Plate 17. Mingela Bluff, south-west of Townsville, showing vine thicket on midslopes (site 48).

Plate 18. Remnant vine thicket (regional type 9) on hillslopes, 16km west of Gunnedah, NSW.

APPENDICES

Appendix 1. Field Key to Structural Types of Australian Rainforest Vegetation

(after Webb 1978a).

1. Mesophylls and notophylls most common

    2. Robust lianes, vascular epiphytes, plank buttresses, macrophylls and compound mesophylls prominent; trunk spaces generally obscured by aroids and palms; stem diameters irregular, many av. 60-120 cm; canopy level av. 21-42 m.

        3. Deciduous emergent and top canopy trees rare

            4. Palm trees not prominent in canopy — **Complex mesophyll vine forest (CMVF)**

            4. Feather palm trees prominent in canopy — **Mesophyll feather-palm vine forest (MFPVF)**

        3. Deciduous and semi-deciduous emergent and top canopy trees frequent

            4. Mostly mesophylls — **Semi-deciduous mesophyll vine forest (SDMVF)**

            4. Mostly notophylls — **.Semi-deciduous notophyll vine forest (SDNVF)**

    2. Robust lianes and vascular epiphytes not conspicuous in upper tree layers which are simplified; spur rather than plank buttresses prominent; trunk spaces open, stem diameters (except for evergreen emergents) generally regular, av. 60 cm; canopy level av. 24-36 m. Simplification of structural features does not, however, approach that of simple notophyll evergreen types. Sclerophylls (e.g. *Acacia*) may be scattered in canopy.

        3. Deciduous emergent and top canopy trees rare or absent. Mostly mesophylls.

            4. Palm trees not prominent in canopy — **Mesophyll vine forest (MVF)**

            4. Fan palm trees prominent in canopy — **Mesophyll fan-palm vine forest (MFAPVF)**

1. Notophylls and microphylls most common

    2. Robust and slender woody lianes, vascular epiphytes, plank buttresses and compound entire leaves prominent; trunk spaces generally obscured by the aroid *Pothos*; stem diameters irregular, many av. 60-120 cm.

3. Canopy level uneven, av. 21-45 m, emergents mostly evergreen and umbrageous

Complex notophyll vine forest (CNVF)

3. Canopy level uneven, av. 15-36 m, occasional deciduous species with common emergent *Araucaria* or *Agathis*, reaching av. 36-51 m

Araucarian notophyll vine forest (ANVF)

2. Robust lianes and vascular epiphytes inconspicuous in tree tops; slender woody and wiry lianes prominent in understorey; plank buttresses inconspicuous; simple toothed leaves prominent; trunk spaces open; stem diameters (except for emergents) generally regular, av. 60 cm; tree crowns evergreen and generally sparse and narrow; strong tendency to single species dominance (e.g. *Ceratopetalum*) in upper tree layers; canopy level even, av. 21-33 m often with sclerophyllous emergents and co-dominants

Simple notophyll evergreen vine forest (SNEVF)

2. Robust lianes, vascular epiphytes and plank buttresses present, but not so prominent as in complex types; tree crowns mostly evergreen, but with a few semi-evergreen or deciduous species, ie.. structural features are intermediate between simple and complex types

Notophyll vine forest (NVF)

2. Robust and slender lianes generally present, wiry lianes (climbing ferns) generally conspicuous in understorey; vascular epiphytes and plank buttresses inconspicuous; feather palms generally conspicuous; tree crowns evergreen; canopy level av. 20-25 m

Evergreen notophyll vine forest (ENVF) ± feather palms

2. Robust, slender and wiry lianes generally inconspicuous; fleshy vascular epiphytes may be prominent on trunks; plank buttresses inconspicuous; simple entire leaves prominent; deciduous species generally absent but many tree crowns become sparse during the dry season i.e. semi-evergreen; typically mixed with sclerophyllous emergents and co-dominants.

3. Canopy level av. 10-20 m

Simple semi-evergreen notophyll vine forest (SSENVF)

3. Canopy level av. 3-9 m, generally even, and canopy trees often branched low down (shrub-like)

Simple semi-evergreen notophyll vine thicket (SSENVT)

I. Microphylls most common

2. Mossy and vascular epiphytes inconspicuous in top tree layers; robust lianes generally prominent; plank buttresses absent; prickly and thorny species frequent in usually dense shrub understorey; ground layer sparse; compound leaves and entire leaf margins common

3. Canopy level uneven, av. 9-15 m with mixed evergreen and semi-evergreen emergent and upper tree layer species; araucarian and deciduous emergents rare or absent

Low microphyll vine forest (LMVF)

3. Canopy level uneven, av. 9-15 m with some deciduous and semi-evergreen species; frequent araucarian (*Araucaria cunninghamii*) emergents to av. 21-36 m

Araucarian microphyll vine forest (AMVF)

3. Canopy level uneven, av. 4-9 m with mixed evergreen, semi-evergreen and deciduous emergents to av. 9-18 m, swollen stems ('Bottle Trees') common

Semi-evergreen vine thicket (SEVT)

3. Canopy level uneven and discontinuous, av. 4-9 m; practically all emergents are deciduous, and many understorey species are deciduous or semi-evergreen; swollen stems ('Bottle Trees' and other species) may be common

Deciduous vine thicket (DVT)

2. Mossy and vascular epiphytes usually present in top tree layers; robust lianes inconspicuous; slender and wiry lianes generally prominent; plank buttresses absent; prickly and thorny species absent; simple leaves with toothed margins common; strong tendency to single species dominance (*Nothofagus*, *Eucryphia*) in tree layer; tree ferns and ground ferns prominent; sclerophyll emergents generally present in marginal situations.

3. Canopy level tall, even except for sclerophylls, av. 20-45 m

Microphyll fern forest (MFF)

3. Canopy level stunted, generally even and mixed with sclerophylls, av. 6-9 m

Microphyll fern thicket (MFT)

1. Nanophylls most common

2. Mossy epiphytes conspicuous; robust lianes and true prickles and thorns absent or rare; plank buttresses absent; simple leaves with toothed margins common; strong tendency to single species dominance (*Nothofagus*) in tree layer; tree ferns and ground prominent; floor often peaty and covered by mosses; sclerophyll emergents generally present

3. Canopy level tall, except for sclerophylls, av. 18-40 m

Nanophyll fern forest (NFF) and mossy forest (NMF)

3. Canopy level stunted, uneven, often with sclerophylls, av. 6-9 m

Nanophyll fern thicket (NFT) and mossy thicket (NMT)

Appendix 2. List of vascular plant species recorded in vine thicket communities in the Brigalow Belt Biogeographic Region of eastern Australia.

NAMECODE	LIFEFORM	NAME	FAMILY	
ABUTINDI	W	Abutilon indicum	MALVA	R[#]
ABUTMICR	W	Abutilon micropetalum	MALVA	
ABUTNOBI	S	Abutilon nobilis	MALVA	R
ABUTOXAC	S	Abutilon oxycarpum forma acutatum	MALVA	
ABUTTUBU	W	Abutilon tubulosum var. tubulosum	MALVA	.
ACACAULA	W	Acacia aulacocarpa	MIMOS	
ACACCATE	W	Acacia catenulata	MIMOS	
ACACEXCE	W	Acacia excelsa	MIMOS	R
ACACFASC	W	Acacia fasciculifera	MIMOS	
ACACHARP	W	Acacia harpophylla	MIMOS	
ACACMAID	W	Acacia maidenii	MIMOS	
ACACMELA	W	Acacia melanoxylon	MIMOS	R
ACACOSWA	W	Acacia oswaldii	MIMOS	
ACACRHOD	W	Acacia rhodoxylon	MIMOS	
ACACSALI	W	Acacia salicina	MIMOS	R
ACACSHIR	W	Acacia shirleyi	MIMOS	R
ACACSPAR	W	Acacia sparsiflora	MIMOS	R
ACALCAPI	W	Acalypha capillipes	EUPHO	
ACALEREM	W	Acalypha eremorum	EUPHO	
ACHYASPE	H	Achyranthes aspera	ACANT	
ACROLAEV	W	Acronychia laevis	RUTAC	
ACROPAUC	W	Acronychia pauciflora	RUTAC	
ACTELIND	W	Actephila lindleyi	EUPHO	
ACTESESS	W	Actephila sessilifolia	EUPHO	
ADIAHISP	F	Adiantum hispidulum	ADIAN	
AGERCONY	H	*Ageratum conyzoides	ASTER	
AIDIRACE	W	Aidia racemosa	RUBIA	
AILATRIP	W	Ailanthus triphysa	SIMAR	
ALANVITO	W	Alangium villosum subsp. tomentosum	ALANG	
ALBICANE	W	Albizia canescens	MIMOS	R
ALCHILIC	W	Alchornea ilicifolia	EUPHO	
ALECCONN	W	Alectryon connatus	SAPIN	
ALECDIVE	W	Alectryon diversifolius	SAPIN	
ALECOLEI	W	Alectryon oleifolius	SAPIN	R
ALECPUBE	W	Alectryon pubescens	SAPIN	
ALECSUBC	W	Alectryon subcinereus	SAPIN	R
ALECSUBD	W	Alectryon subdentatus	SAPIN	
ALECTOME	W	Alectryon tomemtosus	SAPIN	R
ALPHEXCE	W	Alphitonia excelsa	RHAMN	
ALSTCONS	W	Alstonia constricta	APOCY	
ALTENANA	H	Alternanthera nana	AMARA	
ALYXRUSC	W	Alyxia ruscifolia subsp. ruscifolia	APOCY	
ALYXSHAR	W	Alyxia sharpei	APOCY	
ALYXSPIC	C	Alyxia spicata	APOCY	R
AMORANTI	W	Amorphospermum antilogum	SAPOT	R
ANCIUNCI	G	Ancistrachne uncinulata	POACE	
ANEIBIFL	H	Aneilema biflorum	COMME	
ANRECORD	C	*Anredera cordifolia	BASEL	
ANTIPARV	W	Antidesma parvifolium	EUPHO	
APHAPHIL	W	Aphananthe philippinensis	ULMAC	R
APHARESI	C	Aphanopetalum resinosum	CUNON	R
APOPANOM	W	Apophyllum anomalum	CAPPA	
ARAUCUNN	W	Araucaria cunninghamii	ARAUC	
ARCHBASA	W	Archidendropsis basaltica	MIMOS	R
ARCHTHOZ	W	Archidendropsis thozetiana	MIMOS	
ARISGRAC	G	Aristida gracilipes	POACE	
ARISPERS	G	Aristida personata	POACE	

NAMECODE	LIFEFORM	NAME	FAMILY	
ARISRAMO	G	Aristida ramosa	POACE	
ARYTDIVA	W	Arytera divaricata	SAPIN	R
ARYTFOVE	W	Arytera foveolata	SAPIN	
ARYTMICR	W	Arytera microphylla	SAPIN	
ATALCALC	W	Atalaya calcicola	SAPIN	
ATALHEMI	W	Atalaya hemiglauca	SAPIN	
ATALMULT	W	Atalaya multiflora	SAPIN	
ATALRIGI	W	Atalaya rigida	SAPIN	
ATALSALI	W	Atalaya salicifolia	SAPIN	
AUSTBIDW	W	Austromyrtus bidwillii	MYRTA	
AUSTBLAC	C	Austrosteenisia blackii	FABAC	
BACKANGU	W	Backhousia angustifolia	MYRTA	
BACKCITR	W	Backhousia citriodora	MYRTA	
BACKKING	W	Backhousia kingii	MYRTA	
BALOINOP	W	Baloghia inophylla	EUPHO	
BARKSYRI	W	Barklya syringifolia	CAESA	
BEYEVISC	W	Beyeria viscosa	EUPHO	
BIDEPILO	H	*Bidens pilosa	ASTER	
BONADIET	C	Bonamia dietrichiana	CONVO	R
BOSIMEDI	W	Bosistoa medicinalis	RUTAC	
BOUCNEUR	W	Bouchardatia neurococca	RUTAC	
BRACAUST	W	Brachychiton australis	STERC	
BRACBIDW	W	Brachychiton bidwillii	STERC	R
BRACDISC	W	Brachychiton discolor	STERC	
BRACGILE	G	Brachiaria gilesii	POACE	
BRACPOPU	W	Brachychiton populneus	STERC	R
BRACRUPE	W	Brachychiton rupestris	STERC	
BREYOBLO	W	Breynia oblongifolia	EUPHO	
BRIEEXAL	W	Briedelia exaltata	EUPHO	R
BRIELEIC	W	Briedelia leichhardtii	EUPHO	
BRUNAUST	H	Brunoniella australis	ACANT	
BURSINCA	W	Bursaria incana	PITTO	
BURSSPIN	W	Bursaria spinosa	PITTO	R
CADEPENT	W	Cadellia pentastylis	SURIA	
CAESSUBT	C	Caesalpinia subtropica	CAESA	
CALLENDL	W	Callitris endlicheri	CUPRE	R
CALLGLAU	W	Callitris glaucophylla	CUPRE	
CALOHYGR	S	Calophanoides hygrophiloides	ACANT	
CALYGRAC	G	Calyptochloa gracillima	POACE	
CANAPAPU	C	Canavalia papuana	FABAC	
CANTATTE	W	Canthium attenuatum	RUBIA	
CANTBRIG	W	Canthium sp.("brigalow") (C. sp (Berrigurra Station E.R.Anderson 2829))	RUBIA	
CANTBUXI	W	Canthium buxifolium	RUBIA	
CANTCOPR	W	Canthium coprosmoides	RUBIA	
CANTLAMP	W	Canthium lamprophyllum	RUBIA	
CANTODOR	W	Canthium odoratum	RUBIA	
CANTOLEI	W	Canthium oleifolium	RUBIA	R
CANTVACC	W	Canthium vacciniifolium (includes C. microphyllum)	RUBIA	
CAPPARBO	W	Capparis arborea	CAPPA	
CAPPCANE	W	Capparis canescens	CAPPA	R
CAPPLASI	C	Capparis lasiantha	CAPPA	
CAPPLORA	W	Capparis loranthifolia (includes C. loranthifolia var. bancroftii)	CAPPA	
CAPPMITC	W	Capparis mitchellii	CAPPA	
CAPPORNA	C	Capparis ornans	CAPPA	
CAPPSARM	C	Capparis sarmentosa	CAPPA	
CAPPSEPI	C	Capparis sepiaria	CAPPA	
CAPPSHAN	W	Capparis shanesiana	CAPPA	
CARIOVAT	W	Carissa ovata	APOCY	

NAMECODE	LIFEFORM	NAME	FAMILY	
CASEMULT	W	Casearia multinervosa	FLACO	
CASSAUAN	W	Cassine australis var. angustifolia	CELAS	
CASSAUAU	W	Cassine australis var. australis	CELAS	
CASSBREW	W	Cassia brewsteri	CAESA	
CASSLAEV	W	Cassinia laevis	ASTER	R
CASSMELA	W	Cassine melanocarpa	CELAS	
CASSTOME	W	Cassia tomentella	CAESA	R
CASUCRIS	W	Casuarina cristata	CASUA	
CAYRACRI	C	Cayratia acris	VITAC	
CAYRCLEM	C	Cayratia clematidea	VITAC	
CAYRTRIF	C	Cayratia trifolia	VITAC	R
CELAAUST	C	Celastrus australis	CELAS	
CELASUBS	C	Celastrus subspicatus	CELAS	
CELTPANI	W	Celtis paniculata	ULMAC	R
CELTSINE	W	*Celtis sinensis	ULMAC	R
CENCCILI	G	*Cenchrus ciliaris	POACE	
CHEIDIST	F	Cheilanthes distans	ADIAN	
CHEISIEB	F	Cheilanthes sieberi	ADIAN	
CHENCARI	H	Chenopodium carinatum	CHENO	
CHENTRIG	H	Chenopodium trigonon (now Einadia trigonos)	CHENO	
CHLOTRUN	G	Chloris truncata	POACE	
CHORSUBA	W	Choricarpia subargentea	MYRTA	R
CIRSVULG	H	*Cirsium vulgare	ASTER	
CISSANTA	C	Cissus antarctica	VITAC	
CISSCARD	C	Cissus cardiophylla	VITAC	
CISSHAST	C	Cissus hastata	VITAC	R
CISSHYPO	C	Cissus hypoglauca	VITAC	R
CISSOBLO	C	Cissus oblonga	VITAC	
CISSOPAC	C	Cissus opaca	VITAC	
CISSRENI	C	Cissus reniformis	VITAC	
CITRLANC	W	Citriobatus lancifolius	PITTO	R
CITRLINE	W	Citriobatus linearis	PITTO	
CITRPAUC	W	Citriobatus pauciflorus	PITTO	
CITRSPIN	W	Citriobatus spinescens	PITTO	
CLAOAUST	W	Claoxylon australe	EUPHO	
CLAOTENE	W	Claoxylon tenerifolium	EUPHO	
CLEICUNN	W	Cleistanthus cunninghamii	EUPHO	
CLEMFAWC	C	Clematis fawcettii	RANUN	
CLEMGLYC	C	Clematis glycinoides	RANUN	
CLEMMICR	C	Clematis microphylla	RANUN	R
CLEMPIKE	C	Clematis sp. (Pikedale R.J.Henderson H3121)	RANUN	
CLERFLOR	W	Clerodendrum floribundum (includes var.angustifolium)	VERBE	
CLERTOME	W	Clerodendrum tomentosum	VERBE	
CODOATTE	W	Codonocarpus attenuatus	GYROST	R
CORDDICH	W	Cordia dichotoma	BORAG	
CORDMURC	W	Cordyline murchisoniae	AGAVA	
CORDPETI	W	Cordyline petiolaris	AGAVA	R
CROTACRO	W	Croton acronychioides	EUPHO	
CROTARNH	W	Croton arnhemicus	EUPHO	
CROTINSU	W	Croton insularis	EUPHO	
CROTMAGN	W	Croton magneticus	EUPHO	R
CROTPHEB	W	Croton phebalioides	EUPHO	
CROTSTIG	W	Croton stigmatosus	EUPHO	R
CRYPBIDW	W	Cryptocarya bidwillii	LAURA	
CRYPGRAF	C	*Cryptostegia grandiflora	PERIP	
CRYPTRIP	W	Cryptocarya triplinervis	LAURA	
CUPAANAC	W	Cupaniopsis anacardioides	SAPIN	
CUPAPARV	W	Cupaniopsis parvifolia	SAPIN	
CUPASIMU	W	Cupaniopsis simulatus	SAPIN	

