DOCTOR OF PHILOSOPHY

The natural vegetation of the Sabah and natural regeneration of the Dipterocarp Forests.

Fox, J. E. D.

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Dacrydium Mile 5.5 Sook

(b)November 1970
(a)November 1967
Dacrydium elatum Inland Dry Heath Forest Mile 7.5 Sook (7.3(a))

Podocarpus rumphii, Selanga... Island (5.4)

Oak/Conifer Forest (2(c)) 1700 m Crocker Range

Dacrydium gibbsiae Forest (3(b)) 2400 m Mount Kinabalu

Gymnostoma Forest on an ultrabasic ridge (Figure 8) Segaliud-Lokan F.R.(7.5(d))

Commercial Peat Swamp Forest,Lumat (4.2(a)

Secondary Alstonia on cleared peat swamp,Klias (4.3(b))

Strand Flora near Sipitang (5.1,5.2)mangroves on left.

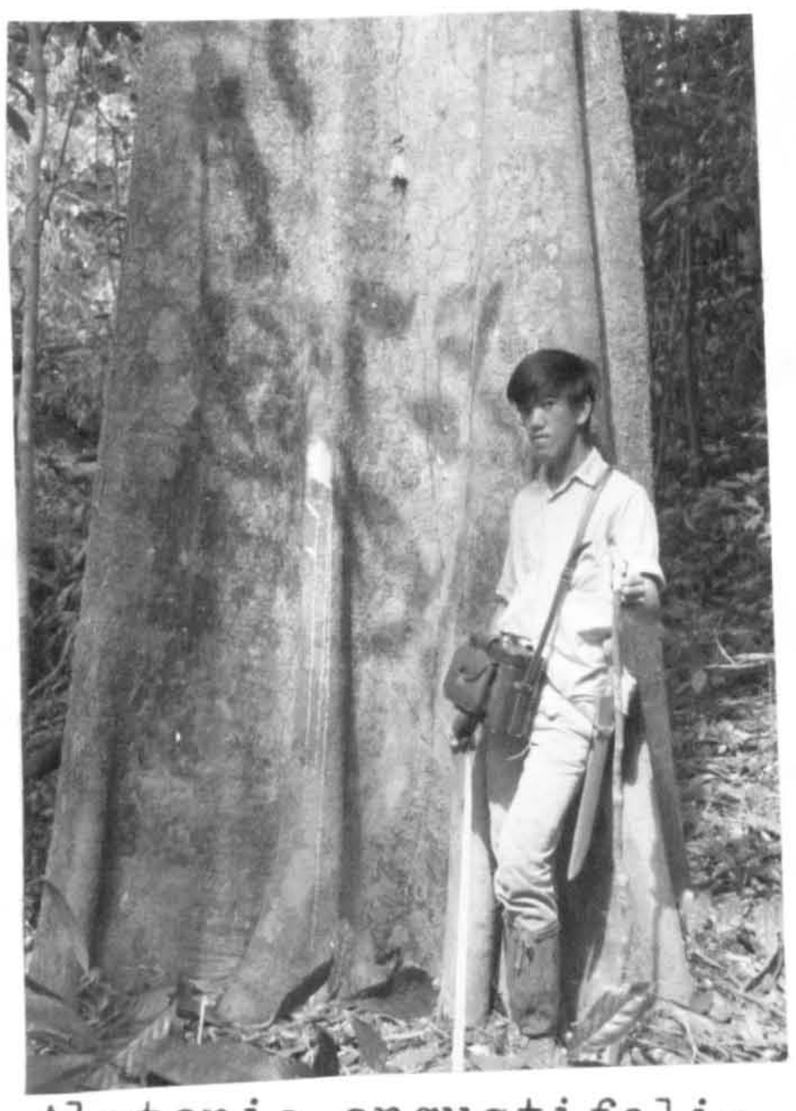
Gymnostoma nobile(7.1(a)) Kampong Usok,near Sipitang

Baeckia frutescens Mile 3 Sook (7.1(b))

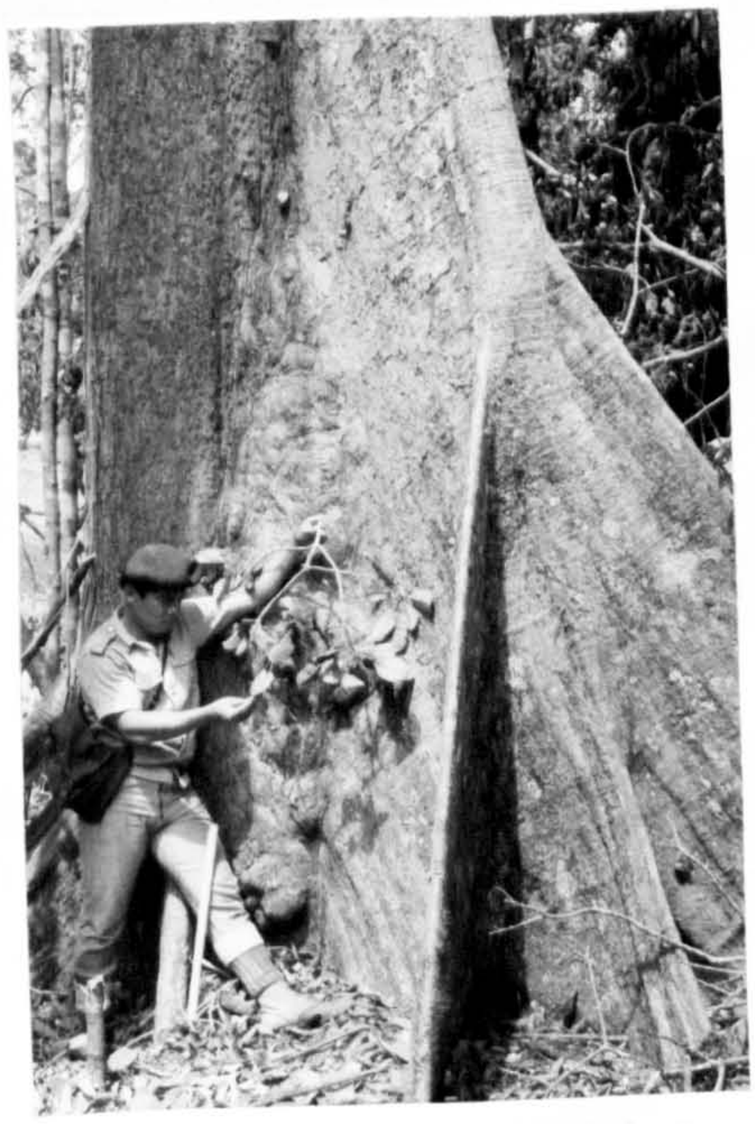
PLATE 3 VEGETATION TYPES and SOME IMPORTANT SPECIES

Nipa fruticans (4.1(c)) with Lawa Lawa Hill behind (7.5(d))

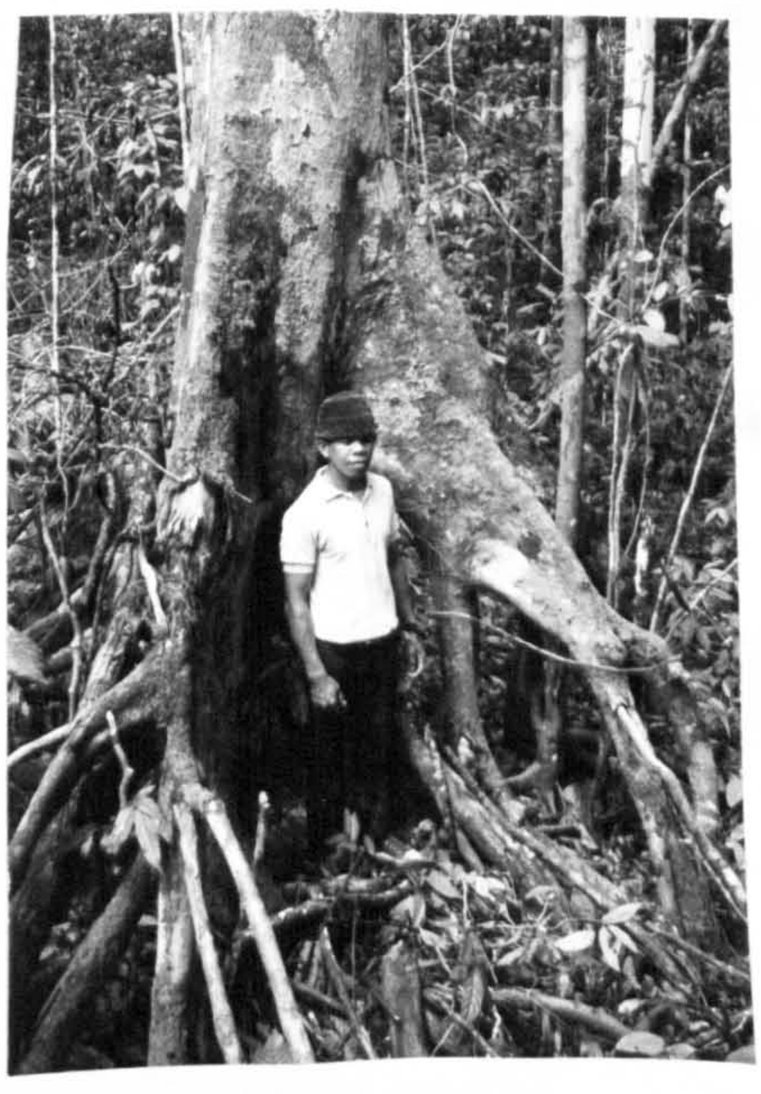
Imperata grasslands near Semporna (see page)



Alstonia angustifolia



Heritiera simplicifolia



Dillenia borneensis

Koordersiodendron pinnatum

<u>Parashorea</u>
<u>malaanonan</u> at
Kalumpang F.R.
Type A Forest

Mixed Rubroshorea species
at Deramakot F.R.
Type B Forest

<u>Shorea parvifolia</u> and
<u>Dipterocarpus verrucosus</u>
Kalabakan F.R. Type C Forest

Dryobalanops rappa Forest on white sand at Mesapol F.R. (7.3(b))

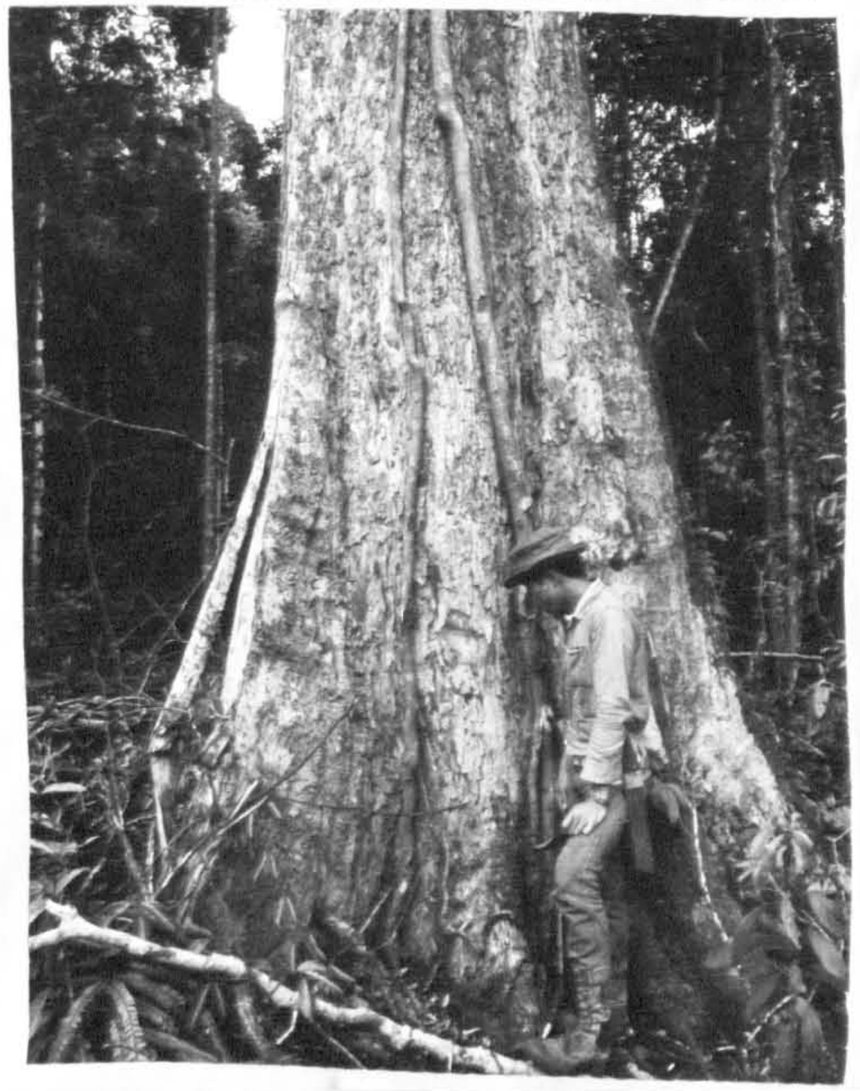
Shifting cultivation in Rubroshorea/*Eusideroxylon* Type C Forest, near Lanas.

Dipterocarpus acutangulus and *Heritiera borneensis* Type D Forest (see Figure 24)

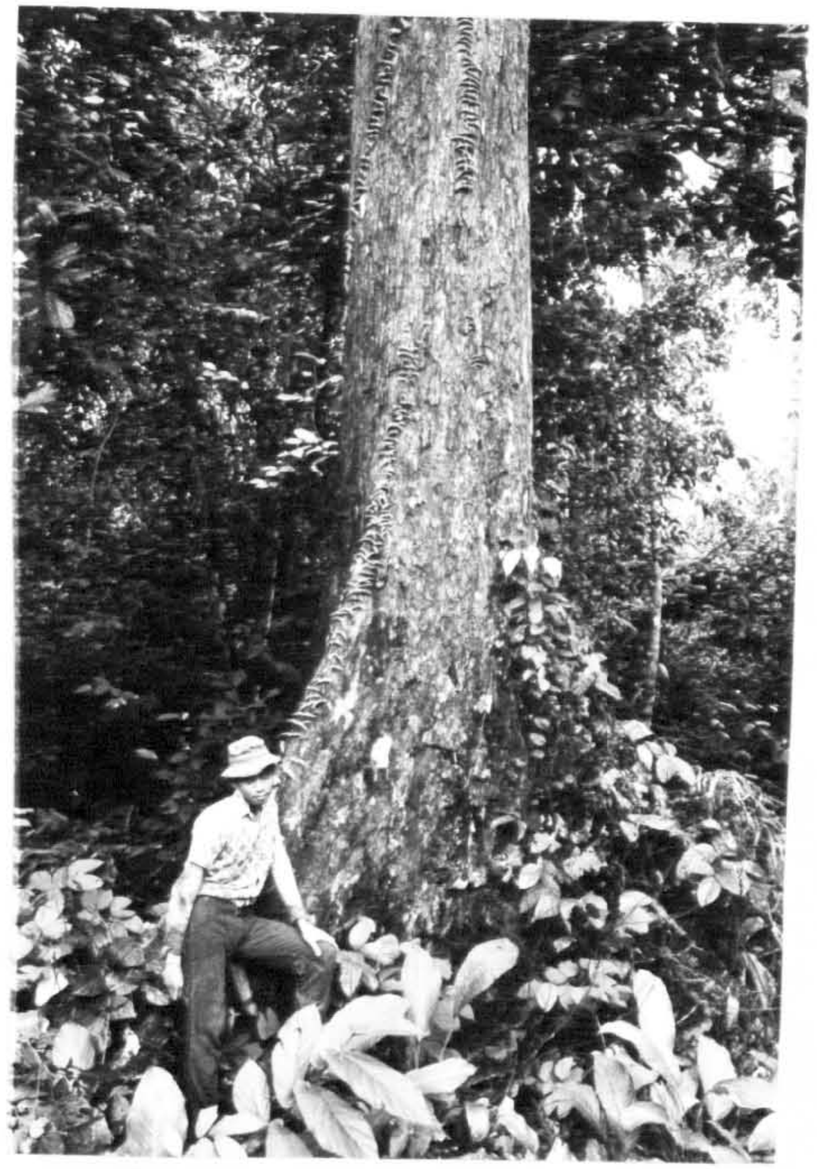
Parashorea malaanonan Type E Forest, Mandalom F.R.

A B C D

E F G

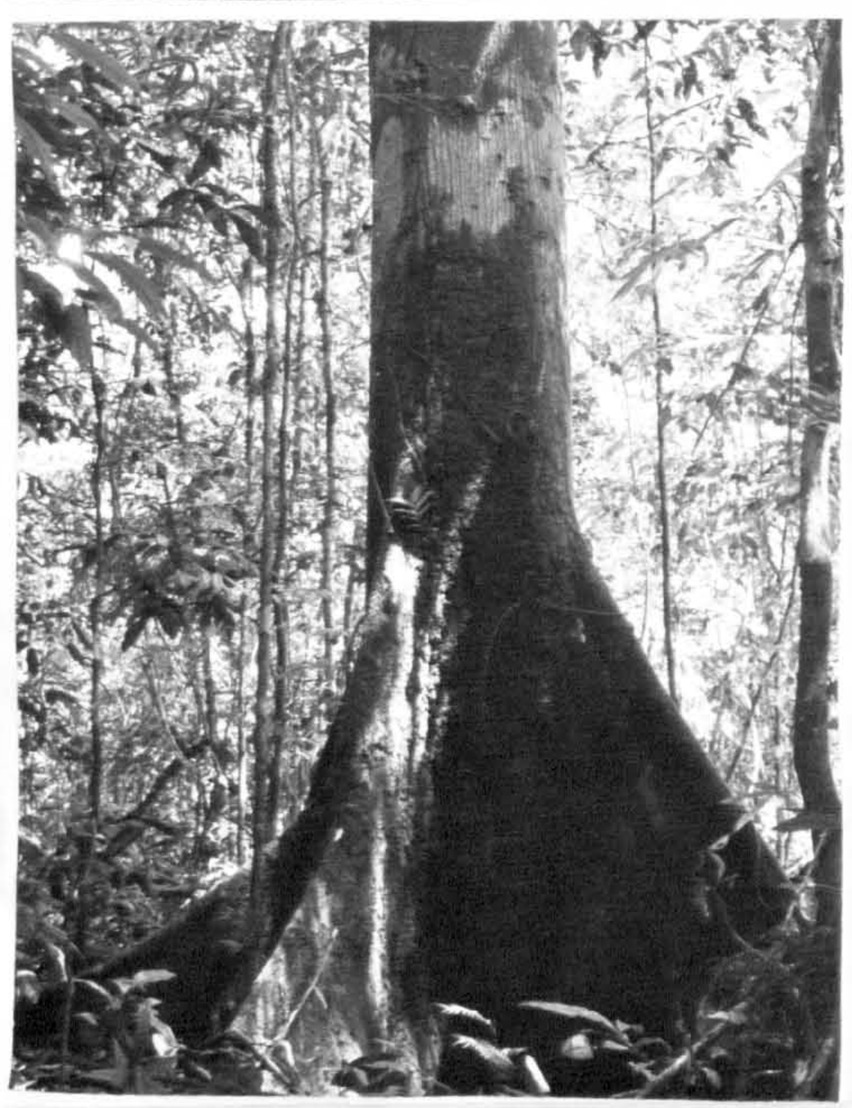


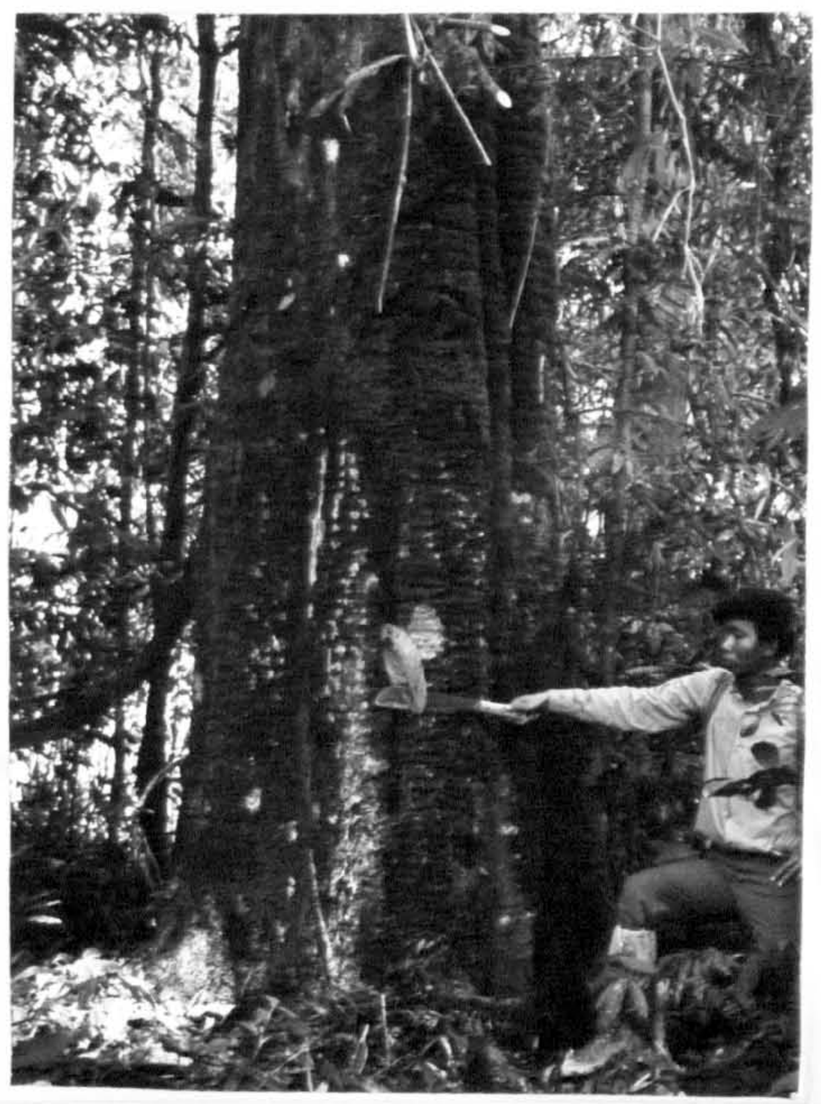
A Dryobalanops beccarii
B Dr.keithii
C Dr.lanceolata
D Dipterocarpus applanatus
E D.caudiferus
F D.grandiflorus
G D.verrucosus



A B C D

E F G



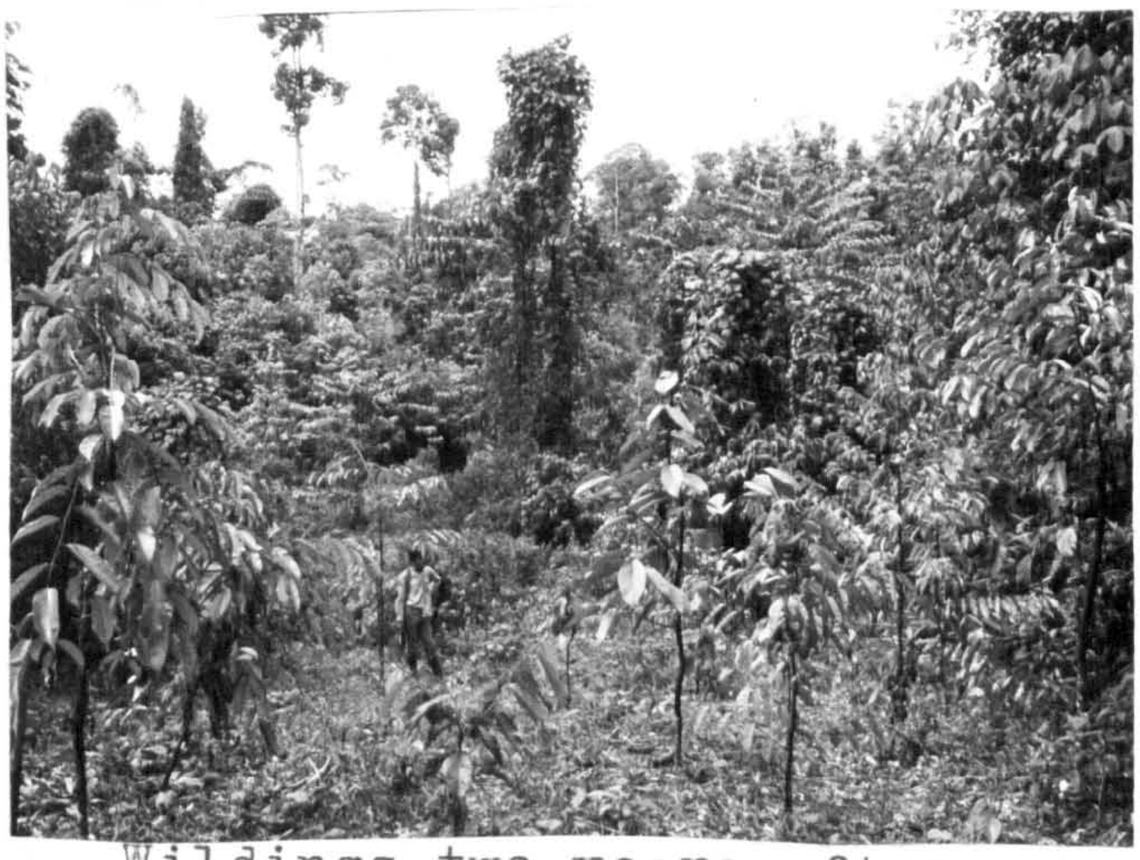


A Parashorea smythiesii
B Shorea almon
C S.argentifolia
D S.leptoclados
E S.oleosa
F S.parvifolia
G Eusideroxylon zwageri

(b)

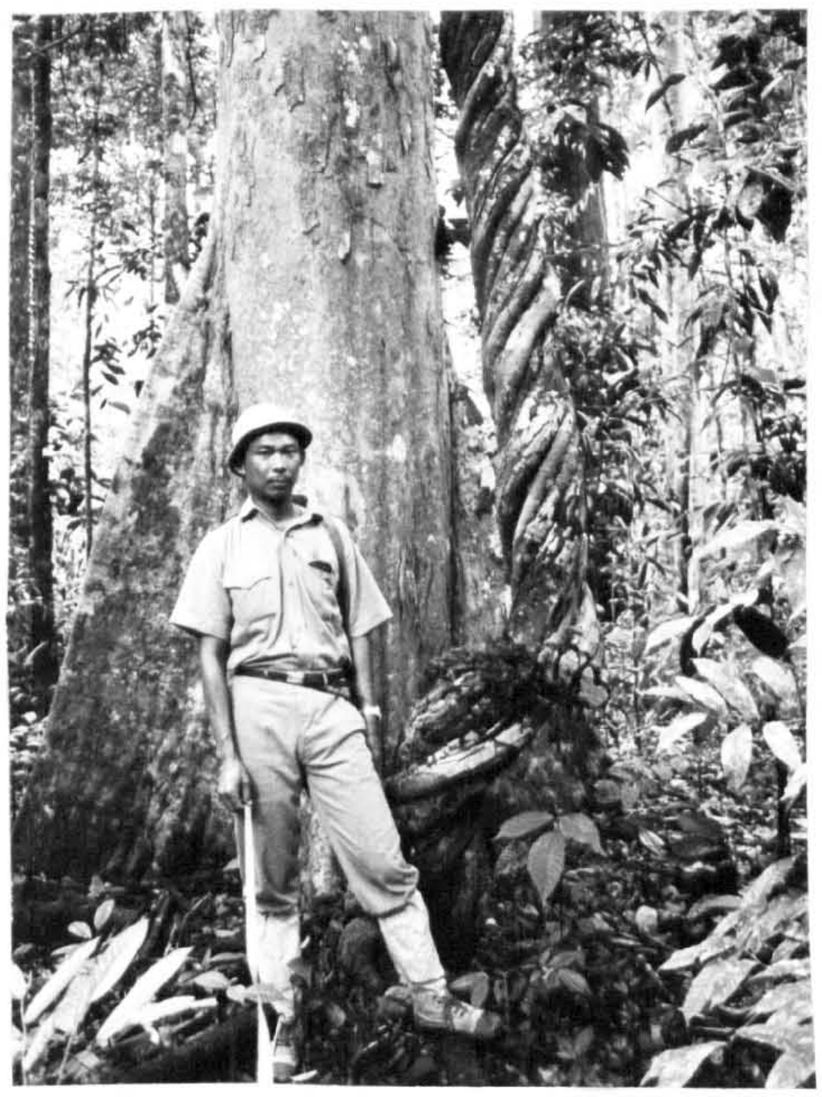
(a) Freshly germinated seedlings (see Tables 24,27)
(a) Dryobalanops aromatica
(b) Shorea glaucescens

Shorea mecistopteryx (a)
R.P.282 Pin F.R.
(a) after logging (b)
(b) two years later



Wildings two years after planting R.P.276 Malua F.R. (see Tables 43,44)

Seedlings surviving felling in shady patch R.P.242 Segaliud-Lokan F.R. (Figure 61)



Large climber in natural forest, Kalabakan F.R.

Felling into buttress with chain saw (cf Figure 57)

Erosion following logging on soft sandstone, Segaliud-Lokan F.R.

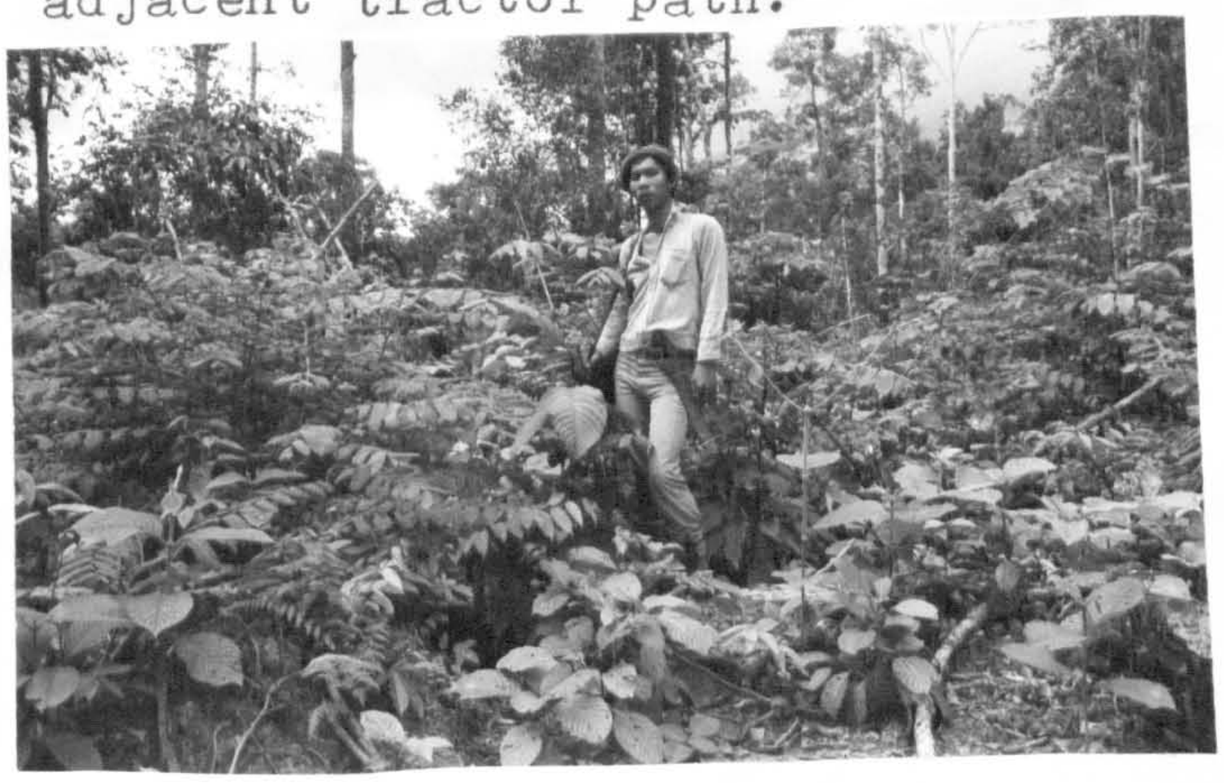
Ponding up following blocking of natural drainage, at Deramakot F.R.

Deep cut on main tractor path, Segaliud-Lokan F.R.

Large landing, Kalabakan F.R.

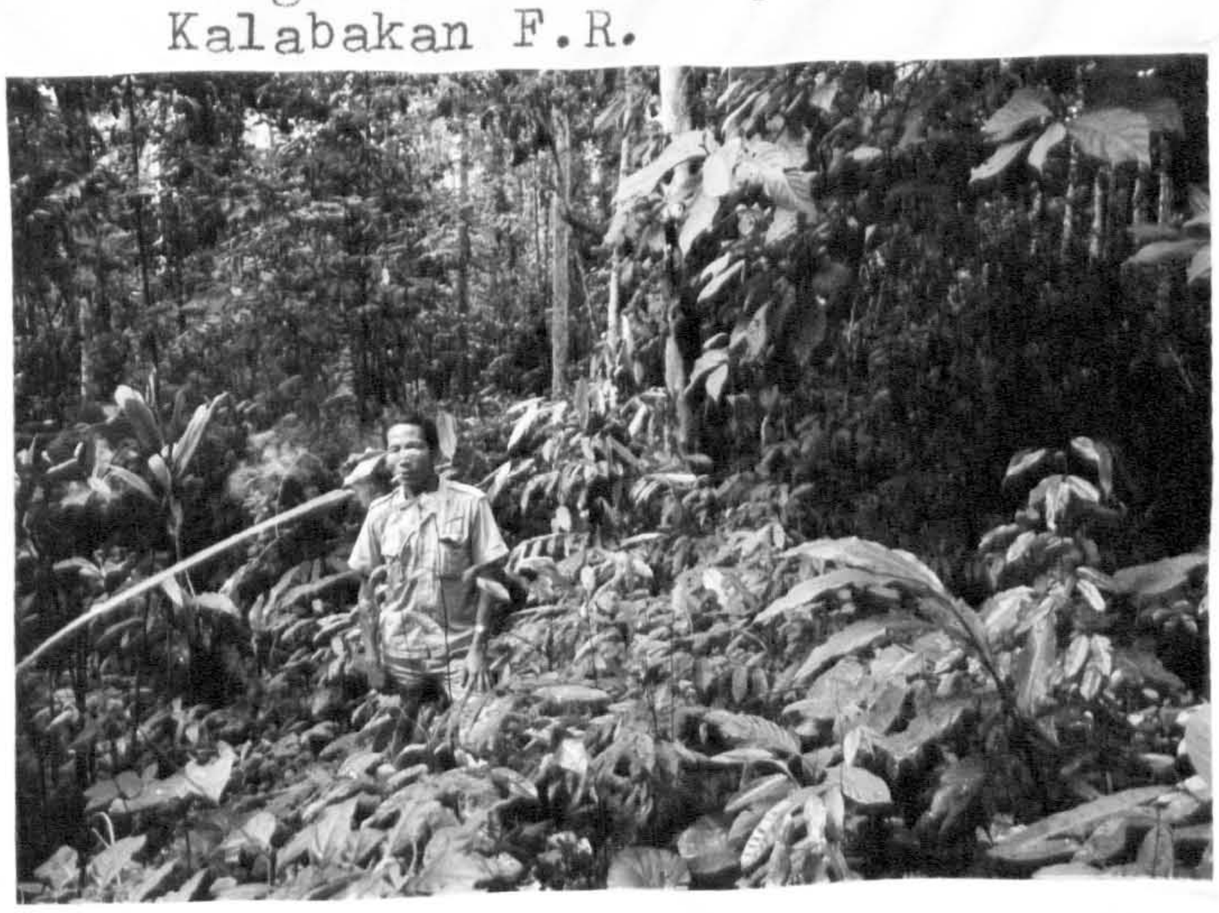
Coppice Parashorea tomentella, Tenegang F.R.

