

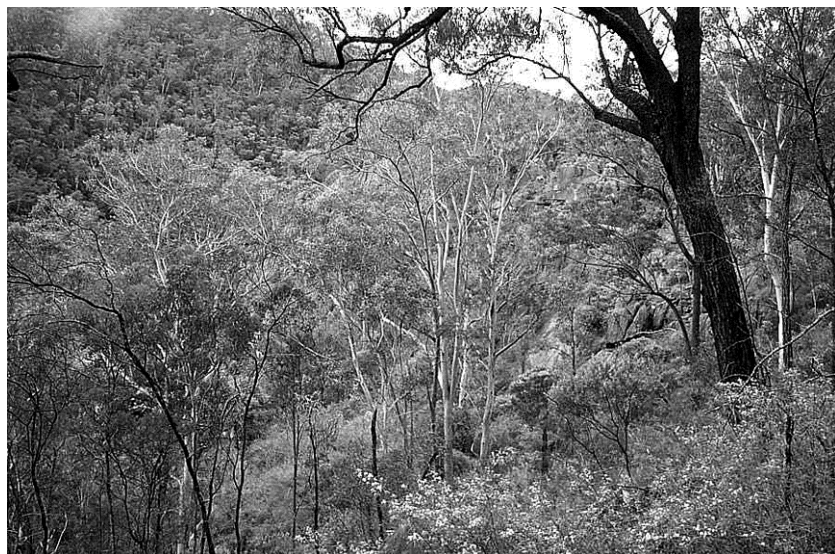
DSF p36: Kowmung-Wollondilly Gorge Woodland

Plate p36. Kowmung-Wollondilly Gorge Forest (Map Unit p36) on a side slope of Mount Armour between the Wollondilly River and Scotts Main Range. The tree canopy is dominated by *Eucalyptus crebra* and *E. tereticornis*, with shrubs including *Acacia filicifolia*, *Olearia viscidula* and *Bursaria spinosa* over a groundcover dominated by *Cenchrus caliculatus* and *Austrodanthonia* spp..

Sample Sites: 56
 Area Extant (ha): 26200
 Estimated % remaining: >95%
 Area in conservation reserves (ha): 24600
 Estimated % of pre-clearing area in conservation reserves: >85%
 No. taxa (total / unique): 398 / 4
 No. taxa per plot (\pm sd): 50.6 (10.7)
 Class: Central Gorge Dry Sclerophyll Forests.
 Related TEC: n/a

Kowmung-Wollondilly Gorge Woodland (DSF p36) is equivalent to DSF 36 identified by Tindall *et al.* (2004). This unit is an open eucalypt forest with an open shrub layer and prominent groundcover of forbs and ferns, and is found on loams on intermediate slopes within rocky gorges in the lower Coxs and Kowmung River catchments. It has been sampled at altitudes of 100 to 750m ASL, and across a mean annual rainfall band of 750 - 950mm.

Kowmung-Wollondilly Gorge Woodland is most extensive on sediments of the Devonian Lambie Group and Permian Shoalhaven Group (Berry Formation), with smaller occurrences on Bindook Porphyry and Carboniferous granitic substrates in the southern part of its range, where it grades into DSF p35 and DSF p37 (see DSF p35). Most of its range is within conservation reserves and very little has been cleared due to the steep and inaccessible terrain.

Floristic Summary:

Trees: *Eucalyptus tereticornis*, *E. crebra*, *Acacia implexa*. **Shrubs:** *Olearia viscidula*, *Breynia oblongifolia*, *Bursaria spinosa*, *Indigofera australis*. **Climbers:** *Geitonoplesium cymosum*, *Clematis glycinoides*, *Glycine clandestina*, *Pandorea pandorana*. **Groundcover:** *Dichondra* spp., *Desmodium gunnii*, *Plectranthus parviflorus*, *Pellaea falcata*, *Pratia purpurascens*, *Microlaena stipoides*, *Oplismenus imbecillis*, *Cheilanthes sieberi*, *Einadia hastata*, *Cymbopogon refractus*, *Lomandra multiflora*, *Adiantum aethiopicum*.

Vegetation structure:

Stratum	Frequency (n=53)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Emergent	2	23 (-)	2 (-)
Tree canopy	100	22 (5.7)	26.3 (10)
Small tree	83	10.5 (5)	17.7 (19.5)
Shrub	75	2.2 (0.6)	21.1 (15.9)
Ground cover	100	0.7 (0.3)	37.2 (23)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 27 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 42 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 27 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Abutilon oxycarpum</i> var. <i>oxycarpum</i>	1(1-1)	14	1(1-1)	<1
<i>Acacia clunies-rossiae</i>	1(1-3)	16	1(1-2)	<1
<i>Acacia implexa</i>	1(1-1)	63	1(1-1)	6
<i>Acacia parramattensis</i>	1(1-2)	25	1(1-2)	4
<i>Adiantum aethiopicum</i>	1(1-2)	50	1(1-1)	9
<i>Ajuga australis</i>	1(1-1)	25	1(1-1)	3
<i>Allocasuarina torulosa</i>	2(1-3)	50	1(1-3)	4
<i>Aphanopetalum resinsum</i>	1(1-2)	14	2(1-3)	4
<i>Aristida ramosa</i>	2(1-3)	23	1(1-2)	5
<i>Aristida vagans</i>	1(1-1)	39	1(1-2)	8
<i>Arthropodium milleflorum</i>	1(1-2)	21	1(1-1)	5
<i>Arthropodium minus</i>	1(1-1)	14	1(1-1)	1
<i>Asplenium flabellifolium</i>	1(1-1)	43	1(1-1)	11
<i>Austrostipa ramosissima</i>	1(1-2)	34	1(1-2)	1
<i>Backhousia myrtifolia</i>	1(1-3)	23	2(1-3)	5
<i>Brachychiton populneus</i> subsp. <i>populneus</i>	1(1-1)	30	1(1-1)	3
<i>Breynia oblongifolia</i>	1(1-1)	61	1(1-1)	12
<i>Brunoniella australis</i>	1(1-1)	18	2(1-2)	4
<i>Bursaria spinosa</i>	2(1-3)	63	1(1-2)	14
<i>Calotis dentex</i>	1(1-1)	14	1(1-2)	1
<i>Carex breviculmis</i>	1(1-1)	23	1(1-1)	4
<i>Cayratia clematidea</i>	1(1-1)	27	1(1-1)	2
<i>Celastrus australis</i>	1(1-1)	21	1(1-2)	2
<i>Cenchrus caliculatus</i>	1(1-2)	30	1(1-1)	1
<i>Cheilanthes distans</i>	1(1-1)	45	1(1-1)	2
<i>Cheilanthes sieberi</i>	1(1-1)	59	1(1-1)	14
<i>Clematis glycinoides</i> var. <i>glycinoides</i>	1(1-2)	57	1(1-1)	9
<i>Clerodendrum tomentosum</i>	1(1-1)	36	1(1-1)	5
<i>Commelina cyanea</i>	1(1-1)	16	1(1-1)	4
<i>Crassula sieberiana</i>	1(1-1)	25	1(1-1)	3
<i>Cymbopogon refractus</i>	2(1-2)	54	1(1-1)	4
<i>Cyperus gracilis</i>	1(1-1)	20	1(1-2)	2
<i>Cyperus laevis</i>	1(1-1)	23	1(1-1)	1
<i>Desmodium brachypodium</i>	1(1-1)	41	1(1-1)	3
<i>Desmodium varians</i>	1(1-1)	84	1(1-1)	21
<i>Dianella revoluta</i> var. <i>revoluta</i>	1(1-1)	48	1(1-1)	15
<i>Dichelachne micrantha</i>	1(1-2)	23	1(1-1)	9
<i>Dichondra</i> spp.	2(1-2)	89	1(1-2)	25
<i>Digitaria parviflora</i>	1(1-1)	16	1(1-1)	2
<i>Digitaria ramularis</i>	1(1-1)	13	1(1-1)	1

<i>Dodonaea viscosa</i> subsp. <i>angustifolia</i>	1(1-2)	27	1(1-1)	1
<i>Echinopogon ovatus</i>	1(1-1)	46	1(1-1)	14
<i>Einadia hastata</i>	1(1-2)	55	1(1-1)	3
<i>Einadia nutans</i>	1(1-2)	16	1(1-1)	3
<i>Eucalyptus crebra</i>	3(2-3)	64	2(1-3)	3
<i>Eucalyptus eugenioides</i>	1(1-2)	18	2(1-3)	4
<i>Eucalyptus punctata</i>	3(1-3)	45	1(1-3)	8
<i>Eucalyptus tereticornis</i>	3(1-3)	70	2(1-3)	7
<i>Exocarpos strictus</i>	1(1-1)	45	1(1-1)	9
<i>Gahnia aspera</i>	1(1-2)	34	1(1-1)	4
<i>Galium propinquum</i>	1(1-1)	21	1(1-1)	7
<i>Geitonoplesium cymosum</i>	1(1-2)	68	1(1-1)	16
<i>Geranium solanderi</i> var. <i>solanderi</i>	1(1-1)	32	1(1-1)	8
<i>Glycine clandestina</i>	1(1-1)	55	1(1-1)	26
<i>Glycine microphylla</i>	1(1-1)	29	1(1-2)	5
<i>Glycine tabacina</i>	1(1-1)	21	1(1-1)	7
<i>Hardenbergia violacea</i>	1(1-1)	41	1(1-1)	17
<i>Hibbertia obtusifolia</i>	1(1-2)	38	1(1-1)	10
<i>Hymenanthera dentata</i>	1(1-1)	25	1(1-1)	6
<i>Indigofera australis</i>	1(1-1)	61	1(1-1)	9
<i>Jacksonia scoparia</i>	2(1-2)	14	1(1-1)	2
<i>Leucopogon juniperinus</i>	1(1-2)	27	1(1-1)	5
<i>Lissanthe strigosa</i>	1(1-1)	32	1(1-1)	8
<i>Lomandra confertifolia</i> subsp. <i>rubiginosa</i>	2(1-3)	18	1(1-1)	4
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	1(1-1)	55	1(1-1)	25
<i>Microlaena stipoides</i>	1(1-2)	61	1(1-2)	36
<i>Notelaea longifolia</i> forma <i>longifolia</i>	1(1-1)	34	1(1-1)	7
<i>Notodanthonia longifolia</i>	2(1-3)	46	1(1-2)	5
<i>Nyssanthes diffusa</i>	1(1-1)	13	1(1-1)	<1
<i>Olearia viscidula</i>	2(1-3)	93	1(1-2)	5
<i>Oplismenus aemulus</i>	1(1-3)	16	1(1-2)	5
<i>Oplismenus imbecillis</i>	2(1-2)	61	1(1-2)	14
<i>Oxalis chnoodes</i>	1(1-1)	20	1(1-1)	1
<i>Pandorea pandorana</i>	1(1-1)	52	1(1-1)	18
<i>Panicum effusum</i>	1(1-2)	29	1(1-1)	2
<i>Passiflora herbertiana</i> subsp. <i>herbertiana</i>	1(1-1)	21	1(1-1)	1
<i>Pellaea falcata</i>	1(1-2)	71	1(1-1)	10
<i>Phyllanthus gunnii</i>	2(1-3)	13	1(1-1)	2
<i>Plantago debilis</i>	1(1-1)	38	1(1-1)	7
<i>Plectranthus parviflorus</i>	1(1-2)	73	1(1-1)	7
<i>Pomax umbellata</i>	1(1-1)	34	1(1-1)	14
<i>Pratia purpurascens</i>	1(1-1)	68	1(1-1)	17
<i>Rubus parvifolius</i>	1(1-2)	23	1(1-1)	9
<i>Rumex brownii</i>	1(1-1)	21	1(1-1)	5
<i>Senecio lautus</i> subsp. <i>lanceolatus</i>	1(1-1)	13	1(1-1)	<1
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	1(1-2)	30	1(1-1)	7

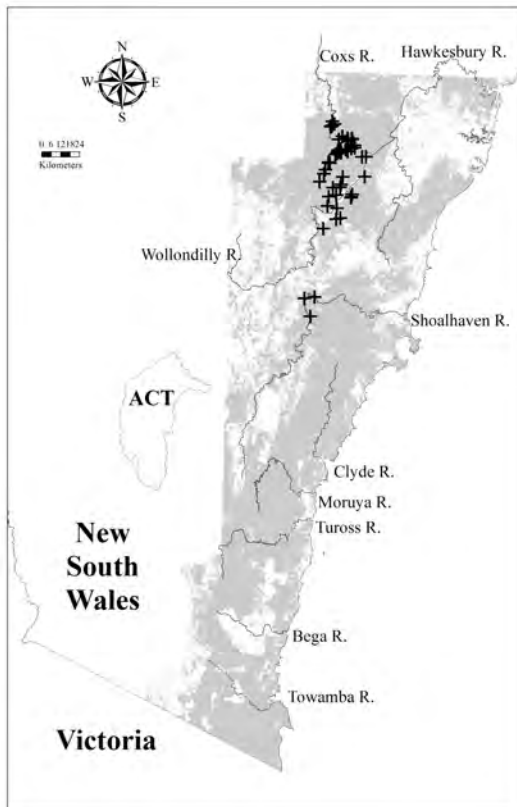
<i>Solanum prinophyllum</i>	1(1-1)	48	1(1-1)	6
<i>Solanum pungetium</i>	1(1-1)	27	1(1-1)	5
<i>Stellaria pungens</i>	1(1-2)	23	1(1-1)	6
<i>Stephania japonica</i> var. <i>discolor</i>	1(1-1)	39	1(1-1)	6
<i>Stypandra glauca</i>	1(1-2)	21	1(1-2)	5
<i>Urtica incisa</i>	1(1-2)	21	1(1-1)	5
<i>Vernonia cinerea</i> var. <i>cinerea</i>	1(1-1)	29	1(1-1)	4
<i>Veronica plebeia</i>	1(1-1)	48	1(1-1)	10
<i>Wahlenbergia gracilis</i>	1(1-1)	30	1(1-1)	11

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Clematis aristata</i>	1(1-2)	30	1(1-1)	20
<i>Lomandra longifolia</i>	1(1-2)	61	1(1-1)	44
<i>Persoonia linearis</i>	1(1-1)	34	1(1-1)	29

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora floribunda</i>	1(1-3)	18	1(1-2)	9
<i>Eucalyptus agglomerata</i>	3(1-3)	4	2(1-3)	7
<i>Eucalyptus blakelyi</i>	3(3-3)	2	1(1-3)	1
<i>Eucalyptus blaxlandii</i>	1(1-1)	2	1(1-3)	1
<i>Eucalyptus cypellocarpa</i>	1(1-1)	2	2(1-2)	10
<i>Eucalyptus elata</i>	1(1-1)	2	2(1-3)	5
<i>Eucalyptus fibrosa</i>	1(1-1)	4	2(1-3)	3
<i>Eucalyptus melliodora</i>	1(1-3)	7	1(1-3)	2
<i>Eucalyptus moluccana</i>	3(1-4)	9	3(1-3)	2
<i>Eucalyptus smithii</i>	1(1-1)	2	1(1-2)	2
<i>Eucalyptus sparsifolia</i>	1(1-3)	7	2(1-3)	2
<i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i>	1(1-1)	2	2(1-3)	8



Locations of survey sites allocated to DSF p36. Grey shading indicates extant native vegetation cover within the study area.

DSF p37: Kowmung-Wollondilly Grassy Gorge Forest



Plate p37. Kowmung-Wollondilly Grassy Gorge Woodland (Map Unit p37) beside Pimlico Creek, between Tomat Swamps and Mount Egan in Blue Mountains National Park. A canopy dominated by *Eucalyptus eugenioides* and *E. viminalis* grows above a patchy shrub layer including *Cassinia cunninghamii* and *Olearia viscidula* and a diverse moist groundcover.

Sample Sites: 59

Area Extant (ha): 37100

Estimated % remaining: >90%

Area in conservation reserves (ha): 31700

Estimated % of pre-clearing area in conservation reserves: 70-90%

No. taxa (total / unique): 367 / 2

No. taxa per plot (\pm sd): 45.8 (10.2)
 Class: Central Gorge Dry Sclerophyll Forests
 Related TEC: n/a

Kowmung-Wollondilly Grassy Gorge Woodland (DSF p37) is equivalent to DSF 37 identified by Tindall *et al.* (2004), and is a dry eucalypt woodland with an open shrub layer and prominent groundcover of forbs and grasses. Kowmung-Wollondilly Grassy Gorge Woodland covers extensive areas of the Coxs, Kowmung and lower Wollondilly River catchments, where mean annual rainfall varies from 750 to 1000mm, and loamy soils have formed on dry slopes and ridges from Bindook Porphyry and Devonian Lambie Group sediments. This woodland tends to occupy altitudes from 300m to 850m ASL, occupying more sheltered aspects at lower elevations and grading into DSF p36 on exposed aspects and lower slopes of the valleys, or DSF p35 in more open granite/porphyry landscapes. Most Kowmung-Wollondilly Grassy Gorge Woodland occurs within the Blue Mountains and Kanangra Boyd National Parks in steep remote areas that were unattractive for farming.

Floristic Summary:

Trees: *Eucalyptus punctata*, *E. eugenioides*. **Shrubs:** *Olearia viscidula*, *Acacia falciformis*. **Climbers:** *Glycine clandestina*, *Geitonoplesium cymosum*, *Clematis aristata*. **Groundcover:** *Dichondra* spp., *Pratia purpurascens*, *Lomandra longifolia*, *Desmodium gunnii*, *Poranthera microphylla*, *Echinopogon ovatus*, *Veronica plebeia*, *Wahlenbergia stricta*, *Hypericum gramineum*, *Lomandra multiflora*, *Cheilanthes sieberi*, *Poa sieberiana*, *Plantago debilis*, *Solanum pungetium*.

Vegetation structure:

Stratum	Frequency (n=41)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Tree canopy	100	22 (3.7)	23.4 (8.3)
Small tree	71	11.6 (3.8)	11.6 (9.4)
Shrub	63	2.1 (0.8)	16 (16.3)
Ground cover	100	0.7 (0.4)	49.3 (30)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 21 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 38 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 21 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia falciformis</i>	1(1-3)	47	1(1-2)	10
<i>Acacia implexa</i>	1(1-1)	27	1(1-1)	6
<i>Acacia parramattensis</i>	1(1-1)	29	1(1-2)	4
<i>Acaena novae-zelandiae</i>	1(1-2)	20	1(1-1)	7
<i>Acaena ovina</i>	1(1-1)	20	1(1-1)	1
<i>Adiantum aethiopicum</i>	1(1-2)	42	1(1-1)	9
<i>Ajuga australis</i>	1(1-1)	25	1(1-1)	3
<i>Allocasuarina torulosa</i>	2(1-3)	20	1(1-3)	5
<i>Asplenium flabellifolium</i>	1(1-1)	42	1(1-1)	11
<i>Brachychiton populneus</i> subsp. <i>populneus</i>	1(1-1)	15	1(1-1)	3
<i>Brachyscome angustifolia</i>	1(1-2)	22	1(1-1)	2
<i>Brachyscome graminea</i>	1(1-1)	14	1(1-1)	<1
<i>Bursaria longisepala</i>	1(1-1)	14	1(1-1)	1
<i>Bursaria spinosa</i>	1(1-1)	41	1(1-2)	14
<i>Carex breviculmis</i>	1(1-1)	25	1(1-1)	4
<i>Carex incomitata</i>	1(1-1)	12	1(1-1)	<1
<i>Centella asiatica</i>	1(1-1)	15	1(1-1)	4
<i>Cheilanthes austrotenuifolia</i>	1(1-2)	14	1(1-1)	1
<i>Cheilanthes distans</i>	1(1-1)	15	1(1-1)	2

<i>Cheilanthes sieberi</i>	1(1-1)	54	1(1-1)	14
<i>Clematis aristata</i>	1(1-1)	56	1(1-1)	20
<i>Clematis glycinoides</i> var. <i>glycinoides</i>	1(1-1)	31	1(1-1)	10
<i>Crassula sieberiana</i>	1(1-1)	15	1(1-1)	3
<i>Cymbonotus lawsonianus</i>	1(1-1)	19	1(1-1)	1
<i>Daucus glochidiatus</i>	1(1-1)	15	1(1-1)	2
<i>Desmodium varians</i>	1(1-2)	81	1(1-1)	21
<i>Dichondra</i> spp.	2(1-2)	88	1(1-2)	25
<i>Dichelachne parva</i>	1(1-2)	12	1(1-1)	1
<i>Dichelachne rara</i>	2(1-3)	15	1(1-1)	4
<i>Echinopogon ovatus</i>	1(1-1)	73	1(1-1)	13
<i>Eucalyptus eugenioides</i>	3(1-3)	44	2(1-3)	4
<i>Eucalyptus punctata</i>	3(1-3)	56	1(1-3)	8
<i>Eucalyptus tereticornis</i>	3(1-3)	27	2(1-3)	7
<i>Euchiton involucratus</i>	1(1-1)	14	1(1-1)	1
<i>Euchiton sphaericus</i>	1(1-1)	32	1(1-1)	3
<i>Galium gaudichaudii</i>	1(1-2)	17	1(1-1)	3
<i>Galium propinquum</i>	1(1-1)	46	1(1-1)	7
<i>Geitonoplesium cymosum</i>	1(1-1)	58	1(1-1)	16
<i>Geranium homeanum</i>	1(1-2)	20	1(1-1)	3
<i>Geranium solanderi</i> var. <i>solanderi</i>	1(1-2)	41	1(1-1)	7
<i>Glycine clandestina</i>	1(1-1)	64	1(1-1)	26
<i>Glycine microphylla</i>	1(1-1)	20	1(1-2)	5
<i>Glycine tabacina</i>	1(1-1)	22	1(1-1)	7
<i>Goodenia hederacea</i> subsp. <i>hederacea</i>	1(1-1)	37	1(1-2)	14
<i>Helichrysum scorpioides</i>	1(1-2)	27	1(1-1)	7
<i>Hydrocotyle geraniifolia</i>	1(1-1)	17	1(1-1)	2
<i>Hydrocotyle laxiflora</i>	2(1-2)	46	1(1-1)	15
<i>Hymenanthera dentata</i>	1(1-2)	22	1(1-1)	6
<i>Hypericum gramineum</i>	1(1-1)	59	1(1-1)	16
<i>Indigofera australis</i>	1(1-1)	29	1(1-1)	9
<i>Libertia paniculata</i>	1(1-2)	12	1(1-1)	2
<i>Lissanthe strigosa</i>	1(1-2)	32	1(1-1)	8
<i>Lomandra longifolia</i>	1(1-2)	85	1(1-1)	43
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	1(1-1)	58	1(1-1)	25
<i>Luzula flaccida</i>	1(1-1)	46	1(1-1)	4
<i>Notodanthonia longifolia</i>	1(1-2)	17	1(1-2)	5
<i>Olearia viscidula</i>	2(1-3)	68	1(1-2)	5
<i>Opercularia hispida</i>	1(1-1)	22	1(1-1)	3
<i>Oxalis perennans</i>	1(1-1)	41	1(1-1)	13
<i>Pellaea falcata</i>	1(1-1)	31	1(1-1)	10
<i>Plantago debilis</i>	1(1-2)	49	1(1-1)	7
<i>Plectranthus parviflorus</i>	1(1-1)	24	1(1-1)	8
<i>Poa sieberiana</i> var. <i>sieberiana</i>	2(1-3)	53	1(1-2)	10
<i>Poa labillardierei</i> var. <i>labillardierei</i>	1(1-2)	25	1(1-2)	12
<i>Poranthera microphylla</i>	1(1-1)	73	1(1-1)	15

<i>Pratia purpurascens</i>	1(1-1)	86	1(1-1)	17
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	1(1-1)	12	1(1-1)	3
<i>Senecio lautus</i> subsp. <i>lanceolatus</i>	1(1-1)	14	1(1-1)	<1
<i>Senecio linearifolius</i>	1(1-1)	29	1(1-1)	8
<i>Senecio minimus</i>	1(1-2)	24	1(1-1)	1
<i>Senecio prenanthoides</i>	1(1-1)	20	1(1-1)	8
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	1(1-1)	39	1(1-1)	7
<i>Solanum pungetium</i>	1(1-1)	49	1(1-1)	5
<i>Stackhousia viminea</i>	1(1-1)	12	1(1-1)	3
<i>Stellaria pungens</i>	1(1-1)	29	1(1-1)	6
<i>Stypandra glauca</i>	2(1-3)	32	1(1-2)	5
<i>Veronica plebeia</i>	1(1-1)	66	1(1-1)	10
<i>Viola betonicifolia</i>	1(1-1)	44	1(1-1)	5
<i>Wahlenbergia gracilis</i>	1(1-1)	34	1(1-1)	11
<i>Wahlenbergia stricta</i> subsp. <i>stricta</i>	1(1-1)	61	1(1-1)	5

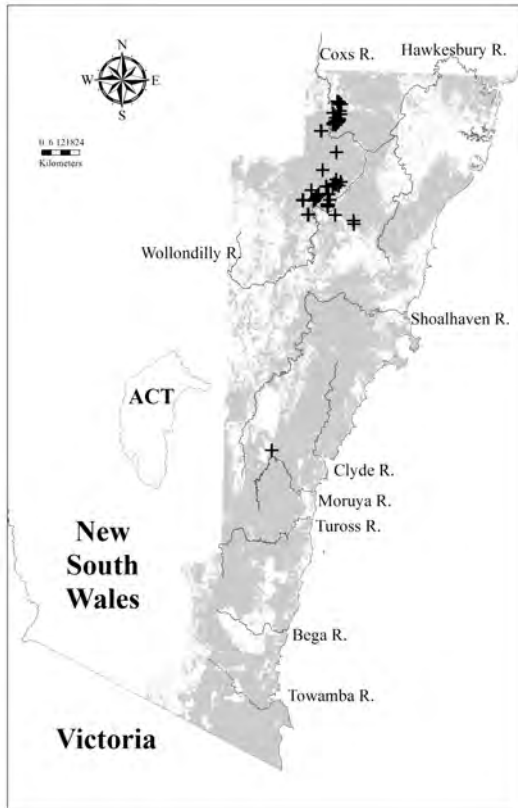
Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Entolasia stricta</i>	1(1-1)	39	1(1-2)	34
<i>Hardenbergia violacea</i>	1(1-1)	32	1(1-1)	17
<i>Microlaena stipoides</i>	2(1-3)	51	1(1-2)	36
<i>Pteridium esculentum</i>	1(1-1)	46	1(1-2)	37
<i>Viola hederacea</i>	1(1-2)	36	1(1-1)	22

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora bakeri</i>	1(1-1)	2	1(1-2)	2
<i>Angophora costata</i>	1(1-1)	2	1(1-3)	7
<i>Angophora floribunda</i>	1(1-2)	20	1(1-2)	9
<i>Eucalyptus agglomerata</i>	3(1-3)	14	2(1-3)	7
<i>Eucalyptus amplifolia</i> subsp. <i>amplifolia</i>	1(1-1)	2	2(1-3)	1
<i>Eucalyptus angophoroides</i>	2(2-2)	2	1(1-2)	1
<i>Eucalyptus beyeriana</i>	3(3-3)	2	2(1-2)	<1
<i>Eucalyptus bicostata</i>	1(1-1)	2	3(3-3)	<1
<i>Eucalyptus blaxlandii</i>	3(3-3)	2	1(1-3)	1
<i>Eucalyptus bosistoana</i>	3(1-3)	10	1(1-2)	3
<i>Eucalyptus bridgesiana</i>	1(1-1)	2	1(1-3)	1
<i>Eucalyptus camphora</i>	1(1-1)	2	2(2-2)	<1
<i>Eucalyptus crebra</i>	1(1-2)	8	2(1-3)	3
<i>Eucalyptus cypellocarpa</i>	1(1-2)	22	2(1-2)	10
<i>Eucalyptus dalrympleana</i> subsp. <i>dalrympleana</i>	3(3-3)	2	1(1-2)	3
<i>Eucalyptus elata</i>	3(1-3)	14	2(1-2)	5
<i>Eucalyptus globoidea</i>	3(1-3)	5	2(1-2)	12
<i>Eucalyptus macrorhyncha</i>	3(3-3)	2	2(1-3)	3
<i>Eucalyptus mannifera</i>	2(2-2)	2	2(1-3)	4
<i>Eucalyptus melliodora</i>	1(1-1)	7	1(1-3)	2
<i>Eucalyptus moluccana</i>	1(1-1)	3	3(1-3)	2

<i>Eucalyptus muelleriana</i>	4(3-4)	3	2(1-2)	6
<i>Eucalyptus piperita</i>	1(1-1)	2	2(1-3)	9
<i>Eucalyptus quadrangulata</i>	3(3-4)	5	3(1-3)	1
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	3(1-3)	3	2(1-3)	6
<i>Eucalyptus sparsifolia</i>	3(3-3)	3	2(1-3)	2
<i>Eucalyptus viminalis</i>	3(1-3)	10	2(1-3)	4



Locations of survey sites allocated to DSF p37. Grey shading indicates extant native vegetation cover within the study area.

