

A conceptual model of the species composition of the original riparian rainforest of the Clarence River Floodplain, New South Wales

Peter Rose

School of Environment, Science and Engineering, Southern Cross University, Lismore, Australia pjrose@westnet.com.au

Abstract: The riparian rainforest on the streamside levees of the coastal floodplain of the Clarence River on the North Coast of New South Wales was cleared during the 1860s by small landholders seeking fertile land. Only three small remnants remain. Using a combination of historical species lists, corner trees from surveyors' portion plans, habitat information and the NSW Scientific Committee's (1999) determination for lowland rainforest on floodplain a conceptual model of the original distribution of rainforest suballiances on the levees of the Clarence River coastal floodplain is proposed.

Cunninghamia (2014) 14: 153–178

doi:10.7751/cunninghamia.2014.14.008

Introduction

Before European settlement the banks of the coastal floodplain of the Clarence River in northern New South Wales (lat. 29.5°S, long. 153.2°E) (Figure 1) were vegetated by a band of rainforest that was known colloquially as 'brush' (Hodgkinson 1845, Rose 2012). In 1839, The Deputy Surveyor-General, Captain Perry onboard one of the first vessels to enter the Clarence River noted that:

owing to the denseness of the brush on the banks, no part of the country could be seen from the deck of the vessel, but was completely screened by a mass of most luxuriant vegetation: the stems of gigantic trees, covered with climbing plants of various descriptions, and which fell down in graceful festoons from the upper branches, produced an effect observable only in a region fresh from the hand of nature (Lang 1847 p. 40)

J D Lang was seeking land for Scottish immigrants and Commissioner Fry reported to him that on the lower 20 miles (32 km) that:

the immediate borders of the stream being covered with a dense impervious brush (Lang 1847 p.52)

and that for the next 30 miles (48km) the land:

becomes more elevated, more open, and of infinitely better description, a belt of brush varying in width from one to four hundred yards (91–366m) fringing the stream all the way up (Lang 1847 p. 52)

The first Europeans to move into the Clarence Valley were cedar getters and graziers who mainly left the riparian rainforest undisturbed. The cedar getters only selectively removed the valuable red cedar from the rainforest; most of the easy to cut cedar exhausted by 1842 (Vader 1987 p.94). The impenetrable rainforest was of no use to the grazier (Lang 1847, Stubbs 1996 p. 124) but changes to the land laws (The Order in Council of 1847 followed by the *Crown Lands Alienation Act 1861*) enabled farmers to obtain smaller blocks (Stubbs 1996). The 'brush' forest blocks along the banks of the Clarence River were sought after due to their fertile soil. Due to its luxuriant nature the 'brush' was not possible to burn and it could only be cleared by cutting down the large trees with an axe. This was hard work and would take a week to clear an acre (4,000 m²). Virtually none of the timber was sold, but merely allowed to dry for about a year and then burnt. In the meantime the settlers planted maize in between

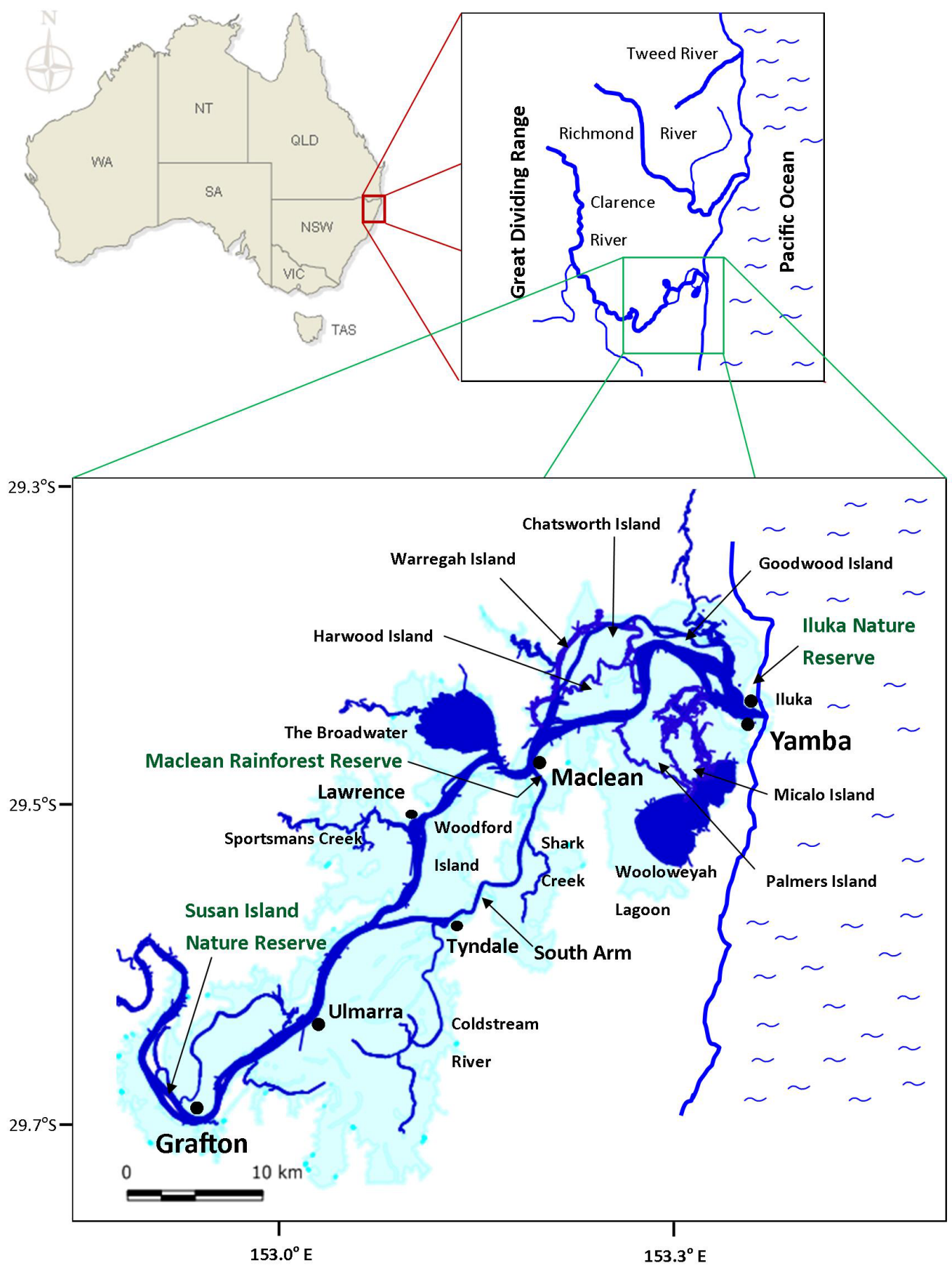


Figure 1. Map showing the location of the Clarence River floodplain (light blue), streams, islands, towns and remnant rainforest reserves.

the logs (McFarlane 1924). In this way the rainforest was rapidly cleared from the banks of the Clarence.

Charles Moore, Director of the Sydney Botanical Gardens visited the area in 1861 and found that:

Even the banks of the Clarence, which some six or eight years ago presented on both sides one continuous mass of this description of forest, varying in breadth from one hundred yards to almost half-a-mile has been already cleared for many miles – the fate which will soon overtake all the brush country available for cultivation, unless the government cause reserves to be made for the preservation of at least some portion of a class of trees which are both interesting and beautiful, even if not otherwise valuable (Moore 1861a).

By 1868 a reporter of the *Sydney Morning Herald* (16 December 1868 p. 5) found that:

The scrubs have wholly disappeared from the banks of the river and where once the vine clad trees rose up, wreathed with thick robes of foliage and tinted with bright flowers, there are now groups of farm buildings, lines of fencing, patches of garden, and green fields of waving corn.

Another reporter (*Sydney Morning Herald*, 10 August 1871 p. 2) noted that near the mouth:

The thick brushes which once grew here have been cut down on most of the islands, and given place to cultivation.

In his next article (*Sydney Morning Herald*, 14 August 1871 p. 2) he observes that:

The tourist may form some idea of the Clarence as it was when first discovered, in 1832, from the vegetation which still grows in rank luxuriance on some of the smaller islands – emerald gems in the glittering stream.

implying that the rest of the brushes (or riparian rainforest) had been totally cleared by that time.

The purpose of this paper is to present the available information of the now largely destroyed riparian rainforest in a manner that could be of use for anyone wishing to reestablish parts of this rainforest. For example Clarence Valley Council has an Environmental Trust grant for Clarence Estuary Riparian and Wetland Restoration and is actively engaged in riparian weed control, native plant establishment and livestock exclusion fencing. Clarence

Landcare has a project for the collection of local native seed species and growing the plants/trees for specific projects (Wilson 2014a). A workshop of the Clarence Floodplain and Estuary Partnership agreed that riparian rehabilitation to be a priority activity for the partners (Wilson 2014b). This paper may help these agencies in their riparian restoration work to seek out species that were originally there and not only those that are currently in the riparian zone.

The starting point for this investigation was the NSW Scientific Committee's (1999) Determination for lowland rainforest on floodplain as an Endangered Ecological Community for the New South Wales North Coast Bioregion. This determination uses Floyd's (1990) classification for rainforests. Floyd (1990, v.2 microfiche) recorded the species found in the three remaining rainforest remnants (Susan Island Nature Reserve, Maclean Rainforest Reserve and Iluka Nature Reserve, Figure 1) on or near the Clarence floodplain. Historical surveyors' corner tree data and species lists from botanists, who visited the area prior to the clearing of the riparian rainforest, was another source for rainforest species found on the floodplain. Rich (1996) suggested that littoral rainforest may extend further inland along estuarine river systems, and as suballiance No. 16 is the main suballiance at the Iluka littoral rainforest reserve, this suballiance was also included in all of the assessments.

The available habitat and historical information was used to determine if any of the eleven suballiances in the Determination (NSW Scientific Committee 1999) could be excluded from being present on the Clarence floodplain and enabled the generation of a conceptual model of the distribution of rainforest suballiances across the riparian levees on the Clarence floodplain.

Methods

Floyd (1990) used floristics or habitat characteristics to differentiate between rainforest suballiances with key characteristics based on soil type, location, altitude, rainfall etc. or a combination of habitat characteristics. Table 1 gives a simple scale created to subjectively assess the habitat of the Clarence floodplain to the habitat characteristics of the eleven suballiances (Floyd 1990) from the NSW Scientific Committees (1999) determination.

Table 1. Criteria used in assessing the habitat fit of Floyd's suballiances to the riparian rainforest on the Clarence floodplain.

Assessment criteria	Habitat fit category
<i>Good fit</i> – the habitat criterion for the suballiances aligns with the habitat of the floodplain – the main suballiances	1
<i>Niches</i> – the habitat criterion for the suballiances aligns with small areas on the floodplain – present throughout in small areas.	2
<i>Edges</i> – the habitat criteria for the suballiances does not align with the main area of the floodplain, but it does for adjoining areas – transitional	3
<i>No fit</i> – the habitat criterion for the suballiances do not fit with the floodplain or its adjoining areas.	4

Table 2. Numerical ratings applied to Floyd’s (1990 v. 1 p. 23) abundance ratings

Abundance rating	Basis for abundance rating	Numerical rating
VC Very common	Top 1–6 most common species	10
C Common	More than 5 individuals	6
O Occasional	2 to about 5 individuals	3
R Rare	1 only seen	1

Table 3 Worked example of the process of plotting abundance Vs number of species. The value for *Ficus macrophylla* for Suballiance 1 is generated from it being present in two of four sites (data not shown) with abundance values of 3 (Occasional) and 6 (Common) to give a rounded down abundance value of 2.2 (sum of 9 divided by 4 = 2.25). This process was repeated for all the other suballiances of interest and also for another four species. The highlighted values are those that are plotted in Figure 2.

Species	Floyd’s suballiances											
	1	2	3	4	5	6	16	23	24	25	26	33
<i>Ficus macrophylla</i>	2.2	5.0	8.4	1.0	0.7			2.6	1.4			0.2
<i>Dendrocnide excelsa</i>	3.8	5.0	6.0	1.3	1.8			3.0	2.0			1.6
<i>Streblus brunonianus</i>	1.0	5.0	5.6		1.5			9.2	3.3	8.7	0.2	0.2
<i>Malotus philippensis</i>	1.5	1.5	4.4	2.0	1.5			6.0	4.0	5.3		0.6
<i>Cryptocarya obovata</i>	1.0	6.0	4.0	1.7	2.8	1.0		0.6	2.3	4.0	0.8	1.4
Sum of average abundance values	9.5	22.5	28.4	6.0	8.3	1.0		21.4	13.0	18.0	1.0	4.0
Total abundance value	225	196	193	160	156	86	193	214	132	126	107	213
Percentage of example list of the total abundance	4.2%	11.5%	14.7%	3.8%	5.3%	1.2%	0.0%	10.0%	9.8%	14.3%	0.9%	1.9%
No. of species (max. 5)	5	5	5	4	5	1	0	5	5	3	2	5
Total No. of species	161	93	146	103	134	99	95	166	75	52	80	184
Percentage of example list of the total no. of species	3.1%	5.4%	3.4%	3.9%	3.7%	1.0%	0.0%	3.0%	6.7%	5.8%	2.5%	2.7%

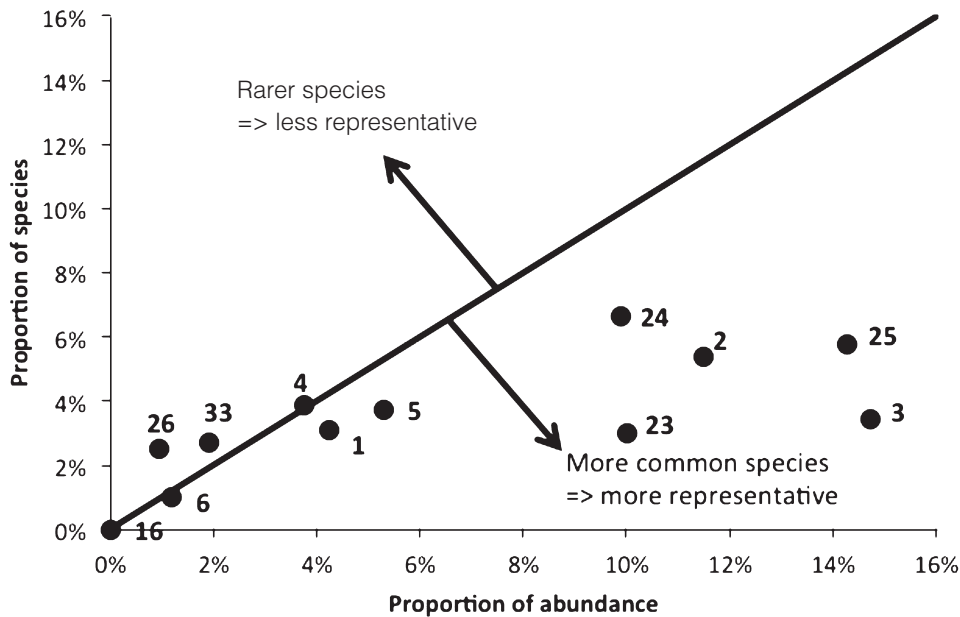


Figure 2 Worked example of plotting abundance Vs number of species. The graph has separated the suballiances into two groups. In the more representative group, only four of the seven suballiances where all five species were represented made it into this group. In suballiance 25, only 3 species were present, but due to them being very common, this suballiance has also made it into the more representative group. Using the proportion of numbers and abundance provides an extra dimension in trying to complete this historical jigsaw puzzle. Suballiances that are above the line will tend to be less representative, as the species that are present are less common. In contrast, those suballiances that are very abundant will tend to be placed below the dividing line, as their higher abundance values will push them to the right on the graph.