Parashorea malaanonan and Dryobalanops lanceolata seedlings at edge of tractor path Gunong Rara F.R.
and
Glochidion sp. and Mesoneuron on adjacent tractor path.



Shorea parvifolia growing under Anthocephalus F+2, Kalabakan F.R.

Dryobalanops lanceolata seedlings on tractor path, F+15, Kalabakan F.R.



Macaranga hypoleuca F+10 at Kalabakan F.R.

Vigorous Rubroshorea regeneration, thinned at F+5 near Kalabakan F.R.

Shorea parvifolia F+15 in Plot 1 of R.P.273 B at Kalabakan F.R.

Vigorous Rubroshorea, mainly Shorea leptoclados, in R.P.38 Sepilok F.R. F+c.50

Appendix 1

Basic Enumeration Data

Table 1	Segaliud-Lokan F.R.	Trees over 5ft girth 78.8acres (32 ha)
Table 2	Segaliud-Lokan F.R.	Trees over 12ins girth 7 acres (2.8 ha.)
Table 3	Kuamut F.R.	Trees over 5ft girth (95.8 acres (39 ha.)
Table 4	Kuamut F.R.	Trees over 12 ins girth 8.6 acres (3.5 ha.)
Table 5	Kalabakan F.R. (Luasong)	Trees over 5ft girth 132.1 acres (53.5 ha.)
Table 6	Kalabakan F.R. (Luasong)	Trees over 12ins.girth 6.0 acres (2.4 ha.)

Appendix 1 Table 1 Summary of Trees Enumerated on 78.8 Acres by Species, Groups and Sizes Segaliud-Lokan F.R.

A. DIPTEROCARPACEAE in groups			Numbers of Stems Enumerated by One Foot Girth Classes																
Group	Species	Botanical Name	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	Total	%
	1	Parashorea tomentella	42	28	27	17	18	15	14	7	3	1	1	1					174	17.4
	2	Parashorea malaanonon	3	7	3	8	2	3	2	1		2	2						33	3.3
1		Total White Seraya Group	45	35	30	25	20	18	16	8	3	3	3	1					207	20.7
2	3	Shorea leptoclados	26	19	15	15	13	12	9	11	5	4	3	3	1	1			137	13.7
	4	Dryobalanops lanceolata	16	17	17	12	14	9	4	5	1	3	1	1					100	10.0
	5	Dryobalanops keithii	-	1	1	1	1		1										5	-
3		Total Kapor Group	16	18	18	13	15	9	5	5	1	3	1	1					105	10.5
	6	Dipterocarpus caudiferus	16	16	17	20	6	5	2	2	1	1							86	8.6
	7	Dipterocarpus grandiflorus	1	3	1	1	1	1	1										9	0.9
	8	Dipterocarpus verrucosus	4	2		2			2										10	1.0
	9	Dipterocarpus exalatus							1										1	-
	10	Dipterocarpus pachyphyllus	1																1	-
4		Total Keruing Group	22	21	18	23	7	6	6	2	1	1							107	10.7
	11	Shorea leprosula	11	5	7	10	2	2	4	2		2							45	4.5
	12	Shorea parvifolia	11	4	4	7	3	2	2	2	1	1							37	3.7
	13	Shorea waltonii	5	2	5	2	2	3	1	3	1								24	2.4
	14	Shorea smithiana	1	2	1			1	1	1	1								8	0.8
	15	Shorea pauciflora			1		1	2		2									6	0.6
	16	Shorea argentifolia			1					1									2	-
	17	Shorea almon		1	1														2	-
	18	Shorea macroptera		2	1														3	-
	19	Shorea mecistopteryx		1		2	1												4	-
	20	Shorea ovalis		1															1	-
5		Total Red Seraya Group (excluding Majau)	28	18	21	21	9	10	8	11	3	3							132	13.2
	21	Shorea gibbosa	1	1		1	1	1	1	2	3	1		2		1			15	1.5
	22	Shorea faguetiana	3	1		1		2											7	-
	23	Shorea hopeifolia														1			1	-
6		Total Yellow Seraya Group	4	2		2	1	3	1	2	3	1		2		2			23	2.3
	24	Hopea sangal		1	3	1													5	-
	25	Hopea nervosa	3																3	-
	26	Hopea ferruginea	1	1															2	-
7		Total Selangan Group	4	2	3	1													10	1.0
8	27	Shorea symingtonii							1										1	-
	28	Shorea superba	3	1	5	4	3	4							1			1	21	2.1
	29	Shorea seminis	2		1										1				5	-
	30	Shorea glaucescens		1															1	-
	31	Shorea leptoderma	1	1	2	1													5	-
	32	Shorea isoptera						1											1	-
	33	Shorea hypoleuca	1																1	-
	34	Shorea guiso	1																1	-
9		Total Selangan Batu Group	8	3	8	5	3	5	1						2			1	36	3.6
	35	Vatica umbonata	1																1	-
	36	Vatica bancana	1																1	-

2

Table 1 Continued

			5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	Total	%
		Total Resak Group	2																2	-
	TOTAL DIPTEROCARPACEAE		155	118	113	105	68	63	46	39	16	15	7	7	3	3	0	1	759	75.9
	PERCENTAGE DIPTEROCARPACEAE of all trees.		59	68	795	861	895	87	958	929	889	100	100	875	75	100	100	100	75.9	
B.	Non-Dipterocarpaceae																			
	(i)	SINGLE SPECIES																		
37		Eusideroxylon zwageri	20	17	10	5	1		1	1									55	5.5
38		Sympetalandra borneensis	6	5	3	2													16	16
39		Koordersiodendron pinnatum	3	2	3			1											9	0.9
40		Planchonia valida	1	1		1	1												4	-
41		Dracontomelum mangiferum			2	1	1												4	-
42		Koompassia excelsa						1		2				1					4	-
43		Octomeles sumatrana									1								1	-
44		Anthocephalus cadamba	1			1		1											3	-
	(ii)	Indeterminate Species or Species Groups.																		
		Diospyros spp.	11	7	3														21	2.1
		Pterospermum spp.	11	3				1											15	1.5
		Eugenia spp.	3	1	2														6	0.6
		Homalium spp.	4		1														5	0.5
		Artocarpus spp.	5		1		1												7	0.7
		Terminalia spp.	1			2	1												4	-
		Lophopetalum spp.	2		2														4	-
	(iii)	FAMILY GROUPS																		
		Annonaceae (at least 2 species)	3	1	1														5	0.5
		Euphorbiaceae (at least 4 species)	4	2															6	0.6
		Fagaceae (at least 2 species)	3	5	1														9	0.9
		Lauraceae (at least 3 species)	9	1	2	2	1												15	1.5
		Leguminosae (at least 4 species)	2	3			1		1										7	0.7
		Malvaceae (at least 3 species)	2				1	1											4	
		Meliaceae (at least 2 species)	8			1					1								10	1.0
		Sapindaceae (at least 2 species)	1	2															3	
		Sterculiaceae (3 species)		2		1													3	
		Tiliaceae (mostly species of Pentace)	4	4															8	0.8
		Verbenaceae (2 species)	4																4	
	(iv)	Miscellaneous (8 species)	5			1	2								1				9	0.9
		TOTAL NON-DIPTEROCARPACEAE	113	56	31	17	10	5	2	3	2	0	0	1	1	0	0	0	241	24
		PERCENTAGE NON-DIPTEROCARPACEAE of all trees	42	32	215	139	13	73	42	71	11.1	0	0	125	25	0	0	0	24.1	
		TOTAL ALL TREES MEASURED	268	174	144	122	78	68	48	42	18	15	7	8	4	3	0	1	1000	100

Appendix 1 Table 2 Systematic Subsample to 12 inches girth, Segaliud-lokan F.R. covering 7 acres.

Group	No. of species	A. DIPTEROCARPACEAE in groups GROUP NAME	Numbers of Stems Enumerated by half foot girth classes. 1/1½	1½/2	2/2½	2½/3	3/3½	3½/4	4/4½	4½/5	5/5½	5½/6	6 +	Total /5'	% /5'
1	2	White Seraya (Parashoreas)	10	11	4	3	1		1		5	1	20	30	4.3
2	1	Seraya majau (Shorea leptoclados)	3	1		1	2		6	1	1		9	14	2.0
3	1	Kapor (Dryobalanops lanceolata)	3	1		4		1			1	1	8	9	-
4	1	Keruing (Dipterocarpus caudiferus)	9	2	1	1	1	3	1	1	1		9	19	2.7
5	7	Red Seraya (Excluding S. majau)	3	4	4	1	2	2			1		8	16	2.3
6	4	Yellow Seraya (Sh. species)		2	1		1	1		1		1	3	6	-
7	2	Selangan (Hopea spp.)	3	5	5	1							1	14	2.0
8	1	Melapi (Shorea symingtonii)				1								1	-
9	4	Selangan batu (Sh. spp.)	1		1	2							5	4	-
10	1	Resak (Vatica spp.)	1	1	1	1								4	-
TOTAL DIPTEROCARPACEAE			33	27	17	15	7	7	8	3	9	3	63	117	16.7
PERCENTAGE DIPTEROCARPACEAE of all trees			12.5	15.2	14.6	29	24	33	32	23	37.5	100	80	16.8	
		B. NON DIPTEROCARPACEAE													
(i)		Common as Genera/species													
		Diospyros spp.	31	19	8	2	3	2	1		3		2	66	9.5
		Eusideroxylon zwageri	1	3	6	5	1	2	2	1	2		8	21	3.0
		Barringtonia spp.	5	5	1	3	2		1	1				18	2.6
		Xanthophyllum	1	1		2		1	1					6	-
		Pentace spp.	10	1	5	1	1	1	2		1		1	21	3.0
		Eugenia spp.	22		6	1	2	1					1	41	5.9
		Sympetalandra borneensis	3	3						1	2			7	-
		Total Group (i)	73	41	26	14	9	7	7	3	8		12	180	25.9

	1½/1½	1½/2	2/2½	2½/3	3/3½	3½/4	4/4½	4½/5	5/5½	5½/6	6 +	Total /5'	% /5'
(ii) Abundant as families													
Euphorbiaceae	68	27	15	3	1	1						95	13.6
Lauraceae	14	16	11	4			1					46	6.6
Anonaceae	19	12	9	4			1	2				47	6.7
Meliaceae	22	11	4	2		1	3					43	6.2
Sapindaceae	12	10	11	2	2							37	5.3
Flacourtiaceae	12	7	2		2			1			1	24	3.4
Sapotaceae	4	4	5	2			1					16	2.3
Burseraceae	1	3	2	1	1	2		2	1			12	1.7
Sterculiaceae	1		3	1		1	3		1			9	-
Dilleniaceae	4	1	1			1						7	-
Total Group (ii)	137	91	63	19	6	6	9	5	2		1	336	48.2
(iii) Less Common													
(a) Large individuals found (9 + species)	4	3	1					1	4		3	9	-
(b) Mostly small trees	12	13	6	3	6	1	1	1				42	6.0
(c) Unidentified	5	2	3	1	1			1	1			13	1.8
Total Group (iii)	21	18	10	4	7	1	1	2	5		3	64	9.2
Total non Dipterocarpaceae	231	150	99	37	22	14	17	10	15		16	580	83.3
Total all trees	264	177	116	52	29	21	25	13	24	3	79	697	100

Appendix 1 Table 3 Stand Table Summary of 95.80 Acres Enumerated Kuamut Forest Reserve

Group	A. DIPTEROCARPACEAE IN GROUPS Species	Botanical Name	NUMBERS OF STEMS ENUMERATED BY ONE FOOT CLASSES 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total	%
	1	Parashorea tomentella	19	12	12	18	16	16	11	8	9	2	1	2	1				127	11.0
	2	Parashorea malaanonan	3	3	2	4	3	2	2	2	2	2	1	1					27	2.3
1		Total White Seraya	22	15	14	22	19	18	13	10	11	4	2	3	1				154	13.3
2	3	Shorea leptoclados	20	32	32	17	20	19	20	9	10	9	8	3	2	1		1	203	17.6
3	4	Dryobalanops lanceolata	18	21	13	12	9	10	2	4	1	2	1	1					94	8.2
	5	Dipterocarpus caudiferus	17	15	13	11	13	5		2	1				1				78	6.7
	6	Dipterocarpus humeratus	1	2		2													5	0.4
	7	Dipterocarpus acutangulus							1										1	-
	8	Dipterocarpus (unident)	1	1															2	-
4		Total Keruing	19	18	13	13	13	5	1	2	1				1				86	7.5
	9	Shorea leprosula	8	7	25	12	17	9	4	2	3	1							88	7.6
	10	Shorea parvifolia	16	8	6	6	4	5	2										47	4.1
	11	Shorea gysbertsiana	13	15	14	14	6	2	3	4	2								73	6.3
	12	Shorea smithiana	1	5	4	3	1	1			2	1		1					19	1.6
	13	Shorea pauciflora		3		2			1			1	1	1	1				10	0.9
	14	Shorea oleosa	6	5			1												12	1.0
	15	Shorea beccariana	1	3	2	1	1		1	1									10	0.9
	16	Shorea macroptera	1	1			1				1								4	-
	17	Shorea almon	1	2															3	-
	18	Shorea argentifolia		1															1	-
	19	Shorea waltonii	1																1	-
5		Total Red Seraya	48	50	51	38	31	17	11	7	8	3	1	2	1				268	23.2
	20	Shorea gibbosa	2	2	2	1	1		1			4		1	1				15	1.3
	21	Shorea hopeifolia	4		1	5	2	2											14	1.2
	22	Shorea acuminatissima		1		1													2	-
6		Total Yellow Seraya	6	3	3	7	3	2	1			4		1	1				31	2.7
	23	Hopea nervosa	1																1	-
	24	Hopea sangal	1		2														3	-
7		Total Selangan	2		2														4	0.3
8	25	Shorea symingtonii		1		1	1												3	0.3
	26	Shorea atrinervosa	10	7	4	7	3	3	1	1			1						37	3.2
	27	Shorea superba	2	4	1	1	1	1				1	2						13	1.1
	28	Shorea foxworthii	2	3	2			1		1									9	
	29	Shorea isoptera		3	1	2	1			1									8	
	30	Shorea guiso	2			1													3	
	31	Shorea seminis			1	2	1												4	
	32	Shorea laevis					1												1	
9		Total Selangan Batu	16	17	9	13	7	5	1	3		1	3						75	6.5
		TOTAL DIPTEROCARPACEAE	151	157	137	123	103	76	49	35	31	23	15	10	6	1		1	918	79.5
		PERCENTAGE OF ALL TREES	61	74	86	93	92	89	94	92	93	96	100	100	100	50	-	100	-	79.5

Table 3 Continued

B. NON DIPTEROCARPACEAE	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total	%
(i) Single Species																		
Eusideroxylon zwageri (Lauraceae)	6	6	2	1	1	2			1					1			20	1.7
Saraca lanceolata (Leguminosae)	2	2	2	1	1		1										9	
Sympetalandra borneensis (Leguminosaea)	2	3	3	3		1	1										13	1.1
Sindora irpicina (Leguminosae)	1	1			1	1	1		1								6	
Dialium indum (Leguminosae)	1	1	1														3	
Intsia palembanica (Leguminosae)					1												1	
Albizia chinensis (Leguminosae)								1									1	
Parkia roxburghii (Leguminosae)				1													1	
Pentace laxiflora (Tiliaceae)	1	2	1		1												5	
Brownlowia stipulata (Tiliaceae)	3		2														5	
Octomeles sumatrana (Datiscaceae)		1			2												3	
Lophopetalum javanicum (Celastraceae)		1	1														2	
Ochanostachys amentacea (Olacaceae)	6	1															7	
Total Group (i)	22	18	12	6	7	4	3	1	2					1			76	6.6
(ii) Indeterminate species																		
Diospyros spp. (Kayu malam)	2																2	
Eugenia spp. (Obahs)	12	1	1	1	1												16	
Artocarpus spp. (Terapa)	1		1	1													3	
Canarium spp. (Kedondong)	2		1														3	
Total Group (ii)	17	1	3	2	1	0	0	0	0								24	2.1
(iii) Family Groups																		
Lauraceae (4+ species)	7	2															9	
Fagaceae (2+ species)	5	3	2	1													11	
Sterculiaceae (5 species)	7	5				2											14	
Sapindaceae (5 species)	2	3	3														8	
Meliaceae (3+ species)	7	2						1		1							11	
Apocynaceae (2 species)	1			1													2	
Total Group (iii)	29	15	5	2		2	0	1	0	1							55	4.8
(iv) Miscellaneous (27+ species)	44	21	7	1	0	3	0	5	0	0							81	7.0
Total Non-DIPTEROCARPACEAE	112	55	27	11	8	9	3	7	2	1				1			236	20.4
Total All Trees	263	212	164	134	111	85	52	42	33	24	15	10	6	2	0	1	1154	100

Appendix 1 Table 4 Systematic Subsample to 12 inches girth Kuamut F.R., Covering 8.6 acres

GROUP	No.of species	A. DIPTEROCARPACEAE in groups GROUP NAME	Numbers of Stems enumerated in half foot girth classes 1'/1½'	1½'/2'	2'/2½'	2½'/3'	3'/3½'	3½'/4'	4'/4½'	4½'/5'	5'+	Total	Total /5'	% /5'
1	2	White seraya – (Parashorea spp.)	14	7	8	3	4	3	2	2	16	59	43	4.5
2	1	Seraya majau – (Shorea leptoclados)	7	6	7	4	2	4	3	2	15	50	35	3.6
3	1	Kapor – (Dryobalanops lanceolata)	4	5	4	–	2	–	–	–	9	24	15	1.6
4	3	Keruing – (Dipterocarpus spp.)	15	12	5	3	1	1	–	–	13	50	37	3.8
5	8	Red Seraya – (Excluding S. majau)	20	14	9	8	5	1	2	7	28	94	66	6.8
6	2	Yellow Seraya–(Shorea spp.)	1	0	1	–	–	–	–	1	2	5	3	–
7	3	Selangan – (Hopea spp.)	9	2	7	5	2	1	1	–	0	27	27	2.8
8	3	Melapi – (Shorea spp.)	1	2	1	1	–	–	–	–	1	6	5	–
9	4	Selangan batu – (Shorea spp.)	7	3	2	1	4	–	–	3	6	26	20	2.1
10	2	Resak – (Vatica spp.)	2	2	–	–	3	–	–	–	–	7	7	–
TOTAL DIPTEROCARPACEAE (29 species)			80	53	44	25	23	10	8	15	90	348	258	26.8
PERCENTAGE DIPTEROCARPACEAE, of all trees			21.9	23.1	27.3	29.8	41	37	42	62.5	77	32.2		
		B. NON DIPTEROCARPACEAE												
(i)		Common as Genera/species												
		Eugenia spp. (Myrtaceae) several species	11	13	8	4	1	2	3	1	5	48	43	4.5
		Diospyros spp. (Ebenaceae) several species	16	12	17	6	6	1		1	2	61	59	6.1
		Kiolodepes longifolium (Euphorbiaceae)	42	15	6							63	63	6.5
		Dillenia excelsa (Dilleniaceae)	2	4	2	1						9	9	0.9
		Castanopsis spp. (Fagaceae) one or two species	5	1	5	1	1				1	14	13	1.3
		Dehaasia incrassata (Lauraceae)	6	5	1	1		1	1		1	16	15	1.6
		Barringtonia spp. (Lecythidaceae) three species	1	6	1	5	–	3			1	17	16	1.7
		Sympetalandra borneensis (Leguminosae)	5	1	2		1					9	9	0.9
		Ochanostachys amentace (Olacaceae)	5	1	3	1	1	1	1			13	13	1.3
		Xanthophyllum spp. (Polygalaceae) one or two species	3	3	1	1	2	1				11	11	1.1
		Nephelium mutabile (Sapindaceae)	6	6	2			1			1	16	15	1.6
		Paranephelium nesidum (Sapindaceae)	10	7	6	2	1					26	26	2.7
		Brownlowia stipulata (Tiliaceae)	10	3	3	1	1			1	2	21	19	2.0
		Pentace laxiflora (Tiliaceae)	2	1	2	1	1		1	1		9	9	0.9
		Total Group (i)	124	78	59	24	15	10	6	4	13	333	320	33.2

	1' /1½'	1½' /2'	2' /2½'	2½' /3'	3' /3½'	3½' /4'	4' /4½'	4½' /5'	5' +	Total	Total /5'	% /5'
(ii) Abundant as Families												
Anonaceae	9	11	4	1						25	25	2.6
Burseraceae	7	7	4							18	18	1.9
Euphorbiaceae	41	23	11	4	3		1	1	3	87	84	8.7
Lauraceae	10	7	3	11	2	2		1		36	36	3.7
Melastomataceae	6	4	3		1					14	14	1.4
Meliaceae	13	10	8	3	1	1	1		2	39	37	3.8
Sapotaceae	3	1	2	1	1					8	8	-
Sterculiaceae	2	1	2	2	2				2	11	9	0.9
Verbenaceae	1	1	4	2	2	1			3	14	11	1.1
Total Group ii	92	65	41	24	12	4	2	2	10	252	242	25.0
(iii) Less common and unidentified species	69	33	17	11	6	3	3	3	4	149	145	15.0
Total Non-Dipterocarpaceae	285	176	117	59	33	17	11	9	27	734	707	73.2
Total All Trees	365	229	161	84	56	27	19	24	117	1082	965	100

APPENDIX 1 TABLE 5 SUMMARY OF TREES ENUMERATED ON 132.1 ACRES BY SPECIES AND SIZES KALABAKAN F.R.

A. Dipterocarpaceas in groups			Numbers of stems enumerated by One Foot Girth Classes																
Group	Species	Botanical Name	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	Total	%
	1	Parashorea tomentella	18	20	16	19	21	13	8	11	2	6	-	-	-	-	-	-	134	5.4
	2	Parashorea malaanonan	27	24	32	40	19	18	11	15	3	1	3	-	-	1	-	-	194	7.8
	3	Parashorea smythiisii	42	31	31	9	7	5	-	1	-	1	-	-	-	-	-	-	127	5.1
1		Total White Seraya Group	87	75	79	68	47	36	19	27	5	8	3	-	-	1	-	-	455	18.3
	4	Dryobalanops keithii	87	63	67	52	41	14	6	3	3	2	-	-	-	-	-	-	388	13.6
	5	Dryobalanops lanceolata	39	26	47	38	20	25	7	15	6	6	3	-	1	-	-	-	233	9.4
2		Total Kapur Group	126	89	114	90	61	39	13	18	9	8	3	-	1	-	-	-	571	23.0
	6	Dipterocarpus caudiferus	28	31	24	19	18	10	11	8	12	13	-	2	-	-	-	-	156	6.3
	7	Dipterocarpus kerii	-	3	1	-	-	2	-	1	-	-	-	-	-	-	-	-	7	.3
	8	Dipterocarpus gracilis	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
	9	Dipterocarpus grandiflorus	-	-	3	-	1	-	-	1	-	-	-	-	-	-	-	-	5	.2
	10	Dipterocarpus confertus	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	3	.12
	11	Dipterocarpus ? applanatus	1	2	3	2	1	2	1	-	-	-	-	-	-	-	-	-	12	.5
	12	Diptetocarpus humeratus	-	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	4	.2
	13	Dipterocarpus ? verrucosus	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
	14	Dipterocarpus ? acutangulus	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3	.12
3		Total Keruing Group	32	38	35	22	21	17	12	10	2	3	-	2	-	-	-	-	194	7.8
	15	Shorea parvifolia	29	19	21	30	20	13	8	3	4	-	1	2	-	-	-	-	150	6.0
	16	Shorea ovalis	1	3	-	1	1	1	-	1	-	-	-	-	-	-	-	-	8	.3
	17	Shorea almon	5	8	5	2	1	1	-	-	-	-	-	-	-	-	-	-	22	.9
	18	Shorea smithiana	2	1	2	4	3	7	2	1	4	2	3	-	-	1	-	-	32	1.3
	19	Shorea pauciflora	2	1	3	-	2	1	-	2	1	-	1	-	-	-	-	-	13	.5
	20	Shorea leptoclados	3	10	13	11	6	10	1	4	4	1	2	-	-	-	-	-	65	2.6
	21	Shorea argentifolia	-	1	1	2	2	1	1	1	1	-	-	-	-	-	-	-	10	.4
	22	Shorea leprosula	6	-	6	5	-	1	±	1	1	2	-	-	-	-	-	-	22	.9
	23	Shorea beccariana	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	.2
	24	Shorea macroptera	13	5	7	2	1	-	-	-	-	3	-	-	-	-	-	-	31	1.3
	25	Shorea waltonii	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	3	.12
	26	Shorea oleosa	17	6	15	12	6	1	2	6	-	4	-	-	-	-	-	-	69	2.8
4		Total Red Seraya	81	56	75	69	42	36	14	19	15	12	7	2	-	1	-	-	429	17.3

			5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20+	Total	%
	27	Shorea artrinervosa	1	-	1	1	-	-	-	1	1	-	-	-	-	-	-	-	5	.2
	28	Shorea superba	1	8	3	4	1	2	1	3	2	1	-	-	-	-	-	-	26	1.1
	29	Shorea exelliptica	4	2	-	1	2	-	-	-	-	-	-	-	-	-	-	-	9	.4
	30	Shorea leptoderma	3	3	4	2	-	-	-	-	-	-	-	-	-	-	-	-	12	.4
	31	Shorea hypoleuca	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	.08
	32	Shorea laevis	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.04
	33	Shorea glaucescens	-	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	4	.2
	34	Shorea sp.	6	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	9	.4
	35	Shorea guiso	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	.04
5		Total Selangan batu group	15	19	10	9	3	2	1	4	4	2	-	-	-	-	-	-	69	2.8
	36	Hopea nervosa	3	5	2	1	-	-	1	-	-	-	-	-	-	-	-	-	12	.5
	37	Hopea ferrugenea	2	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	5	.2
	38	Hopea beccariana	3	-	-	2	-	3	1	-	-	-	-	-	-	-	-	-	9	.4
6		Total Selangan group	8	6	3	3	-	4	2	-	-	-	-	-	-	-	-	-	26	1.1
	39	Shorea symingtonii	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.04
	40	Shorea (Anthoshorea)	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	3	.12
7		Total Melapi group	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	4	.16
	41	Vatica sp.	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	.12
8		Total Resak group	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	.12
	42	Anisoptera costata	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
9		Total	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
	43	Hopea sangal	-	-	1	-	1	2	-	-	-	-	-	-	-	-	-	-	4	.16
10		Total	-	-	1	-	1	2	-	-	-	-	-	-	-	-	-	-	4	.16
	44	Shorea acuminatissima	10	8	3	14	8	4	2	3	6	2	-	1	-	-	-	-	61	2.5
	45	Shorea gibbosa	11	7	6	5	8	8	2	10	4	5	2	-	1	-	-	-	69	2.8
	46	Shorea hopeifolia	10	5	2	3	-	-	-	-	-	-	-	-	-	-	-	-	20	.8
	47	Shorea faguetiana	-	-	-	1	-	1	1	2	-	-	-	-	-	-	-	-	5	.2
	48	Shorea spp.	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
11			32	20	11	24	16	13	5	15	10	7	2	1	1	-	-	-	157	6.3
		Total Dipterocarpaceae	384	308	329	285	191	149	66	93	45	40	15	5	2	2	-	-	1914	
		Percentage of Dipterocarpaceae of all trees	71.2	689	76.9	796	809	832	880	721	978	909	938	100	100	50	-	-	77.2	

Table 5 continued

	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total	%
Non-Dipterocarpaceae																
(i) Single Species																
Eusideroxylon zwageri	9	14	22	37	17	14	6	2	1	1	-	-	-	-	123	5 .0
Sympetalandra borneensis	1	7	1	-	2	-	-	-	-	-	-	-	-	-	11	.4
Koordersiodendron pinnatum	1	3	-	-	-	-	-	-	-	-	-	-	-	-	4	.16
Dracontomelum mangiferum	2	-	1	-	-	-	-	-	-	-	-	-	-	-	3	.12
Koompassia excelsa	-	1	6	2	1	-	1	2	-	1	-	-	-	2	16	.7
Anthocephalus cadamba	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2	.08
Instia palembanica	-	1	-	-	-	1	-	-	-	1	-	-	-	-	3	.12
(ii) Indeterminate Species or Species Groups																
Diospyros	3	2	1	-	-	-	-	-	-	-	-	-	-	-	6	.2
Eugenia spp. (2 species)	8	13	5	3	-	-	-	-	-	-	-	-	-	-	29	1.2
Homalium spp.	-	2	2	-	-	-	-	-	-	-	-	-	-	-	4	.16
Artocarpus spp. (2 species)	9	2	2	1	-	-	-	-	-	-	-	-	-	-	14	.5
Lophopetalum spp.	3	2	2	2	-	-	-	-	-	-	-	-	-	-	9	.4

Table 5 continued

Family Groups	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total	%
Alangiaceae (1 species)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.04
Anacardiaceae (5 species)	4	8	3	-	1	-	1	-	-	-	-	6	-	-	17	.7
Anonaceae	4	5	-	-	-	-	-	-	-	-	-	-	-	-	9	.4
Apocynaceae (1 species)	1	-	-	-	-	-	-	1	-	-	-	-	-	-	2	.08
Burseraceae	11	8	5	4	3	2	1	-	-	-	-	-	-	-	34	1.4
Combretaceae (1 species)	-	-	1	2	-	-	-	-	-	-	-	-	-	-	3	.12
Dilleniaceae (2 species)	8	-	2	-	1	-	-	-	-	-	-	-	-	-	11	.4
Euphorbiaceae (8 species)	24	8	4	4	2	-	-	-	-	-	-	-	-	-	42	1.7
Fagaceae (2 species)	11	6	7	3	2	-	-	-	-	-	-	-	-	-	27	1.1
Guttiferae (2 species)	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	.08
Lecythidaceae (3 species)	7	-	2	1	-	1	-	-	-	-	-	-	-	-	11	.4
Leguminosae (6nspecies)	4	4	6	1	4	2	-	1	-	-	-	-	-	-	22	.9
Magnoliaceae (1 species)	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	.04
Malvaceae (4 species)	3	3	-	-	1	-	-	-	-	-	-	-	-	-	7	.3
Meliaceae	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	.04
Myristicaceae	2	1	-	-	1	1	-	-	-	-	-	-	-	-	5	.2
Olacaceae (1 species)	3	2	-	1	-	-	-	-	-	-	-	-	-	-	6	.2
Rosaceae	3	2	3	-	-	-	-	-	-	-	-	-	-	-	8	.3
Rubiaceae (1 species)	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.04
Sapindaceae (4 species)	6	4	2	1	1	1	-	-	-	-	-	-	-	-	15	.6
Sapotaceae	1	4	-	4	-	3	-	-	-	-	-	-	-	-	12	.4
Sterculiaceae (2 species)	4	21	6	5	10	4	-	2	-	1	1	-	-	-	54	2.2
Thymalaeceae	1	-	1	-	-	1	-	-	-	-	-	-	-	-	3	.12
Tiliaceae	4	4	2	1	1	-	-	-	-	-	-	-	-	-	12	.5
(iv) Miscellaneous (25 species)	14	11	10	1	-	-	-	-	-	-	-	-	-	-	36	1.5
Total Non-Dipterocarpaceae	155	139	99	73	45	30	9	8	1	4	1	-	-	2	566	
% Non-Dipt. of all trees	28.8	31.1	231	204	191	16.8	12.0	7.9	2.2	9.1	6.2	-	-	50.0	22.8	
Total all trees measured	539	447	428	358	236	179	75	101	46	44	16	5	2	4	2480	

Table 6 Enumeration Kalabakan F.R. Systematic Sub-samples to 12 ins girth covering 6 acres

A. Dipterocarpaceae			Numbers of stems enumerated by half ft girth classes												
Group	No. of Species	Group Name	1 /1½	1½ /2	2 /2½	2½ /3	3 /3½	3½ /4	4 /4½	4½ /5	5 /5½	5½ /6	6+	Total /5	% /5
1	3	White Seraya (Parashorea spp.)	7	7	3	2	3	6	3	-	4	-	13	31	5.7
2	2	Kapur (Dryobalanops spp.)	16	15	8	7	6	5	3	1	4	3	22	61	11.1
3	3	Keruing (Dipterocarpus spp.)	6	4	5	-	4	-	-	1	-	-	7	20	3.6
4	5	Red Seraya (Shorea spp.)	2	2	7	5	1	1	2	1	4	2	9	21	3.8
5	4	Yellow Seraya (Shorea spp.)	4	2	1	-	2	2	1	-	-	-	8	12	2.2
6	4	Selangan (Hopea spp.)	5	3	3	1	2	-	-	-	-	-	1	14	2.6
7	4	Selangan Batu (Shorea spp. Eushorea)	-	-	-	1	1	1	-	1	-	-	4	4	.7
8	1	Resak (Vatica spp.)	1	-	-	-	-	-	-	-	-	-	-	1	.2
9	1	Melapi (Shorea spp. Anthoshorea)	-	-	-	-	-	-	-	-	-	1	-	-	-
10	1	Pengiran Kesat (Anisoptera spp.)	1	-	-	-	-	-	-	-	-	-	-	1	.2
Total Dipterocarpaceae			42	33	27	16	19	15	9	4	12	6	64	165	30.1
Percentage of Dipterocarpaceae of all trees			25.9	23.7	30.3	28.6	44.2	57.7	45.0	30.8	50.0	75.0	74.4	30.1	

Table 6 continued

B. Non Dipterocarpaceae (i) Common as genera/species	1	1½	2	2½	3	3½	4	4½	5	5½	6	6+	Total 5	% 5
Eusideroxylon zwageri	–	2	1	–	3	1	4	–	1	6	2	3	10	.5
Glochidion spp.	1	–	1	1	2	2	4	1	1	1	4	1	10	.7
Scaphium spp.	–	1	–	–	2	1	2	1	1	1	3	2	10	.9
Koompassia excelsa	1	–	1	–	–	1	1	1	1	1	1	1	5	.2
Koilodepas spp.	–	1	–	–	2	–	2	1	1	1	1	1	8	1.5
Parinari spp.	1	1	1	–	1	1	2	1	1	1	1	1	8	1.5
Drypetes spp.	1	2	1	1	2	1	2	1	1	1	1	1	8	1.5
Litsea ðdorifera	1	1	1	1	2	1	2	1	1	1	1	1	8	1.5
Xanthophyllum spp.	1	1	1	1	2	1	2	1	1	1	1	1	8	1.5
Hydnocarpus spp.	1	1	1	1	2	1	2	1	1	1	1	1	8	1.5
Alangium spp.	1	1	1	1	2	1	2	1	1	1	1	1	8	1.5
Diospyros spp.	1	1	1	1	2	1	2	1	1	1	1	1	8	1.5
Mallotus penangensis	1	1	1	1	2	1	2	1	1	1	1	1	8	1.5
Garcinia spp.	1	1	1	1	2	1	2	1	1	1	1	1	8	1.5
Sympetalandra borneensis	1	1	1	1	2	1	2	1	1	1	1	1	8	1.5
Pentace	1	1	1	1	2	1	2	1	1	1	1	1	8	1.5
Baccaurea stipulata	1	1	1	1	2	1	2	1	1	1	1	1	8	1.5
Total Group (i)	39	41	21	14	11	4	4	2	1	4	–	14	133	24.2

(11) Abundant as Families

Anacardiaceae	3	2	-	1	-	-	1	-	-	-	-	7	1.3
Anonaceae	13	10	8	3	3	-	1	1	-	-	-	39	7.1
Bombacaceae	-	1	-	1	-	-	1	-	-	-	-	3	.5
Burseraceae	8	5	3	3	-	-	-	2	-	-	1	21	3.8
Celastraceae	-	-	-	1	-	-	-	1	-	-	-	2	.4
Dilleniaceae	9	4	-	1	-	-	-	-	-	-	-	14	2.6
Euphorbiaceae	4	1	5	3	-	1	1	1	-	-	-	16	2.9
Fagaceae	1	1	3	1	1	1	-	1	3	-	1	9	1.6
Guttiferae	-	-	1	-	-	1	1	-	1	-	1	3	.5
Lauraceae	11	8	4	3	1	2	-	-	1	-	-	29	5.3
Lecythidaceae	1	3	1	2	1	-	-	-	-	-	1	8	1.5
Leguminosae	3	-	-	1	3	-	-	-	-	-	-	7	1.3
Magnoliaceae	1	-	-	-	-	-	-	-	-	-	-	1	.2
Melastomataceae	-	1	1	-	-	-	-	-	-	-	-	2	.4
Meliaceae	5	7	1	-	1	-	-	-	-	-	-	14	2.6
Moraceae	-	-	-	-	-	-	-	-	-	1	-	-	-
Myristicaceae	1	5	3	1	-	1	1	-	-	-	-	12	2.2
Myrtaceae	7	2	1	-	-	-	-	-	2	-	2	10	1.8
Olacaceae	-	-	1	-	-	-	1	-	-	-	-	2	.4
Oleaceae	1	-	1	-	-	-	-	-	-	-	-	2	.4
Rubiaceae	-	-	-	-	1	-	-	-	-	-	-	1	.2
Sapindaceae	-	1	1	-	-	-	-	1	-	-	1	3	.5
Sapotaceae	1	4	3	2	1	-	1	1	-	-	-	13	2.4
Sterculiaceae	-	-	-	-	-	-	-	-	-	-	1	-	-
Tiliaceae	1	-	-	-	-	-	-	-	-	-	-	1	.2
Total Group (ii)	70	55	37	23	12	6	8	8	7	1	7	219	40.1

(iii) Less Common													
(a) Large individuals	-	-	-	-	-	-	-	-	-	-	1	-	-
(b) Mostly small trees	6	2	1	1	1	-	-	-	-	1	-	11	2.0
(c) Unidentified	5	8	3	2	-	1	1	-	1	-	-	20	3.6
Total group (iii)	11	10	4	3	1	1	1	-	1	1	1	31	5.6
Total non-Dipterocarpaceae	120	106	62	40	24	11	11	9	12	2	22	383	69.9
Total all trees	162	139	89	56	43	26	20	13	24	8	86	548	100

Appendix 2

Representative Stand Tables

Table 1	RP 271E	Beaufort Hill	1 acre (0.4 ha.)
Table 2	RP 307A *	Kalabakan F.R. (Umas Umas)	63 acres (25.2 ha.)
Table 3	RP 292/1	Sepilok F.R.	10 acres (4 ha.)
Table 4	RP 210/2	Garinomo F.R.	10 acres (4 ha.)
Table 5	RP 242 *	Segaliud-lokan F.R.	10 acres (4 ha.)
Table 6	RP 245/1 *	Segaliud-Lokan F.R.	25 acres (10 ha.)
Table 7	RP 350 *	Kuamut F.R.	17 acres (6.8 ha.)
Table 8	RP 304 *	Karito Estate	23 acres (9.2 ha.)
Table 9	RP 307B *	Kalabakan F.R. (Umas Umas)	16 acres (6.4 ha.)
Table 10	RP 271/A *	Kalabakan F.R. (Umas Umas)	10 acres (4 ha.)
Table 11	RP 303 *	Kalabakan F.R. (Brantian)	16 acres (6.4 ha.)
Table 12	RP 271/F *	Kalabakan F.R. (Luasong)	10 acres (4 ha.)
Table 13	RP 339 *	Tawau Hills F.R.	10 acres (4 ha.)
Table 14	RP 15	Gunong Lumaku F.R.	4 acres (1.6 ha.)
Table 15	RP 292/2	Sepilok F.R.	10 acres (4 ha.)
Table 16	RP 292/3	Sepilok F.R.	10 acres (4.ha.)