RF p38: Grey Myrtle Dry Rainforest

Plate p38. Grey Myrtle Dry Rainforest (Map Unit p38) at Butchers Creek between Lacy's Tableland and Scotts Main Range. The canopy is dominated by *Backhousia myrtifolia*, with a very sparse midstorey and a groundcover of scattered ferns and sprawling tufts of *Poa affinis*.

Sample Sites: 53
 Area Extant (ha): 6550
 Estimated % remaining: 75-85%
 Area in conservation reserves (ha): 5600
 Estimated % of pre-clearing area in conservation reserves: 55-75%
 No. taxa (total / unique): 406 / 5
 No. taxa per plot (\pm sd): 41.9 (13.8)
 Class: Dry Rainforests

Grey Myrtle Dry Rainforest (RF p38) represents a revision of RF 38 described by Tindall *et al.* (2004). Examples occurring on the Razorback Range and Cumberland Plain have been removed to a new class (p39: Western Sydney Dry Rainforest) while in the south the range has extend somewhat with the addition of some recent sites from the Bungonia area. This unit is a simple, low closed forest with a sparse groundcover. It is widely distributed as small patches throughout the dry gorge country of the southern Blue Mountains (Coxs, Kowmung and Wollondilly gorges), the margins of the Cumberland Plain, and the Shoalhaven and Ettrema Gorges. It usually occupies the steep lower slopes of gorges below 600m ASL with an annual rainfall from 750 - 900mm, where pre-Permian rocks underlying those of the Sydney Basin are exposed. From Ettrema south, this unit grades into the closely related Temperate Dry Rainforest (RF p40).

The inaccessibility of its habitat has largely protected Grey Myrtle Dry Rainforest from past land clearing. Grey Myrtle Dry Rainforest is highly sensitive to fire, and remnants on private lands are likely to be degraded by grazing and weed invasion.

Floristic Summary:

Trees: *Backhousia myrtifolia*. **Shrubs:** *Notelaea longifolia*, *Breynia oblongifolia*, *Hymenanthera dentata*, *Sigesbeckia orientalis*. **Climbers:** *Geitonoplesium cymosum*, *Pandorea pandorana*, *Aphanopetalum resinosum*, *Eustrephus latifolius*, *Cayratia clematidea*. **Groundcover:** *Adiantum aethiopicum*, *Asplenium flabellifolium*, *Pellaea falcata*, *Dichondra* spp., *Microlaena stipoides*, *Oplismenus imbecillis*, *Desmodium varians*, *Plectranthus parviflorus*, *Stellaria flaccida*.

Vegetation structure:

Stratum	Frequency (n=47)	Height (m) (±StDev)	Cover (%) (±StDev)
Emergent	28	23.2 (5.3)	7.3 (5.1)
Tree canopy	100	16.8 (7.9)	39.9 (25.1)
Small tree	49	9.8 (4.1)	37.1 (21.4)
Shrub	45	2.4 (0.7)	20.1 (17.6)
Ground cover	96	0.6 (0.3)	34 (27.3)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 18 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 31 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 18 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Adiantum aethiopicum</i>	2(1-3)	85	1(1-1)	9
<i>Adiantum hispidulum</i>	1(1-1)	15	1(1-1)	2
<i>Alectryon subcinereus</i>	1(1-2)	40	1(1-1)	2
<i>Aphanopetalum resinsum</i>	1(1-2)	49	2(1-3)	4
<i>Arthropodium milleflorum</i>	1(1-2)	25	1(1-1)	5
<i>Arthropodium minus</i>	1(1-1)	13	1(1-1)	1
<i>Asplenium flabellifolium</i>	1(1-2)	75	1(1-1)	11
<i>Austrostipa ramosissima</i>	1(1-2)	17	1(1-2)	1
<i>Backhousia myrtifolia</i>	4(3-5)	87	2(1-3)	5
<i>Brachychiton populneus</i> subsp. <i>populneus</i>	1(1-1)	28	1(1-1)	3
<i>Breynia oblongifolia</i>	1(1-1)	49	1(1-1)	12
<i>Bursaria spinosa</i>	1(1-2)	40	1(1-2)	14
<i>Cardamine paucijuga</i>	1(1-1)	19	1(1-1)	<1
<i>Carex longebrachiata</i>	1(1-1)	13	1(1-2)	4
<i>Cayratia clematidea</i>	1(1-1)	36	1(1-1)	2
<i>Celastrus australis</i>	1(1-2)	32	1(1-1)	2
<i>Cissus antarctica</i>	1(1-1)	26	1(1-2)	3
<i>Claoxylon australe</i>	1(1-1)	21	1(1-2)	3
<i>Clematis aristata</i>	1(1-1)	43	1(1-1)	20
<i>Clematis glycinoides</i> var. <i>glycinoides</i>	1(1-1)	42	1(1-1)	10
<i>Clerodendrum tomentosum</i>	1(1-1)	25	1(1-1)	5
<i>Commelina cyanea</i>	1(1-1)	19	1(1-1)	4
<i>Crassula sieberiana</i>	1(1-1)	21	1(1-1)	3
<i>Cyperus gracilis</i>	1(1-2)	13	1(1-1)	2
<i>Deeringia amaranthoides</i>	1(1-1)	13	1(1-1)	<1
<i>Desmodium varians</i>	1(1-1)	53	1(1-1)	21
<i>Dichondra</i> spp.	1(1-1)	64	1(1-2)	25
<i>Doodia aspera</i>	1(1-2)	30	1(1-2)	11
<i>Doodia caudata</i>	1(1-1)	21	1(1-1)	<1
<i>Einadia hastata</i>	1(1-1)	13	1(1-1)	3
<i>Eucalyptus tereticornis</i>	1(1-2)	43	2(1-3)	7
<i>Eustrephus latifolius</i>	1(1-1)	49	1(1-1)	19
<i>Ficus coronata</i>	1(1-3)	23	1(1-2)	4

<i>Ficus rubiginosa</i>	3(1-3)	19	1(1-1)	1
<i>Galium propinquum</i>	1(1-1)	26	1(1-1)	7
<i>Geitonoplesium cymosum</i>	1(1-1)	83	1(1-1)	15
<i>Geranium homeanum</i>	1(1-1)	15	1(1-1)	3
<i>Geranium solanderi</i> var. <i>solanderi</i>	1(1-1)	26	1(1-1)	8
<i>Hydrocotyle geraniifolia</i>	1(1-1)	23	1(1-1)	2
<i>Hymenanthera dentata</i>	1(1-2)	58	1(1-1)	6
<i>Indigofera australis</i>	1(1-1)	28	1(1-1)	9
<i>Marsdenia flavescens</i>	1(1-1)	32	1(1-2)	2
<i>Marsdenia rostrata</i>	1(1-1)	28	1(1-2)	12
<i>Melaleuca styphelioides</i>	3(1-3)	15	2(1-3)	2
<i>Microlaena stipoides</i>	1(1-2)	66	1(1-2)	36
<i>Notelaea longifolia</i> forma <i>longifolia</i>	1(1-1)	55	1(1-1)	7
<i>Notodanthonia longifolia</i>	1(1-1)	21	1(1-2)	5
<i>Olearia viscidula</i>	1(1-1)	38	1(1-2)	5
<i>Oplismenus aemulus</i>	1(1-2)	21	1(1-2)	5
<i>Oplismenus imbecillis</i>	1(1-2)	55	1(1-2)	14
<i>Oxalis chnoodes</i>	1(1-1)	15	1(1-1)	1
<i>Pandorea pandorana</i>	1(1-2)	85	1(1-1)	18
<i>Parietaria debilis</i>	1(1-1)	19	1(1-1)	<1
<i>Passiflora herbertiana</i> subsp. <i>herbertiana</i>	1(1-1)	15	1(1-1)	1
<i>Pellaea falcata</i>	1(1-2)	70	1(1-1)	10
<i>Pellaea nana</i>	1(1-2)	53	1(1-1)	1
<i>Pittosporum undulatum</i>	1(1-1)	43	1(1-1)	14
<i>Plantago debilis</i>	1(1-1)	26	1(1-1)	7
<i>Plectranthus parviflorus</i>	1(1-1)	55	1(1-1)	7
<i>Poa affinis</i>	1(1-3)	17	1(1-2)	2
<i>Pratia purpurascens</i>	1(1-1)	38	1(1-1)	17
<i>Pyrrosia rupestris</i>	1(1-2)	51	1(1-2)	6
<i>Rapanea howittiana</i>	1(1-1)	21	1(1-1)	5
<i>Rumex brownii</i>	1(1-1)	21	1(1-1)	5
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	1(1-1)	45	1(1-1)	7
<i>Solanum prinophyllum</i>	1(1-1)	30	1(1-1)	6
<i>Solanum pungetium</i>	1(1-1)	19	1(1-1)	5
<i>Stellaria flaccida</i>	2(1-2)	42	1(1-1)	10
<i>Stephania japonica</i> var. <i>discolor</i>	1(1-1)	38	1(1-1)	7
<i>Tylophora barbata</i>	1(1-1)	43	1(1-1)	17
<i>Urtica incisa</i>	1(1-1)	45	1(1-1)	5

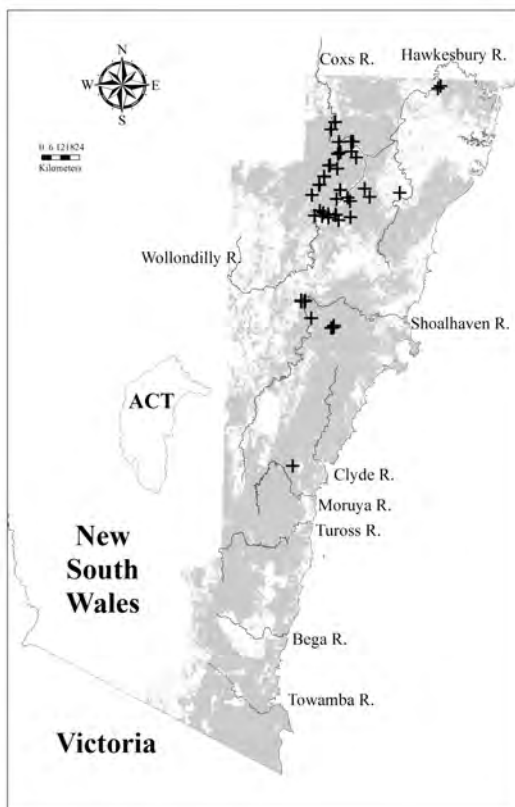
Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Glycine clandestina</i>	1(1-1)	36	1(1-1)	26

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora floribunda</i>	1(1-3)	17	1(1-2)	9
<i>Eucalyptus albens</i>	3(1-3)	4	3(3-3)	<1

<i>Eucalyptus amplifolia</i> subsp. <i>amplifolia</i>	1(1-1)	2	2(1-3)	1
<i>Eucalyptus blakelyi</i>	1(1-1)	2	2(1-3)	1
<i>Eucalyptus bosistoana</i>	1(1-1)	2	1(1-2)	3
<i>Eucalyptus crebra</i>	1(1-1)	4	2(1-3)	3
<i>Eucalyptus deanei</i>	3(1-3)	6	3(1-3)	1
<i>Eucalyptus elata</i>	1(1-1)	2	2(1-3)	5
<i>Eucalyptus eugenioides</i>	1(1-1)	2	2(1-3)	4
<i>Eucalyptus hypostomatica</i>	3(2-3)	4	1(1-3)	<1
<i>Eucalyptus macrorhyncha</i>	1(1-1)	2	2(1-3)	3
<i>Eucalyptus maidenii</i>	1(1-1)	2	2(1-2)	2
<i>Eucalyptus melliodora</i>	1(1-1)	4	1(1-3)	2
<i>Eucalyptus moluccana</i>	3(1-3)	4	3(1-3)	2
<i>Eucalyptus muelleriana</i>	1(1-1)	2	2(1-2)	6
<i>Eucalyptus piperita</i>	3(3-3)	2	2(1-3)	9
<i>Eucalyptus punctata</i>	1(1-1)	11	2(1-3)	9
<i>Eucalyptus siderophloia</i>	2(2-2)	2	3(1-3)	<1
<i>Eucalyptus smithii</i>	2(1-3)	6	1(1-2)	2
<i>Eucalyptus sparsifolia</i>	1(1-1)	2	2(1-3)	2
<i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i>	1(1-1)	2	2(1-3)	8



Locations of survey sites allocated to RF p38. Grey shading indicates extant native vegetation cover within the study area.

RF p39: Western Sydney Dry Rainforest

Plate p39. Western Sydney Dry Rainforest (Map Unit p39) in a gully beside Remembrance Drive on the Razorback Range north of Picton. This example shows a thicket of *Melaleuca styphelioides* draped with lianes (*Pandorea pandorana* and *Aphanopetalum resinosum*) above a shrub layer of *Clerodendrum tomentosum* and *Notelaea longifolia* forma *longifolia* and a close groundcover of *Adiantum aethiopicum*, *Oplismenus imbecillis* and *Pellaea falcata*.

Sample Sites: 9

Area Extant (ha): 350

Estimated % remaining: 25-50%

Area in conservation reserves (ha): <20 ha

Estimated % of pre-clearing area in conservation reserves: <3%

No. taxa (total / unique): 185 / 0

No. taxa per plot (\pm sd): 42.4 (12.8)

Class: Dry Rainforests

Related TEC: Equivalent to Western Sydney Dry Rainforest EEC (TSC).

Western Sydney Dry Rainforest (RF p39) was previously included in Grey Myrtle Dry Rainforest (RF p38) by Tindall *et al.* (2004). The new unit corresponds closely with the map unit of the same name described by Tozer (2003). This unit is a simple, low closed forest, frequently characterised by an interrupted canopy of *Melaleuca styphelioides* with scattered emergent *Eucalyptus* species and a sparse groundcover.

It has narrow distribution and occurs in small patches, mainly on the Razorback range (near Picton) and the Kurrajong area, with scattered occurrences in the central Cumberland Plain (e.g. Fairfield City Farm) and around its margins (e.g. the Cattai-Maroota area). Western Sydney Dry Rainforest generally occurs on sheltered lower slopes and gullies on steeply sloping, rugged topography. It is found almost exclusively on soils derived from Wianamatta Shale in areas receiving annual rainfall in the range of 800 - 920 mm.

In more marginal sites it grades into Cumberland Moist Shale Woodland (Map Unit p514) which is characterised by fewer subtropical rainforest species and an even *Eucalyptus* canopy. There is often an abrupt transition from Western Sydney Dry Rainforest to Cumberland Shale Hills (p28) or Shale Plains (p29) Woodland which may relate to soil moisture gradients or fire history. This transition is also associated with a decrease in annual rainfall and a transition to less rugged topography. In the southern parts of its distribution this unit may grade into Grey Myrtle Dry Rainforest (p38) with which it is closely related.

Remaining stands of Western Sydney Dry Rainforest have become highly fragmented by clearing and as little as one quarter of the original distribution may remain. It is highly sensitive to fire, and remnants on private lands are likely to be degraded by grazing and weed invasion.

Floristic Summary:

Trees: *Melaleuca styphelioides*. **Shrubs:** *Acacia implexa*, *Breynia oblongifolia*, *Clerodendrum tomentosum*, *Notelaea longifolia* forma *longifolia*, *Pittosporum revolutum*, *Rapanea variabilis*. **Climbers** *Aphanopetalum resinosum*, *Cayratia clematidea*, *Eustrephus latifolius*, *Geitonoplesium cymosum*, *Pandorea pandorana*, *Rubus parvifolius*, *Stephania japonica* var. *discolor*. **Groundcover:** *Adiantum aethiopicum*, *Asplenium flabellifolium*, *Desmodium varians*, *Dichondra* spp., *Echinopogon ovatus*, *Galium propinquum*, *Geranium homeanum*, *Microlaena stipoides*,

Oplismenus imbecillis, *Pellaea falcata*, *Plectranthus parviflorus*, *Sigesbeckia orientalis* subsp. *orientalis*, *Stellaria flaccida*, *Urtica incisa*.

Vegetation structure:

Stratum	Frequency (n=9)	Height (m) (±StDev)	Cover (%) (±StDev)
Emergent	11	25 (-)	5 (-)
Tree canopy	100	22.4 (12.6)	26.8 (17.9)
Small tree	22	13.5 (9.2)	40 (0)
Shrub	78	3.4 (2.2)	23.8 (16.2)
Ground cover	89	0.8 (0.3)	37.5 (26)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 22 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 32 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 18 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Abutilon oxycarpum</i> var. <i>oxycarpum</i>	2(1-2)	22	1(1-1)	<1
<i>Acacia implexa</i>	1(1-1)	78	1(1-1)	7
<i>Acacia parramattensis</i>	1(1-1)	33	1(1-2)	4
<i>Adiantum aethiopicum</i>	2(2-3)	89	1(1-1)	9
<i>Alectryon subcinereus</i>	1(1-3)	33	1(1-1)	2
<i>Allocasuarina torulosa</i>	1(1-1)	44	1(1-3)	5
<i>Aphanopetalum resinosum</i>	2(1-3)	78	2(1-3)	4
<i>Asplenium flabellifolium</i>	1(1-3)	56	1(1-1)	12
<i>Breynia oblongifolia</i>	1(1-1)	78	1(1-1)	12
<i>Carex longibrachiata</i>	1(1-1)	33	1(1-2)	4
<i>Cayratia clematidea</i>	2(1-2)	89	1(1-1)	2
<i>Celastrus australis</i>	2(1-2)	22	1(1-1)	2
<i>Cheilanthes distans</i>	1(1-1)	22	1(1-1)	2
<i>Cissus antarctica</i>	2(1-4)	44	1(1-2)	3
<i>Clerodendrum tomentosum</i>	1(1-2)	89	1(1-1)	5
<i>Commelina cyanea</i>	1(1-1)	33	1(1-1)	4
<i>Corymbia maculata</i>	2(1-4)	33	2(1-3)	3
<i>Cyperus gracilis</i>	1(1-1)	33	1(1-1)	2
<i>Cyperus imbecillis</i>	1(1-2)	33	1(1-1)	<1
<i>Deeringia amaranthoides</i>	2(1-2)	22	1(1-1)	<1
<i>Desmodium varians</i>	1(1-1)	78	1(1-1)	21
<i>Dichondra</i> spp.	2(1-2)	78	1(1-2)	25
<i>Echinopogon ovatus</i>	1(1-1)	67	1(1-1)	14
<i>Einadia trigonos</i>	1(1-1)	22	1(1-1)	1
<i>Eucalyptus tereticornis</i>	3(1-3)	44	2(1-3)	7
<i>Eustrephus latifolius</i>	1(1-1)	78	1(1-1)	19
<i>Galium propinquum</i>	1(1-1)	67	1(1-1)	7
<i>Geitonoplesium cymosum</i>	1(1-1)	89	1(1-1)	16
<i>Geranium homeanum</i>	2(1-2)	67	1(1-1)	3
<i>Juncus usitatus</i>	1(1-1)	22	1(1-1)	2

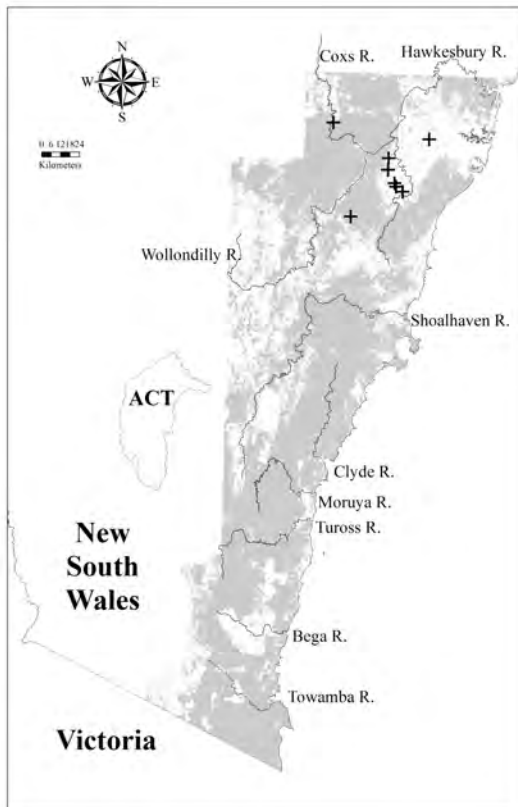
<i>Melaleuca styphelioides</i>	3(1-3)	67	2(1-3)	2
<i>Melicope micrococca</i>	1(1-1)	22	1(1-2)	1
<i>Microlaena stipoides</i>	1(1-2)	89	1(1-2)	36
<i>Notelaea longifolia forma longifolia</i>	1(1-2)	78	1(1-1)	8
<i>Omalanthus populifolius</i>	1(1-1)	22	1(1-1)	1
<i>Oplismenus aemulus</i>	2(1-2)	44	1(1-2)	5
<i>Oplismenus imbecillis</i>	2(1-2)	78	1(1-2)	14
<i>Pandorea pandorana</i>	2(1-2)	67	1(1-1)	18
<i>Pellaea falcata</i>	2(1-3)	89	1(1-1)	10
<i>Pittosporum revolutum</i>	1(1-1)	67	1(1-1)	8
<i>Plectranthus parviflorus</i>	1(1-2)	78	1(1-1)	8
<i>Poa affinis</i>	1(1-1)	22	1(1-2)	2
<i>Pseuderanthemum variabile</i>	1(1-2)	44	1(1-2)	9
<i>Pteris tremula</i>	1(1-1)	22	1(1-1)	1
<i>Rapanea variabilis</i>	1(1-2)	56	1(1-1)	4
<i>Rubus parvifolius</i>	1(1-1)	67	1(1-1)	9
<i>Sarcopetalum harveyanum</i>	1(1-2)	44	1(1-1)	4
<i>Sigesbeckia orientalis subsp. orientalis</i>	1(1-2)	89	1(1-1)	7
<i>Solanum stelligerum</i>	1(1-1)	33	1(1-1)	1
<i>Stellaria flaccida</i>	2(1-2)	56	1(1-1)	11
<i>Stephania japonica var. discolor</i>	1(1-2)	67	1(1-1)	7
<i>Urtica incisa</i>	1(1-2)	56	1(1-1)	5

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Bursaria spinosa</i>	1(1-2)	44	1(1-2)	14
<i>Clematis aristata</i>	1(1-2)	44	1(1-1)	20
<i>Doodia aspera</i>	2(1-4)	33	1(1-2)	12
<i>Glycine clandestina</i>	1(1-1)	33	1(1-1)	26
<i>Glycine tabacina</i>	1(1-2)	33	1(1-1)	7
<i>Hymenanthera dentata</i>	1(1-1)	33	1(1-1)	6
<i>Marsdenia rostrata</i>	2(1-2)	33	1(1-2)	12
<i>Oxalis perennans</i>	1(1-1)	33	1(1-1)	13
<i>Plantago debilis</i>	1(1-2)	33	1(1-1)	7
<i>Pratia purpurascens</i>	1(1-2)	33	1(1-1)	17
<i>Senecio linearifolius</i>	1(1-1)	33	1(1-1)	8
<i>Tylophora barbata</i>	2(1-2)	33	1(1-1)	17
<i>Wahlenbergia gracilis</i>	1(1-1)	33	1(1-1)	11

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora floribunda</i>	1(1-1)	11	1(1-2)	9
<i>Eucalyptus hypostomatica</i>	3(3-3)	11	2(1-3)	<1
<i>Eucalyptus pilularis</i>	3(3-3)	11	2(1-3)	5
<i>Eucalyptus punctata</i>	1(1-1)	11	2(1-3)	9
<i>Syncarpia glomulifera subsp. glomulifera</i>	1(1-1)	11	2(1-3)	8



Locations of survey sites allocated to RF p39. Grey shading indicates extant native vegetation cover within the study area.

RF p40: Temperate Dry Rainforest



Plate p40. Temperate Dry Rainforest (Map Unit p40) beside the Kings Highway at Currowan. The canopy is dominated by *Backhousia myrtifolia*, with a very sparse midstorey including *Pittosporum undulatum* and a sparse groundcover of scattered ferns including *Asplenium australasicum* and *Doodia aspera*.

Sample Sites: 124
 Area Extant (ha): 7500
 Estimated % remaining: >90%
 Area in conservation reserves (ha): 3500
 Estimated % of pre-clearing area in conservation reserves: 40-50%
 No. taxa (total / unique): 372 / 0
 No. taxa per plot (\pm sd): 37.9 (13.6)

Class: Dry Rainforests
Related TEC: n/a

Temperate Dry Rainforest (RF p40) represents a revision and extension of RF 40 identified by Tindall *et al.* (2004), based on additional samples over a larger study area. The revised RF p40 includes a number of additional sites classified by Beukers (undated) as Dry Gully Rainforest.

This unit is a simple closed forest characterised by a dense tree canopy, lianas, a mesic shrub stratum and a sparse patchy groundcover. This dry rainforest has a widespread distribution as small occurrences in gullies and on lower slopes of gorges and foothills below 400m ASL, predominantly south of Nowra in the Ettrema Gorge and the Clyde, Deua and Tuross hinterlands. Within this distribution Temperate Dry Rainforest typically occupies dry shale gullies with an annual rainfall from 850 – 1250mm. North of the Shoalhaven, Temperate Dry Rainforest is largely replaced by Grey Myrtle Dry Rainforest (RF p38) in the Blue Mountains and Cumberland Plain margins, while south of Cobargo it grades into and is replaced by Southeast Dry Rainforest (RF e1).

