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

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Wetland Vegetation Monitoring 2000/2001 (Salinity Action Plan)

Prepared for the Department of Conservation and Land Management

By

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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).

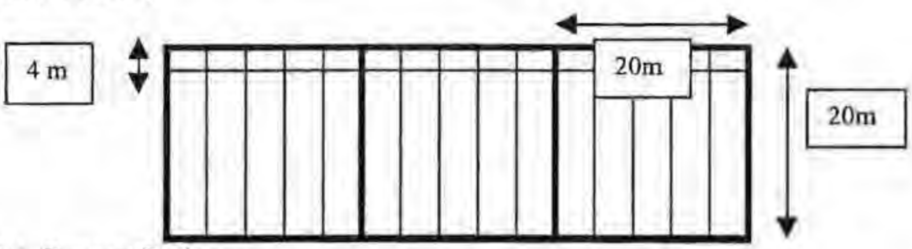


Figure 2.1: Transect Design.

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 90^0 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 acurately 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.

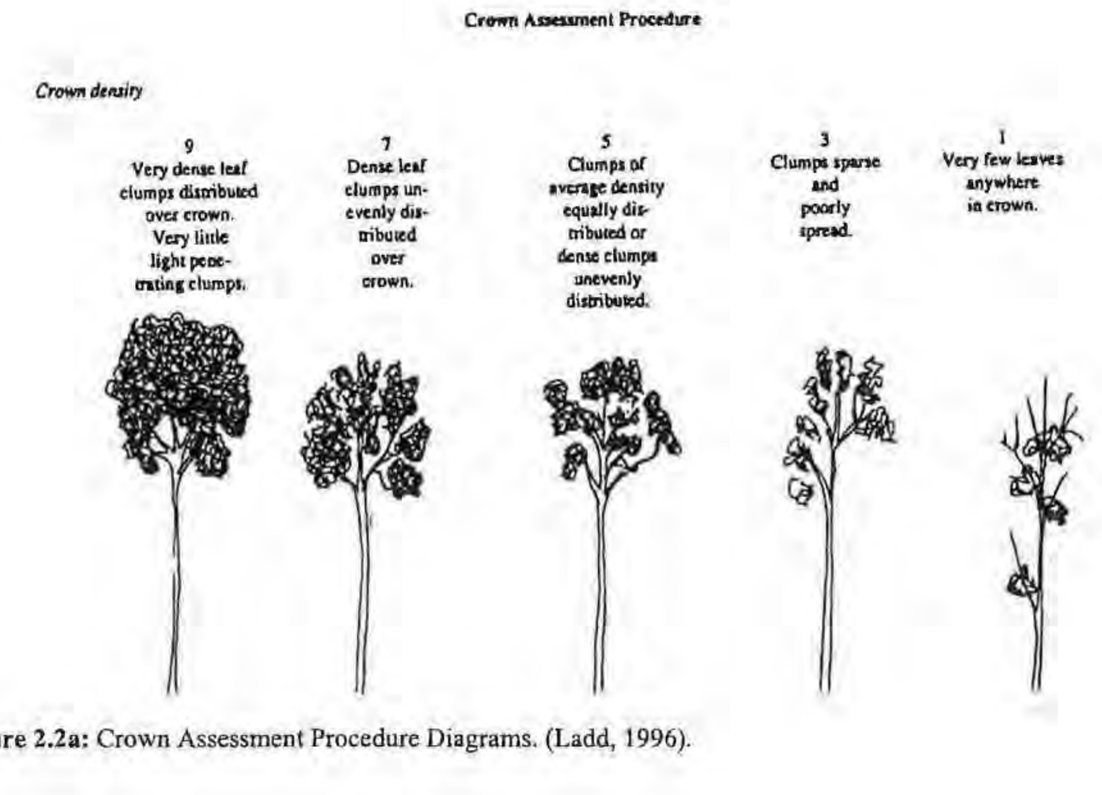
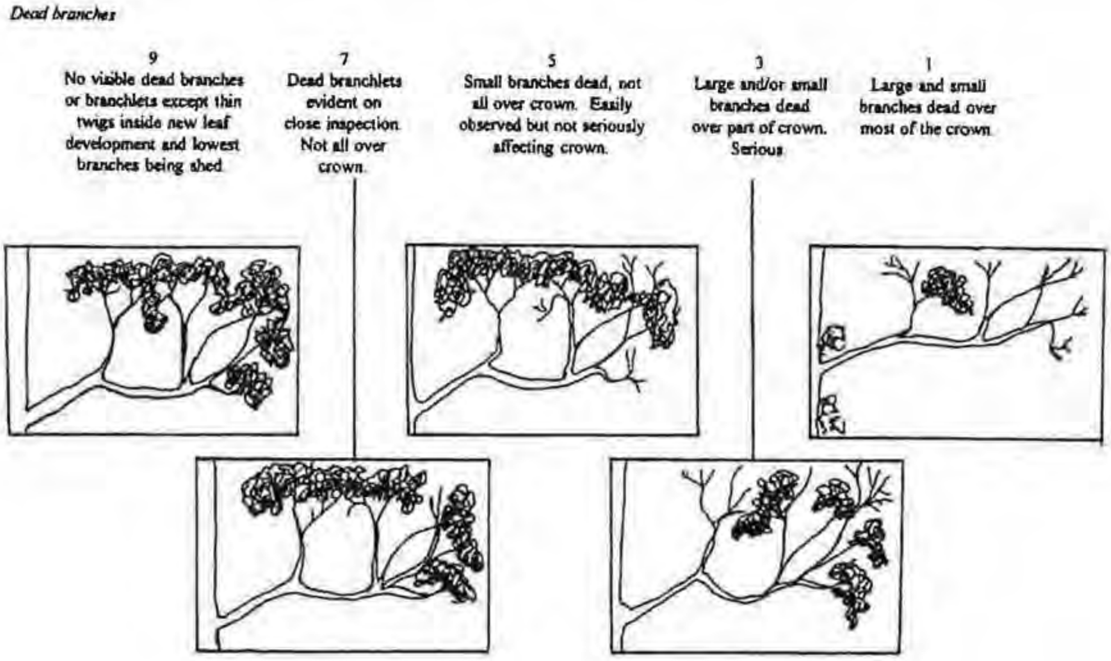


Figure 2.2a: Crown Assessment Procedure Diagrams. (Ladd, 1996).



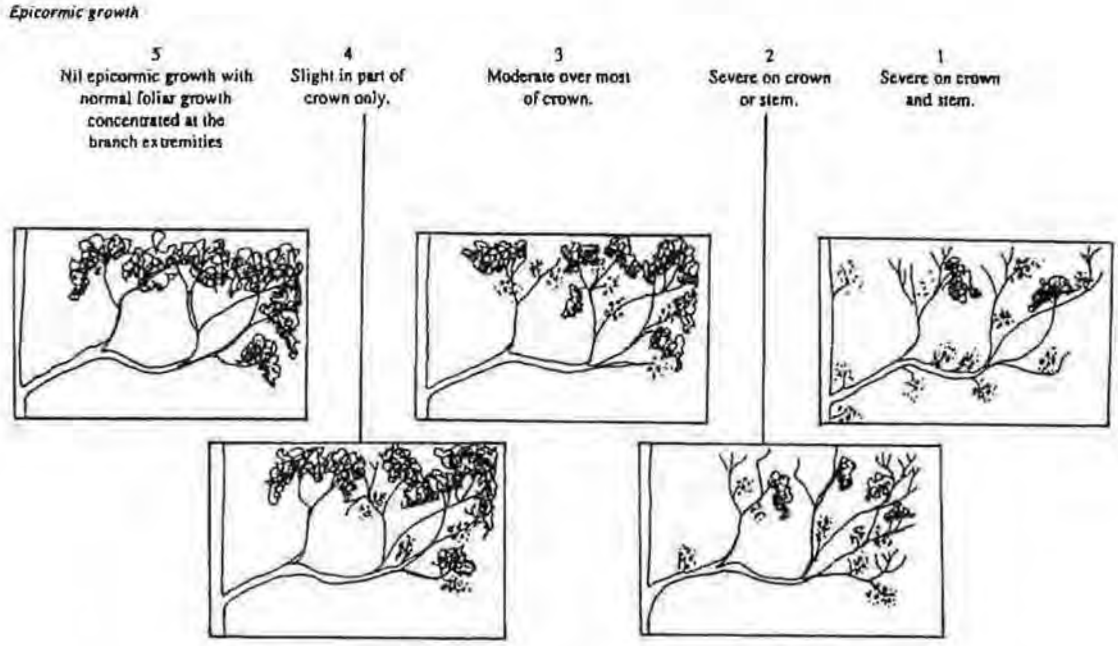


Figure 2.2b: Crown Assessment Procedure Diagrams. (Ladd, 1996).

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, adgatated 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 overfill 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. thyoides, 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 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 1997	Trees 2000	Seedlings 1997	Seedlings 2000	Saplings 1997	Saplings 2000	MCS (S.D) 1997	MCS (S.D) 2000
Eucalyptus flocktoniae	124	123	0	0	2	1	13.9 (4.4)	11.3 (4.25)
Eucalyptus occidentalis	15	15	17	48	15	15	12.9 (4.5)	13.4 (4.03)
Eucalyptus kondininensis	42	41	0	0	0	0	13.5 (4.2)	12.7 (4.27)
Melaleuca halmaturorum	32	30	0	0	0	1	12.3 (2.7)	12.9 (3.58)
Melaleuca strobophylla	115	116	69	83	52	62	14.5 (3.1)	14.6 (3.75)
Melaleuca lateriflora subsp. lateriflora	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) *Centaurium 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 *Cassytha 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	***Santalum acuminatum*** **– 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)

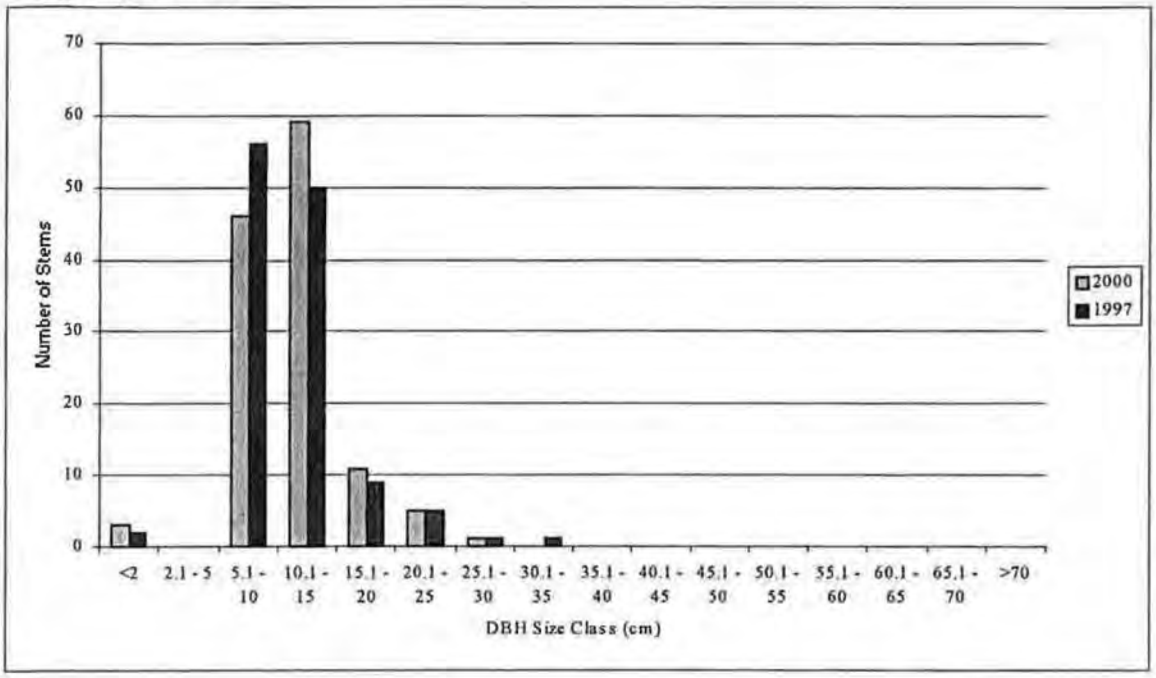
3.1.4 Soil Characteristics

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

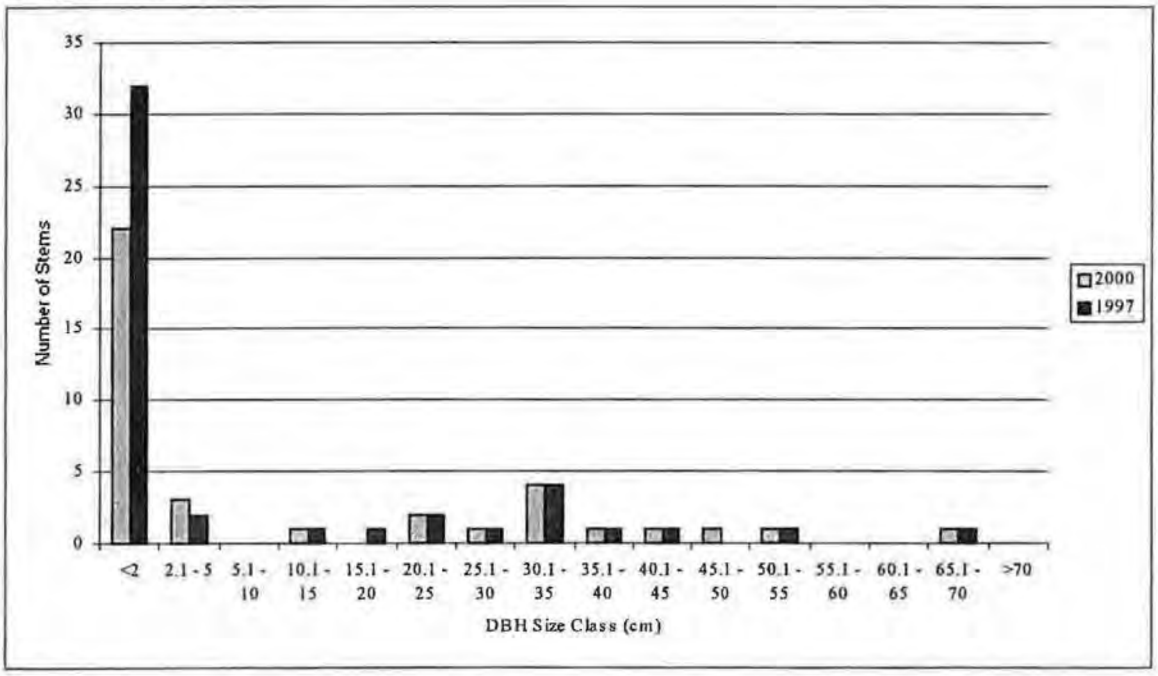
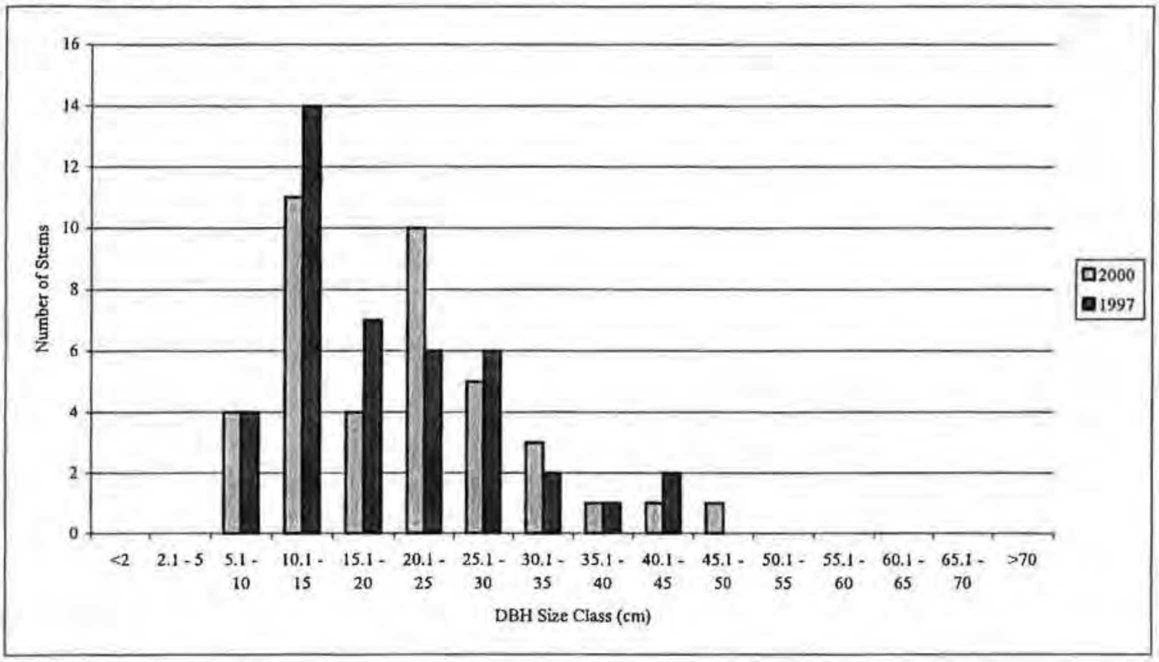


Figure 3.1.1: Size Class Distributions for *Euacalyptus flocktoniae, Eucalyptus occidentalis, Eucalyptus kondininensis, Melaleuca strobophylla, Melaleuca lateriflora* subs. *lateriflora* and *Melaleuca halmaturorum* at Lake Bryde.

Eucalyptus kondininensis



Melaleuca strobophylla

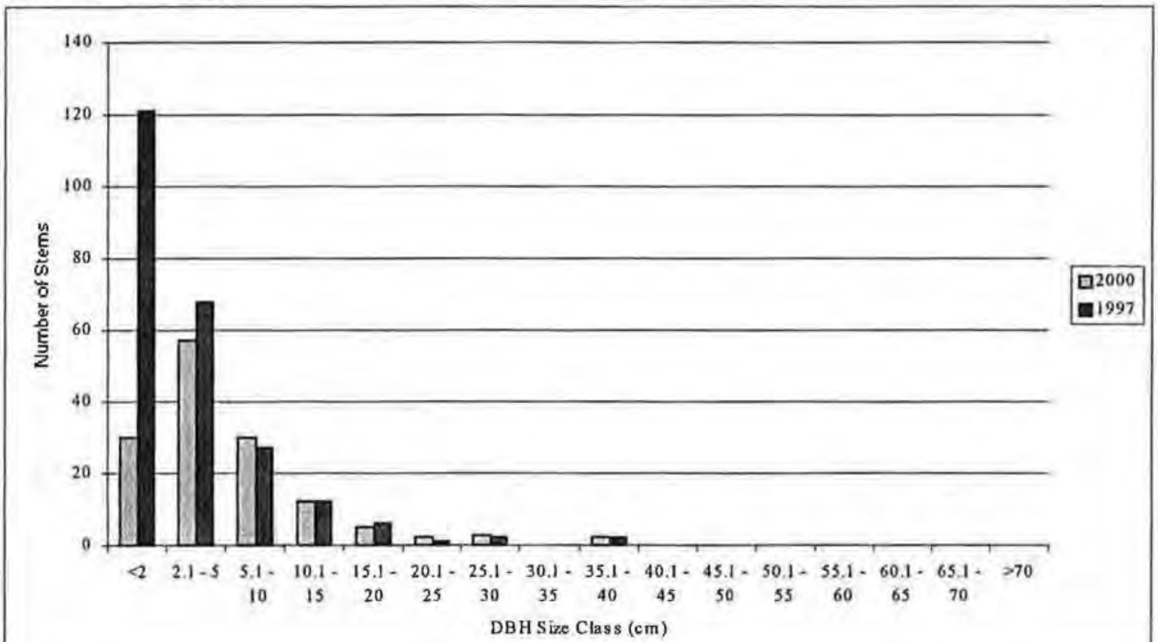
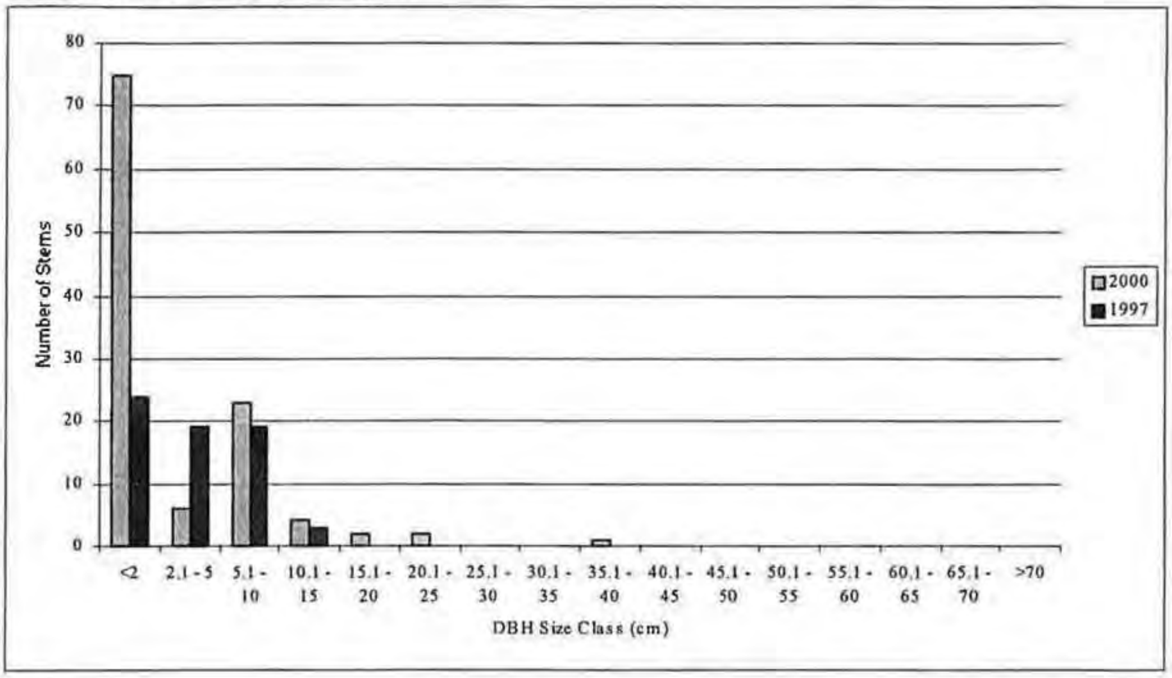


Figure 3.1.1 (cont.): Size Class Distributions for *Euacalyptus flocktoniae, Eucalyptus occidentalis, Eucalyptus kondininensis, Melaleuca strobophylla, Melaleuca lateriflora* subs. *lateriflora* and *Melaleuca halmaturorum* at Lake Bryde.

Melaleuca lateriflora subsp. lateriflora



Melaleuca halmaturorum

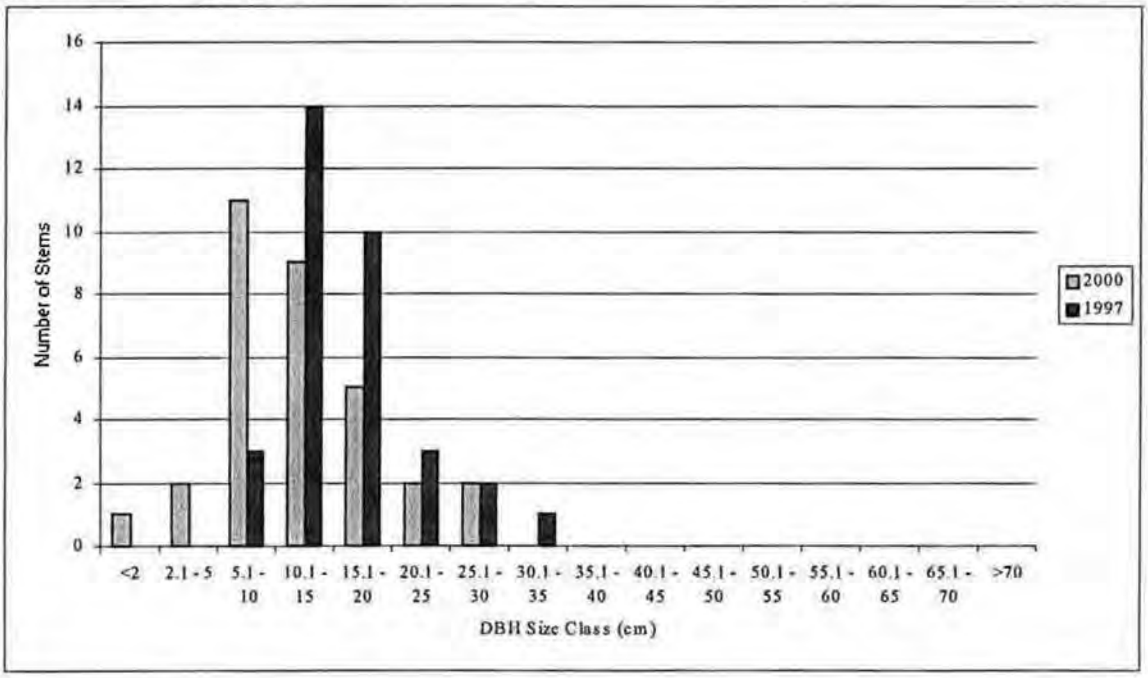


Figure 3.1.1 (cont.): Size Class Distributions for *Euacalyptus flocktoniae, Eucalyptus occidentalis, Eucalyptus kondininensis, Melaleuca strobophylla, Melaleuca lateriflora* subs. *lateriflora* and *Melaleuca halmaturorum* at Lake Bryde.

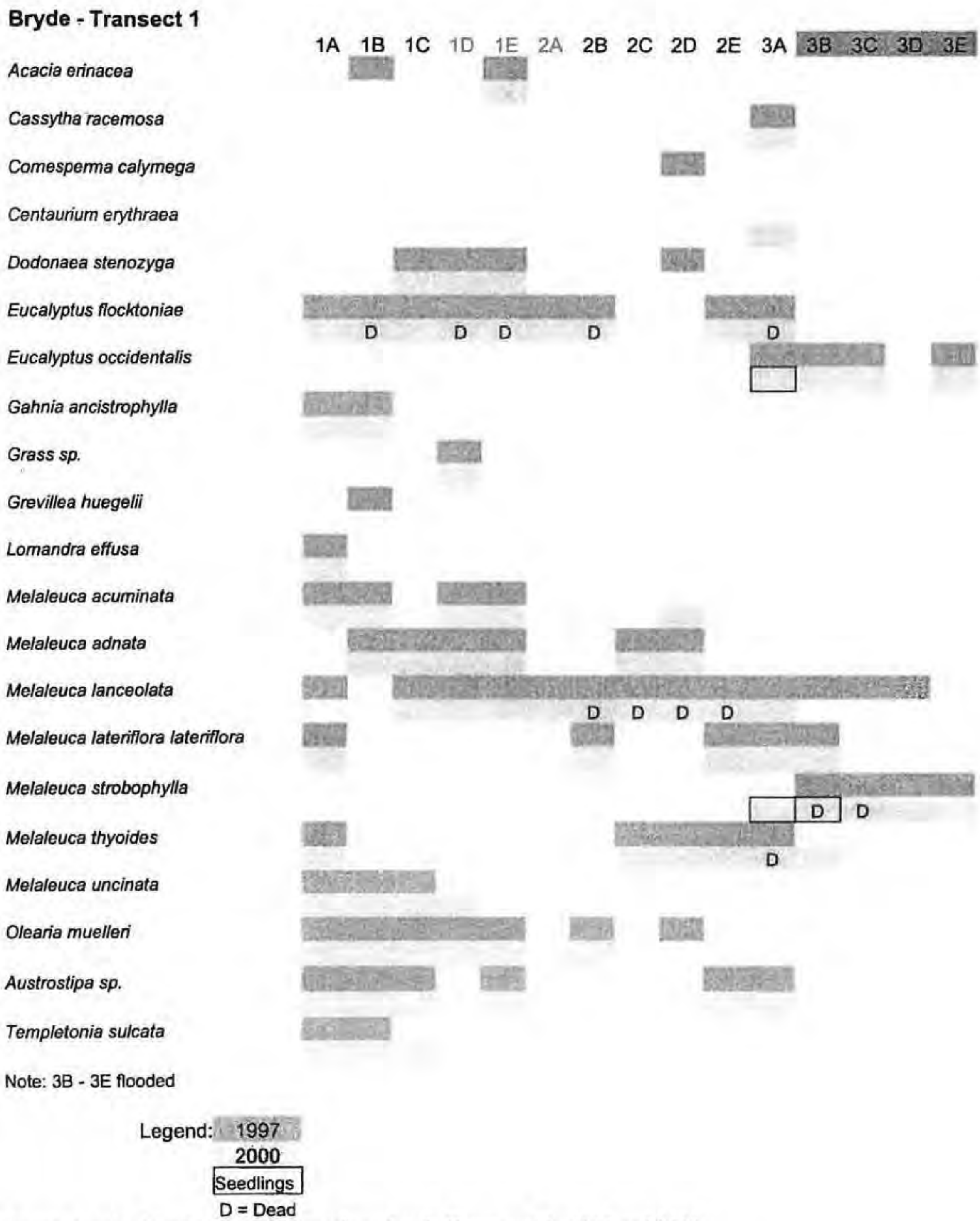


Figure 3.1.2a: Species Distribution along Bryde Transect 1 in 1997 and 2000.

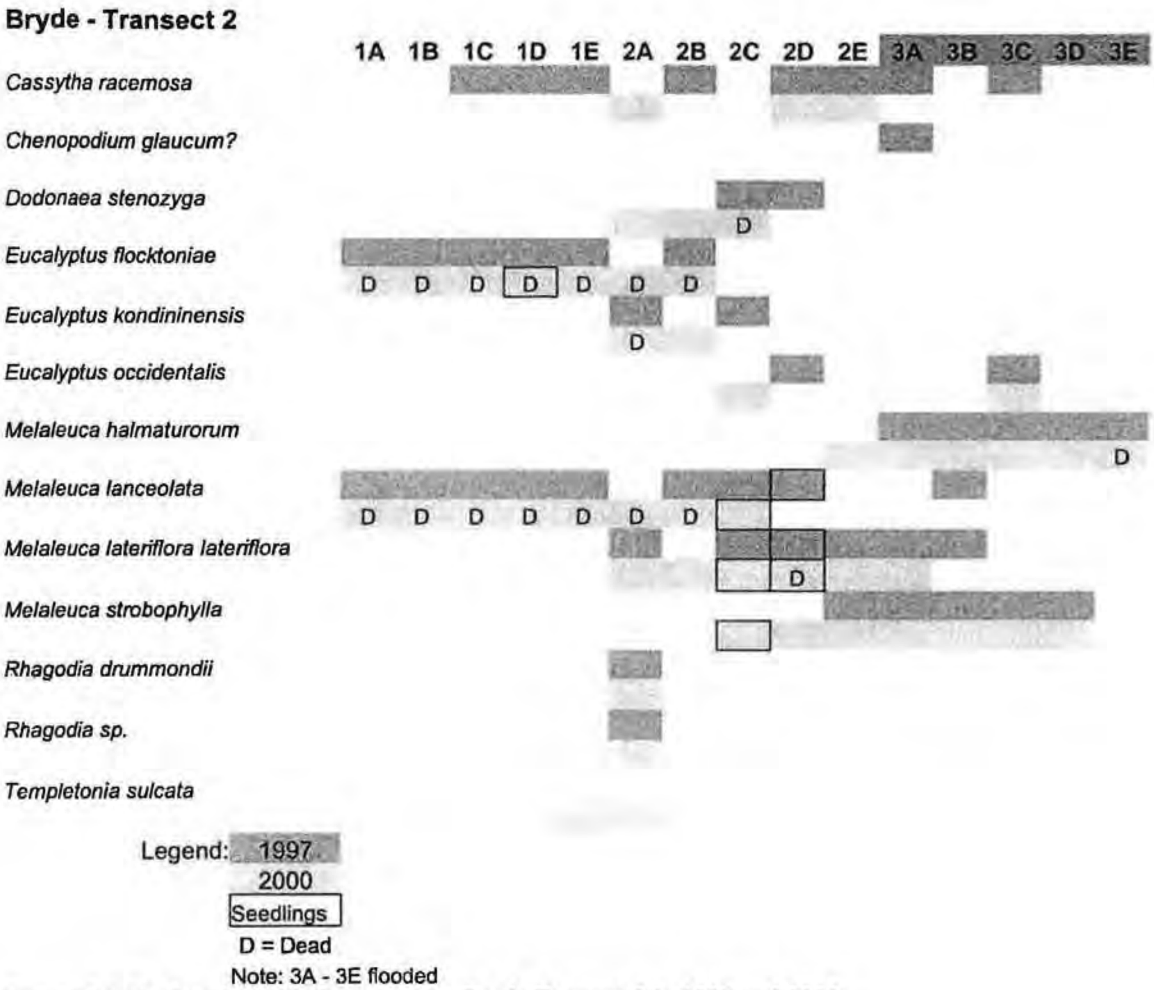


Figure 3.1.2b: Species Distribution along Bryde Transect 2 in 1997 and 2000.