* Subsequently felled over, other plots are in Virgin Jungle Reserves.

Appendix 2 - Table 1

Stand Table RP 271E Beaufort Hill 1 acre (0.4 Ha.)

Species	Girth (Ft.) / Diam. (Cm.)	Number of Trees in Size Classes										Total
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	10 97	
Dipterocarpaceae												
Shorea (Rubroshorea)												
S.argentifolia		-	-	1	3	2	1	-	1	-	-	8
S.fallax		2	1	-	-	-	1	-	-	-	-	4
S.macroptera		3	1	1	-	-	-	-	-	-	-	5
S.parvifolia		-	1	-	-	-	-	-	-	-	-	1
S.quadrinervis		6	3	3	2	1	1	-	-	-	-	16
(Richetia)												
S.acuminatissima		-	-	-	-	1	-	-	-	-	-	1
S.multiflora		1	1	-	-	-	-	-	-	-	-	2
(Selangan Batu)												
S.Laevis		2	2	2	1	-	-	1	-	-	-	8
(Anthoshorea)												
S.Ochracea		5	-	-	1	1	-	-	-	-	-	7
Dipterocarpus acutangulus		-	-	-	-	-	-	-	-	-	1	1
D.conformis		2	1	-	-	-	-	-	-	-	1	4
D.lowii		-	-	-	-	-	1	-	-	-	-	1
Parashorea smythiesii		-	1	-	-	-	-	-	-	-	-	1
Other Dipterocarpoceae		5	-	-	-	-	-	-	-	-	-	5
Non-Dipterocarps												
Melanorrhoea wallichii		15	2	-	-	-	-	-	-	-	-	17
Elateriospermum tapos		7	-	-	-	1	-	-	1	-	-	9
Lophopetalum javanicum		6	1	-	-	-	-	-	-	-	-	7
Other Non-Dipterocarps	50 species	94	28	13	4	5	2	0	0	1	1	148
Totals		148	42	20	11	11	6	1	2	1	3	245
Per 10acres/4 Ha.		1480	420	200	110	110	60	10	20	10	30	2450

Appendix 2 - Table 2

Stand Table RP 307A Kalabakan F.R. (Umas Umas) 63 plots of 0.4Ha. in 1036 Ha.

Species	Girth (ft.) / Diam (cm.)	Number of Trees in Size Classes									Total	Tc
		4.5 44	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+		
Dipterocarpoceae												
Shorea (Rubroshorea)												
S.parvifolia		16	11	16	12	9	4	9	6	8	91	
S.leptoclados		6	5	7	7	4	2	2	2	3	38	
S.smithiana		10	4	3	7	2	3	-	1	5	35	
S.leprosula		5	4	4	6	5	-	3	1	1	29	
S.pauciflora		5	2	7	1	7	-	-	-	7	29	
Others: 6 species		5	1	5	3	2	3	4	1	9	33	
(Richetia)												
2 species		-	-	1	1	-	2	2	3	7	16	
(Selangan Batu)												
4 species		7	6	2	3	5	6	-	3	19	51	18
(Anthoshorea)												
S.symingtonii		1	1	-	-	-	-	-	-	-	2	
Dipterocarpus caudiferus		3	8	6	4	1	2	3	6	5	38	
Other Dipterocarpus: 4 species		4	2	1	-	1	1	1	-	2	12	
Parashorea tomentella		9	3	5	10	3	5	1	3	6	45	
Dryobalanops lanceolata		14	5	5	6	4	1	8	4	15	62	
Other Dipterocarpaceae: 8 species		19	6	4	3	2	-	1	-	1	36	
Non-Dipterocarps												
Eusideroxylon zwageri		46	27	27	28	15	11	6	12	7	179	1
Dillenia borneensis		54	18	14	9	3	3	-	-	1	102	
Eugenia species		22	17	6	1	1	1	1	1	-	50	
Castanopsis sp.		25	8	3	2	3	-	-	-	-	41	
Other Non-Dipterocarps		49	23	19	10	6	2	2	2	4	117	
Totals		300	151	135	113	73	46	43	45	100	1006	7
Per 10 acres/4 Ha.		47.6	24.0	21.4	17.9	11.6	7.3	6.8	7.1	15.7	159.7	1

Appendix 2 - Table 3

Stand Table RP 292/1 Sepilok F.R. 10 acres (4 Ha.)

Species	Girth (Ft.) / Diam. (Cm.)	Number of Trees in Size Classes										Total
		4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+	
Dipterocarpaceae												
Shorea (Rubroshorea)												
S.almon		-	-	2	1	1	1	-	-	-	1	6
S.leprosula		-	1	2	3	2	1	1	-	-	-	10
S.leptoclados		11	11	12	11	7	5	3	-	1	2	63
S.parvifolia		2	-	1	-	1	-	-	-	-	-	4
S.waltonii		-	1	1	-	1	-	-	-	-	-	3
(Richetia)												
S.xanthophylla		4	1	1	-	-	-	-	-	-	-	1
(Anthoshorea)												
S.virescens		-	-	-	-	-	-	-	-	-	-	1
Dipterocarpus applanatus		2	1	1	1	-	-	-	-	-	-	5
caudiferus		-	-	2	2	1	1	-	-	1	1	8
D. humeratus		-	-	-	2	2	-	1	1	-	1	7
Parashorea malaanonan		-	1	-	-	1	-	-	-	-	-	2
P.tomentella		6	4	6	5	2	8	1	1	-	1	34
Dryobalanops lanceolata		-	-	1	1	-	1	1	-	2	-	6
Non-Dipterocarps												
Eusideroxylon zwageri		11	2	5	8	4	2	-	-	-	-	32
Anthocephalus chinensis		-	1	-	4	1	-	-	-	-	-	6
Lithocarpus leptogyne		3	1	1	1	-	-	-	-	-	-	6
Sympetalandra borneensis		1	-	-	-	1	-	-	-	-	1	3
Other Non-Dipterocarps		24	10	6	2	-	1	2	-	-	-	45
Totals		64	34	41	41	24	20	9	2	4	8	247

Appendix 2 - Table 4

Stand Table RP 210/2 Garinono F.R. 10 acres (4 Ha.)

Species	Girth (Ft.) / Diam. (Cm.)	Number of Trees in Size Classes								To
		6 / 58	7 / 68	8 / 78	9 / 87	10 / 97	11 / 107	12 / 116	12+ / 126+	6
Dipterocarpaceae										
Shorea (Rubroshorea)										
S.almon		-	-	-	-	1	-	-	-	1
S.leprosula		-	-	1	-	-	-	-	-	1
S.leptoclados		2	2	2	-	-	1	-	-	7
S.parvifolia		1	1	1	-	-	-	1	1	5
S.paniculata		1	-	1	-	-	-	-	-	2
S.smithiana		1	-	-	-	-	-	-	-	1
S.waltonii		1	-	-	-	-	-	-	-	14
(Richetia)										
S.acuminatissima		1	-	1	-	-	-	-	2	4
S.hopeifolia		-	-	-	-	-	-	-	1	1
(Selangan Batu)										
S.atrinervosa		-	-	1	-	1	-	-	-	2
S.hypoleuca		-	1	-	-	-	-	-	-	1
S.superba		-	-	-	1	-	-	-	1	2
Unident.		-	-	1	-	-	-	-	-	1
(Anthoshorea)										
S.symingtonii		1	-	-	-	-	-	-	-	1
Dipterocarpus caudiferus		5	2	4	1	2	-	2	1	17
Parashorea malaanonan		-	-	-	1	1	-	1	2	5
P. tomentella		-	-	2	1	1	1	1	4	10
Dryobalanops lanceolata		1	4	-	1	1	3	1	3	14
Non-Dipterocarps										
Eusideroxylon zwageri		13	15	6	4	-	-	1	-	39
Other Non-Dipterocarps		4	6	1	1	-	2	1	3	18
Totals 10 acres/4 Ha.		31	31	21	10	7	7	8	18	133

Appendix 2 - Table 5

Stand Table RP 242 Segalind-Lokan F.R. 10 acres (4 Ha.)

Species	Girth (Ft.) / Diam. (Cm.)	Number of Trees in Size Classes										Total
		4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+	
Dipterocarpaceae												
Shorea (Rubroshorea)												
S.leprosula		-	1	-	1	-	-	-	-	-	-	2
S.macrophylla		1	-	-	-	-	-	-	-	1	-	2
S.leptoclados		-	1	1	2	-	2	6	2	2	4	20
S.parvifolia		1	2	-	-	1	-	2	-	-	-	6
S.panciflora		1	-	-	-	-	-	-	-	-	-	1
S.walfonii		-	-	1	2	-	1	-	-	1	1	6
(Richetia)												
S.hopeifolia		1	1	-	-	-	-	-	-	-	-	2
(Selangam Batu)												
S.superpa		-	-	2	-	-	-	-	-	-	-	2
(Anthoshorea)												
S.symingtonii		-	-	-	1	1	-	-	-	1	-	3
Dipterocarpus caudiferus		2	2	1	-	3	1	-	-	-	1	10
D.gracilis		1	1	-	-	2	-	-	-	-	-	4
Parashorea malagnonan		-	1	1	1	-	1	1	-	-	1	6
P.tomentella		2	6	7	3	6	2	3	-	1	4	34
Dryobalanops lanceolata		2	4	7	4	4	2	-	3	-	2	28
Other Dipterocarps - 3 species		2	1	1	1	-	-	1	-	-	-	6
Non-Dipterocarps												
Eusideroxylon zwageri		1	1	-	-	-	-	-	-	-	-	2
Barringtonia Scortechinii		-	2	2	-	-	-	-	-	-	-	4
Lophopetalum javanicum		5	-	1	-	-	-	-	-	-	-	6
Pterospermum elongatum		2	2	-	-	-	-	-	-	-	-	4
Other Non-Dipterocarps 36 species		18	9	6	5	2	-	-	2	-	2	44
Totals 10 acres/4Ha		39	34	30	20	19	9	13	7	6	15	192

Appendix 2 - Table 6

Stand Table RP 245/1 Segaliud-Lokan F.R. 10 plots totalling 25 acres (10 Ha.)

Species	Girth (Ft.) / Diam. (Cm)	Number of Trees in Size Classes								Total
		6 58	7 68	8 78	9 87	10 97	11 107	12 116	12 126	6
pterocarpaceae										
horea (Rubroshorea)										
S.almon		-	2	-	2	-	1	-	1	6
S.leprosula		3	2	1	1	1	2	-	-	10
S.leptoclados		2	3	-	2	7	1	3	6	24
S.mecistopteryx		2	1	4	1	1	3	-	-	12
S.parvifolia		5	-	3	2	1	-	1	3	15
Others: 7 species		3	1	2	3	1	2	5	2	19
(Richetia)										
S.acuminatissima		1	2	1	-	-	-	1	1	6
S.gibbosa		-	1	2	-	-	-	-	2	5
(Selangan Batu)										
S.superba		2	-	2	1	-	2	-	1	8
S.hypoleuca		-	-	-	1	-	-	-	-	1
(Anthoshorea)										
S.symingtonii		-	-	1	-	-	-	-	-	1
Dipterocarpus applanatus		1	1	3	-	-	-	-	-	5
D. caudiferus		2	-	-	-	2	-	-	-	4
Dipterocarpus spp: 3 others		4	1	-	-	1	1	-	1	8
Parashorea malaanonan		-	1	1	-	-	-	1	1	4
P.tomentella		5	-	2	2	-	2	1	4	16
Dryobalanops lanceolata		1	2	1	1	-	2	2	1	10
Hopea sangal		1	-	-	-	-	-	-	-	1
n-Dipterocarps										
Eusideroxylon zwageri		8	4	5	6	1	1	1	-	26
Heritiera simplicifolia		3	4	1	1	1	1	-	-	11
Other Non-Dipterocarps		10	10	1	2	-	2	1	1	27
Totals		53	35	30	25	16	20	16	24	219
Per 10 acres/4 Ha.		21	14	12	10	6.4	8	6.4	9.6	88

Appendix 2 - Table 7

Stand Table RP 350 Kuamut F.R. 17 plots of 0.4 ha - 17 acres (6.8 Ha)

Species	Girth (Ft.) / Diam. (Cm.)	Number of Trees in Size Classes												Total
		2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12 + 126+	
Dipterocarpaceae														
Shorea (Rubroshorea)														
S.almon		2	2	2	1	2	1	1	1	-	-	1	1	14
S.leprosula		2	-	2	-	2	1	1	-	2	-	-	-	10
S.leptoclades		5	1	2	2	3	1	1	-	-	-	1	2	18
S.macroptera		4	3	1	-	-	-	-	-	1	-	-	-	9
S.parvifolia		1	1	2	1	1	-	-	2	-	-	1	-	9
S.panciflora		3	6	8	5	-	3	2	4	5	3	3	2	44
Others: 3 species		2	2	-	-	-	1	-	-	-	-	-	-	5
(Richetia)														
S.acuminatissima		4	1	-	2	-	2	2	-	-	-	-	-	11
S.gibbosa		2	2	-	2	-	-	-	-	-	-	-	-	6
(Selangan Batu)														
S.superba		4	2	3	3	3	5	1	-	-	-	-	-	21
Others: 3 species		3	1	1	-	1	-	-	1	-	-	-	-	7
(Anthoshorea)														
S.agami		1	-	1	-	-	-	-	-	-	-	-	-	2
Dipterocarpus candiferus		14	8	13	1	6	3	2	3	1	1	-	1	53
Parashorea malaanonan		1	2	2	-	-	-	1	1	-	-	1	-	8
Parashorea tomentella		3	3	2	2	1	3	6	7	5	3	2	-	37
Dryobalanops lanceolata		14	8	9	6	11	3	3	1	2	2	3	1	63
Hopea nervosa		16	5	2	2	-	1	-	-	-	-	-	-	26
Other Dipterocarps		5	1	-	-	-	1	-	1	-	-	-	-	8
Non-Dipterocarps														
Eusideroxylon zwageri		-	-	-	2	1	-	-	1	-	-	-	-	4
Eugenia species		23	7	5	2	-	-	-	-	-	-	-	-	37
Other Non-Dipterocarps		215	81	42	26	10	5	2	4	2	2	1	1	391
Totals		324	136	97	57	41	30	22	26	18	11	13	8	783
Per 10 acres/4 Ha.		191	80	57	34	24	18	13	15	11	6	8	5	461

Appendix 2 - Table 8

Stand Table RP 304 Karito Estate Tawau 23 Plots of 0.4 Ha - 23 acres (9.2 Ha.)

Species	Girth (Ft.) / Diam. (Cm.)	Number of Trees in Size Classes										Total
		4.5 44	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+	
Dipterocarpaceae												
Shorea (Rubroshorea)												
S.argentifolia		1	1	1	-	-	2	1	1	1	-	8
S.leprosula		-	1	4	-	1	-	3	-	-	1	10
S.macrophylla		1	1	-	2	1	4	2	3	2	7	23
S.mecistopteryx		2	5	4	5	2	1	4	2	2	2	29
S.ovalis		1	6	4	1	2	-	2	1	-	-	17
S.parvifolia		1	3	-	3	2	4	3	4	-	3	23
S.panciflora		1	2	-	-	1	-	-	-	-	6	10
S.smithiana		1	4	1	1	1	-	1	-	-	-	9
Others: 6 species		1	1	11	2	5	3	2	2	2	-	29
(Richetia)												
3 species		1	-	2	3	1	-	1	1	-	3	12
(Selangan Batu)												
4 species		1	3	-	1	1	3	1	-	-	2	12
(Anthoshorea)												
S.symingtonii		-	-	-	1	1	-	-	-	-	1	3
Dipterocarpus spp-3species		2	3	2	3	-	1	3	-	3	1	18
Parashorea tomentella		2	2	2	-	1	-	-	-	3	1	11
Other Dipterocarps		-	3	-	1	-	-	-	-	2	-	6
Non-Dipterocarps												
Ensideroxylon zwageri		16	23	28	15	12	17	5	3	5	-	124
Eugenia species		2	2	4	2	1	1	-	-	-	-	12
Koompassia malaccensis		1	1	1	-	1	1	-	-	1	1	7
Other Non-Dipterocarps		15	34	19	11	8	1	4	6	1	5	104
Totals		49	95	83	51	41	38	32	23	22	33	467
Per 10 acres/4 Ha.		21	41	37	22	18	17	14	10	9.5	14.5	203

Appendix 2 - Table 9

Stand Table RP 307B Kalabakan F.R. (Umas Umas) 16 Plots of 0.4 Ha. in 259 Ha.

Species	Girth (Ft.) / Diam. (Cm.)	Number of Trees in Size Classes										Total
		4.5 44	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+	
Dipterocarpaceae												
Shorea (Rubroshorea)												
S.leprosula		-	2	1	-	-	-	-	-	-	-	3
S.leptoclados		-	-	1	-	3	1	1	-	1	1	8
S.macroptera		1	1	-	-	-	1	-	-	-	-	3
S.parvifolia		2	3	5	2	7	4	3	2	1	1	30
S.panciflora		-	1	-	-	-	2	-	-	-	1	4
S.oleosa		-	1	1	-	-	-	-	-	-	-	2
S.smithiana		3	-	3	2	1	2	1	-	-	1	13
(Richetia)												
S.gibbosa		1	-	-	-	-	-	2	1	-	2	6
(Selangan Batu)												
S.laevis		2	3	-	-	2	1	1	1	1	4	15
Dipterocarpus caudiferus		2	1	-	-	-	-	-	1	-	-	4
Dipterocarpus confertus		-	-	-	-	-	1	-	-	-	-	1
Parashorea tomentella		3	2	2	1	2	2	2	1	-	-	15
Dryobalanops lanceolata		2	1	5	2	1	3	-	-	1	1	16
Other Dipterocarps-2species		4	3	2	-	-	-	-	-	-	-	9
Non-Dipterocarps												
Eusideroxylon zwageri		-	7	8	3	2	-	-	-	-	-	20
Dillenia borneensis		6	4	4	-	-	-	-	-	-	-	14
Engenia species		3	4	1	3	-	-	-	-	-	-	11
Other Non-Dipterocarps		11	14	8	3	1	3	-	-	-	1	41
Totals		40	47	41	16	19	20	10	6	4	12	215
Per 10 acres/4 Ha.		25	29	26	10	12	12	6	4	2.5	7.5	134

Appendix 2 - Table 10

Stand Table RP 271A Kalabakan F.R. (Umas Umas) 10 acres (4 Ha.)

Species	Girth (Ft.) / Diam (Cm.)	Number of Trees in Size Classes									Total	Total 6'+
		4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12+ 116+		
Dipterocarpaceae												
Shorea (Rubroshorea)												
S.argentifolia		1	1	1	2	1	-	1	-	2	9	7
S.leprosula		1	-	-	-	-	-	-	-	-	1	-
S.leptoclados		-	1	-	1	-	-	-	-	-	2	1
S.parvifolia		-	2	-	1	-	1	1	-	4	9	7
S.panciflora		1	-	-	-	-	-	-	-	-	1	-
(Richetia)												
S.faguetiana		1	2	-	-	-	1	-	-	2	6	3
S.multiflora		-	-	1	-	1	-	1	-	-	3	3
(Selangan Batu)		1	1	-	-	2	-	-	-	-	4	2
S.seminis												
(Anthoshorea)												
Shorea sp.indet		1	-	-	-	-	-	-	-	-	1	-
Parashorea tomentella		1	3	4	1	-	-	-	-	-	9	5
Dryobalanops lanceolata		3	2	1	-	2	1	2	1	2	14	9
Non Dipterocarps												
Eusideroxylon zwageri		17	18	17	12	8	3	-	1	6	82	47
Hydnocarpus sp.		3	2	4	-	-	-	-	-	-	9	4
Parinari sp.		-	4	1	1	1	-	-	-	-	7	3
Eugenia species (4)		3	2	-	2	-	-	-	-	-	7	2
Castanopsis elmeri		1	-	1	1	-	-	-	-	-	3	2
Parishia sp		1	-	-	1	-	1	-	-	-	3	2
Koompassia excelsa		-	-	-	-	-	-	1	-	1	2	2
Artocarpus borneensis		-	1	-	-	-	1	-	-	-	2	1
Other Non-Dipterocarps (41 species)		22	17	15	3	5	1	1	-	1	65	26
Totals		57	56	45	25	20	9	7	2	18	239	126

Appendix 2 - Table 11

Stand Table RP 303 Kalabakan F.R. (Brantian) 16 plots of 0.4 Ha. 16 acres (6.4Ha)

Species	Girth (Ft.) / Diam. (Cm.)	Number of Trees in Size Classes										Total	Total 6'+
		4.5 / 44	5 / 48	6 / 58	7 / 68	8 / 78	9 / 87	10 / 97	11 / 107	12 / 116	12 + / 126 +		
Dipterocarpaceae													
Shorea (Rubroshorea)													
S.leprosula		1	2	-	2	-	-	-	-	-	2	7	4
S.mecistopteryx		2	6	4	3	6	5	2	4	3	2	37	29
S.oleosa		2	3	2	3	4	1	1	2	2	2	22	17
S.ovalis		1	2	-	-	-	-	1	1	-	1	6	3
S.parvifolia		1	-	3	5	3	1	1	-	1	1	16	15
S.pauciflora		-	1	-	1	1	1	-	2	1	1	8	7
S.smithiana		1	-	-	-	2	-	-	-	-	3	6	5
Others: 3 species		-	1	-	1	-	-	-	1	-	-	3	2
(Richetia)													
S.gibbosa		-	1	1	-	-	-	-	1	1	4	8	7
Others: 2 species		3	-	-	2	-	1	-	-	-	1	7	4
(Selangan Batu)													
S.laevis		-	-	-	-	-	-	-	-	1	1	2	2
Others: 4 species		1	-	1	3	1	-	-	-	-	-	6	5
(Anthoshorea)													
S.agami		-	-	1	-	-	-	-	-	-	-	1	1
Dipterocarpus candiferus		-	1	1	-	-	1	1	-	1	2	7	6
D.exalatus		-	-	1	-	1	-	-	-	-	-	2	2
D.confertus		-	-	-	-	1	-	-	-	-	1	2	2
D.verrucosus		1	1	-	2	1	2	-	1	-	1	9	7
Parashorea malaanonan		-	1	-	-	-	-	-	-	-	-	1	-
P.smythiesii		-	-	2	-	-	-	-	-	-	-	2	2
P.tomentella		-	1	-	2	1	1	-	-	2	-	7	6
Dryobalanops keithii		-	-	-	1	1	-	-	1	-	-	3	3
Dr.Lanceolata		2	-	-	3	1	1	1	1	-	1	10	8
Other Dipterocarps		1	-	1	1	-	-	-	-	-	-	3	2
Non-Dipterocarps													
Eusideroxylon zwageri		4	3	5	2	2	1	1	1	-	-	19	12
Other Non-Dipterocarps		22	28	17	13	6	5	3		3	1	98	48
Totals		42	51	39	44	31	20	11	15	15	24	292	199
Per 10 acres/4Ha.		26	32	24	28	19	13	7	9	9	15	182	124

Appendix 2 - Table 12

Stand Table RP 271F Kalabakan F.R. (Luasong) 10 acres (4 Ha.)

Species	Girth (Ft.) Diam. (Cm.)	Number of Trees in Size Classes										Total	Total 6'+
		4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	12+ 126+		
Dipterocarpaceae													
Shorea (Rubroshorea)													
S.leptoclados		2	-	1	-	-	-	2	-	-	1	6	4
S.oleosa		5	3	-	-	2	-	1	-	-	2	13	5
S.parvifolia		2	-	-	-	1	-	-	-	-	-	3	1
S.paniculata		1	1	-	1	1	-	-	1	1	2	8	6
S.smithiana		1	-	1	-	1	1	-	-	-	-	4	3
Others: 2 species		2	1	-	-	-	-	-	-	-	-	3	-
(Richetia)													
2 species		-	-	2	-	-	-	-	-	-	1	3	3
(Selangan Batu)													
S.seminis		3	1	-	-	1	-	3	-	-	-	8	4
S.superba		-	-	1	3	-	-	-	-	-	-	4	4
Others: 2 species		1	1	-	-	-	-	-	-	-	-	2	-
Dipterocarpus caudiferus		1	3	3	3	1	-	-	-	-	-	11	7
Parashorea malaanonan		1	-	-	2	-	-	1	-	-	-	4	3
Dryobalanobalanops keithii		11	6	10	4	7	3	4	2	1	1	49	32
Dr.lanceolata		3	3	3	2	1	-	1	-	-	-	13	7
Hopea nervosa		5	7	-	1	-	-	-	-	-	-	13	1
Other Dipterocarps		1	2	-	2	-	1	-	-	-	1	7	4
Non-Dipterocarps													
Eusideroxylon zwageri		4	5	5	10	12	6	2	-	-	1	45	36
Eugenia palawanensis		7	3	-	-	-	-	-	-	-	-	10	-
E.valdevenosa		-	-	3	-	-	-	-	-	-	-	3	3
Intsia palembanica		1	1	-	2	-	-	1	-	-	-	5	3
Dialium indum		1	-	-	-	-	-	1	-	-	-	2	1
Durio graveolens		1	-	1	-	-	-	-	1	-	-	3	2
Other Non-Dipterocarps (47 species)		28	16	6	12	5	1	2	-	-	-	70	26
Totals		81	53	36	42	32	12	18	4	2	9	289	155

Appendix 2 - Table 13

Stand Table RP 339 Tawau Hills F.R. 10 plots of 1 acre (4 Ha.)

Species	Girth (Ft.) / Diam (Cm.)	Number of Trees in Size Classes (Commercials only) 4.5 / 44	5 / 48	6 / 58	7 / 68	8 / 78	9 / 87	10 / 97	11 / 107	12 / 116	12+ / 126+	Total	Total 6'+
Dipterocarpaceaes .													
Shorea (Rubroshorea)													
S.leptoclados		-	5	1	2	2	2	3	3	-	2	20	15
S.smithiana		-	1	-	-	-	-	1	-	1	2	5	4
Other 6 species		3	3	-	2	-	1	2	-	-	-	11	5
(Richetia)													
2 species		-	-	1	1	1	-	2	-	-	-	5	5
(Selangan Batu)													
2 species		-	2	-	-	1	-	2	1	-	-	6	4
Dipterocarpus caudiferus		-	1	1	1	-	-	-	-	-	-	3	2
Dipterocarpus spp 2 species		-	1	3	-	-	-	-	-	-	-	4	3
Parashorea malaanonan		2	9	-	6	5	7	6	2	4	5	46	35
Dryobalanops lanceolata		-	-	-	1	-	2	1	1	1	2	8	8
Other Dipterocarps - Hopea sp.		-	-	1	-	-	-	-	-	-	-	1	1
Non-Dipterocarps													
Eusideroxylon zwageri		-	1	1	-	1	-	-	-	-	-	3	2
Other Non-Dipterocarps		-	1	2	1	-	1	-	-	-	-	5	4
Totals		5	24	10	14	10	13	17	7	6	11	117	88

Appendix 2 - Table 14

Stand Table RP 15 Gunong Lumaku F.R. 4 acres (1.6 Ha.)

Species	Girth (Ft.) Diam. (Cm.)	Number of Trees in Size Classes												Total	Total
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12+ 116		6'
Dipterocarpaceae.															
Shorea (Rubroshorea)															
S.argentifolia		1	-	-	-	-	-	-	1	-	-	-	-	2	1
S.leprosula		-	1	1	-	1	1	1	1	-	-	-	-	6	3
S.leptoclados		1	6	5	3	4	-	1	-	1	1	-	-	22	3
S.oleosa		10	5	1	-	-	-	-	1	-	-	-	-	17	1
S.ovata		-	-	1	-	-	-	-	-	-	-	-	-	1	-
S.parvifolia		3	3	3	1	1	-	-	-	-	-	-	-	11	-
S.paniciflora		19	5	-	-	-	-	-	-	-	-	-	-	25	1
S.smithiana		-	-	-	-	-	1	-	-	-	-	-	-	1	1
(Richetia)															
2 species		17	5	-	-	-	1	2	-	-	-	-	1	26	4
(Selangan Batu)		23	1	2	-	-	-	1	-	-	-	-	1	28	2
species		1	-	-	-	-	-	-	-	1	-	-	-	2	1
(Anthoshorea)		56	21	2	1	-	1	1	1	-	1	1	-	85	5
Dipterocarpus candiferus		26	12	21	16	8	9	5	-	3	-	-	1	101	18
Parashorea malaanonan		66	20	15	5	6	-	2	1	4	2	2	-	123	11
Dryobalanops lanceolata		-	1	-	1	-	1	-	-	-	-	-	-	3	1
Hopea nervosa															
Non-Dipterocarps															
Dillenia borneensis		4	2	2	1	1	-	-	-	-	-	-	-	10	-
Palaquium beccarianum		8	-	-	-	1	1	-	-	-	-	-	-	10	1
Other Non-Dipterocarps		243	64	14	-	1	4	-	-	-	1	-	-	327	5
Totals		478	146	67	28	23	19	13	5	9	5	3	4	800	58
Per 10 acres/4Ha.		1195	365	168	70	57	47	33	12.5	22.5	12.5	7.5	10	2000	145

Appendix 2 - Table 15

Stand Table RP 292/2 Sepilok F.R. 10 acres (4 Ha.)

Species	Girth (Ft.) / Diam (Cm.)	Number of Trees in Size Classes 4 (39)	5 (48)	6 (58)	7 (68)	8 (78)	9 (87)	Total	Total 6"+
Dipterocarpaceae									
Shorea (Rubroshorea)									
S.argentifolia		1	-	-	-	-	-	1	-
S.macroptera		9	3	3	-	1	-	16	4
(Richetia)									
S.multiflora		5	6	2	1	1	-	15	4
(Selangan Batu)									
S.glauceseens		-	-	1	-	-	-	1	1
(Anthoshorea)									
S.agami		1	-	-	-	-	-	1	-
Dipterocarpus acutangulus		1	3	1	1	-	1	7	3
D.grandiflorus		3	-	1	1	-	-	5	2
Other Dipterocarps - 3 species		1	2	-	-	-	-	3	-
Non-Dipterocarps									
Lithocarpus conocarpus		23	15	4	-	-	-	42	4
Lithocarpus species - 2 species		3	2	-	-	-	-	5	-
Castanopsis motleyana		2	2	-	1	-	-	5	1
Eugenia species - 6 species		12	3	-	2	-	-	17	2
Baccaurea parviflora		14	11	2	-	-	-	27	2
Parishia sericea		5	1	1	1	-	-	8	2
Dialium sp.cf. indum		1	2	2	1	2	-	8	5
Scaphium affine		1	1	-	1	-	-	3	1
Heritiera simplicifolia		1	1	-	1	-	-	3	1
Ganua sarawakensis		1	1	-	-	-	1	3	1
Other Non-Dipterocarps - 25 species		42	22	3	-	-	-	67	3
Totals		126	75	20	10	4	2	237	36

Appendix 2 - Table 16

Stand Table RP 292/3 Sepilok F.R. - 10 acres (4 Ha.)