Temperate Dry Rainforest is highly sensitive to fire, and remnants on private lands are likely to be subject to grazing and weed invasion.

Floristic Summary:

Trees: *Backhousia myrtifolia*, *Acmena smithii*, *Pittosporum undulatum*. **Shrubs:** *Pittosporum revolutum*, *Breynia oblongifolia*, *Ficus coronata*, *Notelaea venosa*, *Rapanea howittiana*. **Climbers:** *Morinda jasminoides*, *Cissus hypoglauca*, *Eustrephus latifolius*, *Pandorea pandorana*, *Smilax australis*, *Marsdenia rostrata*, *Geitonoplesium cymosum*, *Parsonia straminea*. **Groundcover:** *Doodia aspera*, *Pseuderanthemum variabile*, *Oplismenus imbecillis*.

Vegetation structure:

Stratum	Frequency (n=45)	Height (m) (±StDev)	Cover (%) (±StDev)
Emergent	11	29 (8.2)	6.2 (7.9)
Tree canopy	93	24.7 (10.3)	37.2 (24.9)
Small tree	82	12.2 (5.5)	52 (29.7)
Shrub	33	2.8 (0.7)	25.3 (18.9)
Ground cover	89	0.9 (0.4)	31.9 (26.6)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 24 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 27 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 24 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia silvestris</i>	1(1-2)	10	1(1-2)	<1
<i>Acacia trachyphloia</i>	1(1-1)	6	1(1-1)	<1
<i>Acmena smithii</i>	2(1-3)	70	2(1-3)	8
<i>Acronychia oblongifolia</i>	1(1-2)	9	1(1-3)	1
<i>Adiantum aethiopicum</i>	1(1-1)	23	1(1-2)	9
<i>Adiantum formosum</i>	1(1-2)	15	2(1-3)	3
<i>Adiantum hispidulum</i>	1(1-1)	31	1(1-1)	2
<i>Alectryon subdentatus forma subdentatus</i>	1(1-2)	18	1(1-2)	<1
<i>Alphitonia excelsa</i>	2(1-3)	6	1(1-1)	1
<i>Aphanopetalum resinatum</i>	2(1-3)	48	1(1-3)	3
<i>Arthropteris tenella</i>	2(1-3)	9	1(1-2)	2
<i>Asplenium australasicum forma australasicum</i>	1(1-1)	18	1(1-2)	2
<i>Asplenium flabellifolium</i>	2(1-3)	55	1(1-1)	11
<i>Austrocynoglossum latifolium</i>	1(1-2)	5	1(1-1)	1
<i>Australina pusilla</i>	1(1-2)	14	1(1-2)	1
<i>Backhousia myrtifolia</i>	3(3-3)	81	2(1-3)	4
<i>Beyeria lasiocarpa</i>	1(1-2)	24	1(1-2)	1
<i>Blechnum cartilagineum</i>	1(1-3)	45	1(1-2)	11

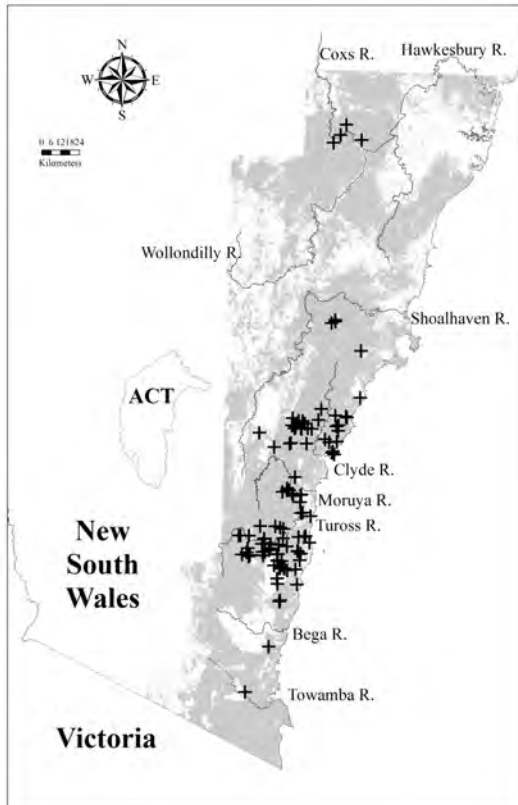
<i>Blechnum nudum</i>	1(1-2)	10	1(1-2)	3
<i>Blechnum patersonii</i> subsp. <i>patersonii</i>	1(1-2)	9	1(1-2)	2
<i>Breynia oblongifolia</i>	1(1-2)	60	1(1-1)	11
<i>Bulbophyllum exiguum</i>	2(1-3)	4	1(1-1)	<1
<i>Callitriche muelleri</i>	1(1-1)	4	1(1-2)	<1
<i>Callicoma serratifolia</i>	2(1-3)	13	1(1-2)	3
<i>Calochlaena dubia</i>	1(1-2)	25	1(1-3)	9
<i>Cassinia trinerva</i>	1(1-1)	10	1(1-1)	3
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	1(1-2)	6	3(1-3)	1
<i>Celastrus australis</i>	1(1-2)	12	1(1-1)	2
<i>Ceratopetalum apetalum</i>	1(1-3)	10	3(1-3)	3
<i>Cissus antarctica</i>	1(1-1)	13	1(1-2)	3
<i>Cissus hypoglauca</i>	2(1-2)	65	1(1-2)	9
<i>Citronella moorei</i>	1(1-1)	5	1(1-2)	1
<i>Claoxylon australe</i>	2(1-3)	26	1(1-2)	3
<i>Clematis aristata</i>	1(1-2)	50	1(1-1)	20
<i>Commersonia fraseri</i>	1(1-2)	7	1(1-1)	1
<i>Coprosma quadrifida</i>	1(1-2)	19	1(1-1)	9
<i>Cyathea australis</i>	1(1-1)	41	1(1-2)	8
<i>Dendrobium speciosum</i>	1(1-1)	6	1(1-1)	1
<i>Dicksonia antarctica</i>	1(1-1)	15	2(1-3)	4
<i>Diospyros australis</i>	2(1-3)	8	1(1-2)	3
<i>Diplazium australe</i>	1(1-1)	12	1(1-2)	1
<i>Doodia aspera</i>	2(1-3)	94	1(1-2)	10
<i>Elaeocarpus reticulatus</i>	1(1-1)	35	1(1-1)	11
<i>Elatostema reticulatum</i>	1(1-1)	3	1(1-3)	1
<i>Eucalyptus botryoides</i>	2(1-2)	8	2(1-3)	3
<i>Eupomatia laurina</i>	2(1-2)	24	1(1-2)	4
<i>Eustrephus latifolius</i>	1(1-2)	69	1(1-1)	18
<i>Ficus coronata</i>	1(1-2)	41	1(1-2)	3
<i>Ficus rubiginosa</i>	1(1-2)	6	1(1-2)	1
<i>Gahnia aspera</i>	1(1-1)	24	1(1-1)	4
<i>Gahnia clarkei</i>	1(1-2)	15	1(1-2)	2
<i>Gahnia melanocarpa</i>	1(1-1)	17	1(1-1)	5
<i>Galium gaudichaudii</i>	1(1-2)	18	1(1-1)	3
<i>Geitonoplesium cymosum</i>	1(1-1)	66	1(1-1)	15
<i>Hedycarya angustifolia</i>	2(1-3)	19	1(1-2)	4
<i>Hibbertia dentata</i>	1(1-1)	15	1(1-1)	6
<i>Histiopteris incisa</i>	1(1-1)	6	1(1-1)	1
<i>Hydrocotyle geraniifolia</i>	1(1-1)	7	1(1-1)	2
<i>Hymenophyllum cupressiforme</i>	1(1-2)	15	1(1-1)	1
<i>Hymenanthera dentata</i>	1(1-1)	27	1(1-1)	6
<i>Lastreopsis acuminata</i>	1(1-2)	7	1(1-2)	2
<i>Lastreopsis decomposita</i>	2(1-3)	44	2(1-3)	2
<i>Lastreopsis microsora</i> subsp. <i>microsora</i>	2(1-3)	48	2(1-3)	3
<i>Lepidosperma urophorum</i>	2(1-2)	18	1(1-2)	7

<i>Libertia paniculata</i>	1(1-1)	6	1(1-1)	2
<i>Liparis reflexa</i>	1(1-1)	3	1(1-1)	<1
<i>Livistona australis</i>	1(1-1)	17	1(1-1)	6
<i>Marsdenia flavescens</i>	1(1-2)	23	1(1-1)	2
<i>Marsdenia rostrata</i>	2(1-2)	77	1(1-1)	11
<i>Microsorium scandens</i>	2(1-3)	13	2(1-3)	4
<i>Morinda jasminoides</i>	2(1-3)	90	1(1-2)	8
<i>Notelaea venosa</i>	2(1-2)	80	1(1-1)	11
<i>Omalanthus populifolius</i>	1(1-2)	6	1(1-1)	1
<i>Oplismenus imbecillis</i>	2(1-2)	79	1(1-2)	13
<i>Pandorea pandorana</i>	2(1-2)	75	1(1-1)	18
<i>Parsonsia brownii</i>	1(1-1)	6	1(1-2)	2
<i>Parsonsia straminea</i>	1(1-2)	48	1(1-1)	6
<i>Pellaea falcata</i>	1(1-2)	56	1(1-1)	10
<i>Pellaea nana</i>	1(1-2)	10	1(1-1)	2
<i>Pittosporum multiflorum</i>	2(1-3)	25	1(1-2)	3
<i>Pittosporum revolutum</i>	1(1-2)	61	1(1-1)	7
<i>Pittosporum undulatum</i>	1(1-2)	74	1(1-1)	13
<i>Plectranthus parviflorus</i>	1(1-2)	33	1(1-1)	7
<i>Plectorrhiza tridentata</i>	2(1-3)	34	1(1-1)	1
<i>Polystichum australiense</i>	1(1-1)	7	1(1-2)	1
<i>Polyscias murrayi</i>	1(1-1)	19	1(1-1)	1
<i>Polystichum proliferum</i>	1(1-2)	12	1(1-2)	4
<i>Pomaderris cinerea</i>	2(1-2)	6	1(1-2)	1
<i>Prostanthera incisa</i>	1(1-1)	18	1(1-1)	1
<i>Prostanthera lasianthos</i>	1(1-1)	16	1(1-1)	2
<i>Pseuderanthemum variabile</i>	2(1-2)	52	1(1-2)	8
<i>Psychotria loniceroides</i>	1(1-2)	45	1(1-1)	3
<i>Pteris tremula</i>	1(1-1)	6	1(1-1)	1
<i>Pteris umbrosa</i>	1(1-1)	8	2(1-3)	2
<i>Pyrrosia rupestris</i>	1(1-2)	52	1(1-2)	6
<i>Rapanea howittiana</i>	1(1-1)	63	1(1-1)	4
<i>Ripogonum album</i>	1(1-3)	9	1(1-2)	1
<i>Rubus moluccanus</i> var. <i>trilobus</i>	1(1-1)	15	1(1-1)	2
<i>Rubus nebulosus</i>	1(1-1)	9	1(1-1)	1
<i>Rubus rosifolius</i>	1(1-1)	27	1(1-1)	2
<i>Sambucus australasica</i>	1(1-1)	12	1(1-1)	1
<i>Sarcochilus falcatus</i>	1(1-2)	13	1(1-2)	<1
<i>Sarcopetalum harveyanum</i>	1(1-1)	28	1(1-1)	4
<i>Sarcochilus hillii</i>	1(1-1)	6	1(1-1)	<1
<i>Sarcochilus olivaceus</i>	1(1-3)	5	1(1-1)	<1
<i>Schizomeria ovata</i>	1(1-2)	10	1(1-2)	1
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	1(1-2)	26	1(1-1)	7
<i>Smilax australis</i>	1(1-2)	73	1(1-1)	15
<i>Solanum aviculare</i>	1(1-1)	10	1(1-1)	1
<i>Solanum pungetium</i>	1(1-1)	31	1(1-1)	5

<i>Solanum stelligerum</i>	1(1-1)	3	1(1-1)	1
<i>Stellaria flaccida</i>	1(1-2)	47	1(1-1)	10
<i>Stenocarpus salignus</i>	2(1-2)	8	1(1-1)	2
<i>Stephania japonica</i> var. <i>discolor</i>	1(1-1)	29	1(1-1)	6
<i>Synoum glandulosum</i> subsp. <i>glandulosum</i>	1(1-2)	39	1(1-2)	6
<i>Tasmania insipida</i>	1(1-3)	8	1(1-2)	2
<i>Tristaniopsis laurina</i>	1(1-2)	10	1(1-3)	1
<i>Trophis scandens</i> subsp. <i>scandens</i>	1(1-1)	5	1(1-2)	1
<i>Tylophora barbata</i>	1(1-1)	33	1(1-1)	17
<i>Urtica incisa</i>	1(1-1)	13	1(1-1)	5
<i>Zieria smithii</i>	1(1-1)	8	1(1-1)	2

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora floribunda</i>	2(1-2)	5	1(1-2)	9
<i>Angophora subvelutina</i>	1(1-1)	1	3(1-3)	<1
<i>Corymbia maculata</i>	1(1-2)	6	2(1-3)	3
<i>Eucalyptus baueriana</i>	2(1-2)	2	2(1-2)	1
<i>Eucalyptus bosistoana</i>	3(3-3)	1	1(1-2)	3
<i>Eucalyptus cypellocarpa</i>	1(1-2)	4	2(1-2)	10
<i>Eucalyptus deanei</i>	1(1-1)	1	3(1-3)	1
<i>Eucalyptus elata</i>	2(2-3)	4	2(1-3)	5
<i>Eucalyptus eugenioides</i>	2(2-2)	1	2(1-3)	4
<i>Eucalyptus fastigata</i>	1(1-1)	2	2(1-3)	6
<i>Eucalyptus fibrosa</i>	1(1-1)	1	2(1-3)	3
<i>Eucalyptus longifolia</i>	1(1-2)	4	1(1-2)	2
<i>Eucalyptus maidenii</i>	2(1-2)	2	2(1-2)	2
<i>Eucalyptus muelleriana</i>	2(1-2)	5	2(1-2)	6
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	1(1-1)	2	1(1-2)	3
<i>Eucalyptus pilularis</i>	1(1-1)	2	2(1-3)	5
<i>Eucalyptus robusta</i>	2(2-2)	1	3(1-3)	<1
<i>Eucalyptus saligna</i> X <i>botryoides</i>	3(1-3)	2	2(1-3)	2
<i>Eucalyptus smithii</i>	1(1-1)	2	1(1-2)	2
<i>Eucalyptus tereticornis</i>	1(1-1)	1	2(1-3)	7
<i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i>	2(1-2)	2	2(1-3)	8



Locations of survey sites allocated to RF p40. Grey shading indicates extant native vegetation cover within the study area.

FoW p44: Sydney Swamp Forest



Plate p44. Sydney Swamp Forest (Map Unit p44) along Cripple Creek at Mount Riverview. A canopy of *Melaleuca linearifolia* grows above a shrub layer including *Leptospermum polygalifolium* and a dense tall ground layer including *Pteridium esculentum*, *Gahnia sieberiana* and *Entolasia marginata*.

Sample Sites: 16
 Area Extant (ha): 160
 Estimated % remaining: 70-85%
 Area in conservation reserves (ha): 20
 Estimated % of pre-clearing area in conservation reserves: <10%
 No. taxa (total / unique): 185 / 1
 No. taxa per plot (\pm sd): 36.6 (23.9)

Class: Coastal Swamp Forests

Related TEC: Swamp Sclerophyll Forest on Coastal Floodplains EEC (TSC); includes Maroota Sands Swamp Forest EEC (TSC).

Sydney Swamp Forest (FoW p44) is equivalent to FoW 44 identified by Tindall *et al.* (2004), and is a dense scrub with emergent trees and a sparse groundcover of sedges and forbs. This unit has a distribution restricted to narrow strips of sandy clay alluvium along drainage lines below 50m around the margins of Cumberland plain. Examples are found in Little Cattai Creek and Blue Gum Creek near Maroota, in the Berowra valley and in the lower Georges River system (e.g. along Williams Creek). Insufficient data were available to reliably model FoW p44 in that area. Sydney Swamp Forest shares a number of species with Coastal Sand Swamp Forest (FoW p45), which is found on soils with sandier texture. Sydney Swamp Forest is likely to occur in low-lying tributaries of the Hawkesbury River estuary immediately to the north of the study area boundary, possibly extending to the Gosford-Wyong district.

Sydney Swamp Forest's naturally restricted range has been reduced by clearing, and remaining stands are threatened by fragmentation and weed invasion.

Floristic Summary:

Trees: *Eucalyptus robusta*. **Shrubs:** *Melaleuca linariifolia*, *Leptospermum polygalifolium*. **Climbers:** *Glycine tabacina*, *Morinda jasminoides*. **Groundcover:** *Pteridium esculentum*, *Pratia purpurascens*, *Gahnia sieberiana*, *Hypolepis muelleri*, *Entolasia marginata*, *Adiantum aethiopicum*, *Calochlaena dubia*, *Centella asiatica*, *Viola hederacea*.

Vegetation structure:

Stratum	Frequency (n=2)	Height (m) (±StDev)	Cover (%) (±StDev)
Tree canopy	100	25 (14.1)	30 (7.1)
Small tree	100	18.5 (9.2)	60 (42.4)
Shrub	-	- (-)	- (-)
Ground cover	100	1.3 (0.4)	40 (42.4)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 9 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 17 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 9 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia floribunda</i>	1(1-2)	38	1(1-2)	2
<i>Acacia parramattensis</i>	1(1-1)	25	1(1-2)	4
<i>Adiantum aethiopicum</i>	1(1-1)	63	1(1-2)	9
<i>Blechnum nudum</i>	1(1-2)	25	1(1-2)	3
<i>Breynia oblongifolia</i>	1(1-1)	44	1(1-1)	12
<i>Callicoma serratifolia</i>	1(1-1)	44	1(1-2)	3
<i>Calochlaena dubia</i>	1(1-3)	56	1(1-3)	9
<i>Centella asiatica</i>	1(1-1)	69	1(1-1)	4
<i>Ceratopetalum apetalum</i>	1(1-2)	44	3(1-3)	3
<i>Cissus hypoglauca</i>	1(1-1)	56	1(1-2)	10
<i>Entolasia marginata</i>	1(1-2)	63	1(1-1)	11
<i>Eucalyptus deanei</i>	2(2-3)	31	3(1-3)	1
<i>Eucalyptus robusta</i>	3(1-3)	50	3(1-3)	<1
<i>Gahnia clarkei</i>	2(2-3)	31	1(1-2)	2
<i>Gahnia sieberiana</i>	1(1-1)	63	1(1-1)	4
<i>Glycine tabacina</i>	1(1-1)	50	1(1-1)	7
<i>Hypolepis muelleri</i>	3(1-4)	81	1(1-1)	1
<i>Leptospermum polygalifolium</i>	1(1-1)	63	1(1-2)	8
<i>Melaleuca linariifolia</i>	3(1-3)	75	1(1-1)	1
<i>Morinda jasminoides</i>	1(1-1)	63	1(1-2)	9

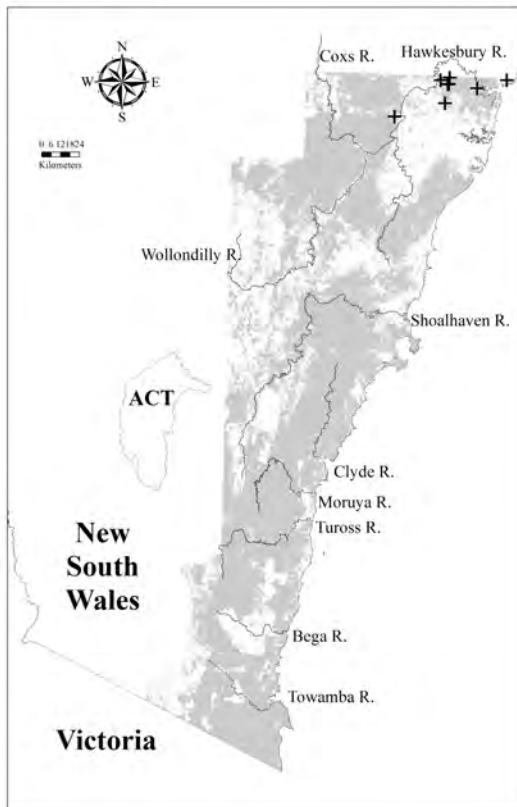
<i>Oplismenus aemulus</i>	1(1-2)	44	1(1-2)	5
<i>Parsonsia straminea</i>	1(1-1)	31	1(1-1)	7
<i>Paspalum distichum</i>	1(1-2)	25	1(1-1)	<1
<i>Pratia purpurascens</i>	1(1-1)	75	1(1-1)	17
<i>Pteridium esculentum</i>	1(1-2)	81	1(1-2)	37
<i>Rubus moluccanus</i> var. <i>trilobus</i>	1(1-1)	44	1(1-1)	2
<i>Stephania japonica</i> var. <i>discolor</i>	1(1-1)	56	1(1-1)	7
<i>Trema tomentosa</i> var. <i>viridis</i>	1(1-1)	25	1(1-1)	1

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Clematis aristata</i>	1(1-2)	31	1(1-1)	20
<i>Dianella caerulea</i>	1(1-1)	38	1(1-1)	28
<i>Glycine clandestina</i>	1(1-1)	31	1(1-1)	26
<i>Imperata cylindrica</i> var. <i>major</i>	1(1-1)	31	1(1-2)	10
<i>Lomandra longifolia</i>	1(1-1)	38	1(1-1)	44
<i>Microlaena stipoides</i>	2(1-2)	44	1(1-2)	36
<i>Oplismenus imbecillis</i>	1(1-1)	38	1(1-2)	14
<i>Pseuderanthemum variabile</i>	1(1-1)	31	1(1-2)	9
<i>Tylophora barbata</i>	1(1-1)	38	1(1-1)	17
<i>Viola hederacea</i>	1(1-1)	50	1(1-1)	22

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora bakeri</i>	1(1-1)	6	1(1-2)	2
<i>Angophora costata</i>	1(1-1)	6	1(1-3)	7
<i>Angophora floribunda</i>	2(1-3)	19	1(1-2)	9
<i>Eucalyptus agglomerata</i>	1(1-1)	6	2(1-3)	7
<i>Eucalyptus notabilis</i>	1(1-1)	6	1(1-2)	1
<i>Eucalyptus piperita</i>	3(3-3)	6	2(1-3)	9
<i>Eucalyptus punctata</i>	1(1-1)	6	2(1-3)	9
<i>Eucalyptus saligna</i> X <i>botryoides</i>	3(3-3)	6	2(1-3)	2
<i>Eucalyptus sclerophylla</i>	1(1-1)	6	2(1-3)	4
<i>Eucalyptus tereticornis</i>	1(1-1)	6	2(1-3)	7
<i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i>	1(1-1)	13	2(1-3)	8



Locations of survey sites allocated to FoW p44. Grey shading indicates extant native vegetation cover within the study area.

FoW p45: Coastal Sand Swamp Forest



Plate p45. Coastal Sand Swamp Forest (Map Unit p45) beside Windang Road at Primbee, with a canopy of *Eucalyptus robusta* and scattered shrub patches including *Viminaria juncea* and *Acacia longifolia*. The dense groundcover is dominated by *Schoenus brevifolius*, *Pteridium esculentum*, *Baumea juncea* and *Imperata cylindrica* var. *major*.

Sample Sites: 18
 Area Extant (ha): 1400
 Estimated % remaining: 50-70%
 Area in conservation reserves (ha): 370
 Estimated % of pre-clearing area in conservation reserves: 5-25%
 No. taxa (total / unique): 169 / 0
 No. taxa per plot (\pm sd): 24.6 (8.2)

Class: Coastal Swamp Forests

Related TEC: Swamp Sclerophyll Forest on Coastal Floodplains EEC

Coastal Sand Swamp Forest (FoW p45) is equivalent to FoW 45 identified by Tindall *et al.* (2004). This unit is a low eucalypt forest with an open shrub layer and a dense groundcover of sedges and forbs, and occurs as scattered patches along the coastline at elevations below 15m ASL in drainage lines and depressions on sandy alluvium and coastal sand flats. Examples occur at Cockle Bay, Jibbon Lagoon, Korrongulla Swamp, Coomonderry Swamp and Lake Tabourie. On better drained sandy soils Coastal Sand Swamp Forest is replaced by Coastal Sand Forest (DSF p64). In poorly drained sites with a high water table Coastal Sand Swamp Forest grades into Coastal Freshwater Lagoon (FrW p313) or Floodplain Swamp Forest (FoW p105). Coastal Sand Swamp Forest has a restricted range within the study area from Sydney to Kiola and has been drained, cleared and fragmented by coastal development.

Floristic Summary:

Trees: *Eucalyptus robusta*. **Shrubs:** *Leptospermum polygalifolium*, *Acacia longifolia*, *Melaleuca linariifolia*, *M. ericifolia*, *Leptospermum continentale*. **Groundcover:** *Gahnia clarkei*, *Selaginella uliginosa*, *Imperata cylindrica*, *Baumea juncea*, *B. articulata*.