NAMECODE	LIFEFORM	NAME	FAMILY	
CUPATOME	W	Cupaniopsis tomentella	SAPIN	R
CUPAWADS	W	Cupaniopsis wadsworthii	SAPIN	
CYCAMEDI	W	Cycas media (= C. megacarpa)	CYCAD	
CYMBCANA	E	Cymbidium canaliculatum	ORCHI	
CYMBREFR	G	Cymbopogon refractus	POACE	
CYNABOWM	C	Cynanchum bowmanii	ASCLE	
CYNOAUAU	H	Cynoglossum australe var. australe	BORAG	
CYPECURV	G	Cyperus curvistylis	CYPER	
CYPEENER	G	Cyperus enervis	CYPER	
CYPEGRAC	G	Cyperus gracilis	CYPER	
CYPETETR	G	Cyperus tetraphyllus	CYPER	
DEERAMAR	3	Deeringia amaranthoides	AMARA	
DEERARBO	C	Deeringia arborescens	AMARA	
DENDBOWM	E	Dendrobium bowmanii	ORCHI	
DENDCUCU	E	Dendrobium cucumerinum	ORCHI	
DENDEXCE	W	Dendrocnide excelsa	URTIC	R
DENDLING	E	Dendrobium linguiforme	ORCHI	
DENDPHOT	W	Dendrocnide photinophylla	URTIC	
DENHCELA	W	Denhamia celastroides	CELAS	R
DENHOLEA	W	Denhamia oleaster	CELAS	
DENHPARV	W	Denhamia parvifolia	CELAS	
DENHPITT	W	Denhamia pittosporoides	CELAS	
DERRINVO	C	Derris involuta	FABAC	
DESMBRAC	H	Desmodium brachypodum	FABAC	
DIANFRUT	G	Dianella fruticans	LILIA	
DIANVANN	G	Dianella caerulea var. vannata	LILIA	
DIGIBROW	G	Digitaria brownii	POACE	
DIOSAUST	W	Diospyros australis	EBENA	
DIOSFASC	W	Diospyros fasciculosa	EBENA	
DIOSGEMI	W	Diospyros geminata	EBENA	
DIOSHUMI	W	Diospyros humilis	EBENA	
DIOSTRAN	C	Dioscorea transversa	DIOSC	
DIPLIXOR	W	Diplospora ixoroides (= Tarenna sp.(Ka Ka Mundi))	RUBIA	
DIPLPALM	C	Diplocyclos palmatus	CUCUR	
DODOANGU	W	Dodonaea viscosa subsp. angustifolia	SAPIN	R
DODOSINU	W	Dodonaea sinuolata (includes subsp. acrodentata)	SAPIN	R
DODOSTEN	W	Dodonaea stenophylla	SAPIN	
DODOVISC	W	Dodonaea viscosa subsp. viscosa	SAPIN	
DORYCONC	F	Doryopteris concolor	ADIAN	
DRYNSPAR	F	Drynaria sparsisora	POLYP	
DRYPDEPL	W	Drypetes deplanchei (previously D. australasica)	EUPHO	
DUBOLEIC	W	Duboisia leichhardtii	SOLAN	R
EHREGRAH	W	Ehretia grahamii	BORAG	
EHREHYBR	W	Ehretia grahamii X membranifolia	BORAG	R
EHREMEMB	W	Ehretia membranifolia	BORAG	
EINAHAST	H	Einadia hastata	CHENO	
EINANUTA	H	Einadia nutans	CHENO	
ELATXYLO	W	Elattostachys xylocarpa	SAPIN	
ENCHTOME	S	Enchylaena tomentosa	CHENO	
ENTEACIC	G	Enteropogon acicularis	POACE	
ENTEPAUC	G	Enteropogon paucispiceus	POACE	
ENTERAMO	G	Enteropogon ramosus	POACE	
ENTEUNIS	G	Enteropogon unispiceus	POACE	
ERAGBROW	G	Eragrostis brownii	POACE	
ERAGMEGA	G	Eragrostis megalosperma	POACE	
EREMGLAU	W	Eremocitrus glauca	RUTAC	
EREMLONG	W	Eremophila longifolia	MYOPO	R
EREMMITC	W	Eremophila mitchellii	MYOPO	
ERYTAUST	W	Erythroxylum australe	ERYTH	
ERYTCROF	W	Erythrina sp. (Croftby P.I. Forster 6209)	FABAC	

NAMECODE	LIFEFORM	NAME	FAMILY	
ERYTVESP	W	Erythrina vespertilio	FABAC	R
EUCAALBE	W	Eucalyptus albens	MYRTA	R
EUCACAMB	W	Eucalyptus cambageana	MYRTA	R
EUCACHLO	W	Eucalyptus chloroclada	MYRTA	R
EUCACREB	W	Eucalyptus crebra	MYRTA	R
EUCADOLI	W	Eucalyptus dolichocarpa (now E. clarksoniana)	MYRTA	
EUCAMELA	W	Eucalyptus melanophloia	MYRTA	R
EUCAPERS	W	Eucalyptus persistens	MYRTA	R
EUCAPOPU	W	Eucalyptus populnea	MYRTA	R
EUCARAVE	W	Eucalyptus raveretiana	MYRTA	R
EUCATERE	W	Eucalyptus tereticornis	MYRTA	R
EUROFALC	W	Euroschinus falcata (includes var. angustifolia)	ANACA	
EUSTLATI	C	Eustrephus latifolius	PHILE	
EVOLALSI	H	Evolvulus alsinoides	CONVO	
EXCODALL	W	Excoecaria dallachyana	EUPHO	
EXOCLATI	W	Exocarpos latifolius	SANTA	
FICUFRAS	W	Ficus fraseri	MORAC	R
FICUOPPO	W	Ficus opposita	MORAC	
FICUPLAT	W	Ficus platypoda var. platypoda	MORAC	
FICURUBI	W	Ficus rubiginosa	MORAC	R
FICUSUHE	W	Ficus superba var. henneana	MORAC	
FICUVISU	W	Ficus virens var. sublanceolata	MORAC	
FLINAUST	W	Flindersia australis	RUTAC	
FLINCOLL	W	Flindersia collina	RUTAC	
FLINDISS	W	Flindersia dissosperma	RUTAC	R
FLINXANT	W	Flindersia xanthoxyla	RUTAC	
FLUELEUC	W	Flueggea leucopyrus	EUPHO	
FONTVENO	W	Fontainea venosa	EUPHO	
GAHNASPE	G	Gahnia aspera	CYPER	
GEIJPANI	W	Geijera paniculata	RUTAC	
GEIJPARV	W	Geijera parviflora	RUTAC	
GEIJSALA	W	Geijera salicifolia var. latifolia	RUTAC	
GEIJSASA	W	Geijera salicifolia var. salicifolia	RUTAC	
GEITCYMO	C	Geitonoplesium cymosum	PHILE	
GLOSHEMI	C	Glossocarya hemiderma	VERBE	
GLYCMATH	C	Glycine sp. (Mt Matheson) (G. sp. (Marburg K.A.Williams 83006))	FABAC	
GLYCTABA	C	Glycine tabacina	FABAC	R
GRAPEXCE	W	Graptophyllum excelsum	ACANT	R
GREVHELM	W	Grevillea helmsiae	PROTE	
GREVROBU	W	Grevillea robusta	PROTE	R
GREVSTRI	W	Grevillea striata	PROTE	
GREWLATI	S	Grewia latifolia	TILIA	
GREWSCAB	W	Grewia scabrella	TILIA	
GUETPUTA	W	Guettardella putaminosa	RUBIA	
GYMNMICR	C	Gymnema micradenium (= Marsdenia micradenia)	ASCLE	
GYMNPLEI	C	Gymnema pleiadenium (= Marsdenia pleiadenia)	ASCLE	
GYNUDRYM	H	Gynura drymophila var. drymophila	ASTER	
GYROAMER	W	Gyrocarpus americanus	GYROC	
HARPHILL	W	Harpullia hillii	SAPIN	
HARPPEND	W	Harpullia pendula	SAPIN	R
HETECONT	G	Heteropogon contortus	POACE	
HIBIDIVA	W	Hibiscus divaricatus	MALVA	R
HIBIHETE	W	Hibiscus heterophyllus subsp. heterophyllus	MALVA	
HIBIPHYL	S	Hibiscus phyllochlaenus	MALVA	R
HIBISTUR	S	Hibiscus sturtii	MALVA	
HIBIVITI	S	Hibiscus vitifolius	MALVA	
HIPPBARB	C	Hippocratea barbata	CELAS	
HOMAALNI	W	Homalium alnifolium	FLACO	
HOVELONG	W	Hovea longipes	POACE	

NAMECODE	LIFEFORM	NAME	FAMILY
HOYAAUAU	C	Hoya australis subsp. australis	ASCLE
HYMEDENT	W	Hymenanthera dentata	VIOLA
HYPOFLOR	S	Hypoestes floribunda	ACANT
HYPTSUAV	H	*Hyptis suaveolens	LAMIA
INDIAUST	S	Indigofera australis	FABAC
IPOMABRU	C	Ipomoea abrupta	CONVO
IPOMCOLO	C	Ipomoea colobra	CONVO
IXORQUEE	W	Ixora queenslandica	RUBIA
JAGEPSPS	W	Jagera pseudorhus forma pseudorhus	SAPIN
JASMDILI	C	Jasminum didymum subsp. lineare	OLEAC
JASMDIRA	C	Jasminum didymum subsp. racemosum	OLEAC
JASMSIAU	C	Jasminum simplicifolium subsp. australiense	OLEAC
LANTCAMA	W	*Lantana camara	VERBE
LANTMONT	S	*Lantana montevidensis	VERBE
LEPTCILI	G	Leptochloa ciliolata	POACE
LEPTDECI	G	Leptochloa decipiens	POACE
LOPHSUAV	W	Lophostemon suaveolens	MYRTA
LYCIFERO	W	*Lycium ferocissimum	SOLAN
LYSICARR	W	Lysiphyllum carronii	CAESA
LYSIHOOK	W	Lysiphyllum hookeri	CAESA
MACLCOCH	C	Maclura cochinchinensis	MORAC
MACRLEIC	W	Macropteranthes leichhardtii	COMBR
MACRLEIO	W	Macropteranthes leiocaulis	COMBR
MAIRMICR	S	Maireana microphylla	CHENO
MALASCAN	C	Malaisia scandens (now Trophis scandens subsp. scandens)	MORAC
MALLCLAO	W	Mallotus claoxyloides	EUPHO
MALLPHIL	W	Mallotus philippensis	EUPHO
MALVAMER	S	*Malvastrum americanum	MALVA
MARSLLOY	C	Marsdenia lloydii	ASCLE
MARSMICR	C	Marsdenia microlepis	ASCLE
MARSROST	C	Marsdenia rostrata	ASCLE
MARSVIRI	C	Marsdenia viridiflora	ASCLE
MAYTBILO	W	Maytenus bilocularis	CELAS
MAYTCUNN	W	Maytenus cunninghamii	CELAS
MAYTDISP	W	Maytenus disperma	CELAS
MELABRAC	W	Melaleuca bracteata	MYRTA
MELIAZED	W	Melia azedarach	MELIA
MELIERYT	W	Melicope erythrococca	RUTAC
MELIMICR	W	Melicope micrococca	RUTAC
MELIURCE	S	Melichrus urceolatus	EPACR
MELOFONT	C	Melodorum sp. (Font Hills G.Sankowsky+ 380)	ANNON
MELOLEIC	C	Melodorum leichhardtii	ANNON
MICRAUST	W	Microcitrus australis	RUTAC
MICRMINU	W	Micromelum minutum	RUTAC
MISCANOD	W	Mischocarpus anodontus	SAPIN
MONOECHI	S	Monococcus echinophorus	PHYTO
MORIACUT	C	Morinda acutifolia	RUBIA
MURROVAT	W	Murraya ovatifoliolata (now known as M. paniculata)	RUTAC
MYOPACUM	W	Myoporum acuminatum	MYOPO
MYOPDESE	W	Eremophila deserti (Myoporum deserti)	MYOPO
MYOPMONT	W	Myoporum montanum	MYOPO
NEOACAPR	C	Neoalsomitra capricornica	CUCUR
NICOFORS	H	Nicotiana forsteri	SOLAN
NICOMEGA	H	Nicotiana megalosiphon	SOLAN
NOTEMICR	W	Notelaea microcarpa var. microcarpa	OLEAC
NOTEMIVE	W	Notelaea microcarpa var. velutina	OLEAC
NYSSDIFF	H	Nyssanthes diffusa	AMARA
NYSSEREC	H	Nyssanthes erecta	AMARA
OCIMTENU	S	Ocimum tenuiflorum	LAMIA

NAMECODE	LIFEFORM	NAME	FAMILY	
OLEACANE	S	Olearia canescens	ASTER	
OLEAELLI	W	Olearia elliptica	ASTER	
OLEAPANI	W	Olea paniculata	OLEAC	
OPLIAEMU	G	Oplismenus aemulus	POACE	
OPLIHIIM	G	Oplismenus hirtellus subsp. imbecillis	POACE	
OPUNINER	S	*Opuntia inermis	CACTA	c
OPUNTOME	W	*Opuntia tomentosa	CACTA	
OWENACID	W	Owenia acidula	MELIA	
OWENVENO	W	Owenia venosa	MELIA	
OZOTCASS	W	Ozothamnus cassinioides	ASTER	
PANDJASM	C	Pandorea jasminoides	BIGNO	
PANDPAND	C	Pandorea pandorana	BIGNO	
PANIMATR	G	*Panicum maximum var. trichoglume	POACE	
PARAMUEL	F	Paracetarach muelleri	ADIAN	
PARATOON	W	Paraserianthes toona	MIMOS	
PARSEUCA	C	Parsonsia eucalyptophylla	APOCY	
PARSLANC	C	Parsonsia lanceolata	APOCY	
PARSLATI	C	Parsonsia longipetiolata (previously known as P. sp. aff. P latifolia)	APOCY	
PARSLEIC	C	Parsonsia leichhardtii	APOCY	
PARSLENT	C	Parsonsia paulforsteri (previously known as P. sp. aff. P. lenticellata)	APOCY	
PARSLILA	C	Parsonsia lilacina	APOCY	
PARSPLAE	C	Parsonsia plaesiophylla	APOCY	
PARSROTA	C	Parsonsia rotata	APOCY	
PARSSTRA	C	Parsonsia straminea	APOCY	
PARSVELU	C	Parsonsia velutina	APOCY	
PARTHYST	H	*Parthenium hysterophorus	EUPHO	
PASPCAES	G	Paspalidium caespitosum	POACE	
PASPCONS	G	Paspalidium constrictum	POACE	
PASPCRIN	G	Paspalidium criniforme	POACE	
PASPGRAC	G	Paspalidium gracile	POACE	
PASSAURA	C	Passiflora aurantia var. aurantia	PASSA	
PASSFOET	C	*Passiflora foetida	PASSA	
PASSSUBE	C	*Passiflora suberosa var. suberosa	PASSA	
PAVEAUST	W	Pavetta australiensis var. australiensis	RUBIA	
PELLFANA	F	Pellaea falcata var. nana	ADAIN	
PELLPARA	F	Pellaea paradoxa	ADAIN	
PENTAUST	W	Pentaceras australe	RUTAC	
PEPEBLFL	H	Peperomia blanda var. floribunda	PIPER	
PHEBSQUL	W	Phebalium squamulosum	RUTAC	
PHYLGASS	S	Phyllanthus gasstroemii	EUPHO	
PHYLPUSI	S	Phyllanthus pusillifolius	EUPHO	
PHYLSUBC	S	Phyllanthus subcrenulatus	EUPHO	
PIMELALA	S	Pimelea latifolia subsp. latifolia	THYME	
PIMENEOA	S	Pimelea neoanglica	THYME	
PISOACUL	C	Pisonia aculeata	NYCTA	
PITTPHYL	W	Pittosporum phillyraeoides	PITTO	
PITTRHOM	W	Pittosporum rhombifolium	PITTO	
PLANCOCO	W	Planchonella cotinifolia var. cotinifolia	SAPOT	
PLANCOPU	W	Planchonella cotinifolia var. pubescens	SAPOT	
PLANMYRS	W	Planchonella myrsinoides	SAPOT	
PLANPOHL	W	Planchonella pohlmaniana	SAPOT	
PLECGRAV	S	Plectranthus graveolens	LAMIA	
PLECPARV	H	Plectranthus parviflorus	LAMIA	
PLEITIMO	W	Pleiogynium timorense	ANACA	
PLEOAUST	C	Pleogyne australis	MENIS	
PLEUOPPO	W	Pleurostylia opposita	CELAS	
PLUMZEYL	S	Plumbago zeylanica	PLUMB	
POLYELEG	W	Polyscias elegans	ARALI	

NAMECODE	LIFEFORM	NAME	FAMILY	
POLYNITI	W	Polyalthia nitidissima	ANNON	
PORTFILI	H	Portulaca filifolia	PORTU	
PREMDALL	W	Premna dallachyana	VERBE	
PREMLIGN	W	Premna lignumvitae	VERBE	
PROTAFRI	C	*Protasparagus africanus (= Asparagus africanus)	LILIA	
PROTDENS	C	*Protasparagus densiflorus (= Asparagus densiflorus)	LILIA	
PSEUTENE	S	Pseuderanthemum tenellum	ACANT	
PSEUVARI	H	Pseuderanthemum variabile	ACANT	
PSYCDAPH	W	Psychotria daphnoides	RUBIA	
PSYCLONI	W	Psychotria loniceroides	RUBIA	
PYRRCONF	E	Pyrrosia confluens	POLYP	
PYRRRUPE	E	Pyrrosia rupestris	POLYP	
QUASBIDW	W	Quassia bidwillii	SIMAR	R
RANDCHAR	W	Randia chartacea	RUBIA	R
RANDFITZ	W	Randia fitzalanii	RUBIA	R
RAPAVARI	W	Rapanea variabilis	MYRSI	
RHAGPARA	S	Rhagodia parabolica	CHENO	
RHAGSPIN	S	Rhagodia spinescens	CHENO	
RHAMVITI	W	Rhamnella vitiensis	RHAMN	
RHODDUMI	W	Rhodamnia dumicola	MYRTA	
RHODRHOD	W	Rhodosphaera rhodanthema	ANACA	
RHODRUBE	W	Rhodamnia rubescens	MYRTA	R
RHYSBIFO	W	Rhysotoechia bifoliolata subsp. bifoliolata	SAPIN	
RHYSTIMO	C	Rhyssopterys timorensis	MALPH	
RICILEDI	W	Ricinocarpos ledifolius	EUPHO	
RIVIHUMI	S	*Rivina humilis	PHYTO	
ROSTADSC	H	Rostellularia adscendens	ACANT	
SACCARMI	E	Saccolabiopsis armitii	ORCHI	
SANTLANC	W	Santalum lanceolatum	SANTA	
SARCDILA	E	Sarcochilus dilatatus	ORCHI	
SARCHARV	C	Sarcopetalum harveyanum	MENIS	
SARCHILL	E	Sarcochilus hillii	ORCHI	
SARCMINU	E	Sarcochilus minutiflos	ORCHI	
SARCSIMP	W	Sarcomelicope simplicifolia subsp. simplicifolia	RUTAC	
SARCVIBR	C	Sarcostemma viminale subsp. brunonianum	ASCLE	
SAURALBI	S	Sauropus albiflorus	EUPHO	
SCHIMOLL	W	*Schinus molle	ANACA	
SCLEMACK	G	Scleria mackaviensis	CYPER	
SCLESPHA	G	Scleria sphacelata	CYPER	
SECAELLI	C	Secamone elliptica	ASCLE	
SENNBARC	S	Senna barclayana	CAESA	
SENNCORO	W	Senna coronilloides	CAESA	
SENNFLOR	W	*Senna floribunda	CAESA	
SENNPLEU	S/W	Senna pleurocarpa	CAESA	
SENNSURE	W	Senna surattensis subsp. retusa	CAESA	
SETADIEL	G	Setaria dielsii	POACE	
SICYAUST	C	Sicyos australis	CUCUR	
SIDACORR	H	Sida corrugata	MALVA	
SIDASUBS	S	Sida subspicata	MALVA	
SIDAVIRG	H	Sida virgata	MALVA	
SIGEORIE	H	Sigesbeckia orientalis	ASTER	
SIPHAUST	W	Siphonodon australis	CELAS	
SMILAUST	C	Smilax australis	SMILA	
SOLACORI	S	Solanum corifolium	SOLAN	
SOLACORK	S	Solanum sp. "corky stem" (sp.Boomer Range R.J.Fensham 717)	SOLAN	
SOLADENS	S	Solanum densevestitum	SOLAN	
SOLAELLI	S	*Solanum ellipticum	SOLAN	
SOLAERIA	W	Solanum erianthum	SOLAN	
SOLANEMO	S	Solanum nemophilum	SOLAN	

NAMECODE	LIFEFORM	NAME	FAMILY
SOLANIGR	H	*Solanum nigrum	SOLAN
SOLAPARV	S	Solanum parvifolium	SOLAN
SOLASEAF	C	*Solanum seaforthianum	SOLAN
SOLASEMI	S	Solanum semiarmatum	SOLAN
SOLASHAN	S	Solanum shanesii	SOLAN
SOLASTEL	S	Solanum stelligerum	SOLAN
SONCOLER	H	*Sonchus oleraceus	ASTER
SPARJUNC	S	Spartothamnella juncea	VERBE
SPORCARO	G	Sporobolus caroli	POACE
SPORSCAB	G	Sporobolus scabridus	POACE
STEPJADI	C	Stephania japonica var. discolor	MENIS
STERQUAD	W	Sterculia quadrifida	STERC
STIPRAMO	G	Stipa ramosissima	POACE
STIPVERT	G	Stipa verticillata	POACE
STREBRUN	W	Streblus brunonianus	MORAC
STRYAXIL	W	Strychnos axillaris (= S. psilosperma)	STRYC
TARECAME	W	Tarenna cameronii	RUBIA
TERMOBLO	W	Terminalia oblongata	COMBR
TERMPORP	W	Terminalia porphyrocarpa	COMBR
TETRNITE	C	Tetrastigma nitens	VITAC
TETRTETR	H	Tetragonia tetragonioides	AIZOA
TEUCORME	S	Teucrium sp. (Ormeau G.Leiper AQ476858)	LAMIA
TINOSMIL	C	Tinospora smilacina	MENIS
TRAGNOVA	C	Tragia novaehollandiae	EUPHO
TREMTOME	C	Trema tomentosa	ULMAC
TURRPUBE	H	Turraea pubescens	MELIA
TYLOGRAN	C	Tylophora grandiflora	APOCY
URTIINCI	H/S	*Urtica incisa	URTIC
VENTPUBI	C	Ventilago pubiflora	RHAMN
VENTVIMI	W	Ventilago viminalis	RHAMN
VERNCINE	H	Vernonia cinerea	ASTER
VITEMELI	W	Vitex melicopea	VERBE
WRIGVERS	W	Wrightia versicolor	APOCY
XYLOTERR	W	Xylosma terraereginae	FLACO
ZANTBRAC	W	Zanthoxylum brachyacanthum	RUTAC
ZEHNCUNN	C	Zehneria cunninghamii	CUCUR
ZIERVERR	S	Zieria sp. (Monogorilby P.I. Forster 1004)	RUTAC
ZINNPERU	H	*Zinnia peruviana	ASTER
ZYGOAPIC	H	Zygophyllum apiculatum	ZYGOP

Lifeforms

W = trees and shrubs

S = subshrubs (soft-woody)

C = lianas and other climbers

G = graminoids (includes sedges, lilies, etc)

H = broad-leaved berbs

F = terrestrial ferns

E = epiphytes

*** - denotes alien species**

$R^{\#}$ - denotes additional species from regional data base

Appendix 3. Locality data for vine thicket sites.