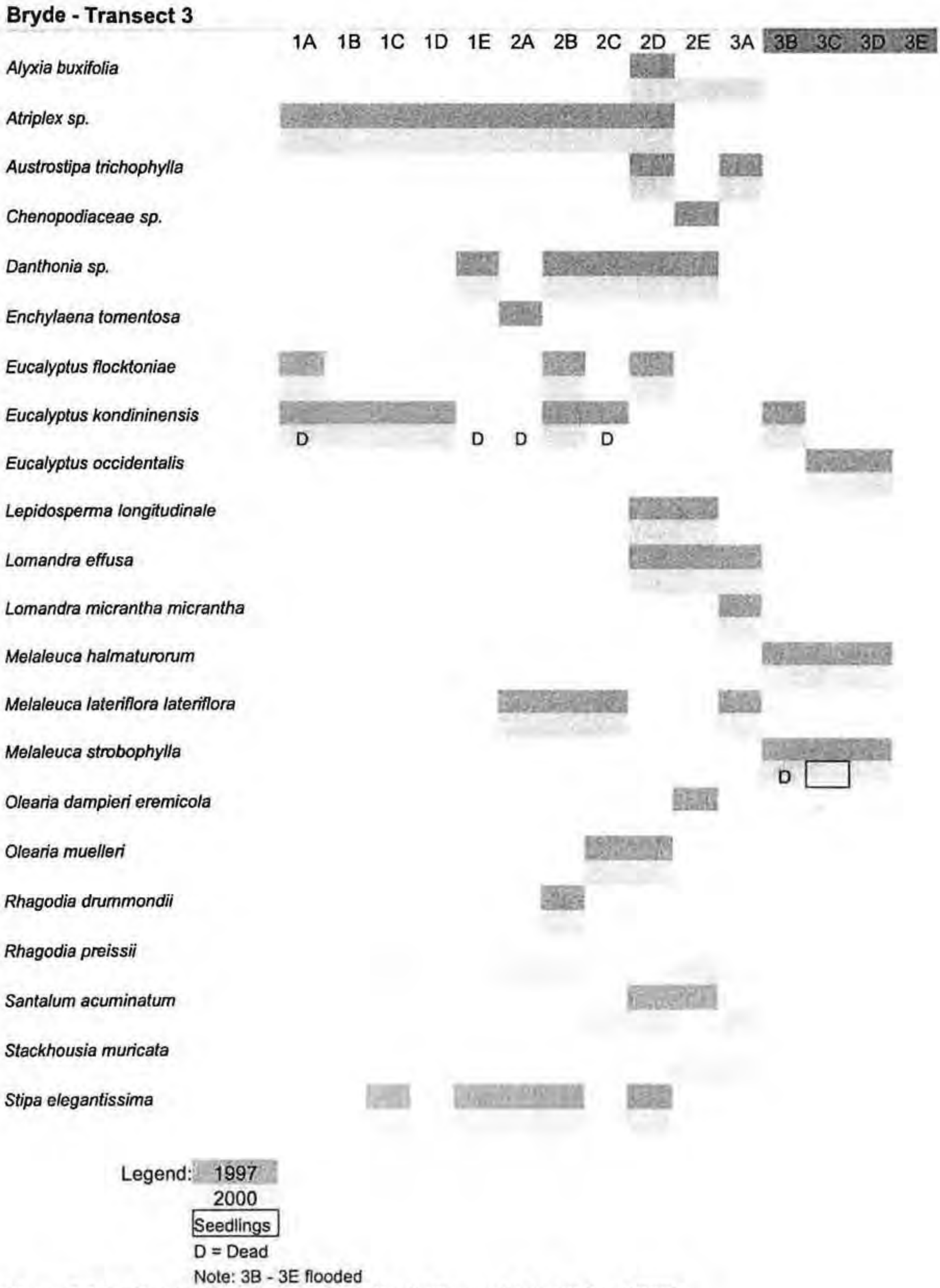


Figure 3.1.2c: Species Distribution along Bryde Transect 3 in 1997 and 2000.

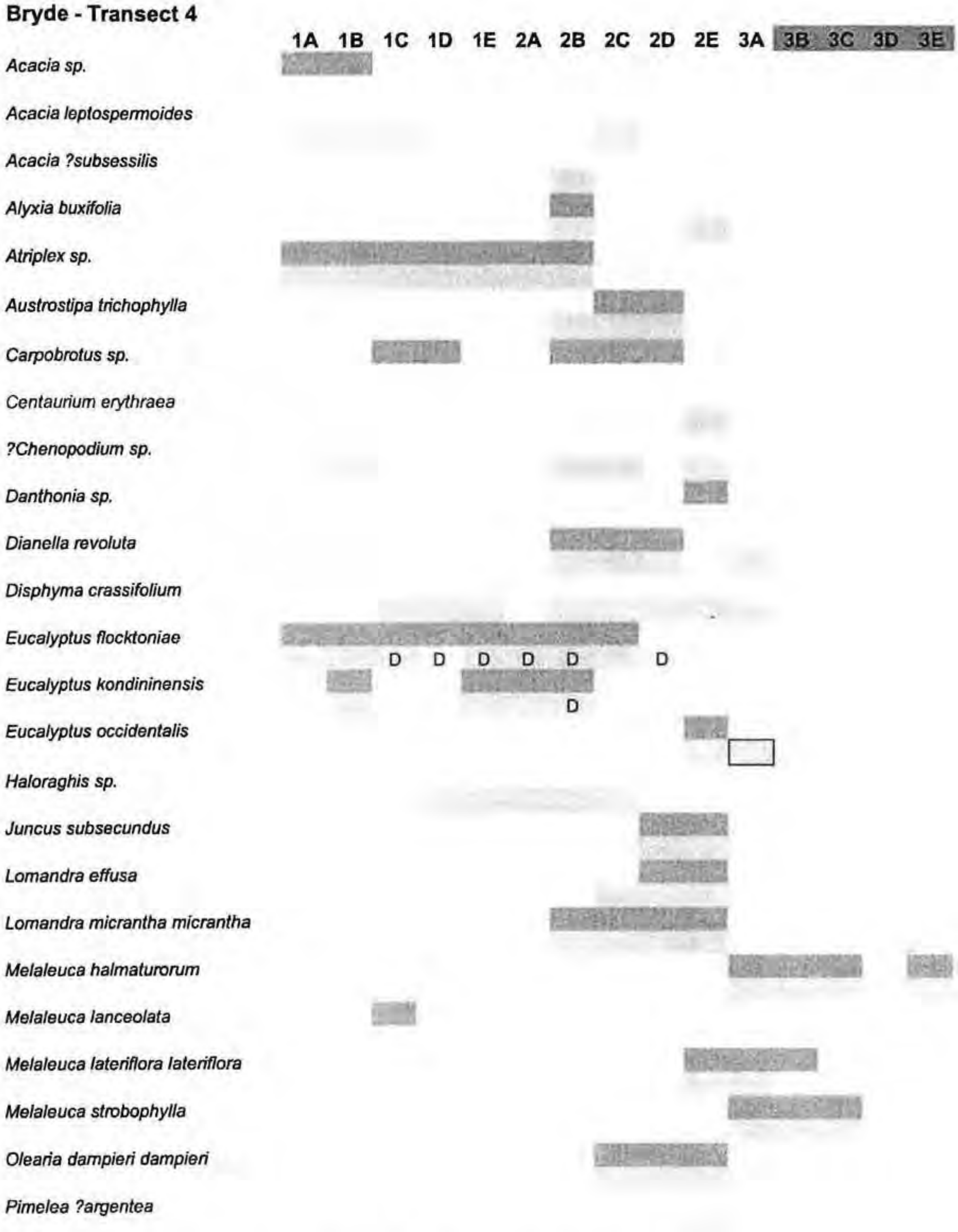


Figure 3.1.2d: Species Distribution along Bryde Transect 4 in 1997 and 2000.

Bryde - Transect 4 cont.	1A	1B	1C	1D	1E	2A	2B	2C	2D	2E	3A	3B	3C	3D	3E
Rhagodia drummondii															
Santalum acuminatum															
Threlkeldia diffusa															

Legend: 1997
2000
Seedlings
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 ($33^0 42'$ S, $121^0 21'$ 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 km^2. 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 1997	Trees 2000	Seedlings 1997	Seedlings 2000	MCS (S.D) 1997	MCS (S.D) 2000
Banksia speciosa	73	70	0	0	13.4 (4.5)	15.7 (2.72)
Eucalyptus occidentalis	267	347	1371	609	14.0 (3.9)	15.4 (4.38)
Melaleuca cuticularis	65	75	8695	6227	12.7 (2.7)	15.5 (3.19)
Acacia cyclops	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	*Conyza albida* (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).

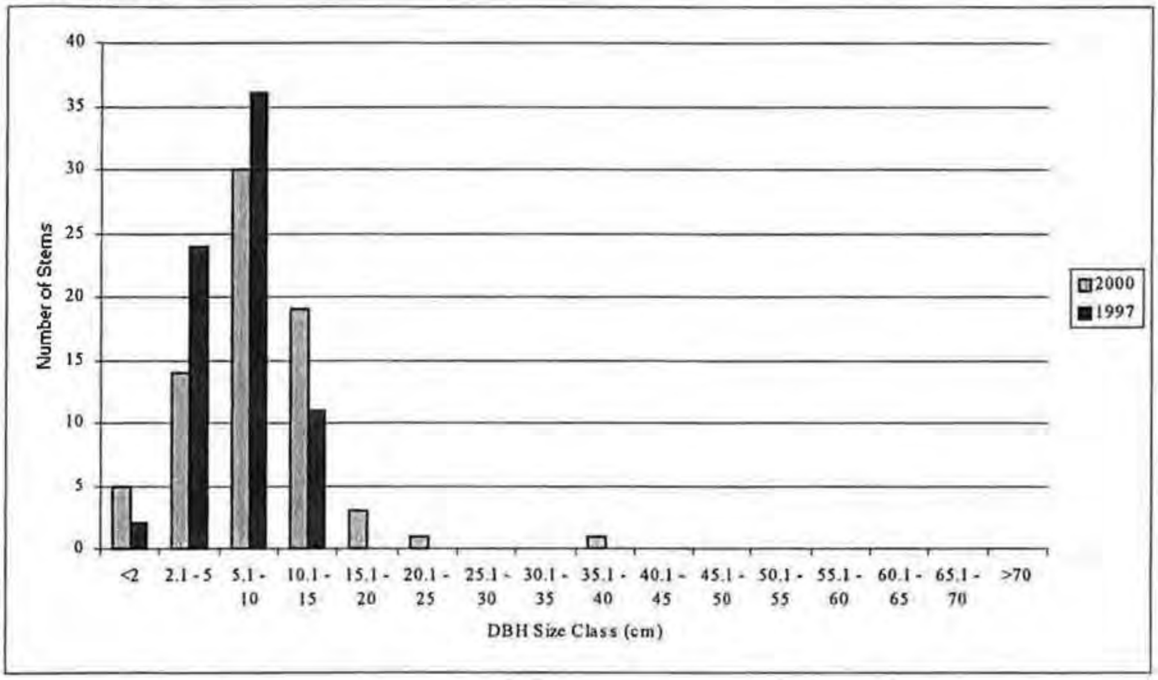
3.2.4 Soil Characteristics

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

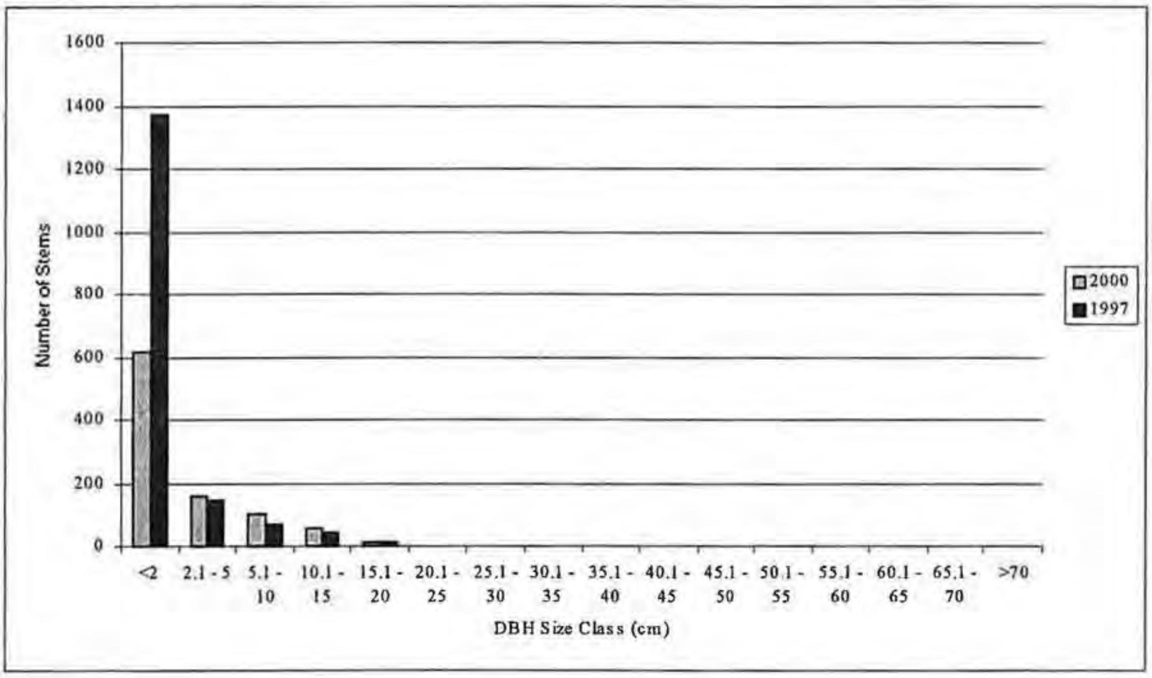
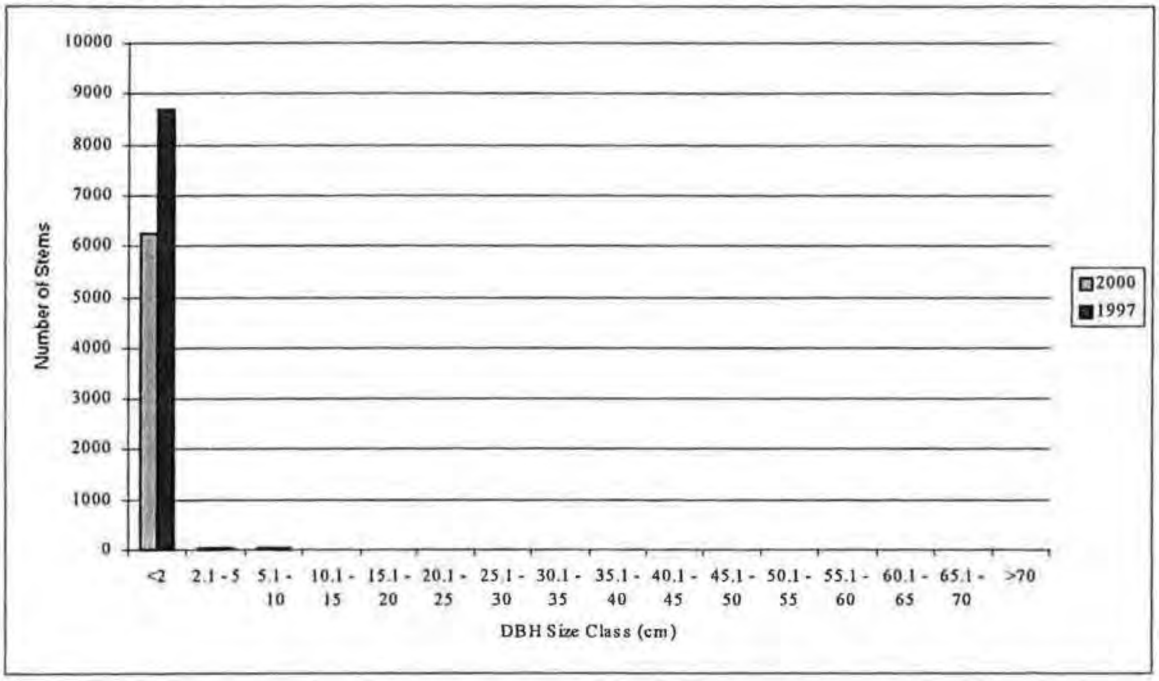


Figure 3.2.1: Size Class Distributions for *Banksia speciosa, Eucalyptus occidentalis, Melaleuca cuticularis* and *Acacia cyclops* at Coomalbidgup Swamp.

Melaleuca cuticularis



Acacia cyclops

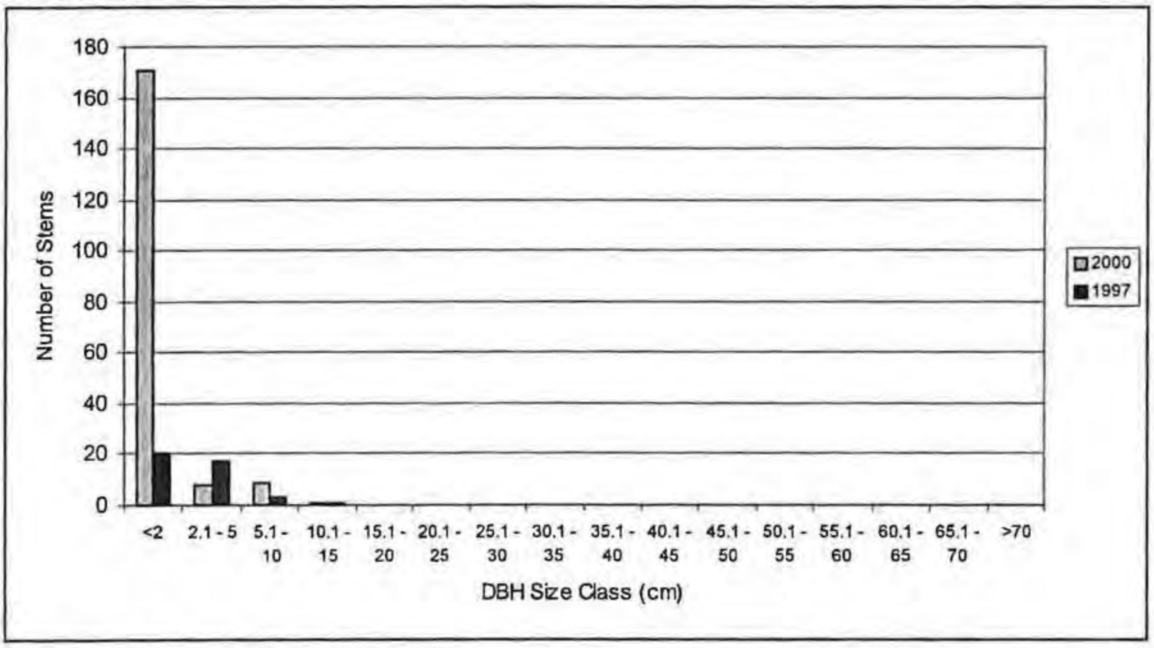


Figure 3.2.1 (cont.): Size Class Distributions for *Banksia speciosa, Eucalyptus occidentalis, Melaleuca cuticularis* and *Acacia cyclops* at Coomalbidgup Swamp.

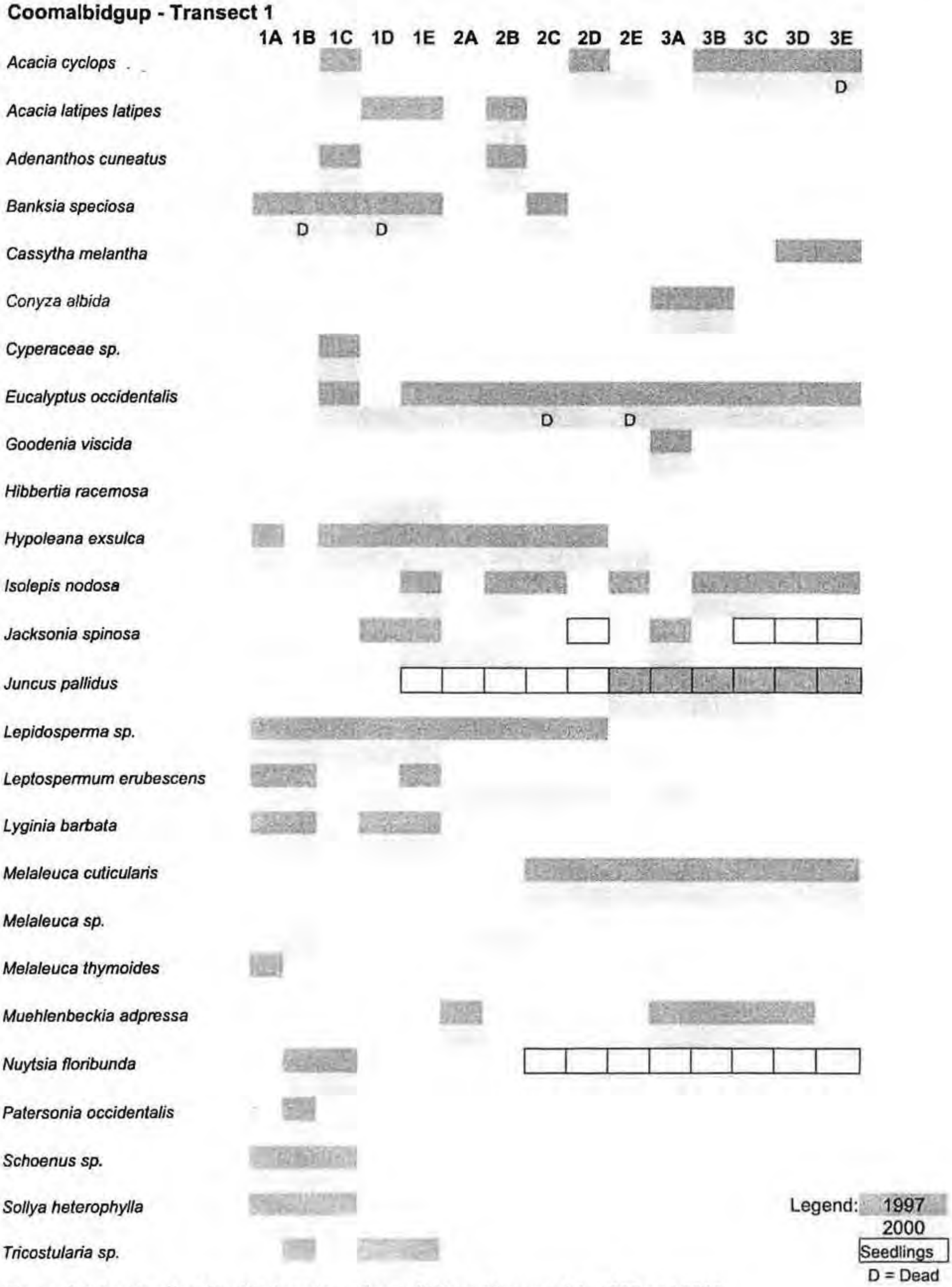


Figure 3.2.2a: Species Distribution along Coomalbidgup Transect 1 in 1997 and 2000.

Coomalbidgup - Transect 2

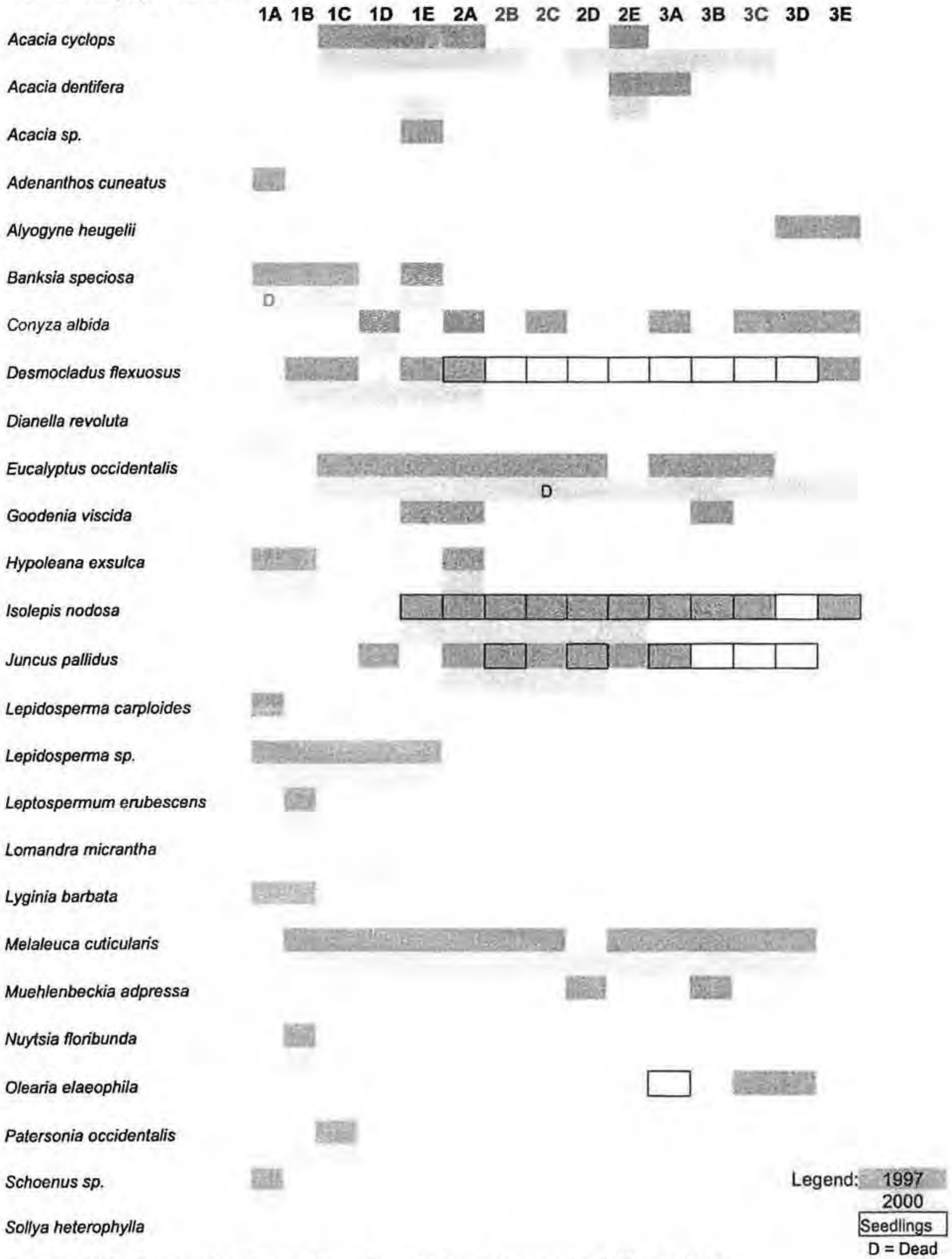


Figure 3.2.2b: Species Distribution along Coomalbidgup Transect 2 in 1997 and 2000.

Coomalbidgup - Transect 3

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

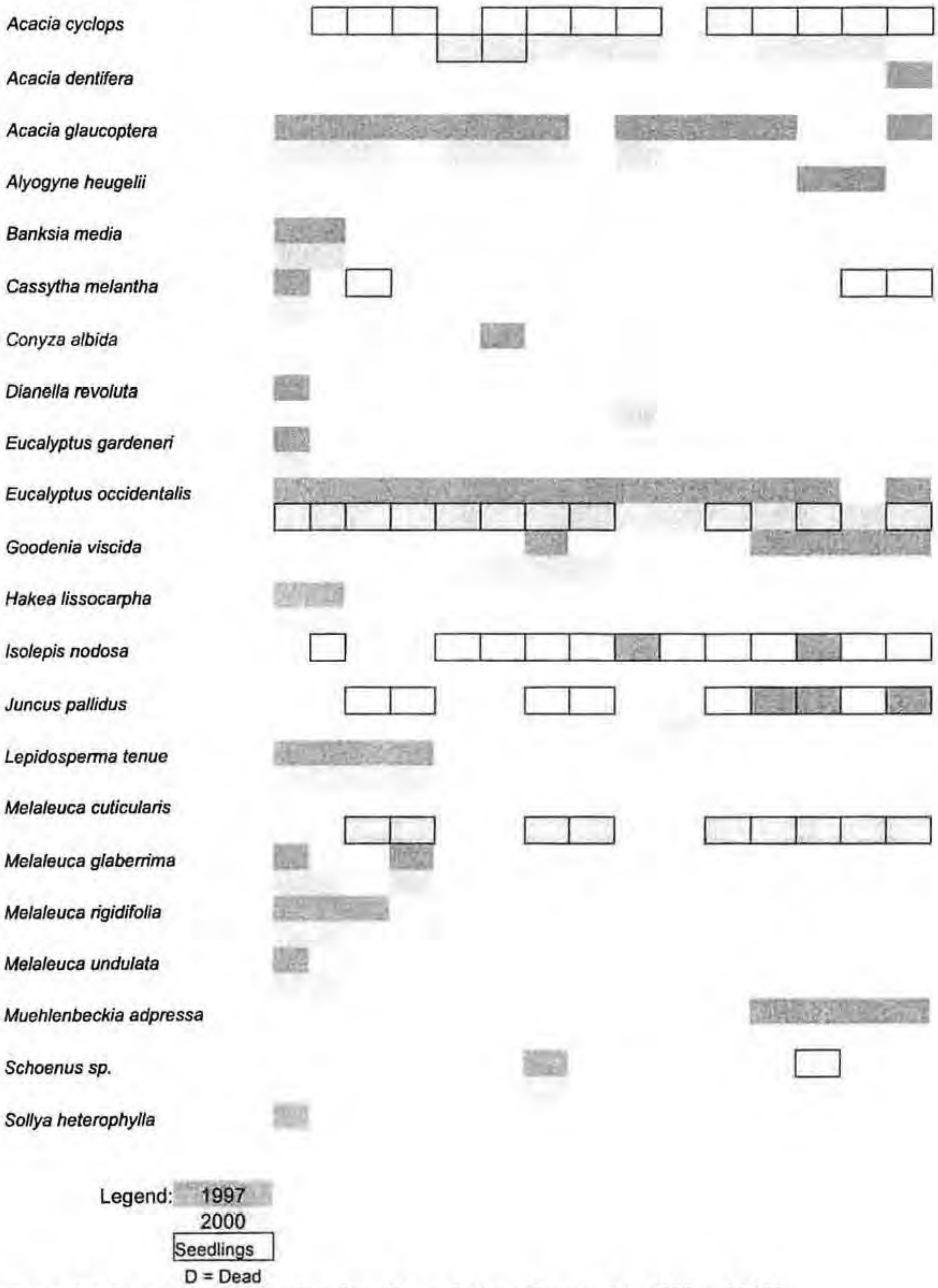


Figure 3.2.2c: Species Distribution along Coomalbidgup Transect 3 in 1997 and 2000.

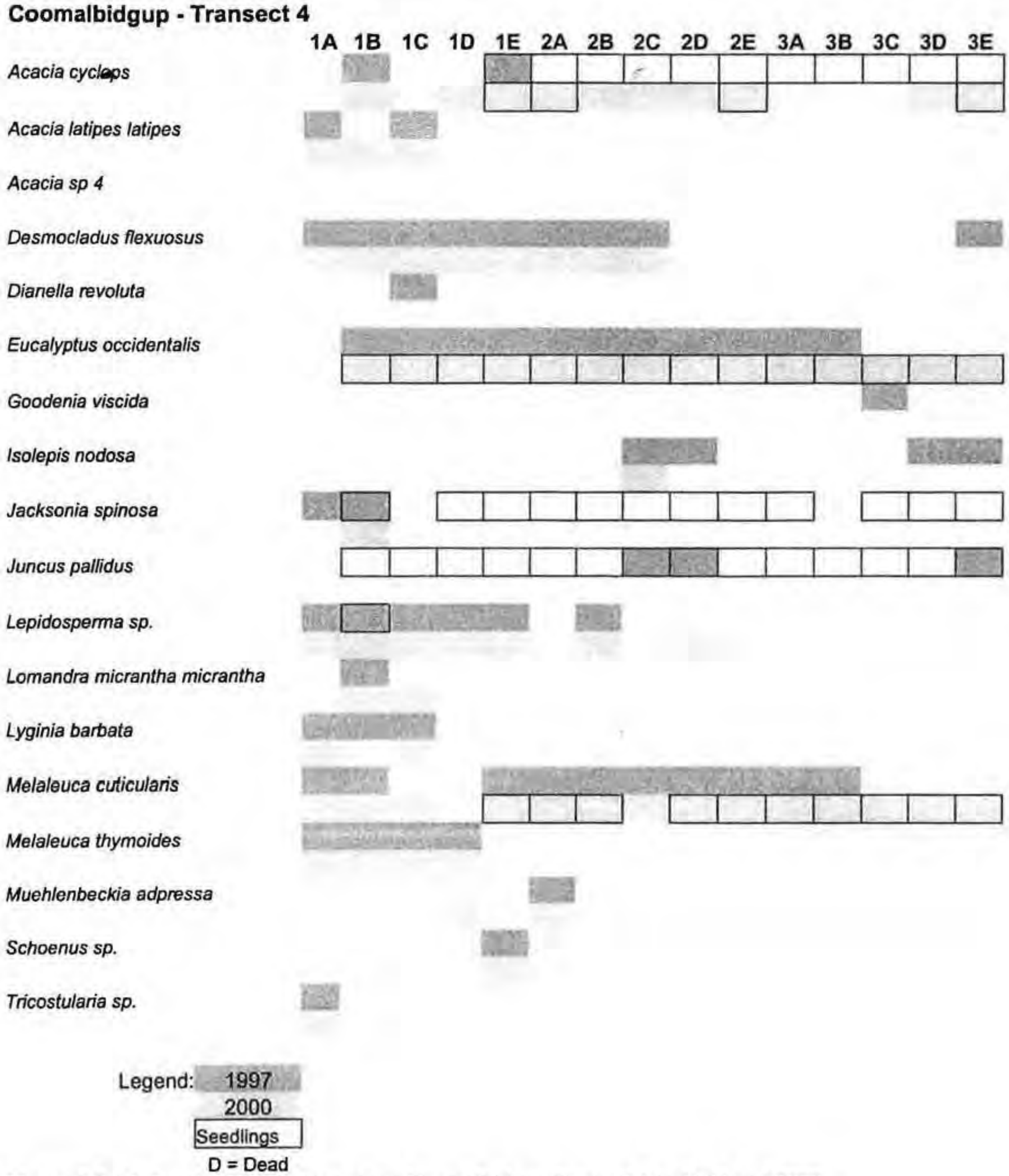


Figure 3.2.2d: Species Distribution along Coomalbidgup Transect 4 in 1997 and 2000.

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

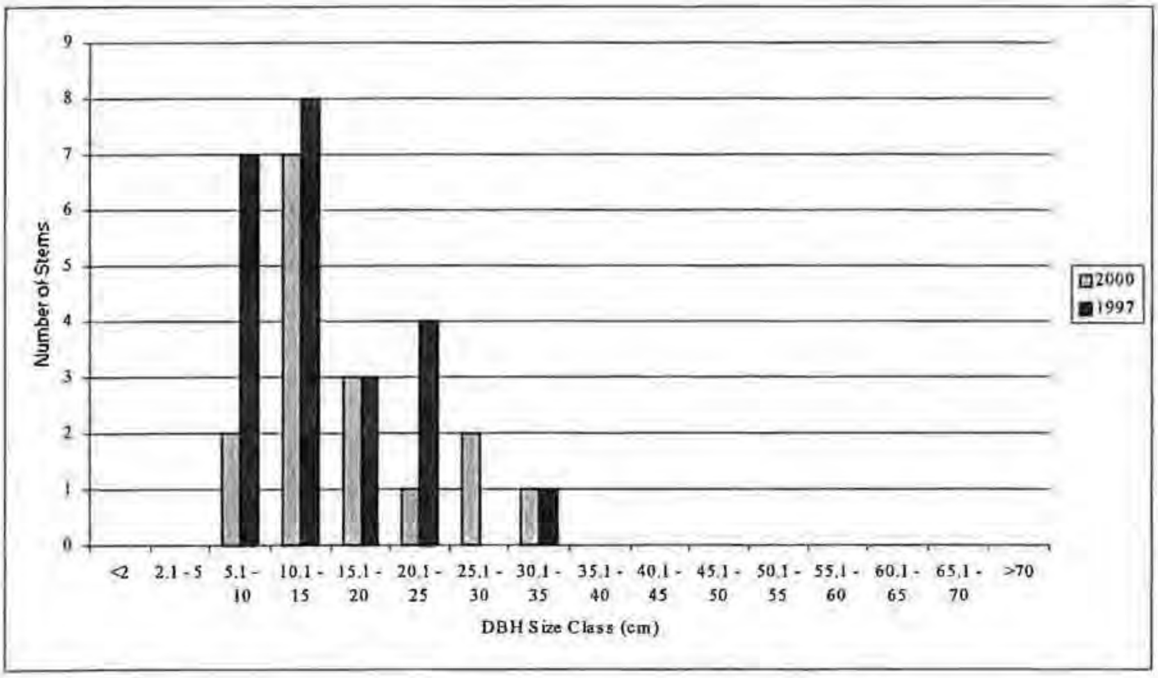
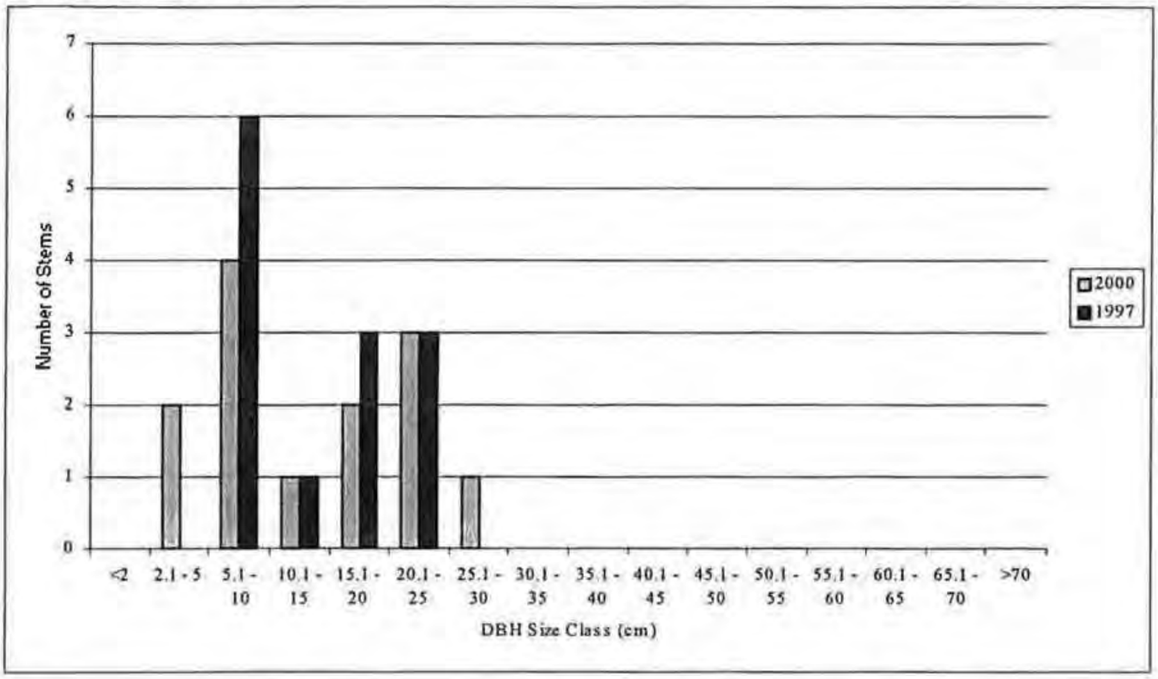


Figure 3.3.1: Size Class Distributions of *Allocasuarina huegeliana, Eucalyptus occidentalis, Acacia acuminata, Eucalyptus loxophleba, Casuarina obesa, Melaleuca strobophylla, Melaleuca acuminata, Melaleuca halmaturorum* and *Melaleuca adenostyla* for Coyrecup Lake.

Eucalyptus occidentalis



Acacia acuminata

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

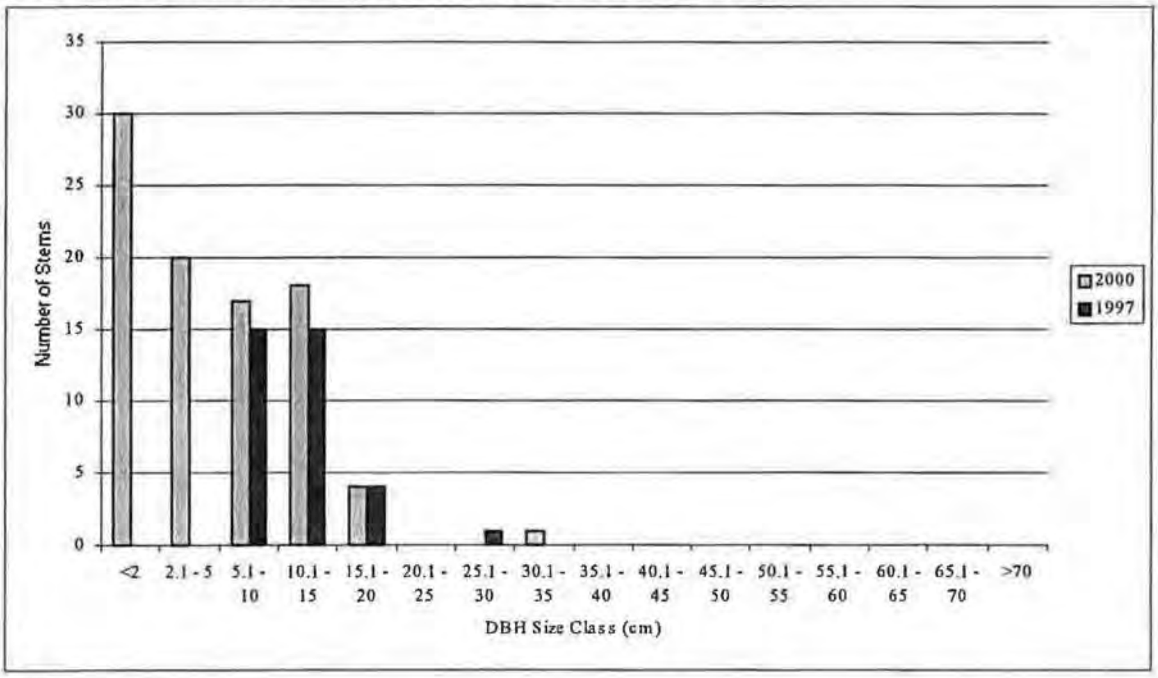
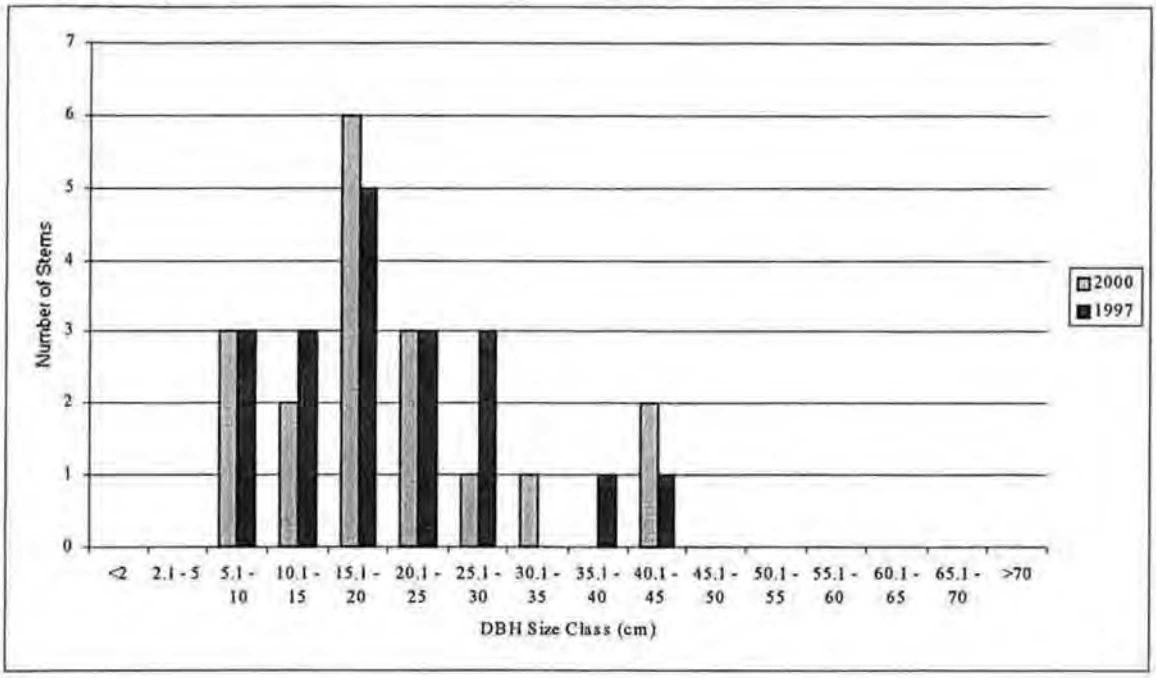


Figure 3.3.1 (cont.): Size Class Distributions of *Allocasuarina huegeliana, Eucalyptus occidentalis, Acacia acuminata, Eucalyptus loxophleba, Casuarina obesa, Melaleuca strobophylla, Melaleuca acuminata, Melaleuca halmaturorum* and *Melaleuca adenostyla* for Coyrecup Lake.

Eucalyptus loxophleba



Casuarina obesa

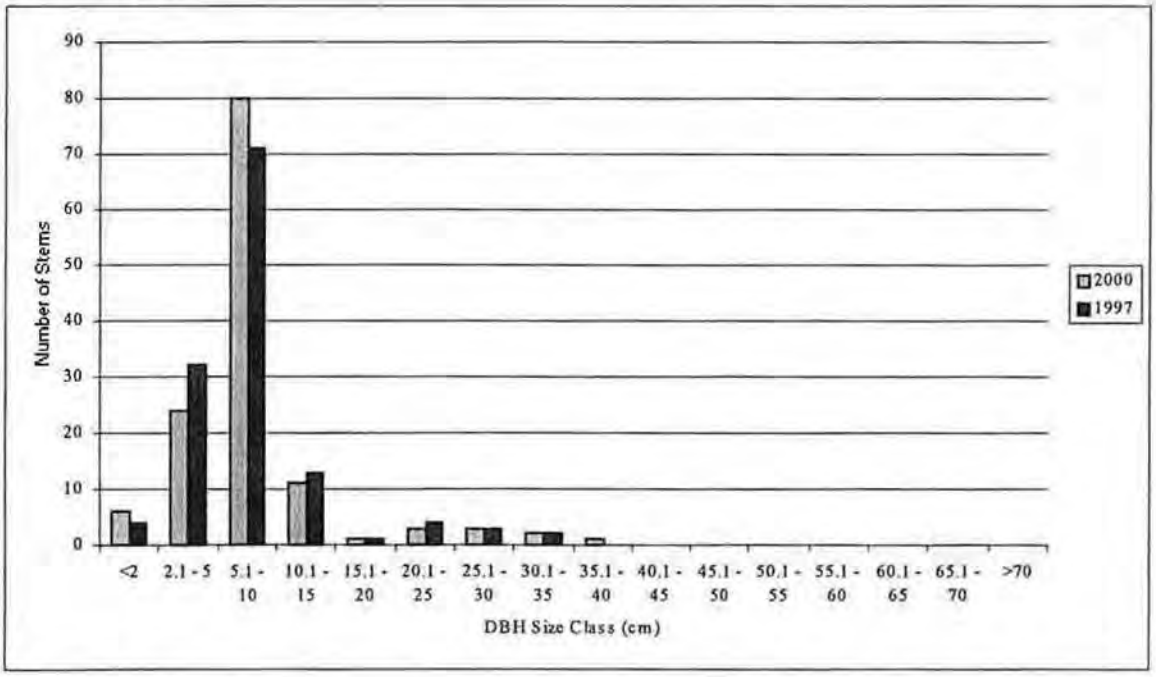
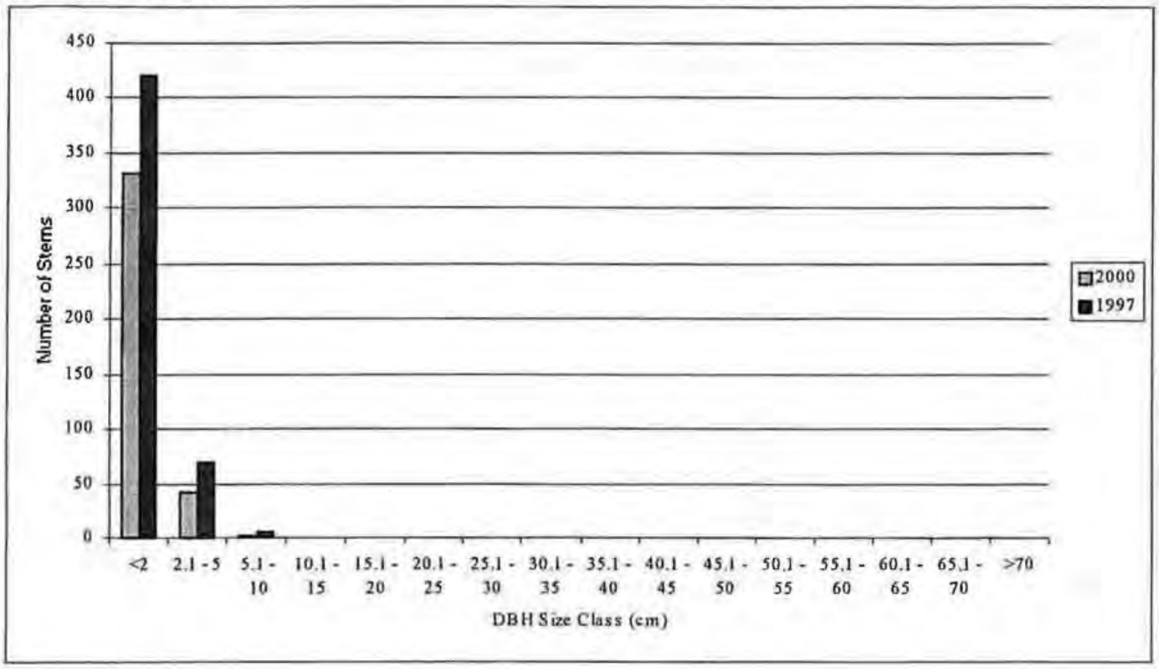


Figure 3.3.1 (cont.): Size Class Distributions of *Allocasuarina huegeliana, Eucalyptus occidentalis, Acacia acuminata, Eucalyptus loxophleba, Casuarina obesa, Melaleuca strobophylla, Melaleuca acuminata, Melaleuca halmaturorum* and *Melaleuca adenostyla* for Coyrecup Lake.

Melaleuca strobophylla



Melaleuca acuminata

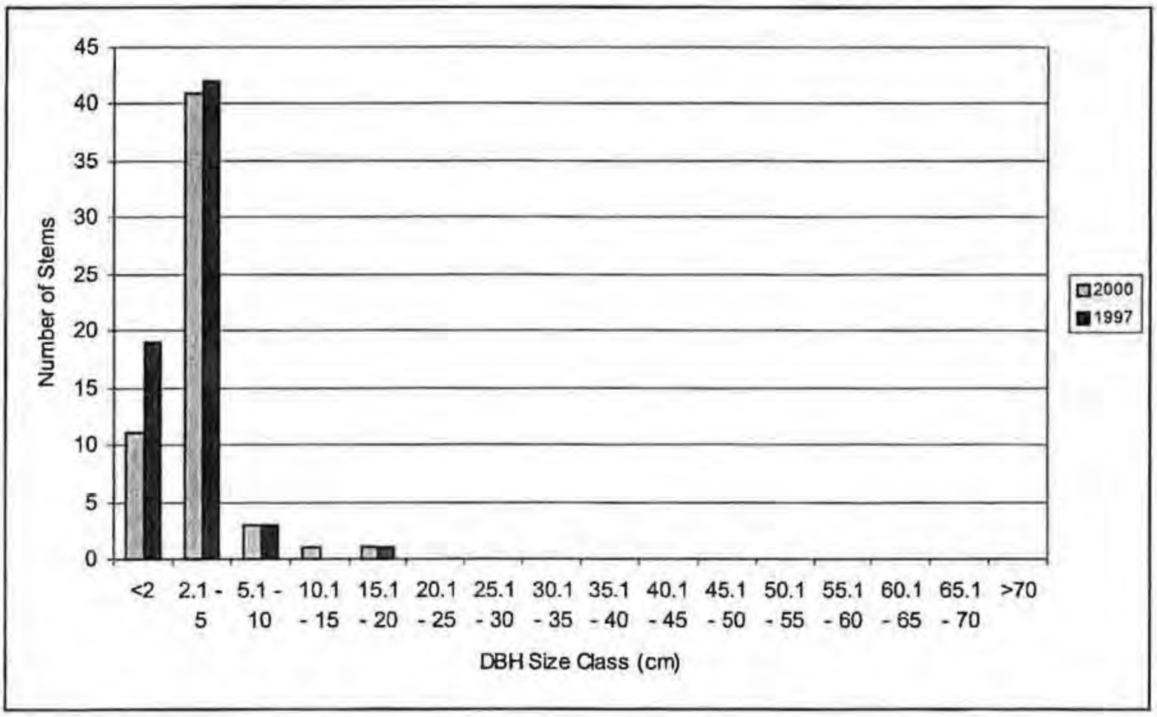
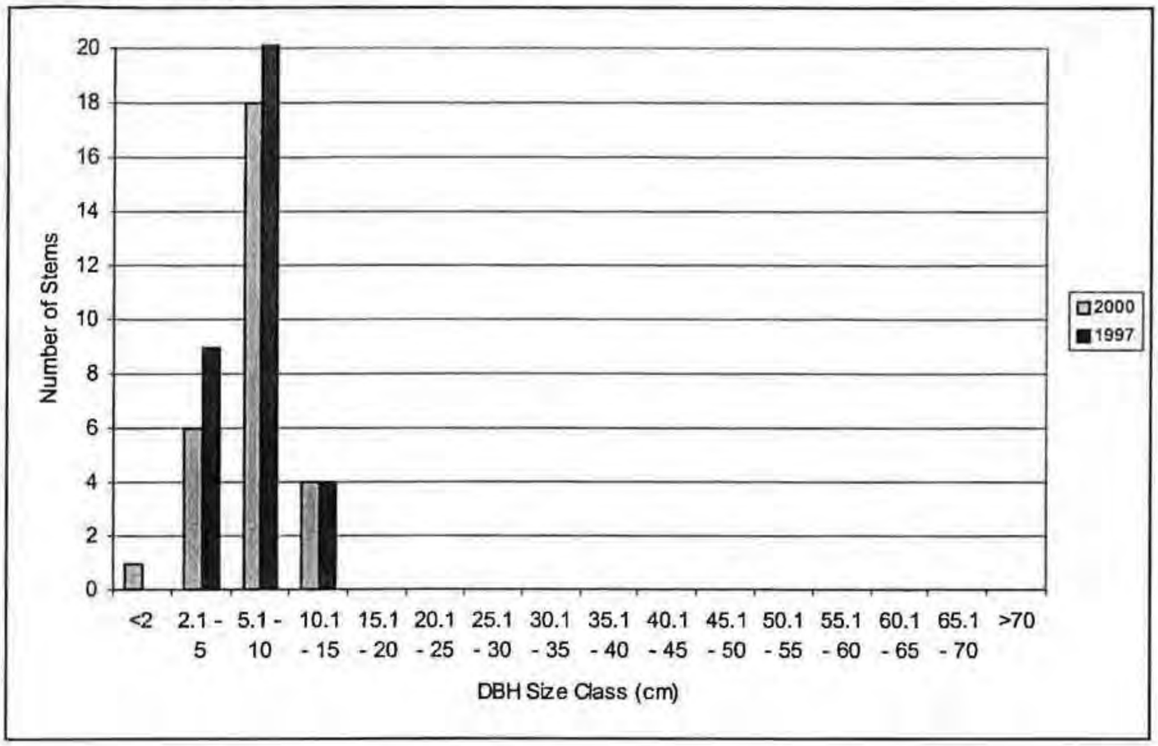


Figure 3.3.1 (cont.): Size Class Distributions of *Allocasuarina huegeliana, Eucalyptus occidentalis, Acacia acuminata, Eucalyptus loxophleba, Casuarina obesa, Melaleuca strobophylla, Melaleuca acuminata, Melaleuca halmaturorum* and *Melaleuca adenostyla* for Coyrecup Lake.

Melaleuca halmaturorum



Melaleuca adenostyla

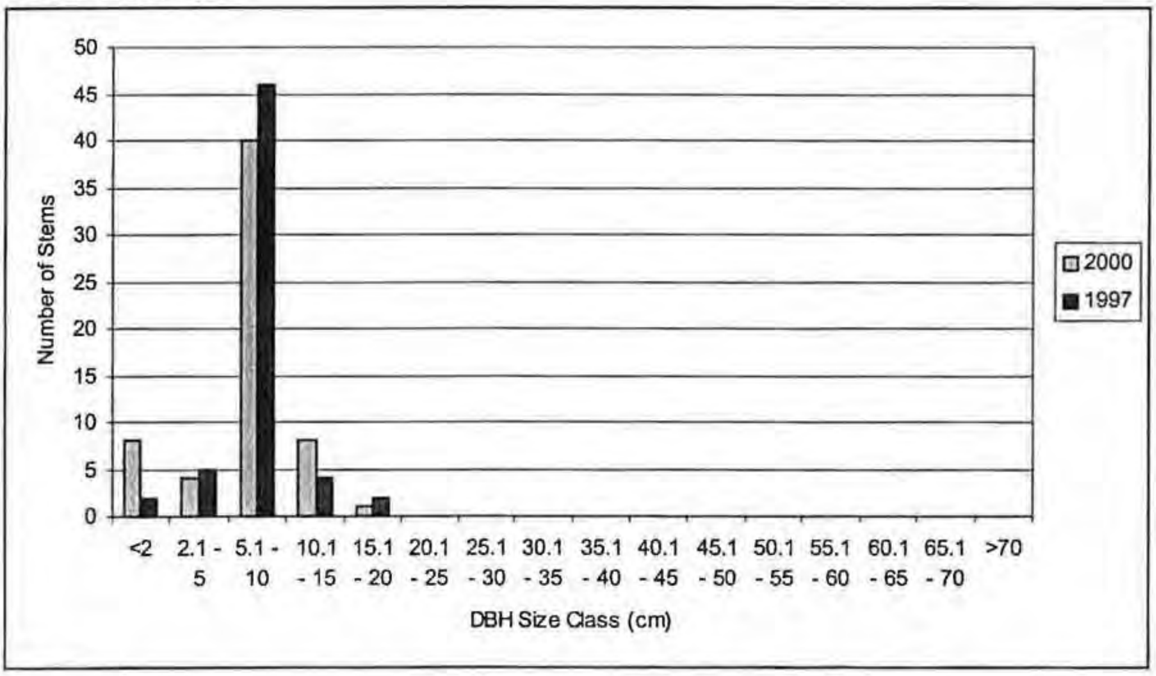


Figure 3.3.1 (cont.): Size Class Distributions of *Allocasuarina huegeliana, Eucalyptus occidentalis, Acacia acuminata, Eucalyptus loxophleba, Casuarina obesa, Melaleuca strobophylla, Melaleuca acuminata, Melaleuca halmaturorum* and *Melaleuca adenostyla* for Coyrecup Lake.

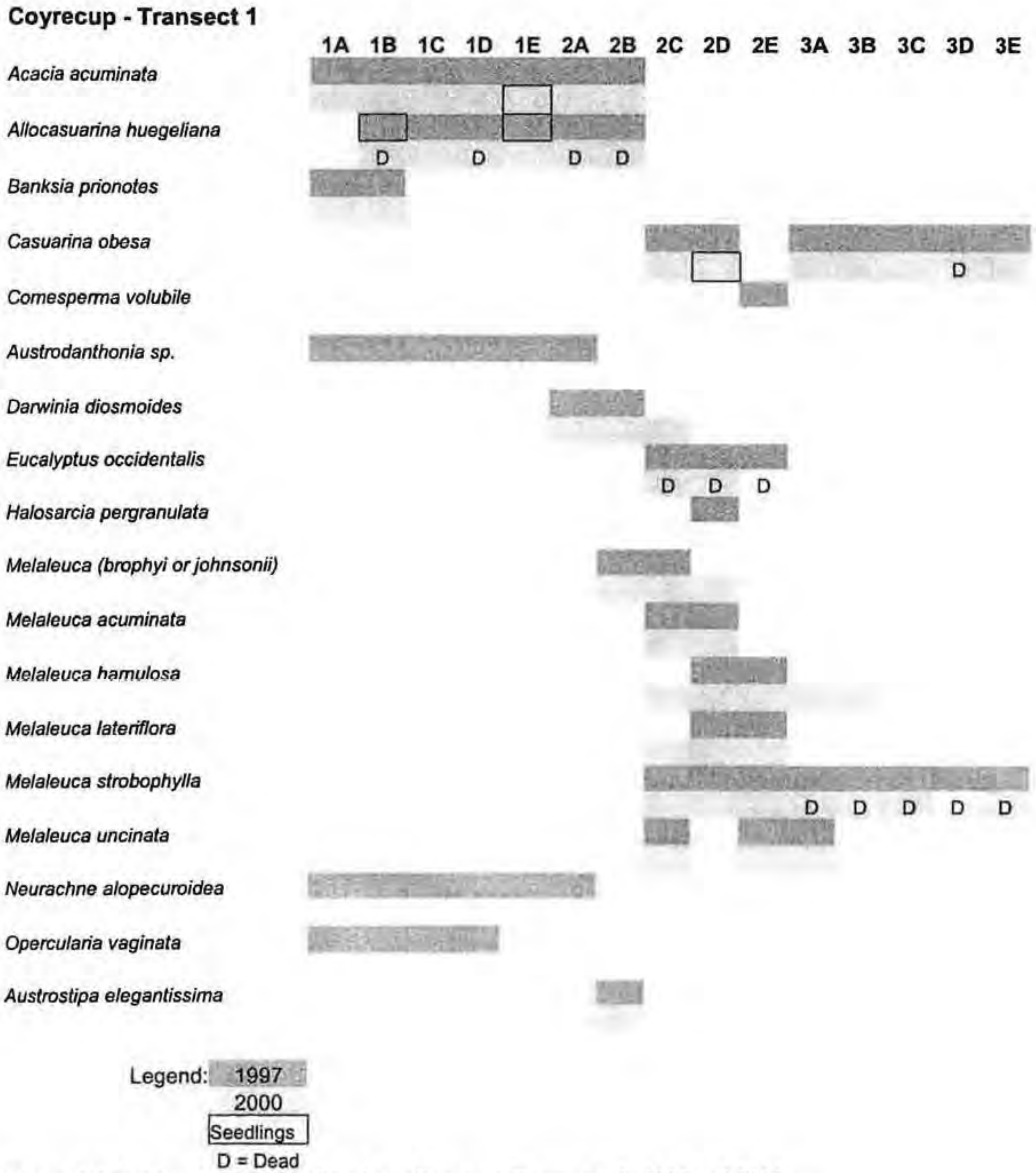


Figure 3.3.2a: Species Distribution along Coyrecup Transect 1 in 1997 and 2000.

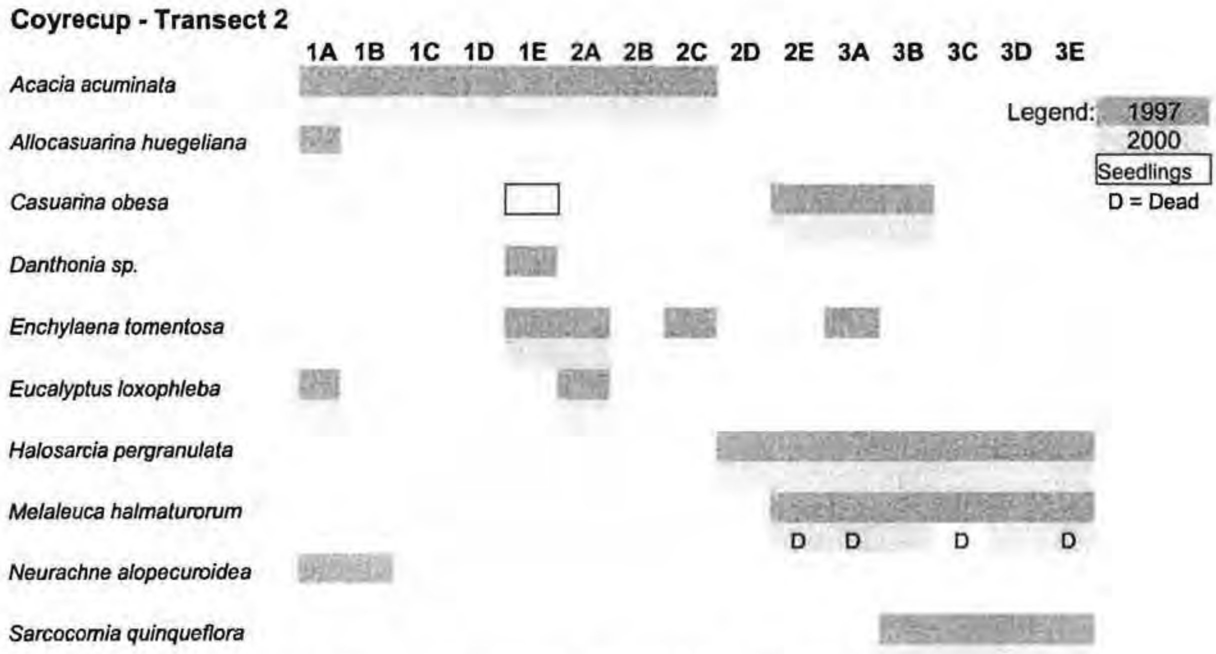


Figure 3.3.2b: Species Distribution along Coyrecup Transect 2 in 1997 and 2000.

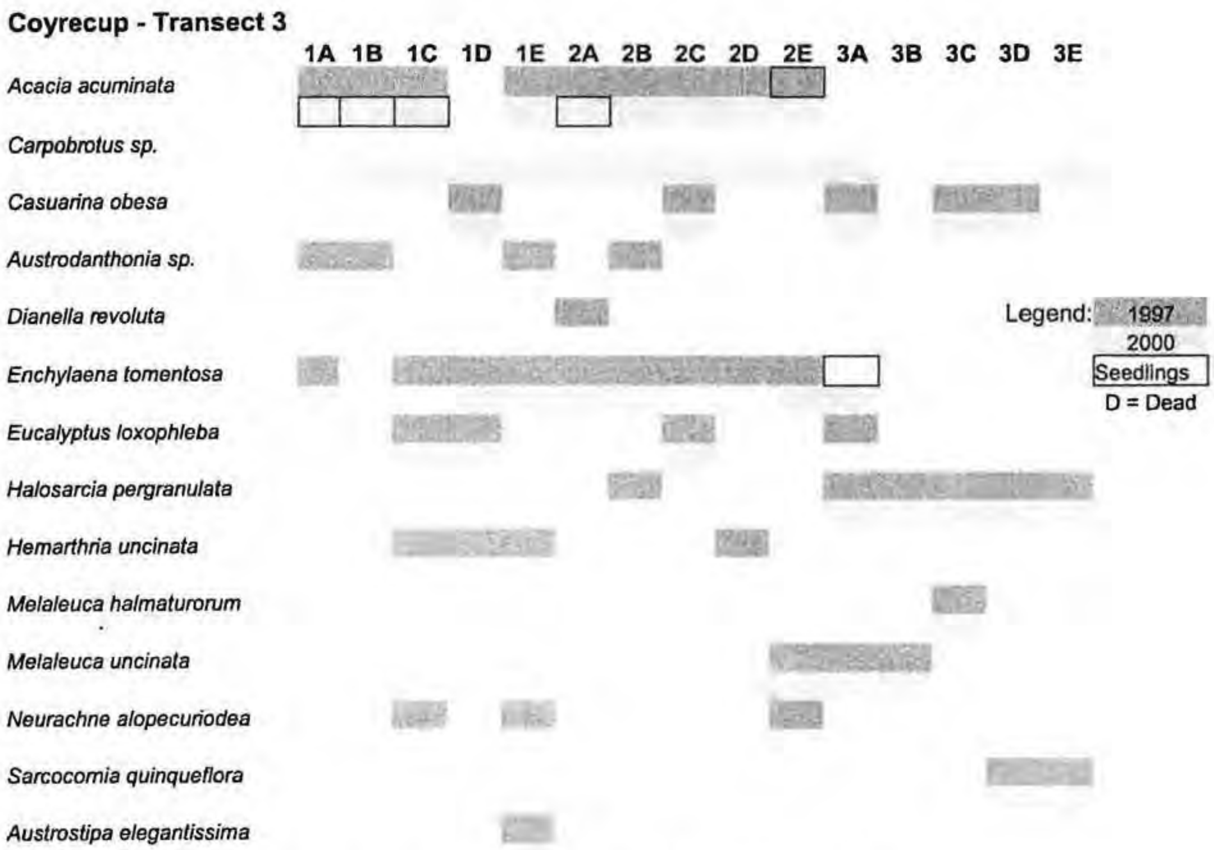


Figure 3.3.2c: Species Distribution along Coyrecup Transect 3 in 1997 and 2000.

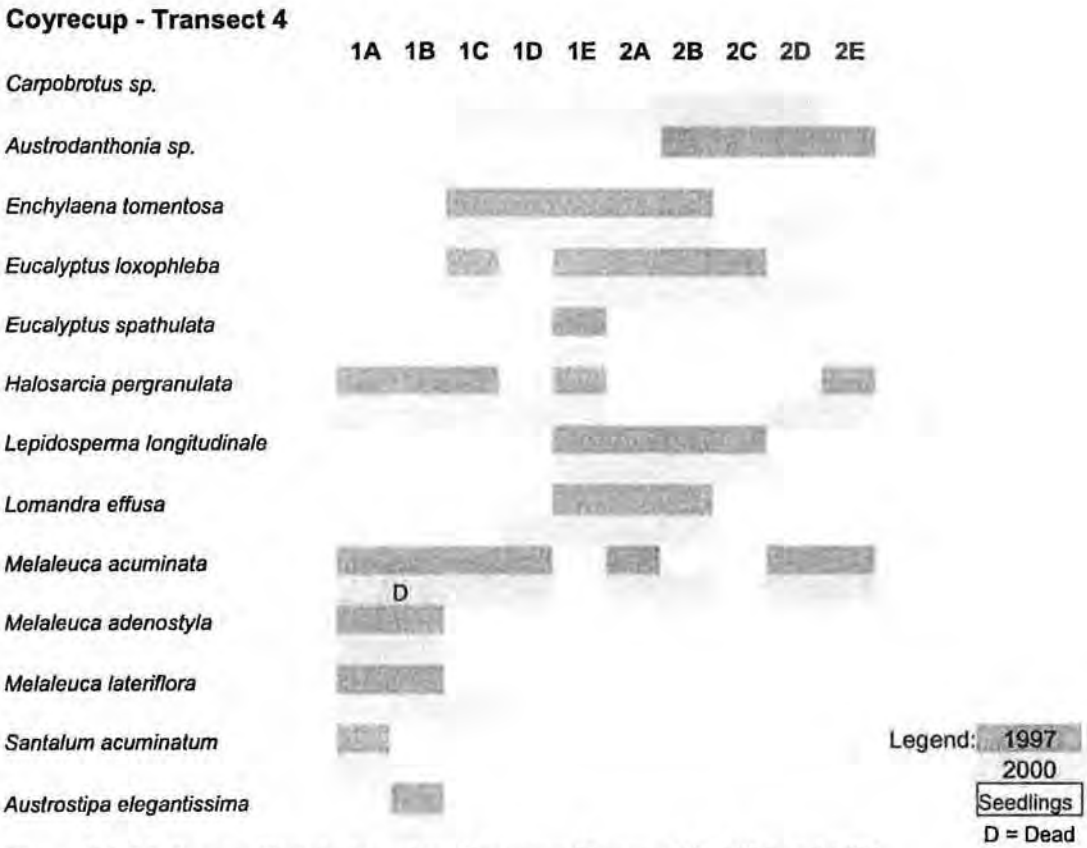


Figure 3.3.2d: Species Distribution along Coyrecup Transect 4 in 1997 and 2000.

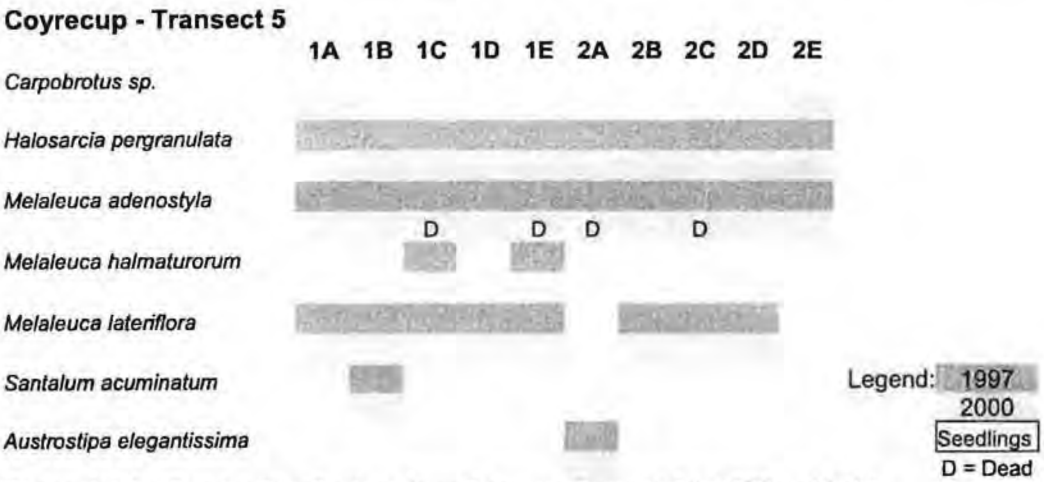


Figure 3.3.2e: Species Distribution along Coyrecup Transect 5 in 1997 and 2000.

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 ($33^0$49' S, $116^0$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 *Desmocladus asper, Conostylis aculeata, Hakea lissocarpa* and *Baumea* sp. On the western side, *Melaleuca rhaphiophylla* 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. rhaphiophylla*) 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. rhaphiophylla* seedlings were found, none of which were recorded during the 1997 monitoring period. A large percentage of the populations of *M. rhaphiophylla, 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 1997	Trees 2000	Seedlings 1997	Seedlings 2000	MCS (S.D) 1997	MCS (S.D) 2000
Eucalyptus wandoo	17	17	0	2	15 (3.1)	17.8 (2.3)
Eucalyptus decipiens	22	21	0	6	11.9 (3.4)	14 (2.8)
Melaleuca cuticularis	324	321	14	184	14.7 (2.6)	16.5 (3.04)
Melaleuca rhaphiophylla	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 *Desmocladus 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.	*Meeboldina cana* – 1997 20%, 2000 1.5%.
1B	Little Change.	Lost 4, gained 4 sp, 1 is introduced.	Lost 5, gained 6 sp. 1 introduced. *Desmocladus asper* – 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. *Schoenus submicrostachyus* – 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.	*Lepidosperma longitudinale* – 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.	

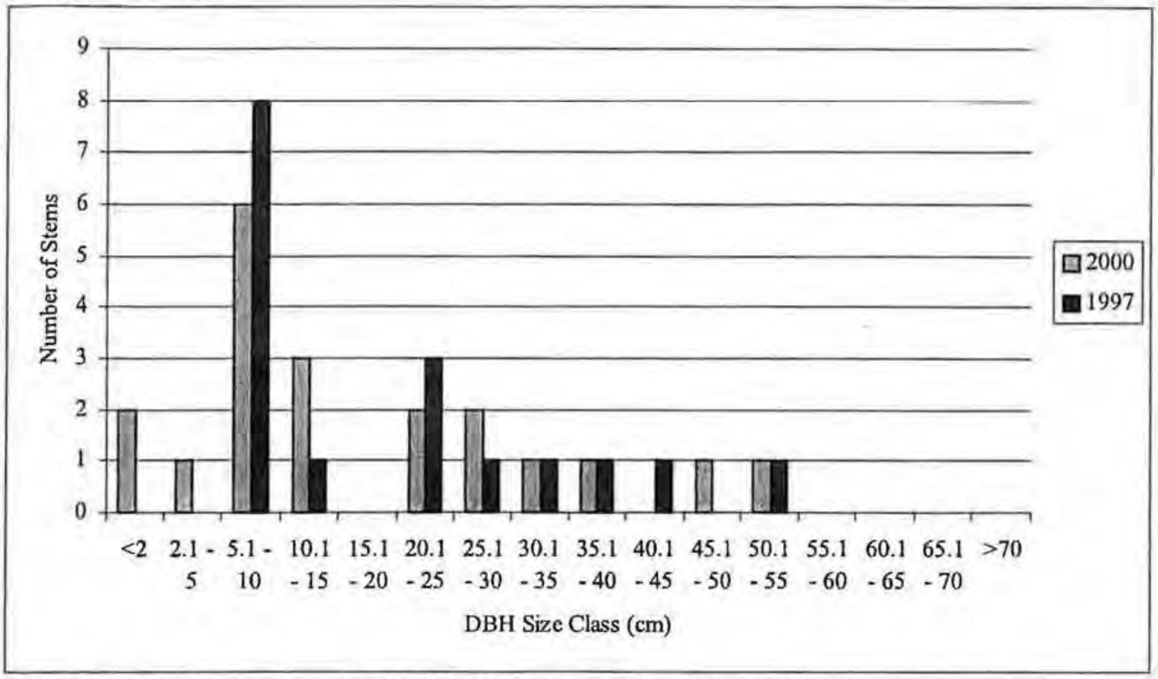
3.4.4 Soil Characteristics

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

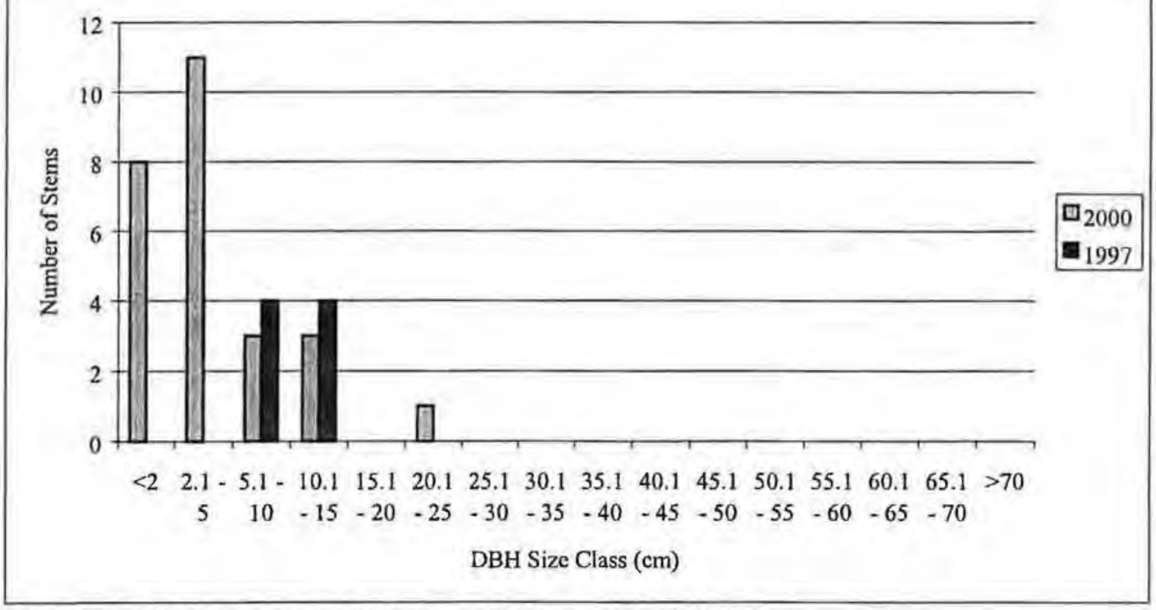
Lake Kulikup is currently unaffected by secondary salinisation and supports upland and littoral vegetation in very good condition, with the mean crown score for each overstorey species increasing since 1997. As in 1997, the lake has the lowest soil salinities of all the lakes surveyed, with a slight 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. rhaphiophylla* are all indications that this wetland continues to be healthy.

Eucalyptus wandoo



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

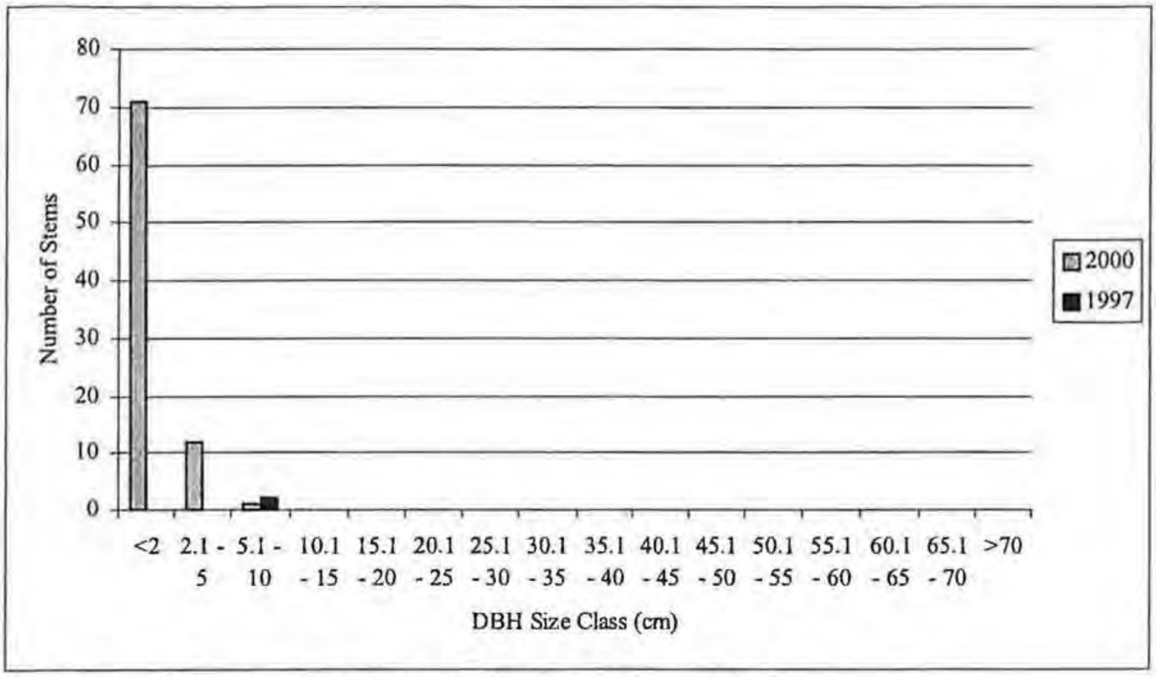
Eucalyptus decipiens



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

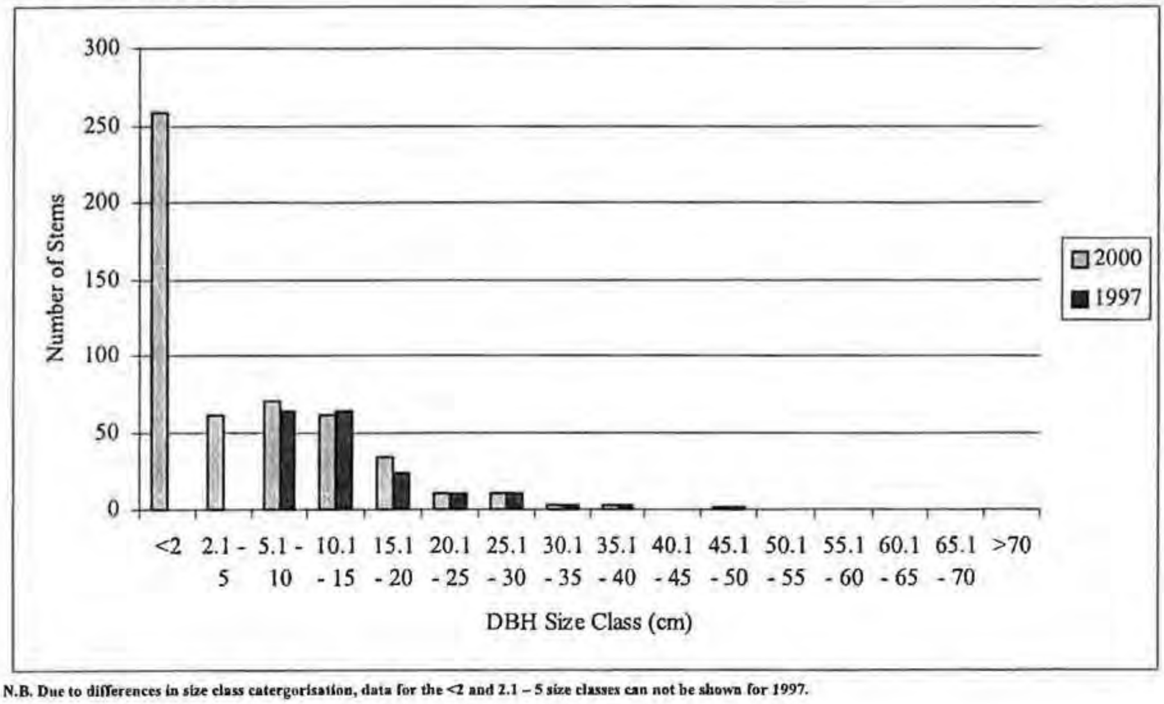
Figure 3.4.1: Size Class Distributions of *E. wandoo, E. decipiens, M. rhaphiophylla* and *M. cuticularis* for Lake Kulikup.

Melaleuca rhaphiophylla



N.B. Due to differences in size class catergorisation, 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 catergorisation, 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. rhaphiophylla* and *M. cuticularis* for Lake Kulikup.

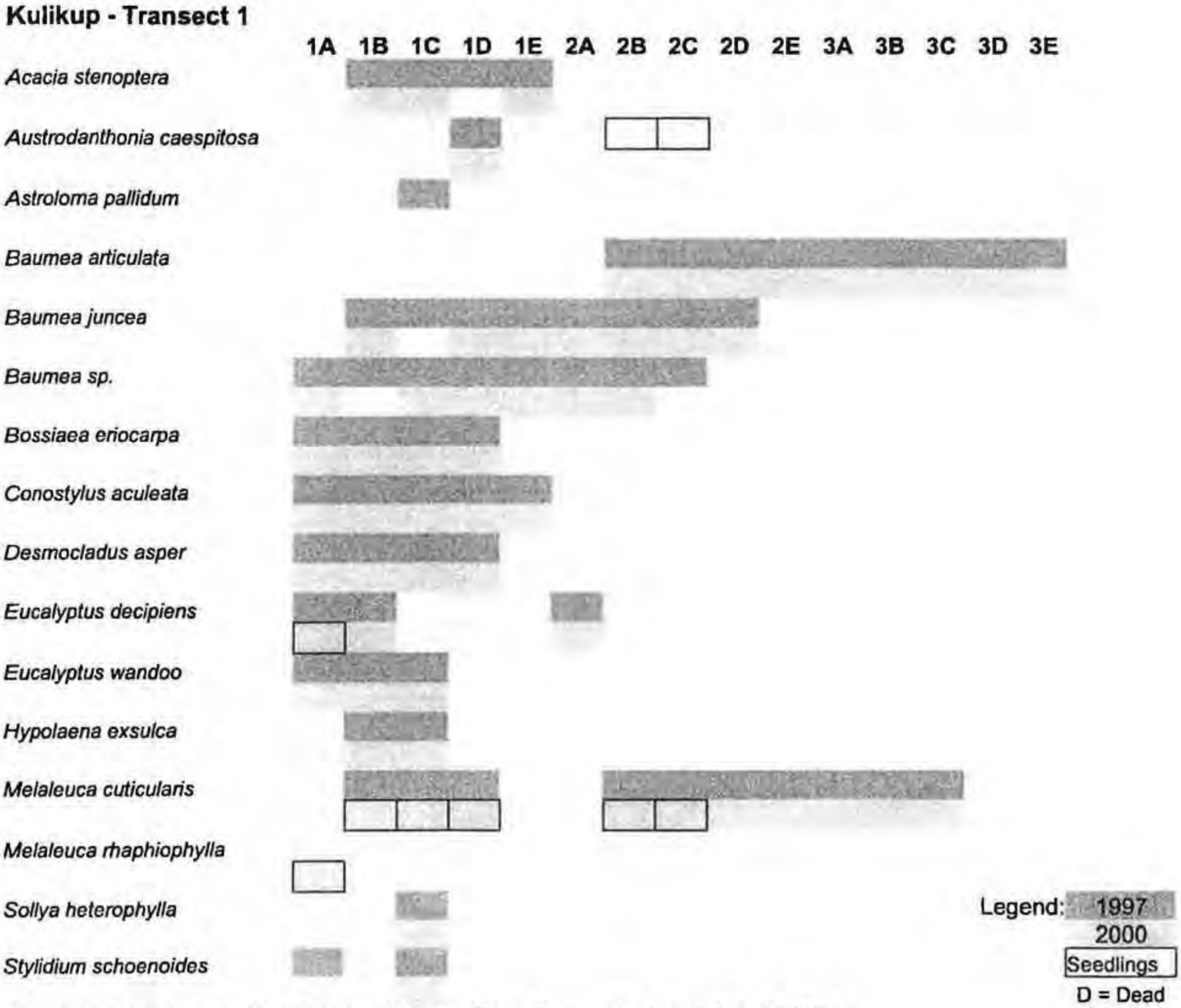
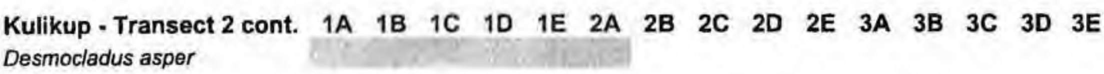


Figure 3.4.2a: Species Distribution along Kulikup Transect 1 in 1997 and 2000.

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



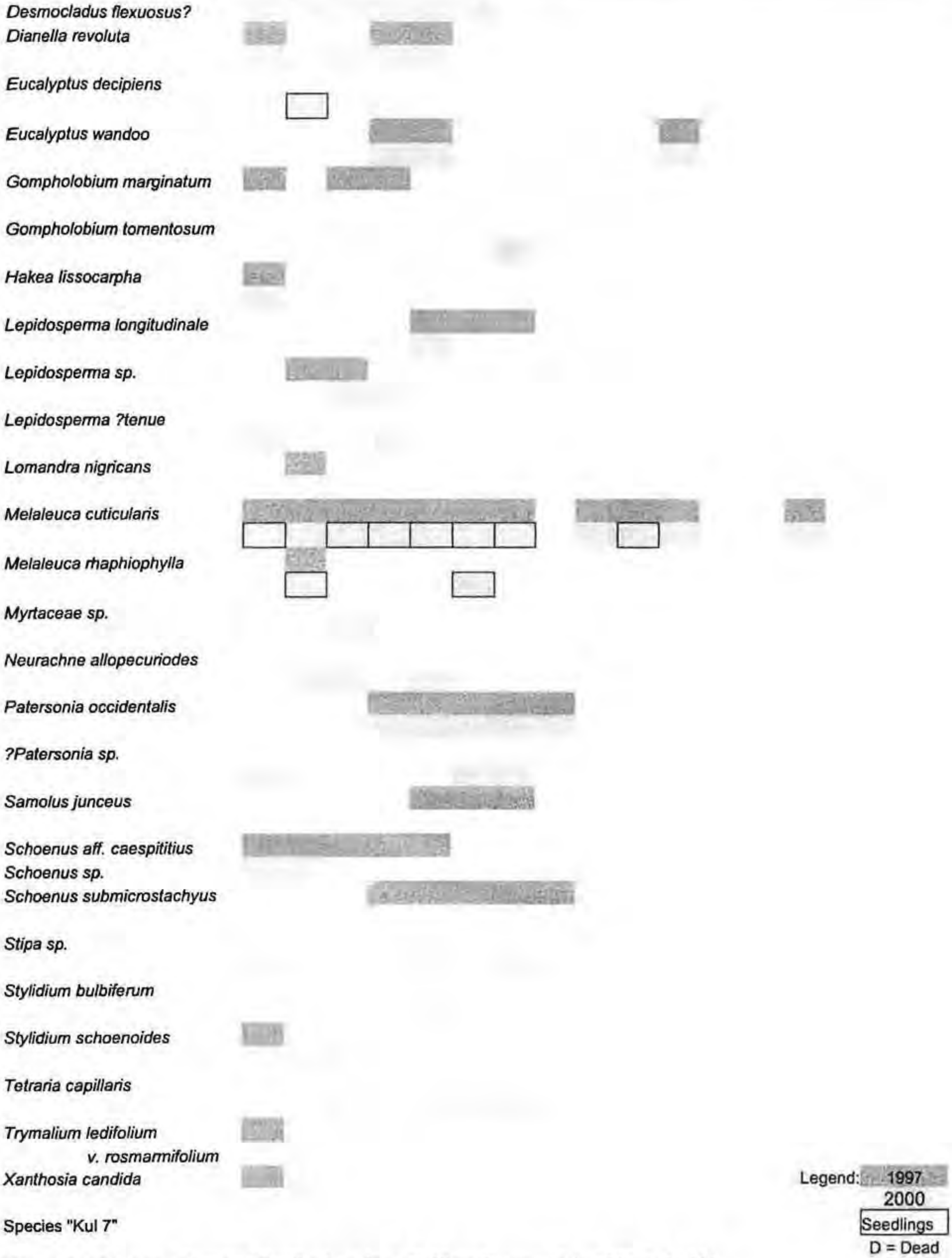


Figure 3.4.2b cont.: Species Distribution along Kulikup Transect 2 in 1997 and 2000.

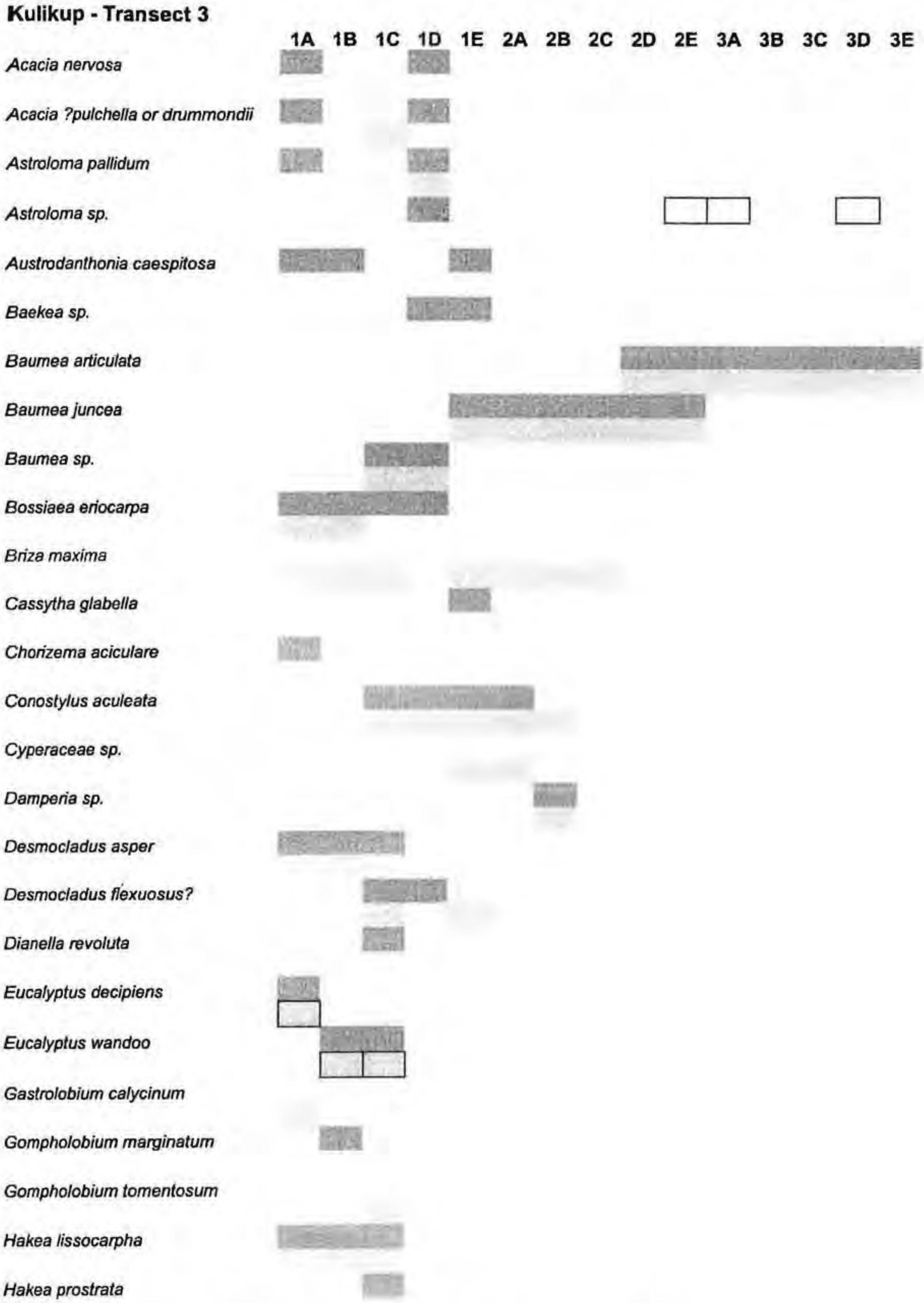


Figure 3.4.2c: Species Distribution along Kulikup Transect 3 in 1997 and 2000.

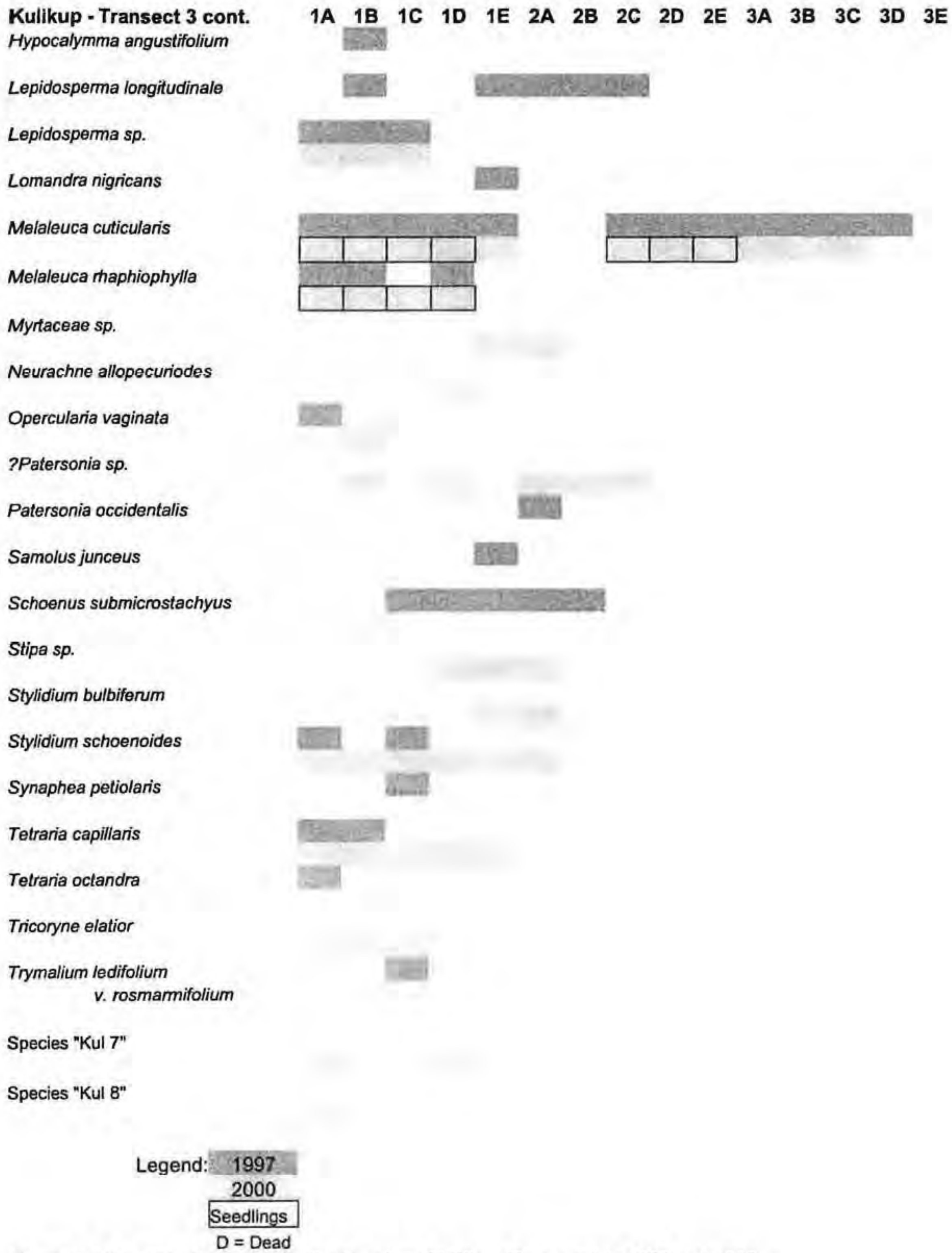


Figure 3.4.2c cont.: Species Distribution along Kulikup Transect 3 in 1997 and 2000.

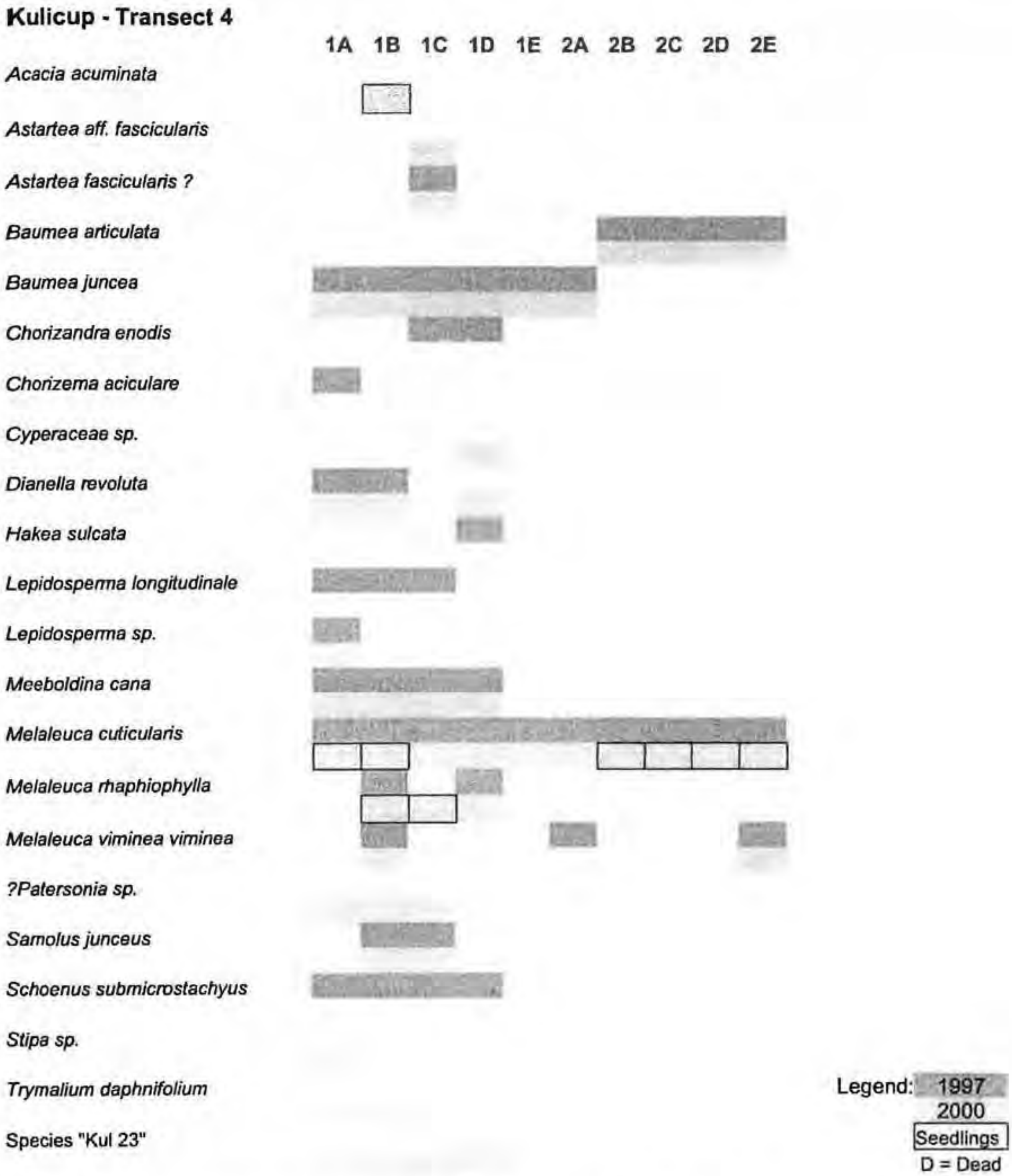


Figure 3.4.2d: Species Distribution along Kulikup Transect 4 in 1997 and 2000.

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 rhaphiophylla, Eucalyptus rudis, Banksia littoralis* and *Viminaria juncea* with an understorey of *Lepidosperma longitudinale, Baumea juncea, B. arthrophylla* and *B. articulata*. The *B. arthrophylla* 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. rhaphiophylla* 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 1997	Trees 2000	Seedlings 1997	Seedlings 2000	Saplings 1997	Saplings 2000	MCS (S.D) 1997	MCS (S.D) 2000
Corymbia calophylla	247	245	232	218	0	60	13.6 (3.0)	15.0 (3.80)
Eucalyptus marginata	60	59	0	0	0	0	13.1 (2.8)	15.3 (4.1)
Eucalyptus rudis	3	3	1	0	0	0	14 (2.6)	13.3 (3.2)
Acacia cyclops	6	7	0	0	2	2	11.3 (3.4)	10.1 (7.3)
Melaleuca rhaphiophylla	28	28	2	8	1	1	9.7 (4.2)	10.3 (5.8)
Banksia littoralis	12	12	3	3	0	0	15.1 (2.5)	18 (2.6)
Viminaria juncea	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. *Macrozamia riedlei* – 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. *Tetratia capillaris* – 1997 25%, 2000 1%.	Gained 8 species.
2A	No Change.	Gained 4 sp.	Little Change.	Lost 2, gained 5 sp. *Macrozamia riedlei* – 1997 19%, 2000 5%. *Tetraria capillaris* – 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.	*Agonis parviceps* – 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?	*Hibbertia amplexicaulis* – 1997 51.1%, 2000 0.5%.
2E	Little Change.	Lost 4, gained 9 species.	Little Change.	*Baumea juncea* – 1997 50%, 2000 80%	Little Change.
3A			Little Change.	*Baumea juncea* – 1997 50%, 2000 15%	*Baumea articulata* – 1997 5%, 2000 35% Lost *B. arthrophylla*, gained *Villarsia* sp + *Triglochin* sp.
3B			Little Change.	Lost *B. arthrophylla*, gained *Triglochin* sp.	*Baumea articulata* – 1997 20%, 2000 35% Lost *B. arthrophylla*, gained *Villarsia* sp + *Triglochin* sp.
3C			Little Change.	Lost *B. arthrophylla*, gained *Triglochin* sp.	*Baumea arthrophylla* – 1997 40%, 2000 5%.
3D			Little Change.	Lost *B. arthrophylla*, gained *Triglochin* sp.	Little Change.
3E			Little Change.	Lost *B. arthrophylla*, gained *Triglochin* sp.	*Baumea arthrophylla* – 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 capillaries* (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)

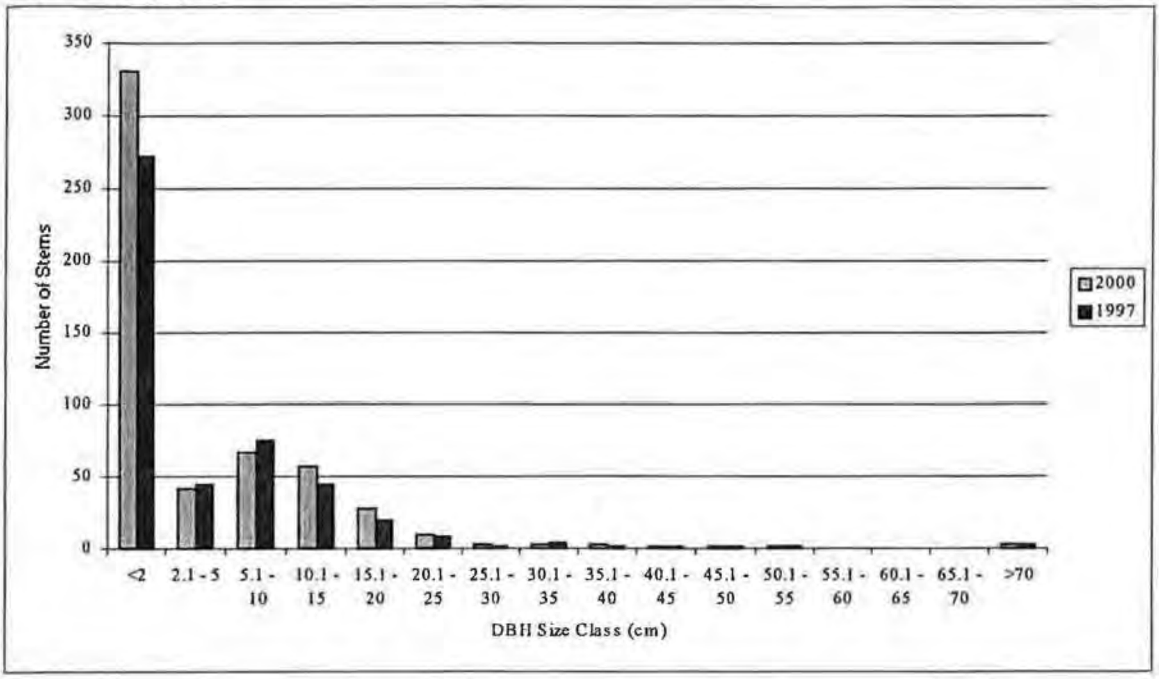
3.5.4 Soil Characteristics

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. arthrophylla* 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

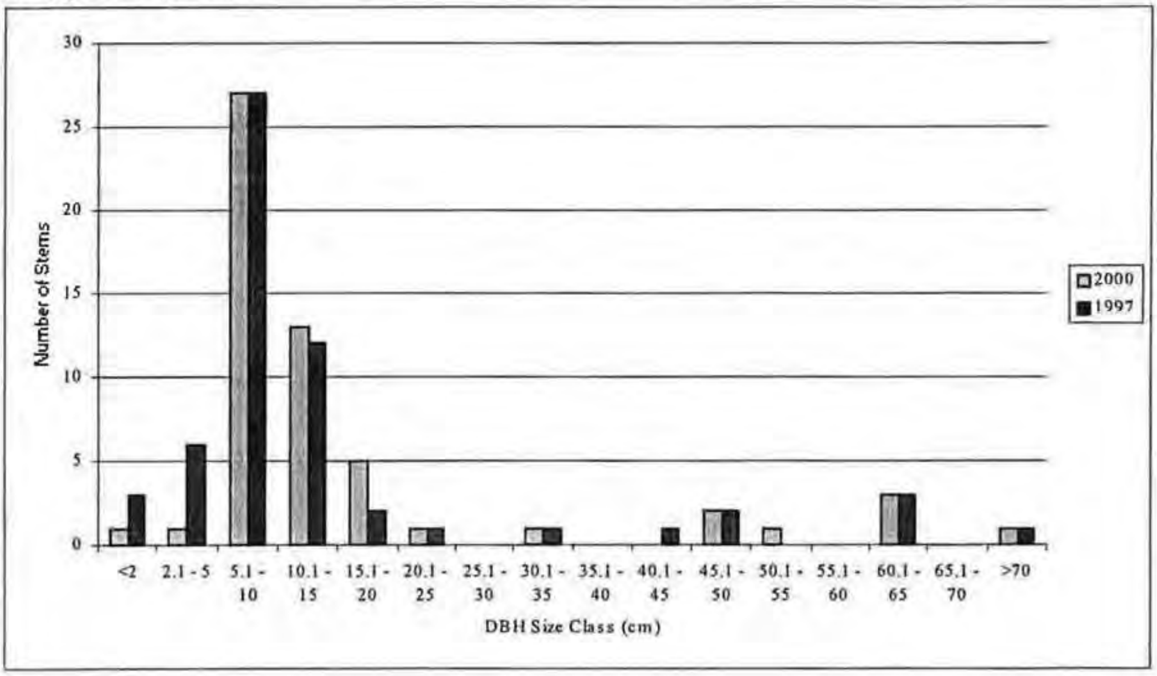
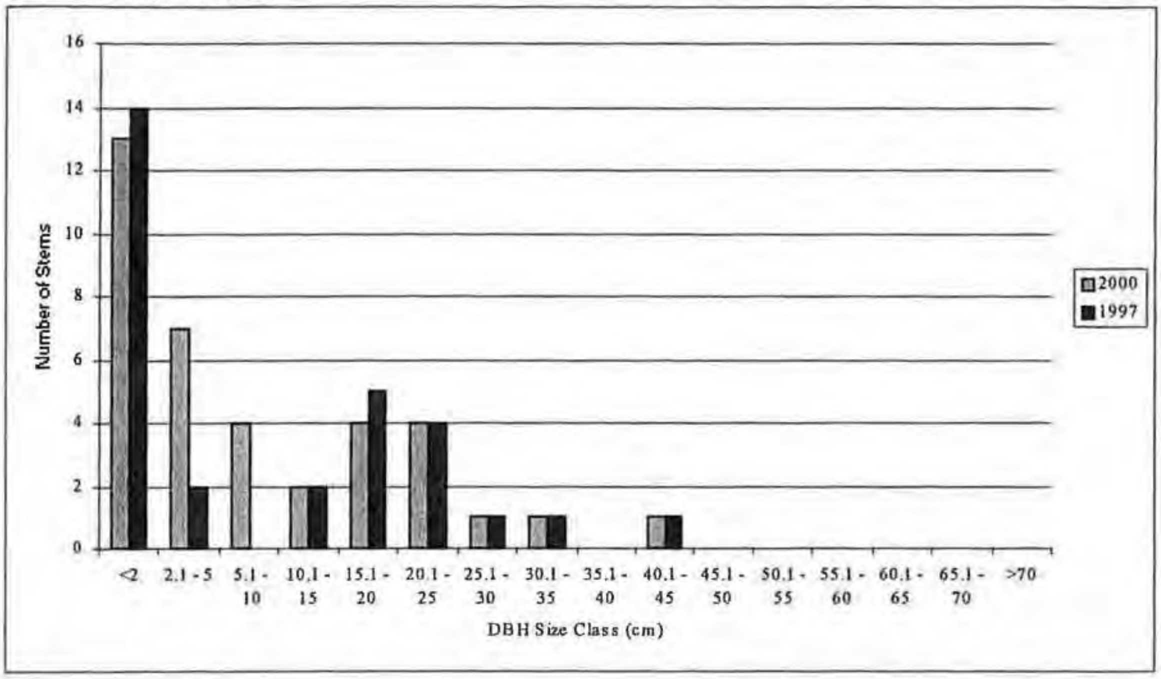


Figure 3.5.1: Size Class Distributions for *Corymbia calophylla, Eucalyptus marginata, Melaleuca rhaphiophylla, Banksia littoralis* and *Viminaria juncea* at Noobijup Lake.

Melaleuca rhaphiophylla



Banksia littoralis

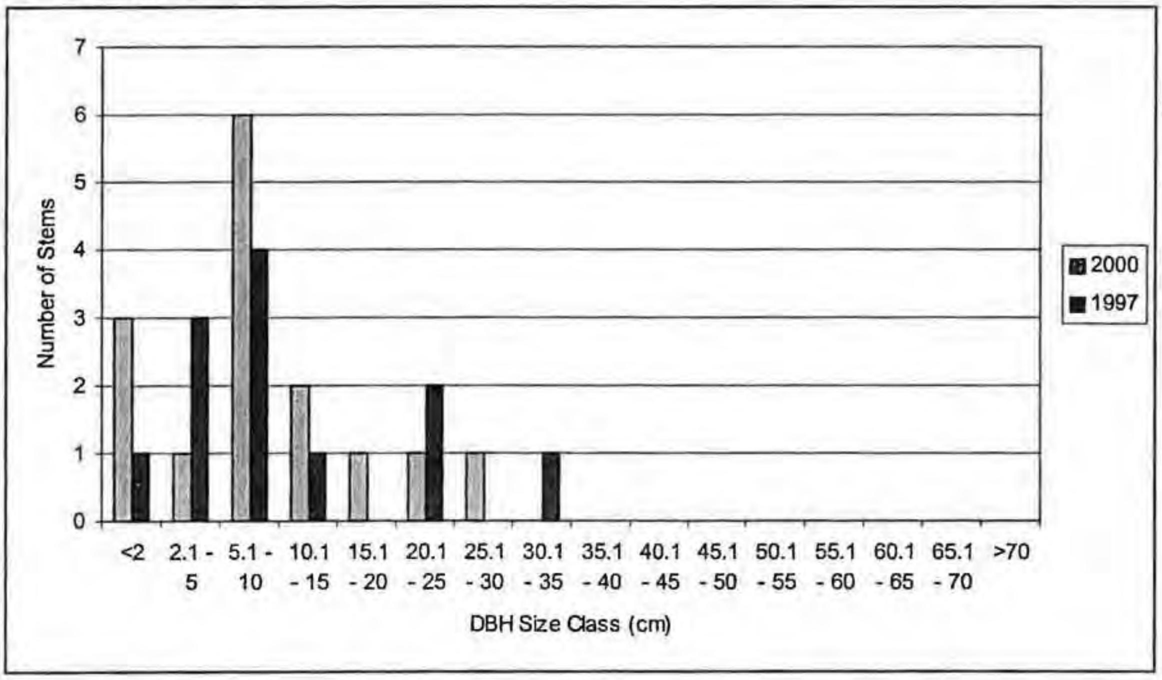


Figure 3.5.1(cont.): Size Class Distributions for *Corymbia calophylla, Eucalyptus marginata, Melaleuca rhaphiophylla, Banksia littoralis* and *Viminaria juncea* at Noobijup Lake.

Viminaria juncea

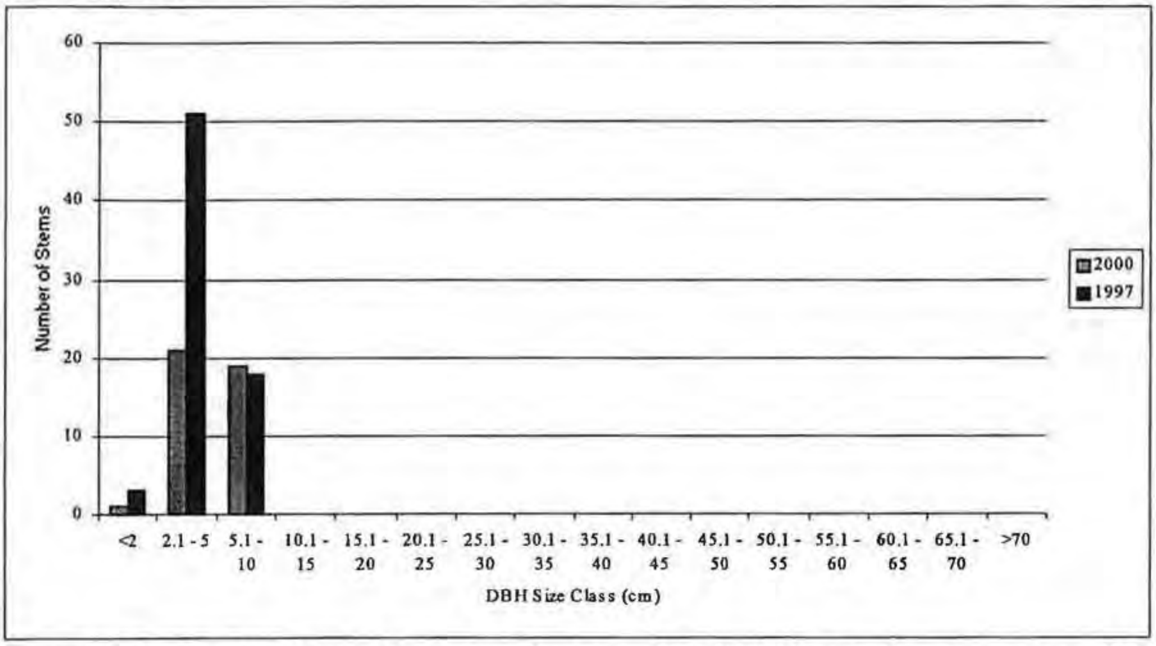


Figure 3.5.1(cont.): Size Class Distributions for *Corymbia calophylla, Eucalyptus marginata, Melaleuca rhaphiophylla, Banksia littoralis* and *Viminaria juncea* at Noobijup Lake.

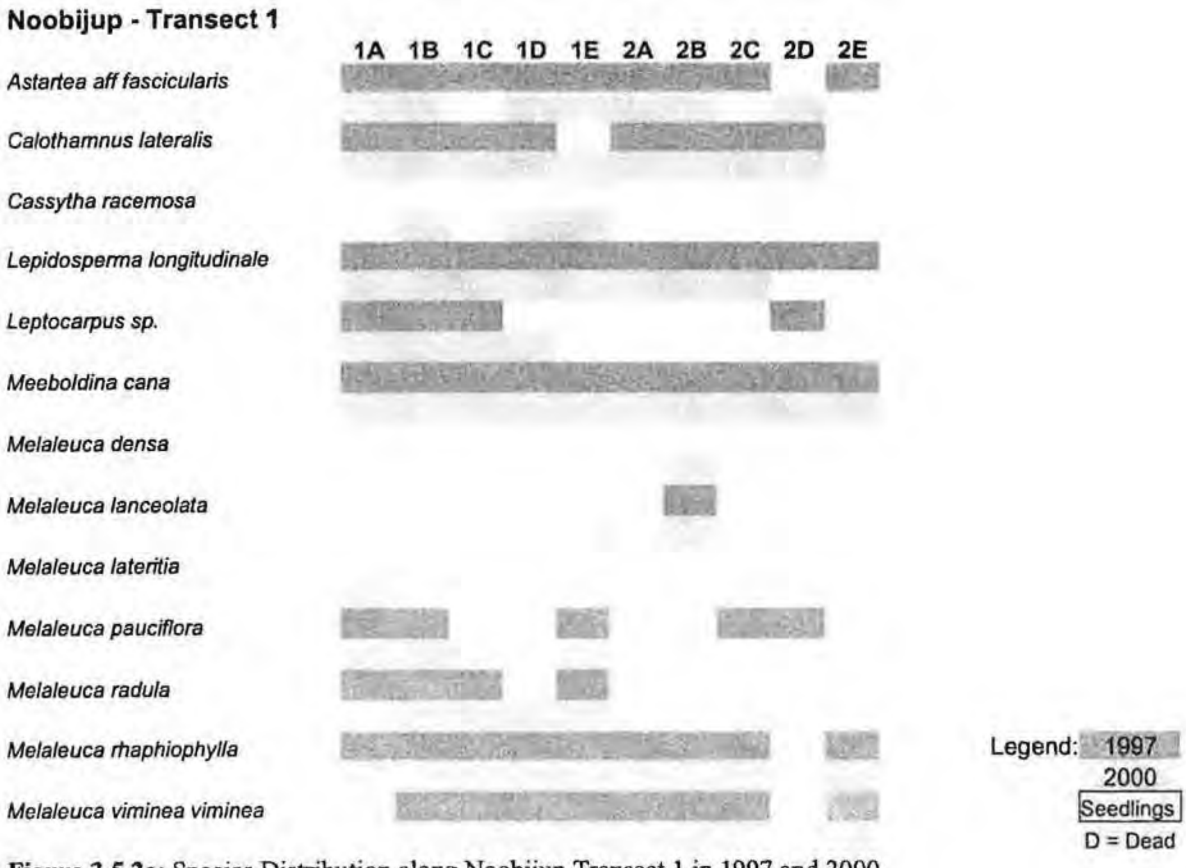


Figure 3.5.2a: Species Distribution along Noobijup Transect 1 in 1997 and 2000.

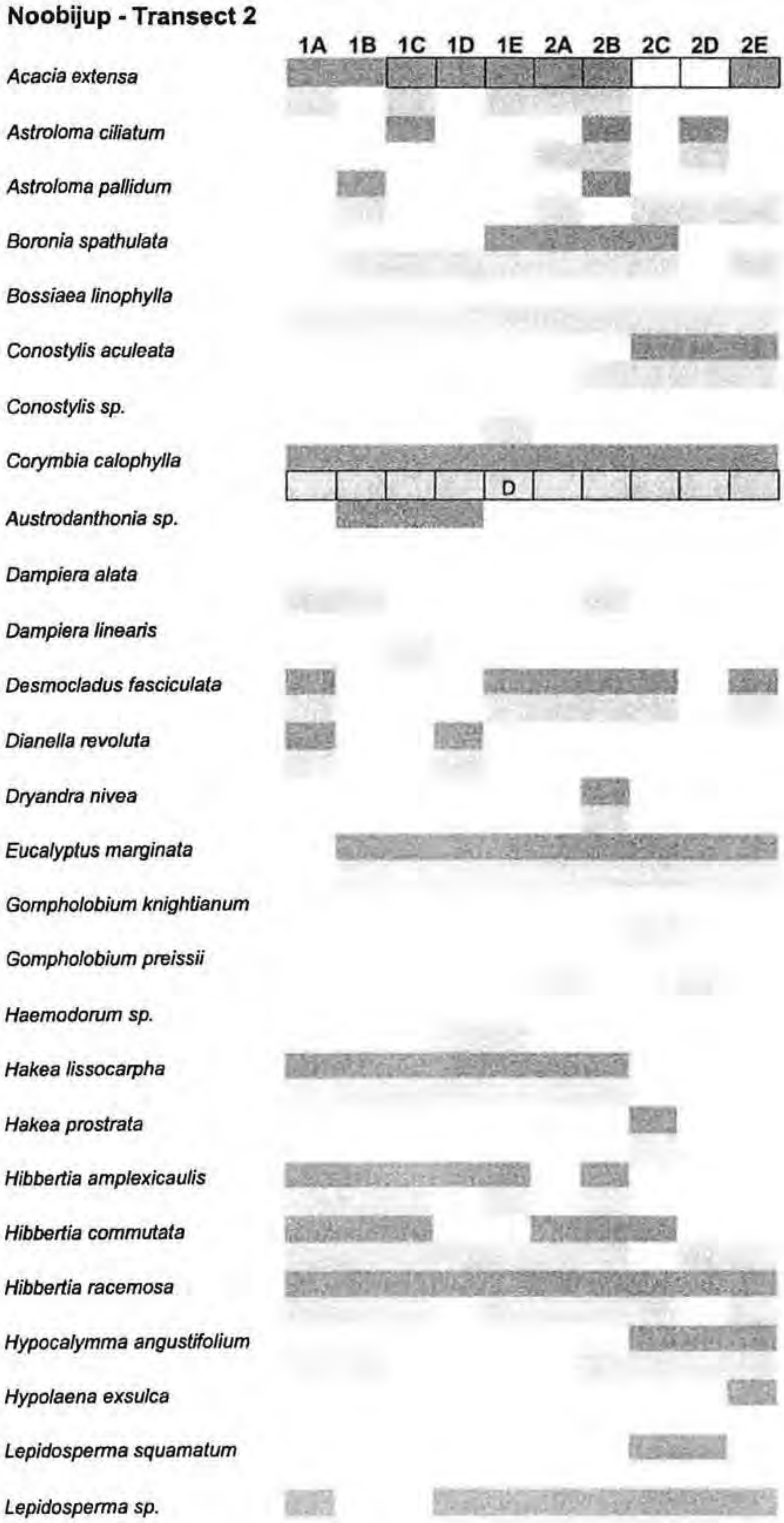


Figure 3.5.2b: Species Distribution along Noobijup Transect 2 in 1997 and 2000.

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

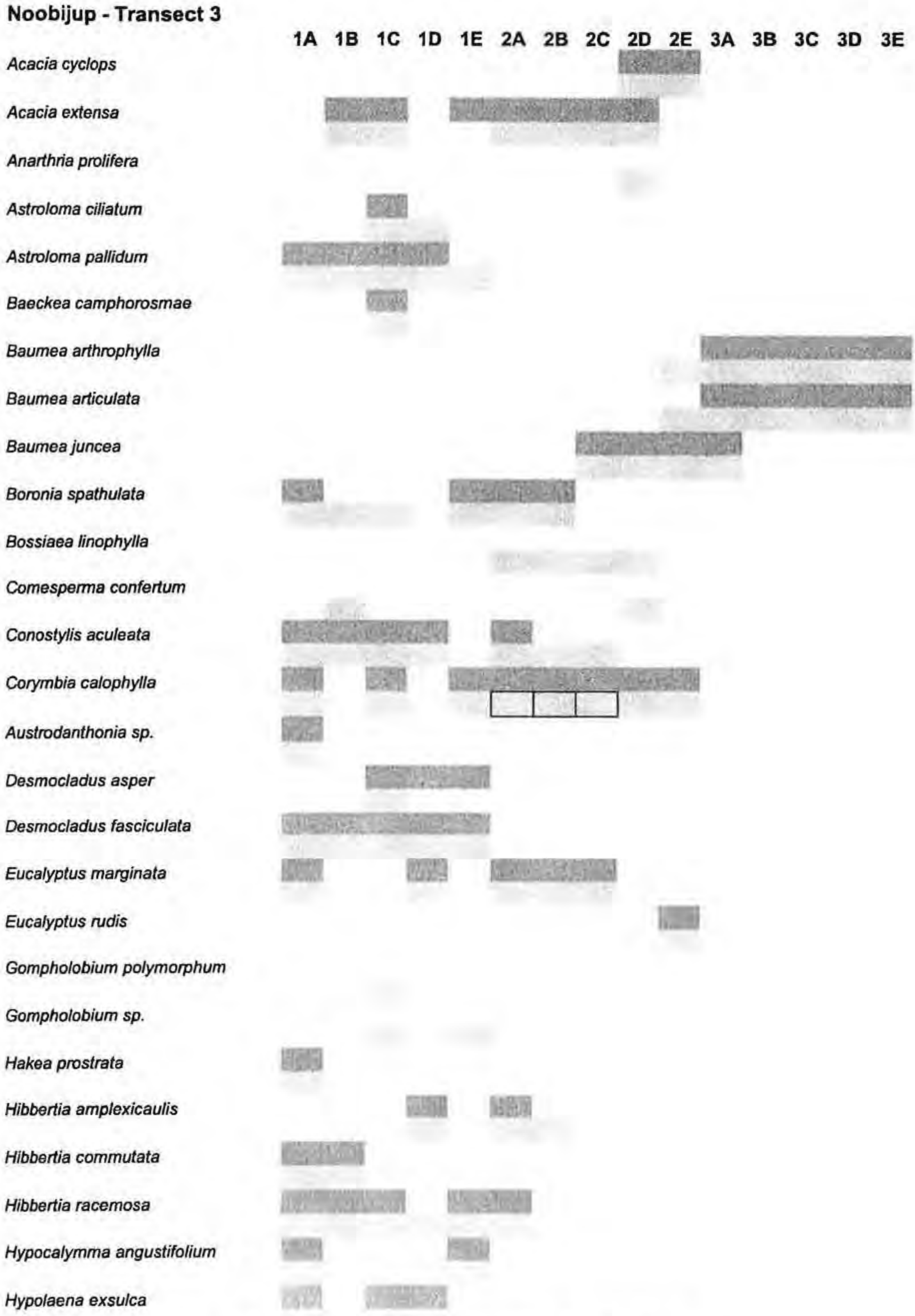


Figure 3.5.2c: Species Distribution along Noobijup Transect 3 in 1997 and 2000.

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.

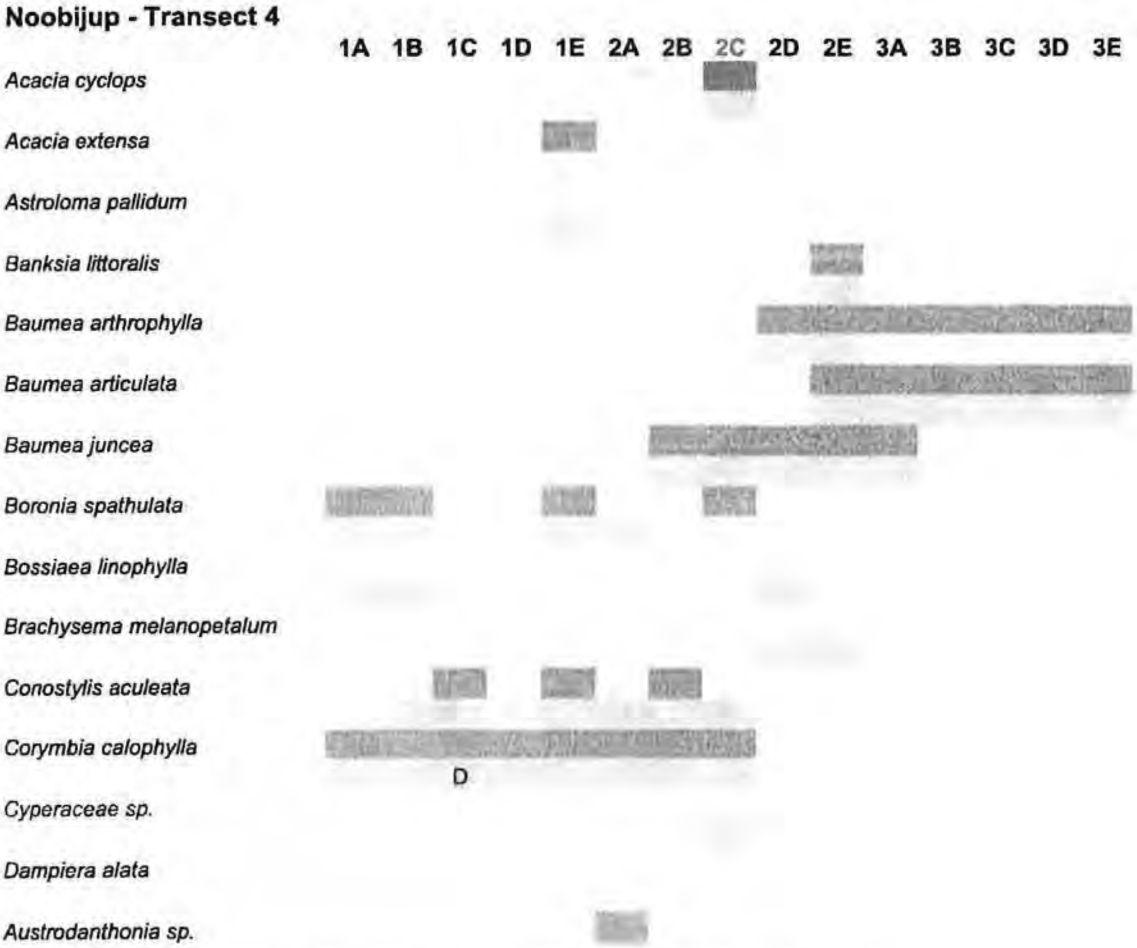


Figure 3.5.2d: Species Distribution along Noobijup Transect 4 in 1997 and 2000.

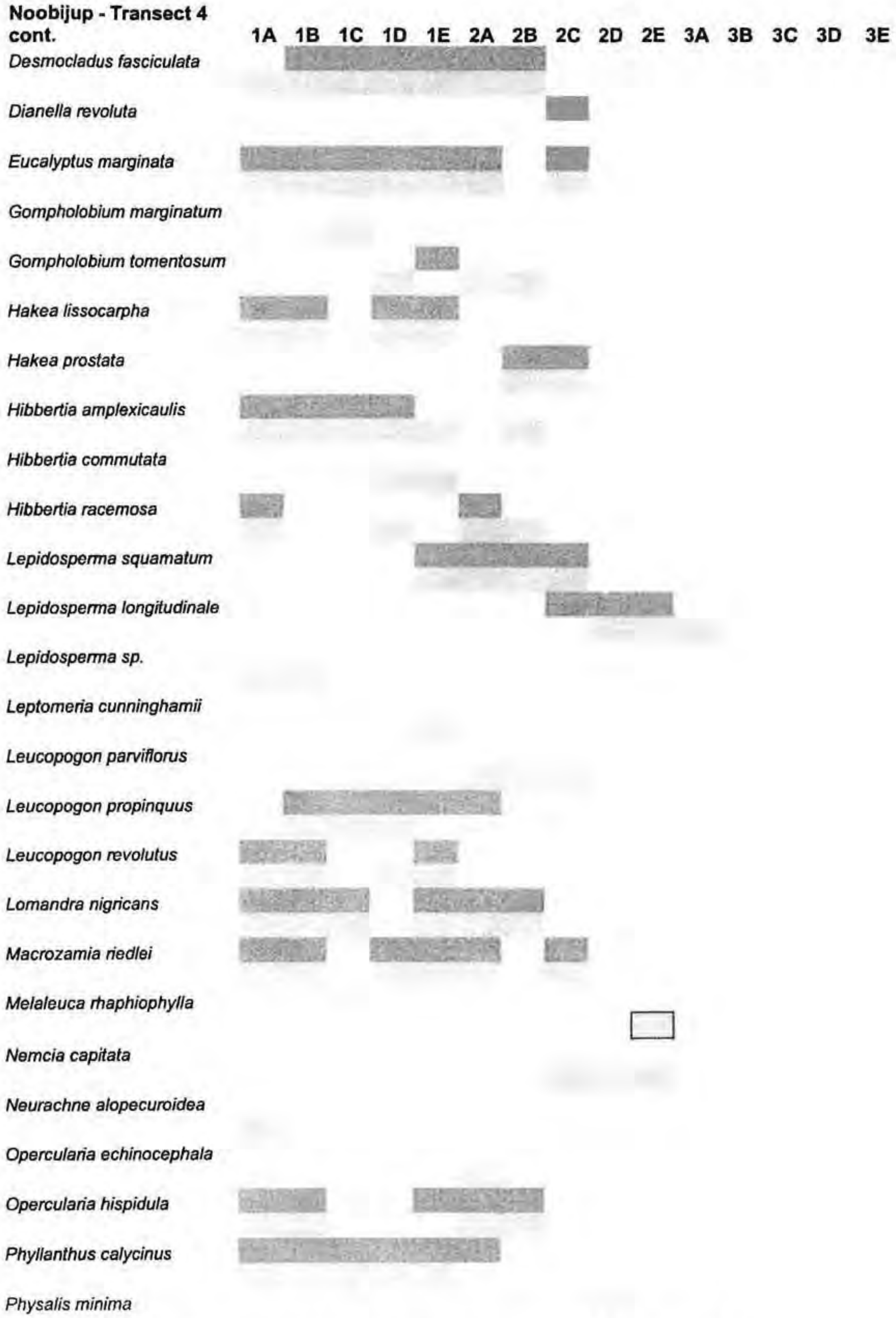


Figure 3.5.2d cont.: Species Distribution along Noobijup Transect 4 in 1997 and 2000.

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

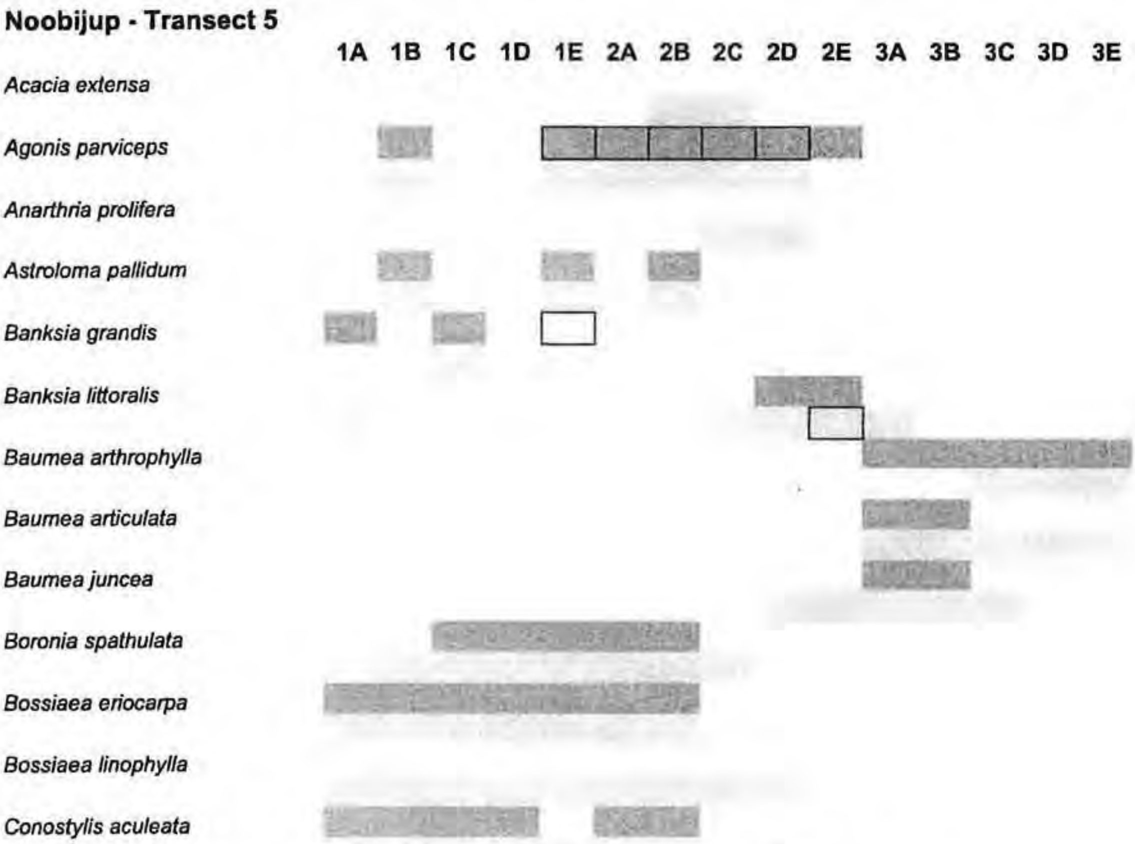


Figure 3.5.2e: Species Distribution along Noobijup Transect 5 in 1997 and 2000.

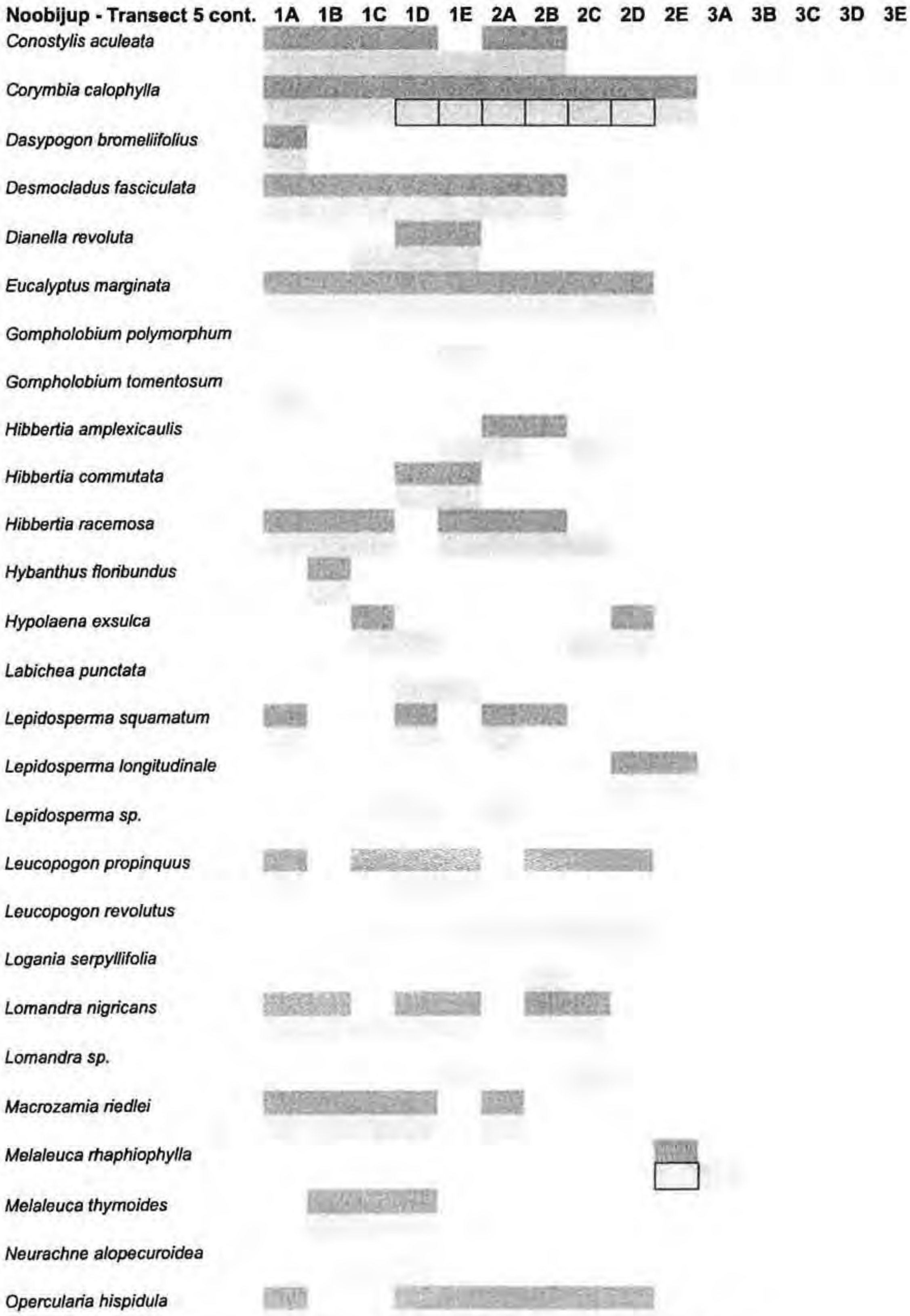


Figure 3.5.2e cont.: Species Distribution along Noobijup Transect 5 in 1997 and 2000.

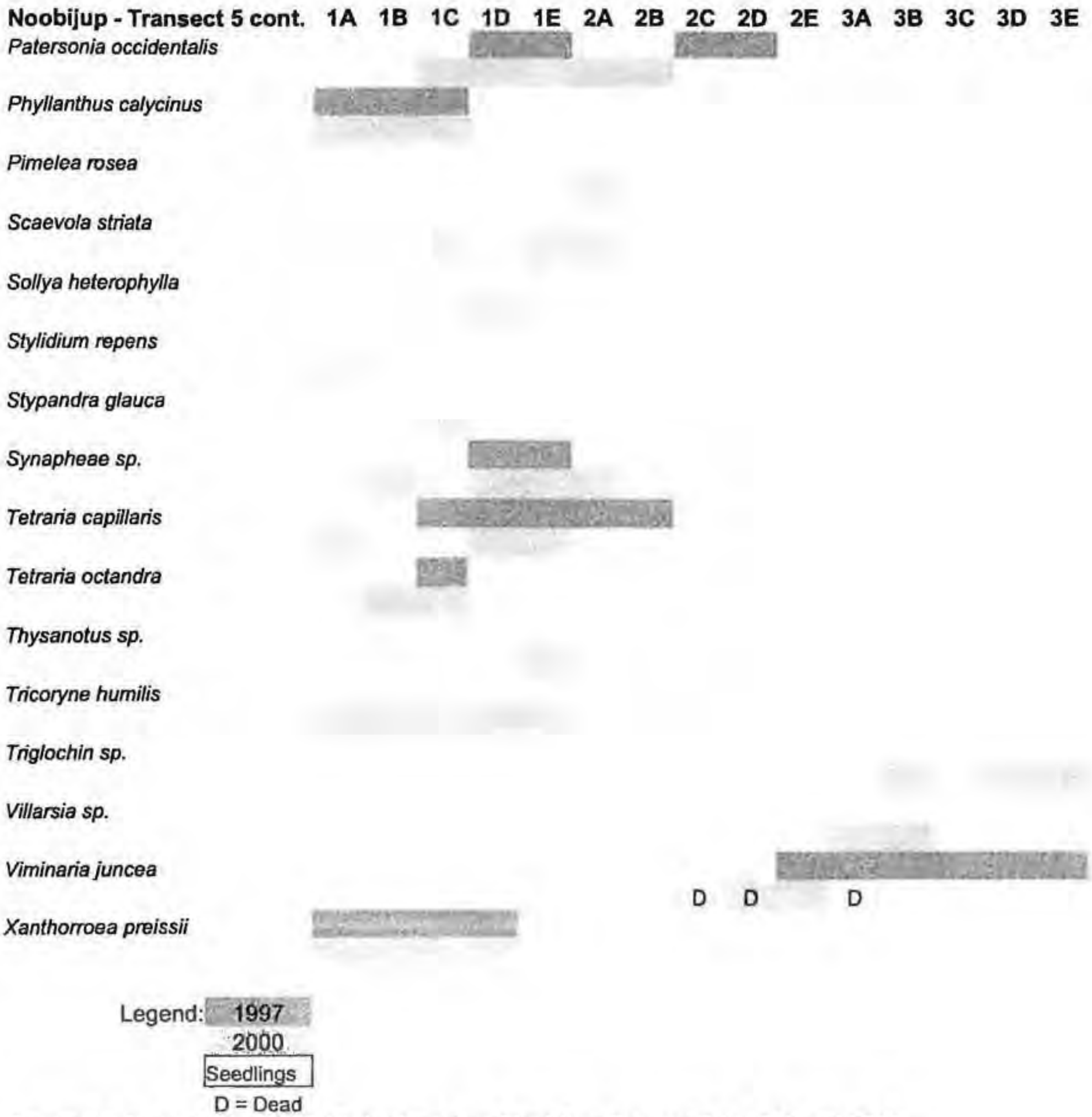


Figure 3.5.2e cont.: Species Distribution along Noobijup Transect 5 in 1997 and 2000.

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; Mattiske, 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 Mattiske (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 1997	Trees 2000	Seedlings 1997	Seedlings 2000	MCS (S.D) 1997	MCS (S.D) 2000
Casuarina obesa	379	357	40	22	8.9 (4.5)	9.2 (7.7)
Melaleuca strobophylla	78	74	33	6	10.7 (4.0)	12.1 (2.7)
Acacia acuminata	4	4	0	0	13 (2.3)	13.7 (0.95)
Eucalyptus rudis	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 - *Halosarcia pergranulata*	No Change?	No Change.
1B	No Change.	Gained 1 - *Halosarcia pergranulata*	No Change?	No Change.
1C	No Change.	Gained 1 - *Halosarcia pergranulata*	No Change?	Little Change.
1D	No Change.	Gained 1 - *Halosarcia pergranulata*	No Change?	No Change.
1E	(No Understorey)	Gained 2, incl. H. pergranulata	No Change?	New understorey of *H. lepidosperma*
2A	Little Change.	Gained 1 – *H. lepidosperma*	No Change.	New understorey of *H. lepidosperma*
2B	Little Change.	Lost 1, gained *H. pergranulata*	No Change.	Little Change.
2C	Little Change.	Lost 1, gained *H. pergranulata*	No Change.	Little Change.
2D	Little Change.	Lost 1, gained *H. lepidosperma*	*Halosarcia pergranulata* 1997 50% 2000 10%	Little Change.
2E	New understorey of *H. lepidosperma*	Lost 1, gained *H. lepidosperma*	Lost *H. pergranulata*.	Gained 1 – *H. pergranulata*
3A		New understorey of *H. lepidosperma*	Little Change.	
3B		(No Understorey)	Lost *H. pergranulata*.	
3C		New understorey of *H. lepidosperma*	Lost *H. pergranulata*.	
3D		Lost 1, gained *H. lepidosperma*	Lost *H. pergranulata*. (1997 41%)	
3E		(No Understorey)	Lost *H. pergranulata*.	

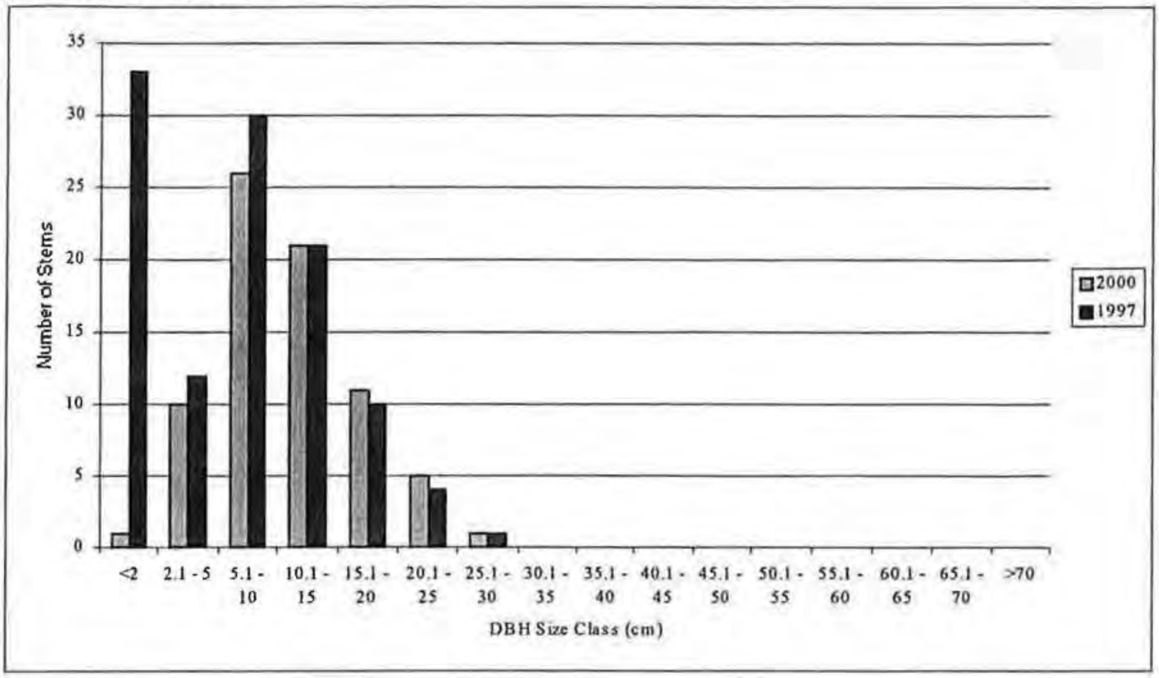
3.6.4 Soil Characteristics

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 at 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

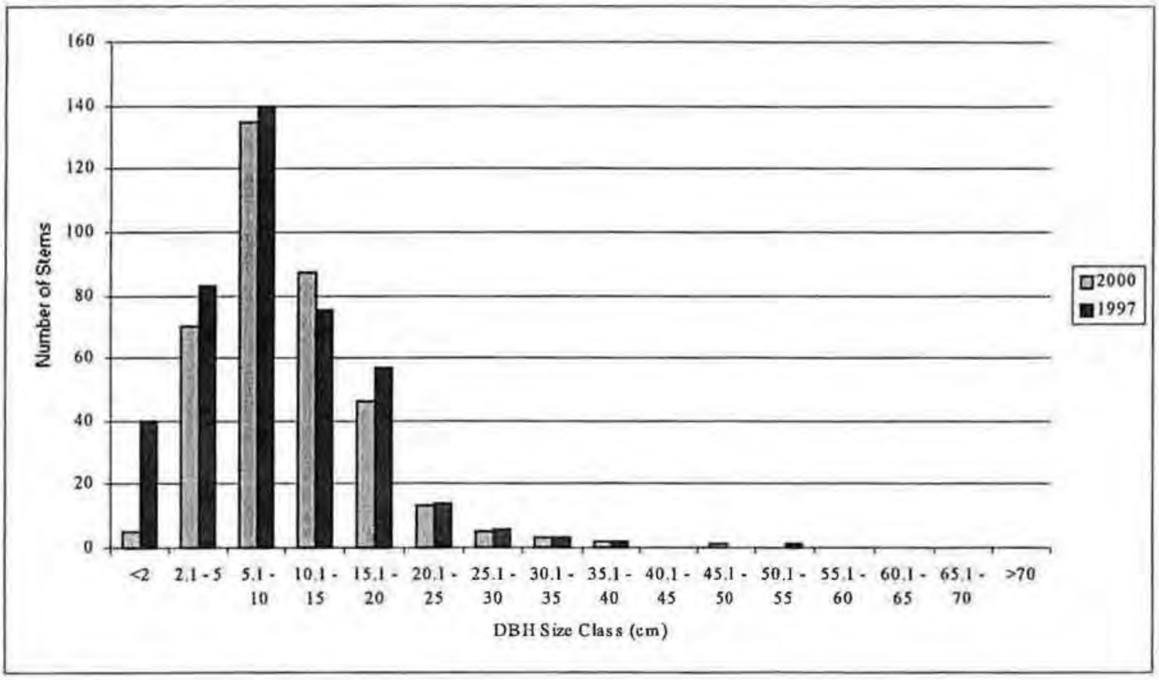


Figure 3.6.1: Size Class Distributions of *Melaleuca strobophylla* and *Casuarina obesa* at Lake Toolibin

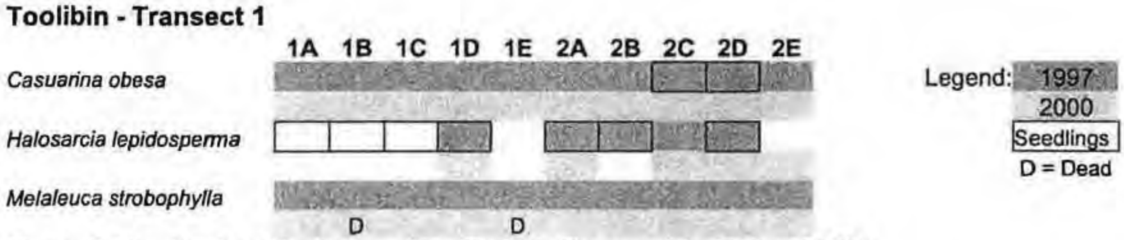


Figure 3.6.2a: Species Distribution along Toolibin Transect 1 in 1997 and 2000.

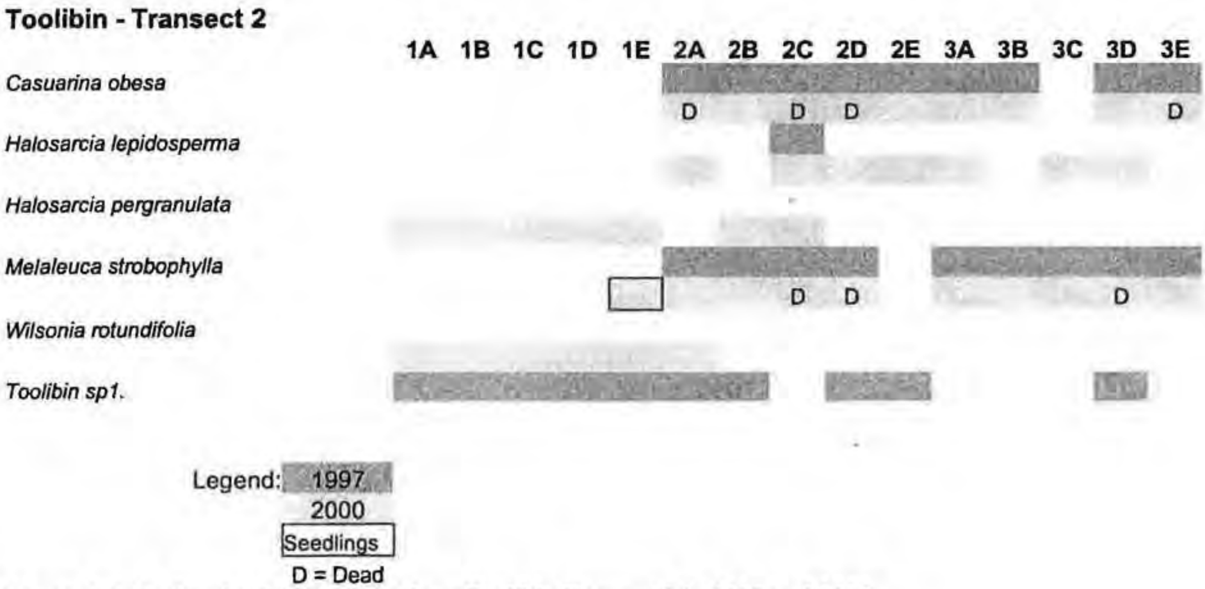


Figure 3.6.2b: Species Distribution along Toolibin Transect 2 in 1997 and 2000.

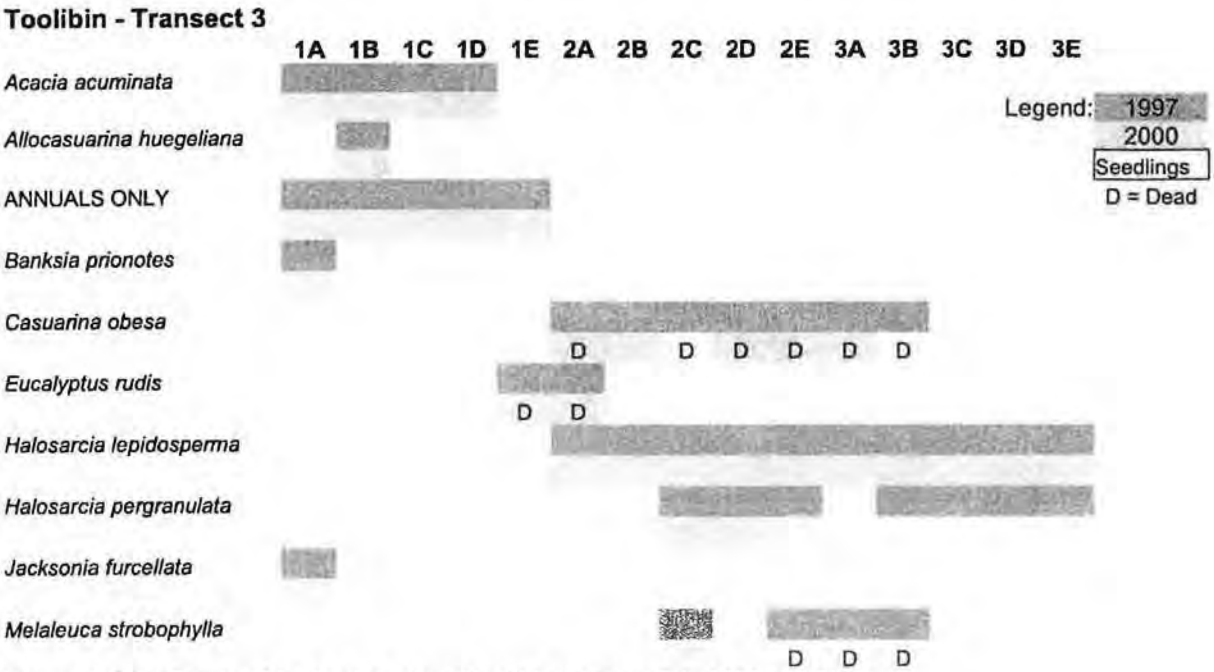


Figure 3.6.2c: Species Distribution along Toolibin Transect 3 in 1997 and 2000.

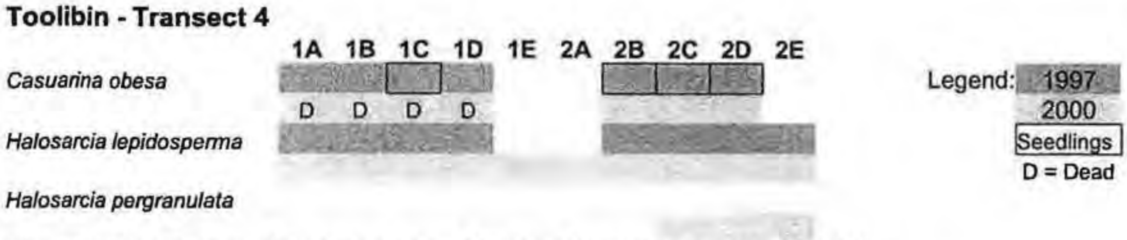


Figure 3.6.2d: Species Distribution along Toolibin Transect 4 in 1997 and 2000.

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 rhaphiophylla* and *Eucalyptus rudis* woodland. This vegetation type occupies the relatively shallow gradient of the lake and inlet perimeter. Partially submerged dead *Melaleuca rhaphiophylla* 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. rhaphiophylla* 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. rhaphiophylla* seedlings were lost in the upper portion of Transects 1 and 2 since 1997. The vigour of both overstorey species, *E. rudis* and *M. rhaphiophylla*, 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. rhaphiophylla* 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 1997	Trees 2000	Seedlings 1997	Seedlings 2000	Saplings 1997	Saplings 2000	MCS (S.D) 1997	MCS (S.D) 2000
Eucalyptus rudis	58	52	4	1	0	3	5.7 (2.6)	5.8 (3.3)
Melaleuca rhaphiophylla	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 longitudinale* 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	*Lepidosperma longitudinale* – 1997 45%, 2000 10%		
2B	*Lepidosperma longitudinale* – 1997 55%, 2000 5%		
2C	*Lepidosperma longitudinale* – 1997 90%, 2000 60%		
2D	No Change.		
2E	No Change.		

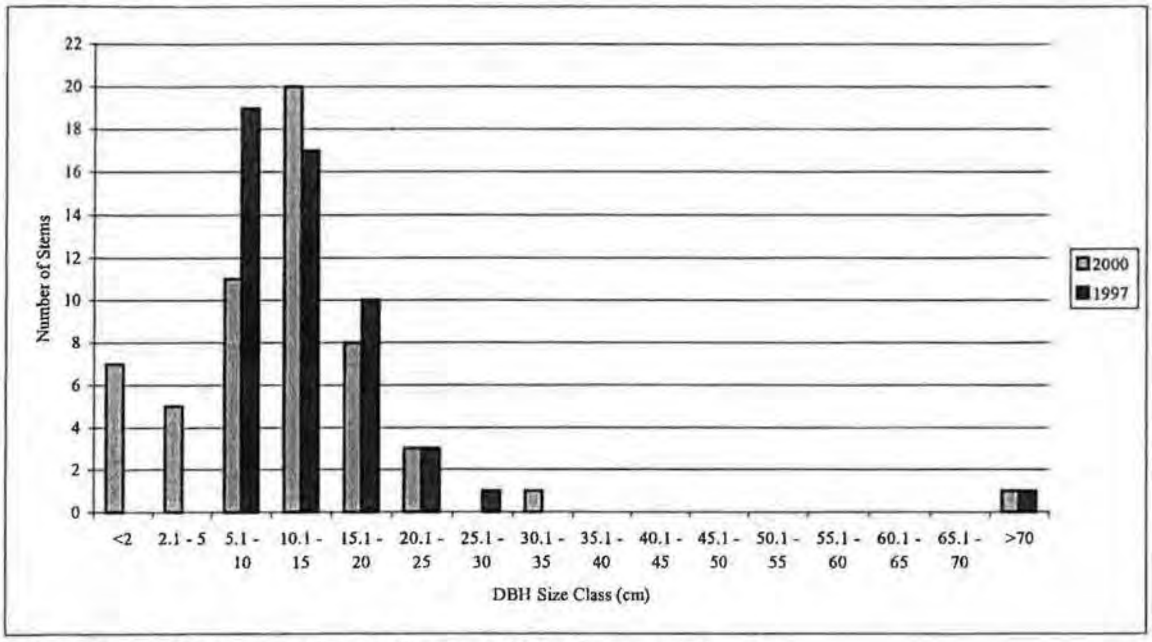
3.7.4 Soil Characteristics

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

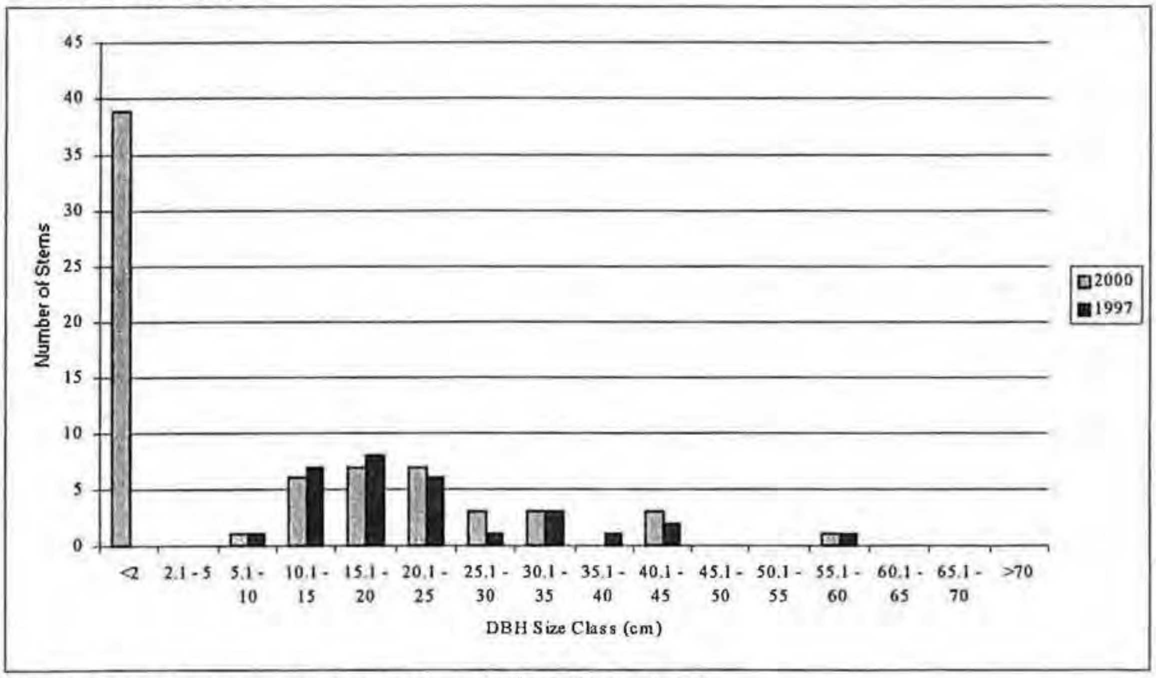
The decline in the vegetation of Lake Towerrinning due to clearing and the effects of salinity and increased waterlogging as described by Froend *et al.* (1991) appears to have continued up to the present time. The condition of the trees at the lake continues to be poor and suggests considerable stress 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. rhaphiophylla* 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 catergorisation, only data between 5.1-10 and >70 is shown for 1997.

Melaleuca rhaphiophylla



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

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

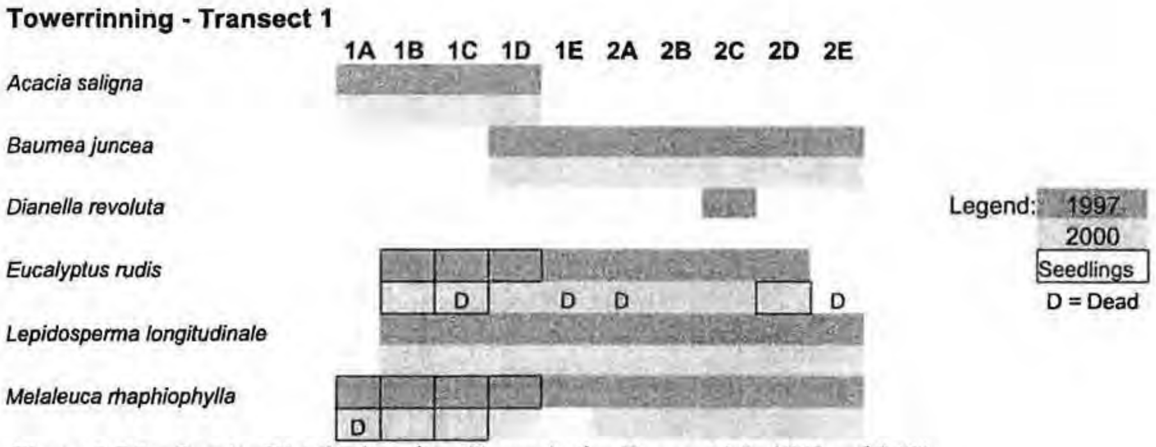


Figure 3.7.2a: Species Distribution along Towerrinning Transect 1 in 1997 and 2000.

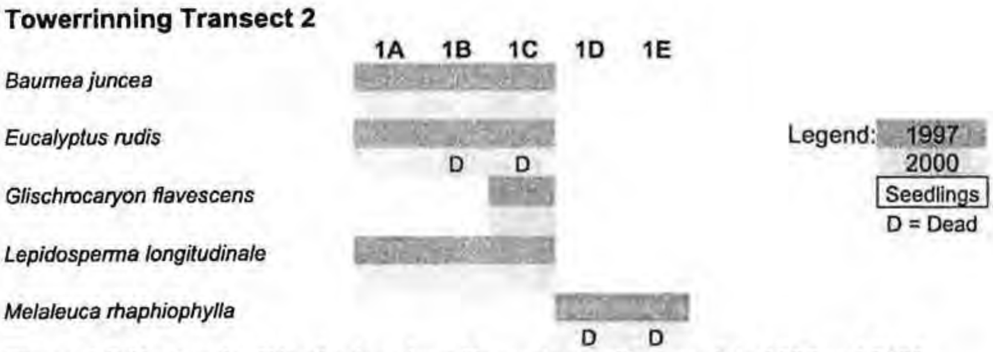


Figure 3.7.2b: Species Distribution along Towerrinning Transect 2 in 1997 and 2000.

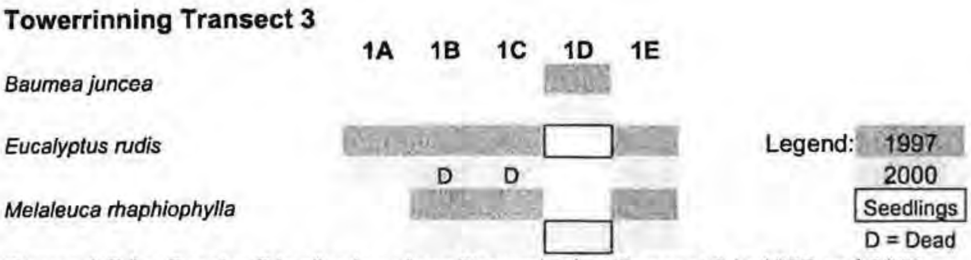


Figure 3.7.2c: Species Distribution along Towerrinning Transect 3 in 1997 and 2000.

3.8 Wheatfield Lake

3.8.1 Description

Lake Wheatfield in the Lake Warden A class Nature Reserve (#32257, $33^0 48'$ S, $121^0 46'$ 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 1997	Trees 2000	Seedlings 1997	Seedlings 2000	Saplings 1997	Saplings 2000	MCS (S.D) 1997	MCS (S.D) 2000
Melaleuca cuticularis	123	122	0	0	0	0	12.2 (3.2)	10.2 (3.39)
Spyridium globulosum	38	41	4	0	0	4	12.9 (2.8)	14.4 (2.64)
Eucalyptus ?incrassata	67	61	0	1	0	0	8.3 (3.9)	8.6 (3.82)
Acacia saligna	8	7	4	0	0	4	11.4 (2.3)	15.9 (4.4)
Melaleuca brevifolia	118	116	55	49	0	0	13.1 (2.6)	14.1 (2.86)
Banksia speciosa	60	54	0	1	0	0	13.7 (3.4)	18 (2.39)
Eucalyptus occidentalis	2	2	0	0	0	0	9.5 (2.1)	9.5 (3.53)
Nuytsia floribunda	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. J. kraussii), now no understorey.	Little Change.	Lost 3, now no understorey	No Change.
1B	*Gahnia trifida* – 1997 60%, 2000 7% *Juncus kraussii* – 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	*Paspalum vaginatum* (introduced) – 1997 40%, 2000 nil	Little Change.	Lost 1, now no understorey	Little Change.
2C	*Paspalum vaginatum* (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)

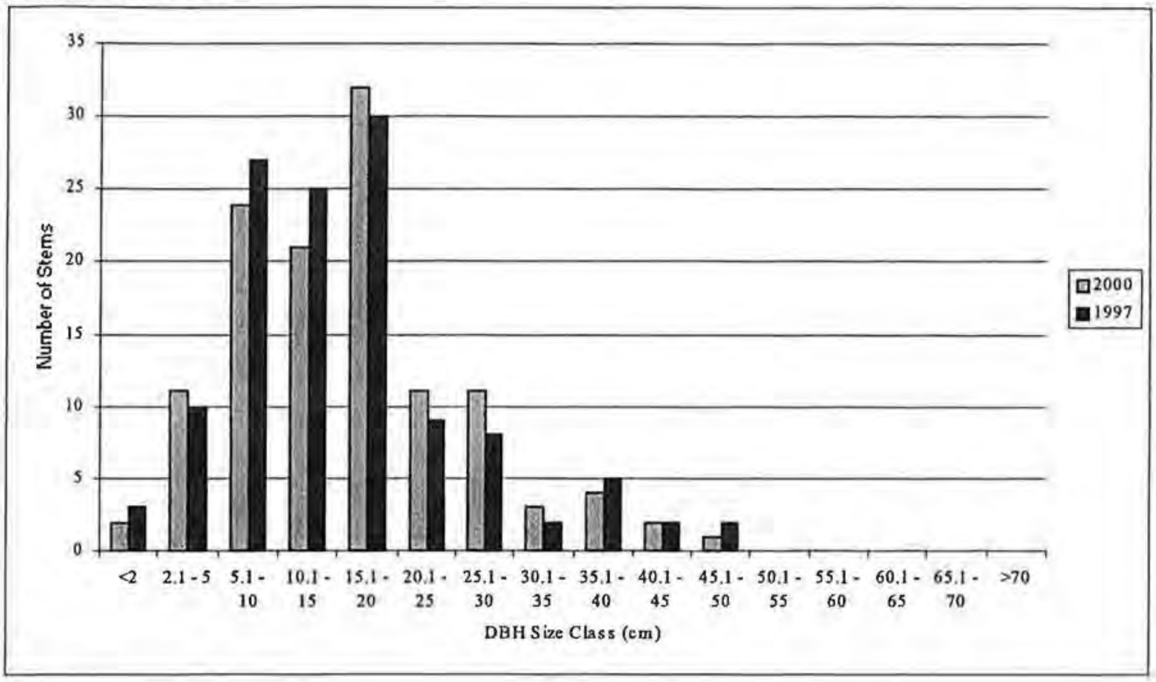
3.8.4 Soil Characteristics

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 *Phytophthera*. 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

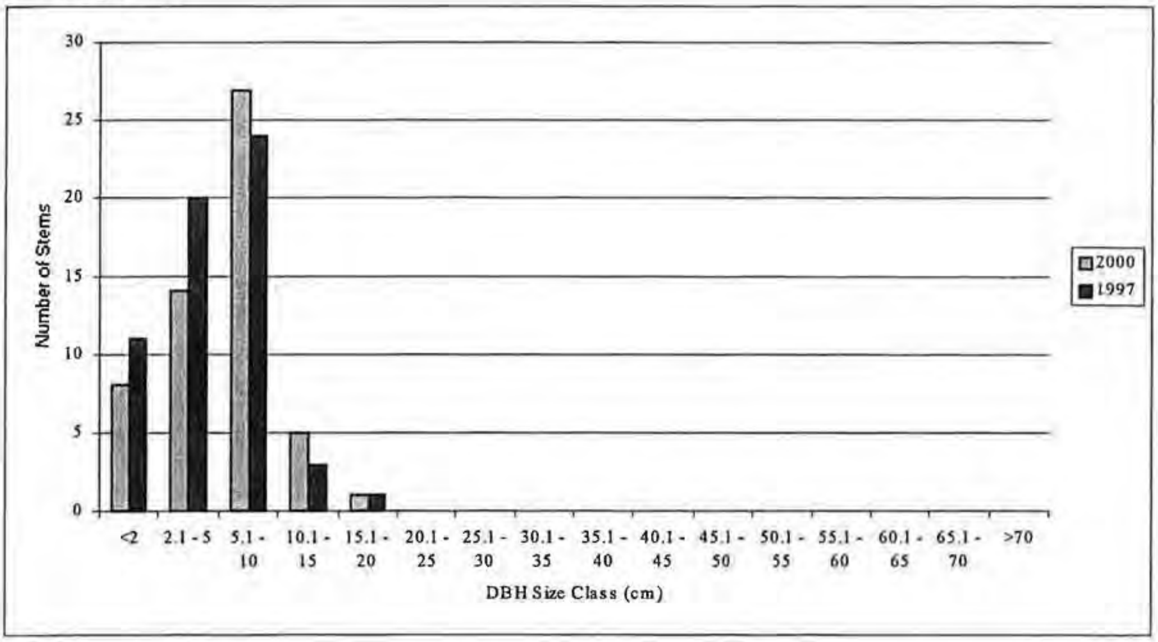
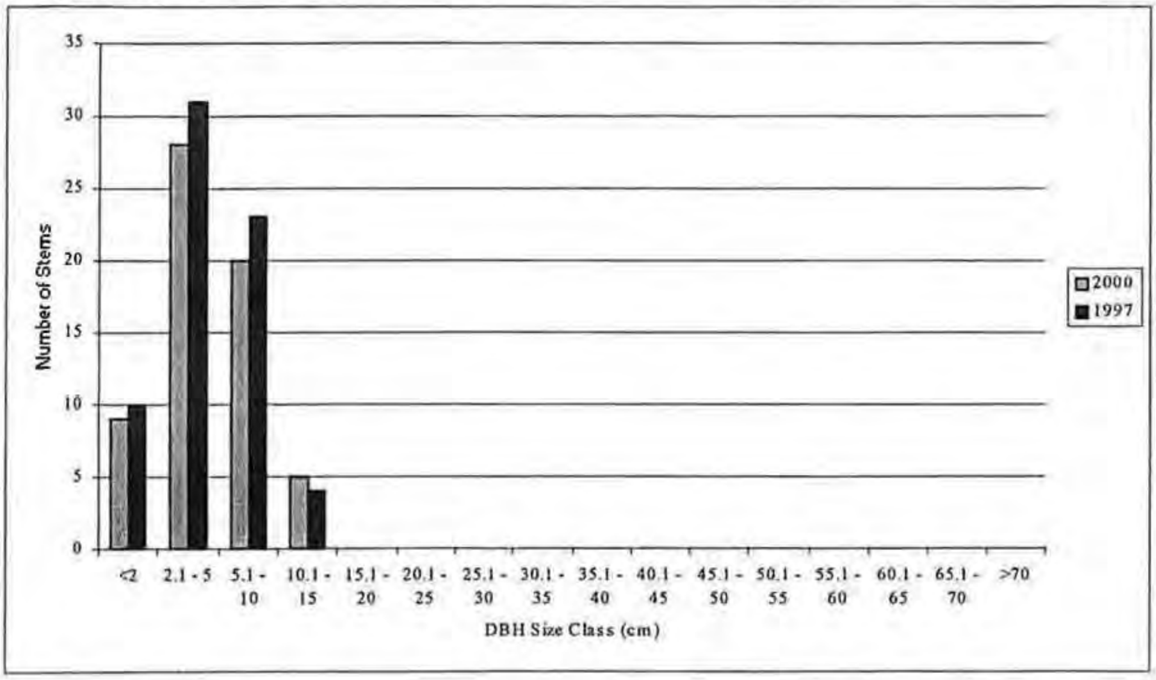


Figure 3.8.1: Size Class Distributions for *Melaleuca cuticularis, Banksia speciosa, Eucalyptus incrassata?, Spyridium globulosum* and *Melaleuca brevifolia* at Lake Wheatfield.

Eucalyptus incrassata?



Spyridium globulosum

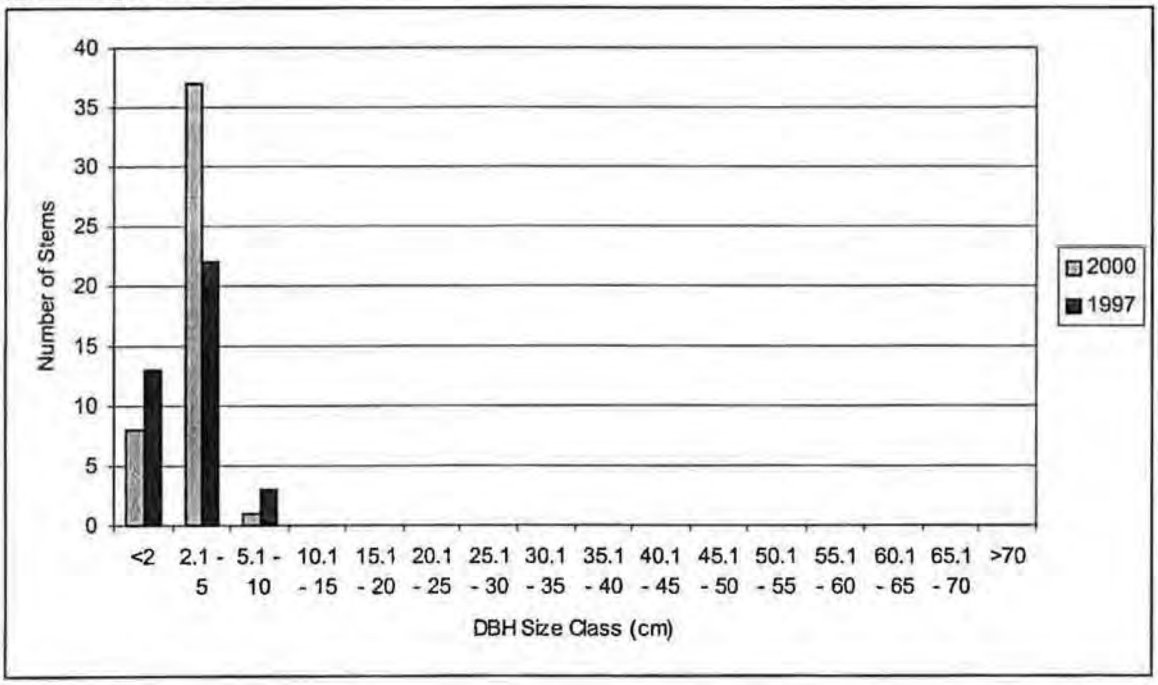


Figure 3.8.1 (cont): Size Class Distributions for *Melaleuca cuticularis, Banksia speciosa, Eucalyptus incrassata?, Spyridium globulosum* and *Melaleuca brevifolia* at Lake Wheatfield.

Melaleuca brevifolia

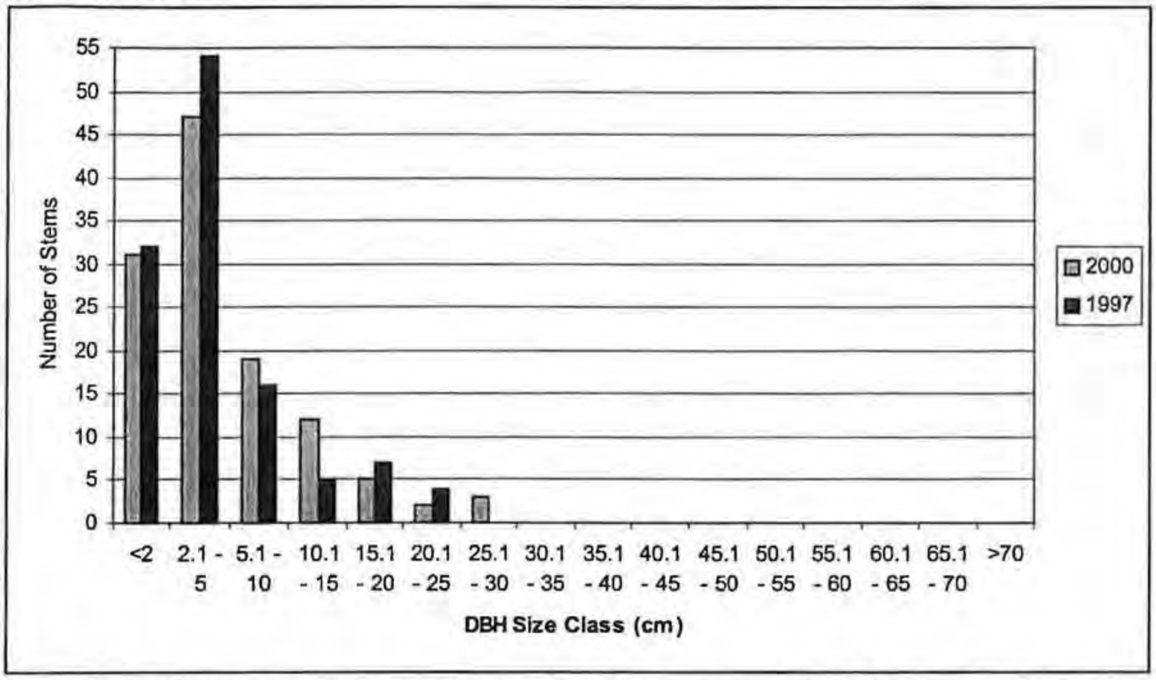


Figure 3.8.1 (cont): Size Class Distributions for *Melaleuca cuticularis, Banksia speciosa, Eucalyptus incrassata?, Spyridium globulosum* and *Melaleuca brevifolia* at Lake Wheatfield.

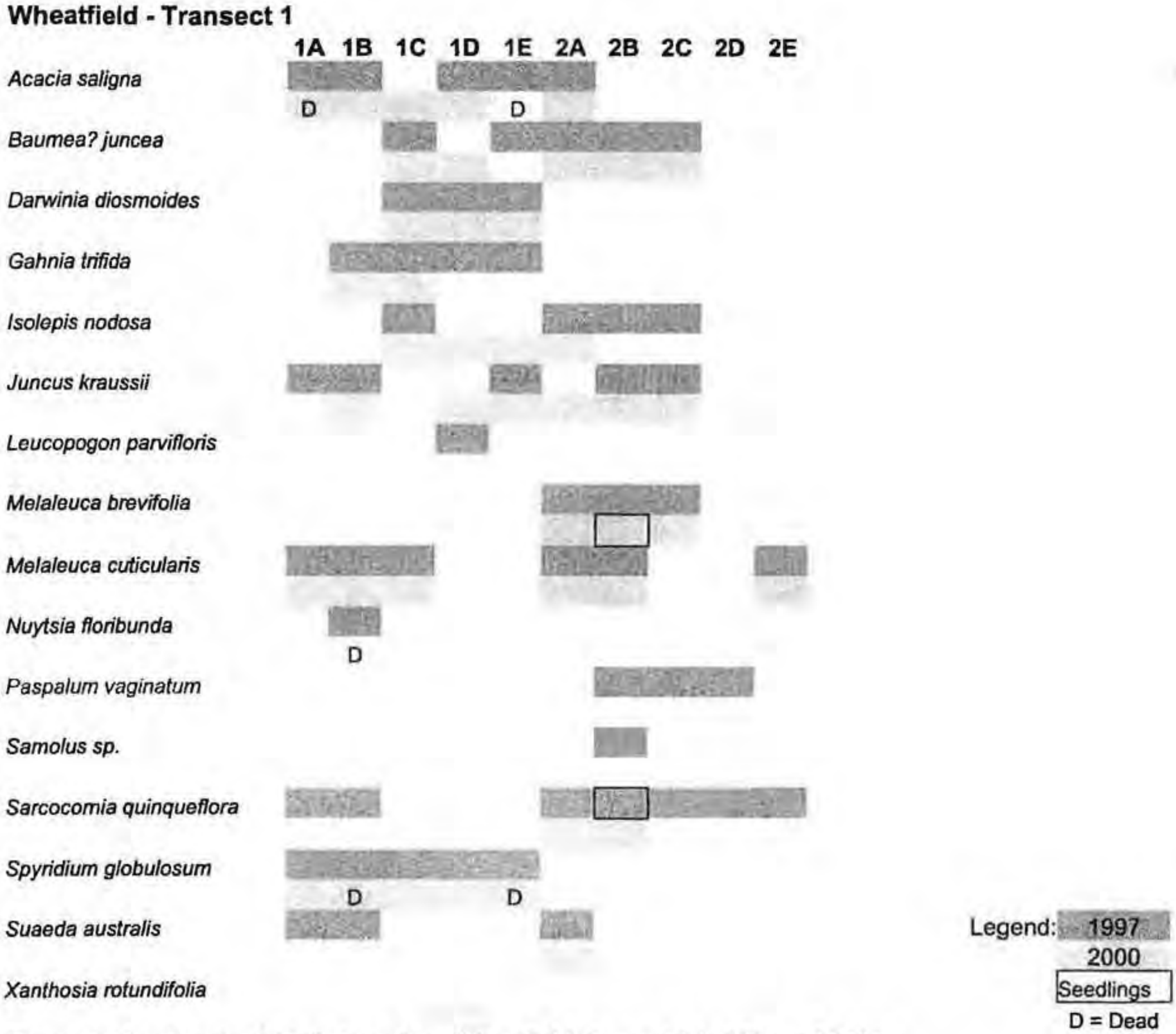


Figure 3.8.2a: Species Distribution along Wheatfield Transect 1 in 1997 and 2000.

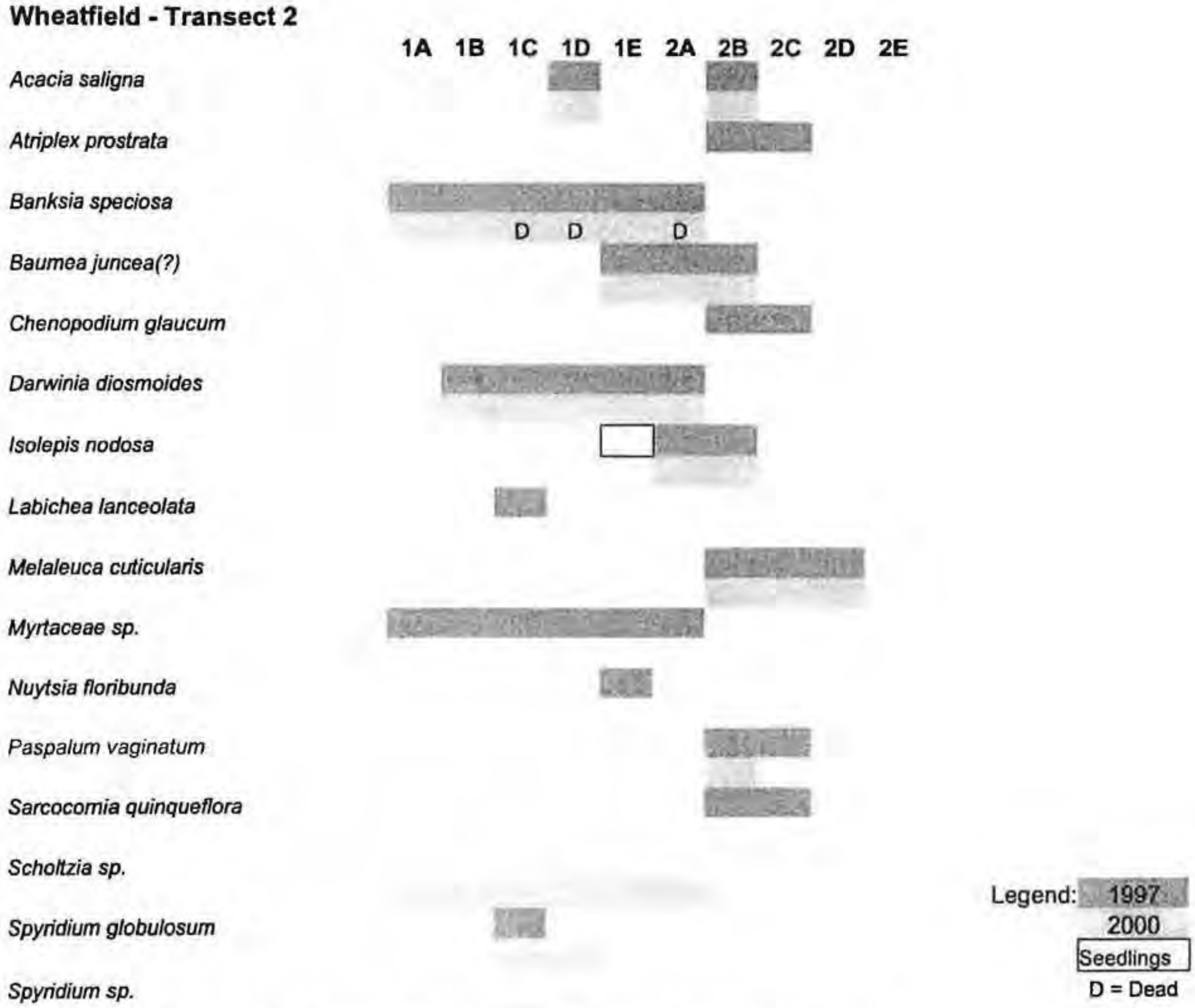


Figure 3.8.2b: Species Distribution along Wheatfield Transect 2 in 1997 and 2000.

Note: Transect flooded

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

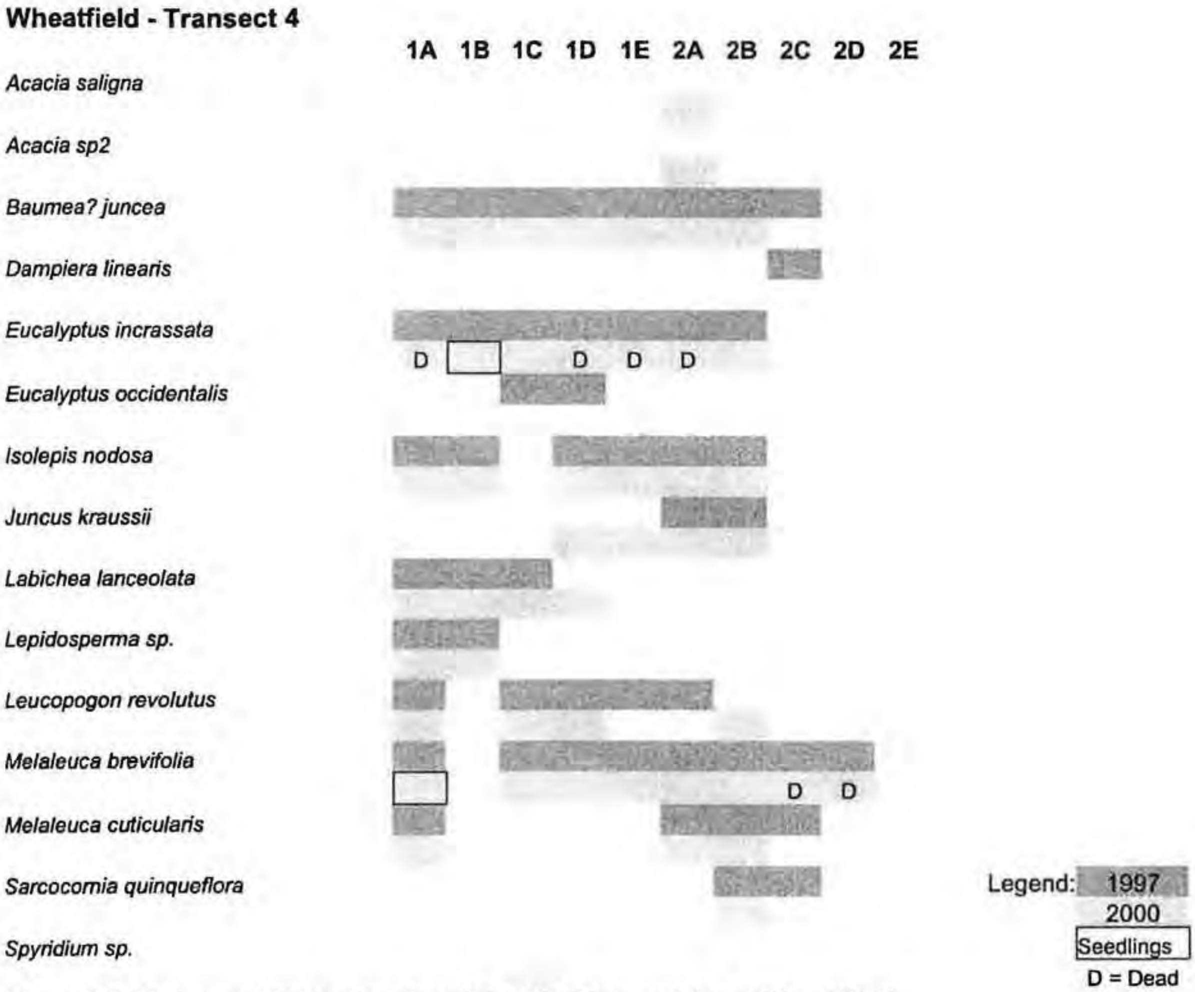


Figure 3.8.2d: Species Distribution along Wheatfield Transect 4 in 1997 and 2000.

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

BRYDE - Transect 2

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	82	60	83	50	92	65	
4	92	57	75	47	90	53	
8	87	53	73	47	83	52	Brown sand
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	
28	315	270	336	238	253	189	Brown/white sand
32	341	248	379	257	320	208	
36	water	water	water	water	360	285	
40					water	water	
44							
48							White sand
52							
56							
60							

BRYDE - Transect 3

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	189	116	210	134	231	164	
4	175	110	238	155	333	216	
8	136	83	281	193	335	233	Brown sand
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	
48	180	145	176	142	185	149	White sand
52	water	water	water	water	water	water	
56	↓	↓	↓	↓	↓	↓	
60							

BRYDE - Transect 4

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	411	325	357	262	415	276	
4	376	276	381	272	349	270	
8	392	278	364	284	290	210	Brown loam
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	
48	water	water	water	water	water	water	White sand
52	↓	↓	↓	↓	↓	↓	
56							
60							

EM38 Data

COOMALBIDGUP - Transect 1

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	12.8	8.4	15.4	8.6	19.2	10.2	
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	Grey sand
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	
28	23.3	13.3	15.7	8	10.2	6.6	Grey/white sand
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	
44	water	water	70.7	69.1	55.8	50.5	
48			water	water	63.5	71.9	Grey sand
52					water	water	
56							
60							

COOMALBIDGUP - Transect 2

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	22.9	17.1	10.8	7.4	14.9	6	
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	Grey sand
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	
28	72.6	80.8	56.8	41.5	46.4	29	Grey/white sand
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	
44							
48							Grey sand
52							
56							
60							

COOMALBIDGUP - Transect 3

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	143	98	123	74	112	65.5	
4	136	82.1	104	60	94	61.7	
8	113	66.3	99	63	88.5	54.5	Grey sand
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	
44	↓	↓	water	water	water	water	
48	↓	↓	↓	↓	↓	↓	Grey sand
52	↓	↓	↓	↓	↓	↓	
56	↓	↓	↓	↓	↓	↓	
60	↓	↓	↓	↓	↓	↓	

COOMALBIDGUP - Transect 4

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	33	21.3	31.6	18.9	35.6	21.1	
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	Grey sand
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	
44	120.8	102.6	water	water	water	water	
48	water	water	↓	↓	↓	↓	Grey sand
52	↓	↓	↓	↓	↓	↓	
56	↓	↓	↓	↓	↓	↓	
60	↓	↓	↓	↓	↓	↓	

EM38 Data

COYRECUP - Transect 1

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	61	52	62	52	64	52	
4	63	51	65	52	66	54	
8	68	53	79	57	71	53	Brown sand
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	
28	129	86	149	97	147	95	Brown sand
30	162	102	203	134	180	116	
36	210	135	262	170	284	193	
40	258	173	311	186	331	206	
44	320	213	328	194	301	195	
48	362	255	369	245	338	250	Grey sandy silt
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 Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	23	13	29	16	29	10	
4	33	16	34	18	35	18	
8	39	21	40	22	43	22	Grey sand
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	
28	101	56	99	55	111	66	Grey sand
30	145	79	123	70	132	73	
36	411	275	414	270	386	268	
40	530	375	565	387	526	390	
44	536	358	608	440	600	463	
48	585	412	573	419	646	459	Grey sand overlying
52	686	500	602	450	625	451	sandy clay
56	610	447	626	459	645	451	
60	614	414	604	408	624	498	

COYRECUP - Transect 3

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	55	31	55	29	53	26	
4	69	37	62	33	64	35	
8	83	45	80	47	83	46	Brown sand
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	Brown sand
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
52	479	340	459	307	542	418	to sandy silt
56	508	361	518	386	565	448	
60	552	416	572	458	573	445	

COYRECUP - Transect 4

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	663	482	598	493	588	512	
4	619	538	529	387	511	412	
8	575	440	488	377	425	370	Brown sand
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	Brown sand
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 Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	470	321	533	378	540	395	
4	509	314	484	380	594	333	
8	558	452	608	437	542	386	Dark sand
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	Brown sandy clay
30	486	320	528	399	552	485	
36	458	366	557	445	517	346	
40	461	345	548	436	516	436	
44							
48							
52							
56							
60							

EM38 Data

KULIKUP - Transect 1

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	50	25	48	22	34	16	
4	82	45	64	33	48	18	
8	93	47	81	40	59	28	Grey sand
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							Grey silt/clay
52							
56							
60							

KULIKUP - Transect 2

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	105	37	120	65	77	52	
4	108	60	119	75	95	48	
8	116	70	122	74	112	66	Dark organic sand
12	114	66	112	67	123	78	with ironstone
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							Grey silt/clay
52							
56							
60							

KULIKUP - Transect 3

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	53	30	70	39	74	43	
4	83	48	95	57	98	54	
8	119	67	116	68	134	73	Brown sandy loam
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	
28	148	92	142	90	129	78	Black sand/silt
30	150	109	147	101	192	134	
36	water	water	185	141	190	138	
40			water	water	water	water	
44							
48							Grey silt/clay
52							
56							
60							

KULIKUP - Transect 4

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	164	109	166	108	114	69	
4	148	101	164	102	106	64	
8	127	99	129	93	100	59	Black silt/clay
12	118	91	109	82	99	69	
16	water	water	104	87	91	68	
20			water	water	85	77	
24					water	water	
28							Black silt/clay
30							
36							
40							
44							
48							
52							
56							
60							

EM38 Data

NOOBIJUP - Transect 1

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	411	429	383	329	225	140	
4	430	450	367	346	312	212	
8	412	415	337	359	320	216	Dark Sandy/
12	389	354	352	305	301	244	Clay
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	Dark Sandy/
30	393	429	309	464	368	460	Clay
36	343	438	339	423	331	473	
40	365	333	456	598	343	612	
44							
48							
52							
56							
60							

NOOBIJUP - Transect 2

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	100	61	112	57	122	62	
4	109	67	115	61	119	61	
8	112	60	128	60	114	53	Laterite
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	Laterite/organic
30	107	75	110	79	98	67	sand
36	107	79	113	80	100	71	
40	123	91	117	87	115	83	
44							
48							
52							
56							
60							

NOOBIJUP - Transect 3

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	76	59	73	58	70	55	
4	77	61	72	57	68	54	
8	77	59	70	56	67	54	Brown sand
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	Brown sand grading
30	143	96	160	123	141	109	to peat
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 Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	80.4	61	74.5	61.1	52.4	51	
4	78	59	72	64.8	56.1	57.9	
8	85.1	53.4	65.6	59.2	60.7	53.7	Brown sand/laterite
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	Brown sand grading
30	185	150	158	120	144	124	to peat
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 Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	77	15	55	45	57	47	
4	54	45	57	47	55	46	
8	57	47	57	45	54	46	Brown sand
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	Brown sand grading
30	91	67	110	77	102	73	to peat
36	129	93	168	151	172	157	
40	207	186	235	190	water	water	
44	water	water	water	water			
48							
52							
56							
60							

EM38 Data

TOOLIBIN - Transect 1

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	279	180	234	156	298	201	
4	258	180	243	154	281	176	
8	270	167	257	173	261	165	Grey sandy silt
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	Grey sandy silt
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 Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	617	514	605	447	625	464	
4	619	477	584	452	583	446	
8	624	472	578	416	545	417	Sandy loam on
12	704	528	554	401	520	388	mounds
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	Silt/clay in
30	565	412	615	488	565	432	depressions
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	Silt/clay in
52	645	593	518	356	366	244	depressions
56	610	488	612	440	383	259	
60	483	362	572	429	476	372	

TOOLIBIN - Transect 3

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	48	26	38	21	35	18	
4	57	30	50	24	42	21	
8	70	38	62	33	54	27	Yellow/brown sand
12	91	49	85	47	68	36	
16	120	68	121	68	94	50	
20	189	117	180	107	160	90	
24	291	193	282	187	231	141	
28	383	251	418	290	358	245	Dark sandy loam
30	444	309	444	320	392	294	
36	487	327	503	380	434	317	
40	552	406	525	387	462	332	
44	643	492	611	491	565	419	
48	668	530	702	576	647	479	Grey silt/clay
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 Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	675	661	547	464	616	491	
4	726	707	636	597	660	523	
8	643	652	609	483	674	534	Dark loam on
12	632	578	674	661	730	648	mounds
16	769	744	625	593	810	688	
20	707	610	679	660	800	651	
24	694	624	733	591	726	673	
28	763	621	682	615	654	569	Clay in depressions
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 Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	324	273	196	131	270	193	
4	212	160	186	128	191	134	
8	177	126	177	122	188	124	Brown sand
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	Coarse brown
30	218	161	231	164	118	69	sand
36	248	232	water	water	137	88	
40	water	water	water	water	240	197	
44							
48							
52							
56							
60							

TOWERRINNING - Transect 2

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	45	32	57	37	63	39	
4	63	43	65	43	72	47	
8	85	72	91	69	98	70	Brown sand
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 Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	63	43	58	40	36	35	
4	64	44	58	44	43	32	
8	66	46	63	43	57	45	Brown sand
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 Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	water	water	324	297	238	199	
4	water	water	239	230	180	130	
8	274	235	185	146	161	119	White sand
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	Black/grey
30	water	water	water	water	water	water	Sand
36	↓	↓	↓	↓	↓	↓	
40							
44							
48							
52							
56							
60							

WHEATFIELD - Transect 2

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	39	20	38	19	42	15	
4	34	19	33	17	25	15	
8	32	17	25	14	26	14	Grey Sand
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 Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	water	water	water	water	water	water	
4							
8							Grey Silty Clay
12							
16							
20							
24							
28							Grey Silty Clay
30							
36							
40							
44							
48							
52							
56							
60							

WHEATFIELD - Transect 4

	Distance Across (m)						
	0		10		20		
Distance (m)	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Field Texture
0	486	449	455	394	342	278	
4	358	274	338	254	304	217	
8	265	183	252	164	303	214	White Sand with
12	260	169	248	156	287	201	Sandstone
16	267	165	262	174	286	198	outcrops
20	296	218	281	173	306	257	
24	378	329	275	211	286	259	
28	water	water	water	water	313	386	White Sand with
30					water	water	Sandstone
36							outcrops on slope
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	*Eucalyptus flocktoniae*	1568	6.85	1.5 - 2.5	10
	Eucalyptus flocktoniae	1569	7		11
	Eucalyptus flocktoniae	1570	8.45		13
	Eucalyptus flocktoniae	1571	8.35		15
	Eucalyptus flocktoniae	1572	7.65		9
	Melaleuca uncinata	x18	multiple <2	0.5 - 2.5	Healthy
	Melaleuca lateriflora lateriflora	x1	<2	1.75	Healthy
	Melaleuca accuminata	x1		2.3	Healthy
	Melaleuca lanceolata	x1		1.75	Healthy
	Melaleuca thyoides	x1		2.2	Healthy
1B	*Eucalyptus flocktoniae*	1573	15.75		15
	Eucalyptus flocktoniae	1574	9.05		8
	Eucalyptus flocktoniae	1575	10.4		3
	Eucalyptus flocktoniae	1576	23.65		11
	Eucalyptus flocktoniae	1577	<2, <2		3
	Eucalyptus flocktoniae	1578	<2		9
	Eucalyptus flocktoniae	1579	12.75		17
	Eucalyptus flocktoniae	1580	9.85		14
	Eucalyptus flocktoniae	1581	12.3		15
	Eucalyptus flocktoniae	1582	15.8		19
	Eucalyptus flocktoniae	1583	12.65		15
	Eucalyptus flocktoniae	1584	8.35		12
	Eucalyptus flocktoniae	x3	dead		
	Melaleuca uncinata	x11	multiple <2	0.4 - 1.7	Healthy
	Melaleuca adnata	x3		2.3	Healthy
	Melaleuca acuminata	x3		2.5	Healthy
	Templetonia sulcata	x11		1.7	Healthy
1C	*Eucalyptus flocktoniae*	1585	12.5		15
	Eucalyptus flocktoniae	1586	12		12
	Eucalyptus flocktoniae	1587	7.8		8
	Eucalyptus flocktoniae	1588	10.55		15
	Eucalyptus flocktoniae	1589	9.9		12
	Melaleuca uncinata	x1	multiple <2	1.7	Healthy
	Dodonaea stenozyga	x2		1.5 - 1.85	Healthy
	Melaleuca adnata	x13		1.5 - 2	Healthy
	Melaleuca lanceolata	x10		1.8 - 2.75	Healthy
1D	*Eucalyptus flocktoniae*	1590	7.05		9
	Eucalyptus flocktoniae	1591	12.4		14
	Eucalyptus flocktoniae	1592	10.3		13
	Eucalyptus flocktoniae	1593	8.9		12
	Eucalyptus flocktoniae	1594	9.85		12
	Eucalyptus flocktoniae	1595	8.1		13
	Eucalyptus flocktoniae	x2	dead		
	Dodonaea stenozyga	x3		1.5 - 1.8	Healthy
	Melaleuca accuminata	x2		1.7 - 2.2	Healthy
	Melaleuca uncinata	x1	multiple <2	1.2	Healthy
	Melaleuca adnata	x3		1.7 - 2	Stressed
	Melaleuca lanceolata	x11		1.5 - 3	Healthy

1E	*Eucalyptus flocktoniae*	1596	13.65		14
	Eucalyptus flocktoniae	1597	11		3
	Eucalyptus flocktoniae	x2	dead		
	Dodonaea stenozyga	x1		1.8	Healthy
	Melaleuca acuminata	x2		1.8 - 2.2	Healthy
	Melaleuca adnata	x1		1.8	Stressed
	Melaleuca lanceolata	x25		1.7 - 3.2	Healthy
2A	*Eucalyptus flocktoniae*	1598	13.9, 10.75		17
	Eucalyptus flocktoniae	1599	21.85		15
	Eucalyptus flocktoniae	1600	13.5		15
	Eucalyptus flocktoniae	1601	11.1		13
	Melaleuca lanceolata	x37		0.4 - 3	Healthy
2B	*Eucalyptus flocktoniae*	1602	12.05		17
	Eucalyptus flocktoniae	1603	18.4		14
	Eucalyptus flocktoniae	1604	14.1		10
	Eucalyptus flocktoniae	1605	23.5		10
	Eucalyptus flocktoniae	1606	20.3		12
	Eucalyptus flocktoniae	x2	dead		
	Melaleuca lateriflora lateriflora	x1	<2	1.7	Healthy
	Melaleuca lanceolata	x79		0.5 - 2.5	Healthy
	Melaleuca lanceolata	x5	dead		
2C	*Melaleuca adnata*	x2		1.7 - 2.2	Healthy
	Melaleuca lanceolata	x422		0.5 - 3.5	Healthy
	Melaleuca lanceolata	x21	dead		
	Melaleuca thyoides	x2		2.5 - 3	Healthy
2D	*Melaleuca thyoides*	x3		2.5 - 3	Healthy
	Melaleuca adnata	x4		1.6 - 2.2	Healthy
	Melaleuca accuminata	x2		1.8	Healthy
	Melaleuca lanceolata	x324		0.5 - 3.2	Healthy
	Melaleuca lanceolata	x49	dead		
2E	*Eucalyptus flocktoniae*	1607	16.15		19
	Melaleuca thyoides	x11		1.5 - 3.2	Healthy
	Melaleuca lateriflora lateriflora	x2	<2	2	Healthy
	Melaleuca lanceolata	x159		0.5 - 3.2	Healthy
	Melaleuca lanceolata	x18	dead		
3A	*Eucalyptus flocktoniae*	1608	17.6		13
	Eucalyptus flocktoniae	1609	14.3		13
	Eucalyptus flocktoniae	x16	dead		
	Melaleuca lateriflora lateriflora	x16	<2	0.8 - 4	Healthy
	Melaleuca thyoides	x20		1.5 - 3	Healthy
	Melaleuca thyoides	x3	dead		
	Melaleuca lanceolata	x38		1.5 - 3.5	Healthy
	Eucalyptus occidentalis	x41	<2 - seedling	1.5 - 3.8	Stressed
	Melaleuca strobophylla	x2	<2 - seedling	1.2	Healthy
3B	*Eucalyptus occidentalis*	1610	20.45, 10.7		15
	Eucalyptus occidentalis	1611	12.1		3
	Eucalyptus occidentalis	1612	29.7		19
	Melaleuca strobophylla	1613	4		15
	Melaleuca strobophylla	1614	4.1		11

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

3 D	*Melaleuca strobophylla*	1665	4.2		19
	Melaleuca strobophylla	1666	6, 3.4, 4.4, <2, 4.2		21
	Melaleuca strobophylla	1667	5, 4.2		15
	Melaleuca strobophylla	1668	6		19
	Melaleuca strobophylla	1669	11.1		19
	Melaleuca strobophylla	1670	6.4		17
	Melaleuca strobophylla	1671	13		19
	Melaleuca strobophylla	1672	3.3, 4, 2.8, 2.5, 5.45		15
	Melaleuca strobophylla	1673	5.7		13
	Melaleuca strobophylla	1674	3, 3.4, 2.7, 3.2		19
	Melaleuca strobophylla	1675	3.5, 3, 3.7		21
3 E	*Melaleuca strobophylla*	1676	7.9, 3.4, 6.4, 9.6, 5.5		21
	Eucalyptus occidentalis	1677	41, 22, 21.8, 24.5		14

BRYDE - Transect 2

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

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

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

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

BRYDE - Transect 3

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

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

BRYDE - Transect 4

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

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

	Melaleuca strobophylla	1934	21.4		19
3 C	*Melaleuca strobophylla*	1935	15.2, 22.5, 16.8		21
	Melaleuca halmaturorum	1936	3.1, 2.9, multiple <2		15
	Melaleuca halmaturorum	1937	25.4		17
	Melaleuca halmaturorum	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	*Melaleuca halmaturorum*	1939	23.5, 7.1, 11, 14, 10.3, 8.3, 8, 7.5		15
	Melaleuca halmaturorum	1940	10.9, 14, 7.2, 7.3		13
	Melaleuca halmaturorum	1941	dead		
	Melaleuca halmaturorum	1942	6.3, 8.6, 5.3		13
	Melaleuca halmaturorum	1943	14.1, 8.8, 5.3		17
	Melaleuca halmaturorum	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	*Banksia speciosa*	701	12.8, 10.4, 10.75		19
	Banksia speciosa	703	37., 4.3, 3.5		13
	Banksia speciosa	704	8.05, 11., 10.7, 5.8, 3.95, 4.3		19
	Banksia speciosa	705	10.1		15
	Banksia speciosa	706	12.9, 12.65, 10.45		21
	Banksia speciosa	707	6.2, 4.55		15
	Banksia speciosa	708	3.45, 9.2, 2.65, 6.85, 3.8, 4.5		15
	Banksia speciosa	709	2.8, 2.7		13
	Banksia speciosa	710	7.4, 4.4, 4.5		17
	Banksia speciosa	711	9.25		15
	Banksia speciosa	712	8.2, 4.1		15
	Banksia speciosa	713	6.2, 3.45, 3.6		15
	Banksia speciosa	714	4.45, 5		13
1 B	*Banksia speciosa*	715	9.7, 4.4, 7.4		15
	Nuytsia floribunda	716	11.2		9
	Nuytsia floribunda	717	15		9
	Nuytsia floribunda	718	11.4, 11.1, 7.7		13
	Nuytsia floribunda	719	15.1, 10.9, 8.9		15
	Nuytsia floribunda	720	19.7		15
	Melaleuca sp.	721	<2		Healthy
	Banksia speciosa	722	10.8, 4, 3, <2, 2.5		15
	Banksia speciosa	723	dead		
	Banksia speciosa	724	2.7		11
	Banksia speciosa	725	2.8		9
	Banksia speciosa	726	7.9, 11, 11.2		17
	Banksia speciosa	727	6, 11.7, 3.2, 5.3		15
	Banksia speciosa	728	3.5, 4		11
	Banksia speciosa	729	3.3, 3, 5.6		13
	Banksia speciosa	730	8.9		15
	Banksia speciosa	731	dead		
	Banksia speciosa	732	14.1		15
	Banksia speciosa	733	2.3, 3.8		13
	Banksia speciosa	734	5.85, 7.3		11
1 C	*Nuytsia floribunda*	735	10.7		14
	Banksia speciosa	736	13.2		15
	Banksia speciosa	737	10.4, 10.95, 6.1, 10.1		19
	Banksia speciosa	738	13.6, 6.5, 7		15
	Banksia speciosa	739	11.1, 5.2, 6		15
	Banksia speciosa	740	15.8		19
	Acacia cyclops	741	5.5		15
	Eucalyptus occidentalis	742	14.4		19
	Eucalyptus occidentalis	743	7.8, 14.6		19
	Banksia speciosa	744	13.1, 7.4, 5.3		15
	Nuytsia floribunda	745	8.9		11
	Nuytsia floribunda	746	6.9, 7.1, 7.3		15
	Banksia speciosa	747	11.3		17
	Banksia speciosa	748	8.3		15
1 D	*Banksia speciosa*	749	6.5, 3.5, 3.5, 4.6		11
	Banksia speciosa	750	4.4, 9.2, 7.8, 5.4, 5.1, 6.6, 11.2		19

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

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

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

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

COOMALBIDGUP - Transect 2

Plot	Species	Tag #	DBH (cm) (2000)	Height(m)	Crown (2000)
1 A	*Banksia speciosa*	833	5.95		15

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

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

	Eucalyptus occidentalis	912	2.7		15
	Eucalyptus occidentalis	911	2.8		19
	Eucalyptus occidentalis	910	2.5		19
	Eucalyptus occidentalis	908	2.2		11
	Eucalyptus occidentalis	x34	<2	1.2 - 2.8	Healthy
	Acacia cyclops	x34	<2	1.8 - 2.8	Healthy
	Melaleuca cuticularis	x13	<2	0.9 - 1.8	Healthy
2 E	*Melaleuca cuticularis*	924	3, 2.6		11
	Melaleuca cuticularis	925	12.6		15
	Melaleuca cuticularis	926	7.4		15
	Melaleuca cuticularis	927	7		15
	Melaleuca cuticularis	928	11.5		13
	Melaleuca cuticularis	929	9.5		13
	Melaleuca cuticularis	930	11		15
	Melaleuca cuticularis	931	15.7		15
	Acacia cyclops	932	9.5, 6, 5.5		11
	Melaleuca cuticularis	933	13.5		15
	Melaleuca cuticularis	934	9.5		15
	Acacia cyclops	935	6		11
	Eucalyptus occidentalis	905	3		21
	Eucalyptus occidentalis	907	2.5		15
	Eucalyptus occidentalis	906	2.4		7
	Eucalyptus occidentalis	x35	<2	1 - 2.6	Healthy
	Melaleuca cuticularis	x33	<2	1 - 1.8	20 Healthy, 13 slightly stressed
	Acacia dentifera	x2	<2	1.8	Healthy
3 A	*Melaleuca cuticularis*	936	8.7		13
	Eucalyptus occidentalis	937	5.5		17
	Eucalyptus occidentalis	938	14.8		15
	Melaleuca cuticularis	939	39.9		15
	Eucalyptus occidentalis	940	6.3		19
	Eucalyptus occidentalis	941	5.5		17
	Eucalyptus occidentalis	942	4.7		19
	Eucalyptus occidentalis	943	7.3		19
	Eucalyptus occidentalis	944	4.5		19
	Eucalyptus occidentalis	915	4.2		19
	Eucalyptus occidentalis	917	3.4		17
	Eucalyptus occidentalis	916	3.05		15
	Eucalyptus occidentalis	918	4.8		19
	Eucalyptus occidentalis	919	3.7		17
	Eucalyptus occidentalis	x10	<2	1 - 2.5	Healthy
	Melaleuca cuticularis	x36	<2	1 - 2.0	30 Healthy. 6 stressed
	Acacia cyclops	x7	<2	2 - 2.9	3 Healthy, 4 stressed
3 B	*Eucalyptus occidentalis*	945	6.25		15
	Eucalyptus occidentalis	946	4.7		15
	Melaleuca cuticularis	947	27.75		19
	Eucalyptus occidentalis	948	6.2		19
	Eucalyptus occidentalis	921	6.2		19
	Eucalyptus occidentalis	920	5.3		19
	Eucalyptus occidentalis	922	5.7		19
	Eucalyptus occidentalis	x3	<2	2.2 - 2.8	Slightly stressed
	Melaleuca cuticularis	x2	<2	2	Healthy
	Acacia cyclops	x3	<2	2.5	Stressed

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

COOMALBIDGUP - Transect 3

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

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

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

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

COOMALBIDGUP - Transect 4

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

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

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

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

COYRECUP - Transect 1

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

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

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

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

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

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

COYRECUP - Transect 2

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

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

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

COYRECUP - Transect 3

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

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

COYRECUP - Transect 4

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

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

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

COYRECUP - Transect 5

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

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