Vegetation structure:

Stratum	Frequency (n=10)	Height (m) (±StDev)	Cover (%) (±StDev)
Emergent	10	15 (-)	5 (-)
Tree canopy	100	15 (5.4)	33.5 (21)
Small tree	70	6.4 (3.9)	38.6 (30.2)
Shrub	50	2.6 (0.5)	25.6 (33.2)
Ground cover	100	1.4 (0.7)	84 (16.6)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 5 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 18 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 5 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia longifolia</i>	1(1-1)	67	1(1-2)	9
<i>Baumea articulata</i>	1(1-3)	33	1(1-2)	<1
<i>Baumea juncea</i>	2(1-4)	39	2(1-3)	1
<i>Casuarina glauca</i>	1(1-3)	28	2(1-3)	1
<i>Centella asiatica</i>	1(1-1)	28	1(1-1)	4
<i>Entolasia marginata</i>	2(1-3)	39	1(1-1)	11
<i>Entolasia stricta</i>	1(1-1)	67	1(1-2)	34
<i>Eucalyptus botryoides</i>	2(1-2)	22	2(1-3)	3
<i>Eucalyptus robusta</i>	3(2-4)	56	2(1-3)	<1
<i>Gahnia clarkei</i>	2(1-3)	67	1(1-2)	2
<i>Gleichenia dicarpa</i>	2(1-4)	22	1(1-2)	2
<i>Gonocarpus micranthus</i>	1(1-6)	28	1(1-1)	1
<i>Imperata cylindrica</i> var. <i>major</i>	1(1-2)	50	1(1-2)	10
<i>Leptospermum continentale</i>	1(1-3)	39	1(1-1)	3
<i>Leptospermum polygalifolium</i>	2(1-2)	67	1(1-2)	8
<i>Leptocarpus tenax</i>	3(1-5)	22	1(1-2)	2
<i>Lobelia anceps</i>	1(1-1)	28	1(1-1)	1
<i>Melaleuca ericifolia</i>	2(1-2)	50	3(1-4)	1
<i>Melaleuca linariifolia</i>	1(1-2)	44	1(1-2)	1
<i>Melaleuca thymifolia</i>	1(1-2)	22	1(1-1)	1
<i>Parsonsia straminea</i>	1(1-3)	28	1(1-1)	7
<i>Schoenus brevifolius</i>	2(1-5)	28	1(1-3)	1

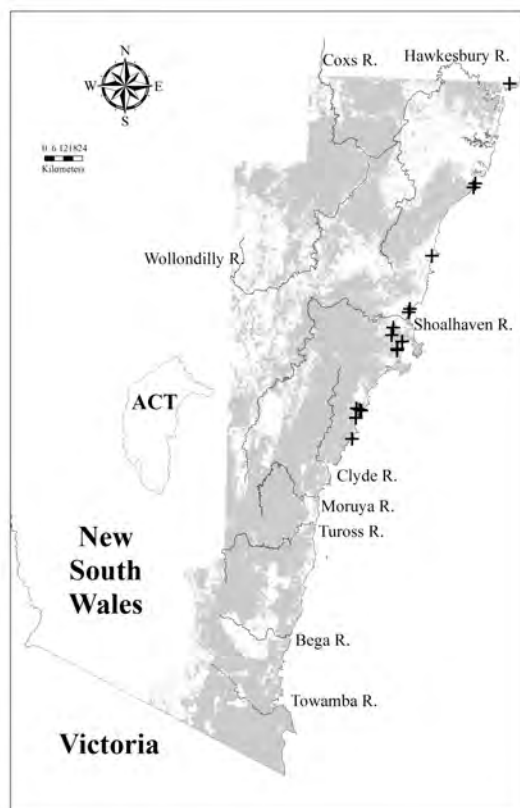
<i>Selaginella uliginosa</i>	1(1-1)	50	1(1-1)	2
<i>Villarsia exaltata</i>	2(1-2)	22	1(1-1)	<1

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Allocasuarina littoralis</i>	1(1-1)	33	1(1-2)	17
<i>Dianella caerulea</i>	1(1-2)	50	1(1-1)	28
<i>Lomandra longifolia</i>	1(1-3)	72	1(1-1)	44
<i>Pteridium esculentum</i>	1(1-2)	67	1(1-2)	37

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora floribunda</i>	1(1-1)	6	1(1-2)	9
<i>Corymbia gummifera</i>	1(1-1)	17	2(1-2)	16
<i>Corymbia maculata</i>	1(1-1)	6	2(1-3)	3
<i>Eucalyptus globoidea</i>	1(1-1)	6	2(1-2)	12
<i>Eucalyptus longifolia</i>	1(1-1)	6	1(1-2)	2
<i>Eucalyptus pilularis</i>	1(1-1)	6	2(1-3)	5
<i>Eucalyptus piperita</i>	1(1-1)	6	2(1-3)	9
<i>Eucalyptus sclerophylla</i>	1(1-1)	6	2(1-3)	4
<i>Eucalyptus sieberi</i>	1(1-1)	6	2(1-3)	16
<i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i>	1(1-1)	6	2(1-3)	8



Locations of survey sites allocated to FoW p45. Grey shading indicates extant native vegetation cover within the study area.

HL p46: Basalt Hilltop Scrub

Plate p46. Basalt Hilltop Scrub (Map Unit p46) beside Wallaby Hill Road south of Jamberoo, with an interrupted low canopy of *Melaleuca armillaris* and *Dodonaea viscosa*, scattered shrubs of *Indigofera australis* and *Leucopogon juniperinus* and groundcover dominated by *Notodanthonia longifolia*, *Eragrostis leptostachya* and *Poa labillardierei* var. *labillardierei*.

Sample Sites: 3

Area Extant (ha): 390

Estimated % remaining: <30%

Area in conservation reserves (ha): 0

Estimated % of pre-clearing area in conservation reserves: <1%

No. taxa (total / unique): 46 / 0

No. taxa per plot (\pm sd): 21.3 (12.2)

Class: Southern Montane Heaths

Related TEC: included within *Melaleuca armillaris* Tall Shrubland EEC (TSC)

Basalt Hilltop Scrub (HL p46) is equivalent to HL 46 identified by Tindall *et al.* (2004), and is characterised by a dense but patchy tall shrub canopy with low shrubs and dense grassy groundcover. This unit is restricted to 100-200m ASL on exposed ridgetops on shallow rocky soil derived from volcanic geologies (Bombo Latite and Milton Monzonite). All occurrences are in the coastal hinterland near Jamberoo and west of Milton, where mean annual rainfall varies between 1200 and 1500mm.

Most of Basalt Hilltop Scrub's original range has been cleared, and the remaining patches are degraded by grazing and weed invasion. Some patches are threatened by expansion of quarrying operations.

Floristic Summary:

Shrubs: *Leucopogon juniperinus*, *Acacia parvipinnula*, *Melaleuca armillaris*, *Indigofera australis*, *Zieria granulata*.

Groundcover: *Bracteantha bracteata*, *Cheilanthes sieberi*, *Notodanthonia longifolia*, *Eragrostis leptostachya*, *Fimbristylis dichotoma*, *Plectranthus graveolens*, *Sporobolus creber*.

Vegetation structure:

Stratum	Frequency (n=3)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Tree canopy	67	9.5 (4.9)	19 (15.6)
Small tree	33	8 (-)	30 (-)
Shrub	100	1.6 (1.2)	41.7 (16.1)
Ground cover	100	0.5 (0.1)	37 (31.6)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 8 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 12 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 8 positive diagnostic species.

Positive Diagnostic Species:

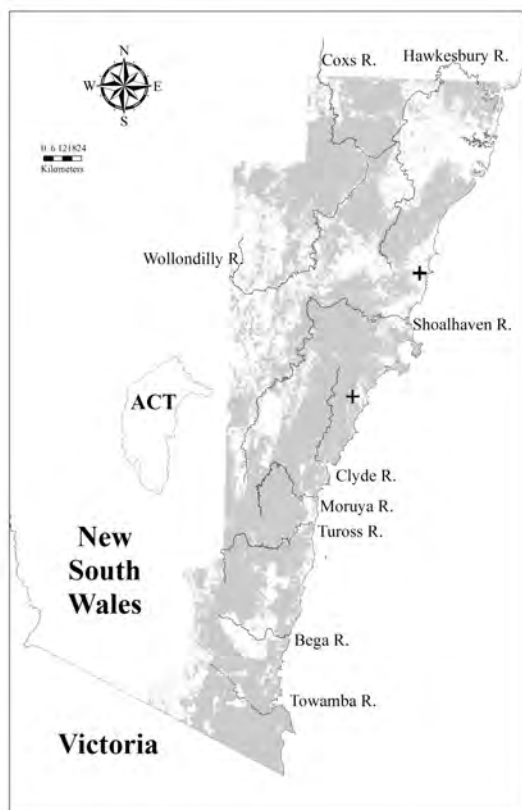
Species	C/A	Freq	C/A O	Freq O
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<i>Acacia parvipinnula</i>	1(1-1)	67	1(1-1)	1
<i>Arthropodium minus</i>	2(2-2)	33	1(1-1)	1
<i>Calandrinia pickeringii</i>	1(1-1)	33	1(1-1)	<1
<i>Cheilanthes sieberi</i>	2(1-3)	100	1(1-1)	14
<i>Commersonia fraseri</i>	1(1-1)	33	1(1-1)	1
<i>Eragrostis leptostachya</i>	4(4-4)	67	1(1-1)	4
<i>Fimbristylis dichotoma</i>	2(1-2)	67	1(1-1)	1
<i>Haloragis exalata</i>	1(1-1)	33	1(1-1)	<1
<i>Hibiscus heterophyllus</i> subsp. <i>heterophyllus</i>	1(1-1)	33	1(1-1)	<1
<i>Indigofera australis</i>	3(2-3)	67	1(1-1)	9
<i>Leucopogon juniperinus</i>	1(1-3)	100	1(1-1)	6
<i>Melaleuca armillaris</i> subsp. <i>armillaris</i>	4(4-4)	67	1(1-2)	1
<i>Notodanthonia longifolia</i>	1(1-3)	100	1(1-2)	5
<i>Oxalis chnoodes</i>	1(1-1)	33	1(1-1)	1
<i>Pelargonium inodorum</i>	1(1-1)	33	1(1-1)	1
<i>Phyllanthus gunnii</i>	1(1-1)	33	1(1-1)	2
<i>Plectranthus graveolens</i>	4(1-4)	67	1(1-1)	1
<i>Scaevola aemula</i>	2(2-2)	33	1(1-1)	<1
<i>Solanum vescum</i>	1(1-1)	33	1(1-2)	<1
<i>Sporobolus creber</i>	3(1-3)	67	1(1-1)	1
<i>Xerochrysum bracteatum</i>	1(1-1)	100	1(1-1)	2
<i>Zieria granulata</i>	1(1-1)	33	1(1-1)	<1

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Cayratia clematidea</i>	1(1-1)	33	1(1-1)	3
<i>Commelina cyanea</i>	1(1-1)	33	1(1-1)	4
<i>Dianella longifolia</i>	1(1-1)	33	1(1-1)	4
<i>Dichelachne micrantha</i>	1(1-1)	33	1(1-1)	9
<i>Digitaria parviflora</i>	3(3-3)	33	1(1-1)	2
<i>Einadia hastata</i>	1(1-1)	33	1(1-1)	3
<i>Entolasia stricta</i>	2(1-2)	67	1(1-2)	34
<i>Eucalyptus tereticornis</i>	3(3-3)	33	2(1-3)	7
<i>Euchiton gymnocephalus</i>	1(1-1)	33	1(1-1)	7
<i>Geitonoplesium cymosum</i>	1(1-1)	33	1(1-1)	16
<i>Glycine microphylla</i>	2(2-2)	33	1(1-1)	5
<i>Helichrysum scorpioides</i>	1(1-1)	33	1(1-1)	7
<i>Hydrocotyle peduncularis</i>	1(1-1)	33	1(1-1)	9
<i>Kennedia rubicunda</i>	1(1-1)	33	1(1-1)	6
<i>Kunzea ambigua</i>	5(5-5)	33	1(1-2)	4
<i>Microlaena stipoides</i>	3(2-3)	67	1(1-2)	36
<i>Notelaea venosa</i>	1(1-1)	33	1(1-1)	12
<i>Oplismenus imbecillis</i>	2(2-2)	33	1(1-2)	14
<i>Pellaea falcata</i>	1(1-1)	33	1(1-1)	10
<i>Pittosporum undulatum</i>	1(1-1)	33	1(1-1)	14
<i>Plectranthus parviflorus</i>	2(2-2)	33	1(1-1)	8

<i>Poa labillardierei</i> var. <i>labillardierei</i>	3(1-3)	67	1(1-2)	12
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	3(3-3)	33	1(1-1)	7
<i>Themeda australis</i>	2(2-2)	33	1(1-3)	17



Locations of survey sites allocated to HL p46. Grey shading indicates extant native vegetation cover within the study area.

HL p50: Sandstone Cliff Soak

Plate p50. Sandstone Cliff Soak (Map Unit p50) on Hawkesbury sandstone cliffs at Sublime Point above Bulli. A dense, continuous, low cover of shrubs including *Pimelea linifolia*, *Tristania neriiifolia*, *Dracophyllum secundum* and *Bauera rubioides* is closely packed with a diverse mix of ferns including *Todea barbara*, *Blechnum* spp. and *Gleichenia rupestris*.

Sample Sites: 2

Area Extant (ha): n/a (not modelled)

Estimated % remaining: n/a

Area in conservation reserves (ha): n/a

Estimated % of pre-clearing area in conservation reserves: n/a

No. Taxa (total / unique): 43 / 3

No. Taxa per Plot (\pm sd): 25.0 (1.4)

Class: Sydney Montane Heaths

Related TEC: n/a

Sandstone Cliff Soak (HL p50) is equivalent to HL 50 identified by Tindall *et al.* (2004), and comprises an open shrub layer intermixed with a patchy cover of ferns, forbs, sedges and considerable areas of wet rock face often covered in mosses and algae. This unit is restricted to sandstone cliff faces receiving seepage moisture, and is widespread throughout the Sydney basin at altitudes up to 1000m ASL, occurring as very small/localised patches. The distribution of Sandstone Cliff Soak on vertical cliff faces precluded mapping by conventional techniques at 1:100 000 scale. Examples can be found on the cliff faces at the base of Horseshoe and Bridal Veil Falls, Blackheath.

While the habitat of Sandstone Cliff Soak has largely escaped land clearing, some stands are threatened by polluted urban runoff and weed invasion.

Floristic Summary:

Shrubs: *Baeckea linifolia*, *Callicoma serratifolia*, *Ceratopetalum apetalum*, *Dracophyllum secundum*, *Bauera rubioides*, *Epacris obtusifolia*. **Groundcover:** *Drosera binata*, *Gleichenia rupestris*, *Todea barbara*, *Blechnum* spp.

Vegetation structure:

Stratum	Frequency (n=1)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Tree canopy	-	- (-)	- (-)
Small tree	-	- (-)	- (-)
Shrub	100	1 (-)	7 (-)
Ground cover	100	0.2 (-)	7 (-)

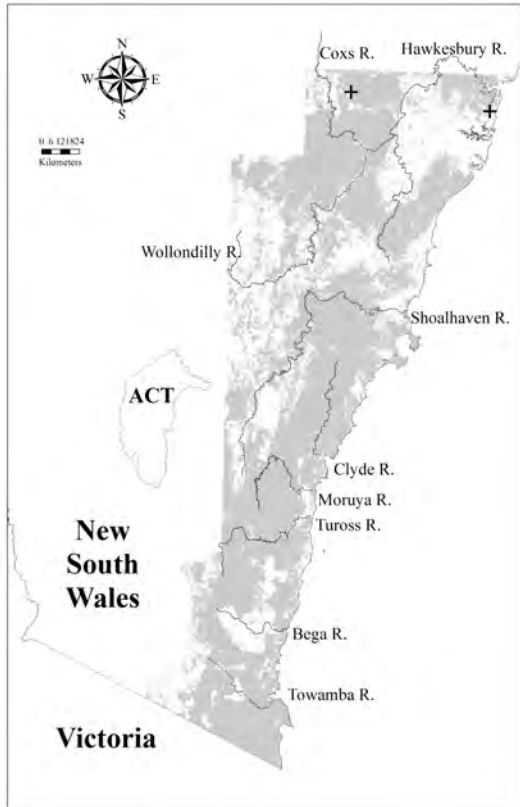
Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 16 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 24 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 16 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Baeckea linifolia</i>	2(1-2)	100	1(1-2)	1
<i>Bauera rubioides</i>	1(1-1)	50	1(1-2)	1
<i>Blechnum ambiguum</i>	1(1-1)	50	1(1-2)	<1
<i>Blechnum minus</i>	1(1-1)	50	1(1-1)	<1
<i>Blechnum wattsi</i>	1(1-1)	50	1(1-2)	2
<i>Callicoma serratifolia</i>	2(1-2)	100	1(1-2)	3
<i>Centrolepis fascicularis</i>	3(3-3)	50	1(1-1)	<1
<i>Ceratopetalum apetalum</i>	1(1-1)	100	3(1-3)	3
<i>Dracophyllum secundum</i>	1(1-1)	100	1(1-1)	<1
<i>Drosera binata</i>	1(1-1)	100	1(1-1)	1
<i>Drosera peltata</i>	1(1-1)	50	1(1-1)	2
<i>Drosera spatulata</i>	1(1-1)	50	1(1-1)	1
<i>Empodisma minus</i>	1(1-1)	50	1(1-2)	3
<i>Epacris crassifolia</i>	1(1-1)	50	1(1-1)	<1
<i>Epacris obtusifolia</i>	1(1-1)	50	1(1-1)	2
<i>Eucalyptus longifolia</i>	1(1-1)	50	1(1-2)	2
<i>Fieldia australis</i>	2(2-2)	50	1(1-3)	2
<i>Gleichenia rupestris</i>	2(2-2)	100	1(1-2)	<1
<i>Hymenophyllum flabellatum</i>	1(1-1)	50	1(1-2)	<1
<i>Lepidosperma evansianum</i>	2(2-2)	50	0(0-0)	<1
<i>Leptopteris fraseri</i>	2(2-2)	50	1(1-1)	<1
<i>Libertia pulchella</i>	2(2-2)	50	2(2-2)	<1
<i>Lobelia anceps</i>	1(1-1)	50	1(1-1)	1
<i>Nertera granadensis</i>	2(2-2)	50	1(1-1)	<1
<i>Notochloe microdon</i>	1(1-1)	50	0(0-0)	<1
<i>Pultenaea retusa</i>	1(1-1)	50	1(1-1)	2
<i>Quintinia sieberi</i>	1(1-1)	50	1(1-2)	<1
<i>Rimacola elliptica</i>	1(1-1)	50	0(0-0)	<1
<i>Selaginella uliginosa</i>	1(1-1)	50	1(1-1)	2
<i>Sprengelia incarnata</i>	1(1-1)	50	1(1-2)	1
<i>Sticherus flabellatus</i> var. <i>flabellatus</i>	1(1-1)	50	1(1-2)	1
<i>Sticherus lobatus</i>	1(1-1)	50	1(1-3)	1
<i>Todea barbara</i>	2(2-2)	100	1(1-2)	1
<i>Tristania neriifolia</i>	1(1-1)	50	1(1-3)	<1
<i>Xyris operculata</i>	2(2-2)	50	1(1-1)	1
Constant:				
Species	C/A	Freq	C/A O	Freq O
<i>Blechnum nudum</i>	1(1-1)	50	1(1-2)	3
<i>Dianella caerulea</i>	1(1-1)	50	1(1-1)	28
<i>Dillwynia retorta</i>	1(1-1)	50	1(1-2)	7

<i>Epacris pulchella</i>	1(1-1)	50	1(1-1)	5
<i>Gahnia melanocarpa</i>	2(2-2)	50	1(1-1)	5
<i>Leptospermum polygalifolium</i>	1(1-1)	50	1(1-2)	8
<i>Petrophile pulchella</i>	1(1-1)	50	1(1-1)	6
<i>Viola hederacea</i>	1(1-1)	50	1(1-1)	22



Locations of survey sites allocated to HL p50. Grey shading indicates extant native vegetation cover within the study area.

FrW p51: Tableland Lacustrine Herbfield



Plate p51. Tableland Lacustrine Herb field (Map Unit p51) on the exposed bed of Lake Bathurst during a drying phase. Vegetation here is exclusively the sprawling salt-tolerant sub-shrub *Wilsonia rotundifolia*.

Sample Sites: 2
 Area Extant (ha): 2600
 Estimated % remaining: <15%
 Area in conservation reserves (ha): 0
 Estimated % of pre-clearing area in conservation reserves: <1%
 No. taxa (total / unique): 9 / 3
 No. taxa per plot (\pm sd): 5 (1.4)
 Class: Montane Lakes
 Related TEC: n/a

Tableland Lacustrine Herbfield (FrW p51) is equivalent to FrW 51 identified by Tindall *et al.* (2004), and is a low open ephemeral herbfield. This unit is found at approximately 670 – 750 m elevation on deep alluvium subject to alternate wetting and drying periods, on the shores of Lake Bathurst, The Morass, and Breadalbane, Wollogorang and Rowes Lagoons south and south-west of Goulburn. Mean annual rainfall is approximately 700-750 mm in this area. Tableland Lacustrine Herbfield also occurs on Lake George. The species composition of these herbfields is likely to vary substantially with sequences of wetting and drying. The lake beds have been grazed since the 1820s and consequently the vegetation is now highly modified and includes a large component of exotic species. It is likely that the lake margins originally supported a fringe of emergent perennial plants. *Lepidosperma longitudinale* and *Eleocharis sphacelata* can be seen at Rowes Lagoon, which is less affected by agriculture than other lakes, while patches of *Phragmites australis* persist on the shores of Lake George.

Floristic Summary:

Groundcover: *Wilsonia rotundifolia*, *Agrostis avenacea*, *Austrodanthonia duttoniana*, *A. pilosa*, *Myriophyllum crispatum*, *Ranunculus diminutus*, *Schoenus nitens*, *Selliera radicans*, *Spergularia marina*.

Vegetation structure:

Stratum	Frequency (n=2)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Tree canopy	-	- (-)	- (-)
Small tree	-	- (-)	- (-)
Shrub	-	- (-)	- (-)
Ground cover	100	0.2 (0.1)	32.5 (38.9)

Diagnostic Species:

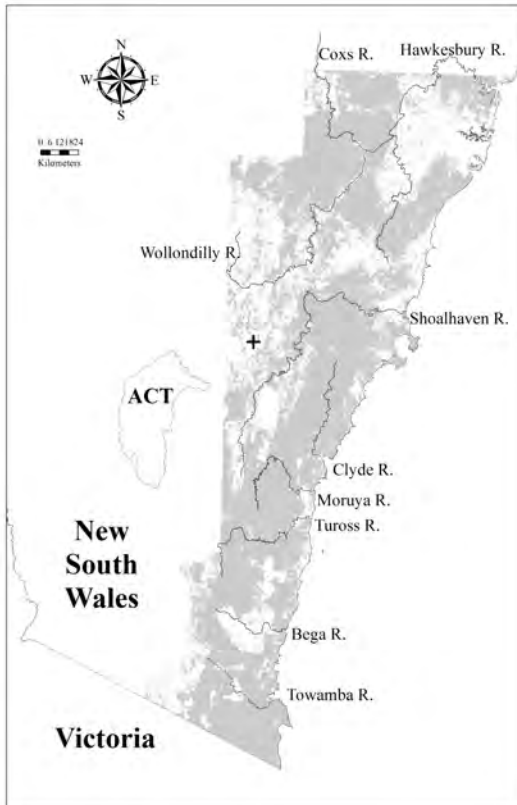
A 0.04ha plot located in this Map Unit is expected to contain at least 1 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 4 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 1 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Austrodanthonia duttoniana</i>	2(2-2)	50	3(2-3)	<1
<i>Myriophyllum crispatum</i>	1(1-1)	50	2(2-2)	<1
<i>Ranunculus diminutus</i>	1(1-1)	50	2(1-3)	<1
<i>Schoenus nitens</i>	3(3-3)	50	0(0-0)	<1
<i>Selliera radicans</i>	3(3-3)	50	1(1-2)	<1
<i>Spergularia marina</i>	2(2-2)	50	0(0-0)	<1
<i>Wilsonia rotundifolia</i>	2(1-2)	100	0(0-0)	<1

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Austrodanthonia racemosa</i> var. <i>racemosa</i>	1(1-1)	50	1(1-2)	6
<i>Lachnagrostis filiformis</i>	1(1-1)	50	1(1-1)	3



Locations of survey sites allocated to FrW p51. Grey shading indicates extant native vegetation cover within the study area.

FrW p53: Tableland Bog



Plate p53. Tableland Bog (Map Unit p53) at Hanging Rock Swamp in Penrose State Forest. Scattered taller patches of *Eucalyptus aquatica* and *Leptospermum continentale* are interspersed with dense lower shrubs including *L. myrtifolium*, *Epacris microphylla*, and *Lepidosperma limicola*.

Sample Sites: 12
 Area Extant (ha): 730
 Estimated % remaining: 65-85%
 Area in conservation reserves (ha): 170

Estimated % of pre-clearing area in conservation reserves: 5-25%

No. taxa (total / unique): 156 / 5

No. taxa per plot (\pm sd): 25.4 (7.4)

Class: Montane Bogs and Fens

Related TEC: includes areas of Montane Peatlands and Swamps EEC (TSC) and Temperate Highland Peat Swamps on Sandstone (EPBC).

Tableland Bog (FrW p53) is equivalent to FrW 53 identified by Tindall *et al.* (2004), and is characterised by an open to sparse shrub canopy with a dense groundcover of sedges and forbs. This unit is found on humic loams and peats in headwater valleys from 500m to 1200m ASL, typically on sandstone or granite substrates. Tableland Bogs are scattered between Boyd and Morton plateaux, and examples include Dingo Swamp near Kanangra Tops, Lannigans Swamp at Mount Werrong, Hanging Rock Swamp near Wingello and Lizard Flat in Morton NP.

Some Tableland Bogs have been degraded following clearing of their catchments, frequent burning, and grazing and trampling by domestic livestock. Some examples are represented within conservation reserves (e.g. Kanangra-Boyd National Park), though many of these were grazed in the past.

Floristic Summary:

Shrubs: *Epacris microphylla*, *Leptospermum continentale*, *L. myrtifolium*. **Groundcover:** *Empodisma minus*, *Gonocarpus micranthus*, *Lepyrodia anarthria*, *Mitrasacme serpyllifolia*, *Hydrocotyle peduncularis*, *Lepidosperma limicola*.

Vegetation structure:

Stratum	Frequency (n=11)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Emergent	9	8 (-)	3 (-)
Tree canopy	45	7.4 (4.4)	3.6 (4)
Small tree	9	4 (-)	35 (-)
Shrub	55	2.1 (0.8)	24.7 (22)
Ground cover	100	0.6 (0.4)	83.6 (21.1)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 6 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 20 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 6 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia rubida</i>	1(1-1)	33	1(1-1)	1
<i>Amphipogon strictus</i> var. <i>strictus</i>	2(2-4)	25	1(1-1)	<1
<i>Baeckea linifolia</i>	1(1-3)	25	1(1-2)	1
<i>Baloskion fimbriatum</i>	3(1-5)	33	1(1-2)	<1
<i>Banksia marginata</i>	1(1-1)	25	1(1-1)	3
<i>Baumea rubiginosa</i>	3(2-4)	50	1(1-2)	1
<i>Chorizandra sphaerocephala</i>	4(2-4)	33	2(1-2)	<1
<i>Drosera binata</i>	1(1-2)	33	1(1-1)	1
<i>Drosera spatulata</i>	1(1-1)	42	1(1-1)	1
<i>Empodisma minus</i>	4(2-5)	50	1(1-2)	3
<i>Epacris microphylla</i> var. <i>microphylla</i>	2(1-3)	67	1(1-1)	5
<i>Eucalyptus cinerea</i>	1(1-2)	25	1(1-2)	1
<i>Eucalyptus mannifera</i>	3(1-3)	25	2(1-3)	4
<i>Gleichenia dicarpa</i>	1(1-2)	42	1(1-2)	2
<i>Gonocarpus micranthus</i>	1(1-2)	58	1(1-1)	1
<i>Goodenia paniculata</i>	1(1-1)	33	1(1-1)	1
<i>Hypericum japonicum</i>	1(1-2)	25	1(1-1)	2
<i>Juncus continuus</i>	1(1-1)	25	1(1-1)	1
<i>Juncus planifolius</i>	1(1-2)	42	1(1-1)	1

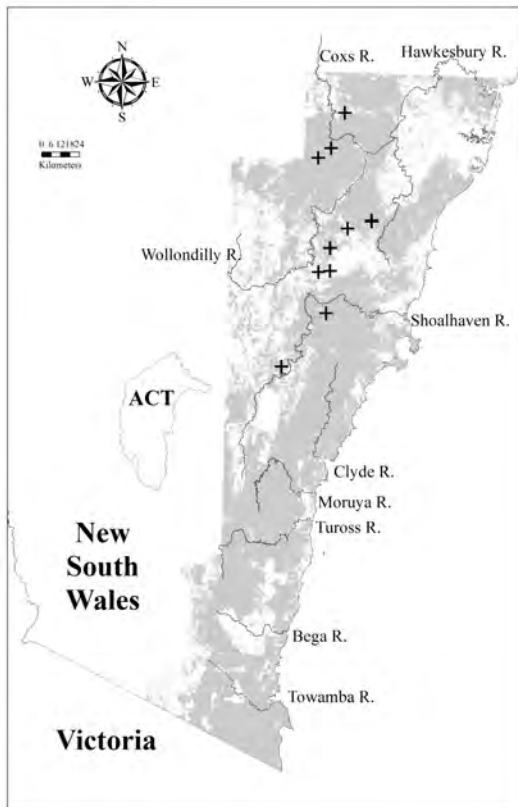
<i>Lepidosperma limicola</i>	1(1-3)	50	2(1-2)	1
<i>Leptospermum continentale</i>	2(1-4)	33	1(1-1)	3
<i>Leptospermum juniperinum</i>	4(2-5)	42	1(1-1)	2
<i>Leptospermum myrtifolium</i>	2(1-4)	25	1(1-1)	1
<i>Lepyrodia anarthria</i>	3(1-4)	67	1(1-2)	<1
<i>Mitrasacme serpyllifolia</i>	2(1-3)	50	1(1-1)	<1
<i>Pultenaea dentata</i>	1(1-2)	33	1(1-1)	<1
<i>Pultenaea divaricata</i>	2(2-3)	25	1(1-2)	<1
<i>Schoenus apogon</i>	1(1-2)	33	1(1-1)	2
<i>Selaginella uliginosa</i>	1(1-1)	50	1(1-1)	2
<i>Tetrarrhena turfosa</i>	3(1-3)	33	1(1-2)	1

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Hydrocotyle peduncularis</i>	1(1-2)	33	1(1-1)	9
<i>Microlaena stipoides</i>	1(1-4)	42	1(1-2)	36
<i>Pteridium esculentum</i>	1(1-2)	33	1(1-2)	37
<i>Stylidium graminifolium</i>	1(1-1)	33	1(1-1)	9

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Eucalyptus apiculata</i>	1(1-1)	8	3(2-3)	<1
<i>Eucalyptus bridgesiana</i>	1(1-1)	8	1(1-3)	1
<i>Eucalyptus camphora</i>	2(2-2)	8	1(1-1)	<1
<i>Eucalyptus elata</i>	2(2-2)	8	2(1-3)	5
<i>Eucalyptus ovata</i>	1(1-1)	17	2(1-3)	1
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	3(1-3)	17	2(1-3)	6
<i>Eucalyptus rubida</i> subsp. <i>rubida</i>	1(1-1)	8	1(1-2)	2
<i>Eucalyptus viminalis</i>	1(1-1)	8	2(1-3)	5



Locations of survey sites allocated to FrW p53. Grey shading indicates extant native vegetation cover within the study area.

FoW p54: Tableland Swamp Woodland



Plate p54. Tableland Swamp Forest (Map Unit p54) at Tomat Swamp on the Bindook Highlands, with *Eucalyptus ovata* and scattered patches of *Leptospermum continentale* over a groundcover dominated by *Poa sieberiana* var. *sieberiana*, *Lomandra longifolia* and *Microlaena stipoides* var. *stipoides*.

Sample Sites: 18
 Area Extant (ha): 1700
 Estimated % remaining: 20-50%
 Area in conservation reserves (ha): 1100
 Estimated % of pre-clearing area in conservation reserves: 50-70%
 No. taxa (total / unique): 224 / 2
 No. taxa per plot (\pm sd): 29.5 (7.7)

Class: Temperate Swamp Forests
 Related TEC: n/a

Tableland Swamp Woodland (FoW p54) is equivalent to FoW 54 identified by Tindall *et al.* (2004). This unit is a low woodland with an open shrub layer and a dense groundcover of grasses and forbs, restricted to poorly-drained flats in headwaters of tableland streams and the margins of Tableland Bogs (FrW p53) and Tableland Swamp Meadows (FrW p57). Suitable habitats are found on a variety of substrates at altitudes of 600m to 1100m ASL where mean annual rainfall is 800-1000mm. Stands of Tableland Swamp Woodland are scattered throughout the tablelands from Jenolan to Tallaganda, with examples including Bent Hook Swamp, Egans Swamp and Tomat Swamps on the Bindook Highlands, Lizard Flat near Tolwong, Long Flat at Majors Creek, Cleatmore Swamp in Deua National Park, and headwater tributaries of Long Swamp Creek in Jenolan State Forest, Frying Pan Creek, Joadja Creek, Mongarlowe River and Jerrabattgulla Creek. Not all of these stands could be mapped, and the extent of this unit is underestimated on the vegetation map. This is because its habitat corresponds with fine-scale drainage patterns that are not well-differentiated by the available topographic data. Tableland Swamp Woodland may also be structurally similar to adjacent map units (e.g. GW p220), particularly in the south of its range, and so could not be distinguished readily on aerial photographs.

Tableland Swamp Woodland is limited to small fragments due to its naturally restricted habitat and the effects of land clearing for pastoral development, and remaining stands are threatened by livestock grazing and trampling, disturbance by feral pigs, frequent burning and removal of woody plants.

Floristic Summary:

Trees: *Eucalyptus ovata*, *E. viminalis*. **Shrubs:** *Epacris microphylla*, *Leptospermum continentale*. **Groundcover:** *Gonocarpus tetragynus*, *Lomandra longifolia*, *Microlaena stipoides*, *Poa sieberiana*, *Hydrocotyle peduncularis*, *Themeda australis*, *Centella asiatica*, *Helichrysum scorpioides*.

Vegetation structure:

Stratum	Frequency (n=14)	Height (m) (±StDev)	Cover (%) (±StDev)
Tree canopy	93	17.2 (8.4)	13.8 (12.5)
Small tree	57	6.5 (2.6)	37.8 (28.7)
Shrub	36	2.4 (0.5)	37 (31.7)
Ground cover	100	0.7 (0.3)	68.2 (22.3)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 7 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 23 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 7 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Austrostipa rudis</i>	1(1-2)	28	1(1-2)	6
<i>Baloskion fimbriatum</i>	2(1-2)	22	1(1-3)	<1
<i>Bossiaea prostrata</i>	1(1-2)	28	1(1-1)	3
<i>Centella asiatica</i>	1(1-2)	44	1(1-1)	4
<i>Dichelachne inaequiglumis</i>	1(1-1)	22	1(1-1)	3
<i>Epacris microphylla</i> var. <i>microphylla</i>	1(1-1)	61	1(1-1)	5
<i>Eucalyptus ovata</i>	3(2-3)	61	2(1-2)	1
<i>Eucalyptus pauciflora</i>	1(1-2)	28	1(1-2)	3
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	1(1-2)	28	2(1-3)	6
<i>Eucalyptus viminalis</i>	2(1-2)	33	2(1-3)	4
<i>Gonocarpus micranthus</i>	1(1-2)	28	1(1-1)	1
<i>Gonocarpus tetragynus</i>	1(1-2)	94	1(1-1)	20
<i>Goodenia hederacea</i> subsp. <i>hederacea</i>	1(1-2)	44	1(1-2)	14
<i>Haloragis heterophylla</i>	1(1-1)	22	1(1-1)	1
<i>Helichrysum scorpioides</i>	1(1-2)	44	1(1-1)	7
<i>Hydrocotyle peduncularis</i>	1(1-2)	50	1(1-1)	9
<i>Hypericum japonicum</i>	1(1-1)	39	1(1-1)	2

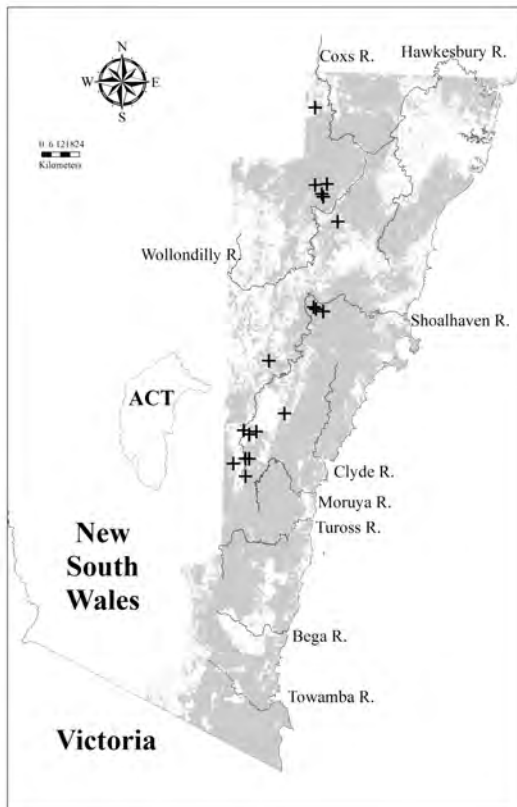
<i>Leptospermum continentale</i>	2(1-2)	33	1(1-1)	3
<i>Leptospermum myrtifolium</i>	2(1-4)	22	1(1-1)	1
<i>Leptospermum obovatum</i>	3(2-5)	22	1(1-2)	<1
<i>Leptospermum polygalifolium</i>	2(1-3)	39	1(1-2)	8
<i>Lomandra longifolia</i>	2(1-2)	94	1(1-1)	44
<i>Microlaena stipoides</i>	2(1-2)	72	1(1-2)	36
<i>Mitrasacme serpyllifolia</i>	1(1-1)	22	1(1-2)	<1
<i>Poa sieberiana</i> var. <i>sieberiana</i>	2(1-3)	61	1(1-2)	10
<i>Poa labillardierei</i> var. <i>labillardierei</i>	1(1-1)	39	1(1-2)	12
<i>Schoenus apogon</i>	2(1-3)	22	1(1-1)	2
<i>Stylidium graminifolium</i>	2(1-2)	33	1(1-1)	9
<i>Themeda australis</i>	1(1-3)	56	1(1-3)	17
<i>Viola betonicifolia</i>	1(1-2)	39	1(1-1)	5

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Dichondra</i> spp.	1(1-2)	39	1(1-2)	25
<i>Entolasia stricta</i>	1(1-1)	39	1(1-2)	34
<i>Hypericum gramineum</i>	1(1-2)	39	1(1-1)	16
<i>Poranthera microphylla</i>	1(1-1)	39	1(1-1)	15
<i>Pratia purpurascens</i>	1(1-1)	33	1(1-1)	17

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Eucalyptus aggregata</i>	3(3-3)	6	2(1-3)	<1
<i>Eucalyptus bridgesiana</i>	1(1-1)	6	1(1-3)	1
<i>Eucalyptus dalrympleana</i> subsp. <i>dalrympleana</i>	1(1-2)	17	1(1-2)	3
<i>Eucalyptus mannifera</i>	2(1-2)	11	2(1-3)	4
<i>Eucalyptus obliqua</i>	1(1-1)	6	2(1-3)	4
<i>Eucalyptus punctata</i>	1(1-1)	6	2(1-3)	9
<i>Eucalyptus rubida</i> subsp. <i>rubida</i>	2(1-2)	11	1(1-2)	2
<i>Eucalyptus stellulata</i>	1(1-1)	6	1(1-2)	1



Locations of survey sites allocated to FoW p54. Grey shading indicates extant native vegetation cover within the study area.

FrW p55: Riparian Herbfield



Plate p55. Riparian Herb field (Map Unit p55) on the Shoalhaven River at Gundillion. A range of aquatic herbs are growing in a gravelly substratum.

Sample Sites: 6

Area Extant (ha): n/a (not mapped)

Estimated % remaining: n/a

Area in conservation reserves (ha): n/a

Estimated % of pre-clearing area in conservation reserves: n/a

No. Taxa (total / unique): 57 / 2

No. Taxa per Plot (\pm sd): 13.5 (6.9)

Class: Montane Bogs and Fens

Related TEC: may include areas matching Montane Peatlands and Swamps EEC (TSC).

Riparian Herbfield (FrW p55) is characterised by a closed to open layer of aquatic and semi-aquatic herbs, sedges and rushes, sometimes with scattered shrubs. It is found on damp flats associated with rivers and creeks on humic loams and clays in low relief terrain, usually on the tablelands at 600-1100 m elevation, although it may also occur on the coastal hinterland as low as 30 m elevation. Mean annual rainfall varies from 700 to 1000 mm. The locally restricted occurrence of this unit within an extensive but sparse distribution that spans a wide range of environments meant that it could not be mapped in this study.

The floristic composition of Riparian Herbfield is highly variable, with only a few species occurring frequently. This may reflect the dynamic nature of these herbfields in relation to variable flood regimes and drought cycles. Examples of Riparian Herbfields are widely scattered across the study area, with records from the tablelands (Wollondilly River, Wollogorang Lagoon, west of Crookwell) and coastal rainshadow valleys (Nurragingy Creek on the Cumberland plain and Candelo Creek in the Bega Valley). These sites represent very localised patches of the community (less than a few hectares in extent), many of which are degraded by livestock and runoff from improved pastures.

Floristic Summary:

Shrubs: *Callistemon sieberi*. **Groundcover:** *Carex appressa*, *Centipeda minima*, *Glyceria australis*, *Hydrocotyle peduncularis*, *H. tripartita*, *Juncus usitatus*, *Paspalum distichum*, *Persicaria decipiens*, *Poa labillardieri*, *Ranunculus inundatus*, *Stellaria angustifolia*.

Vegetation structure:

Stratum	Frequency (n=5)	Height (m) (±StDev)	Cover (%) (±StDev)
Tree canopy	60	12.6 (16.9)	34 (52.8)
Small tree	20	10 (-)	15 (-)
Shrub	60	1.8 (0.3)	26.7 (15.3)
Ground cover	80	0.4 (0.2)	52.5 (26)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 2 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 8 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 2 positive diagnostic species.

Positive Diagnostic Species:

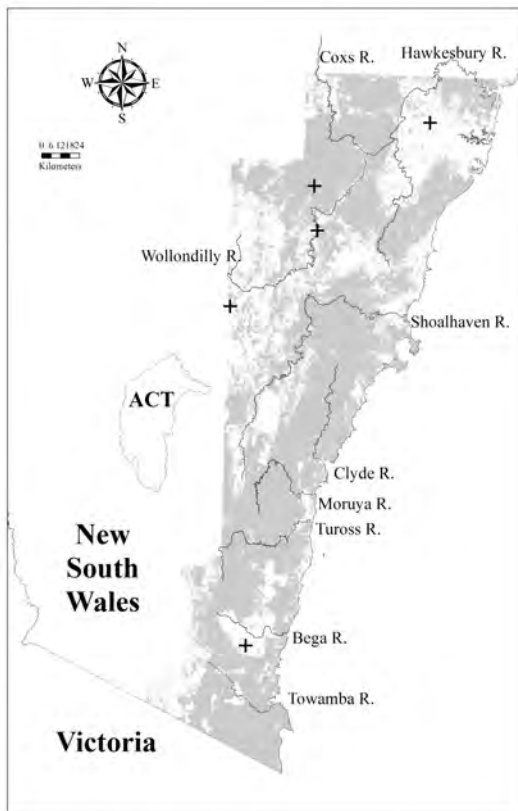
Species	C/A	Freq	C/A O	Freq O
<i>Alternanthera denticulata</i>	3(2-3)	33	1(1-1)	1
<i>Cardamine paucijuga</i>	1(1-1)	33	1(1-1)	1
<i>Carex gaudichaudiana</i>	3(1-3)	33	1(1-2)	1
<i>Centipeda cunninghamii</i>	2(1-2)	33	1(1-2)	<1
<i>Centipeda minima</i> var. <i>minima</i>	2(1-2)	33	1(1-1)	<1
<i>Cynodon dactylon</i>	1(1-3)	67	1(1-2)	2
<i>Eleocharis acuta</i>	1(1-1)	33	2(1-3)	1
<i>Juncus usitatus</i>	1(1-1)	67	1(1-1)	2
<i>Lachnagrostis filiformis</i>	2(1-2)	33	1(1-1)	3
<i>Paspalum distichum</i>	1(1-2)	67	1(1-1)	<1
<i>Persicaria decipiens</i>	2(1-2)	67	1(1-1)	1
<i>Ranunculus inundatus</i>	1(1-1)	33	1(1-1)	1
<i>Schoenoplectus validus</i>	2(2-2)	33	1(1-3)	<1
<i>Typha orientalis</i>	2(2-2)	33	1(1-1)	<1

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Carex appressa</i>	5(2-5)	33	1(1-1)	4
<i>Hydrocotyle peduncularis</i>	3(2-3)	33	1(1-1)	9

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Eucalyptus amplifolia</i> subsp. <i>amplifolia</i>	3(3-3)	17	2(1-3)	1



Locations of survey sites allocated to FrW p55. Grey shading indicates extant native vegetation cover within the study area.

FrW p56: Shoalhaven Riparian Scrub



Plate p56. Shoalhaven Riparian Scrub (Map Unit p56) on the Shoalhaven River at the Warri Bridge crossing, showing a sparse, low shrub layer including *Leptospermum obovatum*, *Melaleuca ericifolia* and *Hakea microcarpa* clinging to pockets of alluvium over bedrock.

Sample Sites: 8
 Area Extant (ha): 1300

Estimated % remaining: >80%
 Area in conservation reserves (ha): 30
 Estimated % of pre-clearing area in conservation reserves: <5%
 No. taxa (total / unique): 77 / 0
 No. taxa per plot (\pm sd): 19.9 (5.9)
 Class: Montane Bogs and Fens
 Related TEC: n/a

Shoalhaven Riparian Scrub (FrW p56) represents a revision and extension of FrW 56 identified by Tindall *et al.* (2004), based on additional samples over a larger study area. The revised FrW p56 includes a number of additional sites classified by Beukers (undated) as Tableland Riparian Scrub.

The revised FrW 56 is characterised by an open but clumped shrub canopy and patchy groundcover of sedges and forbs. It is restricted to shallow alluvial sediments over rock along regularly flooded sections of the beds of higher southern tableland rivers, including the upper Shoalhaven River upstream of Oallen, the Big Badja River and Tuross Rivers above Tuross Falls, the MacLaughlin and Bombala Rivers, and White Rock River at Genoa. It occurs on alluvium derived from a range of metasediment and granitoid substrates, at elevations 500-1000m ASL. Representation of this unit on the vegetation map was dependent upon API delineation of narrow strips of riparian scrub, which in some situations may not have been separated from adjacent forest vegetation. As a result, the extent of FrW p56 is likely to be underestimated, and some of the sampled locations of this unit may be mapped as surrounding vegetation types (e.g. GW p220, GW p520). Shoalhaven Riparian Scrub is restricted to a very specialised habitat and is vulnerable to disturbances within the catchment and degradation of the riparian corridor.

Floristic Summary:

Shrubs: *Leptospermum obovatum*, *Melaleuca ericifolia*, *Callistemon sieberi*, *Leptospermum grandifolium*, *Hakea microcarpa*, *Acacia dealbata*. **Groundcover:** *Carex gaudichaudiana*, *Scirpus polystachyus*, *Carex tereticaulis*, *Chenopodium pumilio*, *Dichelachne inaequiglumis*, *Hydrocotyle peduncularis*, *Juncus usitatus*, *Lomandra longifolia*, *Microlaena stipoides*, *Persicaria hydropiper*, *Poa labillardierei*, *Senecio diaschides*.

Vegetation structure:

Stratum	Frequency (n=7)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Tree canopy	43	7.8 (6.4)	13 (14.7)
Small tree	14	5 (-)	70 (-)
Shrub	71	2.8 (0.4)	49 (21.3)
Ground cover	100	0.7 (0.3)	28.6 (12.1)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 8 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 15 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 8 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia dealbata</i>	1(1-2)	33	1(1-2)	5
<i>Acacia rubida</i>	1(1-1)	22	1(1-1)	1
<i>Acacia siculiformis</i>	1(1-1)	22	1(1-2)	<1
<i>Acaena novae-zelandiae</i>	1(1-1)	44	1(1-1)	7
<i>Blechnum minus</i>	1(1-1)	22	1(1-1)	<1
<i>Callistemon subulatus</i>	1(1-1)	33	1(1-1)	<1
<i>Carex appressa</i>	1(1-1)	33	1(1-1)	4
<i>Carex gaudichaudiana</i>	2(1-2)	78	1(1-2)	1
<i>Elatine gratioloides</i>	1(1-1)	33	1(1-2)	<1
<i>Elymus scaber</i> var. <i>scaber</i>	1(1-1)	33	1(1-1)	5
<i>Epacris breviflora</i>	1(1-1)	22	1(1-1)	<1
<i>Eucalyptus viminalis</i>	1(1-1)	78	2(1-3)	4
<i>Gratiola peruviana</i>	1(1-1)	22	1(1-1)	1
<i>Grevillea lanigera</i>	1(1-2)	44	1(1-1)	<1
<i>Hakea microcarpa</i>	1(1-2)	78	1(1-1)	<1

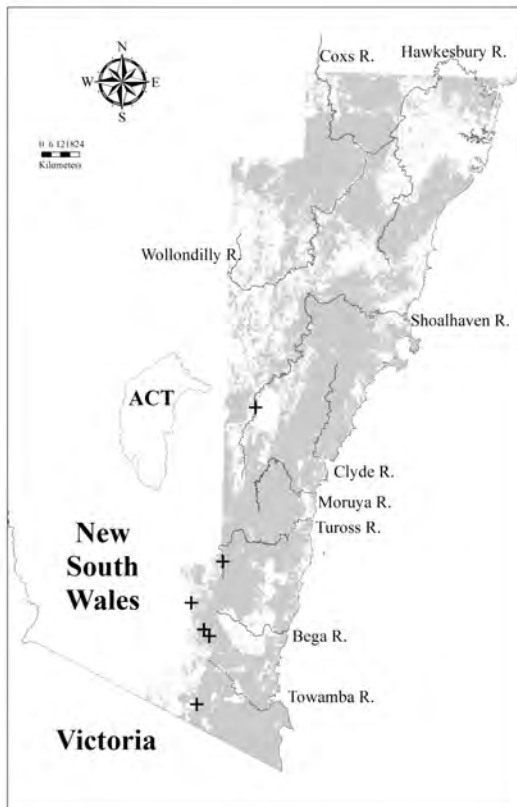
<i>Hypericum japonicum</i>	1(1-2)	56	1(1-1)	2
<i>Juncus falcatus</i>	1(1-1)	22	1(1-3)	<1
<i>Juncus gregiflorus</i>	1(1-1)	22	1(1-1)	<1
<i>Leptospermum grandifolium</i>	3(1-3)	78	1(1-1)	<1
<i>Leptospermum lanigerum</i>	4(1-4)	22	1(1-2)	1
<i>Leptospermum myrtifolium</i>	1(1-1)	22	1(1-1)	1
<i>Leptospermum obovatum</i>	4(3-4)	44	1(1-2)	<1
<i>Lomatia myricoides</i>	1(1-1)	67	1(1-1)	4
<i>Micrantheum hexandrum</i>	1(1-1)	22	1(1-1)	<1
<i>Ozothamnus ferrugineus</i>	1(1-1)	22	1(1-1)	<1
<i>Poa labillardierei</i> var. <i>labillardierei</i>	1(1-2)	78	1(1-2)	12
<i>Pomaderris phlycifolia</i> subsp. <i>ericoides</i>	1(1-1)	22	2(1-2)	<1
<i>Pultenaea altissima</i>	1(1-2)	33	1(1-2)	<1
<i>Ranunculus amphitrichus</i>	1(1-1)	44	1(1-1)	<1
<i>Scirpus polystachyus</i>	1(1-2)	56	1(1-1)	<1
<i>Scleranthus biflorus</i>	1(1-1)	22	1(1-1)	2
<i>Typha orientalis</i>	1(1-1)	22	1(1-2)	<1
<i>Wahlenbergia communis</i>	1(1-1)	22	1(1-1)	2

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Hydrocotyle peduncularis</i>	1(1-3)	33	1(1-1)	9
<i>Lomandra longifolia</i>	1(1-2)	67	1(1-1)	44

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Eucalyptus ovata</i>	1(1-1)	11	2(1-3)	1
<i>Eucalyptus pauciflora</i>	1(1-1)	11	1(1-2)	3



Locations of survey sites allocated to FrW p56. Grey shading indicates extant native vegetation cover within the study area.

FrW p57: Tableland Swamp Meadow



Plate p57. Tableland Swamp Meadow (Map Unit p57) at Bent Hook Swamp on the Bindook Highlands. Dominant species include *Leptospermum obovatum*, *Epacris microphylla* var. *microphylla*, *Pultenaea dentata*, *Lepyrodia anarthria* and *Baumea rubiginosa*.

Sample Sites: 17
 Area Extant (ha): 3800
 Estimated % remaining: 15-25%
 Area in conservation reserves (ha): 470
 Estimated % of pre-clearing area in conservation reserves: <5%
 No. taxa (total / unique): 126 / 0
 No. taxa per plot (\pm sd): 19.3 (8.5)

Class: Montane Bogs and Fens

Related TEC: included within the Montane Peatlands and Swamps EEC (TSC); includes areas of Temperate Highland Peat Swamps on Sandstone EEC (EPBC).

Tableland Swamp Meadow (FrW p57) represents a revision and extension of FrW 57 identified by Tindall *et al.* (2004), based on additional samples over a larger study area. The revised FrW p57 includes a number of additional sites previously classified by Keith & Bedward (1999) as Swamp Forest (unit 58) and by Beukers (undated) as Hinterland and Escarpment Swamp Forests.

This map unit is characterised by a dense groundcover of water-tolerant, soft-leaved sedges and forbs. Scattered trees may be present, and an open to dense shrub layer is occasionally present. Vegetation structure and species composition varies locally in response to water table gradients. Tableland Swamp Meadow is restricted to deep, waterlogged peats and humic loams in sediment-filled valleys 200-1100m ASL where mean annual rainfall is 700-1300mm. Examples are scattered throughout the tablelands, from the Blue Mountains south to the Shoalhaven headwaters, and in the far south at Genoa and Yambulla. Examples include Burralow Swamp in Blue Mountains NP; Burra Burra Lake north of Taralga; Bent Hook Swamp in the Bindook Highlands; Wingecarribee Swamp on the Robertson plateau; Long Swamp on the Southern Highlands; Jembaicumbene Swamp near Braidwood; Sheep Station Creek swamp in Bondi State Forest, and Snob Creek swamp at Yambulla.

Clearing and habitat degradation is widespread throughout the distribution of Tableland Swamp Meadow. Domestic livestock and feral pigs have major impacts on the structure of vegetation and soils. Frequent burning to encourage green pick also reduces cover of woody plants. Clearing, logging and burning in swamp catchments may accelerate sedimentation and alter hydrological cycles. Wingecarribee Swamp suffered a major collapse following peat mining (Whinam and Chilcott 2002).

Floristic Summary:

Shrubs: *Leptospermum juniperinum*, *L. obovatum*, *Lythrum salicaria*. **Groundcover:** *Baumea rubiginosa*, *Carex gaudichaudiana*, *Eleocharis sphacelata*, *Hydrocotyle peduncularis*, *Isachne globosa*, *Juncus usitatus*, *Lepyrodia anarthria*, *Phragmites australis*, *Ranunculus inundatus*.

Vegetation structure:

Stratum	Frequency (n=12)	Height (m) (±StDev)	Cover (%) (±StDev)
Tree canopy	67	5.9 (5.6)	29.9 (31.5)
Shrub	58	1.4 (0.4)	23.3 (24.5)
Ground cover	92	0.6 (0.3)	68.5 (31.4)

Diagnostic Species:

A 0.04 ha plot located in this Map Unit is expected to contain at least 6 positive diagnostic species (95% confidence interval) provided the total number of native species in the plot is 13 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 6 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Baumea rubiginosa</i>	2(2-4)	76	1(1-2)	<1
<i>Blechnum minus</i>	1(1-2)	24	1(1-1)	<1
<i>Carex gaudichaudiana</i>	3(2-4)	76	1(1-2)	1
<i>Centella asiatica</i>	1(1-2)	24	1(1-1)	4
<i>Centella cordifolia</i>	1(1-1)	24	1(1-2)	<1
<i>Cyperus lucidus</i>	1(1-1)	29	1(1-1)	1
<i>Eleocharis gracilis</i>	1(1-2)	24	1(1-2)	<1
<i>Eleocharis sphacelata</i>	2(1-3)	41	1(1-2)	<1
<i>Eucalyptus ovata</i>	1(1-3)	29	2(1-3)	1
<i>Geranium neglectum</i>	1(1-1)	29	1(1-1)	1
<i>Gratiola peruviana</i>	1(1-1)	41	1(1-1)	1
<i>Hemarthria uncinata</i> var. <i>uncinata</i>	1(1-2)	35	1(1-1)	<1
<i>Hydrocotyle peduncularis</i>	1(1-2)	76	1(1-1)	9
<i>Hypericum japonicum</i>	1(1-1)	41	1(1-1)	2
<i>Isachne globosa</i>	2(1-4)	65	1(1-1)	<1
<i>Isolepis inundata</i>	1(1-2)	24	1(1-1)	1

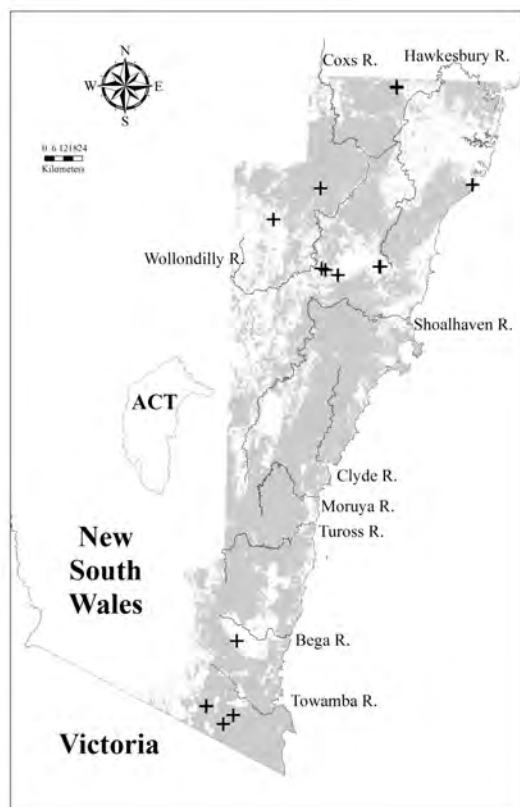
<i>Juncus sarophorus</i>	1(1-3)	29	1(1-2)	<1
<i>Lachnagrostis filiformis</i>	1(1-1)	29	1(1-1)	3
<i>Leptospermum juniperinum</i>	2(1-3)	41	1(1-1)	2
<i>Leptospermum obovatum</i>	2(1-3)	35	1(1-2)	<1
<i>Lepyrodia anarthria</i>	3(1-4)	29	1(1-2)	<1
<i>Lycopus australis</i>	1(1-2)	35	1(1-2)	<1
<i>Lythrum salicaria</i>	1(1-2)	41	1(1-1)	<1
<i>Phragmites australis</i>	1(1-2)	47	1(1-2)	1
<i>Poa labillardierei</i> var. <i>labillardierei</i>	2(1-2)	41	1(1-2)	12
<i>Ranunculus inundatus</i>	1(1-2)	41	1(1-1)	1
<i>Stellaria angustifolia</i>	1(1-1)	24	1(1-1)	<1

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Lomandra longifolia</i>	1(1-1)	41	1(1-1)	44

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	1(1-1)	12	2(1-3)	6
<i>Eucalyptus stellulata</i>	1(1-1)	6	1(1-2)	1



Locations of survey sites allocated to FrW p57. Grey shading indicates extant native vegetation cover within the study area.

FoW p58: Sandstone Riparian Scrub

Plate p58. Sandstone Riparian Scrub (Map Unit p58) on the Hacking River near the upper causeway showing a dense low tree cover of *Tristaniopsis laurina*, with scattered shrubs including *Lomatia myricoides* and a groundcover dominated by *Lomandra longifolia*.

Sample Sites: 22

Area Extant (ha): 2900

Estimated % remaining: >90%

Area in conservation reserves (ha): 1300

Estimated % of pre-clearing area in conservation reserves: 30-50%

No. taxa (total / unique): 263 / 0

No. taxa per plot (\pm sd): 34 (11.4)

Class: Eastern Riverine Forests

Related TEC: n/a

Sandstone Riparian Scrub (FoW p58) is equivalent to FoW 58 identified by Tindall *et al.* (2004). This distinctive unit is a scrub or low forest with clumped shrubs and a clumped groundcover dominated by sedges and ferns. It is distributed around the edges of the Sydney basin on streams draining Triassic Hawkesbury and Narrabeen sandstone, in the Blue Mountains, Hornsby, Woronora and Nattai Plateaux. Outlying occurrences of this unit are also mapped in Morton National Park (Holland Creek Gorge and Clyde River gorge), where Sandstone Riparian Scrub was sampled on Ordovician sediments below Permian Shoalhaven Group sandstone and conglomerate geologies. Within this distribution Sandstone Riparian Scrub is restricted to shallow sand and gravel alluvium over rock on the bed and banks of streams subjected to occasional high-velocity floods. Elevation of sampled sites varies between 10m and 450m ASL, while mean annual rainfall is 800-1500mm.

Several examples are represented within conservation reserves, though these are susceptible to polluted runoff and weed invasion from urban areas in the stream catchments.

Representation of this unit on the vegetation map was dependent upon API delineation of narrow strips of riparian scrub, which may have been undetected in some situations (e.g. in deep gorges). As a result, the extent of FoW p58 is likely to be underestimated, and some of the sampled locations of this unit will be mapped as surrounding vegetation types (e.g. DSF p140, DSF p142, WSF p102).

Floristic Summary:

Trees: *Tristaniopsis laurina*, *Ceratopetalum apetalum*. **Shrubs:** *Lomatia myricoides*, *Tristania neriifolia*, *Leptospermum morrisonii*. **Groundcover:** *Lomandra longifolia*, *Entolasia stricta*, *Schoenus melanostachys*, *Lomandra fluviatilis*, *Sticherus flabellatus*.

Vegetation structure:

Stratum	Frequency (n=6)	Height (m) (±StDev)	Cover (%) (±StDev)
Emergent	17	13 (-)	4 (-)
Tree canopy	83	11.8 (8)	24.2 (26.6)
Small tree	33	9 (1.4)	20 (14.1)
Shrub	83	2.5 (1)	8.6 (4.7)
Ground cover	100	0.6 (0.3)	7.7 (3)

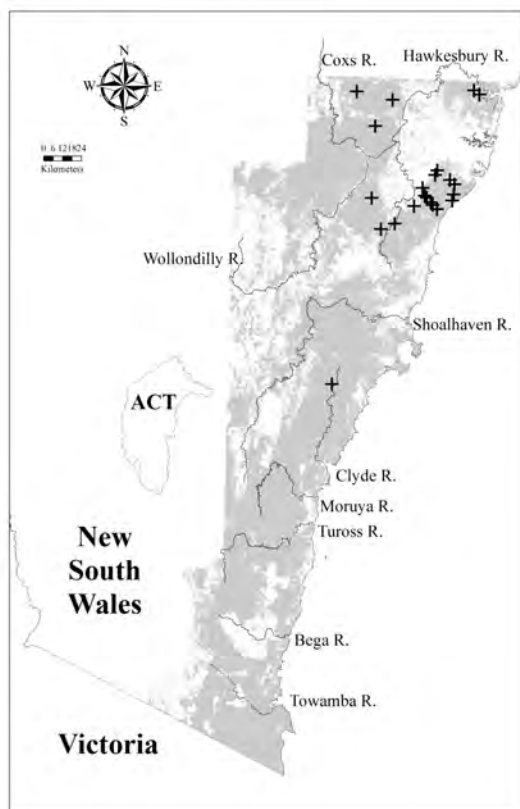
Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 8 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 25 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 8 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia floribunda</i>	1(1-1)	27	1(1-2)	2
<i>Acacia obtusifolia</i>	3(2-3)	32	1(1-2)	9
<i>Angophora costata</i>	1(1-1)	27	1(1-3)	7
<i>Austromyrtus tenuifolia</i>	1(1-3)	23	1(1-2)	<1
<i>Backhousia myrtifolia</i>	1(1-1)	27	2(1-3)	5
<i>Bauera rubioides</i>	1(1-2)	32	1(1-2)	1
<i>Callistemon citrinus</i>	1(1-1)	27	1(1-2)	1
<i>Callicoma serratifolia</i>	2(1-3)	32	1(1-2)	3
<i>Cassyltha glabella</i>	1(1-1)	32	1(1-1)	8
<i>Ceratopetalum apetalum</i>	1(1-3)	68	3(1-3)	3
<i>Daviesia corymbosa</i>	1(1-1)	23	1(1-1)	2
<i>Dodonaea triquetra</i>	1(1-2)	41	1(1-2)	6
<i>Entolasia stricta</i>	1(1-1)	68	1(1-2)	34
<i>Gahnia clarkei</i>	1(1-1)	23	1(1-2)	2
<i>Gleichenia dicarpa</i>	1(1-1)	36	1(1-2)	2
<i>Grevillea oleoides</i>	1(1-2)	36	1(1-1)	2
<i>Guringalia dimorpha</i>	2(1-3)	23	1(1-2)	1
<i>Leionema dentatum</i>	1(1-1)	36	1(1-1)	<1
<i>Leptospermum morrisonii</i>	1(1-2)	45	1(1-2)	<1
<i>Leptospermum polygalifolium</i>	1(1-2)	45	1(1-2)	8
<i>Lomandra fluviatilis</i>	2(2-2)	50	1(1-1)	<1
<i>Lomandra longifolia</i>	1(1-2)	77	1(1-1)	44
<i>Lomatia myricoides</i>	2(1-2)	86	1(1-1)	4
<i>Micrantheum hexandrum</i>	1(1-4)	23	1(1-1)	<1
<i>Monotoca scoparia</i>	1(1-1)	36	1(1-1)	12
<i>Persoonia pinifolia</i>	1(1-1)	23	1(1-1)	4
<i>Pseudanthus pimeleoides</i>	1(1-3)	27	2(1-3)	<1
<i>Schoenus melanostachys</i>	1(1-1)	55	1(1-2)	2
<i>Smilax glycyphylla</i>	1(1-1)	36	1(1-1)	8
<i>Stenocarpus salignus</i>	1(1-1)	32	1(1-1)	2
<i>Sticherus flabellatus</i> var. <i>flabellatus</i>	3(1-3)	50	1(1-2)	1
<i>Todea barbara</i>	1(1-1)	23	1(1-2)	1
<i>Tristaniopsis laurina</i>	3(2-4)	86	1(1-2)	1

<i>Tristania nerifolia</i>	1(1-3)	55	1(1-2)	<1
Constant:				
Species	C/A	Freq	C/A O	Freq O
<i>Allocasuarina littoralis</i>	1(1-3)	41	1(1-2)	17
<i>Lepidosperma laterale</i>	1(1-1)	50	1(1-1)	29
<i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>	1(1-1)	32	1(1-1)	24
<i>Pteridium esculentum</i>	1(1-2)	45	1(1-2)	37
Other tree species occurring less frequently in this community:				
Species	C/A	Freq	C/A O	Freq O
<i>Eucalyptus agglomerata</i>	2(1-2)	14	2(1-3)	7
<i>Eucalyptus deanei</i>	1(1-1)	5	3(1-3)	1
<i>Eucalyptus elata</i>	1(1-1)	5	2(1-3)	5
<i>Eucalyptus piperita</i>	1(1-2)	23	2(1-3)	9
<i>Eucalyptus punctata</i>	1(1-1)	5	2(1-3)	9
<i>Eucalyptus saligna</i> X <i>botryoides</i>	1(1-1)	9	2(1-3)	2
<i>Eucalyptus umbra</i>	1(1-1)	9	1(1-2)	<1



Locations of survey sites allocated to FoW p58. Grey shading indicates extant native vegetation cover within the study area.

HL p63: Littoral Thicket

Plate p63. Littoral Thicket (Map Unit p63) behind Stanwell Park surf life saving club. The dense continuous canopy includes *Leptospermum laevigatum*, *Backhousia myrtifolia* and *Banksia integrifolia*, above a sub canopy including *Notelaea longifolia* and *Tristaniopsis collina* and groundcover dominated by *Lomandra longifolia*.

Sample Sites: 34

Area Extant (ha): 1800

Estimated % remaining: 50-70%

Area in conservation reserves (ha): 1100

Estimated % of pre-clearing area in conservation reserves: 20-40%

No. taxa (total / unique): 241 / 1

No. taxa per plot (\pm sd): 27.4 (10)

Class: transitional between Littoral Rainforests and Coastal Headland Heaths.

Related TEC: may include patches of Littoral Rainforest EEC (TSC).

Littoral Thicket (HL p63) represents a slight revision and extension of HL 63 identified by Tindall *et al.* (2004), based on additional samples over a larger study area.

This unit is an open to dense scrub or low closed forest with an open groundcover, restricted to beach dunes and clay-soil headlands within 200m of the sea, subject to moderate wind shear and salt spray. It has been sampled along the study area coastline from McMasters Beach near Gosford to south of Potato Point, and is likely to continue as small scattered patches to the south. It is generally found at altitudes below 50m ASL, but was also recorded from higher elevations on steep exposed slopes above the sea in the northern Illawarra. On coastal sands, Littoral Thicket occupies areas of intermediate exposure and stability, grading into Coastal Fore-dune Scrub (HL e61) on exposed foredunes and into Coastal Sand Forest (DSF p64) in more sheltered and stable sites. In high rainfall areas Littoral Thicket may co-occur with Temperate Littoral Rainforest (RF p210), which develops with increasing shelter and the absence of fire. is vegetation classes (Keith 2004). About two-thirds of Littoral Thicket's original extent has been cleared for coastal development, and many of the remaining stands are small and threatened by continued small-scale clearing, fragmentation, intense recreational pressures, fires and weed invasion.

Floristic Summary:

Trees: *Banksia integrifolia*, *Leptospermum laevigatum*, *Acmena smithii*, *Eucalyptus botryoides*. **Shrubs:** *Breynea oblongifolia*, *Monotoca elliptica*, *Notelaea longifolia*. **Climbers:** *Stephania japonica*. **Groundcover:** *Lomandra longifolia*, *Commelina cyanea*, *Hibbertia scandens*, *Pteridium esculentum*, *Dichondra* spp., *Viola hederacea*, *Oplismenus imbecillis*, *Imperata cylindrica*.

Vegetation structure:

Stratum	Frequency (n=6)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Tree canopy	100	9.2 (4.6)	61.7 (16.3)
Small tree	17	5 (-)	8 (-)
Shrub	67	2 (-)	22.5 (6.5)
Ground cover	100	1 (0.6)	49 (29.2)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 7 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 19 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 7 positive diagnostic species.

Positive Diagnostic Species:

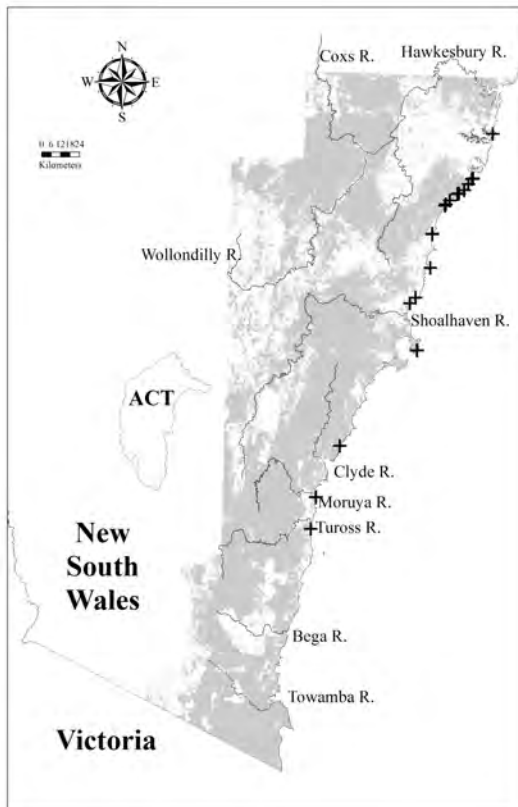
Species	C/A	Freq	C/A O	Freq O
<i>Acacia longifolia</i>	1(1-1)	29	1(1-2)	9
<i>Acmena smithii</i>	1(1-2)	32	2(1-3)	9
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	2(1-3)	91	1(1-1)	2
<i>Breynia oblongifolia</i>	1(1-1)	71	1(1-1)	12
<i>Cayratia clematidea</i>	1(1-1)	29	1(1-1)	2
<i>Chorizandra cymbaria</i>	1(1-2)	21	1(1-2)	<1
<i>Commelina cyanea</i>	1(1-1)	59	1(1-1)	4
<i>Cynodon dactylon</i>	1(1-2)	24	1(1-2)	2
<i>Dichondra</i> spp.	1(1-1)	53	1(1-2)	25
<i>Eucalyptus botryoides</i>	1(1-3)	35	2(1-3)	3
<i>Hibbertia scandens</i>	1(1-2)	59	1(1-1)	5
<i>Imperata cylindrica</i> var. <i>major</i>	1(1-2)	47	1(1-2)	10
<i>Isolepis nodosa</i>	1(1-1)	24	1(1-1)	1
<i>Kennedia rubicunda</i>	1(1-1)	32	1(1-1)	6
<i>Leptospermum laevigatum</i>	3(1-4)	76	1(1-2)	1
<i>Lomandra longifolia</i>	2(1-3)	100	1(1-1)	44
<i>Monotoca elliptica</i>	1(1-2)	56	1(1-1)	2
<i>Notelaea longifolia</i> forma <i>longifolia</i>	1(1-1)	35	1(1-1)	7
<i>Oplismenus imbecillis</i>	1(1-1)	44	1(1-2)	14
<i>Pelargonium australe</i>	1(1-2)	24	1(1-1)	<1
<i>Pteridium esculentum</i>	1(1-2)	62	1(1-2)	37
<i>Rhagodia candolleana</i> subsp. <i>candolleana</i>	1(1-1)	24	1(1-1)	1
<i>Stephania japonica</i> var. <i>discolor</i>	1(1-1)	56	1(1-1)	6
<i>Viola hederacea</i>	1(1-2)	44	1(1-1)	22
<i>Westringia fruticosa</i>	1(1-2)	21	1(1-1)	<1

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Dianella caerulea</i>	1(1-1)	35	1(1-1)	28
<i>Geitonoplesium cymosum</i>	1(1-1)	32	1(1-1)	16
<i>Glycine clandestina</i>	1(1-1)	41	1(1-1)	26

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Corymbia maculata</i>	1(1-1)	3	2(1-3)	3
<i>Eucalyptus pilularis</i>	1(1-1)	3	2(1-3)	5



Locations of survey sites allocated to HL p63. Grey shading indicates extant native vegetation cover within the study area.

DSF p64: Coastal Sand Forest



Plate p64. Coastal Sand Forest (Map Unit p64) at Burrewarra Point, Guerilla Bay. Here, an open tree canopy is dominated by *Eucalyptus botryoides*, above scattered tall *Banksia serrata*, *Acacia longifolia* subsp. *sophorae* and a groundcover dominated by *Pteridium esculentum*.

Sample Sites: 74
 Area Extant (ha): 11200
 Estimated % remaining: 50-70%
 Area in conservation reserves (ha): 6500
 Estimated % of pre-clearing area in conservation reserves: 20-40%
 No. taxa (total / unique): 373 / 4
 No. taxa per plot (\pm sd): 30.9 (12.9)

Class: South Coast Sands Dry Sclerophyll Forest

Related TECs: includes Kurnell Dune Forest EEC, Umina Coastal Sandplain Woodland EEC, and Bangalay Sand Forest EEC (TSC).

Coastal Sand Forest (DSF p64) represents a significant revision and extension of DSF 64 identified by Tindall *et al.* (2004), based on additional samples over a larger study area. The revised DSF p64 includes a number of additional sites, including sites classified by Keith & Bedward (1999) as Dune Dry Shrub Forest (unit 36) and by Beukers (undated) as Dune Dry Shrub Forest.

DSF p64 is a coastal eucalypt forest with a mixed understorey of sclerophyll shrubs, ferns, grasses and forbs. This forest is patchily distributed along the study area coastline from Umina to Nadgee, and is restricted to relatively sheltered deep sands below 100m ASL including aeolian and alluvial sands on beach hind dunes, coastal flats and sandstone headlands. With increasing exposure to salt-laden winds this unit grades into Coastal Fore-dune Scrub (HL e61) or into Littoral Thicket (HL p63) on exposed headlands and cliffs. With increasing soil moisture the transition is to Coastal Sand Swamp Forest (FoW p45).

Up to half of the original distribution of Coastal Sand Forest has been cleared, and remaining areas on private land are subject to ongoing pressures from weed invasion and clearing for development.

Floristic Summary:

Trees: *Banksia serrata*, *Eucalyptus botryoides*, *B. integrifolia*, *E. pilularis*. **Shrubs:** *Breynia oblongifolia*, *Monotoca elliptica*, *Allocasuarina littoralis*, *Acacia longifolia*. **Climbers:** *Glycine clandestina*, *Hibbertia scandens*. **Groundcover:** *Pteridium esculentum*, *Lomandra longifolia*, *Imperata cylindrica*, *Dianella caerulea*, *Gonocarpus teucrioides*.

Vegetation structure:

Stratum	Frequency (n=38)	Height (m) (±StDev)	Cover (%) (±StDev)
Tree canopy	100	19.6 (6.3)	33 (12.3)
Small tree	82	9.0 (3.9)	19.4 (14.2)
Shrub	53	2.4 (0.6)	26.8 (27.9)
Ground cover	95	1.0 (0.4)	56.2 (26.6)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 10 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 21 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 10 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia longifolia</i>	1(1-2)	56	1(1-2)	9
<i>Acacia maidenii</i>	1(1-1)	11	1(1-1)	3
<i>Acacia suaveolens</i>	1(1-1)	28	1(1-1)	7
<i>Acianthus fornicatus</i>	1(1-2)	7	1(1-1)	1
<i>Allocasuarina littoralis</i>	1(1-2)	46	1(1-2)	16
<i>Angophora floribunda</i>	2(1-3)	21	1(1-2)	9
<i>Aotus ericoides</i>	1(1-1)	11	1(1-1)	3
<i>Baloskion tetraphyllum</i>	1(1-3)	10	1(1-2)	<1
<i>Banksia integrifolia</i> subsp. <i>integrifolia</i>	1(1-1)	54	1(1-2)	2
<i>Banksia serrata</i>	2(1-2)	65	1(1-2)	9
<i>Baumea juncea</i>	1(1-3)	7	2(1-3)	1
<i>Breynia oblongifolia</i>	1(1-1)	63	1(1-1)	12
<i>Commelina cyanea</i>	1(1-2)	15	1(1-1)	4
<i>Desmodium rhytidophyllum</i>	1(1-1)	11	1(1-1)	1
<i>Dianella caerulea</i>	1(1-1)	76	1(1-1)	28
<i>Duboisia myoporoides</i>	1(1-1)	8	1(1-1)	<1
<i>Elaeocarpus reticulatus</i>	1(1-1)	26	1(1-1)	12
<i>Eucalyptus botryoides</i>	3(2-3)	65	1(1-3)	2

<i>Eucalyptus pilularis</i>	3(1-3)	42	2(1-3)	4
<i>Eucalyptus robusta</i>	3(1-4)	7	2(1-3)	<1
<i>Gahnia clarkei</i>	2(2-3)	13	1(1-2)	2
<i>Glochidion ferdinandi</i> var. <i>ferdinandi</i>	1(1-2)	22	1(1-1)	2
<i>Glycine clandestina</i>	1(1-1)	61	1(1-1)	26
<i>Gonocarpus teucroides</i>	1(1-1)	68	1(1-1)	17
<i>Hardenbergia violacea</i>	1(1-1)	40	1(1-1)	17
<i>Hibbertia linearis</i>	1(1-1)	8	1(1-1)	1
<i>Hibbertia scandens</i>	1(1-1)	53	1(1-1)	4
<i>Imperata cylindrica</i> var. <i>major</i>	1(1-2)	78	1(1-2)	9
<i>Isolepis nodosa</i>	1(1-2)	18	1(1-1)	1
<i>Kennedia rubicunda</i>	1(1-1)	29	1(1-1)	6
<i>Lepidosperma concavum</i>	2(1-2)	21	1(1-2)	2
<i>Leptospermum laevigatum</i>	1(1-3)	13	1(1-2)	1
<i>Lomandra longifolia</i>	2(1-3)	96	1(1-1)	43
<i>Macrozamia communis</i>	1(1-2)	28	1(1-2)	4
<i>Marsdenia rostrata</i>	1(1-2)	40	1(1-2)	12
<i>Monotoca elliptica</i>	1(1-2)	65	1(1-1)	1
<i>Platysace lanceolata</i>	1(1-1)	28	1(1-1)	13
<i>Podocarpus spinulosus</i>	1(1-2)	14	1(1-1)	1
<i>Pteridium esculentum</i>	3(1-3)	99	1(1-2)	37
<i>Ricinocarpos pinifolius</i>	1(1-1)	13	1(1-1)	1
<i>Schelhammera undulata</i>	1(1-1)	31	1(1-1)	7
<i>Smilax glycyphylla</i>	1(1-1)	29	1(1-1)	8
<i>Stephania japonica</i> var. <i>discolor</i>	1(1-1)	19	1(1-1)	7
<i>Themeda australis</i>	1(1-2)	35	1(1-3)	17
<i>Trachymene anisocarpa</i>	1(1-1)	8	1(1-1)	<1

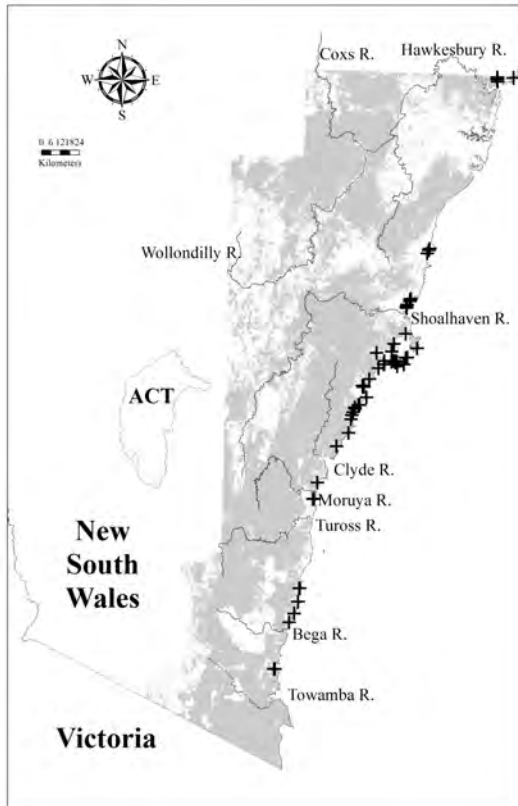
Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Billardiera scandens</i>	1(1-1)	42	1(1-1)	27
<i>Desmodium varians</i>	1(1-1)	33	1(1-1)	21
<i>Entolasia stricta</i>	1(1-1)	42	1(1-2)	34
<i>Microlaena stipoides</i>	1(1-2)	33	1(1-2)	36

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora costata</i>	1(1-3)	10	1(1-3)	7
<i>Corymbia gummifera</i>	2(2-3)	24	2(1-2)	16
<i>Corymbia maculata</i>	2(2-2)	3	2(1-3)	3
<i>Eucalyptus eugenioides</i>	3(3-3)	1	2(1-3)	4
<i>Eucalyptus globoidea</i>	1(1-1)	3	2(1-2)	12
<i>Eucalyptus longifolia</i>	1(1-1)	1	1(1-2)	2
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	1(1-1)	1	1(1-2)	3
<i>Eucalyptus piperita</i>	3(3-3)	1	2(1-3)	9
<i>Eucalyptus scias</i> subsp. <i>callimastha</i>	1(1-1)	1	1(1-2)	1
<i>Eucalyptus sclerophylla</i>	1(1-1)	1	2(1-3)	4

<i>Eucalyptus tereticornis</i>	1(1-1)	1	2(1-3)	7
<i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i>	2(1-3)	10	2(1-3)	8



Locations of survey sites allocated to DSF p64. Grey shading indicates extant native vegetation cover within the study area.

WSF p66: Highland Range Sheltered Forest



Plate p66. Highland Range Sheltered Forest (Map Unit p66) at Mount Shivering northwest of the Bindook Highlands. The tree canopy is dominated by *Eucalyptus fastigata* and *E. dalrympleana* subsp. *dalrympleana*, with scattered *Acacia melanoxylon* and a shrub layer including *Coprosma quadrifida* and *Hedycarya angustifolia*. Groundcover includes dense patches of *Polystichum australiense* and scattered *Helichrysum rutidolepis*.

Sample Sites: 60
 Area Extant (ha): 18500

Estimated % remaining: >90%
 Area in conservation reserves (ha): 12500
 Estimated % of pre-clearing area in conservation reserves: 55-75%
 No. taxa (total / unique): 406 / 2
 No. taxa per plot (\pm sd): 43.1 (10.9)
 Class: Southern Tableland Wet Sclerophyll Forests
 Related TEC: includes areas of Mount Gibraltar Forest EEC (TSC).

Highland Range Sheltered Forest (WSF p66) represents a slight revision of WSF 66 identified by Tindall *et al.* (2004), based on additional samples over a wider study area. This unit is a tall eucalypt forest with an open shrub layer and moist herbaceous groundcover, which generally occurs on upper slopes of high ranges 500m to 1100m ASL receiving orographic moisture. Occurrences are scattered along the eastern fall of the ranges, from the upper Kowmung River and Bindook Highlands south to Mongamulla Mountain in Deua National Park. Highland Range Sheltered Forest is recorded from sites across a wide annual rainfall band, from 750mm along the western edge of the Southern Highlands (Barralier, Hanworth, Canyonleigh) to 1200mm near Mount Shivering in the Kowmung. This unit is found on moderately fertile, fine-grained soils derived from a range of substrates.

Highland Range Sheltered Forest is closely related to Southern Highlands Basalt Forest (WSF p266), which replaces this unit on basalt-derived soils with high rainfall. At higher elevations (e.g. Bindook Highlands, Mongamulla), this unit is increasingly restricted to sheltered lower and mid-slopes, as it is replaced by Cool Montane Wet Forest (WSF p73) or in the south by Southern Range Wet Forest (WSF p338).

About one-fifth of Highland Range Sheltered Forest has been cleared, mainly in the Mittagong-Marulan district, though several examples are represented within conservation reserves north and south of that area.

Floristic Summary:

Trees: *Eucalyptus elata*, *E. radiata*, *E. fastigata*. **Shrubs:** *Leucopogon lanceolatus*, *Rubus parvifolius*. **Climbers:** *Clematis aristata*, *Glycine clandestina*. **Groundcover:** *Pteridium esculentum*, *Lomandra longifolia*, *Viola hederacea*, *Microlaena stipoides*, *Dichondra* spp., *Desmodium varians*, *Poranthera microphylla*, *Echinopogon ovatus*, *Dianella caerulea*, *Veronica plebeia*, *Stellaria pungens*, *Plantago debilis*.

Vegetation structure:

Stratum	Frequency (n=58)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Emergent	3	31.5 (2.1)	19 (19.8)
Tree canopy	98	27.5 (6.3)	30.2 (10.8)
Small tree	69	10.8 (4.1)	13.5 (9.9)
Shrub	52	2.2 (0.6)	15.1 (12)
Ground cover	100	0.7 (0.3)	53 (28.3)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 18 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 34 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 18 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia falciformis</i>	1(1-3)	43	1(1-2)	10
<i>Acaena novae-zelandiae</i>	1(1-2)	27	1(1-1)	7
<i>Adiantum aethiopicum</i>	2(1-2)	40	1(1-1)	9
<i>Asplenium flabellifolium</i>	1(1-1)	32	1(1-1)	11
<i>Austrostipa rudis</i>	1(1-2)	25	1(1-2)	6
<i>Blechnum cartilagineum</i>	1(1-4)	35	1(1-2)	11
<i>Brachyscome angustifolia</i>	1(1-2)	12	1(1-1)	2
<i>Carex breviculmis</i>	1(1-1)	20	1(1-1)	4
<i>Carex inversa</i>	1(1-1)	13	1(1-1)	3
<i>Cassinia aculeata</i>	1(1-1)	20	1(1-1)	6
<i>Clematis aristata</i>	1(1-2)	73	1(1-1)	20
<i>Coprosma quadrifida</i>	1(1-2)	32	1(1-1)	9
<i>Crassula sieberiana</i>	1(1-1)	17	1(1-1)	3

<i>Desmodium varians</i>	1(1-2)	62	1(1-1)	21
<i>Dianella caerulea</i>	1(1-1)	62	1(1-1)	28
<i>Dichelachne inaequiglumis</i>	1(1-1)	12	1(1-1)	3
<i>Dichondra spp.</i>	1(1-2)	78	1(1-2)	25
<i>Dichelachne parva</i>	1(1-1)	12	1(1-1)	1
<i>Echinopogon ovatus</i>	1(1-1)	65	1(1-1)	13
<i>Eucalyptus cypellocarpa</i>	3(1-3)	25	2(1-2)	10
<i>Eucalyptus dalrympleana</i> subsp. <i>dalrympleana</i>	3(1-3)	17	1(1-2)	3
<i>Eucalyptus elata</i>	3(2-4)	48	2(1-2)	5
<i>Eucalyptus fastigata</i>	3(3-4)	28	2(1-3)	6
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	2(1-3)	33	2(1-3)	6
<i>Eucalyptus viminalis</i>	2(1-3)	25	2(1-3)	4
<i>Euchiton gymnocephalus</i>	1(1-1)	35	1(1-1)	7
<i>Euchiton involucratus</i>	1(1-1)	12	1(1-1)	1
<i>Eustrephus latifolius</i>	1(1-1)	37	1(1-1)	19
<i>Galium binifolium</i>	1(1-1)	27	1(1-1)	3
<i>Galium propinquum</i>	1(1-1)	45	1(1-1)	7
<i>Geranium potentilloides</i>	1(1-2)	28	1(1-1)	5
<i>Geranium solanderi</i> var. <i>solanderi</i>	1(1-2)	20	1(1-1)	8
<i>Glycine clandestina</i>	1(1-1)	58	1(1-1)	26
<i>Helichrysum elatum</i>	1(1-2)	12	1(1-1)	2
<i>Helichrysum rutidolepis</i>	2(1-3)	13	1(1-1)	1
<i>Helichrysum scorpioides</i>	1(1-2)	23	1(1-1)	7
<i>Hibbertia empetrifolia</i> subsp. <i>empetrifolia</i>	1(1-2)	18	1(1-1)	6
<i>Hibbertia scandens</i>	1(1-1)	20	1(1-1)	5
<i>Hydrocotyle laxiflora</i>	1(1-2)	37	1(1-1)	15
<i>Hydrocotyle peduncularis</i>	2(1-3)	45	1(1-1)	8
<i>Hypericum gramineum</i>	1(1-1)	35	1(1-1)	16
<i>Indigofera australis</i>	1(1-1)	30	1(1-1)	9
<i>Lagenifera gracilis</i>	1(1-1)	18	1(1-1)	3
<i>Lagenifera stipitata</i>	1(1-2)	37	1(1-1)	14
<i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>	1(1-1)	57	1(1-1)	23
<i>Libertia paniculata</i>	1(1-2)	13	1(1-1)	2
<i>Lomandra longifolia</i>	1(1-2)	85	1(1-1)	43
<i>Lomatia myricoides</i>	1(1-2)	17	1(1-1)	4
<i>Luzula flaccida</i>	1(1-1)	30	1(1-1)	4
<i>Microlaena stipoides</i>	2(1-3)	83	1(1-2)	36
<i>Olearia viscidula</i>	1(1-3)	48	1(1-2)	5
<i>Oxalis exilis</i>	1(1-1)	15	1(1-1)	3
<i>Oxalis perennans</i>	1(1-1)	37	1(1-1)	13
<i>Plantago debilis</i>	1(1-2)	52	1(1-1)	7
<i>Polystichum australiense</i>	2(1-4)	12	1(1-2)	1
<i>Poranthera microphylla</i>	1(1-1)	65	1(1-1)	15
<i>Pratia purpurascens</i>	1(1-1)	40	1(1-1)	17
<i>Prostanthera lasianthos</i>	1(1-1)	12	1(1-1)	2
<i>Pteridium esculentum</i>	2(1-2)	95	1(1-2)	37

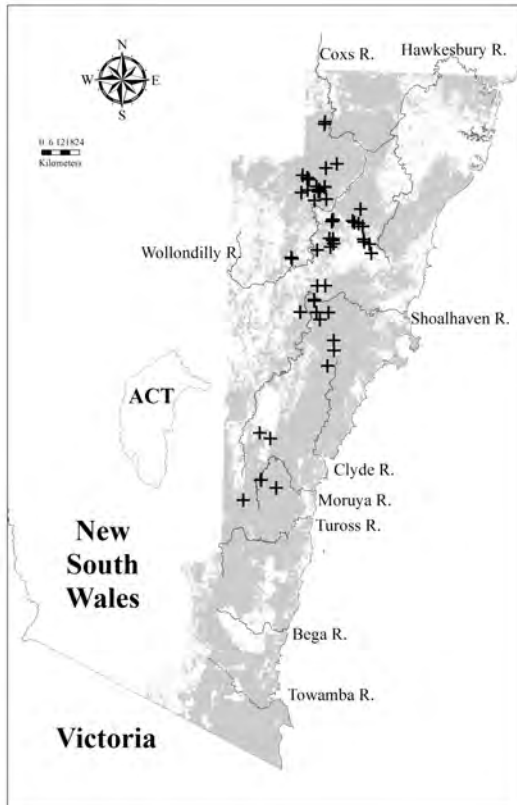
<i>Rubus parvifolius</i>	1(1-1)	50	1(1-1)	9
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	1(1-1)	15	1(1-1)	3
<i>Senecio linearifolius</i>	1(1-2)	27	1(1-1)	8
<i>Senecio prenanthoides</i>	1(1-1)	38	1(1-1)	8
<i>Solanum pungetium</i>	1(1-1)	17	1(1-1)	5
<i>Stellaria pungens</i>	1(1-2)	53	1(1-1)	6
<i>Stypandra glauca</i>	2(1-2)	25	1(1-2)	5
<i>Tylophora barbata</i>	1(1-2)	33	1(1-1)	17
<i>Veronica plebeia</i>	1(1-1)	50	1(1-1)	10
<i>Viola betonicifolia</i>	1(1-1)	15	1(1-1)	5
<i>Viola hederacea</i>	1(1-2)	82	1(1-1)	21
<i>Wahlenbergia gracilis</i>	1(1-1)	40	1(1-1)	10
<i>Wahlenbergia stricta</i> subsp. <i>stricta</i>	1(1-1)	32	1(1-1)	5

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Billardiera scandens</i>	1(1-1)	42	1(1-1)	28
<i>Entolasia stricta</i>	1(1-1)	33	1(1-2)	34
<i>Gonocarpus tetragynus</i>	1(1-1)	32	1(1-1)	20
<i>Persoonia linearis</i>	1(1-1)	42	1(1-1)	29

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora costata</i>	1(1-2)	5	1(1-3)	7
<i>Angophora floribunda</i>	3(2-3)	12	1(1-2)	9
<i>Eucalyptus agglomerata</i>	1(1-3)	8	2(1-3)	7
<i>Eucalyptus amplifolia</i> subsp. <i>amplifolia</i>	1(1-1)	3	2(1-3)	1
<i>Eucalyptus blaxlandii</i>	3(3-3)	5	1(1-3)	1
<i>Eucalyptus bosistoana</i>	1(1-1)	2	1(1-2)	3
<i>Eucalyptus cinerea</i>	1(1-1)	5	1(1-2)	1
<i>Eucalyptus dives</i>	2(2-2)	2	2(1-3)	4
<i>Eucalyptus eugenioides</i>	2(1-2)	3	2(1-3)	4
<i>Eucalyptus globoidea</i>	1(1-1)	7	2(1-2)	12
<i>Eucalyptus maidenii</i>	3(1-3)	3	2(1-2)	2
<i>Eucalyptus mannifera</i>	1(1-1)	2	2(1-3)	4
<i>Eucalyptus melliodora</i>	2(2-2)	2	1(1-3)	2
<i>Eucalyptus moluccana</i>	1(1-1)	2	3(1-3)	2
<i>Eucalyptus muelleriana</i>	3(1-3)	5	2(1-2)	6
<i>Eucalyptus obliqua</i>	3(3-3)	2	2(1-3)	4
<i>Eucalyptus piperita</i>	3(1-3)	13	2(1-3)	9
<i>Eucalyptus punctata</i>	3(1-3)	17	2(1-3)	9
<i>Eucalyptus sieberi</i>	2(1-3)	5	2(1-3)	16
<i>Eucalyptus smithii</i>	3(1-4)	7	1(1-2)	2
<i>Eucalyptus tereticornis</i>	1(1-1)	2	2(1-3)	7



Locations of survey sites allocated to WSF p66. Grey shading indicates extant native vegetation cover within the study area.

WSF p68: Nepean Shale Cap Forest



Plate p68. Nepean Shale Cap Forest (Map Unit p68) along the Picton Road east of Wilton, where a canopy of *Eucalyptus pilularis* grows above a diverse shrub layer including *Grevillea mucronulata*, *Banksia spinulosa* subsp. *spinulosa* and *Persoonia levis* and a patchy groundcover dominated by *Lomandra longifolia*.

Sample Sites: 8
 Area Extant (ha): 660
 Estimated % remaining: >90%
 Area in conservation reserves (ha): 0
 Estimated % of pre-clearing area in conservation reserves: 0
 No. taxa (total / unique): 135 / 0
 No. taxa per plot (\pm sd): 35.8 (10.6)

Class: Northern Hinterland Wet Sclerophyll Forests
Related TEC: n/a

Nepean Shale Cap Forest (WSF p68) is equivalent to WSF 68 identified by Tindall *et al.* (2004). This unit is a eucalypt forest with an open shrub layer and grassy groundcover, restricted to shale lenses on the upper Woronora plateau from 300m to 600m ASL.

Nepean Shale Cap Forest shares a number of species with Southern Highlands Shale Forest (WSF p268), which occurs on deep clay soils derived from shale bedrock whereas this unit occurs on residual sandy – clay soils derived from shallow shale cappings. Further north on the Woronora plateau shale caps, Nepean Shale Cap Forest is replaced by Sydney Shale – Ironstone Cap Forest (DSF p143).

Although Nepean Shale Cap Forest is restricted to a small range and comprised of small patches, much of its original distribution remains intact within Sydney's metropolitan water catchments.

Floristic Summary:

Trees: *Eucalyptus globoidea*, *E. punctata*, *E. piperita* *E. crebra*. **Shrubs:** *Leucopogon lanceolatus*, *Persoonia linearis*.

Climbers: *Clematis aristata*, *Billardiera scandens*, *Glycine clandestina*. **Groundcover:** *Dianella caerulea*, *Pteridium esculentum*, *Lomandra longifolia*, *Pratia purpurascens*, *Viola hederacea*, *Poranthera microphylla*, *Gonocarpus teucrioides*.

Vegetation structure:

Stratum	Frequency (n=7)	Height (m) (±StDev)	Cover (%) (±StDev)
Emergent	-	- (-)	- (-)
Tree canopy	100	21.7 (4.4)	30 (-)
Small tree	71	6.6 (2.6)	20 (-)
Shrub	29	3 (-)	- (-)
Ground cover	100	1 (0.2)	70 (-)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 6 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 27 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 6 positive diagnostic species.

Positive Diagnostic Species:

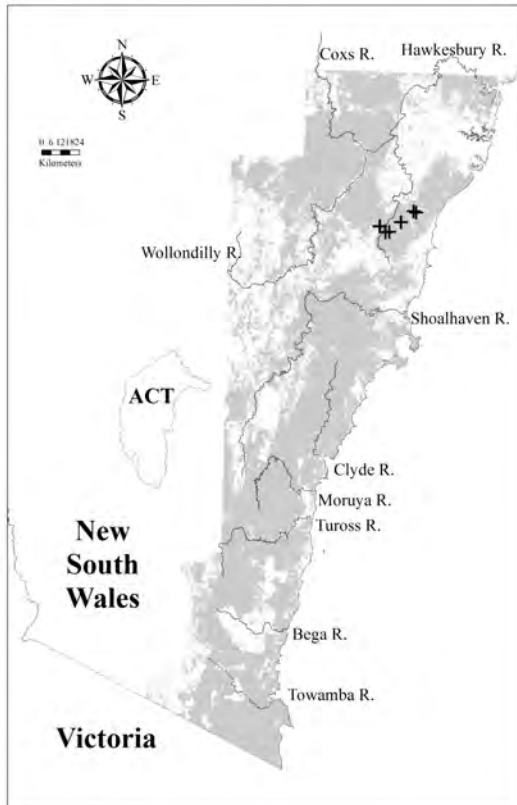
Species	C/A	Freq	C/A O	Freq O
<i>Acacia binervata</i>	3(2-3)	25	1(1-2)	2
<i>Adiantum aethiopicum</i>	1(1-1)	50	1(1-2)	9
<i>Allocasuarina torulosa</i>	1(1-2)	38	1(1-3)	5
<i>Brachyscome angustifolia</i>	1(1-1)	25	1(1-1)	2
<i>Dianella caerulea</i>	1(1-1)	100	1(1-1)	28
<i>Echinopogon caespitosus</i> var. <i>caespitosus</i>	1(1-1)	63	1(1-1)	6
<i>Entolasia marginata</i>	1(1-1)	75	1(1-1)	11
<i>Eucalyptus globoidea</i>	2(1-2)	63	2(1-2)	12
<i>Eucalyptus punctata</i>	2(1-2)	63	1(1-3)	9
<i>Helichrysum elatum</i>	1(1-1)	50	1(1-1)	2
<i>Hibbertia diffusa</i>	1(1-1)	38	1(1-1)	3
<i>Kennedia rubicunda</i>	1(1-1)	38	1(1-1)	6
<i>Lachnagrostis filiformis</i>	1(1-1)	38	1(1-1)	3
<i>Leptomeria acida</i>	1(1-2)	38	1(1-1)	4
<i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>	1(1-2)	88	1(1-1)	24
<i>Opercularia diphylla</i>	1(1-1)	63	1(1-1)	7
<i>Poranthera microphylla</i>	1(1-1)	75	1(1-1)	15
<i>Pratia purpurascens</i>	1(1-2)	100	1(1-1)	17
<i>Pterostylis nutans</i>	1(1-1)	25	1(1-1)	<1

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia longifolia</i>	2(1-2)	38	1(1-2)	10
<i>Acacia mearnsii</i>	1(1-2)	38	1(1-2)	7
<i>Billardiera scandens</i>	1(1-1)	63	1(1-1)	28
<i>Clematis aristata</i>	1(1-1)	63	1(1-1)	20
<i>Desmodium varians</i>	1(1-1)	63	1(1-1)	21
<i>Dichondra spp.</i>	2(1-3)	63	1(1-2)	25
<i>Doodia aspera</i>	1(1-1)	38	1(1-2)	12
<i>Entolasia stricta</i>	1(1-1)	38	1(1-2)	34
<i>Galium propinquum</i>	1(1-1)	38	1(1-1)	7
<i>Glycine clandestina</i>	1(1-1)	50	1(1-1)	26
<i>Gonocarpus teucrioides</i>	1(1-2)	38	1(1-1)	18
<i>Hibbertia aspera</i> subsp. <i>aspera</i>	2(1-3)	38	1(1-1)	10
<i>Hydrocotyle laxiflora</i>	1(1-1)	38	1(1-1)	16
<i>Imperata cylindrica</i> var. <i>major</i>	1(1-1)	38	1(1-2)	10
<i>Indigofera australis</i>	1(1-1)	38	1(1-1)	9
<i>Lagenifera stipitata</i>	1(1-1)	50	1(1-1)	14
<i>Leptospermum polygalifolium</i>	1(1-1)	38	1(1-2)	8
<i>Lomandra longifolia</i>	1(1-1)	75	1(1-1)	44
<i>Microlaena stipoides</i>	1(1-2)	63	1(1-2)	36
<i>Persoonia linearis</i>	1(1-2)	63	1(1-1)	29
<i>Pteridium esculentum</i>	1(1-2)	75	1(1-2)	37
<i>Tylophora barbata</i>	1(1-1)	38	1(1-1)	17
<i>Veronica plebeia</i>	1(1-1)	38	1(1-1)	10
<i>Viola hederacea</i>	1(1-1)	38	1(1-1)	22

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Corymbia gummifera</i>	1(1-1)	25	2(1-2)	16
<i>Eucalyptus amplifolia</i> subsp. <i>amplifolia</i>	1(1-1)	13	2(1-3)	1
<i>Eucalyptus crebra</i>	2(2-2)	25	2(1-3)	3
<i>Eucalyptus cypellocarpa</i>	2(2-2)	13	2(1-2)	10
<i>Eucalyptus eugenioides</i>	2(2-2)	13	2(1-3)	4
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	2(2-2)	13	1(1-2)	3
<i>Eucalyptus piperita</i>	3(2-3)	25	2(1-3)	9
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	1(1-1)	13	2(1-3)	6
<i>Eucalyptus saligna</i> X <i>botryoides</i>	3(3-3)	13	2(1-3)	2



Locations of survey sites allocated to WSF p68. Grey shading indicates extant native vegetation cover within the study area.

WSF p72: Blue Mountains Basalt Forest



Plate p72. Blue Mountains Basalt Forest (Map Unit p72) at Mount Tomah with a canopy of *Eucalyptus fastigata*, a sparse sub canopy of *Doryphora sassafras*, scattered shrubs including *Prostanthera lasianthos* and *Pittosporum multiflorum*, and patches of dense groundcover dominated by *Lomandra longifolia*, *Geranium homeanum*, *Senecio linearifolius* and *Carex appressa*.

Sample Sites: 21

Area Extant (ha): 480

Estimated % remaining: 50-70%

Area in conservation reserves (ha): 160

Estimated % of pre-clearing area in conservation reserves: 10-30%

No. taxa (total / unique): 194 / 0

No. taxa per plot (\pm sd): 37.7 (7.2)

Class: Southern Escarpment Wet Sclerophyll Forests

Related TEC: n/a

Blue Mountains Basalt Forest (WSF p72) is equivalent to WSF 72 identified by Tindall *et al.* (2004). This unit is a tall eucalypt forest with a dense shrub/small tree layer and moist herbaceous groundcover, restricted to basalt caps in the upper Blue Mountains at elevations generally from 750m to 1050m ASL and with annual rainfall of 950 to 1350mm. Blue Mountains Basalt Forest occurs as small, disjunct patches scattered across the upper mountains on residual caps of Post-Triassic basalt, including Mount Wilson, Mount Bell, Mount Tomah, Mount Banks, Mount Caley and Mount Hay. On sheltered basalt slopes and gullies Blue Mountains Basalt Forest may grade into small patches of Intermediate Temperate Rainforest (RF p116). Along the basalt - shale boundary Blue Mountains Basalt Forest grades into and is then replaced by the related Shale-Basalt Sheltered Forest (WSF p168). The basalt - sandstone boundary is much more distinctive with Blue Mountains Basalt Forest grading rapidly into the surrounding sclerophyll forest (Blue Mountains Ridgetop Forest (DSF p136), however on steep, south-facing sandstone slopes this unit may grade into Sandstone Scarp Warm Temperate Rainforest (RF p114).

Blue Mountains Basalt Forest is equivalent to unit 6g Moist Basalt Cap Forest described by Keith and Benson (1988). More than two-thirds of its original distribution has been cleared and only a few hundred hectares remain. Much of this area was exposed to livestock grazing in the past, and some is now contained within Blue Mountains National Park.

Floristic Summary:

Trees: *Acacia melanoxylon*, *Doryphora sassafras*, *Eucalyptus blaxlandii*, *E. oreades*, *E. radiata*. **Shrubs:** *Senecio linearifolius*, *Cyathea australis*, *Indigofera australis*, *Hedycarya angustifolia*, *Hymenanthera dentata*. **Climbers:** *Tylophora barbata*, *Eustrephus latifolius*, *Smilax australis*, *Clematis aristata*, *Glycine tabacina*. **Groundcover:** *Pteridium esculentum*, *Viola hederacea*, *Centella asiatica*, *Stellaria flaccida*, *Geranium homeanum*, *Echinopogon ovatus*, *Carex appressa*, *Dichondra* spp., *Ajuga australis*, *Austrocynoglossum latifolium*, *Oplismenus imbecillis*, *Pellaea falcata*.

Vegetation structure:

Stratum	Frequency (n=3)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Tree canopy	100	32.3 (11)	30 (18)
Small tree	67	18 (14.1)	63.5 (9.2)
Shrub	33	3 (-)	40 (-)
Ground cover	100	0.8 (0.3)	40 (25)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 15 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 32 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 15 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia elata</i>	1(1-1)	33	1(1-3)	1
<i>Acacia melanoxylon</i>	1(1-2)	81	1(1-1)	6
<i>Acaena novae-zelandiae</i>	1(1-1)	38	1(1-1)	7
<i>Ajuga australis</i>	1(1-1)	43	1(1-1)	3
<i>Austrocynoglossum latifolium</i>	1(1-1)	43	1(1-1)	1
<i>Blechnum nudum</i>	1(1-3)	24	1(1-2)	3
<i>Bursaria longisepala</i>	1(1-1)	33	1(1-1)	1
<i>Carex appressa</i>	1(1-1)	57	1(1-1)	4
<i>Centella asiatica</i>	2(1-2)	76	1(1-1)	4
<i>Clematis aristata</i>	1(1-1)	62	1(1-1)	20
<i>Cyathea australis</i>	1(1-2)	57	1(1-2)	8
<i>Cyathea leichhardtiana</i>	1(1-2)	24	1(1-2)	1
<i>Daviesia ulicifolia</i>	1(1-1)	29	1(1-1)	7
<i>Dichondra</i> spp.	1(1-2)	57	1(1-2)	25
<i>Doryphora sassafras</i>	3(1-4)	52	3(1-3)	3

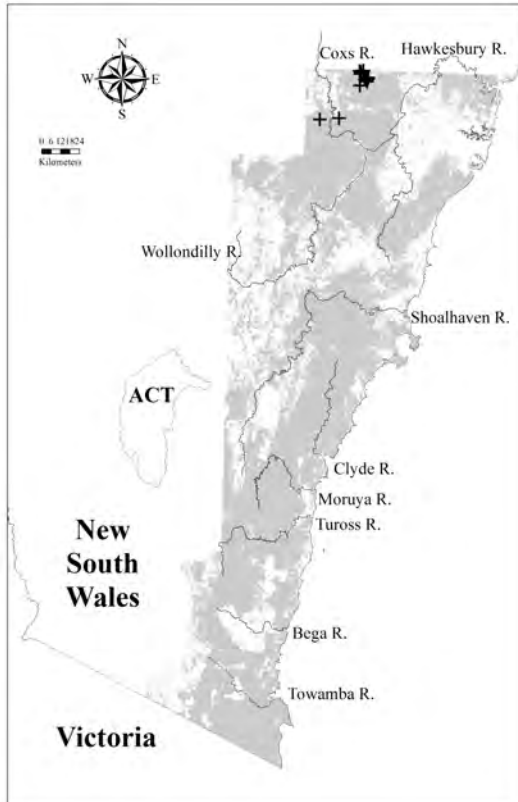
<i>Echinopogon ovatus</i>	1(1-1)	62	1(1-1)	14
<i>Eucalyptus blaxlandii</i>	2(2-3)	43	1(1-3)	1
<i>Eucalyptus oreades</i>	2(1-3)	33	3(1-4)	<1
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	2(1-3)	33	2(1-3)	6
<i>Eustrephus latifolius</i>	1(1-1)	52	1(1-1)	19
<i>Geranium homeanum</i>	2(1-2)	67	1(1-1)	3
<i>Geranium potentilloides</i>	1(1-1)	38	1(1-1)	6
<i>Glycine tabacina</i>	1(1-1)	48	1(1-1)	7
<i>Hedycarya angustifolia</i>	1(1-2)	52	1(1-3)	4
<i>Hymenanthera dentata</i>	1(1-1)	52	1(1-1)	6
<i>Indigofera australis</i>	2(1-3)	57	1(1-1)	9
<i>Marsdenia flavescens</i>	1(1-1)	24	1(1-2)	2
<i>Oplismenus imbecillis</i>	1(1-2)	43	1(1-2)	14
<i>Pellaea falcata</i>	1(1-2)	43	1(1-1)	10
<i>Plantago debilis</i>	1(1-1)	29	1(1-1)	7
<i>Polystichum proliferum</i>	1(1-2)	38	1(1-2)	4
<i>Polyscias sambucifolia</i>	1(1-1)	38	1(1-1)	6
<i>Prostanthera lasianthos</i>	1(1-2)	24	1(1-1)	2
<i>Pteridium esculentum</i>	1(1-2)	81	1(1-2)	37
<i>Pyrrosia rupestris</i>	1(1-1)	29	1(1-2)	6
<i>Rapanea howittiana</i>	1(1-1)	33	1(1-1)	5
<i>Senecio linearifolius</i>	1(1-2)	62	1(1-1)	8
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	1(1-1)	38	1(1-1)	7
<i>Smilax australis</i>	1(1-2)	62	1(1-1)	16
<i>Stellaria flaccida</i>	2(1-2)	71	1(1-1)	10
<i>Stellaria pungens</i>	2(1-2)	29	1(1-1)	6
<i>Tylophora barbata</i>	1(1-1)	86	1(1-1)	17
<i>Urtica incisa</i>	1(1-1)	29	1(1-1)	5
<i>Viola hederacea</i>	1(1-1)	81	1(1-1)	22

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Blechnum cartilagineum</i>	1(1-3)	33	1(1-2)	11
<i>Desmodium varians</i>	1(1-2)	43	1(1-1)	21
<i>Doodia aspera</i>	1(1-3)	33	1(1-2)	12
<i>Geitonoplesium cymosum</i>	1(1-1)	38	1(1-1)	16
<i>Lagenifera stipitata</i>	1(1-1)	38	1(1-1)	14
<i>Lomandra longifolia</i>	1(1-1)	52	1(1-1)	44
<i>Microlaena stipoides</i>	1(1-2)	57	1(1-2)	36
<i>Pandorea pandorana</i>	1(1-1)	43	1(1-1)	18
<i>Poranthera microphylla</i>	1(1-1)	38	1(1-1)	15

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Eucalyptus bicostata</i>	3(3-3)	5	1(1-1)	<1
<i>Eucalyptus cypellocarpa</i>	1(1-3)	14	2(1-2)	10
<i>Eucalyptus fastigata</i>	4(1-4)	14	2(1-3)	6
<i>Eucalyptus piperita</i>	1(1-2)	14	2(1-3)	9
<i>Eucalyptus sieberi</i>	1(1-1)	5	2(1-3)	16
<i>Eucalyptus viminalis</i>	3(1-3)	10	2(1-3)	5



Locations of survey sites allocated to WSF p72. Grey shading indicates extant native vegetation cover within the study area.

WSF p73: Cool Montane Wet Forest

Plate p73. Cool Montane Wet Forest (Map Unit p73) along the Jenolan Caves Road south of Hampton, where a continuous canopy of *Eucalyptus fastigata* and *E. dalrympleana* subsp. *dalrympleana* grows above scattered small trees including *Acacia dealbata* and a continuous groundcover dominated by *Lomandra longifolia* and *Pteridium esculentum*.

Sample Sites: 101

Area Extant (ha): 62600

Estimated % remaining: 70-90%

Area in conservation reserves (ha): 44200

Estimated % of pre-clearing area in conservation reserves: 35-55%

No. taxa (total / unique): 404 / 6

No. taxa per plot (\pm sd): 27 (9.2)

Class: Southern Tableland Wet Sclerophyll Forests

Related TEC: n/a

Cool Montane Wet Forest (WSF p73) is equivalent to WSF 73 identified by Tindall *et al.* (2004). This unit is a tall eucalypt forest with an open shrub layer and moist herbaceous groundcover, found on the higher, cooler parts of the Great Dividing Range in the northern and central parts of the study area. This unit occurs on soils derived from a range of granitic, low-quartz sedimentary and acid volcanic substrates, within a mean annual rainfall range of 800-1100mm and at elevations from 750m to 1300m ASL), including sites subject to occasional winter snowfall. Cool Montane Wet Forest is widespread in the far north-west of the study area, with extensive areas mapped from Lithgow south to Jenolan, Mount Werong and Mount Guineacor. Small outlying areas are found on slightly drier high peaks across the Southern Tablelands (Mount Rae, Cullerin Range and Cookbundoon Range), and in the south scattered records continue to Bombay, Mongarlowe and Wyanbene Caves, where it is replaced by Southern Range Wet Forest (WSF p338).

Cool Montane Wet Forest is often associated with Tableland Ridge Forest (DSF p8). Where they co-occur WSF p73 dominates the higher moister parts of the landscape, becoming increasingly restricted to sheltered gullies and southerly aspects with decreasing altitude and rainfall.

Substantial areas of this unit have been cleared where it occurs on flatter land, and livestock grazing continues to degrade the understorey of remnant patches. Examples are represented in conservation reserves where the terrain is more rugged.

Floristic Summary:

Trees: *Eucalyptus radiata*, *E. fastigata*, *E. dalrympleana*, *Acacia melanoxylon*. **Shrubs:** *Leucopogon lanceolatus*. **Climbers:** *Clematis aristata*. **Groundcover:** *Pteridium esculentum*, *Lomandra longifolia*, *Viola hederacea*, *Stellaria pungens*, *Gonocarpus tetragynus*, *Poa sieberiana*, *Microlaena stipoides*, *Dianella tasmanica*, *Poranthera microphylla*.

Vegetation structure:

Stratum	Frequency (n=86)	Height (m) (±StDev)	Cover (%) (±StDev)
Emergent	1	- (-)	10 (-)
Tree canopy	98	27.3 (6.3)	37.7 (17.1)
Small tree	76	10.6 (5.3)	19.8 (20)
Shrub	51	2.2 (0.7)	13.8 (16.6)
Ground cover	97	0.9 (0.4)	49 (35.1)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 10 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 20 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 10 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia dealbata</i>	1(1-2)	18	1(1-2)	5
<i>Acacia falciformis</i>	1(1-2)	21	1(1-2)	10
<i>Acacia melanoxylon</i>	1(1-1)	38	1(1-1)	6
<i>Acacia obliquinervia</i>	1(1-1)	11	1(1-1)	1
<i>Acaena novae-zelandiae</i>	1(1-1)	21	1(1-1)	7
<i>Arrhenechthites mixta</i>	1(1-1)	17	1(1-1)	1
<i>Asperula conferta</i>	1(1-1)	22	1(1-1)	4
<i>Blechnum nudum</i>	2(2-3)	10	1(1-2)	3
<i>Brachyscome spathulata</i>	2(1-2)	5	1(1-1)	1
<i>Chrysocephalum apiculatum</i>	1(1-2)	8	1(1-1)	2
<i>Clematis aristata</i>	1(1-1)	44	1(1-1)	20
<i>Coprosma quadrifida</i>	1(1-1)	22	1(1-1)	9
<i>Cotula alpina</i>	1(1-1)	5	1(1-1)	<1
<i>Cymbonotus lawsonianus</i>	1(1-1)	9	1(1-1)	1
<i>Daviesia ulicifolia</i>	1(1-1)	15	1(1-1)	6
<i>Deyeuxia parviseta</i>	1(1-1)	4	1(1-1)	<1
<i>Dianella tasmanica</i>	1(1-1)	32	1(1-1)	7
<i>Dichelachne inaequiglumis</i>	1(1-1)	11	1(1-1)	3
<i>Dichelachne sieberiana</i>	1(1-1)	4	1(1-2)	<1
<i>Eucalyptus blaxlandii</i>	1(1-1)	6	2(1-3)	1
<i>Eucalyptus dalrympleana</i> subsp. <i>dalrympleana</i>	1(1-2)	59	1(1-3)	2
<i>Eucalyptus fastigata</i>	2(2-3)	49	2(1-3)	6
<i>Eucalyptus pauciflora</i>	2(1-2)	10	1(1-2)	3
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	2(2-3)	71	2(1-3)	6
<i>Eucalyptus viminalis</i>	2(1-2)	17	2(1-3)	4
<i>Geranium graniticola</i>	1(1-1)	11	2(1-2)	<1
<i>Geranium solanderi</i> var. <i>solanderi</i>	1(1-1)	30	1(1-1)	7
<i>Gonocarpus tetragynus</i>	1(1-1)	64	1(1-1)	20
<i>Helichrysum scorpioides</i>	1(1-2)	36	1(1-1)	7
<i>Hibbertia obtusifolia</i>	1(1-1)	29	1(1-1)	10
<i>Hydrocotyle laxiflora</i>	1(1-2)	33	1(1-1)	15
<i>Lagenifera stipitata</i>	1(1-1)	26	1(1-1)	14
<i>Leptospermum obovatum</i>	2(1-2)	4	1(1-3)	<1

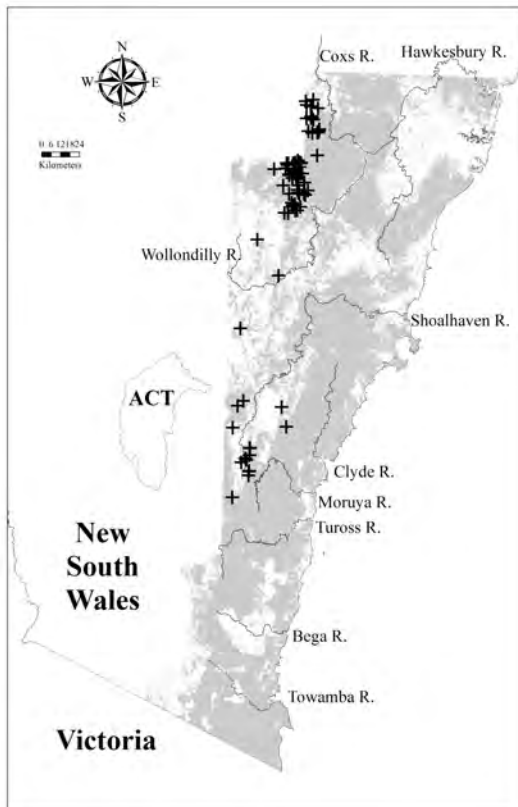
<i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>	1(1-2)	57	1(1-1)	23
<i>Lomandra filiformis</i> subsp. <i>coriacea</i>	1(1-1)	25	1(1-2)	10
<i>Lomandra longifolia</i>	2(1-2)	82	1(1-1)	43
<i>Lomandra micrantha</i> subsp. <i>tuberculata</i>	1(1-1)	4	1(1-1)	<1
<i>Lomatia myricoides</i>	1(1-2)	45	1(1-1)	4
<i>Luzula flaccida</i>	1(1-1)	15	1(1-1)	4
<i>Monotoca scoparia</i>	1(1-1)	26	1(1-1)	12
<i>Olearia erubescens</i>	1(1-1)	19	1(1-1)	2
<i>Oreomyrrhis eriopoda</i>	1(1-1)	12	1(1-1)	1
<i>Persoonia laurina</i>	1(1-1)	10	1(1-1)	2
<i>Plantago debilis</i>	1(1-1)	16	1(1-1)	7
<i>Poa sieberiana</i> var. <i>cyanophylla</i>	1(1-1)	10	1(1-2)	2
<i>Poa sieberiana</i> var. <i>sieberiana</i>	2(1-3)	73	1(1-2)	10
<i>Podolepis hieracioides</i>	1(1-2)	8	1(1-1)	<1
<i>Polystichum australiense</i>	2(2-3)	5	1(1-2)	1
<i>Poranthera microphylla</i>	1(1-1)	36	1(1-1)	15
<i>Pteridium esculentum</i>	1(1-2)	87	1(1-2)	36
<i>Ranunculus lappaceus</i>	1(1-1)	12	1(1-1)	1
<i>Senecio hispidulus</i> var. <i>hispidulus</i>	1(1-1)	10	1(1-1)	3
<i>Senecio lautus</i> subsp. <i>dissectifolius</i>	1(1-2)	4	1(1-1)	<1
<i>Senecio prenanthoides</i>	1(1-1)	26	1(1-1)	8
<i>Stackhousia monogyna</i>	1(1-1)	10	1(1-1)	2
<i>Stellaria pungens</i>	1(1-2)	66	1(1-1)	6
<i>Veronica plebeia</i>	1(1-1)	22	1(1-1)	10
<i>Viola betonicifolia</i>	1(1-1)	35	1(1-1)	5
<i>Viola hederacea</i>	1(1-2)	65	1(1-1)	21

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Microlaena stipoides</i>	1(1-2)	44	1(1-2)	36

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Eucalyptus aggregata</i>	3(3-3)	1	2(1-3)	<1
<i>Eucalyptus blakelyi</i>	2(2-2)	1	1(1-3)	1
<i>Eucalyptus cypellocarpa</i>	2(2-3)	9	2(1-2)	10
<i>Eucalyptus dives</i>	1(1-3)	8	2(1-3)	4
<i>Eucalyptus elata</i>	1(1-1)	2	2(1-3)	5
<i>Eucalyptus goniocalyx</i>	3(3-3)	1	1(1-3)	1
<i>Eucalyptus macrorhyncha</i>	1(1-2)	4	2(1-3)	3
<i>Eucalyptus mannifera</i>	1(1-1)	3	2(1-3)	4
<i>Eucalyptus obliqua</i>	3(2-3)	10	2(1-3)	4
<i>Eucalyptus punctata</i>	3(3-3)	1	1(1-3)	9
<i>Eucalyptus rubida</i> subsp. <i>rubida</i>	1(1-1)	1	1(1-2)	2
<i>Eucalyptus sieberi</i>	1(1-3)	12	2(1-3)	16
<i>Eucalyptus smithii</i>	3(2-3)	5	1(1-2)	2



Locations of survey sites allocated to WSF p73. Grey shading indicates extant native vegetation cover within the study area.

DSF p76: Moist Montane Sandstone Forest



Plate p76. Moist Montane Sandstone Forest (Map Unit p76) on the northeast end of Mount Bolworra on the Gangerang Plateau. Here the canopy contains *Eucalyptus sieberi* and *E. blaxlandii*, over a diverse shrub layer including *Acacia obtusifolia*, *Hakea dactyloides*, *H. salicifolia*, *Leucopogon lanceolatus* var. *lanceolatus* and *Leptospermum trinervium* and a patchy groundcover including *Pteridium esculentum* and *Patersonia glabrata*.

Sample Sites: 14

Area Extant (ha): 4800
 Estimated % remaining: >95%
 Area in conservation reserves (ha): 4500
 Estimated % of pre-clearing area in conservation reserves: >85%
 No. taxa (total / unique): 186 / 0
 No. taxa per plot (\pm sd): 37.6 (9.4)
 Class: Sydney Montane Dry Sclerophyll Forests
 Related TEC: n/a

Moist Montane Sandstone Forest (DSF p76) is equivalent to DSF 76 identified by Tindall *et al.* (2004), and is a eucalypt forest with a mixed understorey of shrubs, sedges, forbs and grasses. This unit is generally found between 800m and 1150m ASL as scattered occurrences across the upper Blue Mountains plateau on sheltered slopes on Triassic Narrabeen Sandstone, and on the Gangerang Plateau and Kanangra Tops where it is associated with residual Permian sediments. Mean annual rainfall varies from 950 to 1300mm. The distribution is restricted, but negligible area has been cleared and most is within Blue Mountains National Park.

Floristic Summary:

Trees: *Eucalyptus radiata*, *E. sieberi*, *E. cypellocarpa*. **Shrubs:** *Leucopogon lanceolatus*, *Amperea xiphioclada*, *Leptospermum polygalifolium*, *Lomatia silaifolia*, *Acacia obtusifolia*, *Banksia spinulosa*, *Monotoca scoparia*, *Persoonia laurina*, *Epacris pulchella*. **Groundcover:** *Lomandra longifolia*, *Dianella caerulea*, *Pteridium esculentum*, *Gonocarpus teucroides*, *Lomandra glauca*.

Vegetation structure:

Stratum	Frequency (n=12)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Emergent	-	- (-)	- (-)
Tree canopy	100	19.6 (4.6)	34.6 (6.6)
Small tree	67	9.6 (5.1)	29.4 (7.8)
Shrub	50	2.3 (1.1)	14.2 (13.9)
Ground cover	100	0.6 (0.2)	37.7 (33.4)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 13 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 30 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 13 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia obtusifolia</i>	2(1-3)	71	1(1-2)	9
<i>Amperea xiphioclada</i>	1(1-1)	86	1(1-1)	7
<i>Arrhenechthites mixta</i>	1(1-1)	21	1(1-1)	1
<i>Banksia cunninghamii</i> subsp. <i>cunninghamii</i>	3(1-3)	21	1(1-1)	<1
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	1(1-1)	79	1(1-2)	15
<i>Caustis flexuosa</i>	1(1-1)	36	1(1-2)	7
<i>Dampiera purpurea</i>	1(1-1)	29	1(1-1)	4
<i>Daviesia ulicifolia</i>	1(1-1)	57	1(1-1)	7
<i>Dianella caerulea</i>	1(1-2)	86	1(1-1)	28
<i>Dianella tasmanica</i>	1(1-2)	36	1(1-1)	7
<i>Drosera peltata</i>	1(1-1)	21	1(1-1)	2
<i>Elaeocarpus reticulatus</i>	1(1-1)	43	1(1-1)	12
<i>Epacris pulchella</i>	1(1-1)	57	1(1-1)	5
<i>Eucalyptus blaxlandii</i>	1(1-3)	21	1(1-3)	1
<i>Eucalyptus cypellocarpa</i>	3(1-3)	57	2(1-2)	10
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	3(3-4)	79	2(1-3)	6
<i>Eucalyptus sieberi</i>	3(1-3)	64	2(1-3)	16
<i>Eucalyptus sparsifolia</i>	1(1-3)	36	2(1-3)	2

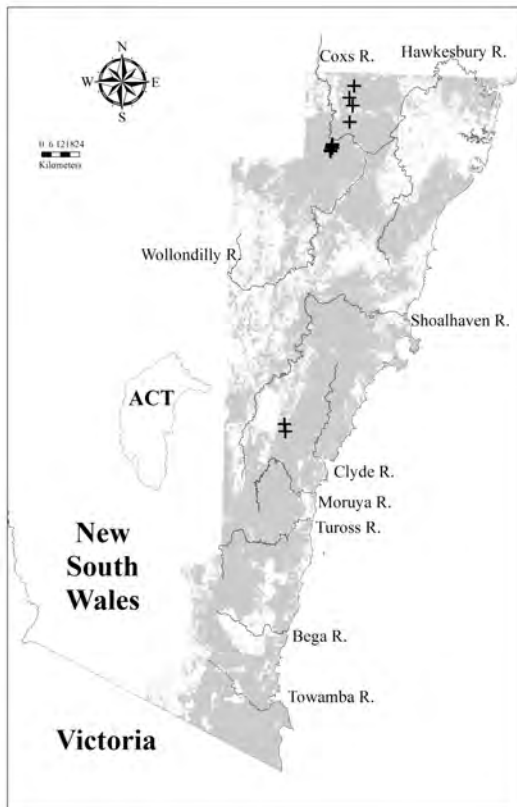
<i>Gahnia microstachya</i>	1(1-2)	21	1(1-2)	1
<i>Gleichenia dicarpa</i>	3(1-4)	21	1(1-2)	2
<i>Gonocarpus teucroides</i>	1(1-2)	57	1(1-1)	17
<i>Hakea dactyloides</i>	1(1-2)	43	1(1-1)	12
<i>Hakea salicifolia</i>	2(1-2)	43	1(1-2)	1
<i>Leptospermum polygalifolium</i>	2(1-3)	71	1(1-2)	8
<i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>	2(1-2)	100	1(1-1)	23
<i>Lindsaea microphylla</i>	1(1-1)	29	1(1-1)	5
<i>Lomandra glauca</i>	1(1-1)	50	1(1-1)	10
<i>Lomandra gracilis</i>	1(1-1)	36	1(1-1)	3
<i>Lomandra longifolia</i>	1(1-1)	86	1(1-1)	44
<i>Lomatia silaifolia</i>	1(1-1)	71	1(1-1)	10
<i>Lycopodium deuterodensum</i>	1(1-3)	36	1(1-1)	1
<i>Monotoca scoparia</i>	1(1-2)	57	1(1-1)	12
<i>Olearia erubescens</i>	2(1-2)	29	1(1-1)	2
<i>Patersonia longifolia</i>	1(1-1)	21	1(1-1)	2
<i>Persoonia laurina</i>	1(1-1)	50	1(1-1)	2
<i>Persoonia levis</i>	1(1-1)	50	1(1-1)	13
<i>Stylidium laricifolium</i>	1(1-1)	21	1(1-1)	1
<i>Tetratheca bauerifolia</i>	1(1-1)	21	1(1-1)	1
<i>Xanthosia pilosa</i>	1(1-1)	43	1(1-1)	8
<i>Xanthorrhoea resinifera</i>	1(1-1)	36	1(1-2)	4

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Billardiera scandens</i>	1(1-1)	50	1(1-1)	28
<i>Persoonia linearis</i>	1(1-2)	43	1(1-1)	29
<i>Phyllanthus hirtellus</i>	1(1-1)	43	1(1-1)	14
<i>Poa meionectes</i>	2(1-3)	43	1(1-2)	16
<i>Pteridium esculentum</i>	1(1-2)	71	1(1-2)	37
<i>Viola hederacea</i>	1(1-1)	43	1(1-1)	22

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Eucalyptus consideriana</i>	1(1-1)	7	2(1-2)	2
<i>Eucalyptus dalrympleana</i> subsp. <i>dalrympleana</i>	1(1-1)	7	1(1-2)	3
<i>Eucalyptus piperita</i>	3(2-3)	29	2(1-3)	9
<i>Eucalyptus smithii</i>	1(1-1)	14	1(1-2)	2



Locations of survey sites allocated to DSF p76. Grey shading indicates extant native vegetation cover within the study area.

WSF p78: Southern Scarp Ash Forest



Plate p78. Southern Escarpment Ash Forest (Map Unit p78) on White Ash Road, Tallaganda State Forest. Majestic *Eucalyptus fraxinoides* rise above a sparse, low shrub understorey dominated by *Acrotriche divaricata*, *Persoonia silvatica*, *Leucopogon lanceolata* and *Omphacomeria acerba*. *Dianella tasmanica* and *Poa meionectes* are the dominant groundcover species.

Sample Sites: 65

Area Extant (ha): 4400

Estimated % remaining: >95%

Area in conservation reserves (ha): 4100

Estimated % of pre-clearing area in conservation reserves: >95%

No. taxa (total / unique): 209 / 0

No. taxa per plot (\pm sd): 19.5 (5.5)
 Class: Montane Wet Sclerophyll Forests
 Related TEC: n/a

Southern Scarp Ash Forest (WSF p78) represents a significant revision and extension of WSF 78 identified by Tindall *et al.* (2004), with the addition of a large number of sites that were classified by Keith & Bedward (1999) as units 41 (Mountain Intermediate Shrub Forest) or W2 (Wadbilliga Range Shrub Forest), and classified by Beukers (undated) as Escarpment Rocky Ash Forest.

WSF p78 is a eucalypt forest with an open shrub layer and groundcover. This unit is restricted to high, wet, exposed rocky crests and upper slopes in dissected terrain, on metasediment and granitoid substrates, at elevations from 700-1250m ASL and mean annual rainfall of 900 - 1350mm. It occurs as scattered patches along the southern escarpment and tableland ranges from the Budawang and Minuma Ranges south to Dampier trig, Wadbilliga trig, Bemboka Peak, Wog Wog Mountain and Mount Imlay. Scattered outlier sites are recorded from the Turpentine Range in Morton National Park, along the high peaks of Gourcock Range in Tallaganda, and at Badja, