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APPENDICES

Appendix A **Comparison of vegetation types within different time periods and areas** - Results of Tukey's-HSD one-way ANOVA post-hoc multiple comparison test. For key to vegetation types see Table 2.3.

Table A1 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for patch area (ha) by vegetation type (Area 2-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean (ha)	Type	11	8	7	5	2	6	4	3	1	9	10
223.79	3	*	*	*	*	*	*	*	*			

Table A2 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for patch area (ha) by vegetation type (Area 2-1992).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean (ha)	Type	7	11	10	1	5	6	2	4	3	8	9
162.41	3	*	*	*	*	*	*	*	*			

Table A3 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for patch area (ha) by vegetation type (Entire area-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean (ha)	Type	11	1	8	7	2	5	4	3	6	9	10
196.97	3	*	*	*	*	*	*	*				
212.33	6	*	*	*	*	*	*	*				

Table A4 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for patch area (ha) by vegetation type (Entire area-1992).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean (ha)	Type	11	7	2	8	9	5	6	1	4	10	3
112.19	10	*	*									
156.00	3	*	*	*			*	*	*	*		

Table A5 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for perimeter length(km) by vegetation type (Area 2-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean (km)	Type	11	7	8	2	5	6	4	3	9	10	11
5.23	4	*										
14.15	3	*	*	*	*	*	*	*				

Table A6 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for perimeter length (km) by vegetation type (Area 2-1992).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean (km)	Type	7	11	10	1	5	2	6	4	3	9	10
6.69	4		*	*								
13.59	3	*	*	*	*	*	*	*	*			

Table A7 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for perimeter length (km) by vegetation type (Entire area-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean (km)	Type	11	1	7	8	2	5	4	6	3	10	11
6.44	4	*										
11.57	6	*	*	*		*	*					
12.59	3	*	*	*	*	*	*					

Table A8 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for perimeter length (km) by vegetation type (Entire area-1992).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean (km)	Type	7	11	9	2	1	5	6	8	4	10	3
6.64	4	*	*									
7.33	10	*	*									
13.10	3	*	*		*	*	*	*		*		

Table A9 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for shape index by vegetation type (Area 2-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	2	7	8	11	5	4	6	3	9	10	1
2.14	4	*			*							
2.19	6	*										
2.42	3	*			*							

Table A10 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for shape index by vegetation type (Area 2-1992).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	10	7	11	2	1	6	5	4	3	8	9
2.65	4	*	*	*	*	*	*	*				
3.24	3	*	*	*	*	*	*	*				

Table A11 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for shape index by vegetation type (Entire area-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	1	2	11	7	8	5	4	6	3	10	9
2.19	4	*	*	*								
2.32	6	*	*	*	*							
2.32	3	*	*	*								

Table A12 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for shape index by vegetation type (Entire area-1992).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	9	7	11	2	1	6	10	5	8	4	9
2.40	4		*	*	*	*						
3.16	3	*	*	*	*	*	*	*	*		*	

Table A13 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for fragmentation index by vegetation type (Area 2-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	8	3	5	2	6	7	4	11	9	10	1
4.18	11				*							

Table A14 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for fragmentation index by vegetation type (Area 2-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	5	2	3	6	4	1	7	10	11	8	9
3.21	7	*	*									
3.22	10	*	*	*	*	*						
3.60	11	*	*	*	*	*	*					

Table A15 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for fragmentation index by vegetation type (Entire area-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	3	6	5	2	1	4	8	7	11	10	9
2.85	7	*	*	*								
4.42	11	*	*	*	*	*	*	*	*			

Table A16 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for fragmentation index by vegetation type (Entire area-1992).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	5	6	3	2	1	10	4	8	9	7	11
3.61	11	*	*		*	*	*					

Table A17 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for dispersion index by vegetation type (Area 2-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	11	4	2	7	5	6	3	8	9	10	11
0.044	6	*										
0.045	3	*										

Table A18 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for dispersion index by vegetation type (Area2-1992).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	11	10	2	5	6	3	4	7	1	8	9
0.033	4	*										
0.033	7											
0.043	1	*	*	*								

Table A19 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for dispersion index by vegetation type (Entire area-1942).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	11	1	7	8	5	3	2	4	6	9	10
0.037	5	*										
0.041	2	*										
0.043	4	*										
0.048	6	*										

Table A20 **Results of a Tukey-HSDpost-hoc test (multiple comparison test) for dispersion index by vegetation type (Entire area-1992).** Only vegetation types with significant differences have been included in the table (as rows). For a given row, types are listed with means ascending from left to right (*significant difference, $p<0.05$).