Site	Province*	Locality	Map Name	Map	Reference	Lat.	Long.	Alt. (m)
S001	BRB 38	Portion 64 Woroon W of Windera	Murgon	9245	776157	26.07252	151.77626	280
S002	BRB 33	Mt Narayen Narayen Research Station (Narayen A)	Auburn	9046	774535	25.71949	150.78133	320
S003	BRB 33	Dingo Trap Hill Narayen RS (Narayen B)	Auburn	9046	820590	25.67055	150.82805	290
S004	BRB 38	Koko Scrub State Forest 40	Auburn	9046	814237	25.98899	150.81624	360
S005	BRB 38	Wonga Hills	Barakula	9045	822147	26.07031	150.82272	480
S006	BRB 25	Cracow Mine	Cracow	8947	270002	25.28973	150.28887	420
S007	BRB 25	Brigalow Research Station	Moura	8848	788542	24.80156	149.75775	165
S008	BRB 25	Oombabeer Bauhinia Downs	Bauhinia	8748	436858	24.52243	149.40435	160
S009	BRB 25	Bauhinia Ck W of Gogango Range Capricorn Highway	Duaringa	8850	906691	23.76289	149.8511	100
S010	BRB 23	South Blackwater ooline site	Comet	8650	874528	23.92542	148.84119	290
S011	BRB 12	Wallalee Springsure	Springsure	8549	287433	24.01703	148.26544	220
S012	BRB 19	Lake Nuga Nuga bonewood site (Nuga Nuga A)	Warrinilla	8648	706348	24.99259	148.69035	270
S013	BRB 19	Lake Nuga Nuga ooline site (Nuga Nuga B)	Warrinilla	8648	711352	24.98892	148.69526	290
S014	BRB 19	Dawson Highway Expedition Range	Bauhinia	8748	33739	24.63565	149.00851	420
S015	BRB 19	Cannondale Mt Expedition Range National Park	Arcadia	8647	14086	25.22527	148.99924	520
S016	BRB 19	Transect Scrub Amphitheatre Expedition Range NP	Glenhaughton	8747	36058	25.25025	149.02148	500
S017	BRB 31	Glenleigh E of Glenhaughton	Glenhaughton	8747	480880	25.40416	149.46528	350
S018	BRB 31	Gerrards Scrub Glenhaughton Road	Glenhaughton	8747	498876	25.40746	149.48323	360
S019	BRB 38	South Mundubbera	Mundubbera	9146	290622	25.64788	151.29654	160
S020	BRB 33	"Oakpark" W of Eidsvold	Rawbelle	9047	698855	25.42957	150.71112	410
S021	SEQ 11	Yarrol Scrub Monto	Monto	9148	321452	24.89901	151.33765	480
S022	SEQ 11	Koolkoorum Scrub Ubobo	Calliope	9149	154960	24.43851	151.17904	220
S023	BRB 36	Dan Dan Scrub (State Forest 53)	Calliope	9149	47264	24.16279	151.07768	120
S024	BRB 36	Mount Larcom	Gladstone	9150	58672	23.79461	151.09393	200
S025	BRB 36	Bracewell (Kearney's Scrub)	Bajool	9050	877570	23.88438	150.91489	100
S026	BRB 35	Rundle Range	Bajool	9050	936851	23.6315	150.97674	40
S027	BRB 35	Moores Creek Rockhampton	Rockhampton	9051	496178	23.33018	150.55116	60
S028	BRB 35	Mount O'Connell Princhester	Princhester	8952	945803	22.75701	150.02523	140
S029	BRB 36	"Commanche" Boomer Range	Rookwood	8851	923167	23.33316	149.85846	80
S030	BRB 21	Mount Adder Road "Homevale"	Mirani	8655	632290	21.433888	148.574722	440
S031	BRB 22	Mt Hillalong Pipeline Road	Hillalong	8555	283457	21.2859	148.23679	400
S032	BRB 23	Bonewood Site Dipperu National Park (Dipperu A)	Nebo	8654	716767	21.90547	148.66118	180
S033	BRB 36	"Rockyvale" Dululu	Mount Morgan	8950	282672	23.78333	150.33284	200
S034	BRB 10	Dry Creek Ka Ka Mundi (Carnarvon National Park)	Vandyke	8448	648693	24.689166	147.640277	560
S035	BRB 23	Bendee Site "Bonnie Doon" E of Gindie (Bonnie Doon A)	Emerald	8550	414733	23.74506	148.3874	200
S036	BRB 37	"Oakwells" W of Injune	Womblebank	8546	264476	25.7842	148.26066	640

Site	Province*	Locality	Map Name	Map	Reference	Lat.	Long.	Alt. (m)
S037	BRB 19	Bullaroo Creek N of Injune (Carnarvon NP)	Arcadia	8647	653069	25.24503	148.64122	400
S038	BRB 25	East Palmgrove (Palmgrove A)	Bauhinia	8748	410449	24.8919	149.38573	300
S039	BRB 25	Central Palmgrove (Palmgrove B)	Bauhinia	8748	404445	24.8956	149.37987	290
S040	BRB 25	Palmgrove Creek (Palmgrove C)	Bauhinia	8748	366411	24.92688	149.34285	260
S041	BRB 18	"Welcome" Section Carnarvon National Park	Vandyke	8448	726799	24.59317	147.7171	540
S042	BRB 2	"Telemon" Springsure	Nandowrie	8449	694370	24.07764	147.68272	360
S043	BRB 23	Bonewood Site "Bonnie Doon" (Bonnie Doon B)	Emerald	8550	414733	23.74506	148.3874	200
S044	BRB 23	Belah Site Dipperu National Park (Dipperu B)	Nebo	8654	796771	21.90105	148.73855	170
S045	BRB 35	E of Denison Creek Nebo-Sarina Road	Nebo	8654	912913	21.7716	148.84915	210
S046	BRB 21	Mount Britten "Homevale"	Mirani	8655	623251	21.46923	148.56644	380
S047	BRB 21	Blenheim Creek	Hillalong	8555	349639	21.12102	148.29897	400
S048	BRB 20	Mingela Bluff "Maidavale" E of Mingela	Mingela	8258	709021	19.87698	146.72203	240
S049	BRB 25	Northern Scrub Isla Gorge National Park (Isla Gorge A)	Cracow	8947	981126	25.17235	150.00491	230
S050	BRB 31	Ridge Site "Bimbadeen" Taroom (Bimbadeen A)	Taroom	8846	654711	25.55361	149.64143	280
S051	BRB 31	Scrub Belt Site "Bimbadeen" (Bimbadeen B)	Taroom	8846	650714	25.55097	149.6374	260
S052	BRB 7	Upper Zamia Creek Palmgrove National Park	Glenhaughton	8747	277296	25.03201	149.25667	360
S053	BRB 37	Gurulmundi Ooline Reserve	Wandoan	8845	874779	26.39002	149.8806	380
S054	BRB 7	Broad Gully Creek Scrub Ka Ka Mundi (Carnarvon NP)	Cungelella	8348	380573	24.79852	147.37596	540
S055	BRB 10	Bottletree Flat Ka Ka Mundi	Vandyke	8448	602562	24.80774	147.59564	580
S056	BRB 18	Upper Vandyke Creek "Kareela"	Vandyke	8448	862740	24.64575	147.85178	560
S057	BRB 7	Southern Expedition Range near "Yebna"	Hornetbank	8746	118570	25.6895	149.11053	360
S058	BRB 25	Devils Nest Scrub Isla Gorge National Park (Isla Gorge B)	Ghinghinda	8847	995127	25.17193	149.97128	250
S059	SEQ 7	Western Road Nangur State Forest W of Goomeri	Murgon	9245	963096	26.128888	151.96671	380
S060	BRB 38	Northern Scrub Allies Creek (Allies Creek A)	Boondooma	9145	170204	26.0237	151.17125	420
S061	BRB 38	Southern scrub remnant Allies Creek) (Allies Creek B)	Boondooma	9145	185167	26.057222	151.185555	440
S062	BRB 33	State Forest 130 Mundowran N of Nantglyn	Mundubbera	9146	349786	25.50052	151.35731	260
S063	BRB 38	"Stuart Downs" Wandoan	Bungaban	8946	340582	25.66986	150.35003	345
S064	SEQ 7	Reinkes Scrub Proston	Murgon	9245	582030	26.18539	151.58096	360
S065	BRB 38	Peanga Scrub Barakula State Forest	Barakula	9045	815979	26.2218	150.81291	480
S066	SEQ 5	Walkers Creek Bunya Mountains National Park	Kingaroy	9244	517313	26.83191	151.50759	640
S067	BRB 36	"Cerberus" Marlborough	Marlborough	8852	587627	22.92369	149.52236	230
S068	BRB 36	Timber Reserve 140 Spier Callide Range	Biloela	9049	544160	24.2496	150.58112	340
S069	SEQ 11	Terrace Site Coominglah State Forest (Hurdle Gully A)	Monto	9148	998447	24.899444	151.017777	300
S070	SEQ 11	Coominglah SF (Hurdle Gully B)	Scoria	9048	973442	24.9038	150.99311	360
S071	SEQ 11	Dry Creek Kroombit Holding	Biloela	9049	813979	24.41694	150.84313	380
S072	BRB 34	S of The Palms Goodedulla National Park (Rookwood A)	Rookwood	8851	836315	23.20116	149.77069	260
S073	BRB 34	Crows Apple Scrub Goodedulla NP (Rookwood B)	Rookwood	8851	798323	23.19459	149.73345	240
S074	SEQ 5	Berlin Scrub Nature Refuge Mount Berryman	Helidon	9342	316360	27.69843	152.30626	300

Site	Province*	Locality	Map Name	Map	Reference	Lat.	Long.	Alt. (m)
S112	SEQ 6	SE of Ban Ban Springs (GPG & JBW)	Gayndah	9246		25.8	151.85	260
S113	SEQ 11	Burnett Highway Dawes Range (GPG & JBW)	Scoria	9048		24.666666	150.733333	430
S114	SEQ 6	Coalstoun Lakes (PAY)	Gayndah	9246	906683	25.598611	151.910555	240
S115		Mt Dangar Goulbourn River NP (AGF)	Merriwa	8933	639190	32.340277	150.491666	435
S116		Scrub Myrtle Flora Reserve E of Narrabri (JB)	Narribri	8937	873359	30.37445	149.98917	350
S117		Ooline Gorge Sundown National Park (JB)	Stanthorpe	9240	621018	28.903888	151.585555	460
S118	BRB 36	Butlerville N of Targinnie (WWF)	Gladstone	9150	018703	23.766111	151.055	100
S119	SEQ 11	Littlemore S of Ubobo (WWF)	Calliope	9149	317938	24.46	151.339444	160
S120	BRB 31	Mt Scoria nr Thangool (WWF)	Scoria	9048	567844	24.535	150.598333	240
S121	BRB 38	Monogorilby (WWF)	Boondooma	9145	017207	26.018888	151.018333	360
S122	SEQ 7	Proston Town Reserve (WWF)	Murgon	9245	977055	26.166111	151.976111	380
S123	SEQ 7	Brigooda W of Proston (WWF)	Boondooma	9145	415939	26.265555	151.4125	400
S124	SEQ 7	Mt Wooroolin nr Kingaroy (WWF)	Kingaroy	9244	810653	26.527777	151.805555	540
S125	SEQ 6	Mt Beppo NE of Esk (WWF)	Esk	9343	458943	27.1725	152.452777	180
S126	SEQ 6	Mt Stradbroke Marburg Range (WWF)	Ipswich	9442	587562	27.516944	152.581666	320
S127	SEQ 6	Tallegalla (WWF)	Ipswich	9442	571477	27.593611	152.565277	180
S128	SEQ 6	Coulson NE of Boonah (WWF)	Ipswich	9442	703074	27.957777	152.697777	130
S129	SEQ 6	Hoya NE of Boonah (WWF)	Ipswich	9442	704054	27.975833	152.698888	100
S130	SEQ 5	Mt Sturt E of Warwick (WWF)	Warwick	9341	211840	28.167222	152.196111	820
S131	BRB 12	Harrow Range NE of Clermont (RJF)	Grosvenor Downs	8553	118156	22.461944	148.086388	440
S132	BRB 22	"Kerlong" S of Coppabella (RJF)	Harry Brandt	8554	357742	21.931111	148.313888	380
S133	BRB 21	"Strathmore" Collinsville (RJF)	Collinsville	8456	725317	20.511944	147.695277	120
S134	BRB 21	Mt Bella Vista W of Collinsville (RJF)	Collinsville	8456	703254	20.568888	147.674444	160
S135	BRB 22	Havilah Plug S of Collinsville (RJF)	Collinsville	8456	853868	20.916944	147.820277	300
S136	BRB 22	"Exmoor" SE of Collinsville (RJF)	Urannah	8556	136779	20.995833	148.092777	300
S137	BRB 22	Newlands 1 NW of Glendon (RJF)	Byerwen	8455	851531	21.221388	147.82	300
S138	BRB 22	Newlands 8 (RJF)	Byerwen	8455	893593	21.165277	147.86	300
S139	BRB 22	Mt Blackjack S of Collinsville (RJF)	Byerwen	8455	970763	21.011388	147.933333	320
S140	BRB 22	SW of "Burton Downs" (RJF)	Harry Brandt	8554	147055	21.649722	148.108333	400
S141	BRB 22	Lake Elphinstone (RJF)	Harry Brandt	8554	280163	21.551388	148.236111	450
S142	BRB 12	Shell Ck E of Scotts Peak (RJF)	Cotherstone	8552	343728	22.846944	148.308888	400
S143	BRB 12	Mt Dalrymple NW of Expedition Peak (RJF)	Cotherstone	8552	353652	22.915555	148.319166	380
S144	BRB 23	"Orana" N of "May Downs" (RJF)	Windeyers Hill	8652	913046	22.554444	148.860277	180
S145	BRB 35	"The Alps" Connors Range W of St Lawrence (RJF)	Connors Range	8753	327256	22.359722	149.259444	360
S146	BRB 35	"Tooloombah" Broadsound Range (RJF)	Mount Bluffkin	8752	542816	22.753611	149.475277	270
S147	BRB 35	"Clive" Broadsound Range (RJF)	Mount Bluffkin	8752	475771	22.795277	149.410833	200
S148	BRB 22	Mt Marion Kerlong Range (RJF)	Harry Brandt	8554	536723	21.946666	148.487222	260
S149	BRB 22	Mt Orange Kerlong Range (RJF)	Nebo	8654	582670	21.994166	148.532222	400

Site	Province*	Locality	Map Name	Map	Reference	Lat.	Long.	Alt. (m)
S075	SEQ 7	Dean Logging Area Yarraman State Forest	Kingaroy	9244	942389	26.767	151.926	450
S076	BRB 24	Upper Charlevue Creek (Blackdown Tableland)	Dingo	8750	063755	23.71806	149.02361	280
S077	BRB 12	E of "Planet Downs" turnoff Dawson Highway	Warrinilla	8648	894824	24.560555	148.87	300
S078	BRB 2	Zig Zag Range N of Bogantungan	Bogantungan	8350	304969	23.53778	147.29778	760
S079	BRB 23	"Daunia" E of Moranbah	Grosvenor Downs	8553	426560	22.09500	148.38222	200
S080	BRB 22	Moranbah Bendee Site	Grosvenor Downs	8553	033633	22.031666	148.000833	240
S081	BRB 23	Taunton Scientific Reserve Dingo	Dingo	8750	320973	23.51806	149.27222	130
S082	BRB 34	"Rookwood" E of Melaleuca Creek	Rookwood	8851	820294	23.22028	149.75556	220
S083	BRB 22	Flora Range SW of Nebo	Nebo	8654	550729	21.94139	148.50083	340
S084	BRB 31	Roadside E of "Eurombah" Taroom	Taroom	8846	630443	25.79583	149.62278	240
S085	SEQ 11	Minerva Road Kalpowar State Forest Monto	Monto	9148	341675	24.69778	151.36000	360
S086	BRB 12	"Charlton Park" NE of Clermont	Kilcummin	8453	841400	22.24333	147.81611	300
S087	BRB 22	"Eaglefield" Nebo-Mount Coolon Road	Wyena	8454	943193	21.52639	147.91056	300
S088	BRB 12	Dilly Pinnacle Arcturus Downs Road Springsure	Springsure	8549	136380	24.06611	148.11750	340
S089	BRB 12	Mt Hope Springsure	Springsure	8549	134340	24.10222	148.11583	460
S090	BRB 19	Marengo Extension Carnarvon National Park	Arcadia	8647	615139	25.18222	148.60278	370
S091	BRB 38	"Stuart Downs" near homestead Wandoan	Bungaban	8946	318562	25.6875	150.3275	320
S092	BRB 38	Taroom-Cracow Road near Nathan Road junction	Bungaban	8946	112708	25.55194	150.12583	270
S093	BRB 35	"Bar Plains" St Lawrence	St Lawrence	8853	647275	22.33806	149.57000	30
S094	SEQ 11	Upper Dry Creek Kroombit Tops	Biloela	9049	881003	24.396111	150.910277	660
S095	BRB 36	"Spring Creek" Craiglands via Jambin	Biloela	9049	463312	24.11111	150.50417	220
S096	BRB 33	Ooline Remnant Burnett Highway N of Mundubbera	Mundubbera	9146	274748	25.53389	151.28222	200
S097	BRB 22	"Kemmis Creek" W of Nebo	Harry Brandt	8554	353209	21.509166	148.306111	360
S098	BRB 25	Dawson Range W of Moura	Moura	8848	853744	24.618055	149.817777	180
S099	SEQ 5	Serpentine Logging Area Oakview State Forest	Goomeri	9345	354082	26.14389	152.35361	250
S100	SEQ 5	"B" Traverse Grongah State Forest	Biggenden	9346	097309	25.93778	152.09833	480
S101	SEQ 6	Nangur State Forest Eastern Road	Murgon	9245	999095	26.13028	151.99861	380
S102	SEQ 7	Round Scrub S of Wondai	Murgon	9245	890808	26.38861	151.88722	380
S103	SEQ 7	Jack Smith Environmental Park Murgon	Murgon	9245	910066	26.15583	151.90944	480
S104	BRB 35	Pine Mountain State Forest (SF70) W of Sarina	Nebo	8654	917924	21.76139	148.85361	230
S105		Planchonella Hill nr Yallaroi (JBW & GPG)	Yallaroi	9039	681750	29.131944	150.616666	470
S106		Booroola E of Crooble (JBW)	Croppa Creek	8939	390620	29.24361	150.31444	400
S107		Little Sugarloaf Mt 5km WSW of Gunnedah (JBW)	Boggabri	8936	295680	30.99028	150.16722	400
S108		3km E of Bingara (JBW)	Bingara	9038	679932	29.86972	150.59694	360
S109		Terry Hie Hie SE of Moree (JBW)	Gravesend	8938	260945	29.84944	150.16389	320
S110		Glenbawn Dam E of Scone(JBW)	Muswellbrook	9033	981315	32.09444	150.98222	320
S111	BRB 25	Bauhinia Downs (LJW & JGT)	Bauhinia	8748	290794	24.582222	149.261111	200

Site	Province*	Locality	Map Name	Map	Reference	Lat.	Long.	Alt. (m)
S150	BRB 23	Bee Creek Dipperu National Park (RJF)	Nebo	8654	765691	21.973611	148.709166	170
S151	BRB 22	Denham Range N of "FortCooper" (RJF)	Hillalong	8555	363323	21.406111	148.314722	440
S152	BRB 22	Mt St Martin S of Collinsville (RJF)	Collinsville	8456	948958	20.835277	147.911111	260
S153	BRB 35	Upper Clarke Creek Broadsound Range (RJF)	Mount Bluffkin	8752	387948	22.636666	149.3225	200
S154	BRB 35	Mt Raddle WNW of St Lawrence (RJF)	Connors Range	8753	142375	22.254444	149.078333	250
S155	BRB 35	N of Cattle Creek "Doreen" (RJF)	Connors Range	8753	192536	22.108611	149.124722	340
S156	BRB 23	Mt Coxenden SE of Moranbah (RJF)	Grosvenor Downs	8553	483475	22.171111	148.438333	400
S157	BRB 36	Scrub Creek W of Rockhampton (RJF)	Ridgelands	8951	40168	23.331388	150.105277	300
S158	BRB 1	Mt Leura NW of Emerald (RJF)	Rubyvale	8451	555115	23.405277	147.543055	340
S159	BRB 2	Narrien Range (RJF)	Albro	8252	965595	22.9725	146.965833	500
S160	BRB 23	Isaac River "Batheaston" (RJF)	Bombandy	8653	882223	22.394722	148.828055	120

* Biogeographic region and province - see **Table 4.a.1** and **Figure 4.a.2**.