	Number of Trees in Size Classes										Total	Total
Girth (ft)	4	5	6	7	8	9	10	11	12	12+		6'+:
Diam (cm)	39	48	58	68	78	87	97	107	116	126++		
Dipterocarpaceae												
Shorea (Rubroshorea)												
S.argentifolia	3	2	1	-	-	-	-	-	-	-	6	1
S.macroptera	5	2	-	-	-	-	-	-	-	-	7	-
S.pauciflora	-	-	-	1	-	-	1	-	-	-	2	2
S.smithiana (Richetia)	5	1	1	1	1	-	-	-	-	-	9	3
S.multiflora (Selangan Batu)	19	6	4	3	1	-	-	-	-	-	33	8
S.glaucescens	-	1	-	-	-	1	1	-	-	-	3	2
Diptero.acutangulus	3	5	2	3	3	3	2	3	-	1	25	17
D.confertus	-	-	1	-	-	-	-	-	-	-	1	1
D.grandiflorus	3	1	4	-	1	1	1	-	-	-	11	7
Diptero.sp indet	-	-	-	-	1	-	-	-	-	-	1	1
Non-Dipterocarps												
Lithocarpus conocarpus	18	13	5	1	-	-	-	-	-	-	37	6
L.meijeri	2	1	-	-	-	-	-	-	-	-	3	-
Castanopsis motleyana	1	1	-	-	-	-	-	-	-	-	2	-
Eugenia sp (3species)	10	3	-	1	-	-	-	-	-	-	14	1
Parishia sericea	3	1	4	-	-	-	-	-	-	-	8	4
Dialium sp.c.f.indum	1	-	1	1	1	1	-	-	-	-	5	4
Scaphium affine	-	1	-	-	-	1	-	-	-	-	2	1
Melanorrhoea sp.indet	4	4	2	-	-	1	-	-	-	-	11	3
Palaquium gutta	1	2	-	-	1	-	-	-	-	-	4	1
Other Non-Dipt.34 species	68	15	6	2	2	1	-	1	-	-	95	12
Totals	146	59	31	13	11	9	5	4	-	1	279	74

Appendix 3 - Table 1

Stand Table RP.311 Madai Forest Reserve Area 5 acres (2 ha.)

(Two plots combined, each of 2.5 acres)

Species	Girth (ft) / Diam. (cm)	Number of Trees in Size Classes												Totals	Totals 6'+
		1	2	3	4	5	6	7	8	9	10	11	12+		
		10	20	30	39	48	58	68	78	87	97	107	116		
Dipterocarpaceae															
Parashorea malaanonan		14	4	3	2	1	4	4	2	7	-	1	3	45	21
Shorea leprosula (Ru)		1	.1	1	1	1	-	2	2	-	-	-	-	9	4
S.leptoclados (Ru)		4	2	-	-	1	-	-	-	1	-	-	-	8	1
S.parvifolia (Ru)		2	2	3	2	3	1	-	3	-	-	-	-	16	4
S.pauciflora (Ru)		-	3	-	-	-	-	2	-	2	3	-	1	11	8
Dryobalanops lanceolata		28	7	3	1	2	1							42	1
Shorea leptoderma (SB)		-	-	-	-	1								1	-
S.guiso (SB)		-	-	-	-	-	-	-	-	-	-	-	3	3	3
S.superba (SB)											1	-	2	3	3
Hopea beccariana		-	-	1										1	-
H.nervosa		1												1	-
H.sangal		2	1	-	-	-	-	1						4	1
Shorea symingtonii (An)		1	-	1	-	-	1							3	1
Non-Dipterocarpaceae															
Alangium javanicum		11	5											16	-
Anonaceae (spp)		57	7											64	-
Aporusa elmeri		1	3	-	1									5	-
Ardisea colorata		2	1											3	-
Baccaurea lanceolata		10												10	-
Barringtonia sp.indet		1	1											2	-
Burseraceae (spp)		15	13	3	3									34	-
Calophyllum sp.indet.		3	7	-	1									11	-
Castanopsis sp.indet.		1	1	1										3	-
Cratoxylon sp.indet.		1	-	1										2	-
Diospyros spp.		10	2	1	-	2	-	1						16	1
Dillenia spp.		43	4											47	-
Eugenia spp		61	12	6	-	2								81	-

Appendix 3 - Table 1 (continued.....)

Species	Girth (ft.) / Diam (cm.)	Number of Trees in Size Classes 1	2	3	4	5	6	7	8	9	10	11	12	Totals	Totals 6'
		10	20	30	39	48	58	68	78	87	97	107	116		
Homalium foetidum		12	6	1	2	-	1	1						23	2
Hydnocarpus spp		-	1	2										3	-
Koilodepas longifolium		7	1											8	-
Lithocarpus spp		3	2	4	3	1	-	-	-	1				14	1
Laportea sp.indet.		9	1											10	-
Lauraceae (spp)		43	24	13	8	1	1	-	-	-	-	-	1	91	2
Meliaceae (spp)		38	11	2	3	1	-	1						56	1
Mastixia trichotoma		5	3	1										9	-
Microcos crassifolia		3												3	-
Nephelium mutabile		10	5	4	4	-	-	1						24	1
Meiogyne virgata		1	1	1	-	1								4	-
Paranephelium nitidum		3	-	1										4	-
Parinari oblongifolia		-	1	1	-	-	-	-	-	-	1			3	1
Planchonia valida		-	-	-	-	1								2	1
Ptychopyxis arborea		13	4	1										18	-
Sapotaceae (spp)		2	1	-										3	-
Sindora irpicina		1	1	1	-	1								4	-
Others (see below)		21	7	3	-	-	-	-	-	-	-	-	-	31	-
Totals, all species		440	145	60	31	18	10	13	7	11	5	1	10	751	57
Per 10 acres/4 ha.		880	290	120	62	36	20	26	14	22	10	2	20	1502	114

Others

Aglaia sp.indet 2' x 1'
Ardisea sp.indet 1x1', 1x2'
Euphoria malaiense 2x2', 1x3'
Glochidion sp.indet. 3x1'
Heritiera sp.indet. 1x1'
Kopsia sp.indet. 1x1'
Leea aculeata 1x1'
Lophopetalum sp.indet. 2x1' 1x2'
Mallotus miquelianus 2x1'
Mallotus sp.indet. 1' x 1'
Mangifera pajang 1x1'
Neonauclea sp.indet. 2x1', 1x2'
Myristicaceae indet. 1x1', 1x2'
Pometia pinnata 1x2'
Pternandra coerulescens 2x1'
Pterospermum sp.indet. 2x3'
Talauma sp.indet. 1x1'

(Note: 1' = one foot class; 2x1' = two trees of one foot)

Appendix 3 - Table 2

Stand Table RP.18 Sepilok Forest Reserve Area 2.5 acres (1.ha.)

Species	Girth (ft.) / Diam. (cm.)	Number of Trees in size classes 1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12+ 116	Totals	Totals 6'
Dipterocarpaceae															
Parashorea tomentella		5	4	3	3	2	-	3	-	-	-	-	-	20	3
Shorea almon (Ru)		1	1	-	-	-	-	-	-	-	-	-	-	2	-
S.leprosula (Ru)		-	-	-	-	-	1	-	1	-	-	-	-	2	2
S.leptoclados (Ru)		1	4	1	5	5	7	7	5	2	-	-	1	38	22
S.parvifolia (Ru)		-	-	2	1	-	1	1	2	-	-	-	-	7	4
S.waltonii (Ru)		-	-	-	-	-	1	1	-	-	-	-	-	2	2
Dipterocarpus applanatus		5	-	1	-	1	-	-	-	1	1	-	-	9	2
D.caudiferus		1	1	-	1	1	-	-	-	1	-	1	-	6	2
D.exalatus		4	-	-	1	-	1	-	-	-	-	-	-	6	1
Shorea seminis (SB)		2												2	-
Hopea nervosa		-	1	2	-	-	-							3	-
Shorea symingtonii (An)		-	-	-	-	1								1	-
Dryobalanops lanceolata		5										1	-	6	1
Shorea xanthophylla (Ri)		18	2	2	-	-								22	-
Non-Dipterocarpaceae (in order of families)															
Gluta renghas		8	-	1										9	-
Koordersiodendron pinnatum		1	-	2										3	-
Dracontomelon puberulum		1	-	1	1									3	-
Meiogyne virgata		3	2	-	-									5	-
Anonaceae misc. (4)		5	2	-	-									7	-
Alangium ebenaceum		10	1	-	2									13	-
Burseraceae (5)		7	1	-	1									9	-
Diospyros spp (6)		8	2	1	1									12	-
Baccaurea spp (3)		8	6	1	1									16	-
Euphorbiaceae misc. (9)		12	-	1	1									14	-
Fagaceae (3)		1	1	1	-	-	-	-	-	-	-	-	-	3	-
Hydnocarpus borneensis		9	-	1										10	-
H.elmeri		3												3	-
H.subfalcata		5												5	-
H.woodii		14	6	2	3	3	-	1						29	1

Appendix 3 - Table 2 (continued....)

Species	Girth (ft.) / Diam. (cm.)	Number of trees in Size Classes 1 (10)	2 (20)	3 (30)	4 (39)	5 (48)	6 (58)	7 (68)	8 (78)	9 (87)	10 (97)	11 (107)	12 (116)	Totals	Totals 6'
Hydnocarpus sp.indet.		1												1	-
Ryparosa hulletii		3												3	-
Eusideroxylon zwageri		5	-	-	2	-	1	2	1	-	-	-	1	12	5
Lauraceae misc. (10)		13	9	1	1									24	-
Sindora wallichii		2												2	-
Sympetalandra borneensis		2	2											4	-
Meliaceae (9)		16	2	3										21	-
Myristicaceae (3)		7	-	2										9	-
Eugenia spp (4)		14	-	-										14	-
Anthocephalus chinensis		-	-	-	-	2	1							3	1
Sapindaceae (5)		5	3	3										11	-
Sapotaceae (3)		3												3	-
Sterculiaceae (2)		-	2											2	-
Gonystylus keithii		6	1											7	-
Microcos hirsuta		1	1											2	-
Pentace laxiflora		6	5	2	1									14	-
Teijsmanniodendron pteropodum		3	6	-	-									9	-
Others (see below)		15	8	2	1	-	1							27	1
Totals, all species		239	73	35	26	15	14	15	9	4	1	2	2	435	47
Per 10 acres/4 ha.		956	292	140	104	60	56	60	36	16	4	8	8	1740	188

Others:

Ardisia colorata 2x1'
Artocarpus sp.indet. 2x2'
Barringtonia curanii 1x1', 1x3'
B.lanceolata 2x1', 1x2'
Buchanania sessilifolia 1x1'
Cratoxylon sp.indet. 1x4'
Elaeocarpus stipularis 1x6'
Evodia punctata 1x2'
Leguminosae indet. 1x1'
Linociera pluriflora 1x1', 1x2'
Lophopetalum javanicum 1x1', 1x3'
Meliosma sumatrana 1x1'
Mesua macrantha 1x1'
Nauclea subdita 1x1'
Neesia altissima 1x1', 2x2'
Pleiocarpidia sandakanenica 1x1', 1x2'
Tiliaceae indet. 1x1'

Appendix 3 - Table 3

Stand Table RP.353, Kalabakan Forest Reserve (Luasong) Area 10 acres (4.ha.)

Species	Girth (ft.) / Diam. (cm.)	Number of trees in Size Classes 1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	Totals	Totals 6'
Dipterocarpaceae															
Dryobalanops keithii		131	53	44	31	14	20	15	13	5	3	-	2	331	58
Dr.lanceolata		10	2	2	1	2	-	-	1					18	1
Parashorea malaanonan		15	8	3	5	3	2	4	6	6	-	1	4	54	20
P.smythiesii		17	7	3	3	-	1	3	1	3	-	-	4	39	9
P.tomentella		6	1	1					1					9	1
Shorea leprosula (Ru)		-	1										1	2	1
S.leptoclados (Ru)		2	2	2	2	2	-	-	1	1	1			13	3
S.oleosa (Ru)		22	10	6	1	-	3							42	3
S.ovalis (Ru)		-	2											2	-
S.parvifolia (Ru)		2	2	4	-	1								9	-
S.pauciflora (Ru)		2	3	1	1	-	-	-	-	1				8	1
S.smithiana (Ru)		1	1	-	-	1	-	1						4	1
Cotylebomium malayanum		5	2											7	-
Vatica spp (3)		5	3	-	1									9	-
Shorea guiso (SB)		1	1											2	-
S.leptoderma (SB)		2	-	-	1									3	-
S.seminis (SB)		-	1											1	-
Shorea sp. indet. (SB)		4	3											7	-
Dipterocarpus acutangulus			2	-	1									3	-
D.caudiferus		22	6	4	6	2	3	-	-	1	-	-	1	45	5
D.exalatus		1			1								1	3	1
D.verrucosus		5	2	1	3	2					2			15	2
Hopea nervosa		2	3	-	1	1								7	-
H.sangal		1	1											2	-
Shorea sp.indet. (Ri)		6	6	3	2	1	2	1	1	3				25	7
S.acuminatissima (Ri)		1												1	-
S.gibbosa (Ri)		3	1	1										5	-
S.multiflora (Ri)			1											1	-
S.agami (An)		1	1	1	1	1	1							6	1

Appendix 3 - Table 3 (continued.....)

Species	Girth (ft.) / Diam. (cm)	Number of trees in Size Classes 1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116	Totals	Totals 6'
Non-Dipterocarpaceae															
Anthocephalus chinensis		1												1	-
Aporusa sp.indet.		2												2	-
Aporusa grandistipulata		1	-	1										2	-
Artocarpus sp.indet.		1	-	-	1	2								4	-
Artocarpus anisophylleus		-	-	1										1	-
Baccaurea stipulata		46	1	1										48	-
B.lanceolata		3	-	-	1									4	-
B.puberula		5	2	1										8	-
Brownlowia peltata		5	-	1										6	-
Chaetocarpus castanocarpus		-	-	1	-	-	-	1						2	1
Cleistanthus sp.indet.		1												1	-
Cynometra elmeri		7	2	-	-									9	-
Dialium indum		-	-	-	1									1	-
Dillenia sp.indet.		5	2											7	-
Diospyros spp.		14	5	2	3									24	-
Eugenia spp.		46	19	8	1	1								75	-
Euphoria malaiensis		3												3	-
Eurycoma longifolia		4	7	-	5	1	3							20	3
Eusideroxylon zwageri		1	1	-	1	-	-	1	-	-	-	-	1	5	2
Fagaceae		16	6	5	1									28	-
Mallotus penangensis		25	3	1	1									30	-
Lauraceae		82	26	9	8	-	2							127	2
Ochanostachys amentacea		6	4	3	1	2								16	-
Indeterminate (1.5.1971)		37	7	1	2	2	-	1						50	1
Others (see below)		98	20	11	2	5	1	1	3	-	-	-	-	141	5
Totals		686	230	122	89	43	38	28	27	20	6	1	8	1298	128

/ Others

Appendix 3 - Table 3 (continued.....)

Others:

Anacardiaceae 5x1', 1x2'
Anonaceae 32x1', 7x2', 1x3'
Burseraceae 8x1' 2x3'
Duabanga moluccana 1x4'
Ficus sp.indet 2x1'
Fordia sp.indet 1x2'
Garcinia sp.indet 4x1'
Gironniera nervosa 5x1', 2x3', 1x6'
Heritiera simplicifolia 1x3'
Intsia palembanica 1x5', 2x8'
Irvingia malayana 1x8'
Mallotus sp.indet. 8x1', 1x3'
Meiogyne virgata 1x5'
Meliaceae 8x1', 3x2', 2x5'
Myristicaceae 15x1', 2x3'
Neonauclea sp. 1x1'
Parishia sp. 3x1' 1x2'
Sapotaceae 9x1', 3x2', 1x4'
Saraca sp.indet. 1x7'
Scaphium longipetiolatum 1x2', 1x5'
Sindora sp. 4x1, 1x2, 2x3'
Sympetalandra borneensis 2x1', 1x3'

Appendix 3 - Table 4

Stand Table RP.268 Mandalom Forest Reserve Area 6 acres (2.4 ha.)
(Seven plots combined)

Species	Girth (ft.) / Diam. (cm.)	Number of trees in Size Classes 1 (10)	2 (20)	3 (30)	4 (39)	5 (48)	6 (58)	7 (68)	8 (78)	9 (87)	10 (97)	11 (107)	12 (116)	Totals	Totals 6'
Dipterocarpaceae															
Parashorea malaanonan		17	6	4	-	-	-	-	1					28	1
Shorea macroptera (Ru)		-							1					1	1
S.parvifolia (Ru)		1	-	-	-	-	-	1	1	-	-	1	-	4	3
S.pauciflora (Ru)		3	-	1	-	-	1	-	-	-	-	1	1	7	3
S.ovalis (Ru)		1			3									4	-
S.smithiana (Ru)		-	2	2	2	2	-	-	-	1	1	-	-	10	2
Dryobalanops lanceolata		1												1	-
Shorea exelliptica (SB)		-	-	1	1	-	1	-	-	-	-	-	1	4	2
S.laevis (SB)		2	-	-	3	2	-	1	-	5	1	1	3	18	11
Dipterocarpus warbugii						2								2	-
Shorea acuminatissima (Ri)		1	-	-	1	1	-	-	2	1	-	-	1	7	4
S.faguetiana (Ri)		1				1								2	-
S.patoiensis (Ri)		1	1	1		1								4	-
Hopea nervosa		1				1								2	-
Vatica sp.indet.					1									1	
Anisoptera laevis													1	1	1
Non-Dipterocarpaceae															
Adenanthera sp.indet		4	-	-	1									5	-
Alangium javanicum			2	1	1									4	
Alphitonia incana		9	4	1	-	1								15	
Anacardiaceae		1	1	-	1	-	-	1	1					5	-2
Anonaceae		10	14	4	1	1								30	
Antiaris toxicaria			1	1	1									3	
Burseraceae		5	1	2	3	1	1	2						15	3
Dillenia borneensis		3	1		1									5	
Diospyros spp		9	6	1										16	
Dyera costulata		-	-	-	-	-	-	-	-	1	-	-	1	2	2
Ervatamia macrocarpa		31	20	15	6	5	2	2						81	4
Eugenia spp.		9	3	-	-	3	1	1						17	2

Appendix 3 - Table 4 (Continued.....)

Species	Girth (ft.) / Diam (cm.)	Number of trees in Size Classes 1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12 116+	Totals	Totals 6'
Fagaceae		9	15	6	7	1	1	-	-	-	1	1		41	3
Glochidion sp.indet.		2	1	3										6	
Heritiera sp.indet.		2	-	-	-	1	1							4	1
Lauraceae		12	4	3	-	2	-	-	-	1				22	1
Mallotus penangensis		1	2	1										4	-
Meliaceae		13	5	1	1									20	-
Myristicaceae		5	5	3	-	-	1							14	1
Pentace spp.		40	43	4	6	1								94	
Sapotaceae		3	3	-	-	1	1							8	1
Talauma sp.indet.		1	-	2	1									4	
Tristania sp.indet.		7	5											12	
Vitex sp.		2	5	1										8	
Indeterminate (1.5.71)		7	2	4	1	-	1	1						16	2
Others (see below)		33	21	8	7	1	3	-	1	1				75	5
Totals, all species		247	173	70	49	28	14	9	7	10	3	4	8	622	55
Per 10 acres/4 ha.		411	289	117	82	47	23	15	11	17	5	7	13	1037	91

Others:

Albizia sp.indet. 1x1', 1x3'
Ardisia colorata 2x1'
Artocarpus spp 2x1', 2x4'
Barringtonia spp 1x1', 1x2', 1x8'
Canarium odontophyllum 2x1'
Cynometra elmeri 1x1', 1x2'
Euphoria sp.indet. 2x1', 1x2', 1x4'
Evodia sp.indet.1x1', 1x2'
Fordia sp.indet. 3x1'
Garcinia sp.indet. 1x1', 1x2'
Geunsia pentandra 1x3',1x5'
Koompassia malaccensis 1x4',1x6'
Kopsia sp.indet. 2x1',2x2'
Lophopetalum sp.indet. 1x2',1x4'
Memecylon spp. 5x2'
Nephelium sp.indet. 2x1',1x2'
Parinari sp.indet. 2x3, 2x4'
Pternandra sp.indet. 2x1'
Scaphium longipetiolatum 1x1,2x2,1x3 '
Xanthophyllum sp.indet.2x1' 1x2'

One tree only
Baccaurea sp.
Callophyllum sp
Dehaasia incrassata
Duabanga moluccana
Koilodepas longifolium
Neesia sp.
Paranephelium nitidum
Pterocymbium sp.

Two foot class
Aquilaria malaccensis
Cratoxylon sp.
Croton oblongifolia
Dialium sp.

Three feet class
Durio sp.
Laportea sp.
Macaranga sp.

Six feet class
Artocarpus anisophylleus
Sindora sp.

Nine feet class
Koompassia excelsa

Appendix 3 - Table 5

Stand Table RP.17 Sepilok Forest Reserve Area 4.5 acres (1.8 ha.)

Species	Number of trees in Size Classes												Totals	Totals 6'+
Girth (ft.)	1	2	3	4	5	6	7	8	9	10	11	12		
Diam. (cm.)	10	20	30	39	48	58	68	78	87	97	107	116		
Dipterocarpaceae														
Dipterocarpus acutangulus	16	9	8	2	3	1	3	5	5	5	1	2	60	22
D.confertus	3	-	1							2	1	-	7	3
D.grandiflorus	12	4	3	1	-	2	-	-	1	-	-	-	23	3
Hopea beccariana	13	16	6	3									38	-
H.semicuneata	-	-	1	-	1	1							3	1
Parashorea malaanonan	-											1	1	1
P.tomentella	-	-	-	-	-	-	-	1	-	-	-	-	1	1
Shorea argentifolia (Ru)	-	-	1	-	2	1	2	2	-	-	-	-		
S.beccariana (Ru)	3	10	6	3	-	-	-	1	-	1	-	-	24	2
S.macroptera (Ru)	9	1	1	-	2	-	1	1	1	-	-	-	16	3
S.mecistopteryx (Ru)	4	2	3	1	1	1	2	1	-	-	-	-	15	4
S.parvifolia (Ru)	-	1	2	-	-	1							4	1
S.smithiana (Ru)	6	2	4	2	1	2							17	2
Vatica micrantha	1	1	1	-									3	-
V.oblongifolia	2	1	1										4	-
V.papuana	1	2	1										4	-
Shorea virescens (An)	-	-	1										1	-
S.faguetiana (Ri)	1	3	1	-	-	-	-	-	-	-	1	1	7	2
S.multiflora (Ri)	35	8	10	3	1								57	-
S.foxworthyii (SB)	1	-	-	-	1								2	-
S.glaucescens (SB)	2	-	2	-	-	-	-	-	1	-	-	-	5	1
Non-Dipterocarpaceae (in order of families)														
Alangium ebenaceum	5	3	-	-									8	-
Gluta renghas	17	9	4	-									30	-
Melanorrhoea wallichii	4	3	4	1	4	2	-						18	2
Anacardiaceae misc (8)	9	-	4	2									15	-
Anonaceae (4)	4	1	1	-	1								7	-
Dyera costulata	-	1	-	1	-	-	1						3	1

Appendix 3 - Table 5 (continued.....)

Species	Girth Diam. (ft.) (cm.)	Number of trees in Size Classes 1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	10 97	11 107	12+ 116+	Totals	Totals 6'+
Dacryodes laxa		7	1											8	-
D.rugosa		2	3											5	-
Burseraceae misc. (4)		5	1											6	-
Lophopetalum beccarianum		27	7	4	2	1								41	-
Dillenia excelsa		2	1	2										5	-
Diospyros spp. (4)		10	2											12	-
Elaeocarpus spp (2)		2	2	1										5	-
Chaetocarpus castanocarpus		5	3	1	1									10	-
Moultonianthus leembrugianus		14	5	1	1									21	-
Tapoides villamillii		20	11											31	-
Euphorbiaceae misc.(17)		30	10	-	1									41	-
Lithocarpus conocarpus		3	4	4	2	-	1							14	1
Fagaceae misc.(5)		6	4	-	1									11	-
Flacourtiaceae (6)		17	4	-	-	1	1							23	1
Persea bancana		14	6	1										21	-
Lauraceae misc.(9)		9	4	1	1									15	-
Barringtonia sarcostachys		11	2											13	-
B.scortechinii		4	2	4	1									11	-
Pternandra verruculosa		9	3	1										13	-
Meliaceae (9)		9	1											10	-
Moraceae (4)		4	-	1										5	-
Myrsticaceae (9)		17	8	2										27	-
Eugenia spp. (16)		41	15	11	2	5	-	-	-	-	-	-	-	74	-
Colubrina anomal		14	2											16	-
Acronychia laurifolia		13	9											22	-
Ganua kingii		32	10	9										51	-
Sapotaceae misc.(5)		11	3	4	-	-	1	-	-	-	1	-	-	20	2
Microcos cinnamomifolia		7	5											12	-
M.crassifolia		4												4	-
Pentace borneensis		30	1											31	-
Teijsmanniodendron glabrum		13	7	6	2									28	-
T.simplicioides		-	2	2										4	-

/others, totals /over

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Appendix 3 - Table 5 (continued....)

Species	Girth (ft.) / Diam. (cm.)	Number of trees in Size Classes 1 / 10	2 / 20	3 / 30	4 / 39	5 / 48	6 / 58	7 / 68	8 / 78	9 / 87	10 / 97	11 / 107	12 / 116	Totals	Totals 6'
Others (see below)		94	23	8	4	4								133	-
Totals, all species		635	238	129	37	28	14	9	11	8	9	3	4	1125	58
per 10 acres/4 ha.		1411	529	287	83	62	31	20	24	18	20	7	8	2500	128

Others:

Acioa heteropetala 1x1', 1x2', 1x4'
Adenanthera pavonina 1x3'
Angelesia spendens 1x1', 1x3'
Aquilaria malaccensis 1x1', 1x2', 1x3'
Bhesa paniculata 1x1'
Crypteronia griffithii 1x1', 2x2'
Dialium indum 2x1'
Durio grandiflorus 2x1', 1x2'
Euphoria sp.indet. 1x1', 3x2', 1x3'
Garcinia benthamaniana 4x1', 1x2', 1x3'
G.moyleyana 2x1', 1x3'
G.nervosa 1x1', 1x3'
Gardenia tubifera 2x1', 1x2'
Gironniera nervosa 1x1'
G.parvifdia 1x1', 1x3'
Gonystylus consanguineus 2x1'
Helicopsis velutina 1x1'
Heritiera javanica 1x1'
H.simplicifolia 2x1', 1x2'
Lophopetalum javanicum 1x2'
Memecylon beccarianum 3x1'
M.edule 1x1'
Mesua macrantha 5x1', 4x2', 1x4', 2x5'
Nauclea sp.indet. 3x1', 1x2', 1x4'
Nephelium beccarianum 3x1', 1x2'
Nephelium sp.indet. 1x1'
Ochanostachys amentacea 1x5'
Pometia pinnata 1x2'
Prunus grisea 1x1'
Pternandra echinata 3x1'
Rhodamnia cinerea 3x1'
Sarcotheca acuminata 1x1'
S.glauca 2x1'
Scaphium affine 4x1', 1x2'
Scaphium sp.indet. 1x5'
Sindora coriaceae 2x1', 1x2', 1x4'
Stemenurus grandiflorus 5x1'
S.secundiflorus 3x1'
Symplocos sp.indet. 17x1', 1x2'
Talauma gitingensis 7x1'
Timonius compressicaulis 1x2'
Timonius sp.indet. 2x1'

Appendix 4

Completely Enumerated Plots

Table 1	Silam 1967 Felling Area 5 Plots, 3-4 acres (1.4 ha.)
Table 2	Tangah Nipah, Lahud Datu 4 Plots, 4 acres (1.6 ha.)
Table 3	Silabukan F.R. RP 271 C and D 2 acres (0.8 ha.)

Appendix 4 - Table 1

Stand Table Silam 1967 Felling Area - Compartments 25, 31, 36
5 Plots Summed totalling 3.4 acres (1.4 Ha.)

Species	Girth (Ft.) Diam (Cm.)	Number of Trees by Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	
Parashorea malaanonan		8	7	6	6	2	2	3	2	7	43
Shorea leprosula Ru		2	1	-	-	-	-	1	1	1	6
Shorea leptoclados Ru		-	-	-	-	-	-	1	-	1	2
Shorea parvifolia Ru		-	1	-	-	-	-	1	-	-	2
Dipterocarpus caudiferus		1	-	-	-	-	-	-	1	-	2
Shorea atrinervosa SB		1	-	-	-	-	-	-	-	-	1
Shorea guiso SB		2	-	3	3	3	1	-	1	2	15
Shorea seminis SB		-	1	-	-	-	-	-	1	-	2
Hopea beccariana		-	1	-	-	-	-	-	-	-	1
Hopea sangal		2	-	3	2	1	2	1	-	-	11
Shorea gibbosa Ri		-	-	-	-	-	-	-	1	-	1
Dryobalanops lanceolata		4	1	-	-	-	-	-	-	-	5
Shorea symingtonii An.		1	-	-	-	-	-	-	-	-	1
Aglaia affinis		16	2	1	1						20
Aglaia gamopetala		1	2	-	-						3
Aglaia odoratissima		4	1	-	1						6
Aglaia spp (2)		-	2	-	-						2
Actinodaphne glomerata		4	-	-	1						5
Anonaceae indet.(2)		5	-	-	-						5
Alphonsea sp		1	-	-	-						1
Anisophylla beccariana		1	1	-	-						2
Aporusa sp.		-	1	-	-						1
Artocarpus borneensis		1	-	-	-						1
Beilschmedia assamica		1	-	1	-						2
Blumeodendron Kurzii		4	3	-	-						7
Brownlowia stipulata		12	3	-	-						15
Buchanania fragrans		4	2	-	-						6
Canarium denticulatum		7	-	-	-						7
Canarium hirsutum		-	-	-	-	-	1				1
Casearia		1	-	-	-	-					1

Appendix 4 - Table 1 (continued.....)

Species	Girth (Ft.) Dia. (Cm.)	Number of Trees by Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	
Cratoxylon		1	-	-	-	-					1
Cynometra elmeri		4	4	4	2	2					16
Dialium platysepalum		-	-	-	-	1	-	-	-	1	2
Dillenia excelsa		19	9	1	1	-					30
Diospyros curranii		2	-	1	-	-					3
Diospyros diepenhorstii		4	-	-	-	-					4
Diospyros elliptifolia		1	2	1	1	-	1				6
Diospyros elmeri		1	-	-	-	-					1
Diospyros macrophylla		4	2	4	1	-					11
Diospyros malayana		1	-	-	-	-					1
Diospyros pyrrhocarpa		2	3	-	-	-					5
Diospyros sumatrana		1	1	-	-	-					2
Diospyros toposioides		12	6	2	4	1					25
Diospyros tuberculata		1	2	1	-						4
Diplodiscus longifolius		2	1	-	-						3
Elmerrillia mollis		-	2	1	-						3
Enicosanthum erianthiodes		3	-	-	1						4
Euphoria denticulata		1	-	-	-						1
Euphonia sp.		1	1	-	-						2
Eugenia barringtoniodes		2	-	-	-	-	-	1			3
Eugenia carasiformis		1	-	-	-						1
Eugenia castanea		-	-	1	-						1
Eugenia leucocladum		-	1	-	-						1
Eugenia sp.		1	-	-	-						1
Ficus magnolii		-	1	-	-						1
Ficus melinocarpa		3	-	-	-						3
Flacourtiaceae		1	-	-	-						1
Ganua kingii		-	-	1	-						1
Ganua pierrei		8	1	1	-						10
Glochidion lanceifolium		1	-	-	-						1
Glochidion sp		1	2	-	-						3
Hydnocarpus borneensis		1	-	-	-						1
Hydnocarpus sumatrana		21	9	3	2						35

Appendix 4 - Table 1 (continued.....)

Species	Girth (Ft.) Dia. (Cm.)	Number of Trees by Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	
Ixora macrophylla		1	-	-	1						2
Knema intermedia		1	1	-	-						2
Koodersiodendron pinnatum		-	1	-	1						2
Lansium domesticum		6	1	-	-						7
Lauraceae (2 species)		2	1	-	-						3
Leea indica		5	-	-	-						5
Lithocarpus cyt.rhyncha		2	1	-	-						3
Lithocarpus lucida		2	-	-	-						2
Lithocarpus urceolaris		-	-	1	-						1
Litsea oppositifolia		3	1	-	-						4
Lophopetalum javanicum		2	4	1	1						8
Mallotus penangensis		1	-	-	-						1
Mangifera sp		1	-	-	-	1					2
Mastixia trichotoma		2	-	-	-						2
Meiogyne virgata		26	3	-	-	-	2				31
Meliaceae indet		-	-	1	-						1
Melanochyla sp		-	1	-	-						1
Microcos antidesmifolia		-	4	-	-						4
Myristica crassa		-	1	-	-						1
Nauclea		1	-	-	-						1
Neo-uvaria acuminatissima		7	3	-	-						10
Nephelium lappaceum		2	1	-	-						3
Nephelium sp		-	1	-	-						1
Orophea myriantha		5	-	-	-						5
Palaquium rostratum		2	2	-	-						4
Paranephelium nitidum		14	4	4							22
Pentace sp		1	1	-	1						3
Polyalthia cf canangioides		-	1	-	-						1
Polyalthia lateriflora		3	2	1	-						6

Appendix 4 - Table 1 (continued.....)

Species	Girth (Ft.) / Diam. (Cm.)	Number of Trees by Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	
Pterospermum elongatum		2	-	-	-	1					3
Ptychopyxis arborea		1	2	-	-						3
Saraca palembanica		7	1	-	-						8
Sagarea lanceolata		-	1	-	-						1
Semecarpus cuneiformis		1	-	-	-						1
Sindora irpicina		1	1	-	-						2
Spathiostemon javensis		2	1	-	1						4
Sterculia rubiginosa		2	1	-	-						3
Sympetalandra borneensis		-	1	-	-	-	-	-	-	1	2
Symplocos sp.		1	-	-	1						2
Talauma sp.		-	-	1	-	1					2
Teijsmanniodendron kolophyllum		8	8	4	4	-					24
Unidentified		-	1	-	-	-	-	-	-	-	1
Totals		298	127	49	36	13	9	8	7	13	561

Trees of over 8 feet girth are as follows:

Parashorea malaamonan: 9,9,10,14,13,13,13
Shorea leprosula: 12
Shorea leptoclados: 10
Shorea guiso: 9,9
Dialium platysepalum: 10
Sympetalandra borneensis: 9

Appendix 4 - Table 2

Stand Table Tangah Nipah, Lahud Datu, 4 Plots of 0.4 Ha. totalling 4 acres (1.6 Ha.) Summed Data.

Species	Girth (Ft.) / Diam. (Cm.)	Number of Trees by Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 + 87	
Parashorea malaanonan		9	5	1	2	1	2	1	3	1	25
Shorea argentifolia Ru		4	2	-	1	-	-	2			9
Shorea leprosula Ru		3	2	-	-	-	1				6
Shorea leptoclados Ru		-	1	-	-	-					1
Shorea parvifolia Ru		3	-	1	-	-					4
Shorea pauciflora Ru		-	-	-	-	-	1				1
Shorea isoptera SB		1	-	-	-	-					1
Shorea guiso SB		1	-	-	-	-	1				2
Shorea superba SB		-	-	-	-	-	-	-	1	-	1
Shorea hopefolia Ri		-	1	-	-	-					1
Shorea bracteolata An		3	-	-	-	-	1				4
Vatica sp.		1	-	-	-	-					1
Aglaia affinis		5	1	-	-	-					6
Aglaia spp indet		10	1	2	-	2					15
Alseodaphne tonkinensis		1	-	1	-						2
Anonaceae indet		3	1	-	-						4
Aglaia adoratissima		1	-	-	-						1
Aporusa grandistipulata		1	-	1	-						2
Ardisia elliptica		1	-	-	-						1
Artocarpus kemando		1	-	-	-						1
Artocarpus		-	-	-	-	-	-	-	1	-	1
Baccaurea lanceolata		4	-	-	-						4
Baccaurea stipulata		10	-	-	-						10
Barringtonia sp		1	-	-	1						2
Beilschmedia assamica		5	2	1	1						9
Blumeodendron kurzii		3	1	1	-						5
Brownlowia stipulata		5	3	2	-						10
Buchanania insignis		-	1	1	-						2
Buchanania lucida		-	1	-	-						1
Buchanania sessilifolia		1	-	-	-						1
Calophyllum sp		-	-	1	-						1

Appendix 4 - Table 2 (continued.....)

Species	Girth (Ft.) Diam (Cm.)	Number of Trees by Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87 +	
Canarium denticulatum		-	-	1	1						2
Canarium odontophyllum		-	-	1	-						1
Canarium decumanum		-	-	1	-						1
Canarium hirsutum		1	-	-	-						1
Canthium confertum		1	-	-	-						1
~~Canthium confertum~~		~~1~~	-	-	-						~~1~~
Cinnamomum iners		-	-	-	-	1					1
Cryptocarya crassinervia		-	-	1	-						1
Cynometra elmeri		5	1	1	-	1	2	-	1	-	11
Dacryodes macrocarpa		1	-	-	-						1
Dehaasia caesia		-	-	1	-						1
Dehaasia incrassata		1	-	1	-						2
Dialium platysepalum		-	-	-	-	-	-	-	-	1	1
Dialium sp		-	-	-	-	1					1
Dillenia excelsa		5	2	-	-						7
Diaspyros cauliflora		-	-	1	-						1
Diospyros curranii		1	1	1	2						5
Diospyros diepenhorstii		1	-	-	-						1
Diospyros discocalyx		-	-	1	-	-	-	1	1	1	4
Diospyros elliptifolia		3	3	-	-						6
Diospyros elmeri		3	1	-	1						5
Diospyros hallierii		-	1	-	1						2
Diospyros macrophylla		1	-	1	-	1	1				4
Diospyros perfida		5	1	1	-						7
Diospyros sumatrana		1	1	-	-						2
Diospyros toposioides		4	3	-	1	-	1				9
Diospyros tuberculata		3	1	1	-						5
Diospyros spp (2)		5	1	-	-						6
Drypetes macrophylla		2	-	-	-						2
Drypetes prunifera		-	2	1	-						3
Dysoxylum alliaceum		1	-	-	-						1
Dysoxylon pachyrache		2	-	-	-						2
Dysoxylon sp		-	1	-	-						1

Appendix 4 - Table 2 (continued....)

Species	Girth (Ft) / Diam. (Cm)	Number of Trees by Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	
Endiandra kingiana		-	2	-	-						2
Eugenia castanea		2	1	1	-						4
Eugenia cephalantha		1	-	-	-						1
Eugenia elliptilimba		1	-	-	-						1
Eugenia elopurae		-	-	1	-						1
Eugenia hirta		1	-	-	-						1
Eugenia keanensis		2	-	-	-						2
Eugenia leucocladum		6	1	-	-						7
Eugenia cf palawanensis		-	-	-	-	-	-	1			1
Eugenia rosulenta		2	1	-	-						3
Euphoria malaiensis			2	2	-	1	-	1			6
Euphoria sp		2	1	1	-						4
Ficus benjamina		-	-	-	-	-	-	-	-	1	1
Ficus sp		1	-	-	-						1
Fordia gibbsae		14	-	-	-						14
Glochidion rubrum		-	-	1	-						1
Hydnocarpus borneensis		5	1	-	-						6
Hydnocarpus polypetala		-	-	-	-	1					1
Ixora elliptica		1	-	-	-	-	-	1			2
Koordersiodendron pinnatum		-	-	-	1	-	-	-	2		3
Lansium sp		1	-	-	-						1
Lauraceae indet (2)		2	-	1	-						3
Leea indica		4	-	-	-						4
Linociera plumiflora		1	1	-	-						2
Litsea angulata		2	1	-	1						4
Litsea ochracea		1	3	1	-						5
Litsea oppositifolia		4	-	-	-						4
Litsea sp		-	-	1	-						1
Lithocarpus clemensiae		-	-	-	1						1
Lithocarpus blumeanus		2	2	-	-						4
Lithocarpus javensis		-	1	-	-						1
Lithocarpus sp		2	2	-	1						5

Appendix 4 - Table 2 (continued....)

Species	Girth (Ft.) Diam. (Cm.)	Number of Trees in Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	
Lophopetalum javanicum		-	1	-	-						1
Mangifera cf macrocarpa		-	-	-	-	-	-	-	-	1	1
Meiogyne virgata		4	4	3	-	-	1	-	-	-	12
Meliaceae indet		2	1	-	-						3
Mesua macrantha		-	1	-	-						1
Microcos antidesmifolia		8	2	2	-						12
Microcos elmeri		1	1	-	-						2
Microcos stylocarpa		3	3	1	-						7
Myristicaceae indet		1	-	-	-						1
Nauclea sp		1	-	-	-						1
Neesia altissima		-	-	1	1						2
Nephelium mutabile		11	1	1	1	1	-	1	-	-	16
Nephelium sp		-	-	-	1						1
Neosortechinia sumatransis		1	-	-	-						1
Neouvaria acuminatissima		6	1	-	-						7
Neovaria sp		1	-	-	-						1
Notaphoebe obovata		-	1	-	-						1
Orophea myriantha		13	-	-	-						13
Otophora glandulosa		1	-	-	-						1
Paranephelium mitidum		8	7	3	-						18
Payena obscura		1	-	-	-						1
Palaquium sericeum		-	1	-	-						1
Parartocarpus venenosus		1	-	-	-						1
Polyalthia lateriflora		8	1	-	-						9
Polyathia subcordata		3	-	1	-						4
Plandhonia valida		1	-	-	-						1
Pometia alnifolia		2	3	-	-						5
Pometia pinnata		-	-	-	-	2					2
Pseudo-uvaria pamattonensis		1	-	-	-						1
Ptychopyxis arborea		10	4	3	-						17
Pyramidantha prismatica		2	5	2	-						9
Ryparosa cf acuminata		4	1	-	-						5
Sagarea lanceolata		3	2	-	-						5

Appendix 4 - Table 2 (continued.....)

Species	Girth (Ft.) Diam. (Cm.)	Number of Trees in Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	
Sagarea myriantha		2	-	-	-						2
Sandoricum maingayi		1	-	-	-						1
Saraca palembanica		9	1	-	-						10
Sindora sp		1	-	-	-						1
Sympetalandra borneensis		1	1	-	-	1	-	-	1	-	4
Stemonoporos scorpiodes		-	1	-	-						1
Symplocos celastrifolia		2	-	-	-						2
Symplocos fasciculata		-	1	-	-						1
Symplocos laurina		2	-	-	-						2
Talauma sp		1	-	-	-						1
Terminalia sp		-	-	1	-						1
Viburnum aplificatum		1	-	-	-						1
Xanthophyllum affine		1	4	-	-						5
Xanthophyllum tenue		-	1	-	-						1
Xanthophyllum sp		-	1	-	-						1
Unidentified (6)		16	3	1	-	-	-	-	-	1	21
Totals		322	113	54	18	13	13	6	10	6	555

Trees of over 8 feet girth are as follows:

Parashorea malaanonan - 13'
Mangifera cf macrocarpa - 11'
Diospyros discocalyx - 10'
Unidentified - 9'
Dialium platysepalum - 9'
Ficus benjaminii - 18'

Appendix 4 - Table 3

Stand Table RP 271 C and D combined Silabukan F.R. Coastal Volcanic Forest
Area 2 acres (0.8 ha.)

Species	Girth (Ft.) Diam. (Cm.)	Number of Trees in Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9+ 87+	
Hopea sangal		1	-	-	-	-	-	-	1	-	2
Aglaia affinis		-	1	-	-	-	-	-	-	-	1
Aglaia odoratissima		1	-	1	-	-	-	-	-	-	2
Aglaia spp.indet (4 species)		-	15	13	9	4					50
Alseodaphne tonkinensis		-	-	-	-	1					1
Anonaceae indet		1	-	-	-						1
Ardisia sp		1	-	-	-						1
Artocarpus sp		2	-	-	-						2
Beilschmedia sp		2	4	-	-						6
Buchanania arborescens		1	-	-	-						1
Buchanania insignis		1	-	-	-						1
Buchanania sp.		-	I	-	-						1
Canarium sp		3	1	-	-						4
Chisocheton sp		-	1	4	3	2	-	-	-	1	11
Cynometra elmeri		7	4	1	-	-	1	-	1	1	15
Dillenia sp		8	5	-	-						13
Diospyros cauliflora		1	-	-	-						1
Diospyros elliptifolia		1	1	-	-						2
Diospyros elmeri		1	-	-	-						1
Diospyros tuberculata		3	4	3	1						11
Diospyros spp.indet		2	-	-	-	-	-	-	1	-	3
Diplospora sp		1	1	1	-						3
Drypetes sp		1	-	-	-	-	1				2
Endiandra		2	1	-	-						3
Enicosanthum grandifolious		28	14	2	-						44
Enythroxylon ecarinatum		1	-	-	1						1
Eugenia lineata		2	1	-	-						3
Eugenia spp.indet.(2)		2	-	-	-	-	-	-	-	2	4

Appendix 4 - Table 3 (continued.....)

Species	Girth (Ft.) Diam. (Cm.)	Number of Trees in Size Classes									Totals
		1 10	2 20	3 30	4 39	5 48	6 58	7 68	8 78	9 87	
Flacourtiaceae indet		1	-	-	-						1
Fordia sp		1	-	-	-						1
Litsea sp		6	1	1	2	-	1				11
Mangifera sp		-	-	-	-	-	1				1
Meiogyne virgata		7	2	-	-						9
Memecylon costatum		1	-	-	-						1
Memecylon sp		1	-	-	-						1
Mischocarpus sundaicus		-	-	1	-						1
Myristicaceae		-	-	-	1						1
Orophea myriantha		32	3	-	-						35
Orophea sp		1	-	-	-						1
Otophora sp		-	1	-	-						1
Parkia sp										1	1
Payena sp		1	1	-	-						2
Planchonia valida		-	-	1	-						1
Polyalthia costigera		2	1	-	1	3					7
Polyalthia sp		9	1	-	1	1					12
Pterospermum sp		-	1	1	-	-	1	2			5
Semecarpus sp		1	-	-	-						1
Tristiropsis		-	-	-	1						1
Vitex pubescens		-	-	1	-						1
Walsura sp		-	2	-	-						2
Xanthophyllum sp		1	-	-	-						1
Unknown		2	1	-	-	1	1	1	2	3	11
Totals		148	68	30	19	12	6	3	5	8	299

Trees larger than 9 feet are: Parkia sp. 12'; Cynometra elmeri 12' ;
Eugenia sp 12'; Unknown at 10 and 11'

Appendix 5

Species Coincidence Tables

Appendix 5 - Table 1

RP. 228 Segaliud-Lokan F.R. Distribution of Common Species in 1 Hectare Sub-plots

Sub Plot Numbers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	Total
Species																																																				
Parashorea tomentella	10	4	5	5	8	6	5	8	10	6	5	5	10	7	4	7	3	6	4	12	1	1	6	7	7	3	8	5	6	4	2	10	8	6	8	4	5	5	7	1	5	4	5	3	5	3	4	4	2	5	274
Parashore malaanonan	-	1	-	-	1	1	-	-	-	-	-	1	-	1	-	1	-	1	-	-	-	-	-	2	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	1	2	-	-	-	-	-	15
Shorea																																																			
(Rubroshorea)																																																			
S.almon	-	-	-	-	-	1	1	-	-	-	-	-	2	-	-	-	1	-	1	-	-	-	2	1	1	-	-	-	-	-	1	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	14
S.argentifolia	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
S.leprosula	-	-	-	-	-	-	-	-	-	-	1	2	1	-	1	-	-	-	3	5	1	-	3	3	3	-	1	3	-	3	-	-	1	2	3	-	1	1	2	2	-	2	-	1	3	-	-	1	1	3	53
S.leptoclados	11	3	2	11	5	3	6	8	8	7	4	2	5	10	1	4	1	9	8	5	6	1	7	4	2	4	3	5	5	4	6	8	4	5	3	4	8	7	5	6	2	3	3	2	5	5	3	5	1	1	240
S.mecistopteryx	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
S.parvifolia	-	2	4	1	2	5	1	6	3	2	5	4	3	1	2	4	-	4	1	-	4	-	1	-	1	2	2	2	3	1	2	2	-	-	-	1	5	3	1	1	3	1	2	-	-	-	1	1	1	-	90
S.pauciflora	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3
S.smithiana	-	-	-	1	1	-	-	-	2	-	-	1	1	-	-	-	-	1	2	-	-	-	1	2	1	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	11
S.waltonii	-	-	2	-	2	-	-	-	1	-	-	-	-	-	-	-	-	1	1	-	-	-	1	2	1	-	-	-	1	-	1	-	1	1	1	1	-	-	1	1	-	-	1	2	1	1	-	-	-	-	24
(Richetia)																																																			
S.acuminatissima	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
S.gibbosa	2	-	-	-	-	-	1	1	-	-	-	1	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1	1	-	1	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	-	-	1	-	17
S.hopeifolia	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
(Selangan Batu)																																																			
S.isoptera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
S.superba	-	-	1	-	-	1	-	-	-	1	1	-	1	-	-	1	-	-	1	-	-	1	1	-	1	-	2	-	2	-	-	1	1	-	-	-	1	-	-	1	3	3	1	3	-	-	-	1	-	-	29
(Anthoshorea)																													1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
S.agami	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	7	4	3	2	2	3	3	2	-	2	3	2	6	3	3	6	6	5	7	170
Dryobalanops lanceolata	2	10	6	4	4	6	8	4	-	2	3	2	5	3	3	3	6	3	2	1	3	3	-	2	2	1	4	5	1	-	3	7	-	-	3	1	-	-	1	1	-	1	4	6	6	-	1	2	3	2	105
Dipterocarpus caudiferus	1	1	8	2	4	1	4	3	2	3	1	4	1	4	1	7	2	2	2	1	-	5	3	1	1	-	-	4	4	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Dipterocarpus gracilis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Anisoptera costata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Hopea beccariana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	1	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	11
Hopea nervosa	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Hopea sangal	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non Dipterocarpaceae																																																		
Eusideroxylon zwager	1	-	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	1	-	-	2	-	2	-	-	2	-	3	2	2	1	1	2	1	1	-	-	3	-	-	-	-	49
Pterospermum elongatum	-	-	-	-	-	-	-	-	2	-	1	-	-	1	1	-	-	-	1	1	-	-	-	1	1	-	-	-	1	-	2	2	-	4	3	2	2	1	1	2	1	1	-	-	3	-	-	-	-	-	32
Pentace polyantha	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	1	-	-	-	1	1	-	-	-	1	-	-	-	1	-	1	-	-	-	-	1	-	1	-	-	-	-	1	-	-	-	12
Sympetalandra borneensis	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	11
Saraca lanceolata	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	1	-	6	-	-	-	-	2	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	10
Planchomia valida	-	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	1	1	-	-	-	1	-	1	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	9
Pometia pinnata	-	-	2	-	-	1	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	9
Dialium indum	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Nephelium mutabile	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	1	1	-	-	1	1	8
Koordersiodendron pinnatum	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	1	-	-	-	-	-	2	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	9
Homalium foetidum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total trees in sub-plot	35	26	36	32	31	34	31	34	32	26	25	27	38	30	14	30	26	32	30	30	26	34	27	29	26	29	25	33	32	19	27	34	32	30	28	24	28	25	27	21	26	31	29	39	30	26	25	36	25	28	

Appendix 5 - Table 1

In addition to the species given in Table 17 of the text, the following 91 species had individuals of 5 feet girth or over in RP.228. They may, therefore, at some stage, be considered as of some silvicultural interest as potential timber producers. However, many are probably species which very rarely reach large size.

(a) More than 5 individual stems (Numbers in brackets)

Amoora malaccensis (6)
Dialium indum (9)
Diospyros curranii (7)
D.macrophylla (9)
Homalium foetidum (9)
Intsia palembanica (8)
Koordersiodendron pinnatum (8)
Nephelium mutabile (9)
Pentace polyantha (12)
Planchonia valida (9)
Pometia pinnata (9)
Saraca lanceolata (10)
Sympetalandra borneensis (11)
Terminalia citrina (6)

(b) Two to five individual stems

Alangium ebenaceum
@ Anthocephalus chinensis
Antiaris toxicarius
Artocarpus anisophylleus
A.tamaran
Canarium odontophyllum
Carallia borneensis
Diploknema sebifera
Dracontomelon puberulum
Durio testudinarium
Elmerillia mollis
@ Endospermum peltatum
Eugenia barringtonioides
E.nitida
@ Geunsia pentandra
@ Glochidion rubrum
Guettarda sp.indet.
Heritiera javanica
Hydnocarpus pinguis
H.sumatrana
Koompassia excelsa
Lithocarpus gracilis
L.meijeri
Litsea firma
Lophopetalum javanicum
@ Macaranga pruinosa
Meliosma lanceolata
Parinari corymbosa
Persea sp.indet.
@ Pterocymbium tubulatum
Sandoricum maingayi
Scaphium longipetiolatum
Sindora irpicina
Terminalia foetidissima
T.phellocarpa

(c) One individual only

Abarema borneensis
Albizia pedicellata
Alseodaphne oblanceolata
Anonaceae indet.
Alstonia angustiloba
Aquilaria sp.indet.
Baccaurea sp.indet
Canarium sp. cf. asperum
C.denticulatum
C.kostermansii
Cleistanthus sp.indet
Diospyros bantamensis
D.confertiflora
D. discocalyx
Durio graveolens
Drypetes macrophylla
Eleutherandra sp.indet.
Eugenia kihamense
Ficus depressa
Ficus sp.indet
Heritiera elata
Horsfieldia reticulata
Hydnocarpus anomala
H.woodii
Koompassia malaccensis
Knema cinerea
K.laurina
Linociera pluriflora
Lithocarpus cantleyanus
L.woodii
Madhuca malaccensis
Myristica malaccensis
Neoscortechinia forbessi
Nephelium maingayi
@ Octomeles sumatrana
Pentace laxiflora
Polyalthia xanthopetala
Prunus javanica
Quercus treubiana
Terminalia subspathulata
Walsura robusta
Xanthophyllum sp.indet.

@ Colonising species of gaps and river banks.

Appendix 5 - Table 2

RP 228 Segaliud-lokan F.R. Number of Trees in Hectare sub-plots by Size Classes.

Plot no.	Size Class (feet).																
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
1	7	5	2	2	3	1	6	4	4	1	0						35
2	5	3	3	3	7	1	2	1	0	0	0				1		26
3	10	9	4	1	3	4	2	1	1	1	0						36
4	5	3	3	6	6	3	1	1	2	1	0	1					32
5	11	5	2	4	4	1	1	3	0	0	0						31
6	4	12	2	2	7	3	2	2	0	0	0						34
7	8	2	5	4	5	4	1	2	0	0	0						31
8	12	5	2	4	3	2	2	1	2	1	0						34
9	10	5	3	4	6	2	1	0	0	0	1						32
10	4	5	3	3	3	1	1	1	2	1	2						26
11	5	3	4	3	1	2	4	1	0	0	0	2					25
12	3	3	5	4	5	2	3	1	1	0	0						27
13	8	6	7	8	3	1	0	1	0	2	0	1				1	38
14	8	3	5	5	3	1	2	1	2	0	0						30
15	3	1	3	2	0	2	2	0	0	0	1						14
16	7	7	6	1	4	0	4	1	0	0	0						30
17	3	4	3	9	2	0	1	2	1	1	0						26
18	7	2	5	5	0	2	4	2	3	0	1					1	32
19	6	2	4	4	3	3	2	1	3	0	1	1					30
20	7	3	4	5	4	2	0	1	1	2	0	1					30
21	4	8	2	5	5	0	2	0	0	0	0						26
22	11	3	4	6	3	3	2	0	0	0	0		1	1			34
23	7	5	5	4	1	1	1	0	2	0	1						27
24	12	2	3	7	1	1	1	0	1	0	1						29
25	5	5	1	4	4	4	2	1	0	0	0						26
26	8	10	2	4	1	2	1	1	0	0							29
27	5	8	2	2	2	1	2	1	0	0		1				1	25
28	6	9	5	3	4	2	0	2	1					1			33
29	4	6	4	5	4	4	0	2	2					1			32
30	6	4	4	1	1	0	0	2	1								19
31	9	6	4	3	2	1	0	1	0	1							27
32	5	8	5	3	5	0	2	4	1	0		1					34
33	11	4	6	2	3	1	1	2	0				2				32
34	6	6	6	4	1	2	2	1	2								30
35	10	3	3	8	0	3	1	0	0								28
36	7	5	3	1	3	1	1	1	1		1						24
37	4	7	3	4	1	1	1	2	3	1						1	28
38	4	3	1	4	4	3	3	2	1	0							25
39	6	3	4	3	4	5	1	1	0								27
40	8	3	3	1	1	3	2	0	0								21
41	5	9	3	7	1	0	0	0	1								26
42	7	6	2	4	6	3	0	0	1	1				1			31
43	9	4	0	2	5	4	1	2	2								29
44	7	7	6	5	2	5	1	5	1								39
45	9	4	4	5	6	2											30
46	10	1	3	3	1	1	1	3	1	1	1						26
47	6	5	3	2			1	2	1	3	1	1					25
48	12	5	8	1	2	1	1	1	3	2							36
49	8	4	2	3	3	1		3			1						25
50	2	6	5	6	9												28
Totals	346	247	181	191	157	92	71	66	47	19	12	9	3	4	1	4	1450

Appendix 5 Table 3 Numbers of Plots (0.2 acres) Where Major Species are Found Coincident Segaliud-lokan F.R.

	By Itself	Parashorea tomentella	Shorea leptoclados	Dryobalanops lanceolata	Dipterocarpus caudiferus	Eusideroxylon zwageri	Shorea leprosula	Shorea parvifolia	Shorea superba	Shorea gibbosa	Shorea waltonii	Shorea smithiana	Diospyros spp.	Parashorea malaanonan	Sympetalandra borneensis	Koordersiodendron pinnatum
Parashorea tomentella	21	X	43	26	18	18	15	7	7	3	6	2	10	5	2	3
Shorea leptoclados	15	43	X	15	17	7	10	14	4	3	8	2	3	6	2	3
Dryobalanops lanceolata	8	26	15	X	15	11	1	5	1	3	6	1	4	11	4	2
Dipterocarpus caudiferus	8	18	17	15	X	9	4	10	5	1	5	3	5	3	2	3
Eusideroxylon zwageri	2	18	7	11	9	X	4	3	2	1	3	1	5	2	1	3
Shorea leprosula	10	15	10	1	4	4	X	3	0	0	2	0	2	2	2	1
Shorea parvifolia	3	7	14	5	10	3	3	X	1	3	3	1	2	0	3	2
Shorea superba	4	7	4	1	5	2	0	1	X	0	2	0	1	1	2	0
Shorea gibbosa	3	3	3	3	1	1	0	3	0	X	2	0	1	1	1	0
Shorea waltonii	2	6	8	6	5	3	2	3	2	2	X	0	2	1	1	0
Shorea smithiana	0	2	2	1	3	1	0	1	0	0	0	X	1	0	0	0
Diospyros spp.	0	10	3	4	5	5	2	2	1	1	2	1	X	0	2	1
Parashorea malaanonan	3	5	6	11	3	2	2	0	1	1	1	0	0	X	0	1
Sympetalandra borneensis	3	2	2	4	2	1	2	3	2	1	1	0	2	0	X	2
Koordersiodendron pinnatum	0	3	3	2	3	3	1	2	0	0	0	0	1	1	2	X

Appendix 5

Table 4

Kuamut F.R.

Numbers of Plots Where Major Species found Coincident

Major Species found Coincident	Shorea leptoclados	Parashorea tomentella	Dryobalanops lanceolata	Shorea leprosula	Dipterocarpus caudiferus	Shorea gysbertsiana	Shorea parvifolia	Shorea atrinervosa	Parashorea malaanonan	Eusideroxylon zwageri	Shorea smithiana	Shorea gibbosa	Shorea oleosa	Shorea hopeifolia	Shorea superba	Sympetalandra borneensis	Shorea pauciflora	Shorea foxworthii	Shorea beccariana	Shorea isoptera	Saraca lanceolata	Dipterocarpus humeratus	Shorea macroptera	By itself
Shorea leptoclados	X	41	24	29	30	17	14	5	9	6	5	4	6	3	4	4	2	0	1	1	0	2	1	25
Parashorea tomentella	41	X	20	17	13	13	12	1	7	3	3	3	6	3	6	4	1	1	2	1	0	3	2	19
Dryobalanops lanceolata	24	20	X	12	11	5	6	2	4	7	4	8	0	2	3	1	0	2	0	0	2	2	0	8
Shorea leprosula	29	17	12	X	12	12	10	3	5	1	3	4	3	3	1	2	0	0	1	0	0	0	1	8
Dipterocarpus caudiferus	30	13	11	12	X	11	13	2	4	2	3	3	0	2	2	2	4	0	1	3	0	2	0	10
Shorea gysbertsiana	17	13	5	12	11	X	8	2	10	5	4	1	2	1	1	0	3	0	1	2	2	1	2	2
Shorea parvifolia	14	12	6	10	13	8	X	1	2	1	1	0	0	0	1	2	1	0	0	0	0	4	0	3
Shorea atrinervosa	5	1	2	3	2	2	1	X	0	0	1	3	0	2	0	0	0	0	0	0	1	0	0	7
Parashorea malaanonan	9	7	4	5	4	10	2	0	X	5	1	1	1	1	1	0	1	1	2	0	0	0	0	2
Eusideroxylon zwageri	6	3	7	1	2	5	1	0	5	X	4	0	0	0	0	0	0	0	0	0	0	1	0	0
Shorea smithiana	5	3	4	3	3	4	1	1	1	4	X	3	0	0	0	3	0	0	0	0	0	0	0	2
Shorea gibbosa	4	3	8	4	3	1	0	3	1	0	3	X	0	0	0	0	0	1	0	0	0	0	0	0
Shorea oleosa	6	6	0	3	0	2	0	0	1	0	0	0	X	0	0	0	0	0	0	0	0	0	0	1
Shorea hopeifolia	3	3	2	3	2	1	0	2	1	0	0	0	0	X	0	1	0	1	0	0	1	0	0	2
Shorea superba	4	6	3	1	2	1	1	0	1	0	0	0	0	0	X	1	0	0	0	1	0	2	0	0
Sympetalandra borneensis	4	4	1	2	2	0	2	0	0	0	3	0	0	1	1	X	0	0	1	0	0	0	1	0
Shorea pauciflora	2	1	0	0	4	3	1	0	1	0	0	0	0	0	0	0	X	0	0	0	0	0	0	2
Shorea foxworthii	0	1	2	0	0	0	0	1	1	0	0	1	0	1	0	0	0	X	0	1	0	0	0	0
Shorea beccariaba	1	2	0	1	1	1	0	0	2	0	0	0	0	0	1	1	0	0	X	0	0	0	1	2
Shorea isoptera	1	1	0	0	3	2	0	0	0	0	0	0	0	0	1	0	0	1	0	X	0	0	0	1
Saraca lanceolata	0	0	2	0	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	X	0	0	1
Dipterocarpus humeratus	2	3	2	0	2	1	4	0	0	1	0	0	0	0	2	0	0	0	0	0	0	X	0	0
Shorea macroptera	1	2	0	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	X	1

Appendix 5 - Table 5

Coincidence of Species in RP 350 Kuamut F.R. (17 plots)

	S. almon	S. argentifolia	S. leprosula	S. leptoclados	S. macroptera	P. tomentella	P. malaanonan	S. acuminatissima	S. gibbosa	Dr. lanceolata	S. superba	S. seminis	D. caudiferus	H. nervosa	E. zwageri	B. lanceolata	T. subspathulata	S. parvifolia	S. pauciflora
Shorea almon	[6]	0	2	2	0	3	0	0	0	4	3	1	5	1	1	0	0	0	2
Shorea argentifolia	0	[1]	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1
Shorea leprosula	2	1	[6]	1	0	3	2	1	0	2	3	0	2	2	1	1	0	1	3
Shorea leptoclados	2	0	1	[6]	0	5	1	2	1	4	2	0	5	0	2	2	1	1	3
Shorea macroptera	0	0	0	0	[1]	1	0	1	1	1	0	0	0	0	0	0	0	1	1
Parashorea tomentella	3	0	3	5	1	[12]	2	3	1	7	6	1	8	1	4	3	2	4	10
Parashorea malaanonan	0	0	2	1	0	2	[2]	1	0	0	0	0	0	1	1	0	0	0	1
Shorea acuminatissima	0	0	1	2	1	3	1	[4]	2	3	0	0	2	1	1	1	1	2	4
Shorea gibbosa	0	0	0	1	1	1	0	2	[2]	2	0	0	1	0	0	0	1	1	2
Dryobalanops lanceolata	4	0	2	4	1	7	0	3	2	[10]	5	1	8	0	1	2	2	3	8
Shorea superba	3	1	3	2	0	6	0	0	0	5	[8]	1	5	1	2	3	2	2	7
Shorea seminis	1	o	0	0	0	1	0	0	0	1	1	[1]	1	0	1	0	0	0	1
Dipterocarpus caudiferus	5	0	2	5	0	8	0	2	1	8	5	1	[11]	0	3	3	2	3	8
Hopea nervosa	1	0	2	0	0	1	1	1	0	0	1	0	0	[2]	1	0	0	0	1
Eusideroxylon zwageri	1	0	1	2	0	4	1	1	0	1	2	1	3	1	[4]	2	1	1	3
Baccaurea lanceolata	0	1	1	2	0	3	0	1	0	2	3	0	3	0	2	[4]	1	2	4
Terminalia subspathulata	0	0	0	1	0	2	0	1	1	2	2	0	2	0	1	1	[3]	1	3
Shorea parvifolia	0	0	1	1	1	4	0	2	1	3	2	0	3	0	1	2	1	[4]	3
Shorea pauciflora	2	1	3	3	1	10	1	4	2	8	7	1	8	1	3	4	3	3	[12]

Appendix 5 - Table 6

Coincidence of Species in RP 307A Kalabakan F.R. (63 plots)

	E. zwageri	Di. borneensis	Castanopsis sp.	Eugenia sp.	S. parvifolia	Dr. lanceolata	S. leptoclados	S. smithiana	P. tomentella*	D. caudiferus	S. leprosula	S. pauciflora	S. guiso	S. laevis	S. superba	H. nervosa	D. confertus	S. argentifolia	S. almon	S. mecistopteryx	S. gibbosa	S. acuminatissima
	E.	Di.	Ca.	Eu.	S.	Dr.	S.	S.	P.	D.	S.	S.	S.	S.	S.	H.	D.	S.	S.	S.	S.	S.
E. zwageri	[51]	39	27	21	13	18	15	17	16	5	8	3	3	9	2	5	6	6	8	5
Di. borneensis (45 plots)	41	[33]	22	16	16	14	15	16	11	5	9	4	2	7	3	5	7	6	7	5
Castanopsis sp. (33 plots)	25	28	[15]	11	16	10	11	9	10	3	6	1	3	5	3	4	3	4	3	3
Eugenia sp. (25 plots)	24	19	14	[6]	7	8	8	8	9	2	4	1	0	5	o	3	4	2	0	4
S. parvifolia	39	[49]	29	16	[18]	18	12	14	18	3	10	2	5	8	4	5	4	5	7	5
Dr. lanceolata	27	29	[32]	11	8	[14]	7	7	12	2	6	0	3	5	1	1	2	2	8	4
S. leptoclados	21	16	11	[23]	5	9	[9]	10	5	3	2	3	0	5	2	2	2	2	3	2
S. smithiana	13	18	8	5	[22]	4	7	[8]	6	0	7	2	4	3	3	2	3	3	3	1
Parashorea tomentella*	18	18	14	9	4	[21]	4	5	[8]	3	5	0	3	0	1	1	3	2	5	2
D. caudiferus	15	12	7	9	7	4	[19]	5	6	[2]	3	2	0	3	1	4	0	3	0	2
S. leprosula	17	14	7	10	8	5	5	[19]	5	3	[3]	4	0	3	3	0	2	2	3	0
S. pauciflora	16	18	12	5	6	8	6	5	[18]	2	2	[0]	3	4	0	4	0	2	2	1
S. guiso	8	10	6	2	7	5	3	3	2	[0]	[13]	1	3	1	3	0	5	0	3	2
S. laevis	3	2	0	3	2	0	2	4	0	1	1	[4]	0	1	1	0	1	0	1	0
S. superba	3	5	3	0	4	3	0	0	3	0	3	0	[7]	2	0	1	0	0	2	0
H. nervosa	9	8	5	5	3	0	3	3	4	0	1	2	2	[11]	0	0	0	2	0	1

* Inclusion of P. melaanonan in plot 4 included.

Appendix 5 - Table 7

Coincidence of Species in RP 303 Kalabakan F.R. (16 plots)

	E. zwageri	Eugenia spp.	S. oleosa	S. mecistopteryx	S. parvifolia	S. leprosula	S. smithiana	P. tomentella	P. malaanonan	Dr. lanceolata	S. argentifolia	D. caudiferus	S. ovalis	S. leptoclados	S. pauciflora	S. gibbosa	Dr. keithii	S. superba	Dipterocarpus spindet	Scaphium longipetiolatum	Hentiera simplicifolia	Sindora irpicina	Diospyros spindet	Canarium spindet	Canarium odontophyllum	Campnosperma	Sapotaceae indet	Buchanania lucida	Lauraceae indet	Richetia indet	Irvingia malayana	Castonopsis sp.	Koompassia excelsa	Koompassia malaccensis	Chaetocarpus castanocarpus	Dialium indum
E. zwageri	11	8	7	6	3	4	3	4	1	6	1	4	5	0	3	3	1	1	1	3	1	1	1	6	2	1	3	1	3	4	2	3	3	3	0	3
S. oleosa	7	9	11	5	7	3	1	3	1	3	0	2	3	1	3	2	2	1	2	4	2	3	1	7	2	1	3	2	3	5	3	3	2	2	1	4
S. mecistopteryx	6	5	5	8	4	2	0	3	0	4	0	2	4	1	2	1	1	0	2	0	1	1	0	3	2	0	1	1	2	4	0	1	1	1	1	2
S. parvifolia	3	6	7	4	8	3	0	2	0	2	0	1	2	1	3	1	1	0	3	2	2	3	1	5	2	0	1	1	2	4	2	3	1	1	1	2
S. leprosula	4	5	3	2	3	5	2	2	0	2	1	2	1	1	1	2	0	0	2	1	0	1	1	2	1	0	1	2	2	2	1	3	2	2	1	1
S. smithiana	3	3	1	0	0	2	3	1	1	2	1	1	0	0	1	1	0	1	0	1	0	0	1	2	0	1	2	2	2	1	1	1	1	1	0	0
P. tomentella	4	5	3	3	2	2	1	5	0	4	0	3	1	0	2	3	1	0	0	1	0	0	1	3	0	0	2	0	2	1	1	1	1	0	0	1
Dr. lanceolata	6	5	3	4	2	2	2	4	1	7	0	3	2	0	2	2	1	1	0	2	0	0	1	3	0	1	3	1	2	2	2	1	1	0	0	1
S. argentifolia	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	1	0	0
D. caudiferus	4	3	2	2	1	2	1	3	0	3	0	4	0	0	1	3	0	0	0	1	0	0	1	2	0	0	1	0	2	0	1	1	1	0	0	0
S. ovalis	5	3	3	4	2	1	0	1	0	2	0	0	5	0	2	0	1	0	1	1	1	1	0	2	2	0	1	0	0	3	0	1	2	2	0	3
S. leptoclados	0	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0
S. pauciflora	3	2	3	2	3	1	1	2	0	2	0	1	2	0	5	1	0	0	0	1	1	1	0	4	1	0	2	0	1	3	1	0	2	1	0	2
S. gibbosa	3	3	2	1	1	2	1	3	0	2	0	3	0	0	1	3	0	0	0	1	0	0	1	2	0	0	1	0	2	0	1	1	1	0	0	0
Dr. keithii	1	2	2	1	1	0	0	1	0	1	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1
S. superba	1	1	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0

Appendix 5 Table 8

Segaliud-lokan F.R. Distribution of Major Species 5ft. Plus

Species	Plots containing trees 1-4+ 1	2	3	4	4+	Total	% of All Plots
1 Parashorea tomentella	101	32	3	0	0	136	34.5
2 Shorea leptoclados	87	19	4	0	0	110	27.8
3 Dryobalanops lanceolata	61	15	1	0	1	78	19.8
4 Dipterocarpus caudiferus	65	9	1	0	0	75	19.0
5 Eusideroxylon zwageri	42	5	1	0	0	48	12.2
6 Shorea leprosula	37	4	0	0	0	41	10.4
7 Shorea parvifolia	31	3	0	0	0	34	8.6
8 Parashorea malaanonan	29	2	0	0	0	31	7.9
9 Shorea waltonii	21	0	1	0	0	22	5.6
10 Shorea superba	19	1	0	0	0	20	5.1
11 Diospyros spp.	19	1	0	0	0	20	5.1
12 Sympetalandra borneensis	16	0	0	0	0	16	4.1
13 Shorea gibbosa	13	1	0	0	0	14	3.6
14 Pterospermum spp.	12	0	1	0	0	13	3.3
15 Koordersiodendron pinnatum	9	0	0	0	0	9	2.3
16 Dipterocarpus grandiflorus	7	1	0	0	0	8	2.0
17 Dipterocarpus acutangulus	5	1	1	0	0	7	1.8
18 Shorea smithiana	6	1	0	0	0	7	1.8
19 Dryobalanops keithii	1	2	0	0	0	3	0.8
20 Shorea mecistopteryx	2	1	0	0	0	3	0.8

Appendix 5 Table 9

Kuamut F.R. Distribution of Major Species 5ft. Plus

	Species	Plots containing trees 1-4+					Total	% of all Plots
		1	2	3	4	4+		
1	Shorea leptoclados	108	26	12	1	1	148	30.8
2	Parashorea tomentella	87	11	6	0	0	104	21.6
3	Dryobalanops lanceolata	59	10	2	1	1	73	15.2
4	Shorea leprosula	56	13	2	0	0	71	14.8
5	Dipterocarpus caudiferus	62	5	2	0	0	69	14.4
6	Shorea gysbertsiana	38	16	1	0	0	55	11.5
7	Shorea parvifolia	35	4	0	1	0	40	8.3
8	Shorea atrinervosa	20	7	1	0	0	28	5.8
9	Parashorea malaanonan	25	1	0	0	0	26	5.4
10	Eusideroxylon zwageri	20	0	0	0	0	20	4.2
11	Shorea smithiana	19	0	0	0	0	19	4.0
12	Shorea gibbosa	15	0	0	0	0	15	3.1
13	Shorea oleosa	12	0	0	0	0	12	2.5
14	Shorea hopeifolia	8	3	0	0	0	11	2.3
15	Shorea superba	9	2	0	0	0	11	2.3
16	Sympetalandra borneensis	9	2	0	0	0	11	2.3
17	Shorea pauciflora	10	0	0	0	0	10	2.1
18	Shorea foxworthii	9	0	0	0	0	9	1.9
19	Shorea beccariana	7	0	1	0	0	8	1.7
20	Shorea isoptera	6	1	0	0	0	7	1.5
21	Saraca lanceolata	5	0	0	1		6	1.2
22	Dipterocarpus humeratus	3	1	0	0	0	4	0.8
23	Shorea macroptera	4	0	0	0	0	4	0.8

Appendix 5 Table 10 Booking Plots with different numbers of trees Segaliud Lokan F.R.

A : All Trees Over Five Feet Girth

Girth	No. of trees in 0.2 acre booking plots											Total
	0	1	2	3	4	5	6	7	8	9	10	
Over 5 ft.	29	80	93	95	56	29	7	4	0	0	1	394
Over 7 ft.	77	158	98	47	8	5	1	0	0	0	0	394
Over 9 ft.	176	151	61	5	1	0	0	0	0	0	0	394
Over 11 ft.	261	121	11	1	0	0	0	0	0	0	0	394

B : Dipterocarps Over Five Feet Girth

Girth	0	1	2	3	4	5	6	7	8	9	10	Total
Over 5 ft.	52	115	102	78	33	12	1	0	1	0	0	394
Over 7 ft.	90	176	85	35	6	1	1	0	0	0	0	394
Over 9 ft.	182	160	48	4	0	0	0	0	0	0	0	394
Over 11 ft.	267	118	8	1	0	0	0	0	0	0	0	394

N.B. Table entries refer to numbers of 0.2 acre plots out of the total of 394.

Appendix 5

Table 11 Booking Plots with different Numbers of Trees Kuamut F.R.

A : All Trees over 5 feet girth

Girth	Nos. of trees in 0.2 acre plots												
	0	1	2	3	4	5	6	7	8	9	10	11	Total
Over 5 feet	68	89	119	92	48	36	18	5	2	1	0	1	479
Over 7 feet	145	129	117	54	20	10	4	0	0	0	0	0	479
Over 9 feet	230	145	80	20	4	0	0	0	0	0	0	0	479
Over 11 feet	333	109	35	2	0	0	0	0	0	0	0	0	479

B. Dipterocarps over 5 feet girth

Girth	0	1	2	3	4	5	6	7	10	Total
Over 5 feet	95	119	123	71	38	18	10	4	1	479
Over 7 feet	159	140	108	46	16	8	2	0	0	479
Over 9 feet	242	145	74	15	3	0	0	0	0	479
Over 11 feet	340	108	30	1	0	0	0	0	0	479

N.B. Table entries refer to numbers of 0.2 acre plots put of the total of 479.

Appendix 6

Summary of Results RP 278

Table 1 Marked Trees by Species and Sizes

Table 2 Damage by Categories

Table 3 Bark and Crown Damage by Girth Classes

Table 4 Stand Tables Sub Block (1)

Table 5 Damage Assessment Sub Block (1)

Table 6 Stand Tables Sub Block (1)

Table 7 Damage Assessment Sub Block (1)

Table 8 Types of Damage by Girth Classes

Appendix 6 Table 1

F.R. Segaliud-Lokan
Plot No. RP 278
83.1 acres.

MARKED TREES BY SPECIES AND SIZES.
(COMMERCIALS ONLY.)

Group	Species	GIRTH CLASS (FEET) 1	2	3	4	5	Total	Percentage.
White	Parashorea tomentella	100	56	31	25	19	231	16.93
Serayas	Parashorea malaanonan	19	13	2	2	2	38	2.78
Majau	Shorea leptoclados	61	48	35	26	15	185	13.58
Red Serayas	Shofea parvifolia	38	17	7	2	3	67	4.91
	Shorea leprosula	30	25	13	12	6	86	6.30
	Shorea waltonii	34	15	4	3	-	56	4.10
	Shorea smithiana	13	13	3	2	3	34	2.49
	Shorea almon	3	2		-	1	6	0.43
	Shorea mecistopteryx	4	2		2	-	8	0.58
	Shorea pauciflora	-	-	1	1	1	3	0.21
	Shorea macroptera	-	1	1	-	-	2	0.14
	Shorea ovalis	1	-	1	-	-	2	0.14
	Shorea macrophylla	-	-	1	-	-	1	0.07
Kapur	Dryobalanops lanceolata	110	46	22	18	13	209	15.32
	Dryobalanops keithii	2					2	0.14
Keruing	Dipterocarpus caudiferus	57	29	14	11	15	126	9.23
	Dipterocarpus exalatus	3	2	1	-	-	6	0.43
	Dipterocarpus grandiflorus	-	-	-	-	1	1	0.07
Yellow serayas	Shorea gibbosa	12	13	6	2	1	34	2.49
	Shorea acuminatissima	12	7	2	2	1	24	1.75
	Shorea hopeifolia (?)	9	2	2	-	-	13	0.95
	Shorea xanthophylla	1	-	-	-	-	1	0.07
Selangan batu	Shorea superba	13	4	2	3	2	24	1.75
	Indet	3	1	3	1	1	8	0.58
	Shorea seminis	4	3	1	1	-	9	0.65
	Shorea obscura	-	3	1		1	5	0.36
Melapi	Shorea gratissima	5	2	-	-	1	8	0.58
	Shorea symingtonii	3	-	1	-	-	4	0.29
	Shorea agami	1	-	3		-	4	0.29
Gagil	Hopea sangal	1	-	2	2	-	5	0.36
Resak	Vatica sp	2	1	1	-	-	4	0.29
Belian	Eusideroxylon zwageri	23	56	34	11	13	137	10 10.04
Nyatoh	Sapotaceae	10	7	-	-	-	17	1.24
Sepetir	Sindora sp	3	-	-	-	-	3	0.21
	Totals	577	368	194	126	99	1364	100

F.R. Segaliud Lokan
Plot No. RP278.

Appendix 6 Table 2

DAMAGE BY CATEGORIES.
COMMERCIAL SPECIES ONLY

	12-23	24-35	36-47	48-59	60-71"	Totals		Percentages
Co s0	98	70	46	27	20	261		19.13
Co s1	2	7	2	5	5	21		1.53
Co s2	5	4	6	3	5	23		1.68
Co s3	0	1	1	0	2	4		0.29
Co s4	0	0	0	0	1	1		0.07
C1 s0	53	33	30	15	13	144		10.55
C1s1	10	6	2	2	4	24		1.75
C1s2	5	5	5	4	2	21		1.53
C1s3	1	0	2	1	1	5		0.36
C1 s4	0	0	0	1	0	1		0.07
C2 s0	13	14	8	5	6	46		3.37
C2 s1	0	4	0	1	0	5		0.36
C2 s2	2	4	2	4	6	18		1.31
C2 s3	1	0	0	0	0	1		0.07
C2 s4	0	0	0	0	2	2		0.14
C2 s5	0	0	0	1	0	1		0.07
C3 s0	8	7	7	4	2	28		2.05
C3 s1	1	2	3	2	2	10		0.73
C3 s2	2	0	0	2	0	4		0.29
C3 s3	1	1	0	1	2	5		0;36
C4 s0	10	10	3	5	2	30		2.19
C4 s1	3	2	2	1	0	8		0.58
C4 s2	6	3	1	3	1	14		1.02
C4 s3	1	2	2	0	1	6		0.43
C4 s4	1	0	1	0	0	2		0.14
C4 s5	0	1	0	0	0	1		0.07
Fallen by tractor	72	50	14	13	3	152		11.14
Near tractor path but not found	147	63	14	4	4	232		17.0
Broken off	57	41	21	18	12	149		10.92
Under fallen trees not found	41	20	11	2	1	75		5.49
Fallen by trees	37	18	10	2	2	69		5.09
Diednaturally	0	0	1	0	0	1		0.07
	577	368	194	126	99	1364		100

Appendix 6 Table 3
Bark Damage by Girth Classes

Category	Girth 1	2	3	4	5	Total	%
1. Less than 1 ft.	16	21	9	11	11	68	4.9
2. 1-5 ft.	20	16	14	16	14	80	5.9
3. 5-10 ft.	4	4	5	2	6	21	1.5
4. 1-20 ft.	1	0	1	1	3	6	0.4
5. Over 20 ft.*	0	1	0	1	0	2	0.1
Total	41	42	29	31	34	177	12.9
Percentage	7.1	11.4	14.9	24.6	34.3		

* Excluding fallen or broken off.

Crown Damage by Girth Classes

Category	Girth 1	2	3	4	5	Total	%
1. 1-25% borken	69	44	39	23	20	195	14.3
2. 25-50% bfoken	16	22	10	11	14	73	5.4
3. 50-75% broken	22	10	19	9	6	47	3.4
4. 75-99% broken	21	18	9	9	4	61	4.5
Total	118	94	68	52	44	376	27.6
Percentage	20.4	25.5	35.1	41.3	44.4		

Appendix 6 Table 4

Stand Table Before and

After Logging Sub-Block i

Species	Girth Class 1		2		3		4		5		Total Before	Total After	Survival %
	B	A	B	A	B	A	B	A	B	A			
Shorea leptoclados	5	1	8	3	3	1	2	2			18	7	39
Shorea leprosula	5	2	6		1		1				13	2	15
Shorea waltonii	3		2	1							5	1	20
Parashorea tomentella	4		1		2	1	2	1	1	1	10	3	30
Parashorea malaanonan	1		1	1							2	1	50
Shorea superba	2		1	1			1	1			4	2	50
Shorea ? seminis/ hopeifolia	4	2	2								6	2	33
Selangan batu	1										1	0	0
Dryobalanops lanceolata	6	2	1								7	1	14
Shorea acuminatissima	2										2	0	0
Dipterocarpus caudiferus	5	1	2		1						8	1	12.5
Dipterocarpus grandiflorus									1	1	1	1	100
Shorea gratissima	2										2	0	0
Sapotaceae	1	1	1								2	1	50
Eusideroxylon zwageri	1		2		4	1					7	1	14
Totals Before	43		26		11		6		2		88	-	
After	9		6		3		4		2		-	24	
Survival %	21		23		27		67		100			27.2	

Appendix 6 Table 5

Damage Assessment After Logging

Sub Block i

Category of Damage	Size Classes (Feet, Girth)					Total	%
	1	2	3	4	5		
C0 S0	4	3				7	7.9
C0 S1	0	1			1	2	2.3
C0S2	1	0				1	1.1
C1 S2	1	0	0	2		3	3.4
C2 S0	1	1	1			3	3.4
C3 S0	0	0		2		2	2.3
Total standing trees with survival value	9	6	3	4	2	24	27.2
C4 S0		1				1	
C4 S1	1					1	
C4 S2		1				1	
C4 S3		1				1	
C4 S4				1		1	
Fallen by tractor	7	1	1	1		10	11.4
Near tractor path, not found	14	7	2			23	26.2
Broken off	2	5	1			8	9.1
Under fallen trees not found	5	3	4			12	13.6
Fallen by trees	5	1				6	6.8
Totals	43	26	11	6	2	88	100

Appendix 6 Table 6

Stand Table Before and

After Logging Sub-Block 1

Species	1		2		3		4		5		Total Before	Total After	Survival %
	Girth Class												
	B	A	B	A	B	A	B	A	B	A			
Shorea leprosula	4	2	2		3	1			1	1	10	4	50
Shorea leptoclados	2		3	2	1		2				8	2	25
Shorea macroptera					1						1		0
Shorea almon	1	1			1	1					2	2	100
Shorea smithiana	1		2								3		0
SMBU	1										1		0
Parashorea tomentella	4	3	2	1	1	1	1				8	5	63
Parashorea malaanonan	2	1	3								5	1	20
Shorea superba			1						1	1	2	1	50
Selangan batu	1				2	1	1				4	1	25
Shorea mecistopteryax	1	1	1	1	1	1					3	3	100
Dryobalanops lanceolata	1		1		1				3	3	6	3	50
Shorea acuminatissima	1	1					2		1		4	1	25
Shorea (Ritchetia)	3										3		0
Dipterocarpus caudiferus	3		1								4		0
Hopea sangal					1				1	1	2	1	50
Sapotaceae	3	2									3	2	67
Eusideroxylon zwageri			6	2	3		1	1	2	2	12	5	41
Totals Before	30		22		15		7		9		83		
After	11		6		5		1		8			31	
Survival %	37		27		33		14		88		37.4		

Appendix 6 Table 7

Damage Assessment After Logging
Sub Block 1

Category of Damage	Size Classes ft. Girth					Total	%
	1	2	3	4	5		
C0 S0	3	2	3	0	1	9	10.8
C0 S1	1				1	2	2.4
C1 S0	2	3	1	0	2	8	9.6
C1 S1	1					1	1.2
C2 S0	2			1	1	4	4.8
C2 S2	1	1	1		1	4	4.8
C3 S0	1				1	2	2.4
C3 S1					1	1	1.2
Total standing trees with survival value	11	6	5	1	8	31	37.4
C4 S0		1				1	1.2
C4 S1			1	1		2	2.4
C4 S5		1				1	1.2
Fallen by tractor	6	7	3	3	1	20	24.1
Near tractor path, not found	6	2				8	9.6
Broken off	4	3	5	2		14	16.8
Fallen by trees	3	2	1			6	7.2
Totals	30	22	15	7	9	83	100

Appendix 6 Table 8

Types of Damage by Girth Classes

Class of Damage	Girth Class (Feet)						Total Per 100 acres	Per-centage
	1	2	3	4	5	Total		
1. No damage	98	70	46	27	20	261	314	19
2. Bark damage, no crown damage	7	12	9	8	13	49	59	4
3. Crown damage, no bark damage	84	64	48	29	23	248	298	18
4. Both bark & crown damage	34	30	20	23	21	128	154	10
5. Fallen or broken off	354	192	71	39	22	678	816	49
Totals	577	368	194	126	99	1364	1641	100

APPENDICES 7 - 13

Appendix 7 - Table 1

Non-Commercial Species Remaining after Logging RP 223C Ulu Segama F.R. (15 Plots of 0.4 ha. summed)

Botanical Status — Girth (ins.) / Diam. (cm.)	Number of Trees in Size Classes										Total
	6 5	9 7	12 9	15 11	18 14	24 19	30 24	36<54 28	54<72 43	72+ 58+	
Lauraceae	66	45	33	22	20	19	10	20	1	1	237
Anonaceae	47	44	25	25	26	10	12	16	3	-	208
Diospyros spp	36	37	20	17	18	16	12	29	12	9	206
Eugenia spp	29	28	18	9	17	7	2	2	1	-	113
Burseraceae	10	14	11	6	6	4	2	7	6	2	68
Aglaia spp	17	13	10	3	7	-	3	-	-	-	53
Dillenia spp	3	7	7	8	12	6	4	5	-	-	52
Leea aculeata	34	8	4	-	-	-	-	-	-	-	46
Baccaurea spp	19	14	12	3	1	-	-	-	-	-	49
Microcos sp	10	15	4	6	5	2	-	1	-	-	43
Paranephelium nitidum	11	12	6	1	5	3	-	-	-	-	38
Koilodepas sp	9	5	3	-	6	2	3	3	1	-	32
Pentace sp	6	10	1	1	3	1	1	1	-	-	24
Fordia sp	7	6	2	4	1	-	-	-	-	-	20
Lophopetalum sp	3	1	2	1	4	2	-	1	1	-	15
Koordersiodendron pinnatum	1	-	-	-	1	1	1	1	-	4	9
Fagaceae	1	-	1	1	1	1	1	2	-	-	8
Others	8	11	4	1	3	3	4	4	-	1	39
Total	317	270	163	108	136	77	55	92	25	17	1260
Per 10 acres/4 ha.	211	180	109	72	91	51	37	61	17	11	840

Appendix 7 - Table 2

Non-Commercial Species Remaining after Logging in 7 Forest Reserves

Mean Per Acre (averages of 15 plots at each)

Location	Girth (ins) / Diam. (cm)	Number of Trees in Size Classes										Totals
		6 5	9 7	12 9	15 11	18 14	24 19	30 24	36< 54 28	54 <72 43	72+ 58 +	
Tenegang FR RP.223A		16.0	21.5	13.7	8.5	9.3	7.6	0.5	3.7	1.1	0.9	85.1
Ulu Segama FR RP.223C		21.1	18.0	10.9	7.2	9.1	5.1	3.7	6.1	1.7	1.1	84.0
Deramakot FR RP.223D		9.4	9.5	5.2	3.2	5.7	2.9	1.7	2.7	1.2	0.3	41.3
Silabukan FR RP.223E		14.6	13.5	8.1	7.0	7.2	5.5	2.3	3.3	1.3	1.1	63.5
Kretam FR RP.223G		2.3	3.5	3.7	4.4	5.5	2.6	2.5	0.9	0.5	0.7	26.8
Kalabakan FR RP.223H		14.5	13.2	10.3	5.1	6.9	4.4	3.4	4.7	2.3	2.1	67.1
Lumerau FR RP.223J		1.1	5.1	3.7	4.7	2.3	1.5	0.2	0.1	0.1	0.4	19.2

Appendix 7 - Table 3

Trees Remaining after Logging on 30 acres (12 ha.)
RP 233 Ulu Segama F.R (Silam)

Botanical Status / Girth (ft.) Diam (cm.)	2 20	3 30	4 39	5 48	6+ 58+	Total
Dipterocarpaceae						
Parashorea malaanonan	5	3	4	5	2	19
Shorea leprosula	-	1	4	2	-	7
Shorea leptoclados	15	8	8	13	14	58
Other dipterocarps (4 species)	1	5	4	-	1	11
Non-Dipterocarpaceae (Families)						
Ebenaceae	13	39	20	5	5	82
Lauraceae	22	24	5	5	5	61
Sapindaceae	9	19	23	1	3	55
Anacardiaceae	5	3	11	2	7	28
Burseraceae	6	8	6	1	3	24
Euphorbiaceae	6	11	4	2	-	23
Meliaceae	12	9	1	-	1	23
Fagaceae	2	8	5	2	2	19
Dilleniaceae	10	6	1	1	-	18
Rubiaceae	-	3	7	2	4	16
Others	15	34	19	12	4	84
Total	121	181	122	53	51	528
Per 10 acres/4 ha.	40	60	41	18	17	176

(More detail in Fox 1969 c)

Appendix 8

Seedling Stocking Following Felling - 1966-70
Overall results of LSM - Linear Sampling of milliacres.

Forest Reserve	(Locality)	Year	Stocking	Percentage Stocking		Individual Species of Rubroshorea most abundant
				Parashorea	Rubroshorea	
Kalabakan	(Brantian)	1966	215	28	64	S.parvifolia, S.leptoclados
		1967	486	25	38	S.smithiania, S.parvifolia
		1968	182	28	53	S.parvifolia, S.leprosula
		1969	200	13	65	S.parvifolia, S.oleosa
		1970	175	23	45	S.parvifolia, S.oleosa
	(Umas Umas)	1968	224	13	49	S.parvifolia, S.smithiana
		1969	291	9	63	S.parvifolia, S.smithiana
		1970	256	18	53	S.parvifolia, S.leprosula
	(Luasong)	1968	321	18	32	S.parvifolia, S.oleosa
		1969	498	26	46	S.parvifolia, S.oleosa
		1970	617	27	47	S.parvifolia, S.oleosa
Gunong Rara Kretam	(Sg.Binuang)	1966	354	17	51	S.leptoclados,S.mecistopteryx
		1967	687	9	53	S.leptoclados,S.leprosula
		1968	415	17	53	S.leptoclados,S.mecistopteryx
		1969	319	18	44	S.leptoclados,S.mecistopteryx
		1970	301	28	34	S.leptoclados,S.oleosa
	(Sg.Rotan)	1968	494	65	19	S.leptoclados,S.leprosula
	(Sg.)Batu)	1966	180	17	68	S.leptoclados,S.parvifolia
		1967	329	18	59	S.leptoclados,S.leprosula
		1968	187	40	48	S.leptoclados,S.parvifolia
	(Sg.Kimambu)	1966	283	21	52	S.leptoclados,S.leprosula
		1967	370	13	64	S.leptoclados,S.parvifolia
		1968	311	21	51	S.leptoclados,S.parvifolia.

/continued.....

Appendix 8 continued.....

Forest Reserve	(Locality)	Year	Stocking	Percentage Stocking Parashorea	Rubroshorea	Individual Species of Rubroshorea most abundant
Deramakot	(Balat)	1966	259	64	13	S.leptoclados, S.smithiana
		1967	146	27	41	S.leptoclados, S.mecistopteryx
		1968	264	60	28	S.leptoclados, S.parvifolia
		1969	236	62	18	S.smithiana S.leptoclados
		1970	194	47	27	S.smithiana S.mecistopteryx
	(Arawon)	1966	177	37	33	S.leptoclados S.smithiana
	(Karis Karis)	1966	244	76	14	S.leptoclados S.parvifolia
		1967	294	51	19	S.macroptera S.leptoclados
		1968	185	47	24	S.smithiana S.leptoclados
		1969	246	36	39	S.leptoclados S.macroptera
		1970	332	42	32	S.macroptera S.mecistopteryx
Kuamut	(Tangkong)	1966	421	4	67	S.leptoclados S.mecistopteryx
		1967A	280	23	45	S.leptoclados S.smithiana
		1967B	217	13	74	S.leptoclados S.smithiana
		1968	267	11	53	S.leptoclados S.mecistopteryx

Appendix 9 - Table 1

Numbers of Increments by C.A.I and Girth Classes

RP.53 Segalind-Lokan F.R.

Size Class	Inches Girth	< 20	20-39.9	40-59.9	60+	Total
Increment Class (Inches CAI)		(a) Prior to felling 1959 - 1962				
0 - 0.49		24	22	10	7	63
0.5 - 0.99		6	11	6	4	27
1.0 - 1.49		-	4	2	2	8
1.5 - 1.99		-	4	1	-	5
2.0+		-	-	1	1	2
		(b) After felling 1963 - 70				
0.- 0.49		7	6	3	1	17
0.5 - 0.99		2	10	10	7	29
1.0 - 1.49		3	21	7	7	38
1.5 - 1.99		-	5	8	2	15
2.0+		-	4	-	2	6

Appendix 9 - Table 2

RP.273 C Silabukan F.R.

Size Class (Inches Girth)	<10	10-19.9	20-29.9	30-39.9	40+	Total
Increment Class (Inches CAI)	(one year following treatment) (a) Control Plots 1 and 4					
0 - 0.9	29	37	5	1	4	76
1 - 1.9	8	42	13	1	5	69
2 - 2.9	1	12	13	2	1	29
3 +	1	4	6	-	3	14
	(b) Treatment Plot 3					
0 - 0.9	9	9	1	-	1	20
1 - 1.9	16	25	-	1	1	43
2 - 2.9	4	13	6	1	-	24
3 +	1	3	1	-	2	7

Appendix 9 - Table 3

Percentage of Average C.A.I's of 2.00 inches or more over the 2 years following treatment

RP.273A Segaliud-lokan F.R.

Girth Class (Inches)	< 10	10-19.9	20-29.9	30-39.9	40+	Totals
Control	0	14	44	33	11	22
T 2	45	73	53	50	-	52
T 3	25	33	63	25	44	40

- Appendix 10 -

Summary of LS ¼ Surveys at Kalabakan F.R. (to show Climber Infestations)

Area	Felled	Girdled	Age from F	Category	Mean Stocking Per Acre (0.4 ha.) All sizes 5ft+ ht (over 1.5m ht)	1-2ft g (10-20 cmd)	Over 2ft g (over 20 cmd)
1	1953-54	1955-57	9	All Stems	91.5	11.1	3.6
				Free of Climbers	34.0	1.6	1.2
			15	All	87.2	13.9	4.7
				Free of Climbers	25.5	1.5	1.3
2	1957-58	1958	5-6	All Stems	110.9	11.0	3.4
				Free of Climbers	69.6	5.9	2.3
			10-11	All	104	16.1	5.8
				Free of Climbers	36.8	6.3	2.6
3	1953-55	1958	10	All Stems	106.8	7.8	6.2
				Free of Climbers	78.1	5.0	5.5
			16	All	122.4	16.4	7.5
				Free of Climbers	46.3	3.4	3.0
4	1955	1958	8	All Stems	91.8	8.7	4.7
				Free of Climbers	73.1	6.6	3.9
			14	All	98.4	7.8	4.8
				Free of Climbers	57.2	1.9	1.2

(Maximum 160)

Appendix 11

Line Summary LS½ Survey Silabukan F.R. Felled 1955, Samples March 1971

ine o.	Chainage	Maximum Plots	Acreage	Stocking size class <10ft.	10ft.<6ins.g.	6-12ins.g.	1-2ft.g.	2-3ft.g.	3-4ft.g.	4-5ft.g.	5ft.+	Total Stocking	Plots with Climbers	Plots with Impeders	Reliefs (Comm.)
	40	80	2·0	13	5	15	6	15	1	-	1	56	49	51	2
	40	80	2·0	10	23	20	10	3	-	-	1	67	61	61	3
	30	60	1·5	5	8	19	15	-	-	1	2	50	23	27	1
	30	60	1·5	8	6	12	2	1	1	-	-	30	18	28	3
	26	52	1·3	5	19	9	-	-	-	-	-	33	33	33	-
	30	60	1·5	-	5	9	10	-	-	3	4	31	25	31	3
	35	70	1·75	23	8	4	6	-	1	1	2	45	29	36	1
	40	80	2·0	4	10	15	6	3	-	-	1	39	32	33	1
	40	80	2·0	2	10	7	8	3	1	-	5	36	5	16	1
otals	311	622	15·55	70	94	110	63	25	4	5	16	387	275	316	15
er Acre -		40	-	4·5	6·05	7·07	4·05	1·61	0·25	0·32	1·06	24·91	17·7	20·3	0·24

Appendix 12 - Table 1

Size Class Distribution of Chosen Trees RP 273

Size Distribution Chosen Trees (consistently present) RP 273C 4 Ha. (10 acres) 14.8years from Felling

Species	Numbers of Trees in Girth Classes (Inches)							Totals
	<10	10-14.9	15-19.9	20-24.9	25-29.9	30-39.9	40+	
Parashorea malaanonan	98	88	48	24	8	6	19	291
Shorea leprosula (Ru)	4	10	11	11	4	1	1	42
S.parvifolia (Ru)	-	1	-	-	1	-	-	2
S.leptoclados (Ru)	1	-	1	-	-	-	-	2
H.Sangal	2	-	-	-	-	-	-	2
Totals	105	99	60	35	13	7	20	339
Percent in Size Class	31	29	18	10	4	2	6	100

Appendix 12 - Table 2

Size Class Distribution of Chosen Trees RP 273

Size Distribution Chosen Trees (At Start) RP 273 B 4 HA (10 acres) 12.7 years from Felling

Species	Number of Trees in Girth Classes (Inches)								Total
	< 10	10-14.9	15-19.9	20-24.9	25-29.9	30-39.9	40-49.9	50+	
Shorea parvifolia (Ru)	28	32	23	33	30	19	5	-	170
S.leprosula (Ru)	21	11	9	15	8	6	1	-	71
S.smithiana (Ru)	16	13	4	5	-	1	-	-	39
S.ovalis (Ru)	9	2	2	1	1	1	-	3	19
S.leptoclados (Ru)	1	6	2	1	-	2	-	-	12
S.oleosa (Ru)	2	1	3	5	-	1	-	-	12
Parashorea tomentella	9	4	3	-	-	-	-	-	16
Dryobalanops lanceolata	9	1	-	1	-	-	-	#1	12
Others: 11 species	30	3	7	4	1	-	3	1	49
Totals	125	73	53	65	40	30	9	5	400
Percent in Size Class	31	18	14	16	10	7	2	1	100

Appendix 12 - Table 3

Size Class Distribution of Chosen Trees RP 273

Size Distribution Chosen Trees (At Start) RP 273 A 4 HA (10 acres) 11.2 years from Felling

Species	Number of Trees in Girth Classes (Inches)								
	< 10	10-14.9	15-19.9	20-24.9	25-29.9	30-39.9	40-49.9	50+	Totals
Shorea leptoclados (Ru)	13	21	48	48	13	6	1	-	150
S.leprosula (Ru)	5	14	21	16	6	-	-	3	65
S.smithiana (Ru)	7	2	-	2	1	1	-	1	14
S.Agami (An)	1	-	1						2
S.parvifolia (Ru)	-	-	2	2	1	1	-	-	6
Parashorea tomentella	22	22	11	7	3	5	7	9	86
P.Malaanonan	-	-	-	-	1	-	-	-	1
Dryobalanops lanceolata	20	3	2	4	1	4	-	3	37
Dipterocarpus candiferus	18	-	4	-	-	1	-	2	25
Totals	86	62	89	79	26	18	8	18	386
Percent in Size Class	22	16	23	20	7	5	2	5	100

Appendix 13

Miscellaneous Tables RP 273

Table 1 - Average CAI for all Chosen Trees and Best 50 Increments in RP 273 B Kalabakan F.R. by Year from Treatment

Treatment	Average C A I (Inches) 1st Year 100	1st Year 50	2nd Year 100	2nd Year 50	Average 100	Average 50
Control	0.96	1.40	1.32	1.91	1.14	1.65
T 2	1.70	2.35	2.61	3.24	2.15	2.81
T 3	1.03	1.40	1.49	2.06	1.25	1.73
Mean,all plots	1.10	1.63	1.70	2.27	1.40	1.95

Table 2 - Average CAI for all Chosen Trees and Best 50 Increments in RP 273 A Segalind Lokan F.R. by Year from Treatment

Treatment	Average C A I (Inches) 1st Year 100	1st Year 50	2nd Year 100	2nd Year 50	Average 100	Average 50
Control	1.20	1.54	1.35	1.73	1.27	1.63
T 2	1.85	2.30	2.31	2.67	2.08	2.46
T 3	1.58	2.10	1.64	2.02	1.61	2.06
Mean,all plots	1.40	1.86	1.65	2.03	1.52	1.94

Appendix 13

Miscellaneous Tables RP 273

Table 3 - Average Crown Scores by Increments RP 273 B Kalabakan F.R.

Treatment		All Chosen Trees	25 best increments	C.A.I 2.5"+	C.A.I. 3"+
Control.	Mean crown position	3.4	3.8	4.2	4.5
	Mean crown shape	2.8	3.4	3.7	3.8
T 2	Mean crown position	3.2	3.4	3.5	3.6
	Mean crown shape	2.2	2.5	2.7	2.5
T 3	Mean crown position	3.6	4.0	4.5	4.5
	Mean crown shape	2.5	3.1	4.1	4.3

Table 4 - Average Heights of Chosen Trees (Feet) in RP 273 B Kalabakan F. R.