Mean	Type	11	2	9	10	6	3	1	7	5	4	8
0.045	4	*										

Appendix B Species presence/absence data matrix for all study sites.

Site/Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Acacia aulacocarpa	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acacia cinncinata	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0
Acacia crassicarpa	1	0	1	1	1	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	1	0
Acacia flavescens	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acacia mangium	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Acacia sp.	1	1	1	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	1
Alloteropsis semialata	1	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	0	0
Aristida latifolia	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alphitonia excelsa	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0
Alysicarpus sp.	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bothriochloa sp.	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Byblis liniflora	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Casuarina equisetifolia var. *incana*	0	0	0	0	1	1	1	0	1	0	1	1	1	1	1	1	0	0	0	0	0	1	1	1
Cassia sp.	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cassytha filiformis	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	1	0	1	0
Centranthera sp.	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Chrysopogon fallax	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
Corymbia clarksoniana	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
Corymbia intermedia	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
Corymbia pellita	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Crinum pedunculatum	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Crotalaria montana	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyperus sp.	0	0	1	1	1	0	0	1	1	1	1	0	1	1	0	0	0	1	1	0	0	1	1	0
Dendrobium canaliculatum	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	0	1	1	0	0
Dianella caerulea sens. lat.	0	0	0	0	1	1	0	0	0	0	1	0	0	0	1	1	0	1	0	1	1	1	0	0
Dianella revoluta	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0
Dillenia alata	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Dischidia nummularia	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	1	1	0	1	0	0	1	0	1
Drosera spathulata	0	0	0	0	1	1	1	0	1	0	0	1	0	0	1	0	0	0	1	1	0	1	0	0
Ectrosia sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Eriachne ciliata	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Euphorbia sp.	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fem sp. A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	1
Fimbristylis sp.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0
Fimbristylis dichotoma	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0
Goodenia paniculata	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Gonocarpus acanthocrpus	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0
Grevillea pteridifolia	0	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0
Habenaria sp.	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
Haemodorum coccineum	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0
Hibbertia melhanioides	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ischaemum australe	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
Jacksonia thesioides	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Lantana camara	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Lomandra sp.	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
Lophostemon suaveolens	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	0	0	0	1	1	1	1	1	1
Loranthaceae sp. A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0
Melaleuca nervosa	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Melastoma affine	0	0	0	0	1	1	0	1	1	1	0	1	1	1	1	1	0	0	1	1	1	1	0	1
Myrmecodia beccarii	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	1	0	0
Orchidaceae sp.	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Pandanus tectorius	1	1	1	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	1	0	0
Panicum sp.	0	0	0	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
Paspalidium sp.	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Persoonia falcata	0	0	0	0	1	1	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Petalostigma banksii	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phyllanthus virgatus	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Pimelia sp.	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pinus caribaea	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0
Planchonia careya	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poaceae sp. A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Restio sp.	0	0	0	0	1	1	1	0	1	0	0	0	1	1	0	0	0	1	1	1	0	1	1	0

Rhyncospora sp.	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Ruellia sp.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
Schoenus calostachys	0	0	1	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Scleria tricuspidata	0	0	1	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Spermacoe brachystema	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Striga curviflora	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stylidium sp.	0	0	1	1	1	1	0	0	1	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0
Themda triandra	1	1	1	1	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	1	0	0	0
Tricoryne anceps	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0
Thysanotus banksii	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Xanthorrhoea johnsonii	1	1	0	0	1	1	1	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0
Xylomelum sp.	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Xyris sp.	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0

Appendix C **Tree DBH and tree height (TH) size class data matrix for all study sites.** Size classes are defined in Section 3.2.3.

Site	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
DBH1	2	0	3	4	5	2	6	4	17	15	14	8	2	18	0	0	0	0	18	19	30	12	63	1
DBH2	14	0	15	0	14	12	51	68	62	2	44	14	15	15	5	14	0	0	5	185	107	89	117	13
DBH3	23	6	44	5	29	15	24	29	50	10	41	14	8	23	43	12	1	1	26	7	27	38	60	23
DBH4	12	28	14	15	16	23	6	2	10	25	21	15	21	14	20	4	0	8	15	0	12	9	10	18
DBH5	2	11	8	10	17	14	1	1	2	15	6	9	12	11	5	13	7	5	5	0	4	1	5	20
DBH6	2	0	0	2	22	15	0	0	1	2	1	1	3	1	1	6	4	3	0	0	3	0	0	7
DBH7	1	1	0	0	10	9	0	0	0	1	1	3	1	1	0	8	6	9	0	0	0	0	0	2
DBH8	0	0	1	0	5	7	0	0	0	0	0	0	0	0	0	7	9	11	0	0	0	0	0	1
DBH9	0	0	3	0	15	10	0	0	0	0	0	0	0	0	0	15	21	20	0	0	0	0	0	1
TH1	1	0	1	1	9	8	14	12	20	5	13	5	2	17	0	12	0	0	11	51	26	12	105	0
TH2	8	0	8	0	56	57	56	72	78	13	47	18	11	19	19	27	1	3	14	156	69	95	144	12
TH3	7	4	19	2	39	25	16	15	34	7	28	7	10	14	41	29	6	10	13	2	51	24	6	22
TH4	23	2	24	6	13	15	2	4	7	13	28	23	11	19	14	6	14	16	20	2	8	15	0	20
TH5	13	19	24	13	6	0	0	1	3	22	11	11	11	9	0	4	20	21	11	0	17	3	0	18
TH6	4	20	8	11	5	0	0	0	0	10	1	0	10	5	0	0	6	4	0	0	11	0	0	14
TH7	0	1	2	0	0	0	0	0	0	0	0	0	7	0	0	1	0	0	0	0	1	0	0	0

Appendix D Results of uni-variate statistical tests for soil moisture and community composition attributes, and chi-squared results of DBH size class comparisons.

Table D1 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for soil moisture (%) by site - May 1994** (*significant difference, p<0.05).

Mean (%)	Site	10	9	8
12.45	10	-		
41.67	9	*	-	
42.04	8	*		-

Table D2 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for soil moisture (%) by site - August 1994** (*significant difference, p<0.05).

Mean (%)	Site	10	9	8
1.81	10	-		
12.43	9	*	-	
16.06	8	*		-

Table D3 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for DBH's (cm) of *Melaleuca viridiflora* by site** (*significant difference, p<0.05).

Mean (cm)	Site	8	9	10
4.29	8	-		
5.85	9		-	
13.24	10	*	*	-

Table D4 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for tree heights (m) of *Melaleuca viridiflora* by site** (*significant difference, p<0.05).

Mean (m)	Site	8	9	10
3.32	8	-		
4.23	9		-	
9.46	10	*	*	-

Table D5 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for heights (cm) of *Xanthorrhoea johnsonii*** (*significant difference, p<0.05).

Mean (cm)	Site	8	9	10
14.71	8	-		
15.11	9		-	
34.90	10	*	*	-

Table D6 **Results of the chi-squared comparisons of *M. viridiflora* DBH (cm) and tree hight (m) data.** All values listed are > the critical χ^2 value (p=0.05) for the recorded degrees of freedom.

Variable/site comparison	χ^2	df
DBH		
8-9	15.06	5
9-10	84.62	5
8-10	109.8	5
Height		
8-9	40.73	3
9-10	212.33	4
8-10	236.49	4

Table D7 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for seedling density (m^{-2}) of *Melaleuca viridiflora*** (*significant difference, p<0.05). The seedling data was log (x+1) transformed.

Mean (m^{-2})	Site	8	9	10
0.00	8	-		
0.14	9		-	
0.33	10	*	*	-

Table D8 **Results of a Tukey-HSD post-hoc test (multiple comparison test) for basal area ($m^{-2}ha^{-1}$) of *Melaleuca viridiflora*** (*significant difference, $p<0.05$).

Mean ($m^{-2}ha^{-1}$)	Site	8	9	10
0.0471	8	-		
0.0743	9		-	
0.3060	10	*	*	-

Appendix E Fire information relevant to investigations carried out in Chapters 5 and 6.

1. Hinchinbrook Island National Park study sites

The fires that are described below are now formally recognised and recorded as part of the prescribed burning program for Hinchinbrook Island National Park (QDEH 1995c). A Fire Action Plan forms the basis of this document, with similar plans for all national parks now a major management goal. The plan basically consists of two tables. The first of these lists the vegetation types located within the park (vegetation types after Tracey 1982), and the current fire management objective and associated fire regime. This is based on consultation with the Principal Conservation Officer, Mr Peter Stanton, past experience, any available data, and the desired management objective for the site (usually associated with maintenance of habitat diversity). The second table lists vegetation types for each management sector, and when they were last burnt if this is known.

1.1 *Melaleuca viridiflora* study sites

(a) Study Site 5

This fire was ignited using drip torches at 2.00 pm on 30.9.92 by QDEH staff. The wind was from the south-east at approximately 8 knots. *Dendrobium canaliculatum* was flowering at the time of ignition. Two fire fronts were ignited: one in the tall closed forest dominated by *Eucalyptus cloeziana* and *Syncarpia glomulifera* to the north of the study site; the second along the adjacent shoreline ridge dominated by *E. tessellaris*/*E. crebra* to the east of the study site. The fire trickled through the adjacent forest communities until it reached the ecotone of the *M. viridiflora* woodland when grasstrees and pandans began to ignite, dramatically increasing the intensity. The fire burnt for several days and burnt all of the largest interconnected patch of *M. viridiflora* on the northern end of HINP (approximately 350ha). This fire was actually expected to extinguish on the night of the 30th as a heavy dew was forecast that evening.

Variable death of *Allocasuarina torulosa* within this community was observed - in some instances to 4-5 m. Trees burnt (100%) on adjoining hills to canopy height. The site had previously been burnt in 1983 (Mr Peter Stanton, pers. comm.). Temperature sensitive paints were tested on a total of 20 aluminium plates at this site. The methods and results of this experiment are considered in detail in Chapter 5.

(b) Study Site 6

Fire commenced at 2.00 pm on 13.10.93 and continued to burn until late afternoon on 16.10.93. This fire was planned to act as a fire break for the fire prescribed for site E later in the dry season. This was to ensure the melaleuca woodlands that had been burnt in the previous year at Site 5 (see above) would not be impacted upon again. Fire was ignited from the first high ridge south of the melaleuca woodland here.

Fire burnt downhill into the wind and was therefore of a cool to moderate intensity. The last rain of approximately 25 mm fell on 5.10.93. At the time of ignition, the wind had an approximate strength of 10-15 knots, and was blowing from the north-east. A total area of

some 240 hectares was burnt, mostly dominated by forest or woodland. Follow up visits, coupled with the mapped extent of the fire at Site E, indicated that this fire acted very successfully in preventing further eastward spread of the Site E (1993) fire.

1.2 Other HINP study sites

(a) Site E

Fire commenced at 11.30 am on 9.11.93 and continued to burn until 22.11.93, a total of 13 days. The aim of this prescribed burn was to produce a moderate to high intensity fire in the tall eucalypt woodland dominated by *Eucalyptus cloeziana*. Little of this vegetation type remains on alluvial soil in the region, and it therefore has very high conservation value (Mr P. Stanton, pers. comm.). In recent times (< 30 years) this site has been invaded by rainforest species to heights of 4-5 metres including *Chionanthus ramiflorus*, *Cryptocarya densiflora*, *Diploglottis cunninghamii* and *Litsea leefeana*.

The effects of this were planned to:

(i) reduce the dominance of closed forest species in the understorey and midstorey (prior to this fire it is possible that this site had not been burnt for at least 20 years); and

(ii) allow regeneration (through germination) of the eucalypt canopy trees. This was later observed only where large eucalypt tree boles had been lying on the ground. It appears that these were the only locations where either sufficient temperatures were reached, or a suitable ash-bed was produced, to stimulate *E. cloeziana* germination.

Prior to the fire, the last rain had fallen (83 mm) in the week ending 27.10.93. Lit as a front of nearly a kilometre along the foreshore with a drip torch, the fire produced a predominantly patchy burn. An estimated 15% of the area covered received a hot fire, with some crown scorch evident. A total area of approximately 400 hectares was burnt in this fire.

2. Mainland *Melaleuca viridiflora* study sites

(a) Study Site 14

The purpose of this prescribed burn was twofold. Firstly, I wished to assess the effects of fire on *M. viridiflora* woodland structure, and secondly the effectiveness of fire as a management tool for the control of *Pinus caribaea* var. *hondurensis* that had invaded this site (see Chapters 5 & 6). The Queensland State Forest Service (QSFS) conducted a prescribed burn at this site on the 24.10.95. Wind was from the north north-east at 18 knots. Eleven days prior to the fire 30.4 mm of rain was recorded. Drip torches were utilised to burn two fronts: one back burn that protected adjoining pine plantations (lit at 1.25 pm and covered an approximate area of 30ha), and one forward burn that burnt the study site later in the afternoon (lit at 4.15 pm and covered an approximate area of 35ha). The site had been burnt 9 years before this fire (QSFS records).

(b) Study Site 19

This site was burnt accidentally by the Queensland State Forest Service as a result of back-burning around *Pinus caribaea* var. *hondurensis* plantations in the vicinity of the study site. Few details are therefore available for the site. The fire occurred just prior to a sampling visit in October 1993 and was rated as being of moderate intensity following an analysis of the scorch heights. The patch of *M. viridiflora* woodland burnt was approximately 25ha (the entire area burnt by the fire was much larger than this but had not been mapped by the QSFS at the time of writing).