A species list was created from the original surveyors' corner tree data and species lists from botanists who visited the region prior to the clearing of the rainforest and will be referred to as the historical species list (Appendix 1).

The historical species list was compared to the species list in each of Floyd's (1990) suballiances to extract the number of species represented, and to generate an abundance rating. Floyd (1990) has provided a species list for each of his suballiances with an associated abundance rating from 2–5 representative sites. This abundance rating was converted to numerical values to reflect the relative weighting of the original rating (Table 2). It is a simple progressive scale with the interval between groups increasing by one and it aims to provide weight to the important species without completely ignoring the others. A linear scale (1, 2, 3, 4) was used initially but it was considered that it did not put enough emphasis on the very common species and too much emphasis on rare species.

The abundance values for each species were averaged to give an average abundance for that species in that suballiance. The average abundance values were then summed for the historical species that were present in each of the suballiances. The proportion of the sum of the abundance values for the historical species to the total of the abundance value for each suballiance was plotted against the proportion of the number of species from the historical list to the total number of species in the suballiance. This process is explained in a simplified example (Table 3, Figure 2).

Results

Two botanists' visited the region prior to the complete loss of the riparian rainforest, Charles Moore and William Carron.

Charles Moore (1861a, b, 1867), Director of the Sydney Botanic Gardens, collected many rainforest specimens on his visit to the Clarence in 1861, with 28 named in two separate newspaper articles. It is also recorded that he published *A catalogue of Northern Timbers*, which he later revised several times (King 1974). The Botanic Gardens Library (part of the National Herbarium of New South Wales) was not able to locate a copy of this Catalogue, but had a copy of his catalogue of *Woods indigenous to the Northern district of the colony* from the *London International Exhibition, 1862*. This catalogue had 116 timber specimens from the Clarence and Richmond districts, with 75 of these from the Clarence, some without species names.

William Carron (1872a, b), a collector for the Sydney Botanic Gardens was sent to the Northern Rivers to seek out possible sites for timber reserves. Only one rainforest timber reserve, located 6–7 miles (10–11 km) north of Grafton, with 20 tree species was nominated.

A list of 77 species (the historical species list, Appendix 1) was compiled from botanists' data combined with the surveyors' corner tree data. Though the corner tree data was only recorded as common names, it was possible to suggest a scientific name with the aid of a list of 78 species from the adjacent Richmond River region

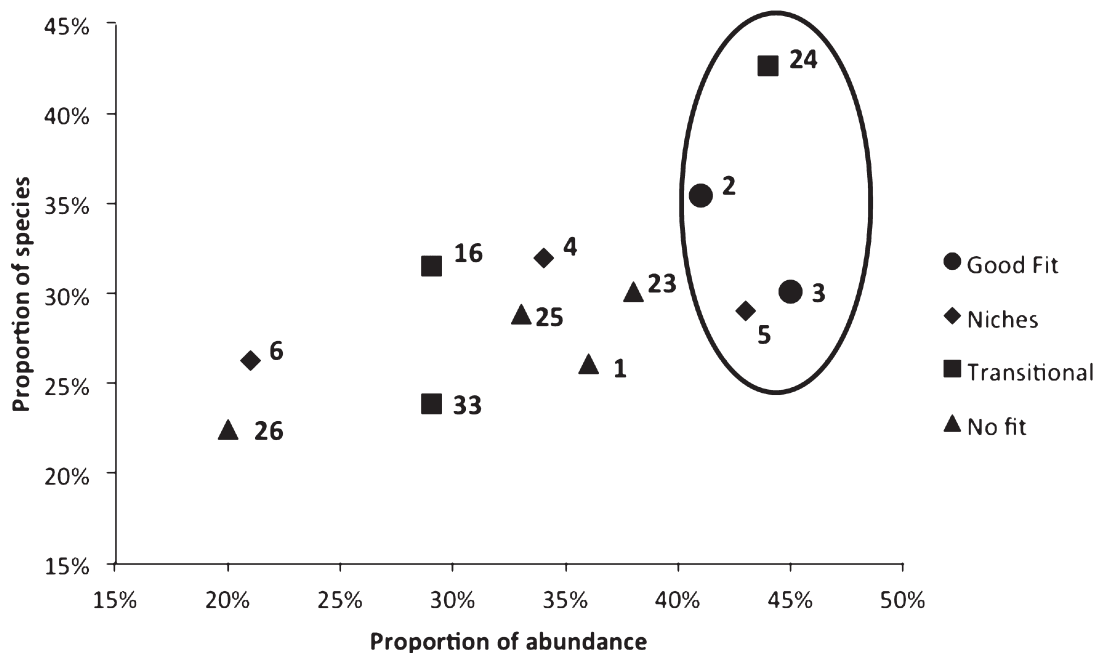


Figure 3. The proportion of species from the historical list in each of Floyd's (1990) suballiances (Table 4 for names) plotted against the proportion of the average abundance of that species in the suballiance with the subjective habitat rating displayed as various point shapes. The suballiances within the circle are those more likely to have been present on the Clarence floodplain.

Table 3. Possible explanations as to why these species were not represented in the 12 suballiances of interest.

No. of species	Reason
3	Only the genus was nominated
1	<i>Callerya megasperma</i> – A vine – only tree data has been captured in this project.
3	Doubles – two species names eventually converged to one species.
3	These may be incorrectly named: <i>Acacia trinervata</i> : Restricted to western Sydney and adjacent lower Blue Mountains (Flora of Australia v. 11B 2001 p. 45) and therefore may be incorrectly named. <i>Epicarpurus orientalis</i> : The common name of Elm and the description suggest the name <i>Aphananthe philippinensis</i> may be more correct. <i>Owenia venosa</i> : The common name of Tulipwood and the description suggest the name <i>Harpullia pendula</i> may be more correct.
4	These species were not listed in the 12 suballiances of interest due to incorrect habitat: <i>Acacia binervata</i> : In more or less abundance all along the coast; a handsome, small sized tree. Timber hard, and occasionally used for carpenters' tools. MALLA WAUNDIE. Clarence and Richmond brush forests (Moore 1861b). <i>Denhamia pittosporoides</i> : In dry rainforest and vine thicket on basaltic or basaltically enriched soil (Floyd 2008). A tree of moderate size; timber not used. Clarence brush forests (Moore 1861b). <i>Erythrina vespertilio</i> : Dry and semi-dry rainforests and also in adjoining open forest country (Floyd 2008). On open forest land bordering on the thick brush forests (Moore 1861b). <i>Geijera salicifolia</i> : In dry rainforest on steep dry stony slopes and sides of gorges. On skeletal soils derived from slates (Floyd 2008). Brush forests, generally in the Northern districts (Moore 1861b).
1	This species may have been totally lost to NSW: <i>Cupaniopsis serrata</i> : Not recorded with certainty in NSW. (Floyd 2008). A very ornamental tree of small size, plentiful in the brushes. Timber not used. GULWIN GULWIN. Richmond and Clarence (Moore 1861b).
2	Unknowns – The following species were unable to be located in the Australian Plant Name Index: <i>Nephelium lanuginosum</i> : <i>Sapindaceae</i> . A fine tree, attaining a height of 80 feet and 3 feet in diameter. Timber occasionally used for building purposes. UROOBIE. Clarence and Richmond brush forests, plentiful (Moore 1861b). <i>Nephelium lucidum</i> : Julip wood. This tree is very generally known wherever it grows, both on account of the beauty of its heart wood, and its excellence for firewood; for this latter purpose it is preferred about Grafton, where it is abundant, to almost any other. The tree grows to a large size, but it is seldom that the stem is solid, being generally decayed near the heart. The wood is exceedingly strong, and richly coloured with different shades, from black to yellow, will take a high polish, and in a good specimen is very beautiful. This has been occasionally employed in Sydney for cabinet work, but it does not appear to have received that attention that it deserves. (Moore 1861a, p.3)

(Clarence and Richmond Examiner and New England Advertiser, 1 April, 1873, Appendix 5). The likely current scientific and common names were determined using the Australian Plant Name Index (www.cpbr.gov.au/apni/) cross referenced with Floyd (2008). Of the 77 species in the complete list 60 were represented in the 12 suballiances that were deemed to be of interest (Appendix 2). An attempt has been made to ascertain why the other 17 species were not represented (Table 3).

The 12 suballiances were subjectively assessed for habitat fit (Table 4). The proportion of the sum of the average abundance values (Appendix 3) for each suballiance was plotted against the proportion of the number of species in each suballiance (Figure 3). In addition, the habitat fit rating of each suballiance was noted on the graph by different shape points. The resulting graph provided some insight on the fit of the 12 suballiances to the Clarence floodplain (Figure 3).

Discussion

The main criteria used to determine the possible distribution of Floyd's rainforest suballiances across the Clarence floodplain was a subjective assessment of the fit of the habitat characteristics of each suballiance to the habitat of the Clarence floodplain. To provide supporting evidence a methodology has been created that utilises a historical species list in a "what if" scenario. If the historical species list had been collected in a particular suballiance, then a particular proportion of the number of species and their abundance would have resulted. These values would vary for each suballiance along both axes, providing an extra dimension of the fit of each suballiance to the Clarence floodplain. There are many reasons why this methodology is not particularly robust, however, in much the same way that a palaeontologist will suggest how an animal may look, from a few bones, it is an attempt to use the available historical data to provide some insight into species distribution in rainforests that were cut down in the 1860s (Stubbs 1996, Rose 2012).

Table 4. Habitat descriptions of the suballiances nominated by the New South Wales Scientific Committee as being associated with the community lowland rainforest of New South Wales North Coast bioregion. In addition, the littoral suballiance No. 16 has been included. These have been ranked for habitat fit (Table 1) to the Clarence floodplain with qualifying remarks.

Suballiance	Comments (1 st line – Suballiance name, 1st paragraph – comments from Floyd 1990 v.2; 2nd paragraph – qualifying remarks for the Clarence floodplain)	Habitat fit categ.
1	<i>Heritiera trifoliolatum</i> Lowland krasnozem. North from Bellinger River. Less flood prone than No.3. Krasnozem soils are not present on the Clarence floodplain.	4
2	<i>Toona – Flindersia spp.</i> Lowland alluvium. Well drained sites on the fertile alluvial flats, which were initially logged and now farmed. May suffer from seasonal moisture stress. Good fit for the Clarence floodplain as it has a low rainfall period during spring.	1
3	<i>Cryptocarya obovata – Dendrocnide excels – Ficus spp – Araucaria</i> Floodplain alluvium. The major sub-alliance on the well-drained, fertile, basaltically-enriched alluvial lowland floodplains north from the Manning River, the majority now under agriculture. Good fit for the Clarence.	1
4	<i>Elaeocarpus grandis</i> Streambank alluvium. Exists as a lowland riverine fringing community within a more extensive community eg No 5, 6 or 33. The stream bank location is due to the large fruit (up to 30mm diameter), which is dispersed by water and not by birds in New South Wales. This could have been a niche community along the banks of the Clarence.	2
5	<i>Castanospermum – Dysoxylum mollissimum</i> Moist, alluvial flats and benches. A reliable soil moisture level appears to be a major requirement. Often derived from weathering of lowland plateaux. This suballiance can occur where hills merge with the floodplain without a backswamp in between e.g. at Maclean, Woodford Island, Ashby and Tyndale.	2
6	<i>Archontophoenix – Livistona</i> Excess soil moisture. Also known as palm forests. Drainage is impeded and there is free surface water during the wet season. Soil type is not critical. No palm forests are indicated on the portion plans, only ‘tall ferns’. However, it could be a transition community to the backswamps in some locations.	2
16	<i>Syzygium luehmannii – Acmena hemilampra</i> Well developed littoral rainforest on deep sand. Rich (1996) has suggested that this suballiance can extend further up the rivers away from the true littoral zone and thus there could have been a transition from this to the main suballiances close to the mouth of the river.	3
23	<i>Ficus spp – Streblus – Dendrocnide – Cassine</i> Central and South coasts on krasnozem at moderate low altitude. To the south of the Bellinger Valley. It occupies dry rocky slopes, ravines and headlands on fertile but often shallow soils. It does not occupy a streamside niche. Wrong location and soil type.	4
24	<i>Castanospermum – Grevillea robusta</i> Gallery rainforest along streams on basaltic alluvium in minimal rainfall areas (950–1100mm). Mainly in the upper Clarence and Richmond valleys. A drier phase of the suballiance No. 5. The annual rainfall on the floodplain is too high for this suballiance to be a major component of the floodplain. However, it fits with the upper end of the floodplain around Grafton as a transition to the main suballiances.	3
25	<i>Streblus – Austromyrtus</i> Streambank basaltic alluvium with high rainfall. Richmond River. Wrong location.	4
26	<i>Waterhousea floribunda/Tristaniopsis laurina</i> Southern Extension of No. 24 on less fertile alluvium. Wrong location.	4
33	<i>Ceratopetalum/Schizomeria – Argyrodendron/Sloanea</i> Warm temperate/subtropical rainforest on alluvium or enriched yellow earth. <i>Sloanea</i> above 650m altitude. A transition suballiance between the subtropical and warm temperate rainforests often in gullies. The floodplain environment on the Clarence of levees transitioning to backplains does not seem to fit this suballiance. Some small areas may be present as per the comments for No 5, in gullies that merge onto alluvial terraces.	3

Assessing habitat characteristics of the eleven rainforest suballiances nominated by the New South Wales Scientific Committee as possibly being present prior to European settlement on the Clarence floodplain, enabled four to be eliminated. Of the remaining suballiances it is suggested that three were present in niche environments, two plus a littoral rainforest suballiance occupied transitional environments and two were the main suballiances. The habitat ranking process for the suballiances was supported to some extent by the abundance and species number data generated from Floyd’s (1990, v.2 microfiche) species lists when cross referenced with the historical species list (Appendix 1, Figure 3).

Suballiance No. 23 rated almost as high as the suballiances suggested for the Clarence floodplain (Figure 3), even though it is only present on the NSW Central and South Coasts. This could be due to either of two reasons: **Option 1)** Floyd (1990, v.1 p. 36) noted that in prior times that the region to the north of the Clarence was drier and seemed to be a major barrier to the north-south movement of some rainforest species. The concept of a species barrier was supported by Rich (1996) who grouped 33 littoral rainforest remnants from all of NSW into 3 groups using PATN analysis. The Iluka littoral rainforest near the mouth of the Clarence River was the northern most representative of the southern group, providing additional evidence of the Clarence as a boundary for some rainforest species. If the rainforest species on the floodplain followed the trend of the littoral rainforest species by having a stronger affinity with the southern rainforest groups, this could explain why the southern suballiance No. 23 rated so highly in Figure 3. **Option 2)** The second reason could be that those who contributed to the historical species list may have been more familiar with the rainforest species closer to home (Sydney), and so they were more familiar with the species from suballiance No. 23. The contrary

argument to this option is the position of suballiance No. 23 in Figure 3, where it lies more to the right on the graph indicating that it is fairly well represented (Figure 3). If this option were true, it would be expected that the species would be less abundant and therefore placed further to the left in Figure 3.