Time from F	12.7			14.2		
Number per plot	100	50	25	100	50	25
Treatment						
Control	38.6	47.9	54.7	41.0	51.6	57.4
T 2	33.6	42.5	49.1	34.9	43.0	49.7
T 3	35.7	48.2	53.6	38.9	51.2	56.1
Mean, all plots	36.6	46.6	53.0	39.0	49.3	55.2

Appendix 14

Management Volumes RP.273

Volume tables of limited applicability have been prepared for regenerating stands, but no generally applicable tables have been assembled.

The table used for assessment of standing timber left in felling areas (Conservator's Circular No. 3/1962) taken from the natural forest tables of Howroyd and Alabazo (1961) has been adapted to estimate volume increment coincident with bole increase by graphical smoothing to give:-

Girth Class (ins.)	15	15-19.9	20-24.9	25-34.9	35-44.9	45-54.9
Volume increment (in hoppus cu.ft) per inch of girth increment	-	0.5	0.75	1.0	1.5	2.0

Girth Class	55-64.9	65+
Vol.increment	2.75	3.0

The convention used here is that a tree of less than 10 inches girth has no volume and the difference in volume between classes is spread over the class. For example the 1962 table is :

Class	Volume	Median Girth
1 ft	4	18 inches
2 ft	13	30 inches

giving a volume difference of 9 for an average girth change of 12 inches, equivalent to an average increase of 0.75 cu.ft/inch.

Management volumes corresponding to bole sizes are as follows:

Girth	Volume	Girth	Volume	Girth	Volume
10 inches	0	30-34.9	6	55-59.9	60
10-14.9	1.5	35-39.9	23	60-64.9	75
15-19.9	4	40-44.9	30	65-69.9	90
20-24.9	7.5	45-49.9	39	70-74.9	105
25-29.9	11	50-54.9	48		

Appendix 14 - (continued....)

Application of these volumes to the plots of RP.273 B gives:

Table 1

Hoppus Volumes Per Plot (2.5 acres) RP.273B

Category	Years from F	Control	T2	T3	Mean
All chosen trees	12.7	743	458	570	628
	14.7	880	721	723	801
Average C.A.I.		68	131	76	86
Consistent trees	12.7	707	423	551	597
	14.7	851	667	705	768
Average C.A.I		72	122	77	85
Average C.A.I. (calculated separately)		90	103	79	90
Best 50 increments	12.7	512	350	470	461
	14.7	641	547	600	607
Average C.A.I.		65	98	65	73
Average C.A.I. (calculated separately)		78	91	72	80
Largest 25 trees Average C.A.I. (calculated separately)		57	66	51	58

Note: Main table entries obtained by multiplying stand table distributions (cf Appendix 12) by management volume sizes as shown above. Where C.A.I is entered as "calculated separately" this means that volume increments were obtained directly from girth increments. The entry "consistent trees" refers to chosen trees present at each measurement, and therefore, excludes new selections.

Appendix 14 - (continued.....)

Similar calculations with respect to the plots of RP.273A gives :

Table 2

Hoppus Volumes Per Plot (2.5 acres) RP.273A

Category	Years from F	Control	T2	T3	Mean
All chosen trees	11.2	742	765	974	806
	13.2	864	973	1181	970
Average C.A.I		61	104	103	82
Consistent trees	11.2	613	716	888	707
	13.2	798	971	1099	916
Average C.A.I		92	127	105	104
Average C.A.I.(calculated separately)		82	119	103	98
Best 50 increments	11.2	416	326	459	404
	13.2	554	492	629	560
Average C.A.I		69	83	85	78
Average C.A.I.(calculated separately)		68	78	79	73
Largest 25 trees Average C.A.I (calculated separately)		47	46	56	49

Equivalence for yield plot summaries is:

Girth Class	< 12	12+	24+	36+	48+	60+	72+
Vol.i/inch	0	0.5	1.0	1.5	2.0	2.75	3

Appendix 15

Sampling Errors Associated with series of Yield Plots at First Measurement

Yield Plot Series (Plots in brackets)	Statistic	Measurement Parameter (Per Plot Values) Total Basal Area (sq.ft)	Total trees 12" g+	Stocking (Max.100)	Stocking 12" g+	Mean Girth Overall of Crop Trees
Segalind-Lokan 1957(10)	Mean	161	584	95.9	60.1	14.2
	SE%	3.6	6.1	1.3	5.3	3.0
Segalind-Lokan 1959 (10)	Mean	132	479	91.4	50.8	13.2
	SE%	6.4	6.0	2.3	8.5	4.0
Kalabakan 1953 (5)	Mean	185	495	89.6	43.2	11.9
	SE%	18.1	9.4	6.8	23.6	15
Kalabakan 1955 (7)	Mean	226	552	84.9	43.3	13.0
	SE%	8.3	7.1	8.2	7.7	8.9
Silabukan 1954-57 (10)	Mean	153	527	95.0	64.8	14.7
	SE%	8.6	10.6	1.7	10.2	8.1
Kalumpang 1957-59 (10)	Mean	159	439	93.5	38	10.7
	SE%	11.6	7.3	2.1	14.2	9.3
Kretam 1953-54 (5)	Mean	264	503	94.2	30.4	9.2
	SE%	7.6	5.0	3.8	14.8	7.8
Garinono 1928 (5)	Mean	275	446	82.4	46.6	13.9
	SE%	5.2	2.1	4.4	5.5	5.6

APPENDIX 16

Stand Tables of Chosen Trees (Yield Plots).

Table 1	Silabukan F.R. F 1954-57
Table 2	Silabukan F.R. F 1961
Table 3	Kalumpang F.R. F 1957-59
Table 4	Segaliud-lokan F.R. F 1957
Table 5	Segaliud-lokan F.R. F 1959
Table 6	Kretam F.R. F 1952-54
Table 7	Garinono F.R. F 1928
Table 8	Kalabakan F.R. F 1953
Table 9	Kalabakan F.R. F 1955
Table 10	Kalabakan F.R. F 1959
Table 11	Kalabakan F.R. F 1961

Appendix 16 - Table 1

Stand Table Chosen Trees by Size Classes Silabukan F.R. F 1954-57 Y.P.'s 1-10

(a) First measurement.

Girth Class (ins.)	1 -5•9	6-11•9	12=17•9	18-23•9	24-29•9	30-35•9	36-41•9	42+	Total
Plot									
Y.P.1	4	23	32	16	4	1	1	15	96
Y.P.2	11	17	28	8	6	3	3	14	90
Y.P.3	3	8	23	29	15	3	3	8	92
Y.P.4	15	12	25	15	5	7	4	16	99
Y.P.5	13	30	26	10	2	-	2	9	92
Y.P.6	2	10	34	37	7	2	1	7	100
Y.P.7	11	19	25	14	8	6	2	11	96
Y.P.8	4	8	49	23	10	-	1	5	100
Y.P.9	5	40	24	1	-	1	2	27	100
Y.P.10	42	25	10	1	1	-	1	5	85
Mean per acre	4•4	7•7	11•0	6•2	2•3	0•9	0•8	4•7	38
(b) Second measurement.									
Y.P.1	4	19	28	19	6	1	-	16	93
Y.P.2	10	19	21	10	5	5	4	15	89
Y.P.3	3	4	9	17	25	10	7	9	84
Y.P.4	11	12	24	7	9	5	4	16	88
Y.P.5	5	17	27	9	1	2	-	10	71
Y.P.6	3	6	22	38	18	5	1	7	100
Y.P.7	13	17	19	18	8	7	5	13	100
Y.P.8	5	4	34	32	16	2	-	7	100
Y.P.9	3	24	37	5	-	1	1	28	99
Y.P.10	31	28	13	3	-	-	-	3	78
Mean per acre	3•5	6•0	9•4	6•3	3•5	1•5	0•9	5•0	36

See Appendix 17 - Table 1 for times from felling

Appendix 16 - Table 2

Stand Table Chosen Trees by Size Classes Silabukan F.R. F 1961 Y.P.'s 1-5

Girth Classes (ins.)	1-5•9	6-11•9	12-17•9	18-23•9	24-29•9	30+	Total
Plot							
Y.P.1	9	35	26	7	3	-	80
Y.P.2	8	32	14	15	1	1	71
Y.P.3	26	23	24	13	3	-	89
Y.P.4	50	26	12	3	2	2	95
Y.P.5	49	34	9	2	2	4	100
Mean per acre	11•3	12•0	6•8	3•2	0•9	0•6	34•8

(9•2 years from felling)

First measurement.

Appendix 16 - Table 3

Stand Table Chosen Trees by Size Classes Kalumpang F.R. F 1957-59 Y.P.'s 1-10

(a) First measurement.

Girth Class (ins.)	1-5•9	6-11•9	12-17•9	18-23•9	24-29•9	30+	Total
Plot							
Y.P.1	18	41	22	9	-	5	95
Y.P.2	53	36	3	1	-	3	96
Y.P.3	18	19	27	17	5	3	89
Y.P.4	18	22	37	9	-	7	93
Y.P.5	22	15	10	25	14	5	91
Y.P.6	14	22	21	14	2	6	79
Y.P.7	32	35	16	2	4	11	100
Y.P.8	58	17	2	9	4	9	99
Y.P.9	39	39	12	3	1	4	98
Y.P.10	19	18	28	13	7	10	95
Mean per acre	11•6	10•6	7•1	4•1	1•5	2•5	37•4

(b) Second measurement.

						30-35•9	36-41•9	42+	Total
Y.P.1	16	29	27	12	6	1	1	1	93
Y.P.2	50	26	10	3	1	-	-	3	93
Y.P.3	15	13	18	23	13	2	2	3	89
Y.P.4	18	11	35	17	4	-	2	5	92
Y.P.5	20	14	5	15	17	10	3	5	89
Y.P.6	9	8	17	18	8	2	-	5	67
Y.P.7	27	27	15	9	3	2	-	10	93
Y.P.8	50	15	5	10	2	2	-	9	93
Y.P.9	37	33	15	5	-	-	-	4	94
Y.P.10	16	12	16	24	8	5	1	9	91
Mean per acre	10•3	7•5	6•5	5•4	2•5	1•0	0•4	2•2	35•8

See Appendix 17 - Table 2 for times from felling.

Appendix 16 - Table 4

Stand Table Chosen Trees by Size Classes Segaliud-lokan F.R. F 1957 Y.P.'s1-10

(a) First measurement.

Girth Class (ins)	1-5•9	6-11•9	12-17•9	18-23•9	24-29•9	30+	Total
Plot							
Y.P.1	6	19	39	21	6	9	100
Y.P.2	8	29	28	14	5	11	95
Y.P.3	9	30	34	7	4	8	92
Y.P.4	10	15	40	22	4	8	99
Y.P.5	14	27	34	13	1	8	97
Y.P.6	15	27	27	13	3	7	92
Y.P.7	7	17	35	28	2	11	100
Y.P.8	17	35	30	6	3	6	97
Y.P.9	11	22	16	10	7	22	88
Y.P.10	18	22	32	14	5	8	99
Mean per acre	4•6	9•7	12•6	5•9	1•6	3•9	38•3

9•3 years from felling

(b) Second measurement.

						30-35•9	36-41•9	42+	Total
Y.P.1	4	17	19	33	13	5	1	5	97
Y.P.2	5	13	33	18	11	5	2	5	92
Y.P.3	9	25	22	21	4	2	1	6	90
Y.P.4	9	12	30	31	8	2	3	4	99
Y.P.5	10	17	29	23	6	2	1	6	94
Y.P.6	15	22	23	18	7	-	-	7	92
Y.P.7	5	16	25	31	10	2	1	9	99
Y.P.8	15	29	21	19	4	3	2	3	96
Y.P.9	6	15	21	11	10	-	4	19	86
Y.P.10	11	20	26	21	8	2	2	4	94
Mean per acre	3•6	7•4	10•0	9•0	3•2	0•9	0•7	2•7	37•5

10•9 years from felling

(c) Third measurement.

Y.P.1	3	11	12	21	26	9	3	6	91
Y.P.2	3	9	27	24	12	9	3	7	94
Y.P.3	6	22	17	18	15	4	1	8	91
Y.P.4	4	11	12	32	21	5	4	6	95
Y.P.5	2	13	16	27	15	4	2	7	86
Y.P.6	12	14	18	21	11	4	-	7	87
Y.P.7	2	12	15	22	22	11	2	9	95
Y.P.8	5	20	22	15	8	6	-	5	81
Y.P.9	5	9	11	10	13	5	2	21	76
Y.P.10	4	16	15	24	14	4	2	6	85
Mean per acre	1•8	5•5	6•6	8•7	6•3	2•4	0•7	3•3	35•3

13•7 years from felling

Appendix 16 - Table 5

Stand Table Chosen Trees by Size Classes Segaliud-lokan F.R. F 1959 Y.P.'s 1-10

(a) First measurement.

Girth Class (ins)	1-5•9	6-11•9	12-17•9	18-23•9	24-29•9	30+	Total
Plot							
Y.P.1	19	27	34	15	-	5	100
Y.P.2	23	27	13	8	3	9	83
Y.P.3	23	29	20	7	4	15	98
Y.P.4	14	25	24	9	3	5	80
Y.P.5	9	28	31	16	4	10	98
Y.P.6	11	29	29	11	5	9	94
Y.P.7	12	23	28	12	4	13	92
Y.P.8	7	10	36	21	10	8	92
Y.P.9	26	23	25	8	1	14	97
Y.P.10	16	25	27	-	2	10	80
Mean per acre	6•4	9•8	10•7	4•3	1•4	3•9	36•6

7•4 years from felling

(b) Second measurement.

							30-35•9	36-41•9	42+	Total
Y.P.1	15	25	26	20	6	1	1	3		97
Y.P.2	18	31	12	7	5	2	4	5		84
Y.P.3	22	30	11	9	9	2	2	13		98
Y.P.4	14	18	23	12	5	2	-	5		79
Y.P.5	9	20	23	25	8	3	3	4		95
Y.P.6	12	26	31	11	5	4	1	4		94
Y.P.7	13	11	29	16	8	3	3	7		90
Y.P.8	4	12	27	23	14	7	-	6		93
Y.P.9	22	21	25	11	2	3	1	9		94
Y.P.10	15	24	21	9	1	3	3	3		79
Mean per acre	5•8	8•7	9•1	5•7	2•5	1•2	0•7	2•4		36•1

8•9 years from felling

(c) Third measurement.

Y.P.1	12	21	11	26	16	2	2	4		94
Y.P.2	16	29	9	9	8	1	4	5		81
Y.P.3	17	34	12	9	7	2	2	12		95
Y.P.4	9	15	22	15	9	2	1	5		78
Y.P.5	8	15	20	16	20	8	4	6		97
Y.P.6	13	15	25	23	10	3	2	4		95
Y.P.7	10	8	22	17	10	8	4	8		87
Y.P.8	4	6	24	23	17	9	1	6		90
Y.P.9	20	22	16	15	6	3	2	10		94
Y.P.10	9	18	19	13	4	1	3	5		72
Mean per acre	4•7	7•3	7•2	6•6	4•3	1•6	1•0	2•6		35•3

11•9 years from felling

Appendix 16 - Table 6

Stand Table Chosen Trees by Size Classes Kretam F.R. F. 1952-54 Y.P.'s 1-6 (no. 4)

(a) First measurement.

Girth Class (ins.)	1-5•9	6-11•9	12-17•9	18-23•9	24-29•9	30+	Total
Plot							
Y.P.1	52	12	4	-	1	12	81
Y.P.2	57	9	8	4	4	11	93
Y.P.3	28	27	13	7	5	20	100
Y.P.5	39	26	15	6	2	9	97
Y.P.6	53	16	7	6	4	14	100
Mean per acre	18•3	7•2	3•8	1•8	1•3	5•3	37•7

(b) Second measurement.

						30-35•9	36-41•9	42+	Total
Y.P.1	50	14	2	1	-	4	1	8	80
Y.P.2	54	8	5	5	5	5	-	7	89
Y.P.3	22	26	16	6	7	4	4	14	99
Y.P.5	34	19	18	7	5	1	2	3	89
Y.P.6	42	20	8	6	4	2	2	11	95
Mean per acre	16•2	7•0	3•9	2•0	1•7	1•3	0•7	3•4	36•2

Appendix 16 - Table 7

Stand Tables Chosen Trees by Size Classes Garinono F 1928 Y.P.'s 1-5.

First measurement. (a) All trees by species.

Girth Class (feet)	1	1	2	3	4	5	6	7	8	Total
Parashorea tomentella	47	59	12	7	1	3	1	1	-	131
Parashorea malaanonan	6	3	-	1	-	-	-	-	1	11
Shorea leptoclados	14	2	2	3	5	6	2	2	1	37
Shorea leprosula	9	8	11	6	3	-	-	-	-	37
Shorea parvifolia	14	7	7	3	3	1	-	-	-	35
Shorea smithiana	2	2	4	-	3	1	-	-	-	12
Shorea waltonii	1	3	-	-	-	-	-	1	-	5
Hopea saugal	2	1	-	1	-	-	-	-	-	4
Dipterocarpus caudiferus	57	16	4	1	-	-	1	-	-	79
Dryobalanops lanceolata	9	18	4	1	-	-	-	2	1	35
Other species	12	9	1	-	-	-	-	-	-	22
Totals	173	128	45	23	15	11	4	6	3	408
Mean per acre	13•9	10•3	3•6	1•8	1•2	0•9	0•3	0•5	0•2	32•7

(b) By plots.

Y.P.1	38	21	12	4	5	2	2	2	1	87
Y.P.2	41	23	11	1	1	2	-	-	-	79
Y.P.3	37	35	3	7	3	3	1	1	1	91
Y.P.4	23	21	10	8	6	1	-	2	-	71
Y.P.5	34	28	9	3	-	3	-	2	1	80

Appendix 16 - Table 8

Stand Table Chosen Trees by Size Classes Kalabakan F.R. F 1953 Y.P.'s 1-5

(a) First measurement.

Girth Class (ins)	1-5•9	6-11•9	12-17•9	18-23•9	24-29•9	30+	Total
Plot							
Y.P.1	23	26	13	1	2	3	68
Y.P.2	25	25	17	4	5	15	91
Y.P.3	9	41	31	11	1	1	94
Y.P.4	6	22	23	12	14	23	100
Y.P.5	34	21	20	7	2	11	95
Mean per acre	7•8	10•8	8•3	2•8	1•9	4•2	35•8

13•5 years from felling

(b) Second measurement.

						30-35•9	36-41•9	42+	Total
Y.P.1	18	26	13	1	2	-	1	4	65
Y.P.2	25	24	17	5	2	4	4	10	91
Y.P.3	9	40	27	10	3	-	-	2	91
Y.P.4	6	22	20	12	9	12	1	18	100
Y.P.5	28	29	20	8	1	1	4	7	98
Mean per acre	6•9	11•2	7•8	2•9	1•3	1•4	0•8	3•3	35•6

14•7 years from felling

(c) Third measurement.

Y.P.1	29	21	15	4	1	-	-	3	73
Y.P.2	26	20	17	9	3	4	5	10	94
Y.P.3	12	32	31	10	1	2	-	2	90
Y.P.4	2	19	17	12	10	10	7	19	96
Y.P.5	12	27	19	9	3	2	3	8	83
Mean per acre	6•5	9•5	7•9	3•6	1•4	1•4	1•2	3•4	34•9

17•4 years from felling

Appendix 16 - Table 9

Stand Table Chosen Trees by Size Classes Kalabakan F.R. F 1955 Y.P.'s 1-7

First measurement.

Girth Class (ins.)	1-5•9	6-11•9	12-17•9	18-23•9	24-29•9	30+	Total
Plot							
Y.P.1	28	18	21	11	2	9	89
Y.P.2	46	13	9	11	-	10	89
Y.P.3	32	15	11	7	5	29	99
Y.P.4	26	23	18	15	6	10	98
Y.P.5	7	7	15	11	3	3	46
Y.P.6	26	17	16	7	6	19	94
Y.P.7	17	13	5	6	7	31	79
Mean per acre	10•6	6•1	5•4	3•9	1•7	6•3	34•0

11•7 years from felling

Appendix 16 - Table 10

Stand Table Chosen Trees by Size Classes Kalabakan F.R. F 1959 Y.P.'s 1-10

First measurement.

Girth Class (ins.)	1-5•9	6-11•9	12-17•9	18-23•9	24-29•9	30+	Total
Plot							
Y.P.1	17	25	18	25	11	4	100
Y.P.2	30	38	9	7	4	2	90
Y.P.3	21	21	22	17	7	8	96
Y.P.4	11	30	27	16	7	8	92
Y.P.5	43	26	9	5	2	5	88
Y.P.6	19	21	24	10	13	9	96
Y.P.7	35	36	13	9	2	3	98
Y.P.8	25	24	24	15	6	6	100
Y.P.9	26	24	18	11	9	8	96
Y.P.10	29	31	16	12	6	3	97
Mean per acre	10•2	11•0	7•2	5•1	2•7	1•9	38•1

Appendix 16 - Table 11

Stand Table Chosen Trees by Size Classes Kalabakan F.R. F 1961 Y.P.'s 1-5

First measurement.

Girth Class (ins.)	1-5•9	6-11•9	12-17•9	18-23•9	24-29•9	30+	Total
Plot							
Y.P.1	11	25	11	14	5	4	70
Y.P.2	17	14	5	2	-	7	45
Y.P.3	21	26	21	16	1	5	90
Y.P.4	17	28	18	14	6	-	83
Y.P.5	10	16	11	10	10	7	64
Mean per acre	6•1	8•7	5•3	4•5	1•8	1•8	28•2

9•1 years from felling

APPENDIX 17

Mean Girths of Abundant Chosen Tree Species

All measurements in inches. (Yield Plots)

Appendix 17 - Table 1

Mean Girths of Most Abundant Chosen Tree Species Silabukan F 1954-1957

(a) First measurement (48 ins. g). (All measurements in inches girth)

Species Y.P.	1	2	3	4	5	6	7	8	9	10
Parashorea malaanonan	14·3	14·4	22·0	16·5	10·1	18·0	15·4	15·8	13·3	5·5
Shorea leprosula	20·3	15·7	20·0	-	18·7	17·4	18·9	17·1	12·5	10·5
Dryobalanops lanceolata	-	10·7	-	14·8	-	20·0	-	-	-	-
Shorea parvifolia	21·9	21·6	18·7	25·0	-	-	-	-	-	-
Shorea leptoclados	-	16·5	18·3	-	-	-	-	-	-	-
Overall plot mean	15·6	14·8	19·8	15·8	11·7	17·7	16·2	16·2	13·2	6·1
Time from felling (years)	12·8	10·9	10·9	13·0	12·9	12·1	12·0	13·0	13·0	14·0

(b) Second measurement.

Parashorea malaanonan	15·1	17·0	23·0	20·0	12·2	18·9	17·0	18·5	15·1	6·8
Shorea leprosula	23·7	15·9	25·7		22·0	20·9	20·9	20·5	16·9	11·2
Dryobalanops lanceolata	-	11·5		14·0		21·5				
Shorea parvifolia	20·7	25·5	24·1	27·7						
Shorea leptoclados	-	17·9	23·9							
Overall plot mean	16·7	16·8	24·2	17·2	14·4	20·0	17·9	18·9	15·0	7·2
Time from felling (years)	15·6	13·6	13·6	15·7	15·7	14·7	14·7	15·5	15·7	16·7

Appendix 17 - Table 2

Mean Girths of Most Abundant Chosen Tree Species Kalumpang F.R. F 1957-59

(a) First measurement (48 ins. g) (All measurements in inches girth)

Species. Y.P.	1	2	3	4	5	6	7	8	9	10
Parashorea malaanonan	7·8	4·8	12·4	6·5	10·4	7·5	8·1	7·2	3·3	12·1
Shorea leprosula	15·2	9·2	16·5	1 4·2	20·1	14·3	10·9	4·1	9·6	11·1
Shorea parvifolia	12·2	15·6	11·2	12·2	23·5	10·3	7·7	5·4	6·0	13·4
Shorea leptoclados	12·8	-	-	-	-	-	-	-	9·2	15·6
Overall plot mean	10·8	5·4	13·2	11·7	14·9	12·0	9·8	6·9	8·1	14·5
Time from felling (years)	9·6	9·7	8·7	8·8	7·8	7·8	7·8	7·8	9·6	9·6

(b) Second measurement.

Parashorea malaanonan	9·7	6·3	14·8	7·2	12·2	9·8	8·0	7·4	3·7	13·2
Shorea leprosula	19·1	13·7	21·0	17·0	26·0	19·9	12·5	5·3	9·9	14·3
Shorea parvifolia	15·3	28·1	15·9	16·3	28·7	16·6	10·1	7·4	7·6	14·8
Shorea leptoclados	16·1								12·6	23·3
Overall plot mean	13·5	7·0	16·9	13·9	18·5	15·9	11·1	8·2	8·9	17·0
Time from felling (years)	12·8	12·8	11·9	11·9	10·9	10·9	10·9	10·9	12·8	12·8

Appendix 17 - Table 3

Mean Girths of Most Abundant Chosen Tree Species Segaliud-lokan F.R. F1957

(a) First measurement (48 ins. g) (All measurements in inches girth)

Species. Y.P.	1	2	3	4	5	6	7	8	9	10
Parashorea tomentella	12·8	12·0	12·2	14·8	9·7	9·1	16·2	11·3	15·2	10·6
Shorea leptoclados	16·3	14·7	14·4	15·5	15·1	-	18·9	-	15·3	14·2
Shorea leprosula	14·4	16·0	17·0	14·2	15·5	16·1	14·9	15·4	13·4	15·6
Dipterocarpus caudiferus	16·7	16·5	7·3	-	21·6	7·5	-	7·9	12·7	19·3
Dryobalanops lanceolata	-	12·0	-	10·6	5·6	18·3	14·5	10·5	17·9	10·9
Overall plot mean	15·0	14·5	13·9	15·1	13·9	12·6	15·7	11·7	15·8	13·9
	9·3 years from felling									

(b) Second measurement.

Parashorea tomentella	15·1	14·8	13·2	16·3	11·7	10·4	16·3	14·0	16·6	13·4
Shorea leptoclados	21·0	18·8	17·3	18·5	19·5	-	23·1	-	18·7	16·8
Shorea leprosula	19·5	18·9	19·3	17·9	18·3	19·9	18·1	19·4	16·3	18·8
Dipterocarpus caudiferus	17·7	18·0	7·6	15·3	27·2	8·2	9·3	8·4	11·7	16·6
Dryobalanops lanceolata	-	-	-	12·4	6·9	18·3	-	9·5	22·6	12·5
Overall plot mean	18·4	17·8	15·6	17·2	17·0	14·1	17·9	14·0	18·3	16·1
	10·9 years from felling									

(c) Third measurement.

Parashorea tomentella	17·2	16·4	16·1	19·1	15·3		20·4	16·0	17·9	16·8
Shorea leptoclados	25·3	23·7	20·3	23·7	24·5		28·4	30·2	24·3	20·1
Shorea leprosula	20·9	22·2	23·7	19·5	21·9		20·8	21·9	21·2	22·4
Dipterocarpus caudiferus	24·1	19·3	8·3	16·3	25·9		-	8·3	21·3	19·9
Dryobalanops lanceolata	12·7	-	17·7	17·4	13·6		20·1	15·2	28·5	14·6
Overall plot mean	21·8	19·9	18·1	20·9	20·5	16·3	21·6	16·9	21·7	19·4
	13·7 years from felling									

Appendix 17 - Table 4

Mean Girths of Most Abundant Chosen Tree Species Segaliud-Lokan F.R. F 1959

(a) First measurement (48 ins. g) (All measurements in inches girth)

Species.	Y.P.	1	2	3	4	5	6	7	8	9	10
Parashorea tomentella		9·1	13·6	13·6	10·7	18·2	10·4	13·2	13·0	10·7	14·1
Shorea leptoclados		14·2	13·1	16·9	16·3	14·0	14·1	12·4	18·5	11·2	-
Shorea leprosula		14·8	-	-	12·8	-	14·0	16·3	13·9	15·2	15·6
Dipterocarpus caudiferus		-	14·1	12·0	6·6	11·8	14·1	-	8·7	15·4	7·5
Dryobalanops lanceolata		8·1	6·9	7·2	10·0	19·5	13·7	8·1	-	3·1	12·6
Overall plot mean		11·4	11·7	12·2	12·3	15·1	13·6	14·7	16·5	11·7	12·3
		7·4 years from felling									
(b) Second measurement.											
Parashorea tomentella		11·3	14·6	14·3	12·4	18·6	10·4	14·2	17·7	11·7	15·5
Shorea leptoclados		18·5	16·7	19·0	19·1	17·6	16·9	15·8	21·6	14·1	-
Shorea leprosula		16·7	21·7	-	16·4	-	16·5	17·9	17·3	16·9	17·4
Dipterocarpus caudiferus		17·2	13·7	14·2	7·2	10·6	14·9	24·3	9·3	11·3	8·9
Dryobalanops lanceolata		12·3	8·3	9·0	13·1	20·8	13·4	8·4	9·7	6·5	11·3
Overall plot mean		14·7	12·9	13·7	14·6	17·4	14·6	15·8	18·7	12·5	13·2
		8·9 years from felling									
(c) Third measurement.											
Parashorea tomentella		12·0	17·8	14·8	14·5	19·0	12·0	16·4	19·4	13·7	15·1
Shorea leptoclados		23·9	21·5	22·3	22·8	22·4	20·8	19·5	22·8	-	21·3
Shorea leprosula		19·4	17·7	15·4	18·0	-	19·8	21·7	18·4	20·3	21·3
Dipterocarpus caudiferus		-	14·5	12·7	8·3	14·9	19·7	23·3	10·8	15·3	10·5
Dryobalanops lanceolata		13·3	8·6	11·5	9·5	22·1	13·8	11·9	12·4	4·2	12·7
Overall plot mean		17·7	13·9	14·4	16·3	19·9	16·8	18·9	20·2	14·2	15·9
		11·9 years from felling									

Appendix 17 - Table 5

Mean Girths of Most Abundant Chosen Tree Species Kretam F.R. F 1952-54

(a) First measurement (48 ins. g) (All measurements in inches girth)

Species.	Y.P. 1	2	3	5	6
Parashorea tomentella	36•5		2•7	10•4	6•0
Euurideroxylon zwageri	6•4	7•4		6•0	2•1
Shorea parvifolia	1•0	2•5	10•9		
Dryobalanops lanceolata			7•8	8•0	9•9
Dipterocarpus caudiferus			11•4	8•5	16•3
Shorea leptoclados			29•2		3•5
Overall plot mean	7•2	8•5	11•6	9•5	9•2
Time from felling (years)	14•4	14•4	12•5	13•5	13•5
(b) Second measurement.					
Parashorea tomentella	35•7		3•6	11•7	7•5
Eusideroxylon zwageri	6•9	8•4		6•7	3•2
Shorea parvifolia		4•5	15•8		
Dryobalanops lanceolata			9•1	8•6	7•7
Dipterocarpus caudiferus			12•3	10•6	15•5
Shorea leptoclados			29•4		7•2
Overall plot mean	7•8	9•0	13•5	11•0	10•1
Time from felling (years)	17•9	17•9	15•9	16•9	16•9

Appendix 17 - Table 6

Mean Girths of Most Abundant Chosen Tree Species Kalabakan F 1953

(a) First measurement (48 ins. g) (All measurements in inches girth)

Species. Y.P.	1	2	3	4	5
Parashorea tomentella	8·1	5·5	10·1	13·7	6·7
Shorea parvifolia	10·5	10·4	11·4	17·6	14·0
Shorea leptoclados	-	15·0	13·4	-	-
Dryobalanops lanceolata	-	12·9	4·6	19·6	-
Shorea leprosula	-	-	12·0	-	9·6
Overall plot mean	7·8	12·2	11·3	17·1	11·1
Time from felling (years)	13·5				

(b) Second measurement.

Parashorea tomentella	8·8	6·0	9·4	14·1	7·9
Shorea parvifolia	10·7	11·2		18·8	12·5
Shorea leptoclados		16·1	13·9		
Dryobalanops lanceolata		11·7	4·6	19·8	
Shorea leprosula			12·6		10·0
Overall plot mean	9·9	12·8	11·5	18·1	11·5
Time from felling (years)	14·7				

(c) Third measurement.

Parashorea tomentella	7·8		11·1	16·1	9·3
Shorea parvifolia	12·1	12·7	13·7	21·1	15·4
Shorea leptoclados		18·4	15·6		19·0
Dryobalanops lanceloata		10·3	4·7	21·1	
Shorea leprosula			14·3		
Overall plot mean	8·2	12·6	11·9	20·3	14·2
Time from felling (years)	17·4				

Appendix 17 - Table 7

Mean Girths of Most Abundant Chosen Tree Species Kalabakan F.R. F 1955

First measurement (48 ins.g) (All measurements inches girth)

Species	Y.P.	1	2	3	4	5	6	7
Parashorea malaanonan		8·9	6·9	9·0	12·1	4·2	10·3	14·9
Parashorea tomentella		10·5	9·2	8·3	-	-	9·2	16·5
Shorea leprosula		13·8	13·2	-	10·0	15·7	-	44·0
Shorea parvifolia		17·4	11·4	-	14·4	17·2	12·0	20·4
Eusideroxylon zwageri		7·9	11·7	22·2	3·9	-	13·7	19·7
Overall plot mean		11·1	8·9	14·3	11·6	14·3	12·5	18·5
Time from felling (years)		11·1	12·1	12·1	12·1	12·1	11·1	11·1

Appendix 17 - Table 8

Mean Girths of Most Abundant Chosen Tree Species Kalabakan F.R. F 1959

First measurement (48 ins g)

Species	Y.P.	1	2	3	4	5	6	7	8	9	10
Shorea parvifolia		19·5	10·3	15·0	15·9	7·4	19·9	9·9	15·7	13·4	15·0
Shorea leptoclados		15·3	10·9	15·8	-	-	17·9	13·4	-	21·2	-
Dryobalanops lanceolata		-	7·8	6·1	5·9	5·2	5·3	8·7	10·9	11·3	8·3
Shorea leprosula		-	-	-	16·3	11·5	-	-	12·9	16·2	15·3
Parashorea tomentella		-	8·6	8·2	7·6	10·7	-	5·3	-	-	6·1
Shorea oleosa		11·3	9·2	22·0	-	-	18·0	-	15·4	-	-
Overall plot mean		14·5	9·2	14·4	13·5	8·5	15·4	8·9	13·2	13·6	10·5
		10·9 years from felling									

- Table 9

Mean Girths of Most Abundant Chosen Tree Species Kalabakan F.R. F 1961

First measurement (48 ins. g)

Species	Y.P.	1	2	3	4	5
Shorea parvifolia		14·7	-	14·2	11·9	17·3
Shorea leptoclados		17·0	-	-	12·7	18·9
Shorea leprosula		22·0	-	15·6	-	-
Dryobalanops lanceolata		-	13·1	-	-	21·4
Parashorea tomentella		-	10·6	-	-	13·3
Overall plot mean		13·8	13·2	12·4	11·7	16·1
		9·1 years from felling				

APPENDIX 18

Average Current Annual Increments (Yield Plots)

Table 1	Silabukan F 1954-57
Table 2	Silabukan RP 45
Table 3	Kalumpang F 1957-59
Table 4	Segaliud-lokan F 1957
Table 5	Segaliud-lokan F 1959
Table 6	Kretam F 1952-54
Table 7	Garinono F 1928
Table 8	Kalabakan F 1953

Appendix 18 - Table 1.

Average Current Annual Increments of Girth Silabukan F.R. F. 1954-57 Y.P.'s 1-10 Over the Period 1968-1971

(a) All Chosen Trees (nos. in brackets).

cies. Girth Class (ins)	1	6	12	18	24	30	36	42	48	60	72+	Overall
ashorea malaanonan	0·16(52)	0·54(91)	0·76(152)	1·00(60)	1·26(30)	1·47(14)	1·59(12)	1·48(12)	1·50(23)	2·07(12)	1·70(24)	0·89(483)
rea leprosula	0·28(3)	0·75(5)	0·75(34)	1·23(70)	1·74(47)	2·34(14)	2·73(4)	2·46(2)	2·59(2)	1·18(2)	0·95(5)	1·38(188)
rea parvifolia	-	0·18(2)	0·83(5)	1·38(4)	1·67(7)	2·29(3)	2·70(2)	1·62(1)	-	1·27(2)	2·05(3)	1·53(29)
rea leptoclados	0·29(1)	-	0·65(5)	1·07(2)	2·09(2)	-	3·43(1)	-	2·33(2)	3·64(1)	2·27(5)	1·63(18)
obalamops lancedata	0·37(13)	0·28(8)	0·38(10)	0·58(4)	-	0·11(1)	1·09(1)	-	0·62(1)	2·32(1)	1·32(4)	0·58(45)
terocarpus caudiferus	0·03(2)	0·11(1)	0·65(5)	1·01(1)	-	0·72(2)	1·59(1)	-	-	0·87(2)	1·65(3)	0·74(15)
chosen tree species	0·20(72)	0·52(112)	0·73(218)	1·11(45)	1·56(87)	1·80(35)	1·97(21)	1·62(15)	1·61(28)	1·89(21)	1·68(44)	1·04(799)

(b) 2 Leading Dominants per Chain Square.

ashorea malaanonan	0·14(13)	0·77(26)	0·76(59)	1·06(38)	1·29(25)	1·52(12)
rea leprosula	-	0·78(1)	0·70(8)	1·21(45)	1·68(38)	2·34(14)
rea parvifolia	-	-	0·51(3)	1·95(1)	1·54(3)	2·29(3)
rea leptoclados	-	-	0·77(3)	0·25(1)	-	-
obalanops lanceolata	0·18(2)	0·11(2)	0·48(7)	0·76(2)	-	0·11(1)
terocarpus caudiferus	0·00(1)	0·00(1)	0·32(2)	1·01(1)	-	0·80(1)
species	0·12(17)	0·73(32)	0·70(86)	1·03(90)	1·56(67)	1·87(32)

Remainder as (a)

Appendix 18 - Table 2

Average Current Annual Increments of Girth Silabukan F.R. RP 45 1966-71.

Species. Girth Class (ins)	1	6	12	18	24	30	36	42	Overall
Shorea leprosula	-	0·04(1)	0·69(1)	0·90(20)	1·15(16)	1·98(18)	2·60(3)	3·04(1)	1·40(60)
Parashorea malaanonan	0·29(3)	0·50(16)	0·65(21)	0·94(16)	1·23(13)	1·74(4)	-	2·50(3)	0·90(76)
All species	0·25(4)	0·26(25)	0·65(29)	0·91(42)	1·08(38)	1·89(27)	2·65(4)	2·52(5)	1·05(174)

- Table 3

Average C.A.I. of Girth Kalumpang F.R. F 1957-59 Y.P.'s 1-10 Over period 1967-70

(a) All Chosen Trees.

Species. Girth Class (ins)	1	6	12	18	24	30	36	42	48	60	72+	Overall
Parashorea malaanonan	0·22(105)	0·47(62)	0·96(32)	0·79(16)	1·33(15)	2·04(8)	2·38(6)	2·63(3)	1·90(7)	1·40(5)	1·65(11)	0·71(270)
Shorea leprosula	0·20(17)	0·46(35)	0·92(50)	1·45(59)	1·91(30)	2·17(8)	2·27(1)	1·89(2)	0·44(1)	-	-	1·15(203)
Shorea parvifolia	0·32(31)	0·67(47)	1·11(53)	1·48(30)	1·71(6)	1·99(3)	-	0·39(2)	0·87(1)	1·71(1)	-	1·46(174)
Shorea leptodados	0·14(7)	0·50(6)	1·02(8)	1·62(17)	1·92(8)	2·33(3)	1·82(1)	-	2·03(2)	-		1·31(52)
All chosen tree species	0·25(197)	0·50(177)	0·99(149)	1·34(132)	1·71(61)	2·03(24)	2·25(9)	1·14(13)	1·69(11)	1·27(12)	1·62(12)	0·89(797)

(b) 2 Leading Dominants per Chain Square.

Parashorea malaanonan	0·32(22)	0·58(30)	0·98(19)	0·79(16)	1·26(14)	2·04(8)	
Shorea leprosula	0·12(5)	0·36(14)	1·06(30)	1·50(46)	1·95(26)	2·17(8)	
Shorea parvifolia	0·37(10)	0·67(22)	1·16(35)	1·55(22)	1·60(5)	1·99(3)	Remainder as (a)
Shorea leptodados	-	-	0·64(3)	1·68(13)	1·92(8)	2·33(3)	
All species	0·31(45)	0·53(84)	1·06(89)	1·37(106)	1·70(55)	2·03(24)	

Appendix 18 - Table 4

Average Current Annual Increments of Girth Segalind-lokan F.R. 1957, Y.P.'s 1-10 Over the Period 1968-71.

(a) All chosen trees (nos. in brackets).

Species. Girth Class (ins)	1	6	12	18	24	30	36	42	48	60	72+	Overall
Parashorea tomentella	0·07(7)	0·41(51)	0·74(66)	1·22(48)	1·52(14)	1·82(10)	1·13(4)	0·94(5)	2·43(6)	0·36(1)	0·50(1)	0·91(215)
Shorea leptoclados	-	0·66(6)	0·75(22)	1·32(52)	1·73(77)	2·12(23)	2·57(3)	3·11(1)	-	1·52(1)	-	1·52(186)
Shorea leprosula	-	0·23(2)	0·75(18)	1·19(48)	1·49(27)	2·25(9)	2·25(1)	-	1·53(3)	1·52(1)	-	1·28(109)
Shorea parvifolia		0·47(3)	0·98(5)	1·35(13)	1·62(8)	2·10(5)	-	-	-	-	-	1·39(34)
Shorea waltonii		0·03(1)	0·74(4)	0·94(8)	1·63(4)	-	1·29(3)	-	-	-	3·58(1)	1·16(21)
Dipterocarpus caudiferus	0·13(9)	0·22(11)	0·17(5)	0·46(8)	0·59(5)	2·79(2)	-	0·81(3)	1·07(3)	0·96(3)	0·81(3)	0·53(52)
Dryobalanops lanceolata	0·94(4)	0·50(15)	0·43(9)	0·67(7)	1·03(12)	1·23(2)	1·20(4)	0·63(4)	0·63(4)	1·15(6)	0·99(3)	0·80(68)
Shorea acuminatissima	-	0·76(1)	0·61(1)	1·21(3)	-	-	-	2·26(1)	-	-	1·52(1)	1·25(7)
All chosen tree species	0·28(22)	0·41(95)	0·63(132)	1·19(196)	1·56(150)	1·96(58)	1·53(16)	1·08(16)	1·66(18)	1·24(13)	1·18(9)	1·12(729)

(b) 2 Leading Dominants per Chain Square.

Parashorea tomentella	-	0·46(8)	0·71(27)	1·18(30)	1·65(13)
Shorea leptoclados	-	0·65(2)	0·86(6)	1·39(29)	1·72(59)
Shorea leprosula	-	-	1·23(5)	1·32(27)	1·44(21)
Shorea parvifolia	-	0·93(1)	1·04(1)	1·60(7)	1·62(8)
Shorea waltonii	-	0·03(1)	1·00(1)	1·06(4)	1·63(4)
Dipterocarpus caudiferus	-	0·54(2)	0·20(1)	0·67(5)	0·72(4)
Dryobalanops lanceolata	-	1·46(3)	-	0·62(5)	1·06(11)
All species	2·30(1)	0·57(17)	0·78(42)	1·25(115)	1·55(123)

Remainder as (a)

Appendix 18 - Table 5

Average Current Annual Increments of Girth Segalind-lokan F.R. 1959 Y.P.'s 1-10

Over the Period 1968-1971

(a) All Chosen Trees (nos. in brackets)

Species. Girth Class (ins)	1	6	12	18	24	30	36	42	48	60	72+	Overall
Parashorea tomentella	0·26(11)	0·36(45)	0·71(35)	1·18(24)	1·03(9)	1·18(9)	1·45(4)	1·58(4)	1·28(5)	1·11(3)	1·89(4)	0·83(153)
Shorea leptoclados	0·54(2)	0·57(8)	0·88(30)	1·21(44)	1·59(47)	1·55(12)	1·76(6)	0·66(3)	1·49(1)	-	1·52(5)	1·22(158)
Shorea parvifolia	-	0·05(2)	0·78(4)	1·25(8)	2·32(5)	2·80(2)	3·17(1)	-	-	-	1·75(1)	1·53(23)
Shorea waltonii	0·28(2)	0·48(7)	1·31(5)	0·78(3)	1·89(2)	1·35(2)	-	-	-	-	0·70(1)	0·91(22)
Shorea leprosula	0·50(1)	0·77(8)	0·76(36)	1·19(53)	1·34(24)	1·11(2)	2·64(2)	2·04(3)	1·45(3)	-	0·99(1)	1·12(133)
Dipterocarpus caudiferus	0·17(14)	0·29(29)	0·27(12)	0·31(3)	0·63(6)	0·32(3)	1·29(6)	0·64(4)	0·77(2)	0·23(1)	0·08(2)	0·41(83)
Dryobalanops lanceolata	0·26(18)	0·25(18)	0·60(12)	0·38(11)	1·19(6)	1·76(2)	0·10(2)	1·09(2)	0·68(1)	-	1·20(4)	0·52(77)
All chosen tree species	0·24(51)	0·37(127)	0·73(149)	1·15(154)	1·39(102)	1·54(36)	1·53(23)	1·09(19)	1·20(12)	1·14(5)	1·31(18)	0·92(696)

(b) 2 Leading Dominants per Chain Square.

Parashorea tomentella	0·52(2)	0·60(12)	0·79(24)	1·16(19)	0·93(6)
Shorea leptoclados	-	0·84(1)	0·80(13)	1·27(21)	1·54(37)
Shorea leptosula	-	0·67(5)	0·94(12)	1·36(37)	1·39(22)
Dipterocarpus caudiferus	0·24(2)	0·49(10)	0·36(7)	0·31(3)	0·63(6)
Dryobalanops lanceolata	0·72(3)	0·28(7)	0·57(5)	0·25(5)	1·21(5)
All species	0·47(8)	0·48(40)	0·84(73)	1·17(100)	1·43(85)

Remainder as (a)

Appendix 18 - Table 6

Average Current Annual Increments of Girth Kretam F.R. F 1952-54. 5 Yield Plots Over the Period 1966-1970

All chosen trees (nos. in brackets).

Species. Girth Class (ins)	1	6	12	18	24	30	36	42	48	60	72+	Overall
Parashorea tomentella	0·16(15)	0·83(3)	0·50(4)	-	1·36(3)	-	1·05(1)	-	0·51(2)	-	1·28(2)	0·52(30)
Eusideroxylon zwageri	0·15(89)	0·36(20)	0·38(2)	-	-	0·41(4)	0·00(1)	0·30(3)	0·26(2)	0·49(1)	0·69(1)	0·21(123)
Shorea parvifolia	0·42(2)	1·46(1)	1·54(4)	1·04(3)	-	-	-	-	-	-		0·89(16)
Shorea leptoclados	0·30(8)	0·26(2)	0·46(1)	-	0·26(2)	0·57(3)	1·37(3)	1·78(1)	0·29(1)	0·85(3)	0·72(1)	0·60(25)
Dryobalanops lanceolata	0·28(25)	0·35(31)	0·44(13)	0·60(5)	-	-	-	-	-	-	-	0·42(76)
Dipterocarpus caudiferus	0·21(8)	0·26(15)	0·35(6)	0·61(6)	0·38(3)	-	-	-	-	-	-	0·36(41)
Shorea acuminatissima	0·24(4)	0·36(3)	0·80(5)	1·06(2)	1·08(3)	0·97(1)	-	-	-	-	-	0·71(19)
All chosen tree species	0·19(181)	0·37(82)	0·65(45)	1·04(24)	0·90(18)	0·80(13)	1·04(8)	0·83(9)	1·14(11)	1·64(7)	0·72(9)	0·47(407)

Appendix 18 - Table 7

Average Current Annual Increments of Girth Garinono F.R. F 1928. 5 Y.P.'s Over the Period 1968-1969

(a) All Chosen Trees (nos in brackets).

Species. Girth Class (ins)	1	6	12	18	24	30	36	48	60	72+	Overall
Parashorea tomentella	0•32(18)	0•64(21)	0•65(30)	0•65(20)	1•39(8)	0•67(4)	1•51(6)	0•60(1)	1•95(2)	3•70(1)	0•75(111)
Shorea leptoclados	0•43(13)	-	2•40(1)	0•67(1)	1•29(1)	3•20(1)	2•63(2)	0•94(2)	0•68(5)	1•29(3)	0•95(29)
Shorea leprosula	0•37(5)	1•03(4)	0•48(3)	0•99(5)	1•02(8)	1•27(3)	1•24(6)	1•89(3)	-	-	1•04(37)
Shorea parvifolia	0•52(9)	1•19(4)	1•31(4)	1•31(2)	0•93(4)	1•33(2)	1•62(3)	0•99(3)	0•79(1)	-	1•01(32)
Dryobalanops lanceolata	0•24(2)	0•31(7)	0•73(12)	0•29(3)	0•40(2)	1•18(2)	1•40(1)	-	-	-	0•58(29)
Dipterocarpus caudiferus	0•29(22)	0•47(25)	0•37(13)	0•35(2)	0•59(2)	0•21(1)	-	-	-	-	0•38(65)
All chosen tree species	0•40(80)	0•60(68)	0•64(72)	0•77(4 0)	0•98(28)	1•12(14)	1•48(20)	1•38(12)	0•92(9)	1•89(4)	0•74(347)

(b) 2 Leading Dominants per Chain Square.

Parashorea tomentella	0•14(5)	0•64(9)	0•62(17)	0•72(16)	1•61(6)	0•67(4)	1•69(5)	0•60(1)	1•95(2)	3•70(1)	0•85(66)
Shorea leptoclados	0•72(4)	-	2•40(1)	0•67(1)	1•29(1)	3•20(1)	2•63(2)	0•94(2)	0•68(5)	1•29(3)	1•24(20)
Shorea leprosula	-	-	0•48(3)	0•99(5)	1•01(7)	1•27(3)	1•21(5)	1•89(3)	-	-	1•13(26)
Shorea parvifolia	0•77(2)	1•29(3)	1•32(3)	2•12(1)	0•93(4)	2•06(1)	1•62(3)	0•99(3)	0•79(1)	-	1•22(20)
Dryobalanops lanceolata	0•10(1)	0•00(1)	0•83(10)	0•29(3)	0•70(1)	1•18(2)	-	-	-	-	0•72(19)
Dipterocarpus caudiferus	0•45(2)	0•48(10)	0•31(9)	0•35(2)	0•59(2)	0•21(1)	-	-	-	-	0•41(26)
All species	0•50(17)	0•67(28)	0•67(51)	0•83(35)	0•99(24)	1•16(13)	1•55(17)	1•38(12)	0•92(9)	1•89(4)	0•88(210)

Appendix 18 - Table 8

Average Current Annual Increments of Girth Kalabakan F.R. F 1953. 5 Y.P.'s

Over the Period 1968-1970

All Chosen Trees (nos. in brackets)

Species. Girth Class (ins)	1	6	12	18	24	30	36	48	60	72+	Overall
Shorea parvifolia	0•28(4)	0•60(25)	0•80(35)	1•27(18)	1•16(10)	1•42(6)	1•30(4)	0•99(3)	-	-	0•91(105)
Parashorea tomentella	0•30(15)	0•39(30)	0•62(14)	0•49(3)	0•74(2)	1•31)2)	1•12(1)	-	-	0•97(2)	0•49(69)
Dryobalanops lanceolata	0•13(3)	0•64(7)	0•25(3)	0•37(3)	-	1•86(1)	0•75(3)	1•12(2)	1•49(1)	1•63(4)	0•79(27)
Shorea leprosula	0•37(1)	0•41(7)	0•92(9)	1•63(6)	-	1•68(2)	0•86(1)	-	-	-	1•01(26)
Shorea leptoclados	-	1•06(3)	0•61(8)	1•00(6)	1•12(3)	1•13(1)	2•26(1)	-	0•75(1)	0•95(2)	0•94(25)
All chosen tree species	0•27(33)	0•52(89)	0•70(86)	1•08(40)	1•03(16)	1•33(16)	0•92(18)	1•41(9)	1•12(2)	1•64(10)	0•77(319)

Appendix 19

Stocking Tables. Sungei Betotan LS½ Survey 1970

Dipterocarpaceae and other Chosen Trees

A Nomadic Species

B Large Trees of Natural Forests

C Small Trees, mainly Understorey Species

Appendix 20

Size Class Tables RP 315 Garimono

Table 1 Stand Table Before Logging

Table 2 Trees felled and Cross-cut

Table 3 Volume cut by Species and Sizes

Table 4 Production by Sub-Block

APPENDIX 19

SG. BETOTAN LS½ SURVEY 1970 18 Acres

All Trees in Half Foot Classes

A. DIPTEROCARPACEAE & OTHER CHOSEN TREES	GIRTH CLASS 0>6"	6>12	12>18	18>24	24>30	30>36	36>42	42>48	48>54	54>60	60>66	66>72	72>78	78>84	84"+	Total
Parashorea tomentella	90	34	34	18	11	9	6	2	2	4	4	-	2	1	3	220
Parashorea malaanonan	5	3	7	7	2	1	-	-	-	-	1	-	-	-	1	27
Shorea leptoclados	33	6	15	10	3	6	5	8	10	8	4	3	2	-	5	118
Shorea leprosula	18	5	15	8	5	3	4	3	3	-	4	3	-	1	1	73
Shorea parvifolia	8	1	3	-	3	-	1	3	-	1	-	1	-	1	-	22
Shorea smithiana	2	1	2	4	5	1	1	1	-	-	1	1	-	-	-	19
Shorea pauciflora	1	-	1	-	-	1	-	-	-	-	-	-	-	-	2	5
Shorea waltonii	5	-	1	-	-	1	-	-	1	-	-	-	-	-	1	9
Shorea acuminatissima	1	3	4	5	2	2	1	-	-	1	-	-	-	1	-	20
Shorea gibbosa	-	1	5	4	-	-	1	1	-	1	-	-	-	1	2	16
Shorea xanthophylla	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Shorea symingtonii	1	1	1	-	5	2	-	1	-	-	-	1	-	-	-	12
Shorea superba	-	1	2	-	-	1	-	-	-	-	-	-	-	-	1	5
Shorea agami	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Shorea leptoderma	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	2
Shorea sp. (SB)	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2
Dryobalanops lanceolata	15	18	22	6	-	3	-	-	1	-	2	-	-	1	-	68
Dipterocarpus caudiferus	73	28	19	5	1	1	1	4	2	3	1	1	-	4	5	148
Dipterocarpus exalatus	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Hopea nervosa	-	-	11	6	4	3	2	-	-	-	-	-	1	-	-	27
Hopea sangal	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	2
Total Dipterocarpaceae	252	102	146	74	41	34	22	23	19	19	19	10	5	10	22	798
Eusideroxylon zwageri	-	1	4	5	6	7	1	3	2	-	-	2	-	1	1	33
B. ALL OTHER SPECIES RECORDED	0	0	543	373	202	121	84	44	49	31	20	17	8	9	11	1512
TOTAL ALL TREES	252	103	693	452	249	162	107	70	70	50	39	29	13	20	34	2343

SG. BETOTAN LS½ SURVEY 1970 18 Acres

SPECIES/GIRTH CLASS FREQUENCY FOR OTHER TREES

(i.e. not chosen tree) By one Foot Girth Class

A. NOMADIC SPECIES			1'<2'	2'<3'	3'<4'	4'<5'	5'<6'	6'<7'	7'+	TOTALS
Anthocephalus chinensis	Laran	Rubiaceae	-	3	6	12	11	5	-	37
Nauclea sp.	Bangkal	Rubiaceae	22	12	3	2	-	-	-	39
Duabanga moluccana	Magas	Sonneratiaceae	1	1	-	-	2	1	-	5
Dillenia excelsa	Simpor	Dilleniaceae	6	2	1	-	-	-	-	9
Endospermum malaccense	Sindok2	Euphorbiaceae	2	-	-	-	-	-	-	2
Evadia sp.	Pauh	Rutaceae	1	1	1	-	-	-	-	3
Glochidion spp.	Oba nasi	Euphorbiaceae	23	46	17	7	-	-	-	93
Leea aculeata	Mali2	Vitaceae	16	-	-	-	-	-	-	16
Macaranga hypoleuca	Sedaman	Euphorbiaceae	1	1	1	1	-	-	-	4
Mallotus sp.	-	Euphorbiaceae	17	4	-	-	-	-	-	21
Octomeles sumatrana	Binuang	Datiscaceae	-	-	-	1	-	-	-	1
Pternandra caerulescens	Sireh2	Melastomaceae	9	1	-	-	-	-	-	10
Pterocymbium tinctorum	Teluto	Sterculiaceae	2	2	1	3	-	-	-	8
Pterospermum sp.	Bayor	Sterculiaceae	19	20	29	23	14	4	1	110
Scolopia sp.	Rukam	Flacourtiaceae	1	1	-	-	-	-	-	2
Symplocos sp.	Loboh	Symplocaceae	16	8	1	-	-	-	-	25
Memecylon	Telinga basing	Melastomaceae	-	-	1	-	-	-	-	1
TOTAL A			136	102	61	49	27	10	1	386

B. LARGE TREES OF NATURAL FORESTS			1'<2'	2'<3'	3'<4'	4'<5'	5'<6'	6'<7'	7'+	TOTALS
Artocarpus sp.	Terap	Moraceae	2	-	1	-	-	-	-	3
Barringtonia spp.	Tampalang	Lecythidaceae	5	5	3	2	1	1	-	17
Canarium sp.	Kedondong	Burseraceae	30	4	1	1	-	-	1	37
Calophyllum sp.	Bintangor	Guttiferae	13	2	1	-	-	-	-	16
Canarium decumanum	Pamatadon	Burseraceae	-	-	-	-	-	1	-	1
Cratoxylon formosum	Geronggang	Hypericaceae	1	-	-	-	-	-	-	1
Cynometra inaequifolia	Katong2	Leguminosae	1	-	-	1	-	-	-	2
Dialium indum	Keranji	Legumonosae	-	-	-	2	-	-	-	2
Dracontomelum edule	Sengkuang	Anacardiaceae	-	-	-	-	2	-	1	3
Castanopsis moileyana	Berangan	Fagaceae	2	3	3	1	-	-	-	9
Elaeocarpus stipularis	Kungkurad	Flaeocarpaceae	1	-	-	-	-	-	-	1
Heriteria sp.	Mengkulang	Sterculiaceae	-	1	-	-	-	-	-	1
Homalium foetidum	Takaliu	Flacourtiaceae	4	3	1	-	1	-	-	9
Hydnocarpus sp.	-	Flacourtiaceae	12	-	2	1	1	-	-	16
Intsia palembanica	Merbau	Legumihosae	1	-	-	-	-	-	-	1
Koodersiodendron pinnatum	Ranggu	Anacardiaceae	2	2	1	-	-	-	-	5
Lithocarpus sp.	Mempening	Fagaceae	4	2	1	-	-	-	-	7
Lophopetalum javanicum	Perupok	Celastraceae	2	-	2	1	-	-	-	5
Mangifera sp.	Mangga Hutan	Anacardiaceae	1	-	-	-	-	-	-	1
Microcos sp.	Damak2	Tiliaceae	3	2	-	-	-	-	-	5
(Meliaceae)	Lantupak	Meliaceae	105	30	5	3	1	1	-	145
Neesia altissima	Durian Munyit	Bombacaceae	2	1	-	-	-	-	-	3
Nephelium lappaceum	Rambutan	Sapindaceae	2	1	-	-	-	-	-	3
Nephelium mutabile	Meritam	Sapindaceae	13	6	1	3	1	1	-	25
Parinari	Membatu	Rosaceae	-	-	1	2	-	-	-	3
Pentace sp.	Tekalis	Tiliaceae	26	16	-	1	-	-	-	43
Planchonia valida	Putat Paya	Lecythidaceae	-	-	-	-	-	1	2	3
(Sapotaceae)	Nyatoh	Sapotaceae	7	3	-	-	-	-	-	10
Saraca palembanica	Gapis	Leguminosae	7	4	2	-	-	-	-	13
Scorodocarpus borneensis	Bawang Hutan	Olacaceae	-	1	-	-	-	-	-	1
Sympetalandra borneensis	Merbau lalat	Leguminosae	2	-	3	1	-	-	-	6
Terminalia subspathulata	Talisai	Combretaceae	1	-	-	-	-	-	2	3
Podocarpus sp.	Kayu china	Coniferae	1	-	-	-	-	-	-	1
Sindora spp.	Sepetir	Caesalpiniaceae	1	-	-	-	-	-	-	1
		TOTAL B	251	86	28	19	7	5	6	402

C. SMALL TREES : MAINLY UNDERSTOREY SPECIES			1'<2'	2'<3'	3'<4'	4'<5'	5'<6'	6'<7'	7'+	TOTAL
Aglaia spl	Langsat2	Meliaceae	28	6	-	-	-	-	-	34
(Anonaceae)	Pisang2; Karai	Annonaceae	84	9	3	1	-	-	-	97
Alangium sp.	Satu Inche	Alangiaceae	3	3	-	1	-	-	-	7
Baccourea bracteata	Tampoi	Euphorbiaceae	26	3	-	-	-	-	-	29
Baccourea stipulata	Kunau2	Euphorbiaceae	9	-	-	-	-	-	-	9
Buchanania sessilifolia	Kepala Tundang	Anacardiaceae	1	-	-	-	-	-	-	1
Carallia sp.	Meransi	Rhizophoraceae	-	1	-	-	-	-	-	1
Citrus sp.	Limau2	Rutaceae	6	10	2	-	-	-	-	18
Goeledepas brevipes	Kilas	Euphorbiaceae	57	9	2	1	-	-	-	69
Diospyros spp.	Kayu malam	Ebenaceae	74	15	3	1	1	2	2	98
Drypetes spp.	Mentulang	Euphorbiaceae	4	-	-	-	-	-	-	4
Eugenia spp.	Obah	Myrtaceae	69	33	17	2	-	-	1	122
(Lauraceae)	Medang	Lauraceae	110	21	9	5	1	-	1	147
Mallotus penangonsis	Kemenyen2	Euphorbiaceae	1	-	-	-	-	-	-	1
Melanorrhoea sp.	Rengas	Anacardiaceae	-	1	-	-	-	-	-	1
Murraya paniculata	Kemuning	Rutaceae	5	-	-	-	-	-	-	5
(Myristicaceae)	Darah2	Myristicaceae	10	-	-	-	1	-	-	11
Paranephelium nitidum	Membuakat	Sapindaceae	24	15	3	-	-	-	-	42
Urophyllum sp.	Kopi2	Rubiaceae	5	-	-	-	-	-	-	5
Xanthophyllum sp.	Minyak berok	Polygalaceae	7	2	1	-	-	-	-	10
Mallotus miquellanus	Ulas	Euphorbiaceae	2	-	-	-	-	-	-	2
Crudia reticulata	Agar2	Euphorbiaceae	2	-	-	-	-	-	-	2
Microcos crassifolia	Kerodong	Tiliaceae	1	1	-	-	-	-	-	2
Anisophyllea disticha	Sikib2	Sapindaceae	1	1	-	-	-	-	-	2
Antidesma ghaesembilla	Tandurupis	Euphorbiaceae	3	-	-	-	-	-	-	3
Hydnocarpus borneensis	Tulangsai	Flacourtiaceae	2	-	-	-	-	-	-	2
TOTAL C			534	130	40	11	3	2	4	724
TOTAL A, B, C,			921	318	129	79	37	17	11	1512

Stand Table Before Logging

Species	Girth Classes													Grand Total No. of Trees
	4' No.	5' No.	6' No.	7' No.	8' No.	9' No.	10' No.	11' No.	12' No.	13' No.	14' No.	16' No.	25' No.	
Shorea leptoclados	35	31	21	14	6	7	2	1	4	-	-	-	-	121
Parashorea tomentella	20	15	7	8	6	10	7	4	1	1	1	-	-	80
Parashorea malaanonan	1	-	-	1	1	-	-	-	-	-	-	-	-	3
Shorea leprosula	4	6	6	3	6	2	1	-	-	-	-	-	-	28
Dryobalanops lanceolata	9	10	10	10	9	2	1	1	-	-	-	-	-	52
Hopea sangal	-	-	1	-	3	1	-	-	-	-	-	-	-	5
Shorea parvifolia	6	7	2	4	1	3	1	1	1	-	-	-	-	26
Dipterocarpus caudiferus	10	7	13	16	7	9	4	1	-	-	-	1	-	68
Shorea gibbosa	3	-	2	-	2	2	1	-	1	-	1	-	-	12
Shorea faguetiana	-	-	-	-	-	1	-	-	1	-	-	-	-	2
Shorea waltonii	-	1		-	2	-	1	1	-	1	-	-	-	6
Eusideroxylon zwagerii	11	6	5	3	6	-	2	-	-	-	-	-	-	33
Shorea smithiana	11	4	5	1	-	-	-	-	-	-	-	-	-	21
Shorea seminis	2	1	2	-	1	-	1	-	-	-	-	-	-	7
Shorea superba	1	-	1	1	2	-	-	-	-	-	-	-	-	5
Shorea symingtonii	1	-	2	-	-	-	-	-	-	-	-	-	-	3
Shorea leptoderma	-	-	1	-	1	-	-	-	-	-	-	-	-	2
Shorea foxworthyii	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Shorea agami	-	-	-	-	-	2	1	-	-	-	-	-	-	3
Shorea pauciflora	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Shorea ochracea	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Anisoptera grossivenia	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Grand Total	115	88	78	61	54	39	22	9	9	2	2	1	1	481

Appendix 20 Table 1 R.P.315 Stand Table Before Logg

Stand Table of Trees Felled & Cross Cut

Species	Girth Classes													Total
	4	5	6	7	8	9	10	11	12	13	14	16	25	
Shorea leptoclados		4	11	12	6	6	2	1	4					46
Parashorea tomentella		1	3	5	5	10	6	4	1		1			36
Dipterocarpus caudiferus			3	12	4	7	3	1				1		31
Dryobalanops lanceolata			3	5	6	2		1						17
Shorea leprosula			2	3	6	2	1							14
Shorea parvifolia		2	1	4	1	3	1	1	1					14
Hopea sangal			1		3									4
Shorea gibbosa					1	1					1			3
Shorea faguetiana						1			1					2
Shorea waltonii					2		1			1				4
Shorea seminis					1		1							2
Shorea agami						2	1							3
Shorea smithiana			2	1										3
Shorea superba					1									1
Parashorea malaanonan					1									1
Anisoptera grossivenia													1	1
Shorea ochracea									1					1
Totals	-	7	26	42	37	34	16	8	8	1	2	1	1	183

Appendix 20 Table 2 Trees Felled and Cross-cut

Hoppus Volumes Cut by Species and Size Classes Table 3

Species		Volume by Girth Breast Height Size Classes									
		<6'	6-6'11	7'-7'11	8-8'11	9-9'11	10-10'11	11-11'11	12'+	Total	%
Parashorea tomentella	White seraya	-	365	670	956	2,819	1,896	1,352	1,058	9,117	22.5
Parashorea malaanonan	White seraya	-	-	-	182	-	-	-	-	182	0.5
Shorea leptoclados		252	1,247	1,744	968	1,506	796	307	2,039	8,859	21.9
Shorea leprosula		-	308	538	1,260	359	365	-	-	2,831	7.0
Shorea parvifolia		88	210	457	189	762	198	407	434	2,745	6.8
Shorea smithiana		-	242	127	-	-	-	-	-	370	0.9
Shorea waltonii		-	-	-	409	-	357	-	278	1,045	2.6
Total Red Serayas		340	2,006	2,867	2,827	2,627	1,725	714	2,751	15,849	39.2
Shorea faguetiana	Yellow seraya	-	-	-	-	267	-	-	453	719	1.8
Shorea gibbosa	Yellow seraya	-	-	-	-	138	-	-	521	658	1.6
Dipterocarpus caudiferus	Keruing	-	279	1,784	940	1,628	1,047	414	772	6,864	17.0
Dryobalanops lanceolata	Kapur	-	420	872	1,189	537	-	253	-	3,270	8.1
Shorea agami	Melapi	-	-	-	-	614	305	-	591	1,510	2.3
Anispoptera costata	Pengiran	-	-	-	-	-	-	-	785	785	3.4
Hopea sangal	Gagil	-	88	-	801	-	-	-	-	889	2.2
Shorea seminis	Selangan batu	-	-	-	156	-	253	-	-	409	1.0
Shorea superba	Selangan batu	-	-	-	197	-	-	-	-	197	0.5

Appendix 20 Table 4

Production By Sub-Block

R.P.315

Sub-Block No.	No. of Trees Cut	No. of Logs Cut	No.of Commercial 4'+ on Block not Cut + = Belian		Hoppus Volume Per Acre
1	16	34	11		1,867.2
2	13	23	12	+3	1,191.0
3	9	18	14	+3	991.1
4	10	13	19		809.9
5	7	14	12	+2	524.5
6	6	8	12		468.6
7	13	25	10	+2	842.0
8	9	16	7	+2	572.4
9	11	22	12	+6	896.9
10	12	26	12	+4	1,072.2
11	7	14	16	+1	668.0
12	7	14	8	+1	774.3
13	2	3	17		207.3
14	4	8	10		282.6
15	6	15	13	+1	556.7
16	19	37	12	+4	1,824.7
17	5	10	22	+3	450.7
18	8	17	23		754.2
19	6	10	19		406.9
20	13	23	4	+1	1,339.1
Totals	183	350	265	+33	16,500.3
Mean	9.15	17.5	13.25	1.65	808.99

Appendix 20 Table 4

Production By Sub-Block

R.P.315

Sub-Block No.	No. of Trees Cut	No. of Logs Cut	No.of Commercial 4'+ on Block not Cut + = Belian		Hoppus Volume Per Acre
1	16	34	11		1,867.2
2	13	23	12	+3	1,191.0
3	9	18	14	+3	991.1
4	10	13	19		809.9
5	7	14	12	+2	524.5
6	6	8	12		468.6
7	13	25	10	+2	842.0
8	9	16	7	+2	572.4
9	11	22	12	+6	896.9
10	12	26	12	+4	1,072.2
11	7	14	16	+1	668.0
12	7	14	8	+1	774.3
13	2	3	17		207.3
14	4	8	10		282.6
15	6	15	13	+1	556.7
16	19	37	12	+4	1,824.7
17	5	10	22	+3	450.7
18	8	17	23		754.2
19	6	10	19		406.9
20	13	23	4	+1	1,339.1
Totals	183	350	265	+33	16,500.3
Mean	9.15	17.5	13.25	1.65	808.99