	1.6	Healthy
	<i>Melaleuca adenostyla</i>	x2	<2	1.6	Healthy
	<i>Melaleuca lateriflora</i>	x2	<2	0.5 - 2.5	Healthy
1 D	<i>Melaleuca adenostyla</i>	2425	9.8		3
	<i>Melaleuca adenostyla</i>	2426	7.9, 7.5		3
	<i>Melaleuca adenostyla</i>	2427	8.3		9
	<i>Melaleuca adenostyla</i>	2428	7.8		11
	<i>Melaleuca adenostyla</i>	2429	7.95, 4.9, 7.2		15
	<i>Melaleuca lateriflora</i>	x1	<2	2.8	Healthy
1 E	<i>Melaleuca adenostyla</i>	2430	6.4		13
	<i>Melaleuca adenostyla</i>	2431	9.5		13
	<i>Melaleuca lateriflora</i>	2432	17.1, 12.8		13
	<i>Melaleuca adenostyla</i>	2433	6.3		15
	<i>Melaleuca adenostyla</i>	2434	5, 3.65, 6.3, 6.6, 5.9, 6		15
	<i>Melaleuca adenostyla</i>	2435	5.4		15

	<i>Melaleuca lateriflora</i>	2436	15.5		13
	<i>Melaleuca adenostyla</i>	2437	5		9
	<i>Melaleuca adenostyla</i>	2438	3.5, 4.95, 7.4		15
	<i>Melaleuca adenostyla</i>	2439	5, 3.1		13
	<i>Melaleuca adenostyla</i>	2440	dead		
	<i>Melaleuca adenostyla</i>	2441	7.3		11
	<i>Melaleuca adenostyla</i>	2442	10.4		15
	<i>Melaleuca adenostyla</i>	2443	7.9, 6		15
	<i>Melaleuca halmaturorum</i>	x1	<2	1.7	Healthy
	<i>Melaleuca lateriflora</i>	x4	<2	0.4 - 0.8	Healthy
2 A	<i>Melaleuca adenostyla</i>	2444	7.35		15
	<i>Melaleuca adenostyla</i>	2445	7.8, 6.8		15
	<i>Melaleuca adenostyla</i>	2446	10.5		17
	<i>Melaleuca adenostyla</i>	2447	6.5		15
	<i>Melaleuca adenostyla</i>	2448	5.9, 3.2, 5.1, 8, 7.1, 6.15		15
	<i>Melaleuca adenostyla</i>	2449	11.2		17
	<i>Melaleuca adenostyla</i>	2450	8		17
	<i>Melaleuca adenostyla</i>	2451	8.4		15
	<i>Melaleuca adenostyla</i>	2452	dead		
	<i>Melaleuca adenostyla</i>	2453	8		15
	<i>Melaleuca adenostyla</i>	2454	8.8		17
	<i>Melaleuca adenostyla</i>	2455	8.4		15
	<i>Melaleuca adenostyla</i>	2456	8.15		15
	<i>Melaleuca adenostyla</i>	2457	7.1		15
	<i>Melaleuca adenostyla</i>	2458	6		13
<i>Melaleuca adenostyla</i>	2459	7.7		13	
2 B	<i>Melaleuca adenostyla</i>	2460	5.5		13
	<i>Melaleuca adenostyla</i>	2461	6.4		9
	<i>Melaleuca adenostyla</i>	2462	6.5, 8		9
	<i>Melaleuca adenostyla</i>	2463	6		9
	<i>Melaleuca adenostyla</i>	2464	7.8		15
	<i>Melaleuca lateriflora</i>	2465	15.4		11
	<i>Melaleuca adenostyla</i>	2466	8.9, 4.8, 7.5		15
2 C	<i>Melaleuca adenostyla</i>	2467	8.75, 4.7		13
	<i>Melaleuca adenostyla</i>	2468	dead		
	<i>Melaleuca adenostyla</i>	2469	dead		
	<i>Melaleuca adenostyla</i>	2470	11.7		13
	<i>Melaleuca lateriflora</i>	x11	<2	2 - 2.5	Healthy
2 D	<i>Melaleuca adenostyla</i>	2471	12.7, 9.8		17
	<i>Melaleuca adenostyla</i>	2472	17.45		15
	<i>Melaleuca adenostyla</i>	2473	5.6		3
	<i>Melaleuca adenostyla</i>	2474	11		3
	<i>Melaleuca adenostyla</i>	2475	10.05		17
	<i>Melaleuca lateriflora</i>	x13	<2	1.6 - 2.5	Healthy
2 E	<i>Melaleuca adenostyla</i>	2476	7.9		11
	<i>Melaleuca adenostyla</i>	2477	7.3		15