Appendix 4. Geological substrates for vine thicket sites (determined from 1:250 000 map series).

Site	Geol. Map Unit	Geology	Abbr.*
S001	Tv	Basalt, agglomerate, rhyolite, trachyte	B
S002	Pla - Narayen Beds	Intermediate to basic volcanics, minor arenite and conglomerate.	I
S003	Pla - Narayen Beds	Intermediate to basic volcanics, minor arenite and conglomerate.	I
S004	Jle1 - Evergreen Formation (Lower Jurassic)	Arkosic and feldspathic sandstone, some pebbly, some calcareous; siltstone, mudstone.	S
S005	Jle2 - Evergreen Formation	Siltstone, fine feldspathic to sublabile sandstone	S
S006	Pln - Camboon Andesite	Andesitic tuffs and flows, agglomerate, minor basalt.	I
S007	Cz/Rm	Soil, alluvia over sediments (Moolayember Formation).	C
S008	Rm - Moolayember Formation.	Lithic sandstone, grey shale, etc.	S
S009	Ta (to east, Plw - Rannes Beds - see S073)	Sandstone, siltstone, claystone, conglomerate, oil shale. Minor basalt.	S
S010	Ta	Sandstone, siltstone, claystone, conglomerate, oil shale. Minor basalt.	S
S011	Tb (? Pli, Plf and Pup all close by)	Basaltic flows, minor pyroclastics and sediments.	B
S012	Cz/Rr (Triassic Rewan Formation)	Soil, alluvia over buff, lithic sandstone & siltstone, red siltstone & shale.	C
S013	Cz/Rr (Triassic Rewan Formation)	Soil, alluvia over buff, lithic sandstone & siltstone, red siltstone & shale.	C
S014	? Ta	Tertairy sandstone, siltstone, claystone, conglomerate.	S
S015	Rm - Moolayember Formation	Mudstone, lithic sandstone, sublabile lithic sandstone, conglomerate, carbonaceous shale, fine tuff.	S
S016	Rm - Moolayember Formation	Mudstone, lithic sandstone, sublabile lithic sandstone, conglomerate, carbonaceous shale, fine tuff.	S
S017	Jmb - Birkhead Formation	Calcareous lithic sandstone, calcareous siltstone shale, carbonaceous shale, coal.	S
S018	Jmb - Birkhead Formation (? lateritised here)	Calcareous lithic sandstone, calcareous siltstone shale, carbonaceous shale, coal.	S
S019	Clc - Caswell Creek Group (? overlain with colluvia)	Arenite, siltstone, mudstone, conglomerate, oolitic limestone.	C
S020	Prd - Delubra Quartz Gabbro (part of Rawbelle batholith)	Quartz gabbro	A
S021	Ta	Lateritised Tertiary sediments - shale, sandstone, brown coal, conglomerate.	S
S022	Clc (minor Ru) - Caswell Creek Group	Lithic arenite, mudstone, conglomerate, limestone, etc.	S
S023	Dh - Mt Holly Beds	Siltstone, mudstone, lithic arenite, limestone, conglomerate, tuff.	S
S024	Pb - Berserker Beds	Dacitic to andesitic crystalline tuff and agglomerate, minor mudstone.	I
S025	Dh - Mt Holly Beds	Acid or intermediate tuff and flows, siltstone, mudstone, limestone.	I

Site	Geol. Map Unit	Geology	Abbr.*
S026	Pb - Berserker Beds (Dcd - Doonside Formation nearby)	Dacitic to andesitic crystalline tuff and agglomerate, minor mudstone.	I
S027	Pb - Berserker Beds	Dacitic to andesitic crystalline tuff and agglomerate, minor mudstone.	I
S028	Pui	Adamellite, granodiorite	A
S029	Plr - Rookwood Volcanics	Spilite pillow lava, agglomerate, volcanic breccia, chert, tuff, tuffaceous sandstone and siltstone.	I
S030	Plv - Lower Bowen Volcanics	Intermediate and acid volcanics, etc..Minor basalt,shale, etc.	I
S031	Tb - Tertiary basalts	Basalt flows and plugs, minor trachyte (tholeiitic basalt coll.)	B
S032	Qa	Sand, silt, mud, clay, gravel (over clay)	C
S033	Dma - Capella Creek Beds	Acid/intermediate volcanics, some sediments (mudstone, limestone)	I
S034	Rm - Moolayember Formation (Tc close by and coming down onto sediments)	Mudstone, lithic sandstone, sublabile lithic sandstone. conglomerate, carbonaceous shale, fine tuff.	S
S035	Ta - areas of Cz around.	(Lateritised) claystone, siltstone, sandstone, pebbly sandstone, gravel.	S
S036	Juw - Westbourne Formation (part of Injune Creek Subgroup)	Siltstone, mudstone, very fine-grained quartz-rich sandstone.	S
S037	Rm - Moolayember Formation	Mudstone, lithic sandstone, sublabile lithic sandstone. conglomerate, carbonaceous shale, fine tuff.	S
S038	Rm - Moolayember Formation	Mudstone, lithic sandstone, sublabile lithic sandstone. conglomerate, carbonaceous shale, fine tuff.	S
S039	Rm - Moolayember Formation	Mudstone, lithic sandstone, sublabile lithic sandstone. conglomerate, carbonaceous shale, fine tuff.	S
S040	Rm - Moolayember Formation	Mudstone, lithic sandstone, sublabile lithic sandstone. conglomerate, carbonaceous shale, fine tuff.	S
S041	Pup - Peawaddy Formation (Tc - collapsed sheets of basalt - to east)	Lithic quartz sandstone. carbonaceous siltstone, lenticular coquinite (Mantuan *Productus* bed)	S
S042	Tb (Clu - Ducabrook Formation in vicinity)	Basaltic flows, minor pyroclastics and sediments.	B
S043	Ta - areas of Cz around.	(Lateritised) claystone, siltstone, sandstone, pebbly sandstone, gravel.	S
S044	Qa	Sand, silt, mud, clay, gravel (over clay)	C
S045	Plv - Lower Bowen Volcanics	Intermediate and acid volcanics, etc..Minor basalt,shale, etc.	I
S046	Tb (poss. Plv on lower slopes)	Tertiary volcanics - olivine basalt, minor porphyritic rhyolite..	B
S047	Plz - Lizzie Creek Volcanics	Intermediate/basic volcanics.	I
S048	Mc - Collopy Formation. S-Dr (Ravenswood Granodiorite) on flats.	Micaceous sandstone, arkosic in places; conglomerate, minor quartz sandstone.	S
S049	Rr - Rewan Formation	Brown mudstone, green lithic sandstone, minor conglomerate.	S

Site	Geol. Map Unit	Geology	Abbr.*
S050	Jmb - Birkhead Formation	Calcareous lithic sandstone, calcareous siltstone shale, carbonaceous shale, coal.	S
S051	Jmb - Birkhead Formation	Calcareous lithic sandstone, calcareous siltstone shale, carbonaceous shale, coal.	S
S052	Rm - Moolayember Formation	Mudstone, lithic sandstone, sublabile lithic sandstone, conglomerate, carbonaceous shale, fine tuff.	S
S053	Klm - Mooga Sandstone	Quartzose to labile sandstone, some clayey; some sandstone, conglomerate.	S
S054	Rm - Moolayember Formation	Mudstone, lithic sandstone, sublabile lithic sandstone, conglomerate, carbonaceous shale, fine tuff.	S
S055	Rm - Moolayember Formation	Mudstone, lithic sandstone, sublabile lithic sandstone, conglomerate, carbonaceous shale, fine tuff.	S
S056	Tc - coming down to Rr (Rewan Formation) lowest parts of valley	Collapsed sheets of basalt.	B
S057	Jle - Evergreen Formation (some Jmb overlying)	Labile and sublabile sandstone, mudstone, minor shale and coal.	S
S058	Rm - Moolayember Formation	Mudstone, lithic sandstone, sublabile lithic sandstone, conglomerate, carbonaceous shale, fine tuff.	S
S059	Rn - Neara Volcanics	Volcanic conglomerate, andesitic agglomerate, flows and tuff, mudstone, conglomerate, sandstone, acid tuff	I
S060	Jle1 - Evergreen Formation (Lower Jurassic)	Arkosic and feldspathic sandstone, some pebbly, some calcareous; siltstone, mudstone.	S
S061	Jle1 - Evergreen Formation (Lower Jurassic)	Arkosic and feldspathic sandstone, some pebbly, some calcareous; siltstone, mudstone.	S
S062	Clr - Crana Beds	Mudstone, siltstone, lithic arenite, rare andesite.	S
S063	Jle1 - Evergreen Formation (Lower Jurassic)	Arkosic and feldspathic sandstone, some pebbly, some calcareous; siltstone, mudstone.	S
S064	Pz - undifferentiated metamorphics	Quartz-rich schist, meta quartzite, shale, siltstone, greywacke, mudstone, chert, basic amphibolite, metabasalt, meta-andesite, meta-agglomerate, phyllite.	?I
S065	Jle2 - Evergreen Formation	Siltstone, fine feldspathic to sublabile sandstone	S
S066	Tmb - Main Range Volcanics	Olivine basalt, tuff, agglomerate, dolerite, minor shale, sandstone, diatomite.	B
S067	D/Co - Connors Volcanics ?	Rhyolite, dacite, trachyte and andesitic volcanics, basalt flows, etc.	I
S068	Rca - Callide Coal Measures	Siltstone, shale, conglomerate, coal, intermediate volcanics.	S
S069	Jle2 - Evergreen Formation	Siltstone, sublabile sandstone, mudstone.	S
S070	Jle2 - Evergreen Formation	Siltstone, sublabile sandstone, mudstone.	S
S071	Dr - Kroombit Beds	Andesitic lava, agglomerate, tuff, lithic arenite, siltstone, conglomerate, limestone.	I
S072	D/Co - Connors Volcanics ?	Rhyolite, dacite, trachyte & andesitic volcanics, basalt flows, etc.	I
S073	Plw (?) - Rannes Beds	Mudstone, siltstone, greywacke, conglomerate, acid to intermediate volcanics, etc.	S/I
S074	Heifer Creek Sandstone 2 - Marburg Formation (Jlm)	Micaceous siltstone, labile sandstone. (?Tertiary) basalt upslope.	S

Site	Geol. Map Unit	Geology	Abbr.*
S075	Tm - Main Range Volcanics (lateritised)	Vesicular olivine basalt, pyroxene basalt, dolerite, minor lacustrine sediments	B
S076	Czp	Quaternary sandy clay - some Qa as well?	C
S077	Tb	Basalt	B
S078	Clu - Ducabrook Formation	Feldspathic lithic sandstone, siltstone, shale, tuff, minor algal and oolitic limestone: fossiliferous	S/I
S079	Ts - Suttor Formation	Quartz sandstone, siltstone, conglomerate	S
S080	Puw - Blackwater Group	Siltstone, shale, mudstone, conglomerate, coal: fossiliferous	S
S081	Puw - Blackwater Group	Lithic and feldspathic sandstone, calcareous in places, silstone, mudstone, carbonaceous mudstone, coal, limestone, tuff, ashstone with abundant plant fossils	S
S082	D/Co - Connors Volcanics ?	Rhyolite, dacite, trachyte and andesitic volcanics, basalt flows, etc.	I
S083	Pue - Blenheim Subgroup (of Back Creek Group)	Micaceous siltstone, pebbly in places, greywacke, quartz lithic sandstone; coquinite, limestone; locally metamorphosed to knotted schist, graphitic schist, slate, hornsfels. Quartz sandstone, conglomerate, siltstone. Fossiliferous.	S
S084	Jmb - Birkhead Formation	Calcareous lithic sandstone, calcareous siltstone shale, carbonaceous shale, coal.	S
S085	Ru - Muncon Volcanics	Intermediate and basic lava, tuff, agglomerate, siltstone, lithic arenite, conglomerate, mudstone.	I
S086	D/Cs - Silver Hills Volcanics	Flow-banded and spherulitic rhyolite, pyroclastics, minor arkose, lithic sandstone, siltstone.	I/A
S087	Tb	Basalt flows and plugs: minor trachyte flows, plugs and dykes	B
S088	Tr - Minerva Hills Volcanics	Plugs, domes and dykes of alkaline quartz trachyte,and rhyolite	A
S089	Tb	Basaltic flows, minor pyroclastics and sediments	B
S090	Cz/Rr (Triassic Rewan Formation)	Soil, alluvia over buff, lithic sandstone and siltstone, red siltstone and shale.	C
S091	Jle1 - Evergreen Formation (Lower Jurassic)	Labile to sublabile sandstone, some pebbly; siltstone, shale.	S
S092	Jle2 - Evergreen Formation	Siltstone, sublabile sandstone, mudstone.	S
S093	Kls - Styx Coal Measures	Quartz sandstone, conglomerate, siltstone, carbonaceous shale, coal	S
S094	Ru - Muncon Volcanics	Intermediate and basic lava, tuff, agglomerate, siltstone, lithic arenite, conglomerate, mudstone.	I
S095	Prf - Mount Gerard Complex	Diorite, gabbro	?I/A
S096	Clc - Caswell Creek Group	Arenite, siltstone, mudstone, conglomerate, oolitic limestone.	S
S097	Puw - Blackwater Group	Siltstone, shale, mudstone, conglomerate, coal: fossiliferous	S
S098	Ta	Tertiary sandstone, siltstone, claystone, conglomerate	S
S099	Rn - Neara Volcanics	Volcanic conglomerate, andesitic agglomerate, flows and tuff, mudstone, conglomerate, sandstone, acid tuff	I
S100	Ru - Boogooramunya Granite	Biotite granite, granophyre, rhyolite	A

Site	Geol. Map Unit	Geology	Abbr.*
S101	Rn - Neara Volcanics	Volcanic conglomerate, andesitic agglomerate, flows and tuff, mudstone, conglomerate, sandstone, acid tuff	I
S102	Tm - Main Range Volcanics		B
S103	Tv	Basalt, agglomerate,rhyolite, dolerite. Lateritised.	B
S104	Tv	Acid and intermediate flows and pyroclastics, minor siltstone and sandstone	I/A
S105	Tv	Basalt	B
S106	Tv	Basalt	B
S107	Pzw - undifferentiated Palaeozoic sediments		S
S108	Pzw - undifferentiated Palaeozoic sediments	Argillite,greywacke,phyllite	S
S109	R	Recrystalised quartzite- sandstone	S
S110	Lower Carboniferous - Kingsfield Beds & Dangarfield Formation	Arenite/limestone	S
S111	Tb	Basalt	B
S112	Tv	Basalt	B
S113	Tb	Olivine basalt	B
S114	Tv	Basalt	B
S115		Sandstone, conglomerate with basalt enrichment	S/B
S116	Rn	Lithic sandstone	S
S117	Clt -Texas Beds	Lithic sandstone and mudstone, intraformational conglomerate, slate, chert, jasper, andesite, limestone	S/M
S118	Plb - Berserker Beds	Dacitic to andesitic crystalline tuff and agglomerate, minor mudstone.	I
S119	Dc	Conglomerate, tuff, lithic arenite, intermediate lava, mudstone, oolitic limestone	I
S120	Tv	Basalt	
S121	Jle1 - Evergreen Formation (Lower Jurassic)	Arkosic and feldspathic sandstone, some pebbly, some calcareous; siltstone, mudstone.	S
S122	Puw - Wigton Adamellite	Rapakivi granite, pyroxene gabbro, biotite adamellite, hornblende-biotite diorite	A
S123	Czg (over Pgy Auburn Granite)	Granite wash (with deep weathering profile and younger ferruginous material)	C
S124	Tm - Main Range Volcanics	Basalt, etc. - lateritised	B
S125	Rn - Neara Volcanics	Andesitic flows, tuff and agglomerate, lahar, pebble to cobble conglomerate, minor shale.	I
S126	Tb - undifferentiated volcanics	Volcanic flows, mainly basalt	B
S127	Jw - Walloon Coal Measures	Shale, siltstone, fine to medium argillaceous sandstone, cone-in-cone limestone, clay-ironstone, coal seams	S
S128	Jw - Walloon Coal Measures	Shale, siltstone, fine to medium argillaceous sandstone, cone-in-cone limestone, clay-ironstone, coal seams	S
S129	Jw - Walloon Coal Measures	Shale, siltstone, fine to medium argillaceous sandstone, cone-in-cone limestone, clay-ironstone, coal seams	S
S130	Tmm - Main Range Volcanics	Alkali-olivine basalt, minor tuff, sandstone, mudstone	B
S131	Tb		B
S132	Re - Clematis Sandstone		S

Site	Geol. Map Unit	Geology	Abbr.*
S133	Plz - Lizzie Creek Volcanics		I
S134	Plz - Lizzie Creek Volcanics		I
S135	Tb		B
S136	Ki - granodiorite		I/A
S137	Tb		B
S138	Tb		B
S139	Tb		B
S140	Cz		C
S141	?Re - Clematis Sandstone		S
S142	Pue - Blenheim Subgroup		S
S143	Tb		B
S144	Ta	Sandstone, siltstone, claystone, diatomite, oil shale, conglomerate, some basalt	S
S145	Pla/D-Co ?		I
S146	Pla - Carmila Volcanics		I
S147	D-Co - Connors Volcanics		I
S148	Pue - Blenheim Subgroup		S
S149	Pue - Blenheim Subgroup		S
S150	?Cz		?C
S151	Tb		B
S152	Tb		B
S153	Pla/D-Co ?		I
S154	K-Tv	Trachyte, rhyolite, dacite and andesitie flows and pyroclastics, plugs and dykes	I/A
S155	Plz - Lizzie Creek Volcanics		I
S156	Rc - Carborough Sandstone		S
S157			I
S158	Tb		B
S159			S
S160	Qa		C

*** Abbreviations - see Chapter 3**

Appendix 5. Table of climatic (BIOCLIM) attributes for 160 vine thicket sites in the Brigalow Belt Biogeographic Region.

No.	Attribute	Site 1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Annual Mean Temperature	19.2	19.4	19.5	19.1	18.4	19.2	21.1	21.3	21.7	21.3	21.7	21.2	21.1	20.3
2	Mean Diurnal Range(Mean(period max-min))	13.8	15.4	15.2	15.4	14.6	15.2	14	14	12.3	14.3	14.4	14.8	14.8	14.8
3	Isothermality 2/7	0.53	0.54	0.54	0.54	0.53	0.54	0.52	0.51	0.5	0.53	0.52	0.52	0.52	0.53
4	Temperature Seasonality (C of V)	2	2	2	2	2	2	2	2	1	2	2	2	2	2
5	Max Temperature of Warmest Period	30.6	31.9	31.9	31.7	30.7	31.7	32.9	33.1	32.2	33.2	33.9	33.8	33.7	32.7
6	Min Temperature of Coldest Period	4.6	3.3	3.7	3	3.1	3.4	5.7	5.9	7.8	6	6	5.1	5	4.7
7	Temperature Annual Range (5-6)	26	28.5	28.2	28.7	27.6	28.2	27.1	27.1	24.4	27.2	27.9	28.7	28.7	28.1
8	Mean Temperature of Wettest Quarter	24.1	24.8	24.9	24.6	23.8	24.6	26.4	26.7	26.5	26.5	27.2	26.9	26.8	25.8
9	Mean Temperature of Driest Quarter	14.3	14.1	14.3	13.7	13.2	14	15.9	16.1	16.9	16.2	16.5	15.7	15.6	15
10	Mean Temperature of Warmest Quarter	24.1	24.8	24.9	24.6	23.8	24.6	26.4	26.7	26.5	26.5	27.2	26.9	26.8	25.8
11	Mean Temperature of Coldest Quarter	13.2	12.8	13.1	12.5	12	12.7	14.6	14.9	15.8	14.9	15.1	14.2	14.2	13.6
12	Annual Precipitation	744	695	685	724	765	728	673	675	702	608	620	708	717	770
13	Precipitation of Wettest Period	113	100	99	104	110	110	107	111	124	102	105	117	118	129
14	Precipitation of Driest Period	26	28	28	30	32	28	23	21	21	18	22	24	24	23
15	Precipitation Seasonality(C of V)	50	51	51	49	48	51	56	58	61	61	59	60	60	59
16	Precipitation of Wettest Quarter	318	298	296	308	322	314	307	313	333	287	291	338	342	359
17	Precipitation of Driest Quarter	96	94	92	102	109	92	79	75	73	67	73	81	82	83
18	Precipitation of Warmest Quarter	318	298	296	308	322	314	307	313	333	287	291	338	342	359
19	Precipitation of Coldest Quarter	102	99	97	104	111	101	88	84	88	71	81	89	90	94
20	Annual Mean Radiation	19.5	19.6	19.6	19.5	19.4	19.5	19.6	19.7	20	20.2	20.3	19.8	19.8	19.7
21	Highest Period Radiation	25.8	25.2	25.2	25.2	25.3	25	25.3	25.4	25.5	25.8	25.9	25.4	25.4	25.3
22	Lowest Period Radiation	12.8	12.8	12.8	12.6	12.7	13	12.7	13.1	13.8	13.6	13.6	13.1	13.1	13.2
23	Radiation Seasonality (Cof V)	23	23	23	23	23	22	21	21	20	20	20	21	21	21
24	Radiation of Wettest Quarter	23.9	23.5	23.6	23.5	23.4	22.9	22.8	22.8	23.1	23.3	23.5	23	23	23
25	Radiation of Driest Quarter	16.6	16.8	16.8	16.6	16.5	17	17.2	17.5	17.8	17.8	17.8	17.3	17.3	17.4
26	Radiation of Warmest Quarter	23.9	23.5	23.6	23.5	23.4	22.9	22.8	22.8	23.1	23.3	23.5	23	23	23
27	Radiation of Coldest Quarter	14.3	14.3	14.4	14.2	14.1	14.5	14.7	14.9	15.4	15.4	15.3	14.8	14.8	14.9
28	Annual Mean Moisture Index	0.42	0.39	0.39	0.41	0.44	0.39	0.3	0.31	0.34	0.29	0.28	0.33	0.33	0.37
29	Highest Period Moisture Index	0.6	0.57	0.57	0.58	0.62	0.59	0.52	0.54	0.64	0.53	0.48	0.54	0.55	0.64
30	Lowest Period Moisture Index	0.26	0.23	0.22	0.26	0.29	0.21	0.15	0.15	0.13	0.14	0.15	0.17	0.18	0.17
31	Moisture Index Seasonality (C of V)	24	26	27	23	22	28	34	36	42	39	36	34	34	36
32	Mean Moisture Index of High Qtr. MI	0.56	0.52	0.52	0.52	0.56	0.53	0.44	0.45	0.54	0.45	0.42	0.48	0.48	0.56
33	Mean Moisture Index of Low Qtr. MI	0.32	0.3	0.29	0.32	0.35	0.28	0.2	0.2	0.19	0.18	0.18	0.22	0.22	0.23
34	Mean Moisture Index of Warm Qtr. MI	0.54	0.49	0.49	0.5	0.53	0.5	0.44	0.45	0.51	0.43	0.42	0.48	0.48	0.52
35	Mean Moisture Index of Cold Qtr. MI	0.43	0.41	0.39	0.43	0.48	0.41	0.29	0.28	0.29	0.25	0.27	0.32	0.32	0.35

Appendix 5 Table of BIOCLIM attributes (cont.)

	Site																				
Attr.	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**
1	19.4	19.6	20.2	20.2	20.3	19	18.6	20.6	21.6	21.3	21.9	22.3	22.1	22.3	22	21.7	22.1	22.5	21.3	19.9	21.8
2	14.6	14.7	15.1	15.2	13.3	15.2	13.6	12.8	10.7	11.2	10.3	9.3	10.1	10.3	11.5	12.4	12.6	11.8	12.4	14.5	14.1
3	0.52	0.52	0.53	0.53	0.52	0.54	0.54	0.53	0.5	0.52	0.49	0.48	0.49	0.5	0.5	0.54	0.54	0.52	0.52	0.51	0.52
4	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
5	32.2	32.3	33	32.9	31.4	31.3	29.6	31.1	31.1	30.9	31.1	30.9	31.1	31.4	31.9	31.8	32.4	32.3	31.7	32.9	33.6
6	4	4	4.1	4.1	5.9	3.2	4.6	7.1	9.7	9.3	10.3	11.3	10.3	10.8	8.7	8.9	9.1	9.6	8	4.5	6.4
7	28.2	28.4	28.8	28.8	25.5	28.1	25	24	21.4	21.6	20.8	19.5	20.8	20.5	23.2	22.9	23.3	22.7	23.7	28.5	27.3
8	25.1	25.3	25.9	25.9	25.2	24.3	23.3	25	25.8	25.4	26	26.3	26.3	26.3	26.5	25.2	25.6	26.7	25.8	25.8	27.1
9	14.1	14.2	14.8	14.7	15.4	13.8	14.1	16.1	17.4	17.2	17.8	18.3	17.9	18.3	17.4	17.7	18.1	18.3	16.8	14.5	16.7
10	25.1	25.3	25.9	25.9	25.2	24.3	23.3	25	25.8	25.4	26	26.3	26.3	26.3	26.5	25.7	26.1	26.7	25.8	25.8	27.1
11	12.7	12.8	13.4	13.3	14.3	12.6	12.9	15	16.4	16.2	16.8	17.4	17	17.3	16.4	16.5	16.9	17.2	15.7	13.1	15.4
12	796	789	749	751	693	744	827	954	936	954	896	892	974	939	725	1193	896	637	771	708	602
13	129	128	116	116	107	112	140	178	174	189	175	174	190	190	140	247	183	127	135	113	102
14	26	26	26	26	25	28	27	29	26	25	24	23	23	23	20	18	17	18	22	25	20
15	57	57	54	53	53	51	56	67	67	68	68	66	73	76	69	87	79	74	62	58	61
16	365	361	335	335	306	319	367	469	464	467	446	433	512	492	368	704	497	329	367	326	287
17	91	91	92	92	87	95	94	100	93	91	86	86	85	82	71	83	73	59	78	82	69
18	365	361	335	335	306	319	367	469	464	467	446	433	512	492	368	618	454	329	367	326	287
19	102	102	101	102	94	104	116	113	111	119	110	117	120	105	88	114	100	76	99	91	76
20	19.6	19.6	19.4	19.4	19.7	19.5	19.9	20	20.2	20.4	20.4	20.5	20.3	20.5	20.3	20.3	20.5	20.6	20.2	20.1	20.3
21	25.3	25.3	25.2	25.1	25.4	25.1	25.6	25.3	25.2	25.2	25.2	25.5	25.5	25.6	25.6	25.8	25.8	25.9	25.2	25.7	25.9
22	13	13	12.9	12.9	13	13	13.7	14	14.2	14.2	14.3	14.1	13.9	14.5	14.1	14.4	14.4	14.4	14.3	13.5	13.8
23	22	22	22	22	23	22	22	21	20	20	20	21	20	19	20	19	19	19	20	21	20
24	23	23	22.9	22.9	23.6	23.1	24	24	24.1	24.4	24.3	24.5	23.7	24	23.8	21.8	22.1	23.7	23.8	23.3	23.6
25	17	17	16.9	16.9	16.9	16.9	17.2	17.3	17.5	17.8	17.8	17.9	17.9	18.1	18	18.3	18.4	18.4	17.8	17.6	17.9
26	23	23	22.9	22.9	23.6	23.1	24	24	24.1	24.4	24.3	24.5	23.7	24	23.8	23.3	23.5	23.7	23.8	23.3	23.6
27	14.6	14.6	14.5	14.5	14.5	14.5	14.9	15.2	15.4	15.4	15.5	15.5	15.5	15.8	15.6	15.9	16	16	15.5	15.2	15.5
28	0.4	0.4	0.37	0.37	0.37	0.43	0.52	0.54	0.5	0.53	0.47	0.47	0.49	0.51	0.36	0.64	0.5	0.33	0.39	0.34	0.28
29	0.65	0.64	0.58	0.58	0.57	0.63	0.79	0.91	0.88	0.92	0.85	0.84	0.9	0.96	0.73	1	0.96	0.67	0.71	0.54	0.48
30	0.2	0.2	0.2	0.2	0.2	0.23	0.24	0.25	0.21	0.2	0.17	0.17	0.15	0.16	0.13	0.16	0.13	0.13	0.15	0.17	0.14
31	32	31	29	29	29	27	32	39	42	43	45	46	52	54	51	51	58	56	42	33	38
32	0.57	0.56	0.51	0.51	0.51	0.58	0.74	0.85	0.82	0.84	0.78	0.77	0.85	0.89	0.63	1	0.9	0.61	0.63	0.49	0.42
33	0.26	0.26	0.26	0.26	0.26	0.31	0.32	0.32	0.28	0.27	0.25	0.23	0.22	0.22	0.18	0.2	0.18	0.15	0.21	0.22	0.17
34	0.54	0.53	0.49	0.49	0.49	0.53	0.64	0.72	0.71	0.71	0.68	0.65	0.76	0.75	0.57	0.8	0.68	0.55	0.57	0.46	0.42
35	0.41	0.41	0.39	0.39	0.37	0.44	0.53	0.45	0.41	0.45	0.4	0.41	0.39	0.37	0.29	0.59	0.39	0.27	0.35	0.34	0.26

Appendix 5 Table of BIOCLIM attributes (cont.)

	Site																			
Attr.	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**
1	18.7	20.4	20.7	20.7	20.9	20.1	21.4	21.8	22.5	22.5	22	22.1	23.8	20.6	20.5	20.6	20.4	19.5	20.1	19.7
2	14.3	14.9	14.9	14.9	14.8	14.6	14.8	14.1	11.6	11.5	12.4	12.4	13.1	14.7	15.1	15	15	15.4	14.7	14.5
3	0.5	0.52	0.53	0.53	0.52	0.51	0.52	0.52	0.52	0.52	0.54	0.54	0.55	0.53	0.52	0.52	0.53	0.52	0.51	0.51
4	2	2	2	2	2	2	2	2	1	1	1	1	1	2	2	2	2	2	2	2
5	31.9	33.4	33.1	33.1	33.2	33	34	33.6	32.2	32	32.1	32.2	34.3	32.8	33.1	33.2	33	32.7	33.3	32.8
6	3.4	4.4	4.8	4.8	5	4.6	5.5	6.4	9.7	10	9.2	9.3	10.6	4.8	4.3	4.5	4.4	3.2	4.4	4.3
7	28.5	28.9	28.3	28.3	28.2	28.4	28.5	27.3	22.4	22	22.9	22.9	23.7	27.9	28.8	28.7	28.5	29.6	28.9	28.5
8	24.7	26.3	26.2	26.2	26.4	25.9	27	27.1	26.7	26.1	25.6	25.6	27	26	26.2	26.3	26	25.5	26.1	25.6
9	13.1	14.9	15.3	15.4	15.5	14.7	16.1	16.7	18.3	18.5	18	20.8	20.2	15.3	15	15.1	15	13.8	14.6	14.3
10	24.7	26.3	26.2	26.2	26.4	25.9	27	27.1	26.7	26.6	26	26.1	27.6	26	26.2	26.3	26	25.5	26.1	25.6
11	11.8	13.5	14	14	14.2	13.3	14.6	15.4	17.3	17.4	16.9	17.1	19	14	13.6	13.7	13.6	12.5	13.1	12.9
12	649	714	742	739	733	715	649	602	654	754	1067	1068	737	682	695	691	773	655	651	702
13	97	116	122	122	120	115	106	102	133	160	222	222	183	103	106	106	128	94	102	111
14	27	24	24	24	23	25	23	20	17	18	17	19	11	25	26	26	25	27	24	25
15	49	58	57	57	57	59	60	61	75	81	87	82	97	53	51	52	57	47	55	57
16	275	334	343	342	340	332	305	287	339	414	626	605	452	302	304	303	359	273	291	320
17	90	84	84	84	84	81	74	69	60	61	76	82	38	85	90	89	88	93	78	82
18	275	334	343	342	340	332	305	287	339	395	555	545	320	302	304	303	359	273	291	320
19	95	91	94	94	94	91	83	76	77	82	102	115	54	93	98	97	99	101	86	91
20	20	19.7	19.5	19.5	19.5	20.1	20.3	20.3	20.6	20.6	20.4	20.3	20.5	19.6	19.5	19.5	19.6	19.7	20.3	20.1
21	25.7	25.4	25.3	25.3	25.3	25.7	25.9	25.9	25.9	25.8	25.8	25.7	25.2	25.1	25.2	25.2	25.3	25.5	25.8	25.7
22	13	13	13	13	13	13.5	13.8	13.8	14.4	14.5	14.5	14.3	14.7	12.7	12.8	12.7	13.1	12.4	13.6	13.5
23	22	21	21	21	21	21	20	20	19	19	19	19	18	22	22	22	22	24	21	21
24	23.9	23	22.8	22.8	22.8	23.2	23.4	23.6	23.7	22.4	21.9	21.8	21.8	23	23.2	23.2	23	24.1	23.7	23.3
25	17	17.2	17.2	17.2	17.2	17.6	17.9	17.9	18.4	18.4	18.4	21.4	18.7	17.1	16.9	16.9	17.1	16.5	17.7	17.6
26	23.9	23	22.8	22.8	22.8	23.2	23.4	23.6	23.7	23.7	23.4	23.3	24.2	23	23.2	23.2	23	24.1	23.7	23.3
27	14.6	14.7	14.7	14.7	14.7	15.2	15.4	15.5	16	16	15.9	15.9	16.4	14.5	14.4	14.4	14.7	14	15.2	15.1
28	0.35	0.35	0.35	0.35	0.34	0.34	0.3	0.28	0.34	0.4	0.59	0.61	0.4	0.33	0.35	0.34	0.37	0.36	0.31	0.34
29	0.47	0.55	0.6	0.59	0.58	0.56	0.51	0.48	0.7	0.83	1	1	0.89	0.53	0.51	0.51	0.63	0.51	0.47	0.53
30	0.23	0.19	0.17	0.17	0.17	0.17	0.14	0.14	0.13	0.12	0.14	0.15	0.08	0.18	0.2	0.2	0.18	0.24	0.15	0.17
31	23	31	34	34	34	34	37	38	58	62	55	53	79	30	27	27	34	23	30	32
32	0.42	0.49	0.51	0.5	0.49	0.5	0.45	0.42	0.64	0.78	0.99	0.99	0.84	0.45	0.45	0.44	0.54	0.45	0.43	0.48
33	0.26	0.24	0.23	0.22	0.22	0.22	0.18	0.17	0.15	0.16	0.19	0.19	0.09	0.23	0.25	0.25	0.24	0.28	0.2	0.22
34	0.41	0.48	0.49	0.49	0.48	0.47	0.42	0.42	0.56	0.64	0.77	0.75	0.43	0.45	0.45	0.44	0.52	0.41	0.4	0.45
35	0.41	0.35	0.33	0.33	0.33	0.34	0.29	0.26	0.27	0.29	0.49	0.54	0.19	0.33	0.38	0.37	0.36	0.45	0.32	0.34

Appendix 5 Table of BIOCLIM attributes (cont.)

	Site																						
Attr.	**56**	**57**	**58**	**59**	**60**	**61**	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**	**76**	**77**	**78**
1	19.9	20.4	20.5	18.5	18.5	18.4	19.6	19.5	18.7	18.4	17.2	21.8	19.9	19.5	19.1	19.4	21.4	21.6	18.3	17.9	21.3	21	19
2	14.5	15	14.8	13.7	14.9	14.7	14.3	15.5	14.5	14.7	11.5	12.2	14.6	15.1	15.5	14.8	12.6	12.5	13.3	13.7	14	14.7	13.3
3	0.51	0.52	0.53	0.53	0.54	0.53	0.54	0.54	0.54	0.53	0.5	0.52	0.55	0.55	0.56	0.56	0.53	0.53	0.52	0.52	0.53	0.52	0.51
4	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	2
5	32.7	33.3	32.8	29.7	30.8	30.6	31.2	32.2	30.6	30.8	27.6	32	31.5	31.4	31.2	31.1	31.9	32	29.7	29.4	32.9	33.4	31.2
6	4.5	4.3	4.7	4.1	3	3.1	4.7	3.3	3.5	2.9	4.7	8.6	4.9	4.1	3.4	4.3	8	8.2	3.9	3.3	6.4	5.2	4.9
7	28.3	29.1	28.1	25.6	27.7	27.5	26.5	28.9	27.1	27.8	22.9	23.4	26.5	27.4	27.8	26.7	23.9	23.8	25.8	26.1	26.5	28.1	26.3
8	25.6	26.3	25.9	23.4	23.9	23.7	24.6	25.1	23.8	23.9	22	26.2	24.7	24.5	24.1	24.2	25.9	26	23.4	23	26.4	26.5	23.9
9	14.5	14.8	15.2	13.7	13.4	13.3	14.7	14.2	13.6	13.1	14.6	17.4	15.1	14.6	14.2	14.6	17	17.1	13.3	12.9	16.4	15.7	14.1
10	25.6	26.3	25.9	23.4	23.9	23.7	24.6	25.1	23.8	23.9	22	26.2	24.7	24.5	24.1	24.2	25.9	26	23.4	23	26.4	26.5	24.4
11	13.1	13.3	13.9	12.6	12.2	12.1	13.5	12.8	12.5	11.9	11.6	16.3	13.9	13.4	12.9	13.4	15.8	16	12.2	11.8	15.1	14.3	12.8
12	744	669	690	809	756	760	748	724	714	761	717	782	727	710	720	797	788	778	894	824	620	735	810
13	121	105	105	121	110	110	116	106	107	108	110	151	123	122	119	136	151	149	152	119	106	121	146
14	26	25	25	29	32	32	26	29	27	32	32	20	24	22	23	24	21	21	38	34	18	23	23
15	60	52	53	49	49	49	53	48	50	48	44	73	59	54	53	60	70	70	51	47	63	59	63
16	348	296	306	341	322	323	329	303	304	319	289	406	342	309	311	368	400	396	383	340	298	343	386
17	84	88	85	105	107	108	91	99	97	109	108	71	80	84	86	85	75	74	122	113	66	81	80
18	348	296	306	341	322	323	329	303	304	319	289	406	342	309	311	368	400	396	383	340	298	343	374
19	94	94	94	113	108	109	103	106	100	111	115	88	95	100	102	101	93	92	135	121	71	90	98
20	20	19.7	19.5	19.4	19.4	19.4	19.6	19.5	19.5	19.4	19.5	20.5	19.9	19.7	19.7	20	20.4	20.4	18.7	19.2	20.1	19.8	20.3
21	25.6	25.5	25.1	25.8	25.5	25.5	25.6	25	25.6	25.3	25.4	25.7	25.1	25.3	25.2	25.3	25.6	25.6	24.9	25.4	25.8	25.4	25.9
22	13.5	12.7	12.8	12.8	12.7	12.7	13.2	12.9	12.7	12.6	12.3	14.3	13.9	13.4	13.5	13.9	14.3	14.3	11.8	12.4	13.7	13.2	13.9
23	21	22	22	23	23	23	22	22	23	23	25	20	20	21	21	21	20	20	25	24	20	21	20
24	23.1	23.4	22.9	23.8	23.5	23.5	23.5	23.3	23.9	23.4	24.3	23.9	23.2	23.2	23.1	23.9	24	23.9	23.2	23.7	23.2	22.9	22.2
25	17.6	16.9	17.1	16.5	16.5	16.5	16.9	16.7	16.5	16.4	14.9	18.1	17.6	17.3	17.3	17.5	18	18	15.7	16.1	17.9	17.4	18
26	23.1	23.4	22.9	23.8	23.5	23.5	23.5	23.3	23.9	23.4	24.3	23.9	23.2	23.2	23.1	23.9	24	23.9	23.2	23.7	23.2	22.9	23.4
27	15.1	14.4	14.5	14.2	14.2	14.2	14.6	14.4	14.2	14.1	13.7	15.7	15.2	14.9	14.8	15.2	15.6	15.6	13.3	13.8	15.4	15	15.6
28	0.36	0.34	0.34	0.5	0.43	0.44	0.42	0.4	0.41	0.44	0.43	0.42	0.39	0.42	0.43	0.45	0.42	0.41	0.52	0.5	0.3	0.35	0.41
29	0.59	0.48	0.53	0.69	0.62	0.63	0.64	0.56	0.57	0.6	0.54	0.84	0.65	0.68	0.68	0.75	0.81	0.8	0.71	0.66	0.56	0.59	0.71
30	0.18	0.2	0.18	0.3	0.28	0.29	0.21	0.24	0.27	0.3	0.28	0.15	0.18	0.18	0.19	0.2	0.15	0.15	0.32	0.33	0.14	0.16	0.15
31	34	26	30	23	24	23	30	24	23	22	19	54	36	33	32	36	51	51	24	21	42	35	43
32	0.53	0.43	0.46	0.65	0.57	0.57	0.59	0.49	0.52	0.55	0.5	0.77	0.58	0.6	0.61	0.68	0.73	0.72	0.68	0.63	0.48	0.51	0.64
33	0.23	0.25	0.24	0.37	0.35	0.35	0.28	0.31	0.33	0.35	0.34	0.2	0.24	0.28	0.29	0.28	0.2	0.2	0.37	0.38	0.18	0.21	0.2
34	0.5	0.43	0.45	0.6	0.53	0.54	0.54	0.48	0.51	0.52	0.49	0.66	0.56	0.52	0.53	0.61	0.64	0.63	0.64	0.58	0.46	0.49	0.54
35	0.36	0.37	0.34	0.5	0.45	0.46	0.42	0.43	0.42	0.48	0.5	0.32	0.37	0.44	0.45	0.42	0.33	0.32	0.55	0.53	0.25	0.32	0.39

Appendix 5 Table of BIOCLIM attributes (cont.)