Initial work with this concept using a smaller species list and plotting absolute numbers instead of proportions gave a poor rating for suballiance No. 25, which is described as being from the Richmond River (the next river valley to the north of the Clarence)(Rose 2012). This provided further evidence to support Option 1) above, however, with the revised methodology this is no longer as clear cut. Suballiance No. 25 is a dry rainforest type with a high rainfall, and as the lower Clarence floodplain has a relatively dry spring (Rose 2012, p. 24), it was expected that this suballiance would have a fit on the Clarence and perhaps it did. However, this is not a strong link and it can be argued that the data presented in Figure 3 could support the idea that at some time in the past the region directly to the north of the Clarence was a barrier for the north-south movement of rainforest species.

Floyd (1990, v.1 p 23) in setting up his classification of New South Wales Rainforests comments that:

It must be kept in mind at all times that the subformations, alliances and particularly the suballiances are merely nodes or fairly frequent clusters of species along a continuous gradation. Some areas will fall somewhere between two nodes or suballiances.

Keeping these comments in mind a conceptual model of the possible distribution of suballiances throughout the Clarence floodplain is proposed with the boundaries in the diagram acting as transition zones (Figure 4). In this model suballiance No. 4 occupies sections directly on the

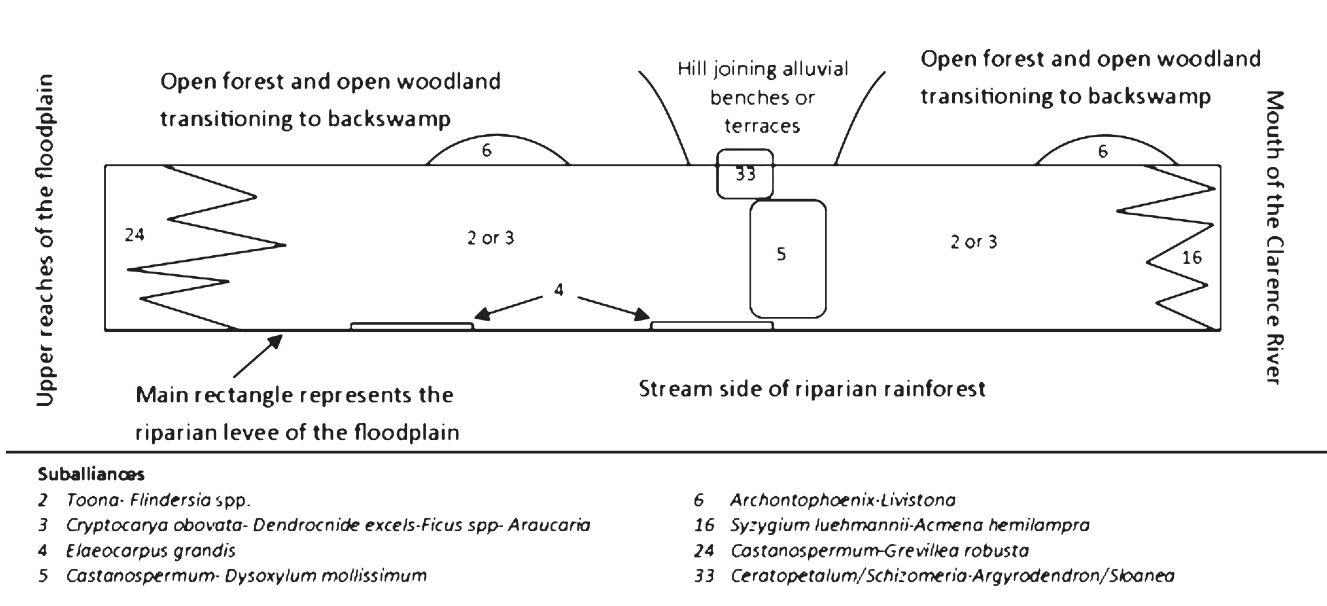


Figure 4. Proposed conceptual model of the occurrence and arrangement of the various rainforest suballiances on the Clarence floodplain.

riverbank, transitioning to the two major and one niche suballiance that occupy the bulk of the alluvial streamside levees. The two major suballiances are No. 2 and No. 3. Floyd indicates that suballiance No. 2 may suffer from seasonal moisture stress, which is a characteristic of the Clarence floodplain during spring. A climate and geomorphological (e.g. bank height, Rose 2012) gradient does exist along the Clarence floodplain and some species differentiation would be expected as a consequence. The corner trees from the portion plans provided some data on species distribution; however, only two rainforest species had more than four representatives, making any subregional suballiance delineation highly speculative.

Apart from Carron's Grafton brush species list (Appendix I), the only species location comments in the historical record refer to the Hoop pine, *Araucaria cunninghamii*, in the lower river:

(i) Hodgkinson (1845 p. 97) notes that: *The brushes near the mouth of the Clarence are interspersed with the beautiful variety of pine I have already described...*

(ii) Perry investigating a northern branch off the main river not far from the mouth (perhaps around Chatsworth Island via Middle Channel) found ... *some nooks presenting pine brushes. The height of the pine trees, at the full growth, is about ninety feet, and they are as straight as an arrow.* (Lang 1847, p. 45)

(iii) Pines were used as corner trees in four instances, all from Warregah Island. The only instance where pines were specifically referred to on portion plans was as a pine forest near the current day Maclean golf course (northern end of Woodford Island), which is upstream from where the above comments were made.

Floyd's (1990, v.2 microfiche) species lists indicate that *Araucaria cunninghamii* is present in suballiance No. 3 but not in suballiance No. 2, providing some support that at least on the lower floodplain that suballiance No. 3 may have been more dominant than suballiance No. 2.

Floyd commented that the rainforest on Susan Island, located at the upper reaches of the floodplain, contains four emergent species typical of dry rainforest. As a consequence, the conceptual model includes a zone of transition at the upper end of the floodplain from the two major suballiances No. 2 and No. 3 into the dry rainforest suballiance No. 24. This suballiance is present in the upper reaches of the Clarence River and plausibly could have transitioned into the floodplain. Suballiance No. 24 rates very highly in Figure 3 and sits on the midline between less and more representative. This indicates that a lot of the less abundant species from this suballiance were known to those, who contributed to the historical species list. Most of these people would have been based in Grafton during their visit to the region and it is plausible that their knowledge of the rainforest species closer to Grafton would have been better than those further away. However, as Suballiance 24 does not sit further to the right in Figure 3, it is fair to place it as a transitional suballiance on the Clarence floodplain.

At the mouth of the Clarence a zone of transition to the littoral rainforest suballiance No. 16 is included. Rich (1996) has suggested that littoral rainforest can be found inland as far as 3.1km and further inland along estuarine rivers (e.g. Stotts Island on the Tweed River is 15 km upstream and 8 km inland). The analysis of the historical data rates suballiance No. 16 on the midline between less and more representative, which is indicative of a transitional suballiance – the species are present to some extent, but as they are not fully suited, are not all that abundant.

The niche suballiance present in the main body of the riparian rainforest is suballiance No. 5, which is present on alluvial flats or benches that have been created by the weathering of an adjacent hill or plateau. A number of situations exist on the floodplain where the geomorphology is stream-bench-hill, without a backswamp in between e.g. near Maclean High School, where a remnant of this suballiance used to exist until destroyed by flying

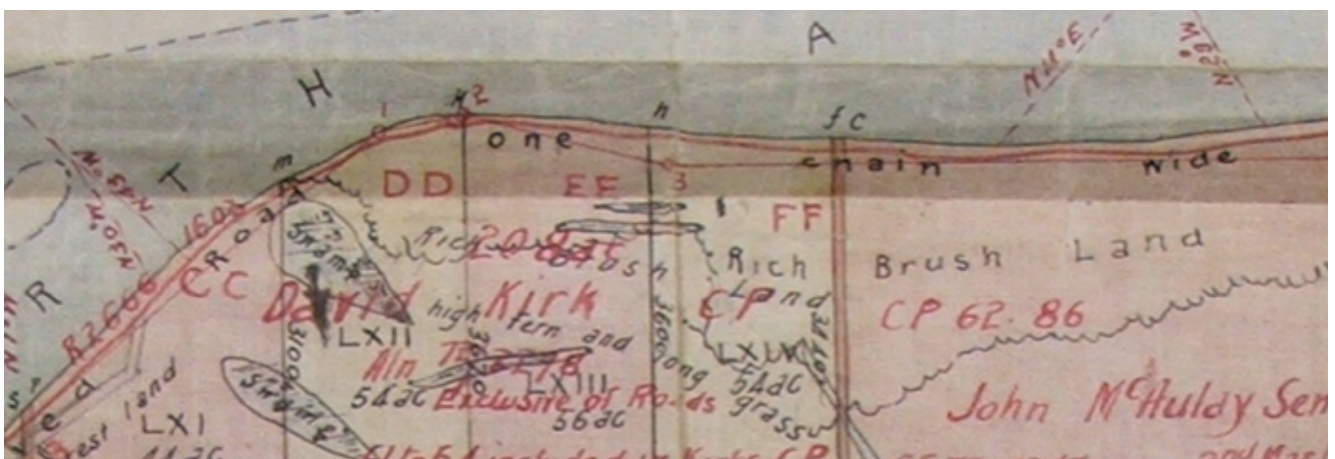


Figure 5 Portion plan of the northern part of Chatsworth Island showing a reference to 'high fern and long grass'. Surveyed 1862. (Department of Lands, Grafton, C62)

foxes (Silver 2010). It is possible that this suballiance transitioned into the warm rainforest suballiance No. 33 from the bench into gullies in the adjacent hill. It has been included as such in the conceptual model.

Floyd (1990 v.2 p. 23) notes that there are two examples of suballiance No. 6 in the lower Clarence region, with one on the floodplain. An early newspaper article about Susan Island records among other plants that Bangalow palms (*Archontophoenix cunninghamiana*) are present (Clarence and Richmond Examiner and New England Advertiser, 20 January, 1880, p. 3). As expected this suballiance rates poorly in the historical data analysis (Figure 3) as only a few species have high abundance ratings (Appendix 4). From a habitat point of view suballiance No. 6 fits as a transition suballiance from the main body of the riparian rainforest to the backswamps. As noted previously, both Hodgkinson and Perry commented on the abundance of pines on the lower river. Hoop pines (*Araucaria cunninghamii*) were observed at Stotts Island (Tweed River, northern New South Wales) within one of the largest examples of suballiance No. 6, where they are present on slightly higher areas in amongst the palm trees (Floyd, 1990, v. 2 p. 22). There were no references to palm forests on the 1860s portion plans. There were, however, many references to 'high fern' (e.g. Figure 5) in the areas where this suballiance may have been expected to be present but no documentation was found to confirm its identity (possibly Bracken *Pteridium esculentum*, Ed.).

As an aid to those using the suballiance conceptual model (Figure 4), the 45 most abundant species in Floyds (1990) species list from each suballiance as determined by the ranking system used in Table 1 is given in Appendix 4.

A total of 17 species from the historical list were not present in the 12 suballiances of interest. Most of these species were collected by Moore in 1861, at a time when there were still substantial areas of rainforest on the floodplain. A reason for their absence could be found for most of the species, however, two species were not able to be located in the Australian Plant Name Index and one (*Cupaniopsis serrata*) may have been totally lost to New South Wales. The presence of these species in the historical list indicate that the remaining rainforest remnants do not necessarily fully represent what was originally there. This is quite plausible, as the remnants are in locations that are not typical of the habitat of the majority of the original riparian rainforest. The conceptual model (Figure 4) cannot be classified as a complete solution, but based on the currently available evidence, as presented in this paper, it may be a fair representation of what may have been there.

Conclusion

We may never know the true species composition of the original riparian rainforest of the Clarence floodplain, but this paper has attempted to use the available information to generate a concept of what may have been there. Models do not always generate the correct answer. They do, however, provide a framework that promotes discussion and the basis for the construction of alternatives.

Acknowledgements

The guidance of Alison Specht, Michael Whelan and Brett Stubbs was greatly appreciated. Thanks to Miguel Garcia for tracking down Moore's list of rainforest species from the northern districts.

References

- Carron, W (1872a) Timber Reserves in the Clarence River District. *The Sydney Morning Herald*. 19th August.
- Carron, W (1872b) Timber Reserves (Report on – In Clarence, Richmond and Tweed River Districts). *Legislative Assembly New South Wales*: 861–872.
- Flora of Australia Volume 11B (2001) *Mimosaceae, Acacia part 2*. ABR/CSIRO Publishing, Melbourne.
- Floyd, AG (1990) *Australian Rainforests in New South Wales*. Surrey Beatty and Sons, NSW National Parks and Wildlife Service.
- Floyd, AG (2008) *Rainforest tress of mainland south-eastern Australia*. Terania Rainforest Publishing, Lismore, Australia.
- Ensbey, F (2010) *Clarence Valley Council Riparian Action Strategy*. Clarence Valley Council, Grafton.
- Hodgkinson, C (1845) *Australia from Port Macquarie to Moreton Bay*. T. and W. Boone, London.
- King, CJ (1974) Moore, Charles (1820–1905), *Australian Dictionary of Biography*, Online Edition, Australian National University.
- Lang, JD (1847) *Cooksland in north-eastern Australia*. Longman, Brown, Green and Longmans, London.
- McFarlane, D (1924) *A History of the Clarence River*. compiled from a series of articles in the Daily Examiner by Job (2005). Clarence River Historical Society Inc, Grafton, New South Wales.
- Moore, C (1861a) Scrub Timbers of the Clarence and Richmond Districts. *The Courier*. Brisbane, Qld. 26 September 2–3.
- Moore, C (1861b) Woods indigenous to the Northern district of the colony. *London International Exhibition, 1862 : Catalogue of the natural and industrial products of New South Wales*. pp. 27–32.
- Moore, C (1867) Woods from the Northern Districts of the Colony. *The Sydney Morning Herald*. 21st February.
- NSW Scientific Committee (1999) Lowland rainforest on floodplain in the NSW North Coast Bioregion – endangered ecological community – final, NSW Department of Environment and Conservation, Sydney.

- Rich, A (1996) What is littoral about rainforest? A study of floristic patterns in coastal rainforests of subtropical eastern Australia. Faculty of Resource Science and Management. Lismore, Southern Cross University. Honours thesis: 120.
- Rose, P (2012) Riparian vegetation on the Clarence Floodplain: historical insights as an aid for today's management, Southern Cross University, Lismore, Australia. M Sc. Thesis.
- Rose, P, Specht, A, Whelan, M & Stubbs, B (2010) Riparian vegetation change on the Clarence River floodplain. *Australasian Journal of Environmental Management* 17: 223–234.
- Silver, V (2010) Draft Maclean flying-fox management strategy, prepared for Clarence Valley Council and Department of Environment and Climate Change and Water, GeoLINK, Lennox Head, New South Wales.
- Stubbs, BJ (1996) A question of competing values: forest and timber conservation in New South Wales, 1838–1996, Southern Cross University, Lismore. PhD Thesis: pp 615.
- Vader, J (1987) *Red Gold: The tree that built a nation*. New Holland Publishers (Australia) Pty Ltd. Frenches Forest NSW.
- Wilson, P (2014a) Clarence Floodplain and Estuary Partnership Meeting Minutes 5th June 2014, Clarence Valley Council, Grafton, NSW.
- Wilson, P (2014b) Outcomes and actions from CF & EP Workshop, 15th October 2014, Clarence Valley Council, Grafton, NSW.

Manuscript accepted 25 November 2014

Appendix 1. Historical species list – Brush (rainforest) species from the Clarence floodplain as recorded in the mid-19th century

Scientific name (at time of description)	Described by		Common names			Likely current names from the Australian Plant Name Index		
	Moore	Carron	Surveyors	Moore (1861)	Carron (1871)	Surveyors (Wilson: 1841–42, others: 1857–1870)	Scientific name	Common name
<i>Acacia cunninghamii</i>	•						<i>Acacia trinervata</i>	Three-veined wattle
<i>Acacia umbrosa</i>	•						<i>Acacia binervata</i>	Two-veined hickory
<i>Achras australis</i>	•						<i>Pouteria australis</i>	Black apple
<i>Acmena spp</i>	•						Myrtaceae	
<i>Acronychia hillii</i>	•						<i>Sarcomelicope simplicifolia</i> subsp. <i>simplicifolia</i>	Yellowwood
<i>Ailantus spp.</i>	•						<i>Ailanthus triphysa</i>	White bean
<i>Alphitonia excellea</i>	•	•					<i>Alphitonia excelsa</i>	Red ash
<i>Araucaria cunninghamii</i>	•	•	•	Pine	Morton Bay pine	Pine	<i>Araucaria cunninghamii</i>	Hoop pine
<i>Atherosperma micranthum</i> <i>Daphnandra micrantha</i>	•							Manning River socketwood
<i>Baloghia lucida</i>	•						<i>Daphnandra micrantha</i> <i>Baloghia inophylla</i>	Brush bloodwood
<i>Brachychiton luridum</i>	•						<i>Brachychiton discolor</i>	Brush kurrajong
<i>Busbeckia arborea</i>	•						<i>Capparis arborea</i>	Brush caper berry
<i>Cargillia pentamera</i>	•	•					<i>Diospyros pentamera</i>	Grey persimmon
<i>Castanospermum australe</i>	•	•	•	Moreton Bay Chestnut or bean tree	bean-tree	Bean	<i>Castanospermum australe</i>	Black bean
<i>Cedreia toona</i>	•	•	•	Cedar	red cedar	Cedar	<i>Toona ciliata</i>	Red cedar
<i>Celtis opaca</i>	•						<i>Celtis paniculata</i>	Native hackberry
<i>Commersonia spp.</i>	•						<i>Commersonia bartramia</i>	Brown kurrajong
<i>Cryptocarya glaucescens</i>	•						<i>Cryptocarya glaucescens</i>	Silver sycamore
<i>Cryptocarya obovata</i>	•							
<i>Tetranthera ferruginea</i>	•						<i>Cryptocarya obovata</i>	Pepperberry
<i>Cupania anacardioides</i>	•						<i>Cupaniopsis anacardioides</i>	Tuckeroo
<i>Cupania australis</i>	•						<i>Diploglottis australis</i>	Native tamarind
<i>Diploglottis cunninghamii</i>	•							

Scientific name (at time of description)	Described by			Common names		Likely current names from the Australian Plant Name Index		
	Moore	Carron	Surveyors	Moore (1861)	Carron (1871)	Surveyors (Wilson: 1841–42, others: 1857–1870)	Scientific name	Common name
<i>Cupania pseud-orchis</i>	•			Iceaaya			<i>Jagera pseudorhus</i>	Foambark Tree
<i>Cupania semiglauca</i>	•	•					<i>Guioa semiglauca</i>	Wild quince
<i>Cupania serrata</i>	•			Gulwin gulwin			<i>Cupaniopsis serrata</i>	Smooth tuckeroo
<i>Cupania xylocarpa</i>	•			wootarie			<i>Elattostachys xylocarpa</i>	White tamarind
<i>Diospyros</i> spp.	•						<i>Diospyros</i> spp	
<i>Denhamia pittosporoides</i>	•						<i>Denhamia pittosporoides</i>	Orange boxwood
<i>Duboisia myoporoides</i>	•		•	Corkwood		Cork	<i>Duboisia myoporoides</i>	Cork
<i>Dysoxylon fraserianum</i>	•	•	•		rosewood	Rosewood	<i>Dysoxylum fraserianum</i>	Rosewood, Rose mahogany
<i>Dysoxylon muelleri</i>	•			Pencil cedar or turnip wood			<i>Dysoxylum mollissimum</i>	Miva mahogany
<i>Echinocarpus australis</i>	•						<i>Sloanea australis</i>	Blush alder
<i>Endiandra virens</i>	•			Bat & Ball, Native pomegranate			<i>Endiandra virens</i>	White apple
<i>Epicarpurus orientalis</i>	•			Elm			<i>Epicarpurus orientalis</i>	
<i>Erythrina vespertilionis</i>	•						<i>Erythrina vespertilio</i>	Grey corkwood
<i>Eugenia ventenatii</i>	•			Large-leaved water gum			<i>Syzygium floribundum</i>	Weeping satinash
<i>Euodia erythrococca</i>	•						<i>Dinosperma erythrococcum</i>	Tingle-tongue
<i>Ficus aspera</i>	•			Small leafed fig			<i>Ficus obliqua</i>	Small leaved fig
<i>Ficus macrophylla</i>	•		•	Large leaved fig		Fig	<i>Ficus macrophylla</i>	Moreton Bay fig
<i>Flindersia australis</i>	•		•	Ash, beech		Ash	<i>Flindersia australis</i>	Crows ash
			•			Whitewood	<i>Flindersia schottiana</i>	
<i>Geijera salicifolia</i>	•			Balsam Capivi tree			<i>Geijera salicifolia</i>	Green satinheart
<i>Geissois benthamii</i>	•						<i>Geissois benthamii</i>	Brush mahogany
			•			Beech	<i>Gmelina leichhardtii</i>	White beech
<i>Grevillea robusta</i>	•	•			silky-oak		<i>Grevillea robusta</i>	Southern silky oak
<i>Harpullia pendula</i>	•	•	•		tulip-wood	Tulip	<i>Harpullia pendula</i>	Tulipwood
<i>Hartighsia rufa</i>	•			Woggi-amabbie			<i>Dysoxylum rufum</i>	Rusty mahogany
<i>Hodgkinsonia ovatiflora</i>	•			larribie			<i>Hodgkinsonia ovatiflora</i>	Golden ash
<i>Jambosa australis</i>	•			Cherry of the Clarence			<i>Syzygium australe</i>	Brush cherry
<i>Lophostemon australis</i>	•						<i>Lophostemon confertus</i>	Brush box
<i>Mooria campylosperma.</i>	•			Urra wymbie			<i>Citronella moori</i>	Soapy box
<i>Morus brunoniana</i>	•			lagaulbie			<i>Streblus brunonianus</i>	Whalebone tree
<i>Myrtus acmenoides</i>	•	•	•	White myrtle	hickory	Hickory	<i>Gossia acmenoides</i>	Ironwood
<i>Myrtus melastom?e</i>	•						<i>Rhodammia rubescens</i>	Brush turpentine
<i>Nephelium lanuginosum</i>	•			uroobie				
<i>Nephelium leiocarpum</i>	•						<i>Alectryon subcinereus</i>	Wild quince, bird's eye
<i>Nephelium lucidum</i>	•			Julip wood				
<i>Olea paniculata</i>	•	•		marblewood	marble-wood		<i>Olea paniculata</i>	Native olive
<i>Owenia venosa</i>	•			Tulip wood			<i>Owenia venosa</i>	Tulipwood
<i>Panax elegans</i>	•			undambie			<i>Polyscias elegans</i>	Celery wood
<i>Pseudalangium</i> spp.	•			Walm babie			<i>Alangium villosum subsp. polyosmoides</i>	Black muskheart

Scientific name (at time of description)	Described by			Common names		Likely current names from the Australian Plant Name Index		
	Moore	Carron	Surveyors	Moore (1861)	Carron (1871)	Surveyors (Wilson: 1841–42, others: 1857–1870)	Scientific name	Common name
<i>Rhus rhodanthema</i>	•	•	•	light yellow wood	satin or yellow wood	Yellowwood	<i>Rhodosphaera rhodanthema</i>	Tulip satinwood
<i>Rottlera discolor</i>	•						<i>Mallotus discolor</i>	Yellow kamala
<i>Rottlera tinctoria</i>	•						<i>Mallotus philippensis</i>	Orange kamala
<i>Schmidelia anodonta</i>	•			gomphan			<i>Mischocarpus anodontus</i>	Pear fruited tamarind
<i>Stenocarpus salignus</i>	•			beefwood or silky oak			<i>Stenocarpus salignus</i>	Red silky oak
<i>Stenocarpus sinuatus</i>	•				beefwood or silky oak		<i>Stenocarpus sinuatus</i>	White silky oak
<i>Synoum glandulosum</i>	•			Rosewood			<i>Synoum glandulosum</i>	Scentless rosewood
<i>Tabernaemontana</i> spp.	•			Bitter bark				
<i>Tarrietia argyrodendron</i>	•			Iron wood or byong			<i>Heritiera trifoliolatum</i>	Brown tulip oak
<i>Trochocarpa laurina</i>	•				bush cherry		<i>Trochocarpa laurina</i>	
<i>Urtica gigas</i>	•	•		Large Nettle tree		Nettle	<i>Dendrocnide excelsa</i>	Giant stinging tree
<i>Urtica photiniophylla</i>	•			Small-leaved nettle			<i>Dendrocnide photinophylla</i>	Shining leaved stinging tree
<i>Vitex</i> spp	•			Beech-tree			<i>Premna lignum-vitae</i>	Yellow hollywood
<i>Wistaria megasperma</i>	•						<i>Callerya megasperma</i>	Native wistaria

Appendix 2. The 60 species of the total of 77 species from the historical list (Appendix 1) also present in Floyd's (1990) species list.

Family	Species	Name in 1990	Common name
Alangiaceae	<i>Alangium villosum</i>		Black muskheart
Anacardiaceae	<i>Rhodosphaera rhodanthema</i>		Deep yellowwood
Araliaceae	<i>Polyscias elegans</i>		Celery wood
Araucariaceae	<i>Araucaria cunninghamii</i>		Hoop pine
Cannabaceae	<i>Celtis paniculata</i>	Fa. Ulmaceae	Native hackberry
Capparaceae	<i>Capparis arborea</i>		Native pomegranate
Cardiopteridaceae	<i>Citronella moorei</i>	Fa. Icacinaceae	Soapy Box
Cunoniaceae	<i>Geissois benthamii</i>		Red carabean
Ebenaceae	<i>Diospyros pentamera</i>		Grey persimon
Elaeocarpaceae	<i>Sloanea australis</i>		Maiden's blush
Epacridaceae	<i>Trochocarpa laurina</i>		Tree heath
Euphorbiaceae	<i>Baloghia inophylla</i>		Brush bloodwood
	<i>Mallotus discolor</i>		Yellow kamalla
	<i>Mallotus philippensis</i>		Orange kamalla
Fabaceae	<i>Castanospermum australe</i>		Black bean
Lauraceae	<i>Cryptocarya glaucescens</i>		Jackwood
	<i>Cryptocarya obovata</i>		Pepperberry
	<i>Endiandra virens</i>		White apple
Meliaceae	<i>Dyoxylum fraserianum</i>		Rosewood
	<i>Dyoxylum mollissimum</i>	<i>Dyoxylum muelleri</i>	Red bean
	<i>Dyoxylum rufum</i>		Hairy Rosewood
	<i>Synoum glandulosum</i>		Scentless rosewood
	<i>Toona ciliata</i>	<i>Toona australis</i>	Red cedar
Monimiaceae	<i>Daphnandra micrantha</i>	Fa. Atherospermataceae	Socketwood
Moraceae	<i>Ficus macrophylla</i>		Moreton Bay fig
	<i>Ficus obliqua</i>		Small leaved fig
	<i>Streblus brunonianus</i>		Whalebone tree

Family	Species	Name in 1990	Common name
Myrtaceae	<i>Gossia acmenoides</i>	<i>Austromyrtus acmenoides</i>	Scrub ironwood
	<i>Lophostemon confertus</i>		Brush box
	<i>Rhodamnia rubescens</i>		Scub turpentine
	<i>Syzygium australe</i>		Brush cherry
	<i>Syzygium floribundum</i>		<i>Waterhousea floribunda</i>
Oleraceae	<i>Olea paniculata</i>	Native olive	
Proteaceae	<i>Grevillea robusta</i>		Silky oak
	<i>Stenocarpus salignus</i>		Scrub beefwood
	<i>Stenocarpus sinuatus</i>		Wheel of fire tree
Rhamnaceae	<i>Alphitonia excelsa</i>		Red ash
Rubiaceae	<i>Hodgkinsonia ovatiflora</i>		Golden ash
Rutaceae	<i>Dinosperma erythrococcum</i>	<i>Melicope erthrococca</i>	Tingle tongue
	<i>Flindersia australis</i>		Teak
	<i>Flindersia schottiana</i>		Bumpy ash
	<i>Sarcomelicope simplicifolia</i>		Yellow acronychia
Sapindaceae	<i>Alectryon subcinereus</i>		Wild quince
	<i>Cupaniopsis anacardioides</i>		Tuckeroo
	<i>Diploglottis australis</i>		Tamarind
	<i>Elattostachys xylocarpa</i>		Short-leaf beetroot
	<i>Guioa semiglauca</i>		Guioa
	<i>Harpullia pendula</i>		Tulipwood
	<i>Jagera pseudohus</i>		Foambark
	<i>Mischocarpus anodontus</i>		Few-leaved brush apple
Sapotaceae	<i>Pouteria australis</i>	<i>Planchonella australis</i>	Black apple
Simaroubaceae	<i>Ailanthus triphysa</i>		White bean
Solenaceae	<i>Duboisia myoporoides</i>		Soft corkwood
Sterculiaceae	<i>Heritiera trifoliolatum</i>	<i>Argyrodendron trifoliolatum</i>	White booyong
	<i>Brachychiton discolor</i>		Lacebark tree
	<i>Commersonia bartramia</i>		Brown kurrajong
Urticaceae	<i>Dendrocnide excelsa</i>		Giant stinging tree
	<i>Dendrocnide photinophylla</i>		Shining-leaved stinging tree
Verbenaceae	<i>Gmelina leichhardtii</i>		white beech
	<i>Premna lignum-vitae</i>		Lignum-vitae

Appendix 3. The historical list of species (Appendix 2) with average abundance data using the rating in Table 2 applied to the abundance data taken from Floyd (1990).

Species	Floyd's suballiances												
	1	2	3	4	5	6	16	23	24	25	26	33	
<i>Ailanthus triphysa</i>	1.5						0.8	0.2	0.3				0.2
<i>Alangium villosum</i>	1.5	3.5	2.8	1.3	1.5	0.2	1	0.2					1.2
<i>Alectryon subcinereus</i>	0.5	0.5	0.6	1				2.6	1.3		0.3		0.8
<i>Alphitonia excelsa</i>	1.8	2	2.6	0.3	1.8	0.2	0.8	2.6	0.3	3	4.8		2.4
<i>Araucaria cunninghamii</i>			1.4			0.6	1.5	0.6	0.3				
<i>Argyrodendron trifoliolatum</i>	9.0	1	2.4	0.3	2.3			0.6	2				1.2
<i>Austromyrtus acmenoides</i>		1.5	0.2					0.8		2.3			0.2
<i>Baloghia inophylla</i>	2.5	1.5	1.2		1	0.6	0.3	3.8	5.3		0.8		2.6
<i>Brachychiton discolor</i>		0.5	1.8					1.2	0.3				
<i>Capparis arborea</i>	1.5		2.6	1	1			3.8		4			
<i>Castanospermum australe</i>	1.0		2.6	1	10				8.7	3			1.2
<i>Celtis paniculata</i>	0.5	1.5	0.8	0.3	1		1.8	0.4	1				
<i>Citronella moorei</i>	1.3	0.5		2	0.8			1.2					1
<i>Commersonia bartramia</i>	1.0	1.5	0.8	0.3	0.3		1.5	2	0.3				0.6
<i>Cryptocarya glaucescens</i>		1.5		1.3	0.3	0.6	0.3	0.2			3		2.8
<i>Cryptocarya obovata</i>	1.0	6	4	1.7	2.8	1		0.6	2.3	4	0.8		1.4
<i>Cupaniopsis anacardioides</i>			0.2		0.3	0.2	7.3	3.2					
<i>Daphnandra micrantha</i>	2.5	3	1.8	3.3		0.6		1.4	3		1.5		2.4
<i>Dendrocnide excelsa</i>	3.8	5	6	1.3	1.8			3	2				1.6

Species	Floyd's suballiances											
	1	2	3	4	5	6	16	23	24	25	26	33
<i>Dendrocnide photinophylla</i>	2.8	2	2	1.3	2.3		4.5	0.6	1			0.6
<i>Diospyros pentamera</i>	3.3	3	2.4		1.8	0.6	3.5	3.8	1	1		3
<i>Diploglottis australis</i>	2.5	3	2	3	2.5		0.8	2.2	1.3	1.3	0.8	2.2
<i>Duboisia myoporoides</i>	1.5		0.2									0.8
<i>Dyoxylum fraserianum</i>	2.0	2	0.2	1	1.5		0.8	2.4	2		0.8	1.6
<i>Dyoxylum muelleri</i>	2.5	0.5	1.2	3.3	5	0.8	1	0.6				0.6
<i>Dyoxylum rufum</i>	0.3	4.5	2.2	0.3	0.3		0.3	0.2	1			1.2
<i>Elatostachys xylocarpa</i>								0.6	0.3			
<i>Endiandra virens</i>	0.8											0.2
<i>Ficus macrophylla</i>	2.3	5	8.4	1	0.8			2.6	1.3			0.2
<i>Ficus obliqua</i>	2	1.5	3	0.3		0.2	1.8	0.8				
<i>Flindersia australis</i>	0.8		0.4		0.8			0.6				0.2
<i>Flindersia schottiana</i>			0.8	0.3	2.3		4.8	0.6				0.8
<i>Geissois benthamii</i>	3.8			2	3.3							5.2
<i>Gmelina leichhardtii</i>	0.8		0.2	1.3	0.3	0.2	1	0.6	0.3		0.3	1.6
<i>Grevillea robusta</i>		3	1.4						4.7	1.7	2.5	
<i>Guioa semiglauca</i>	2.5	0.5	2	1.3	1.5	0.6	4.5	4.4	1.3	2	2.3	2.4
<i>Harpullia pendula</i>	0.3	3.5	2.8		0.3	0.2	0.8					
<i>Hodgkinsonia ovatiflora</i>	0.5	0.5	0.8	1	0.8	1.2	4.3	0.4	0.3	1.3		0.2
<i>Jagera pseudohus</i>	1.8	3	3	0.3	2.3	0.6	1.3	1.4		2	1	0.8
<i>Lophostemon confertus</i>	4.5	1.5		2.3	1.8	0.6	3	1.2	0.3			3
<i>Malotus discolor</i>	2.5	1.5	0.6		1.5		1.5	0.6				0.2
<i>Malotus philippensis</i>	1.5	1.5	4.4	2	1.5			6	4	5.3		0.6
<i>Melicope erythrocoeca</i>								0.6				
<i>Mischocarpus anodontus</i>						0.2						
<i>Olea paniculata</i>	0.3		0.4			0.6	1	3.8	0.7			
<i>Planchonella australis</i>	1.8	0.5	2.4	1	1.3		1	2		0.7	1	1.6
<i>Polyscias elegans</i>	2.0	3	1.4	1	1.8	0.6	2	1.6	0.3			1.4
<i>Premna lignum-vitae</i>									1			
<i>Rhodamnia rubescens</i>	0.5	3			1	0.6		1.2				2.4
<i>Rhodosphaera rhodantha</i>									1			
<i>Sarcomelicope simplicifolia</i>	0.8		0.4		1.8		1.5	2				0.4
<i>Sloanea australis</i>	5.8		2	7.7	3.3	2.6		0.6			0.3	3.2
<i>Stenocarpus salignus</i>								0.4				1.6
<i>Stenocarpus sinuatus</i>	0.8		0.6	1	0.8	0.2		0.6				0.2
<i>Streblus brunonianus</i>	1.0	5	5.6		1.5			9.2	3.3	8.7	0.3	0.2
<i>Synoum glandulosum</i>				2	0.8	1.8	0.3	0.6			0.8	3
<i>Syzygium australe</i>	1.5		1	2	0.3		1.8	0.8	4	1.3		0.8
<i>Toona australis</i>	0.3	5	1.4	5.3	2.3	0.2		1	2.3		0.8	0.6
<i>Trochocarpa laurina</i>						2.6	2.3	0.6				2.8
<i>Waterhousea floribunda</i>			1.8					0.6				
Sum of average abundance values	82	83	87	56	69	18	58	84	59	42	22	63
Total abundance value	225	196	193	160	156	86	193	214	132	126	107	213
Percentage of historical list of the total abundance	37%	42%	45%	35%	44%	21%	30%	39%	45%	33%	20%	30%
No. of species (max. 60)	44	35	45	34	41	26	31	52	33	15	18	45
Total No. of species	161	93	146	103	134	99	95	166	75	52	80	184
Percentage of historical list of the total no. of species	27%	38%	31%	33%	31%	26%	33%	31%	44%	29%	23%	24%

Appendix 4. Rainforest trees by suballiance that have been sorted by abundance.

These lists have been created from Floyd's species list (Floyd 1990, v. 2 microfiche) and have been sorted so that the top 45 most abundant species from the represented sites are listed. These could be the species to be used to start any rainforest recreation activities. This assumes that the more abundant species are the more successful in the ecological niche for that particular suballiance and therefore have the greatest chance of becoming established. These lists would be used in conjunction with the model of the location of the suballiances on the floodplain as an aid in species selection for any given site on the floodplain.

The lists show the species name using the 1990 names used in Floyd (1990). The abundance rating is shown for each of the listed sites and the average rating across all sites. In addition, the highest abundance rating for all sites is shown.

Table 2 (from main document) Numerical rating values applied to Floyd's (1990 v. 1 p. 23) abundance ratings.

Abundance rating	Basis for abundance rating	Numerical rating	
VC	Very common	Top 1–6 most common species	10
C	Common	More than 5 individuals	6
O	Occasional	2 to about 5 individuals	3
R	Rare	1 only seen	1

Suballiance No. 2 *Toona* – *Flindersia* spp.

Site	Location
1	Stotts Is. N.R.
2	Hortons Ck., Leasehold

Family	Genus	Species	Common	Site		Av. abund. ratings	Max of abund. ratings
				1	2		
Sapindaceae	<i>Elattostachys</i>	<i>nervosa</i>	Beetroot	3	10	6.5	10
Lauraceae	<i>Cryptocarya</i>	<i>obovata</i>	Pepperberry	6	6	6	6
Rutaceae	<i>Flindersia</i>	<i>schottina</i>	Bumpy ash	6	6	6	6
Ulmaceae	<i>Aphananthe</i>	<i>philippinensis</i>	Native elm	10		5	10
Moraceae	<i>Ficus</i>	<i>macrophylla</i>	Moreton bay fig	10		5	10
Moraceae	<i>Streblus</i>	<i>brunonianus</i>	Whalebone tree	10		5	10
Urticaceae	<i>Dendrocnide</i>	<i>excelsa</i>	Giant stinging tree		10	5	10
Meliaceae	<i>Melia</i>	<i>azedarach</i> var. <i>australasica</i>	White cedar		10	5	10
Meliaceae	<i>Toona</i>	<i>australis</i>	Red cedar		10	5	10
Sterculiaceae	<i>Argyrodendron</i>	<i>actinophyllum</i>	Black booyong	10		5	10
Moraceae	<i>Ficus</i>	<i>coronata</i>	Creek sandpaper fig	6	3	4.5	6
Meliaceae	<i>Dyoxylum</i>	<i>rufum</i>	Hairy Rosewood	6	3	4.5	6
Sapindaceae	<i>Harpullia</i>	<i>pendula</i>	Tulipwood	6	1	3.5	6
Alangiaceae	<i>Alangium</i>	<i>villosum</i>	Black muskheart	1	6	3.5	6
Podocarpaceae	<i>Podocarpus</i>	<i>elatus</i>	Brown pine	6		3	6
Arecaceae	<i>Archontophoenix</i>	<i>cunninghamiana</i>	Bangalow palm	3	3	3	3
Proteaceae	<i>Grevillea</i>	<i>robusta</i>	Silky oak		6	3	6
Atherospermataceae	<i>Daphnandra</i>	<i>micrantha</i>	Socketwood		6	3	6
Lauraceae	<i>Endiandra</i>	<i>muelleri</i>	Green-leaved rose walnut		6	3	6
Lauraceae	<i>Neolitsea</i>	<i>dealbata</i>	White bolly gum		6	3	6
Euphorbiaceae	<i>Cleistanthus</i>	<i>cunninghamii</i>	Cleistanthus	6		3	6
Euphorbiaceae	<i>Croton</i>	<i>verreauxii</i>	Green native cascarilla	3	3	3	3
Euphorbiaceae	<i>Drypetes</i>	<i>australasica</i>	Yellow tulip	6		3	6
Celastraceae	<i>Denhamia</i>	<i>celastroides</i>	Orange boxwood		6	3	6
Sapindaceae	<i>Diploglottis</i>	<i>australis</i>	Tamarind	3	3	3	3
Sapindaceae	<i>Jagera</i>	<i>pseudohus</i>	Foambark	3	3	3	3
Elaeocarpaceae	<i>Elaeocarpus</i>	<i>grandis</i>	Blue fig	6		3	6
Elaeocarpaceae	<i>Elaeocarpus</i>	<i>obovatus</i>	Blueberry ash	6		3	6
Myrtaceae	<i>Austromyrtus</i>	<i>bidwillii</i>	Python tree	3	3	3	3
Myrtaceae	<i>Rhodamnia</i>	<i>rubescens</i>	Scub turpentine		6	3	6
Araliaceae	<i>Polyscias</i>	<i>legans</i>	Celery wood	3	3	3	3

Sapotaceae	<i>Planchonella</i>	<i>laurifolia</i>	Blush coonoo	6		3	6
Ebenaceae	<i>Diospyros</i>	<i>pentamera</i>	Grey persimon	3	3	3	3
Urticaceae	<i>Dendrocnide</i>	<i>photinophylla</i>	Shining-leaved stinging tree	1	3	2	3
Rutaceae	<i>Acronychia</i>	<i>oblongifolia</i>	Common acronychia	1	3	2	3
Meliaceae	<i>Dyoxylum</i>	<i>fraserianum</i>	Rosewood	1	3	2	3
Rhamnaceae	<i>Alphitonia</i>	<i>excelsa</i>	Red ash	3	1	2	3
Ulmaceae	<i>Celtis</i>	<i>paniculata</i>	Native hackberry	3		1.5	3
Moraceae	<i>Ficus</i>	<i>fraseri</i>	Sandpaper fig	3		1.5	3
Moraceae	<i>Ficus</i>	<i>obliqua</i>	Small-leaved fig	3		1.5	3
Moraceae	<i>Ficus</i>	<i>virens</i> var. <i>sublanceolata</i>	White fig	3		1.5	3
Moraceae	<i>Ficus</i>	<i>watkinsiana</i>	Strangler fig		3	1.5	3
Lauraceae	<i>Beilschmiedia</i>	<i>obtusifolia</i>	Hard bolly gum	3		1.5	3

Suballiance No. 3 *Cryptocarya obovata* – *Dendrocnide excels* – *Ficus spp* – *Araucaria*

Site Location

1	Stotts Is. N.R.
2	Boat Harbour N.R.
3	Susan Island. N.R.
4	Bellingen Is. Rec. Res.
5	Wingham Brush Rec. & Flora Res.

Family	Genus	Species	Common	Site					Av. abund. ratings	Max of abund. ratings
				1	2	3	4	5		
Moraceae	<i>Ficus</i>	<i>macrophylla</i>	Moreton bay fig	10	6	10	6	10	8.4	10
Ulmaceae	<i>Aphananthe</i>	<i>philippinensis</i>	Native elm	10	10	6		10	7.2	10
Urticaceae	<i>Dendrocnide</i>	<i>excelsa</i>	Giant stinging tree			10	10	10	6	10
Moraceae	<i>Streblus</i>	<i>brunonianus</i>	Whalebone tree	6	6	10		6	5.6	10
Meliaceae	<i>Melia</i>	<i>azedarach</i> var. <i>australasica</i>	White cedar		3	3	6	10	4.4	10
Euphorbiaceae	<i>Malotus</i>	<i>philippensis</i>	Orange kamalla	3	10	6		3	4.4	10
Moraceae	<i>Ficus</i>	<i>coronata</i>	Creek sandpaper fig	1	3	6	10	1	4.2	10
Lauraceae	<i>Cryptocarya</i>	<i>obovata</i>	Pepperberry	3	10	1	3	3	4	10
Lauraceae	<i>Endiandra</i>	<i>pubens</i>	White bark walnut		10		6		3.2	10
Moraceae	<i>Ficus</i>	<i>obliqua</i>	Small-leaved fig	3	6		6		3	6
Sapindaceae	<i>Jagera</i>	<i>pseudohus</i>	Foambark		6	3	6		3	6
Sapindaceae	<i>Harpullia</i>	<i>pendula</i>	Tulipwood	3	1	10			2.8	10
Alangiaceae	<i>Alangium</i>	<i>villosum</i>	Black muskheart		1		3	10	2.8	10
Capparaceae	<i>Capparis</i>	<i>arborea</i>	Native pomegranate		6	1		6	2.6	6
Fabaceae	<i>Castanospermum</i>	<i>australe</i>	Black bean		6	3	1	3	2.6	6
Rutaceae	<i>Euodia</i>	<i>micrococca</i>	White euodia		6		6	1	2.6	6
Rhamnaceae	<i>Alphitonia</i>	<i>excelsa</i>	Red ash	3	6	3		1	2.6	6
Elaeocarpaceae	<i>Elaeocarpus</i>	<i>obovatus</i>	Blueberry ash	6	3	3		1	2.6	6
Myrtaceae	<i>Eucalyptus</i>	<i>tereticornis</i>	Forest red gum		3	10			2.6	10
Myrtaceae	<i>Syzygium</i>	<i>francisii</i>	Giant water-gum	6	6		1		2.6	6
Sterculiaceae	<i>Argyrodendron</i>	<i>trifoliolatum</i>	White booyong		6		6		2.4	6
Sapotaceae	<i>Planchonella</i>	<i>australis</i>	Black apple		6			6	2.4	6
Ebenaceae	<i>Diospyros</i>	<i>pentamera</i>	Grey persimon	3		3	3	3	2.4	3
Lauraceae	<i>Cinnamomum</i>	<i>oliveri</i>	Oliver's sassafras		10		1		2.2	10
Meliaceae	<i>Dyoxylum</i>	<i>rufum</i>	Hairy Rosewood		3	1	1	6	2.2	6
Arecaceae	<i>Archontophoenix</i>	<i>cunninghamiana</i>	Bangalow palm	10					2	10
Moraceae	<i>Ficus</i>	<i>watkinsiana</i>	Strangler fig		3	1	6		2	6
Urticaceae	<i>Dendrocnide</i>	<i>photinophylla</i>	Shining-leaved stinging tree	1	6		3		2	6
Lauraceae	<i>Neolitsea</i>	<i>dealbata</i>	White bolly gum		3	1	3	3	2	3
Mimosaceae	<i>Pararchidendron</i>	<i>pruinsum</i>	Snow-wood		1	3	3	3	2	3
Sapindaceae	<i>Diploglottis</i>	<i>australis</i>	Tamarind		3		6	1	2	6
Sapindaceae	<i>Guioa</i>	<i>semiglauca</i>	Guioa	1	3		3	3	2	3
Elaeocarpaceae	<i>Sloanea</i>	<i>australis</i>	Maiden's blush				10		2	10
Atherospermataceae	<i>Daphnandra</i>	<i>micrantha</i>	Socketwood		3			6	1.8	6

Lauraceae	<i>Endiandra</i>	<i>muelleri</i>	Green-leaved rose walnut	6	3		1.8	6
Lauraceae	<i>Litsea</i>	<i>australis</i>	Brown bolly gum	6	3		1.8	6
Euphorbiaceae	<i>Drypetes</i>	<i>australasica</i>	Yellow tulip	6	3		1.8	6
Sapindaceae	<i>Elatostachys</i>	<i>nervosa</i>	Beetroot	3		3	1.8	3
Sterculiaceae	<i>Brachychiton</i>	<i>discolor</i>	Lacebark tree	3	6		1.8	6
Myrtaceae	<i>Waterhousea</i>	<i>floribunda</i>	Weeping myrtle			6	1.8	6
Araucariaceae	<i>Araucaria</i>	<i>cunninghamii</i>	Hoop pine	3	3		1.4	3
Moraceae	<i>Ficus</i>	<i>fraseri</i>	Sandpaper fig	1	3	3	1.4	3
Proteaceae	<i>Grevillea</i>	<i>robusta</i>	Silky oak	3	1	3	1.4	3

Suballiance No. 4 *Elaeocarpus grandis*

Site	Location
1	Wanganui P.P.
2	Terania Ck., Nightcap N.P.
3	Middle Ck., Gibraltar Range N.P.

Family	Genus	Species	Common	Site			Av. abund. ratings	Max of abund. ratings
				1	2	3		
Arecaceae	<i>Archontophoenix</i>	<i>cunninghamiana</i>	Bangalow palm	10	10	10	10.0	10
Elaeocarpaceae	<i>Sloanea</i>	<i>australis</i>	Maiden's blush	10	10	3	7.7	10
Elaeocarpaceae	<i>Elaeocarpus</i>	<i>grandis</i>	Blue fig	3	6	10	6.3	10
Escelloniaceae	<i>Cuttsia</i>	<i>viburnea</i>	Elderberry	3	3	10	5.3	10
Meliaceae	<i>Toona</i>	<i>australis</i>	Red cedar	10		6	5.3	10
Moraceae	<i>Ficus</i>	<i>coronata</i>	Creek sandpaper fig	6	6	3	5.0	6
Atherospermataceae	<i>Daphnandra</i>	<i>micrantha</i>	Socketwood	6	3	1	3.3	6
Lauraceae	<i>Cryptocarya</i>	<i>rigida</i>	Rose maple			10	3.3	10
Meliaceae	<i>Dyoxylum</i>	<i>melleri</i>	Red bean	10			3.3	10
Myrtaceae	<i>Syzygium</i>	<i>crebrinerva</i>	Purple cherry	10			3.3	10
Lauraceae	<i>Endiandra</i>	<i>pubens</i>	White bark walnut	6	3		3.0	6
Cunoniaceae	<i>Caldcluvia</i>	<i>paniculosa</i>	Corkwood	3		6	3.0	6
Euphorbiaceae	<i>Glochidion</i>	<i>ferdinandi</i>	Cheese tree	6		3	3.0	6
Sapindaceae	<i>Castanospora</i>	<i>alphanthii</i>	Brown tamarind	6	3		3.0	6
Sapindaceae	<i>Diploglottis</i>	<i>australis</i>	Tamarind	6		3	3.0	6
Myrtaceae	<i>Austromyrtus</i>	<i>lasioclada</i>	Velvet myrtle	6	3		3.0	6
Moraceae	<i>Ficus</i>	<i>watkinsiana</i>	Strangler fig	1		6	2.3	6
Lauraceae	<i>Neolitsea</i>	<i>dealbata</i>	White bolly gum	1		6	2.3	6
Icacinaceae	<i>Pennantia</i>	<i>cunninghamii</i>	Brown beech	3	1	3	2.3	3
Myrtaceae	<i>Lophostemon</i>	<i>confertus</i>	Brush box	1		6	2.3	6
Cunoniaceae	<i>Geissois</i>	<i>benthamii</i>	Red carabeen	6			2.0	6
Meliaceae	<i>Synoum</i>	<i>glandulosum</i>	Scentless rosewood			6	2.0	6
Euphorbiaceae	<i>Malotus</i>	<i>philippensis</i>	Orange kamalla	3		3	2.0	3
Icacinaceae	<i>Citronella</i>	<i>moorei</i>	Soapy box	3		3	2.0	3
Myrtaceae	<i>Acema</i>	<i>smithii</i> var. <i>minor</i>	Small leaved lilly pilly	6			2.0	6
Myrtaceae	<i>Syzygium</i>	<i>australe</i>	Brush cherry			6	2.0	6
Myrtaceae	<i>Syzygium</i>	<i>hodgkinsoniae</i>	Smooth-bark rose apple	6			2.0	6
Myrtaceae	<i>Tristaniosis</i>	<i>laurina</i>	Water gum	6			2.0	6
Lauraceae	<i>Cryptocarya</i>	<i>obovata</i>	Pepperberry	3	1	1	1.7	3
Urticaceae	<i>Dendrocnide</i>	<i>excelsa</i>	Giant stinging tree	1		3	1.3	3
Urticaceae	<i>Dendrocnide</i>	<i>photinophylla</i>	Shining-leaved stinging tree	1		3	1.3	3
Eupomatiaceae	<i>Eupomatia</i>	<i>laurina</i>	Bolwarra	1		3	1.3	3
Lauraceae	<i>Cryptocarya</i>	<i>glaucescens</i>	Jackwood	1		3	1.3	3
Lauraceae	<i>Endiandra</i>	<i>muelleri</i>	Green-leaved rose walnut	3		1	1.3	3
Pittosporaceae	<i>Hymenosporum</i>	<i>fiavum</i>	Native frangipani	1		3	1.3	3
Pittosporaceae	<i>Pittosporum</i>	<i>undulatum</i>	Sweet pittosporum	3		1	1.3	3
Cunoniaceae	<i>Ceratopetalum</i>	<i>apetalum</i>	Coachwood	1		3	1.3	3
Cunoniaceae	<i>Schizomeria</i>	<i>ovata</i>	Crabapple	1		3	1.3	3
Mimosaceae	<i>Acacia</i>	<i>melanoxydon</i>	Blackwood	1		3	1.3	3

Meliaceae	<i>Melia</i>	<i>azedarach</i> var. <i>australasica</i>	White cedar	1	3	1.3	3
Anacardiaceae	<i>Euroschinus</i>	<i>falcata</i>	Chinaman's cedar	3	1	1.3	3
Sapindaceae	<i>Guioa</i>	<i>semiglauc</i>	Guioa	1	3	1.3	3
Myrtaceae	<i>Syzygium</i>	<i>olersum</i>	Blue cherry	1	3	1.3	3

Suballiance No. 5 *Castanospermum* – *Dysoxylum mollissimum*

Site	Location
1	Couchy Ck., Numinbah N.R.
2	Boomerang Falls F.R.
3	Davis Scrub N.R.
4	Maclean Flora & Fauna Reserve

Family	Genus	Species	Common	Site				Av. abund. ratings	Max of abund. ratings
				1	2	3	4		
Fabaceae	<i>Castanospermum</i>	<i>australe</i>	Black bean	10	10	10	10	10.0	10
Meliaceae	<i>Dysoxylum</i>	<i>muelleri</i>	Red bean			10	10	5.0	10
Cunoniaceae	<i>Geissois</i>	<i>benthamii</i>	Red carabeen	3	10			3.3	10
Elaeocarpaceae	<i>Sloanea</i>	<i>australis</i>	Maiden's blush		10	3		3.3	10
Meliaceae	<i>Anthocarapa</i>	<i>nitidula</i>	Bog onion	3	6	3		3.0	6
Lauraceae	<i>Cryptocarya</i>	<i>obovata</i>	Pepperberry	1	3	1	6	2.8	6
Moraceae	<i>Ficus</i>	<i>watkinsiana</i>	Strangler fig	6	3		1	2.5	6
Mimosaceae	<i>Pararchidendron</i>	<i>pruinatum</i>	Snow-wood	3	1	3	3	2.5	3
Sapindaceae	<i>Diploglottis</i>	<i>australis</i>	Tamarind	1	3	3	3	2.5	3
Moraceae	<i>Ficus</i>	<i>fraseri</i>	Sandpaper fig			6	3	2.3	6
Urticaceae	<i>Dendrocnide</i>	<i>photinophylla</i>	Shining-leaved stinging tree	6			3	2.3	6
Lauraceae	<i>Endiandra</i>	<i>muelleri</i>	Green-leaved rose walnut		3	6		2.3	6
Lauraceae	<i>Endiandra</i>	<i>pubens</i>	White bark walnut	3		6		2.3	6
Rutaceae	<i>Flindersia</i>	<i>schottina</i>	Bumpy ash			6	3	2.3	6
Meliaceae	<i>Toona</i>	<i>australis</i>	Red cedar	3		3	3	2.3	3
Sapindaceae	<i>Arytera</i>	<i>distylis</i>	Two-leaved coogara	6		3		2.3	6
Sapindaceae	<i>Jagera</i>	<i>pseudohus</i>	Foambark	3		3	3	2.3	3
Elaeocarpaceae	<i>Sloanea</i>	<i>woollsii</i>	Yellow carabeen		6	3		2.3	6
Sterculiaceae	<i>Argyrodendron</i>	<i>trifoliolatum</i>	White booyong	3	3	3		2.3	3
Sterculiaceae	<i>Brachychiton</i>	<i>acerifolius</i>	Flame tree	6	1	1		2.0	6
Ulmaceae	<i>Aphananthe</i>	<i>philippinensis</i>	Native elm			1	6	1.8	6
Urticaceae	<i>Dendrocnide</i>	<i>excelsa</i>	Giant stinging tree	3		3	1	1.8	3
Rutaceae	<i>Sarcomelicope</i>	<i>simplicifolia</i>	Yellow acronychia		1	3	3	1.8	3
Meliaceae	<i>Melia</i>	<i>azedarach</i> var. <i>australasica</i>	White cedar	3		3	1	1.8	3
Sapindaceae	<i>Sarcopteryx</i>	<i>stipata</i>	Steelwood	6		1		1.8	6
Rhamnaceae	<i>Alphitonia</i>	<i>excelsa</i>	Red ash	3		3	1	1.8	3
Myrtaceae	<i>Lophostemon</i>	<i>confertus</i>	Brush box	6			1	1.8	6
Myrtaceae	<i>Syzygium</i>	<i>crebrinerva</i>	Purple cherry		1	6		1.8	6
Myrtaceae	<i>Syzygium</i>	<i>hodgkinsoniae</i>	Smooth-bark rose apple	6		1		1.8	6
Araliaceae	<i>Polyscias</i>	<i>legans</i>	Celery wood	3		3	1	1.8	3
Ebenaceae	<i>Diospyros</i>	<i>pentamera</i>	Grey persimmon	3	1	3		1.8	3
Moraceae	<i>Streblus</i>	<i>brunonianus</i>	Whalebone tree				6	1.5	6
Proteaceae	<i>Macadamia</i>	<i>tetraphylla</i>	Rough-shelled bush nut			3	3	1.5	3
Atherospermataceae	<i>Daphnandra</i>	<i>tenuipes</i>	Red-flowered socketwood	3	3			1.5	3
Lauraceae	<i>Neolitsea</i>	<i>australiensis</i>	Smooth-barked booly gum			6		1.5	6
Lauraceae	<i>Neolitsea</i>	<i>dealbata</i>	White bolly gum	3		3		1.5	3
Cunoniaceae	<i>Pseudoweinmannia</i>	<i>lachnocarpa</i>	Mararie	6				1.5	6
Rutaceae	<i>Euodia</i>	<i>micrococca</i>	White euodia			6		1.5	6
Rutaceae	<i>Melicope</i>	<i>octandra</i>	Doughwood			6		1.5	6
Meliaceae	<i>Dysoxylum</i>	<i>fraserianum</i>	Rosewood	3		3		1.5	3
Euphorbiaceae	<i>Actephila</i>	<i>lindleyi</i>	Actephila			6		1.5	6
Euphorbiaceae	<i>Malotus</i>	<i>discolor</i>	Yellow kamalla			6		1.5	6
Euphorbiaceae	<i>Malotus</i>	<i>philippensis</i>	Orange kamalla			3	3	1.5	3

Suballiance No. 6 *Archontophoenix* – *Livistona*

Site	Location
1	Stotts Is. N.R.
2	Round Mtn. Lease
3	Terania Ck., Nightcap N.P.
4	Clarence Peak, freehold
5	Yahou Is. N.R.

Family	Genus	Species	Common	Site					Av. abund. ratings	Max of abund. ratings
				1	2	3	4	5		
Arecaceae	<i>Archontophoenix</i>	<i>cunninghamiana</i>	Bangalow palm	3	10	10	10		6.6	10
Arecaceae	<i>Livistona</i>	<i>australis</i>	Cabbage tree palm	10	3		10	10	6.6	10
Elaeocarpaceae	<i>Sloanea</i>	<i>australis</i>	Maiden's blush		3	10			2.6	10
Epacridaceae	<i>Trochocarpa</i>	<i>laurina</i>	Tree heath		3		10		2.6	10
Moraceae	<i>Ficus</i>	<i>coronata</i>	Creek sandpaper fig		6	6			2.4	6
Lauraceae	<i>Endiandra</i>	<i>discolor</i>	Rose walnut		6		6		2.4	6
Elaeocarpaceae	<i>Elaeocarpus</i>	<i>grandis</i>	Blue fig		6	6			2.4	6
Sapotaceae	<i>Planchonella</i>	<i>laurifolia</i>	Blush coondoo		10				2	10
Meliaceae	<i>Synoum</i>	<i>glandulosum</i>	Scentless rosewood		3		6		1.8	6
Euphorbiaceae	<i>Glochidion</i>	<i>ferdinandi</i>	Cheese tree				3	6	1.8	6
Myrtaceae	<i>Melaleuca</i>	<i>quinquenervia</i>	Broad-leaved paper-bark	3				6	1.8	6
Oleraceae	<i>Notelaea</i>	<i>lonifolia</i>	Large mock-olive			3		6	1.8	6
Elaeocarpaceae	<i>Elaeocarpus</i>	<i>obovatus</i>	Blueberry ash	6	1	1			1.6	6
Rutaceae	<i>Acronychia</i>	<i>oblongifolia</i>	Common acronychia				1	6	1.4	6
Casuarinaceae	<i>Casuarina</i>	<i>glauca</i>	Swamp she-oak	3				3	1.2	3
Lauraceae	<i>Endiandra</i>	<i>globosa</i>	Black walnut		6				1.2	6
Lauraceae	<i>Neolitsea</i>	<i>dealbata</i>	White bolly gum		6				1.2	6
Cunoniaceae	<i>Ceratopetalum</i>	<i>gummiferum</i>	NSW christmas bush				6		1.2	6
Cunoniaceae	<i>Schizomeria</i>	<i>ovata</i>	Crabapple				6		1.2	6
Mimosaceae	<i>Acacia</i>	<i>maidenii</i>	Maiden's wattle					6	1.2	6
Mimosaceae	<i>Archidendron</i>	<i>grandiflorum</i>	Pink lace-flower		3	3			1.2	3
Euphorbiaceae	<i>Glochidion</i>	<i>sumatranum</i>	Umbrella cheese tree		6				1.2	6
Myrtaceae	<i>Acema</i>	<i>smithii</i>	Lilli Pilly				3	3	1.2	3
Myrtaceae	<i>Callistemon</i>	<i>salignus</i>	White bottlebrush					6	1.2	6
Myrtaceae	<i>Rhodamnia</i>	<i>maideniana</i>	Smooth-leaved brush turpentine		6				1.2	6
Myrtaceae	<i>Syzygium</i>	<i>olersum</i>	Blue cherry		3		3		1.2	3
Rubiaceae	<i>Hodgkinsonia</i>	<i>ovatiflora</i>	Golden ash			3	3		1.2	3
Lauraceae	<i>Cryptocarya</i>	<i>obovata</i>	Pepperberry	1	3	1			1	3
Meliaceae	<i>Dyoxylum</i>	<i>melleri</i>	Red bean	1	3				0.8	3
Sapindaceae	<i>Mischocarpus</i>	<i>pyiformis</i>	Brush apple	1	3				0.8	3
Myrtaceae	<i>Syzygium</i>	<i>moorei</i>	Rose apple	1	3				0.8	3
Araucariaceae	<i>Araucaria</i>	<i>cunninghamii</i>	Hoop pine	3					0.6	3
Moraceae	<i>Ficus</i>	<i>fraseri</i>	Sandpaper fig					3	0.6	3
Moraceae	<i>Ficus</i>	<i>watkinsiana</i>	Strangler fig		3				0.6	3
Atherospermataceae	<i>Daphnandra</i>	<i>micrantha</i>	Socketwood			3			0.6	3
Lauraceae	<i>Cryptocarya</i>	<i>glaucescens</i>	Jackwood				3		0.6	3
Lauraceae	<i>Cryptocarya</i>	<i>rigida</i>	Rose maple				3		0.6	3
Lauraceae	<i>Endiandra</i>	<i>muelleri</i>	Green-leaved rose walnut		3				0.6	3
Lauraceae	<i>Endiandra</i>	<i>pubens</i>	White bark walnut			3			0.6	3
Lauraceae	<i>Endiandra</i>	<i>sieberi</i>	Hard corkwood				3		0.6	3
Escelloniaceae	<i>Cuttsia</i>	<i>viburnea</i>	Elderberry			3			0.6	3
Pittosporaceae	<i>Hymenosporum</i>	<i>fiavum</i>	Native frangipani		3				0.6	3
Pittosporaceae	<i>Pittosporum</i>	<i>undulatum</i>	Sweet pittosporum				3		0.6	3

Suballiance No. 16 *Syzygium luehmannii* – *Acmena hemilampra*

Site	Location
1	Broken Head N.R. & Rec. Reserve
2	Iuka N.R.
3	Bundagen F.R.
4	Yarrahapinni Ecology Study Centre

Family	Genus	Species	Common	Site				Av. abund. ratings	Max of abund. ratings
				1	2	3	4		
Sapindaceae	<i>Mischocarpus</i>	<i>pyiformis</i>	Brush apple	6	10	6	10	8.0	10
Myrtaceae	<i>Syzygium</i>	<i>luehmannii</i>	Riberry		10	10	10	7.5	10
Sapindaceae	<i>Cupaniopsis</i>	<i>anacardioides</i>	Tuckeroo	10	6	10	3	7.3	10
Euphorbiaceae	<i>Drypetes</i>	<i>australasica</i>	Yellow tulip	3	10	1	6	5.0	10
Rutaceae	<i>Acronychia</i>	<i>imperfata</i>	Beach acronychia	3	10	3	3	4.8	10
Rutaceae	<i>Flindersia</i>	<i>schottina</i>	Bumpy ash	3	10		6	4.8	10
Anacardiaceae	<i>Euroschinus</i>	<i>falcata</i>	Chinaman's cedar		6	10	3	4.8	10
Moraceae	<i>Ficus</i>	<i>watkinsiana</i>	Strangler fig		6	6	6	4.5	6
Urticaceae	<i>Dendrocnide</i>	<i>photinophylla</i>	Shining-leaved stinging tree		6	6	6	4.5	6
Sapindaceae	<i>Guioa</i>	<i>semiglauca</i>	Guioa	3	6	6	3	4.5	6
Arecaceae	<i>Archontophoenix</i>	<i>cunninghamiana</i>	Bangalow palm	10	1	3	3	4.3	10
Rubiaceae	<i>Hodgkinsonia</i>	<i>ovatiflora</i>	Golden ash	10	1	3	3	4.3	10
Podocarpaceae	<i>Podocarpus</i>	<i>elatus</i>	Brown pine	1	3	6	6	4.0	6
Ulmaceae	<i>Aphananthe</i>	<i>philippinensis</i>	Native elm	10			6	4.0	10
Proteaceae	<i>Banksia</i>	<i>integrifolia</i>	Coast banksia	3	3	10		4.0	10
Celastraceae	<i>Cassine</i>	<i>australis</i>	Red olive berry	3	6	6	1	4.0	6
Sapindaceae	<i>Arytera</i>	<i>divaricara</i>	Coogara		10	3	3	4.0	10
Myrtaceae	<i>Acema</i>	<i>hemilampra</i>	Broad-leaved lilly pilly	6	10			4.0	10
Rubiaceae	<i>Canthium</i>	<i>coprosmoides</i>	Coast canthium	6	6	1	3	4.0	6
Myrtaceae	<i>Rhodomyrtus</i>	<i>psidioides</i>	Native guava	3	3	3	6	3.8	6
Myrtaceae	<i>Syzygium</i>	<i>olersum</i>	Blue cherry	3	6	3	3	3.8	6
Oleraceae	<i>Notelaea</i>	<i>lonifolia</i>	Large mock-olive		6	3	6	3.8	6
Ebenaceae	<i>Diospyros</i>	<i>pentamera</i>	Grey persimon		10	3	1	3.5	10
Euphorbiaceae	<i>Glochidion</i>	<i>ferdinandi</i>	Cheese tree	6	3	1	3	3.3	6
Lauraceae	<i>Litsea</i>	<i>australis</i>	Brown bolly gum	3	3	3	3	3.0	3
Rutaceae	<i>Flindersia</i>	<i>bennettiana</i>	Bennett's ash	6	6			3.0	6
Rutaceae	<i>Halfordia</i>	<i>kendack</i>	Saffronheart	6	6			3.0	6
Sapindaceae	<i>Alectryon</i>	<i>coniaceus</i>	Beach bird's eye		6	6		3.0	6
Myrtaceae	<i>Lophostemon</i>	<i>confertus</i>	Brush box	3	3	3	3	3.0	3
Moraceae	<i>Ficus</i>	<i>coronata</i>	Creek sandpaper fig		1	3	6	2.5	6
Moraceae	<i>Ficus</i>	<i>fraseri</i>	Sandpaper fig	3	3	1	3	2.5	3
Myrtaceae	<i>Rhodammia</i>	<i>argentea</i>	Malletwood		6		3	2.3	6
Epacridaceae	<i>Trochocarpa</i>	<i>laurina</i>	Tree heath		3	3	3	2.3	3
Myrtaceae	<i>Acema</i>	<i>smithii</i>	Lilli Pilly		1	6	1	2.0	6
Araliaceae	<i>Polyscias</i>	<i>legans</i>	Celery wood	3	1	3	1	2.0	3
Ulmaceae	<i>Celtis</i>	<i>paniculata</i>	Native hackberry		3	1	3	1.8	3
Moraceae	<i>Ficus</i>	<i>obliqua</i>	Small-leaved fig		3	3	1	1.8	3
Lauraceae	<i>Endiandra</i>	<i>discolor</i>	Rose walnut		1	6		1.8	6
Euphorbiaceae	<i>Claoxylon</i>	<i>australe</i>	Brittlewood		6	1		1.8	6
Myrtaceae	<i>Syzygium</i>	<i>australe</i>	Brush cherry	1		6		1.8	6
Araucariaceae	<i>Araucaria</i>	<i>cunninghamii</i>	Hoop pine	6				1.5	6
Arecaceae	<i>Livistona</i>	<i>australis</i>	Cabbage tree palm		3		3	1.5	3
Lauraceae	<i>Cryptocarya</i>	<i>triplinervis</i>	Three veined laurel	3	3			1.5	3

Suballiance No. 24 *Castanospermum* – *Grevillea robusta*

Site	Location
1	Sawpit Ck., Border Ranges N.P.
2	Moore Park Rec. Reserve
3	Yorklea, Freehold

Family	Genus	Species	Common	Site			Av. abund. ratings	Max of abund. ratings
				1	2	3		
Fabaceae	<i>Castanospermum</i>	<i>australe</i>	Black bean	6	10	10	8.7	10
Casuarinaceae	<i>Casuarina</i>	<i>cunninghamiana</i>	River oak		10	6	5.3	10
Ulmaceae	<i>Aphananthe</i>	<i>philippinensis</i>	Native elm	3	10	3	5.3	10
Euphorbiaceae	<i>Baloghia</i>	<i>inophylla</i>	Brush bloodwood	6	10		5.3	10
Moraceae	<i>Ficus</i>	<i>coronata</i>	Creek sandpaper fig	6	6	3	5.0	6
Proteaceae	<i>Grevillea</i>	<i>robusta</i>	Silky oak	3	10	1	4.7	10
Euphorbiaceae	<i>Malotus</i>	<i>philippensis</i>	Orange kamalla	3	6	3	4.0	6
Myrtaceae	<i>Syzygium</i>	<i>australe</i>	Brush cherry	6	3	3	4.0	6
Myrtaceae	<i>Syzygium</i>	<i>francisii</i>	Giant water-gum	10	1		3.7	10
Podocarpaceae	<i>Podocarpus</i>	<i>elatus</i>	Brown pine		10		3.3	10
Moraceae	<i>Streblus</i>	<i>brunonianus</i>	Whalebone tree	3	6	1	3.3	6
Myrtaceae	<i>Eucalyptus</i>	<i>grandis</i>	Flooded gum	10			3.3	10
Myrtaceae	<i>Melaleuca</i>	<i>bracteata</i>	White cloud tree		10		3.3	10
Atherospermataceae	<i>Daphnandra</i>	<i>micrantha</i>	Socketwood	6	3		3.0	6
Mimosaceae	<i>Acacia</i>	<i>concurrans</i>	Curracabah		6	3	3.0	6
Surianaceae	<i>Guifoylia</i>	<i>monostylis</i>	Native plum	6	3		3.0	6
Sapindaceae	<i>Arytera</i>	<i>divaricara</i>	Coogara	6	3		3.0	6
Lauraceae	<i>Beilschmiedia</i>	<i>elliptica</i>	Grey walnut	1	6		2.3	6
Lauraceae	<i>Cryptocarya</i>	<i>obovata</i>	Pepperberry	3	3	1	2.3	3
Lauraceae	<i>Cryptocarya</i>	<i>triplinervis</i>	Three veined laurel		1	6	2.3	6
Meliaceae	<i>Toona</i>	<i>australis</i>	Red cedar	6	1		2.3	6
Urticaceae	<i>Dendrocnide</i>	<i>excelsa</i>	Giant stinging tree	6			2.0	6
Lauraceae	<i>Beilschmiedia</i>	<i>obtusifolia</i>	Hard bolly gum	3	3		2.0	3
Mimosaceae	<i>Pararchidendron</i>	<i>pruinatum</i>	Snow-wood		6		2.0	6
Meliaceae	<i>Dyoxylum</i>	<i>fraserianum</i>	Rosewood	6			2.0	6
Meliaceae	<i>Melia</i>	<i>azedarach</i> var. <i>australasica</i>	White cedar	3	3		2.0	3
Sapindaceae	<i>Elatostachys</i>	<i>nervosa</i>	Beetroot	6			2.0	6
Sterculiaceae	<i>Argyrodendron</i>	<i>actinophyllum</i>	Black booyong	6			2.0	6
Sterculiaceae	<i>Argyrodendron</i>	<i>trifoliolatum</i>	White booyong	6			2.0	6
Myrtaceae	<i>Acema</i>	<i>smithii</i>	Lilli Pilly			6	2.0	6
Myrtaceae	<i>Callistemon</i>	<i>viminalis</i>	Drooping bottlebrush		3	3	2.0	3
Moraceae	<i>Ficus</i>	<i>macrophylla</i>	Moreton bay fig	3	1		1.3	3
Rutaceae	<i>Acronychia</i>	<i>oblongifolia</i>	Common acronychia		1	3	1.3	3
Sapindaceae	<i>Alectryon</i>	<i>subcinereus</i>	Wild quince	3	1		1.3	3
Sapindaceae	<i>Diploglottis</i>	<i>australis</i>	Tamarind	3	1		1.3	3
Sapindaceae	<i>Guioa</i>	<i>semiglauca</i>	Guioa	3	1		1.3	3
Ulmaceae	<i>Celtis</i>	<i>paniculata</i>	Native hackberry		3		1.0	3
Urticaceae	<i>Dendrocnide</i>	<i>photinophylla</i>	Shining-leaved stinging tree	3			1.0	3
Lauraceae	<i>Endiandra</i>	<i>muelleri</i>	Green-leaved rose walnut	1	1	1	1.0	1
Lauraceae	<i>Litsea</i>	<i>australis</i>	Brown bolly gum	3			1.0	3
Lauraceae	<i>Neolitsea</i>	<i>australiensis</i>	Smooth-barked booly gum	3			1.0	3
Lauraceae	<i>Neolitsea</i>	<i>dealbata</i>	White bolly gum		3		1.0	3
Pittosporaceae	<i>Hymenosporum</i>	<i>fiavum</i>	Native frangipani		3		1.0	3

Suballiance No. 33 *Ceratopetalum/Schizomeria* – *Argyrodendron/Sloanea*

Family	Genus	Species	Common	Site					Av. abund. ratings	Max of abund. ratings
				1	2	3	4	5		
	Site	Location								
	1	Hogans Scrub, Freehold								
	2	Middle Ck., F.R., Marengo S.F.								
	3	Bruxner Park F.R., Orara East S.F.								
	4	Waterfall and Cockerawombeeba Cks., Mt. Boss S.F.								
	5	Weelah N.R.								
Elaeocarpaceae	<i>Sloanea</i>	<i>woollsii</i>	Yellow carabeen	3	10	10	10	3	7.2	10
Cunoniaceae	<i>Geissois</i>	<i>benthamii</i>	Red carabeen	1	3	6	10	6	5.2	10
Sterculiaceae	<i>Argyrodendron</i>	<i>actinophyllum</i>	Black booyong		10	3	6	6	5	10
Atherospermataceae	<i>Doryphora</i>	<i>sassafras</i>	Sassafras	6	6	3	6	3	4.8	6
Cunoniaceae	<i>Ceratopetalum</i>	<i>apetalum</i>	Coachwood	10	3	10			4.6	10
Arecaceae	<i>Archontophoenix</i>	<i>cunninghamiana</i>	Bangalow palm	10		10			4	10
Lauraceae	<i>Cryptocarya</i>	<i>meissneriana</i>	Thick-leaved laurel	3			10	6	3.8	10
Escalloniaceae	<i>Polyosma</i>	<i>cunninghamii</i>	Featherwood	3	3	6	3	3	3.6	6
Cunoniaceae	<i>Caldcluvia</i>	<i>paniculosa</i>	Corkwood	3	3	3	3	6	3.6	6
Lauraceae	<i>Cryptocarya</i>	<i>microneura</i>	Murrogun	3		6	1	6	3.2	6
Elaeocarpaceae	<i>Sloanea</i>	<i>australis</i>	Maiden's blush	6		10			3.2	10
Moraceae	<i>Ficus</i>	<i>coronata</i>	Creek sandpaper fig		6	3	6		3	6
Proteaceae	<i>Orites</i>	<i>excelsa</i>	Prickly ash	3	6	3	3		3	6
Cunoniaceae	<i>Schizomeria</i>	<i>ovata</i>	Crabapple		3	3	3	6	3	6
Meliaceae	<i>Synoum</i>	<i>glandulosum</i>	Scentless rosewood	3		3	3	6	3	6
Myrtaceae	<i>Lophostemon</i>	<i>confertus</i>	Brush box	6		6	3		3	6
Ebenaceae	<i>Diospyros</i>	<i>pentamera</i>	Grey persimon	3	3	6		3	3	6
Moraceae	<i>Ficus</i>	<i>watkinsiana</i>	Strangler fig	3		10		1	2.8	10
Lauraceae	<i>Cryptocarya</i>	<i>glaucescens</i>	Jackwood	6	1	3	1	3	2.8	6
Epacridaceae	<i>Trochocarpa</i>	<i>laurina</i>	Tree heath	3	1	3	1	6	2.8	6
Escalloniaceae	<i>Quintinia</i>	<i>verdonii</i>	Grey possumwood	3		6	1	3	2.6	6
Rutaceae	<i>Acradenia</i>	<i>euodiiformia</i>	Bonewood			10	3		2.6	10
Euphorbiaceae	<i>Baloghia</i>	<i>inophylla</i>	Brush bloodwood				3	10	2.6	10
Myrtaceae	<i>Acema</i>	<i>smithii</i>	Lilli Pilly	6	1		3	3	2.6	6
Atherospermataceae	<i>Daphnandra</i>	<i>micrantha</i>	Socketwood		1		1	10	2.4	10
Lauraceae	<i>Cryptocarya</i>	<i>rigida</i>	Rose maple			6	3	3	2.4	6
Icacinaceae	<i>Pennan??a</i>	<i>cunninghamii</i>	Brown beech		6		3	3	2.4	6
Sapindaceae	<i>Guioa</i>	<i>semiglauca</i>	Guioa	3		3		6	2.4	6
Rhamnaceae	<i>Alphitonia</i>	<i>excelsa</i>	Red ash	6		6			2.4	6
Myrtaceae	<i>Rhodamnia</i>	<i>rubescens</i>	Scub turpentine	3		6		3	2.4	6
Lauraceae	<i>Neolitsea</i>	<i>dealbata</i>	White bolly gum	3		6	1	1	2.2	6
Sapindaceae	<i>Diploglottis</i>	<i>australis</i>	Tamarind	3	1	3	1	3	2.2	3
Sapindaceae	<i>Sarcopteryx</i>	<i>stipata</i>	Steelwood	3	1	3	1	3	2.2	3
Lauraceae	<i>Endiandra</i>	<i>muelleri</i>	Green-leaved rose walnut	3		3	1	3	2	3
Elaeocarpaceae	<i>Elaeocarpus</i>	<i>reticulatus</i>	Lily-of-the-valley tree	3		3	1	3	2	3
Lauraceae	<i>Endiandra</i>	<i>discolor</i>	Rose walnut	6		3			1.8	6
Myrtaceae	<i>Eucalyptus</i>	<i>grandis</i>	Flooded gum	3		6			1.8	6
Urticaceae	<i>Dendrocnide</i>	<i>excelsa</i>	Giant stinging tree	1	1		3	3	1.6	3
Proteaceae	<i>Stenocarpus</i>	<i>salignus</i>	Scrub beefwood	1		3	1	3	1.6	3
Meliaceae	<i>Dyoxyllum</i>	<i>fraserianum</i>	Rosewood	1	3		1	3	1.6	3
Euphorbiaceae	<i>Claoxylon</i>	<i>australe</i>	Brittlewood		1	3	1	3	1.6	3
Sapotaceae	<i>Planchonella</i>	<i>australis</i>	Black apple	3		3	1	1	1.6	3
Verbenaceae	<i>Gmelina</i>	<i>leichhardtii</i>	White beech	1		3	1	3	1.6	3

Appendix 5. List of species from the brushes of the Richmond River region, as printed in the *Clarence and Richmond Examiner* and *New England Advertiser*, 1 April, 1873, p. 6.

The likely current names were based on the original botanical name utilising the Australian Plant Census and Australian Plant Name Index.

Botanical name (1873)	Local name	Height		Likely current botanical name
		Feet	Metres	
<i>Eucalyptus siderophloia</i>	Ironbark	100–50	30–45	<i>Eucalyptus siderophloia</i>
<i>Eucalyptus rostrata</i>	Flooded gum	100–50	30–45	<i>Eucalyptus camaldulensis</i>
<i>Eucalyptus saligna</i>	Grey gum	100–50	30–45	<i>Eucalyptus saligna</i>
<i>Eucalyptus amygdalina</i>	Stringybark	80–50	24–45	<i>Eucalyptus amygdalina</i>
<i>Eucalyptus robusta</i>	Mahogany	100–50	30–45	<i>Eucalyptus robusta</i>
<i>Eucalyptus maculate</i>	Spotted gum	80–20	24–37	<i>Corymbia maculata</i>
<i>Eucalyptus corymbosa</i>	Bloodwood	70–20	21–37	<i>Corymbia gummifera</i>
<i>Backhousia myrtifolia</i>	–	40	12	<i>Backhousia myrtifolia</i>
<i>Eugenia ventenatii</i>	Water gum	70–90	21–27	<i>Syzygium floribundum</i>
<i>Eugenia jambolana</i>	Durobby	80–00	24–30	<i>Syzygium cumini</i>
<i>Eugenia myrtifolia</i>	Brush cherry	30–80	9–24	<i>Syzygium australe</i>
<i>Eugenia</i> sp.	Coolmin	100–50	30–45	
<i>Myrtus Becklerii</i>	Myrtle	60–80	18–24	<i>Archirhodomyrtus beckleri</i>
<i>Myrtus Acmenioides</i>	White myrtle	60–80	18–24	<i>Gossia acmenoides</i>
<i>Rhodammia trinervia</i>	Three-veined myrtle	30–40	9–12	<i>Rhodammia rubescens</i>
<i>Callistemon salignus</i>	Broad-leaved tea tree	60–80	18–24	<i>Callistemon salignus</i>
<i>Malaleuca styphelioides</i>	Fine-leaved tea tree	30–40	9–12	<i>Melaleuca styphelioides</i>
<i>Malaleuca leucadendron</i>	White tea tree	50–80	15–24	<i>Melaleuca leucadendra</i>
<i>Malaleuca armillaris</i>	Small tea tree	20–30	6–9	<i>Melaleuca armillaris</i>
<i>Tristania conferta</i>	Bastard box	80–30	24–40	<i>Lophostemon confertus</i>
<i>Tristania suaveolens</i>	Swamp mahogany	80–20	24–37	<i>Lophostemon suaveolens</i>
<i>Tristania neriifolia</i>	Water gum	80–00	24–30	<i>Tristania neriifolia</i>
<i>Cedrela Australis</i>	Red cedar	100–60	30–49	<i>Toona ciliata</i>
<i>Flindersia Greaveaai</i>	Bulbura	100–60	30–49	??
<i>Flindersia Australis</i>	Cudgery	80–00	24–30	<i>Flindersia australis</i>
<i>Flindersia Oxleyana</i>	Yellow wood	80–00	24–30	<i>Flindersia xanthoxyla</i>
<i>Flindersia Schottiana</i>	White wood	80–00	24–30	<i>Flindersia schottiana</i>
<i>Flindersia Bennetiana</i>	Bogum	80–00	24–30	<i>Flindersia bennetiana</i>
<i>Dysoxylon Fraseranum</i>	Rosewood	80–100	24–30	<i>Dysoxylum fraserianum</i>
<i>Dysoxylon Mullerii</i>	Pencilwood	80–100	24–30	<i>Dysoxylum mollissimum</i>
<i>Dysoxylon rufum</i>	–	40–50	12–15	<i>Dysoxylum rufum</i>
<i>Melia composite</i>	White cedar	40–60	12–18	<i>Melia azedarach</i>
<i>Acacia Cunninghamii</i>	Bastard myall	30–40	9–12	<i>Acacia trinervata</i>
<i>Acacia glaucescens</i>	–	50–70	15–21	<i>Acacia binervia</i>
<i>Castanospermum Australe</i>	Beantree	100–130	30–40	<i>Castanospermum australe</i>
<i>Castanospermum decurrens</i>	Green wattle	30–40	9–12	??
<i>Pithecolobium pruinsum</i>	A yellow wood	30–50	9–15	<i>Pararchidendron pruinsum</i>
<i>Monotoca elliptica</i>	Sea coast box	Handles		<i>Monotoca elliptica</i>
<i>Echinocarpus Australis</i>	–	100–150	30–45	<i>Sloanea australis</i>
<i>El??ocarpus grandis</i>	Blue peach	50–80	15–24	<i>Elaeocarpus grandis</i>
<i>Sloanea Australis</i>	Maiden's blush	30–40	9–12	<i>Sloanea Australis</i>
<i>Elcodendron Australe</i>	–	30	9	<i>Elaeodendron australe</i>
<i>Araucaria Cunninghamii</i>	Moreton Bay pine	100–180	30–55	<i>Araucaria cunninghamii</i>
<i>Frenela columnaris</i>	Cypress pine	50–80	15–24	<i>Callitris columellaris</i>
<i>Grevillea robusta</i>	Silky oak	60–80	18–24	<i>Grevillea robusta</i>
<i>Stenocarpus salignus</i>	Beef wood	60–80	18–24	<i>Stenocarpus salignus</i>
<i>Stenocarpus sinuatus</i>	–	80–100	24–30	<i>Stenocarpus sinuatus</i>
<i>Banksia serrata</i>	Honeysuckle	30–50	9–15	<i>Banksia serrata</i>
<i>Doryphora sassafras</i>	Sassafras	70–80	21–24	<i>Doryphora sassafras</i>
<i>Daphandra micrantha</i>	Light yellow wood	70–90	21–27	<i>Daphandra micrantha</i>
<i>Harpullia pendula</i>	Tulip wood	30–40	9–12	<i>Harpullia pendula</i>
<i>Diploglottis Cunninghamii</i>	Native tamarind	60–90	18–27	<i>Diploglottis australis</i>
<i>Cupania pseudorhus</i>	Light yellow wood	50–80	15–24	<i>Jagera pseudorhus</i>
<i>Achras Australis</i>	Black apple	60–100	18–30	<i>Planchonella australis</i>
<i>Ber?ali?ia</i> sp.	–	90–100	27–30	
<i>Alphitonia excelsa</i>	–	70–100	21–30	<i>Alphitonia excelsa</i>
<i>Cryptocarya glaucescens</i>	Laurel	80–100	24–30	<i>Cryptocarya glaucescens</i>
<i>Cryptocarya obvata</i>	Sycamore	80–100	24–30	<i>Cryptocarya obvata</i>
<i>Tetranthera ferrugina</i>	–	80	24	<i>Litsea breviumbellata</i> ??
<i>Weinmanni</i> sp.	Murraree	100–150	30–45	<i>Pseudoweinmannia lachnocarpa</i>
<i>Grissois Benthemii</i>	–	100–120	30–37	<i>Geissois benthamiana</i>

<i>Avicennia tomentose</i>	Large mangrove	30–50	9–15	<i>Avicennia marina</i>
<i>Gmelina Leichardtii</i>	Beech	100–150	30–45	<i>Gmelina leichardtii</i>
<i>Casaurina tennissima</i>	Forest oak	50–80	15–24	<i>Allocauarina torulosa</i>
<i>Casaurina quadrivalvis</i>	Swamp oak	40–90	12–27	<i>Allocauarina verticillata</i>
<i>Baloghia lucida</i>	Brush bloodwood	40	12	<i>Baloghia inophylla</i>
<i>Bradleia Australis</i>	Red wood	50–70	15–21	??
<i>Cargillia pentamera</i>	Black myrtle	80–100	24–30	<i>Diospyros pentamera</i>
<i>Celtis op?ca</i>	–	40–60	12–18	??
<i>Duboisra myoporoides</i>	Cork wood	50	15	<i>Duboisia myoporoides</i>
<i>Memecyclon sp.</i>	Brush cherry, cobbinmuni	60–80	18–24	<i>Memecylon sp. ??</i>
<i>Myrsine varabilis</i>	–	20–50	6–15	<i>Myrsine variabilis</i>
<i>Pittosporum undulatum</i>	–	30–40	9–12	<i>Pittosporum undulatum</i>
<i>Podocarpus spinulosus</i>	Smooth bark pine	40–120	12–37	<i>Podocarpus spinulosus</i>
<i>Tarrietia actinodendron</i>	Stave wood	70–120	21–37	??
<i>Tarrietia argyrodendron</i>	Iron wood	100–150	30–45	??
<i>Tarrietia Carronii</i>	Byong	100–150	30–45	<i>Argyrodendron trifoliolatum ??</i>
<i>Rhus rodantheme</i>	Dark yellow wood	50–80	15–24	<i>Rhodospaera rodantheme</i>