	Site																							
Attr.	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**	**101**	**102**
1	22.5	22.5	21.8	21.6	22	20.6	19	22.3	22.6	21.3	20.6	20.7	19.7	20.2	22.6	18.3	20.9	20.1	22.2	21.1	19.4	18.1	18.5	18.4
2	12.5	13.1	12.8	12.3	12.8	15	15.2	13.7	13	14.7	14.6	14.9	15.4	15.1	10	11.8	13	13.7	12.7	13.9	12.2	12.5	13.6	13.9
3	0.52	0.53	0.51	0.52	0.54	0.52	0.56	0.53	0.54	0.52	0.52	0.52	0.53	0.53	0.49	0.52	0.53	0.53	0.54	0.52	0.52	0.53	0.53	0.53
4	1	1	2	1	1	2	2	1	1	2	2	2	2	2	1	1	1	2	1	2	1	1	2	2
5	32.7	33.2	32.6	32	32.4	33.3	30.7	33.4	33.1	33.7	33.1	33.5	32.4	32.7	31.3	28.5	31.7	31.4	32.5	32.7	29.6	28.5	29.7	29.9
6	8.8	8.4	7.5	8.4	8.6	4.4	3.7	7.8	8.9	5.6	5.2	4.6	3.5	4.1	10.9	5.8	7.1	5.6	9	5.9	6.3	4.8	4.2	3.7
7	23.9	24.7	25.1	23.6	23.8	28.9	27	25.6	24.2	28.1	27.9	28.9	28.9	28.6	20.4	22.7	24.6	25.8	23.5	26.8	23.3	23.6	25.5	26.2
8	26.9	27	26.7	26.1	25.8	26.4	23.7	27	26.8	26.8	26.1	26.5	25.3	25.7	26.7	22.7	25.6	25	25.8	26.3	23.9	22.6	23.3	23.5
9	18.1	18.1	17	17.2	17.8	15.1	14.3	17.8	18.4	16.1	15.4	15.1	14.3	14.8	18.5	14	16.3	15.2	18.1	16	14.9	13.6	13.7	13.5
10	26.9	27	26.7	26.1	26.3	26.4	23.7	27	26.8	26.8	26.1	26.5	25.3	25.7	26.7	22.7	25.6	25	26.3	26.3	23.9	22.6	23.3	23.5
11	16.9	16.9	15.8	16.1	16.6	13.7	13	16.5	17.2	14.6	14	13.7	13	13.5	17.6	12.9	15.2	14.1	16.9	14.7	13.9	12.5	12.6	12.4
12	585	538	689	770	704	668	950	558	539	666	715	714	717	729	953	869	744	712	821	671	939	945	819	770
13	111	101	123	147	132	101	172	102	111	111	117	117	104	108	217	144	126	111	165	108	144	142	123	112
14	18	17	21	21	18	26	29	16	12	24	25	24	29	28	19	27	23	25	17	23	32	34	29	27
15	73	73	64	70	73	50	62	72	78	59	60	59	48	47	83	58	61	53	79	56	51	51	49	47
16	308	285	337	391	360	289	452	294	290	313	334	337	300	305	521	393	353	314	452	306	399	400	345	317
17	56	53	71	74	63	90	105	54	45	76	80	83	98	97	67	98	79	88	67	77	114	119	106	103
18	308	285	337	391	357	289	452	294	290	313	334	337	300	305	521	393	353	314	419	306	399	400	345	317
19	67	60	81	92	81	96	126	62	55	85	90	90	105	106	90	116	96	97	90	87	127	132	114	109
20	20.6	20.7	20.1	20.4	20.6	19.6	19.9	20.7	20.7	20.2	20.1	19.8	19.5	19.4	20.5	20.1	20	19.7	20.6	19.6	19.3	19.4	19.4	19.4
21	25.9	26	25.7	25.6	25.9	25.3	25.5	26	25.8	25.8	25.7	25.4	25.1	25	25.7	25.3	25.1	25.4	25.8	25.3	25.4	25.4	25.8	25.7
22	14.3	14.4	13.8	14.2	14.4	12.6	13.8	14.4	14.5	13.6	13.6	13	12.8	13	14.5	14.1	14	13.1	14.5	12.9	12.8	12.9	12.8	12.6
23	19	19	20	20	19	23	21	19	19	20	20	21	22	22	19	21	20	22	19	21	24	23	24	24
24	23.6	23.9	23.2	23.9	22.4	23.5	24	23.8	23.8	23.3	23.2	23.1	23.4	23.1	23.7	24.2	23.3	23.5	22.3	22.8	23.7	23.8	23.8	23.9
25	18.4	18.4	17.9	18	18.4	16.8	17.3	18.4	18.5	17.8	17.7	17.2	16.7	16.8	18.2	17.4	17.7	16.9	18.4	17.4	16.4	16.5	16.5	16.3
26	23.6	23.9	23.2	23.9	23.6	23.5	24	23.8	23.8	23.3	23.2	23.1	23.4	23.1	23.7	24.2	23.3	23.5	23.6	22.8	23.7	23.8	23.8	23.9
27	15.9	16	15.4	15.6	15.9	14.3	15	16	16.1	15.3	15.3	14.8	14.3	14.4	15.9	15.2	15.3	14.5	16	14.8	14.1	14.3	14.2	14.1
28	0.29	0.26	0.33	0.4	0.38	0.34	0.58	0.27	0.27	0.31	0.34	0.34	0.39	0.38	0.54	0.55	0.38	0.39	0.45	0.31	0.61	0.61	0.51	0.47
29	0.61	0.54	0.63	0.79	0.75	0.47	0.91	0.55	0.61	0.53	0.59	0.55	0.55	0.55	0.99	0.84	0.67	0.6	0.89	0.53	0.85	0.86	0.7	0.62
30	0.12	0.11	0.15	0.15	0.13	0.2	0.25	0.11	0.1	0.15	0.16	0.18	0.24	0.23	0.15	0.27	0.16	0.2	0.12	0.15	0.34	0.36	0.3	0.31
31	54	53	44	51	55	25	35	52	60	36	37	33	24	24	57	33	38	29	59	34	26	25	23	20
32	0.53	0.47	0.55	0.71	0.69	0.42	0.85	0.47	0.52	0.47	0.52	0.48	0.48	0.47	0.95	0.78	0.58	0.54	0.82	0.44	0.81	0.81	0.66	0.58
33	0.14	0.13	0.18	0.2	0.17	0.25	0.36	0.13	0.12	0.19	0.21	0.23	0.3	0.29	0.2	0.34	0.23	0.27	0.17	0.2	0.4	0.41	0.37	0.37
34	0.49	0.45	0.52	0.62	0.58	0.42	0.73	0.45	0.47	0.45	0.48	0.48	0.47	0.46	0.8	0.68	0.55	0.51	0.65	0.44	0.7	0.69	0.61	0.56
35	0.24	0.21	0.27	0.32	0.3	0.38	0.53	0.22	0.2	0.3	0.33	0.34	0.43	0.42	0.34	0.53	0.35	0.39	0.34	0.29	0.62	0.62	0.51	0.48

Appendix 5 Table of BIOCLIM attributes (cont.)

	Site																							
Attr.	**103**	**104**	**105**	**106**	**107**	**108**	**109**	**110**	**111**	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**	**121**	**122**	**123**	**124**	**125**	**126**	**127**
1	18	22.5	17.1	17.7	16.9	17.7	18.1	16.8	21.2	19.4	19.1	19.7	15.7	17.7	17.1	22.1	21.1	20.5	18.9	18.5	18.5	17.6	19.3	18.2	19.1
2	13	11.6	15.7	15.7	14.8	15.1	15.2	12.3	14.3	13.4	14.7	13	13.4	15	14.4	9.6	11.4	13.9	15.3	13.7	14.7	12.4	12.4	12.5	12.8
3	0.53	0.53	0.51	0.5	0.49	0.5	0.5	0.49	0.52	0.53	0.55	0.53	0.49	0.49	0.51	0.49	0.52	0.54	0.54	0.53	0.53	0.52	0.52	0.51	0.52
4	1	1	2	2	2	2	2	2	2	1	2	1	2	2	2	1	1	2	2	2	2	1	1	1	1
5	28.9	32	31.7	32.4	31.5	31.9	32.6	29	33.2	30.5	30.9	30.4	29.2	32.4	30.1	30.9	30.9	31.8	31.4	29.7	30.6	28.4	30	29	30
6	4.2	10	0.7	1.2	1.5	1.9	2.1	3.9	5.7	5.3	4.1	6	1.8	1.9	1.9	11.2	8.7	5.8	3	4.1	3.1	4.3	5.9	4.6	5.3
7	24.6	22.1	31	31.2	30	30	30.5	25.2	27.6	25.2	26.8	24.4	27.5	30.5	28.2	19.6	22.2	26	28.4	25.6	27.5	24	24.1	24.4	24.7
8	22.8	26.1	23.8	24.5	23.6	24.2	24.8	22.3	26.6	24.2	24.1	24.3	21.9	24.5	23	26	25.3	25.3	24.4	23.4	23.8	22.5	24.1	22.6	23.9
9	13.3	18.4	13.7	14.2	13.4	14.3	12.1	11.8	16	14.7	14.3	15.1	9.9	14.1	14.1	18.1	16.8	15.7	15.8	13.7	13.3	13	14.7	13.5	14.4
10	22.8	26.5	23.8	24.5	23.6	24.2	24.8	22.3	26.6	24.2	24.1	24.3	21.9	24.5	23	26	25.3	25.3	24.4	23.4	23.8	22.5	24.1	23	23.9
11	12.3	17.3	10	10.5	9.9	10.7	11	10.8	14.7	13.6	13.1	14	9.2	10.5	10.5	17.2	15.8	14.5	12.4	12.6	12.2	12	13.7	12.4	13.4
12	810	768	688	658	595	728	655	691	693	816	691	881	644	641	688	954	1003	689	736	807	719	774	943	1033	894
13	120	163	85	82	73	92	80	78	114	126	107	138	77	79	89	201	193	109	106	121	105	113	143	171	141
14	30	18	35	34	36	41	37	47	21	28	23	29	38	36	32	24	28	24	31	29	29	31	33	38	33
15	49	82	29	28	25	27	26	18	58	52	53	53	25	25	34	71	68	57	49	48	49	48	49	51	49
16	341	426	238	227	201	247	220	220	323	354	300	386	220	214	249	474	494	314	314	339	304	323	395	442	373
17	107	61	122	123	116	138	127	145	77	101	83	105	127	126	115	88	102	79	105	105	101	107	123	136	119
18	341	403	238	227	201	247	220	220	323	354	300	386	220	214	249	474	494	314	314	339	304	323	395	438	373
19	114	82	138	135	123	151	138	155	86	111	96	118	132	139	131	115	120	91	105	113	103	112	135	155	134
20	19.4	20.6	19.2	19.2	18.5	18.9	19	17.8	19.7	19.6	19.8	19.6	17.7	18.8	19.2	20.5	20	19.8	19.4	19.4	19.5	19.3	18.8	18.5	18.8
21	25.8	25.8	26.4	26	25.1	26	25.7	24.8	25.4	25.9	25.1	25.5	24.5	25.4	26.3	25.2	25.3	25.1	25.3	25.8	25.5	25.6	25.1	24.9	25.2
22	12.8	14.5	11.3	11.2	10	11	11	9.5	13.1	13	13.4	13.2	9.1	10.7	11.2	14.3	14	13.4	12.7	12.8	12.6	12.5	12.1	11.9	11.9
23	23	19	28	28	31	29	29	31	21	23	21	23	32	29	28	20	21	21	23	24	23	24	25	25	25
24	23.8	22.4	25.1	25	24.5	24.7	24.8	23.8	22.7	23.8	23.2	24	23.6	24.6	24.9	24.5	24	23.1	23.5	23.8	23.8	23.8	23.3	20.8	23.4
25	16.4	18.4	14.2	14.2	13	13.7	14.8	13.9	17.4	16.7	17.4	16.7	10.4	13.5	14.2	17.8	17.3	17.5	15.2	16.4	16.4	16.3	15.9	15.7	15.7
26	23.8	23.7	25.1	25	24.5	24.7	24.8	23.8	22.7	23.8	23.2	24	23.6	24.6	24.9	24.5	24	23.1	23.5	23.8	23.8	23.8	23.3	22.8	23.4
27	14.2	16	12.7	12.7	11.6	12.5	12.4	11.4	14.9	14.4	14.9	14.5	10.9	12.1	12.7	15.5	15.2	15	14.2	14.2	14.1	14	13.6	13.3	13.3
28	0.51	0.41	0.42	0.38	0.34	0.42	0.36	0.49	0.32	0.46	0.4	0.5	0.46	0.36	0.42	0.51	0.57	0.36	0.42	0.5	0.41	0.48	0.57	0.66	0.54
29	0.7	0.85	0.67	0.64	0.58	0.68	0.64	0.78	0.55	0.68	0.61	0.74	0.71	0.64	0.63	0.93	0.94	0.59	0.6	0.69	0.57	0.64	0.81	0.9	0.75
30	0.32	0.12	0.26	0.24	0.22	0.28	0.23	0.31	0.15	0.25	0.19	0.25	0.31	0.23	0.25	0.18	0.23	0.17	0.27	0.3	0.28	0.33	0.32	0.39	0.31
31	23	62	33	36	36	34	39	34	36	28	30	30	30	40	26	46	40	33	24	23	22	20	26	25	25
32	0.66	0.8	0.62	0.59	0.53	0.63	0.58	0.73	0.47	0.63	0.55	0.7	0.66	0.59	0.58	0.83	0.88	0.52	0.54	0.65	0.52	0.6	0.76	0.86	0.72
33	0.38	0.16	0.31	0.28	0.25	0.31	0.26	0.33	0.2	0.32	0.27	0.32	0.33	0.26	0.31	0.25	0.32	0.24	0.33	0.37	0.34	0.39	0.39	0.45	0.38
34	0.6	0.65	0.34	0.3	0.26	0.33	0.27	0.35	0.46	0.58	0.51	0.63	0.35	0.27	0.4	0.7	0.74	0.5	0.51	0.6	0.51	0.58	0.66	0.74	0.64
35	0.52	0.3	0.62	0.59	0.53	0.63	0.58	0.73	0.29	0.45	0.4	0.47	0.66	0.59	0.58	0.41	0.48	0.35	0.43	0.51	0.43	0.5	0.58	0.68	0.55

Appendix 5 Table of BIOCLIM attributes (cont.)

	Site																							
Attr.	**128**	**129**	**130**	**131**	**132**	**133**	**134**	**135**	**136**	**137**	**138**	**139**	**140**	**141**	**142**	**143**	**144**	**145**	**146**	**147**	**148**	**149**	**150**	**151**	**152**
1	19.2	19.4	15.4	21.4	21.9	23.4	23.3	22.9	22.7	22.8	22.8	22.7	22	21.7	21.4	21.5	22.2	21.5	21.7	22	22.4	21.7	22.5	21.8	23
2	13.2	13.2	10.9	13.7	13.1	11.3	11.7	12.7	12.3	12.9	12.8	12.6	13.1	12.9	13.8	13.9	12.3	12.5	12.3	11.9	12.5	12.9	11.8	12.7	12.3
3	0.52	0.53	0.49	0.54	0.54	0.53	0.53	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.53	0.53	0.52	0.54	0.53	0.52	0.53	0.54	0.52	0.54	0.54
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1
5	30.3	30.5	25.6	32.6	32.5	32.6	32.8	33.1	32.7	33.2	33.1	33	32.6	32.1	32.8	32.9	32.5	31.7	31.9	32	32.6	32.2	32.2	32.1	32.9
6	5.1	5.4	3.3	7.1	8.3	11	10.7	9.8	9.9	9.3	9.4	9.6	8.4	8.4	6.9	6.8	8.7	8.4	8.6	9	9	8.2	9.6	8.7	10.2
7	25.2	25.1	22.2	25.5	24.2	21.6	22.1	23.3	22.8	23.9	23.7	23.3	24.2	23.7	25.9	26.1	23.7	23.3	23.3	23.1	23.5	23.9	22.7	23.4	22.7
8	24.1	24.3	20.1	26.1	25.7	26.8	26.8	26.8	26.7	26.9	26.8	26.7	25.7	25.4	26.2	26.3	26.7	25.3	26	26.4	26.6	25.5	26.7	25.4	26.9
9	14.5	14.7	10.9	16.9	17.7	21.8	21.9	19	18.9	18.7	18.8	18.8	17.8	17.6	16.7	16.8	17.8	17.3	17.4	17.7	18.1	17.5	18.3	17.8	19.2
10	24.1	24.3	20.1	26.1	26.2	27.2	27.2	26.8	26.7	26.9	26.8	26.7	26.2	25.9	26.2	26.3	26.7	25.7	26	26.4	26.6	26	26.7	25.9	26.9
11	13.5	13.7	10	15.6	16.4	18.5	18.4	17.8	17.7	17.5	17.5	17.6	16.6	16.4	15.4	15.4	16.6	16.1	16.2	16.5	16.9	16.2	17.2	16.5	18
12	893	884	944	725	704	666	653	647	697	525	539	620	707	856	727	696	657	903	823	771	642	751	630	987	664
13	142	140	128	152	135	150	144	141	155	115	118	135	140	175	146	131	127	181	163	153	122	145	127	206	151
14	35	34	45	17	17	0	10	13	13	10	11	13	17	17	17	18	18	20	20	20	18	17	17	18	11
15	50	50	38	74	73	94	92	85	83	82	82	82	75	78	70	67	73	77	75	74	73	73	74	81	90
16	379	374	358	377	360	392	379	362	380	290	296	339	371	467	365	343	345	479	428	404	330	388	327	556	381
17	117	115	148	64	63	39	40	46	52	40	42	46	61	70	67	67	61	73	71	68	60	65	59	78	44
18	379	374	358	377	358	387	378	362	380	290	296	339	361	433	365	343	345	466	428	404	330	380	327	500	381
19	126	124	162	76	80	58	58	64	72	51	53	63	78	94	82	82	74	96	90	85	75	85	75	107	62
20	18.6	18.6	18.6	20.5	20.6	20.6	20.7	20.7	20.6	20.8	20.7	20.7	20.6	20.5	20.4	20.4	20.5	20.5	20.5	20.5	20.6	20.6	20.6	20.4	20.7
21	24.9	24.9	25	25.9	25.9	25.6	25.6	25.7	25.7	25.8	25.8	25.7	25.8	25.8	25.8	25.9	25.9	25.7	25.7	25.8	25.9	25.9	25.9	25.8	25.7
22	11.7	11.6	11.6	14.3	14.4	14.7	14.6	14.6	14.6	14.6	14.6	14.6	14.4	14.4	14.1	14.1	14.2	14.4	14.4	14.3	14.4	14.4	14.4	14.4	14.6
23	25	25	26	19	19	18	18	19	19	19	19	19	19	19	20	20	20	19	20	20	19	19	19	19	19
24	23.3	23.3	23.5	23.6	22.4	22.3	22.4	23.6	23.6	23.8	23.8	23.6	22.4	22.2	23.5	23.4	23.5	22.5	23.9	23.8	23.6	22.4	23.6	21.9	23.6
25	15.5	15.5	15.4	18.3	18.4	21.6	21.6	18.6	18.6	18.6	18.6	18.6	18.4	18.4	18.2	18.2	18.3	18.2	18.1	18.1	18.4	18.3	18.4	18.3	18.6
26	23.3	23.3	23.5	23.6	23.6	23.5	23.6	23.6	23.6	23.8	23.8	23.6	23.6	23.6	23.5	23.4	23.5	23.8	23.9	23.8	23.6	23.7	23.6	23.4	23.6
27	13.1	13.1	13.1	15.8	16	16.3	16.3	16.2	16.2	16.2	16.2	16.2	16	16	15.7	15.7	15.8	15.8	15.8	15.7	16	15.9	16	15.9	16.2
28	0.56	0.55	0.64	0.37	0.38	0.34	0.33	0.34	0.37	0.27	0.27	0.32	0.38	0.48	0.37	0.35	0.34	0.53	0.46	0.42	0.34	0.41	0.33	0.57	0.34
29	0.76	0.75	0.81	0.76	0.75	0.82	0.8	0.76	0.8	0.62	0.63	0.73	0.77	0.93	0.73	0.68	0.71	0.97	0.89	0.84	0.68	0.8	0.67	1	0.8
30	0.34	0.34	0.48	0.12	0.13	0.06	0.07	0.08	0.09	0.08	0.08	0.09	0.12	0.13	0.12	0.12	0.13	0.15	0.15	0.14	0.12	0.13	0.12	0.14	0.07
31	22	22	17	53	55	78	77	68	66	65	65	65	57	57	49	46	54	53	54	55	55	55	57	55	73
32	0.72	0.71	0.76	0.66	0.68	0.74	0.72	0.69	0.73	0.53	0.54	0.65	0.7	0.86	0.64	0.59	0.62	0.91	0.83	0.77	0.61	0.74	0.61	0.97	0.72
33	0.42	0.42	0.51	0.18	0.17	0.08	0.09	0.11	0.13	0.11	0.11	0.12	0.16	0.18	0.19	0.18	0.17	0.21	0.2	0.19	0.15	0.18	0.15	0.19	0.1
34	0.67	0.66	0.63	0.57	0.57	0.61	0.61	0.59	0.62	0.48	0.49	0.56	0.58	0.66	0.55	0.52	0.57	0.75	0.7	0.67	0.54	0.61	0.55	0.72	0.62
35	0.55	0.54	0.76	0.29	0.3	0.2	0.2	0.23	0.26	0.19	0.2	0.23	0.3	0.37	0.31	0.31	0.27	0.4	0.34	0.31	0.27	0.33	0.26	0.48	0.22

Appendix 5 Table of BIOCLIM attributes (cont.)

	Site							
Attr.	**153**	**154**	**155**	**156**	**157**	**158**	**159**	**160**
1	22.1	22.1	21.8	21.6	21	21.8	21.2	22.4
2	11.8	12	12.3	13.2	12.9	14.6	14.4	11.9
3	0.52	0.53	0.54	0.54	0.54	0.53	0.53	0.51
4	1	1	1	1	1	2	2	1
5	32	32.1	31.8	32.4	31.6	34	33.5	32.3
6	9.2	9.3	8.9	7.9	7.6	6.2	6.1	9
7	22.8	22.8	22.9	24.5	24	27.8	27.4	23.3
8	26.4	26.3	25.5	26.1	25.4	27.1	26.5	26.8
9	17.8	17.9	17.7	17.3	16.6	16.7	16.3	17.9
10	26.4	26.3	25.9	26.1	25.4	27.1	26.5	26.8
11	16.7	16.8	16.5	16.1	15.5	15.2	14.9	16.9
12	783	742	859	728	812	657	673	622
13	159	150	174	145	152	116	124	124
14	19	17	19	18	21	21	19	17
15	75	75	78	73	69	65	67	74
16	412	385	464	372	410	320	326	330
17	67	64	69	65	78	68	64	58
18	412	385	444	372	410	320	326	330
19	85	84	93	81	100	79	78	71
20	20.5	20.6	20.6	20.5	20.4	20.4	20.5	20.5
21	25.8	25.8	25.8	25.9	25.5	26	26.1	25.9
22	14.3	14.4	14.5	14.3	14.4	14	14.2	14.2
23	20	19	19	19	20	20	20	19
24	23.8	23.8	22.5	23.6	24.1	23.4	23.5	23.5
25	18.2	18.3	18.3	18.3	18	18.1	18.3	18.3
26	23.8	23.8	23.8	23.6	24.1	23.4	23.5	23.5
27	15.8	15.9	15.9	15.9	15.7	15.7	15.9	15.9
28	0.43	0.41	0.5	0.39	0.43	0.3	0.31	0.32
29	0.87	0.84	0.94	0.78	0.82	0.56	0.6	0.67
30	0.14	0.13	0.14	0.13	0.15	0.13	0.11	0.12
31	56	56	56	54	50	43	47	56
32	0.8	0.77	0.88	0.7	0.74	0.49	0.52	0.58
33	0.19	0.17	0.19	0.18	0.21	0.16	0.15	0.15
34	0.68	0.65	0.71	0.59	0.65	0.45	0.45	0.55
35	0.31	0.32	0.37	0.31	0.36	0.28	0.28	0.25

Appendix 6. Comparison of bioregional vine thicket group means (± standard deviations) for 35 climatic (BIOCLIM 3.6) attributes. Groups derived from floristic (presence/absence) data for 160 plots [NB. Group 8 (sites 35 and 43) represents a single locality].

	Group 1	± S.D.	Group 2	± S.D.	Group 3	± S.D.	Group 4	± S.D.	Group 5	± S.D.	Group 6	± S.D.	Group 7	± S.D.	Group 9	± S.D.	Group 10	± S.D.
Sites*	27		25		40		21		10		19		7		6		3	
Attr. 1	18.70	0.90	19.55	1.07	21.06	0.96	21.34	1.01	21.55	0.94	21.93	0.41	23.11	0.41	16.98	0.74	17.63	0.50
Attr. 2	13.51	1.04	14.45	1.04	14.23	1.02	11.69	1.45	12.68	0.45	12.84	0.98	12.29	0.61	14.50	1.37	14.87	0.42
Attr. 3	0.53	0.01	0.53	0.01	0.52	0.00	0.52	0.02	0.53	0.01	0.53	0.00	0.54	0.00	0.50	0.00	0.50	0.01
Attr. 4	1.52	0.51	1.88	0.33	1.78	0.42	1.10	0.30	1.10	0.32	1.26	0.45	1.00		2.00		2.00	
Attr. 5	29.90	1.19	31.70	1.19	33.05	0.44	31.29	0.76	32.03	0.36	32.51	0.55	33.06	0.57	30.95	1.47	31.70	1.39
Attr. 6	4.46	0.87	4.25	1.42	5.80	1.89	8.62	1.90	8.25	1.27	8.32	1.29	10.26	0.52	1.83	1.10	1.97	0.12
Attr. 7	25.42	1.37	27.44	1.70	27.23	2.02	22.65	1.98	23.78	1.02	24.20	1.78	22.79	0.74	29.15	2.34	29.73	1.33
Attr. 8	23.56	0.93	24.93	1.07	26.36	0.51	25.64	0.89	25.57	0.72	26.15	0.47	26.81	0.11	23.38	1.05	24.10	0.96
Attr. 9	13.94	0.89	14.53	1.09	15.96	1.41	17.02	1.17	17.31	1.17	17.70	1.01	19.97	1.36	12.88	1.72	13.43	1.15
Attr. 10	23.57	0.91	24.93	1.07	26.36	0.51	25.66	0.89	25.90	0.59	26.36	0.30	27.01	0.33	23.38	1.05	24.10	0.96
Attr. 11	12.84	0.86	13.12	1.14	14.63	1.49	15.97	1.24	16.10	1.21	16.34	0.80	18.14	0.51	10.18	0.60	10.67	0.29
Attr. 12	834.74	89.66	719.08	40.53	676.83	67.66	860.38	93.89	825.90	133.18	766.79	146.79	669.14	37.82	667.33	45.89	661.33	24.13
Attr. 13	130.11	17.44	110.16	9.96	113.85	8.63	164.76	27.23	164.20	31.58	152.53	35.02	151.29	15.52	81.17	6.74	82.67	5.51
Attr. 14	30.41	5.05	27.00	3.52	22.30	4.59	23.10	2.83	18.50	1.96	18.00	1.15	10.14	4.63	38.50	4.85	35.00	2.65
Attr. 15	50.67	4.28	52.24	4.46	60.80	9.14	68.67	6.30	75.40	6.22	74.47	6.29	89.00	5.77	25.33	3.93	28.33	4.93
Attr. 16	356.48	39.49	315.16	24.08	319.08	22.25	430.24	56.28	438.90	94.19	406.26	101.81	383.57	34.75	225.50	16.01	227.67	18.72
Attr. 17	107.37	15.17	92.56	10.56	76.15	15.15	82.52	10.27	70.00	6.91	66.53	6.65	43.57	4.96	128.50	10.89	122.67	6.66
Attr. 18	356.33	39.16	315.16	24.08	319.08	22.25	429.29	55.84	419.20	71.18	391.74	78.64	363.86	25.28	225.50	16.01	227.67	18.72
Attr. 19	118.59	16.37	99.84	7.41	85.58	14.45	103.33	11.88	90.90	10.29	84.68	12.38	61.57	5.77	139.00	12.02	136.00	4.36
Attr. 20	19.30	0.43	19.63	0.21	19.99	0.46	20.30	0.22	20.49	0.10	20.48	0.14	20.64	0.08	18.55	0.67	19.00	0.20
Attr. 21	25.41	0.33	25.32	0.17	25.54	0.30	25.42	0.22	25.83	0.08	25.85	0.09	25.60	0.18	25.47	0.77	25.80	0.46
Attr. 22	12.70	0.66	12.93	0.42	13.46	0.61	14.17	0.26	14.35	0.16	14.28	0.20	14.63	0.05	10.35	0.94	10.97	0.25
Attr. 23	23.37	1.50	22.28	1.14	20.68	1.10	20.14	0.65	19.20	0.42	19.37	0.50	18.57	0.53	29.83	1.72	28.67	0.58
Attr. 24	23.53	0.62	23.38	0.39	23.26	0.34	23.90	0.47	22.66	0.75	22.98	0.72	22.99	0.79	24.45	0.62	24.77	0.15
Attr. 25	16.42	0.60	16.80	0.65	17.58	0.58	17.81	0.30	18.28	0.14	18.44	0.73	19.47	1.45	13.23	1.46	14.17	0.65
Attr. 26	23.60	0.33	23.38	0.39	23.26	0.34	23.96	0.34	23.60	0.17	23.55	0.17	23.67	0.24	24.45	0.62	24.77	0.15
Attr. 27	14.10	0.61	14.48	0.40	15.12	0.59	15.49	0.24	15.87	0.12	15.86	0.16	16.26	0.08	11.97	0.77	12.40	0.30
Attr. 28	0.51	0.07	0.39	0.04	0.33	0.04	0.47	0.06	0.46	0.09	0.40	0.09	0.35	0.03	0.42	0.05	0.38	0.03
Attr. 29	0.72	0.09	0.58	0.06	0.57	0.06	0.84	0.10	0.85	0.12	0.78	0.14	0.80	0.05	0.68	0.07	0.64	0.00
Attr. 30	0.29	0.07	0.22	0.05	0.16	0.04	0.18	0.04	0.14	0.01	0.13	0.01	0.08	0.01	0.27	0.04	0.24	0.01
Attr. 31	25.56	4.86	27.96	5.77	38.25	11.47	46.10	7.46	53.80	3.99	53.42	5.78	72.29	5.94	33.83	2.23	35.00	7.81
Attr. 32	0.67	0.09	0.52	0.05	0.50	0.05	0.77	0.11	0.79	0.14	0.71	0.15	0.73	0.06	0.63	0.07	0.58	0.00
Attr. 33	0.36	0.06	0.28	0.05	0.21	0.05	0.24	0.05	0.19	0.02	0.17	0.02	0.10	0.02	0.30	0.03	0.28	0.03
Attr. 34	0.61	0.07	0.50	0.04	0.47	0.04	0.67	0.07	0.65	0.08	0.60	0.10	0.58	0.07	0.32	0.04	0.31	0.08
Attr. 35	0.52	0.09	0.40	0.06	0.31	0.06	0.38	0.06	0.37	0.08	0.33	0.09	0.22	0.02	0.63	0.07	0.58	0.00

Appendix 7. Regenerative and other attributes of vine thicket tree species.

	SPECIES	Max. DBH(cm)	Decid.	Fruit	Regen. (seed)	Regen. (veg.)	Disp.	Growth*	Comment(s)
1	Acacia fasciculifera .	45.7	Ev.	Pod	B - boil	R	g,?a - wind	6x4m /8y	
2	Acacia harpophylla .	51.6	Ev.	Pod	A - soft seed	R	g,?a - water		Don't boil - store in fridge [H]. Eaten by black cockatoos.
3	Acronychia laevis .	12.2	Ev.	Fleshy drupe,6-10 lobes, 4-celled	C	R?	a,g		Large crops of fruit - poor seed production.
4	Alectryon connatus .	25.0	Ev.	Lobed capsule, each lobe with glossy black seed, almost enclosed in light red edible aril	A		a,g		High abortion rate
5	Alectryon diversifolius .	18.5	Ev.	Capsule, edible red aril	A		a,g	Im/5y 3m/10y	Slow growth.
6	Alectryon subdentatus .	14.7	Ev.	Capsule, usually 2-lobed, red aril	A		a		Poor seed production
7	Alphitonia excelsa	12.0	Ev.	Drupe-like, thinly succulent, usually containing 2 hard cells (cocci), each with seed	C	R?	a		Eaten by black cockatoo, silvereye, Lewins honeyeater, oriole, pied currawong, regent bowerbird, varied triller.
8	Alstonia constricta .	18.1		Follicle, splitting to release downy seeds	A	R	w	Fast	Commonly in disturbed situations.
9	Apophyllum anomalum .	30.4	Ev.	? Berry	A		?a	Slow	Very poor regen. Heavy insect attack.
10	Archidendropsis thozetiana	46.0	Df.	Pod	A - rare		g,?a - w.	2m/2y	Rel. fast growth. Thin seed, pod opens on tree.
11	Arytera foveolata .	18.0	Ev.	Lobed capsule, edible aril			a		
12	Atalaya rigida .	24.2	Ev.	Fruit 3 I-seeded samaras	A	R,B	w	3m/4y	Persists for decades after clearing and fire.
13	Atalaya salicifolia .	33.1	Ev.	As for A. rigida.	A	R,B	w	2m/4y	Heavy seed crops.
14	Austromyrtus bidwillii	24.9	Ev.	Berry, 3-6 hard seeds.	A	No	a	Slow - 1m/2y	Fruits ripen over extended period. Eaten by figbirds, etc..
15	Backhousia angustifolia	28.5	Ev.	Fruit surrounded by persistent calyx, not opening or opening tardily. Seeds 1-2 per fruit.	C	R	g,w	Slow - 1m/5y	Both Backhousia spp. layer readily from lower branches to form thickets.

	SPECIES	Max. DBH(cm)	Decid.	Fruit	Regen. (seed)	Regen. (veg.)	Disp.	Growth*	Comment(s)
16	Backhousia kingii	41.4	Ev.	As for B. angustifolia.	C	R + B, layers	g,w	5m/5y	See above.
17	Barklya syringifolia	17.3	Ev.	Pod	C		g,w	2m/3y	
18	Bosistoa medicinalis	23.8	Ev.	Woody cocci - 1 to 2-valved - 1 seed / valve	A		g,	Vigorous - 1m/1y	Seed mechanically catapulted up to 3-4m. Heavy crops of seed shed in short time.
19	Brachychiton australis	128.0	De.	Cluster of 3-5 follicles, 30-50 large, soft-walled seeds per follicle	A		a,g	2m/1y, 3-5m/4y	Responds to building-up of soil. Birds pick out individual seeds.
20	Brachychiton rupestris	201.0	Df/De	Follicles, smaller and less robust than in B. australis, 4-8 seeds in each follicle	A		a,g	2m/1y	Birds pick out individual seeds.
21	Briedelia leichhardtii	34.5	Df.	Drupe with 2-celled stone, 1 seed/cell		R?	a		Heavy crops when deciduous. Fruit eaten by birds.
22	Bursaria incana	24.9	Ev.	2-valved, thin-walled capsule			g	1m/2y	Very slow in bush.
23	Cadellia pentastylis	94.0	Ev.	Cluster of up to 5 small, 1-seeded drupes, with papery, persistent calyx.	A	R?	g,w & wa	1m/1y	Relatively fast in cultivation. Very heavy crops some years apart.
24	Canthium sp. (brigalow)	21.0	Ev.	Drupe, single seed			a		Eaten by birds.
25	Canthium odoratum	15.6	Ev.	Drupe, single seed		R	a	5m/5y	Grows in clumps. Eaten by figbird.
26	Canthium vacciniifolium		Ev.	Drupe, single seed			a	1m/3y	
27	Capparis arborea	27.9	Ev.	Globular berry with numerous seeds embedded in pulp	A		g,a		Slow at start. Eaten by birds, rodents, ? marsupials.
28	Capparis loranthifolia	23.2	Ev.	As for C. arborea			g,a		
29	Cassine australis var.angustifolia	23.2	Ev.	Drupe, inner hard 'stone' with 1 or rarely 2 seeds	C		a,g, wa	5m/6y	Seed extracted from capsule in vice.
30	Cassine melanocarpa	10.5	Ev.	Drupe, larger than in C. australis	C		g	Slow - 1m/3y	
31	Cassia tomentella	25.5	Df ?	Pod	B	B+R	g	Slow - 1m/2y	Specimen on Mt Etna 50cm dbh. Pods chewed by cockatoos.
32	Casuarina cristata	55.2	Ev.	Small samaras in "cone"	A	No	w	10m/10y	Prolific regeneration from seed in good season.
33	Croton acronychioides	10.1	Ev.	Explosive capsule, fragmenting into 3 segments, 1 seed per segment.			g,?a	2m/5y	

	SPECIES	Max. DBH(cm)	Decid.	Fruit	Regen. (seed)	Regen. (veg.)	Disp.	Growth*	Comment(s)
34	Croton insularis .	17.9	Ev.	Explosive capsule, smaller than C. acronychioides		R?	g,?a	3m/5y	
35	Cupaniopsis parvifolia .	35.5	Ev.	3-lobed capsule - up to 3 seeds with edible orange aril	A		a,g		
36	Dendrocnide photinophylla	33.6	Df	Fruit an achene, disc-shaped, borne on enlarged and juicy pedicel		B	a	Fast, regrowth where damaged	
37	Denhamia oleaster .	30.1	Ev.	Capsule, 3-5-celled, splitting into 3-5 valves, seeds 2 or 1 in each cell - almost covered with thin red aril.	C		g,a	Slow - 2m/7y	Produces very deep root when only small. Seeds eaten by birds.
38	Denhamia pittosporoides	29.0	Ev.	As for D. oleaster	C		g,a		
39	Diospyros geminata .	23.3	Ev.	1-seeded berry	A	R?	a,w,g	1m/1y	Massive crops accumulate in creeks.
40	Diospyros humilis .	26.1	Ev.	1-seeded berry	A		a	1m/2y - 4m/8y	Fruit ripen progressively. Eaten by birds.
41	Drypetes deplanchei .	21.1	Ev.	Drupe with hard stone, single seed.	A		g,a	1m/1y	Produces large crops of fruit. Eaten by eg. emerald dove.
42	Ehretia membranifolia .	36.6	Df	Small brownish drupe.	A	R	a	0.2m/1mnth	Excellent germination.
43	Elattostachys xylocarpa	22.6	Ev.	Capsule, splitting into 3, rarely 4, woody valves - seeds 1 in each valve, small aril at base	A	?	g,a	1m/1y	
44	Erythroxylon australe .	30.2	Ev.	Small reddish-orange drupe	?		a		
45	Euroschinus falcata .	58.5	Df/De?	drupe	A-C		a	2m/1y	Ripe fruit black. Ripening staggered. Eaten by Lewins honeyeater.
46	Excoecaria dallachyana	30.5	Df ?	3-celled capsule, single seed in each cell	?	B	?g/a		
47	Exocarpos latifolius .	22.4	Ev.	Drupe, seated on thick red fleshy edible stalk		R	?a	1m/5y (max.)	Root parasite.
48	Flindersia australis .	95.0	Df/De.	Woody capsule, splitting (but generally remaining united at base), 2-3 flat winged seeds per valve, wing at apical end	A	B	w,g	2m/1y	Resprouts after fire [H].
49	Flindersia collina .	53.0	Ev.	Capsule splitting into separate valves, wings at both ends of seeds			w,g		

	SPECIES	Max. DBH(cm)	Decid.	Fruit	Regen. (seed)	Regen. (veg.)	Disp.	Growth*	Comment(s)
50	Geijera paniculata .	32.0	Ev.	2 small cocci, each with single glossy black seed	?C	B	a	2m/2y?	
51	Geijera parviflora	40.5	Ev.	As for G. paniculata.	B-C	B	a	1m/1y	
52	Geijera salicifolia var. latifolia	46.6	Ev.	As for G. paniculata.	B-C		a	1.5m/1y	High germination in pot plants and roof gutters [H]. Eaten by Lewins honeyeater, king parrot, brush turkey.
53	Geijera salicifolia var. salicifolia	43.9	Ev.	As for G. paniculata.			a		
54	Grevillea helmsii .	25.5	Ev.	A follicle, seed flat, 2 in each fruit, surrounded by papery wing			g,w	5m/5y	
55	Gyrocarpus americanus	43.1	De.	A follicle, seed flat, 2 in each fruit, surrounded by papery wing	A		w	Vigorous - .2m/1y	Eaten by figbird.
56	Homalium alnifolium .	38.3	Df ?	Fruit resembling shuttlecock, persistent perianth	?	?R	w		Seeds germinate freely on rocks, etc..
57	Lysiphyllum carronii .	55.3	De.	Pods large and flat, coriaceous, dehiscent. Seeds compressed.		B	g,w	Slow - 1m/4y	
58	Lysiphyllum hookeri .	63.1	De.	Pods large and flat, coriaceous, dehiscent. Seeds compressed.	B	B	g,w	1m/3y - 7m/5y.	Slow outside garden. Seedlings common after rain [OK]. Germination activated after pods damaged by fire.
59	Macropteranthes leichhardtii	37.2	Df	Fruit indehiscent, 1-seeded, conical or funnel-shaped with persistent, enlarged calyx-lobes and bracteoles.		B, ?R, layers	g,w	15 cm in 3 months	
60	Macropteranthes leiocaulon	30.3	Df	As for M. leichhardtii			g,w		
61	Mallotus phillipensis .	13.5	Ev.	Capsule with 3 lobes, single seed in each lobe	c	R,B	a		
62	Maytenus dispermus .	22.7	Ev.	2-valved capsule, yellow aril at base of seed	?	?	a		Eaten by Lewins honeyeater.
63	Melicope erythrococca .	35.4	Ev.	Cocci 4, rarely 5, commonly only 2 developing, seed 1 per coccus			a		Eaten by king parrot.

	SPECIES	Max. DBH(cm)	Decid.	Fruit	Regen. (seed)	Regen. (veg.)	Disp.	Growth*	Comment(s)
64	Notelaea microcarpa .	36.5	Ev.	Fleshy drupe, with hard 1-seeded stone			a		Eaten by figbird.
65	Owenia venosa .	51.8	Ev.	Large reddish drupe, hard woody stone with 2-4 cells, single seed in each cell	B-C	Roots	g	3m/2y	
66	Pittosporum rhombifolium	23.0	Ev.	Small orange capsule with 2-3 black seeds	C/		a	!0m/6y	Relatively fast growth.
67	Planchonella cotinifolia var. cotinifolia	32.9	Ev.	Shiny black oval berry, usually containing 1 seed			a,g		
68	Planchonella cotinifolia var. pubescens	21.4	Ev.	Shiny black oval berry, usually containing 1 seed			a,g		Rare seedling in garden [OK].
69	Pleiogynium timorense .	82.6	De.	Large dark-reddish drupe with large hard stone	C		g,?a, wa	6m/5y	Eaten by flying fox.
70	Polyscias elegans .	20.9	Ev.	Purple-black drupe, 1 seed in each of 2 cells		R,B	a	Fast. 6m/3y	Few viable seeds [H]. Root cuttings very good [H]. Suckers readily. Eaten by Lewins honeyeater, figbird, oriole. pied currawong.
71	Premna lignum-vitae .	49.7	Ev.	Pink drupe, enclosing stone with 4 cells, each containg mature or aborted seed			a		
72	Siphonodon australis .	33.7	Ev.	Drupe, giving 10 nutlets (2 in each original cell)	C		g,a	Slow.	Bird-dispersed.
73	Sterculia quadrifida .	31.4	De.	Separate stalkless carpels forming 1-4 reddish-orange follicles, each follicle with 2-8 black, edible seeds	A		a,g	Fast. 4m/4y	
74	Strychnos axillaris .	58.5	Ev.	Blackish berry with single flattened seed immersed in internal pulp		B?	a,g		
75	Terminalia oblongata .	30.6	De.	Nut with 2 dry wings	C	R	g,w		Readily produces root suckers.
76	Terminalia porphyrocarpa	35.1	De.	Fruit a drupe, green, beaked.	B-C		g,a, wa	2m/1y	
77	Ventilago viminalis .	56.6	Ev.	Samara	A	R	w,g		Comes up from root suckers and very persistent [OK].

Regen. (seed)	**Regen. (vegetative)**	**Dispersal**	**Deciduousness**
A. germinates readily without treatment.	B. basal suckers	a. animal	Ev. evergreen
B. germinates readily with treatment.	R. root suckers (away from trunk)	g. gravity	Df. facultatively (eg. drought) deciduous
C. poor germination.		w. wind. wa. water	De. deciduous

* Growth data (metres/year) provided by B. O'Keeffe and N. and D. Hoy.

Appendix 8. List of frugivorous birds recorded in central and southern Queensland vine thickets.

Species	Common name	Ka	Va	Ig	Bs	Co	Dd	Me	Ml	Na	Ru	Sc
Alectura lathami	Brush turkey			p	p	p	p	p	p	p	p	p
Alisterus scapularis	King parrot			p		p	p	p		p	p	p
Cacatua galerita	Sulphur-crested cockatoo			p		p	p					p
Calyptorhynchus lathami	Glossy black-cockatoo										p	
Calyptorhynchus magnificus	Red-tailed black-cockatoo					p	p	p	p		p	p
Chalcophaps indica	Emerald dove	p				p	p	p	p	p	p	
Chlamydera maculata	Spotted bowerbird	p										
Coracina lineata	Barred (yellow-eyed) cuckoo-shrike									p		
Coracina novaehollandiae	Black-faced cuckoo-shrike			p	p	p					p	
Dicaeum hirundinaceum	Mistletoebird	p	p	p	p		p			p	p	p
Dicrurus hottentottus	Spangled drongo					p	p	p			p	p
Dromaius novaehollandiae	Emu										p	
Entomyzon cyanotis	Blue-faced honeyeater	p	p	p								
Eudynamis scolopacea	Common koel									p	p	p
Geopelia humeralis	Bar-shouldered dove	p		p		p	p	p	p	p	p	p
Geopelia placida	Peaceful dove			p		p	p					p
Lalage leucomela	Varied triller	p		p		p	p	p		p	p	p
Leucosarcia melanoleuca	Wonga pigeon			p	p	p	p	p		p	p	
Lopholaimus antarcticus	Topknot pigeon						p					
Macropygia amboinensis	Brown cuckoo-dove						p		p	p		
Meliphaga lewinii	Lewin's honeyeater	p	p	p	p	p	p	p	p	p	p	p
Ocyphaps lophotes	Crested pigeon			p		p						
Oriolus sagittatus	Olive-backed oriole			p	p					p		
Platycercus adscitus	Pale-headed rosella			p	p	p	p			p	p	p
Ptilinopus magnificus	Wompoo fruit-dove						p					
Ptilinopus regina	Rose-crowned fruit-dove						p	p	p		p	
Ptilinopus superbus	Superb (purple-crowned) fruit-dove											p
Ptilinorhynchus violaceus	Satin bowerbird						p					
Scythrops novaehollandiae	Channel-billed cuckoo						p		p	p	p	p
Sericulus chrysocephalus	Regent bowerbird	p			p		p			p		
Sphecotheres viridis	Fig-bird					p			p	p	p	p
Strepera graculina	Pied currawong	p	p	p	p	p	p		p	p	p	p
Trichoglossus chlorolepidotus	Scaly-breasted lorikeet			p			p			p	p	p
Trichoglossus haemodotus	Rainbow lorikeet			p			p	p		p	p	p
Zosterops lateralis	Silvereye	p		p		p	p			p		

Locality	Source
Ka - Ka Ka Mundi	1,2
Va - Upper Vandyke Creek	1
Ig - Isla Gorge	1,4
Bs - Berlin (Scanlon's) Scrub	1
Co - Hurdle Gully Scrub, Coominglah S F	3
Dd - Dan Dan Scrub	3
Me - Mt Etna	3
Ml - Mt Larcom	3
Na - Nangur State Forest	3
Ru - Rundle Range	3
Sc - Spring Creek, Craiglands	3

Sources

1. Paul Grimshaw - Apr.- May 1993 (unpublished QNPWS records)
2. Paul Lawless-Pyne (pers. comm. 1993)
3. Horsup, James and Porter (1993)
4. Jahnke (1976)

Appendix 9. Growth data (basal areas) for individual vine thicket trees - Brigalow Research Station Transect

Species	Plot	Basal Area (cm^2) 1968/70	1990/92
ACACFASC	15	12.26	56.82
	16	393.76	593.40
	17	2290.36	DEAD
	22	1145.86	1220.18
	23	600.86	876.13
	24	720.76	994.13
	25	1145.86	1220.18
	25	393.76	519.71
	62	34.06	84.10
	18	1.36	25.56
	19	491.86	898.03
	20	1.36	10.95
	21	851.56	965.36
	21	851.56	1285.25
	21	1226.25	1200.99
	37	1.36	59.62
	59	164.86	314.75
	60	12.26	51.41
	61	79.03	249.88
ACACHARP	12	491.86	DEAD
	12	230.26	482.67
	30	720.76	1058.92
	30	12.26	62.50
	30	720.76	843.78
	37	491.86	671.98
	37	12.26	58.21
	37	12.26	121.68
	37	12.26	89.65
	37	12.26	132.03
	37	12.26	192.67
	37	12.26	62.50
	38	1669.06	DEAD
	38	393.76	DEAD
	39	1145.86	1406.62
	39	230.26	503.08
	39	961.93	1574.83
	39	164.86	DEAD
	59	306.56	532.36
	59	851.56	881.58
	59	600.86	653.05
	61	393.76	507.21
	61	851.56	DEAD
	61	306.56	DEAD
	13	491.86	909.08
	13	1343.43	DEAD
	14	851.56	DEAD
	14	306.56	DEAD
	14	164.86	390.60
	38	993.26	1265.55

Species	Plot	Basal Area (cm^2) 1968/70	1990/92
ACACHARP (Cont.)	38	12.26	39.07
	39	306.56	519.71
	40	164.86	344.79
	40	34.06	321.31
	40	393.76	671.98
	60	993.26	1107.32
	60	491.86	735.36
	60	66.76	111.75
	61	12.26	87.91
	61	66.76	100.39
	61	306.56	318.02
	61	993.26	DEAD
ALECDIVE	12	24.53	79.51
	13	52.88	130.42
	13	52.88	76.26
	18	52.88	121.87
	18	427.38	DAM.
	19	9.71	19.47
	19	9.71	8.65
	19	475.94	47.09
	20	9.71	26.50
	21	317.77	463.91
	21	26.98	40.23
	30	12.26	8.12
	38	34.06	79.68
	39	26.98	30.95
	39	12.26	24.10
	40	52.88	48.81
	40	9.71	29.41
	40	9.71	37.93
	40	53.96	66.12
	58	12.26	30.95
	58	12.26	18.67
	59	26.98	83.39
	59	9.71	6.62
	60	48.57	59.38
	25	26.98	115.67
APOPANOM	12	12.26	45.03
	13	9.71	16.85
	18	600.86	486.72
	20	230.26	264.73
	21	231.68	247.09
	21	26.98	14.91
	37	164.86	182.60
	38	66.76	77.88
	38	12.26	24.11
	40	66.76	56.82
	40	164.86	227.27
	40	110.36	125.77

Appendix 9 (cont.)

Species	Plot	Basal Area (cm^2) 1968/70	1990/92
APOPANOM	40	306.56	444.34
(Cont.)	40	110.36	203.01
	59	34.06	37.08
	61	9.71	39.99
	61	9.71	10.35
	61	9.71	21.13
	61	26.98	31.04
	61	9.71	8.65
	61	9.71	11.57
	61	52.88	61.05
ATALSALI	18	34.06	58.21
	18	162.36	389.08
	20	230.26	273.78
	20	230.26	295.49
	20	312.69	443.13
	30	12.26	33.54
	17	851.56	876.13
	17	12.26	54.08
	22	34.06	55.44
	22	393.76	470.63
	22	34.06	52.74
	23	491.86	643.69
	52	26.98	43.80
	13	1.36	41.41
	19	1.36	21.98
	21	110.36	210.95
BRACRUPE	14	600.86	1971.29
	18	110.36	DEAD
	21	600.86	1711.13
	37	27861.76	27989.78
	58	34.06	66.93
	59	491.86	1144.33
	17	34.06	314.75
	22	170.91	620.58
	23	1309.36	1906.53
	33	1.36	341.39
	34	393.76	1156.81
	42	2072.36	2901.70
	56	720.76	1113.45
	57	1865.26	2981.46
	62	9.71	51.41
	65	1865.26	2445.80
	30	0.00	76.26
	40	0.00	9.77
	60	393.76	1175.64
	60	393.76	1119.59
	61	2519.26	3614.20
	61	164.86	216.32
	56	720.76	DEAD
	120	12.00	170.39

Species	Plot	Basal Area (cm^2) 1968/70	1990/92
DIOSHUMI	12	68.13	136.59
	12	12.26	35.06
	12	164.86	DEAD
	19	66.76	109.66
	21	727.58	785.21
	61	12.26	84.26
	61	12.26	20.29
	29	297.03	311.92
	63	110.36	142.81
	65	12.26	29.16
	66	12.26	20.29
	30	91.29	113.31
	60	12.26	11.57
	60	0.00	8.65
EHREMEMB	12	110.36	161.01
	12	34.06	74.31
	12	12.26	12.85
	12	66.76	81.15
	12	12.26	20.29
	13	52.88	148.53
	13	9.71	39.36
	14	9.71	7.61
	14	9.71	14.91
	18	52.88	121.38
	18	79.86	59.62
	19	306.56	383.37
	19	125.35	148.91
	19	110.36	188.24
	19	9.71	22.85
	20	110.36	158.60
	21	147.15	290.47
	21	278.71	338.00
	37	9.71	32.33
	37	130.59	DEAD
	37	26.98	41.77
	37	26.98	65.44
	38	12.26	16.07
	38	12.26	22.52
	38	66.76	134.15
	39	12.26	30.95
	39	230.26	339.50
	39	34.06	24.64
	40	130.59	312.86
	58	34.06	51.41
	59	9.71	19.47
	59	9.71	31.44
	60	9.71	50.44
	60	87.42	160.46
	60	9.71	58.58
	61	9.71	27.72

Appendix 9 (cont.)

Species	Plot	Basal Area (cm^2) 1968/70	1990/92
EHREMEMB	61	9.71	39.07
(Cont.)	61	9.71	19.47
	61	9.71	23.30
	61	26.98	56.56
	61	9.71	12.20
	61	182.39	225.24
FLINCOLL	11	12.26	19.47
	16	110.36	247.09
	16	12.26	77.88
	17	12.26	35.70
	22	34.06	79.51
	26	66.76	89.65
	29	34.06	89.65
	34	34.06	55.44
	57	66.76	175.22
	13	7.85	33.54
	14	12.26	39.07
	18	0.00	21.98
	18	0.00	16.36
	18	0.00	138.44
	20	110.36	276.83
	20	34.06	89.65
	40	34.06	61.05
GEIJPARV	12	275.23	210.95
	12	306.56	420.21
	14	1669.06	1906.53
	30	393.76	503.08
	30	395.13	458.74
	37	230.26	227.27
	39	393.76	486.72
	58	460.53	517.83
	59	393.76	486.72
	60	110.36	180.12
	60	164.86	219.03
	61	230.26	289.20
	61	242.83	369.10
	61	182.39	282.98
	61	164.86	182.60
	61	491.86	463.24
	61	230.26	314.75
	61	164.86	246.01
	28	12.26	63.96
	33	393.76	515.53
	34	306.56	362.07
	52	34.06	43.80
	52	66.76	109.82
	52	164.86	258.78
	55	230.26	344.79
	55	393.76	423.99
	57	164.86	301.84

Species	Plot	Basal Area (cm^2) 1968/70	1990/92
GEIJPARV	13	1.36	41.41
(Cont.)	36	12.26	79.51
CAPPLORA	14	269.81	255.61
	18	1103.63	1041.12
	20	667.63	730.84
	23	3951.25	4037.49
	61	122.63	357.01
CASSTOME	19	528.83	304.20
	20	97.13	142.04
	28	122.63	37.26
	37	122.63	596.23
	37	667.63	1137.03
	40	122.63	202.88
	55	340.63	527.36
CASUCRIS	18	11458.63	12009.90
	19	6008.63	13385.14
	26	4918.63	6530.50
	28	25192.63	20704.61
	40	11458.63	17725.06
	40	2302.63	4164.50
	60	4918.63	7254.24
	60	667.63	3018.42
	61	4918.63	6023.92
CROTINSU	13	122.63	135.20
	13	122.63	632.74
	14	340.63	639.58
	19	122.63	294.14
	19	245.25	423.18
	20	122.63	135.20
	20	667.63	861.98
	37	340.63	304.20
	38	122.63	171.11
DENHOLEA	17	122.63	202.88
	34	122.63	211.25
	36	97.13	356.68
	61	122.63	357.01
	66	340.63	554.40
DENHPITT	54	122.63	255.61
	54	122.63	357.01
	61	667.63	762.61
	63	2302.63	2190.32
EUCACAMB	60	14837.63	18825.25
	60	32713.63	33219.40
	61	16690.63	22411.51
LYSICARR	11	122.63	142.04
	14	1103.63	1428.05
	14	6008.63	8761.30
	29	1103.63	4089.80
	66	1226.25	2731.11
	67	2302.63	3620.74

Appendix 9 (cont.)

		Basal Area (cm^2)	
Species	**Plot**	**1968/70**	**1990/92**
PLANCOPU	20	2924.73	5545.74
	21	366.94	1508.79
VENTVIMI	14	3065.63	3380.00
	14	122.63	746.64
	18	340.63	749.09
	22	64868.63	61051.25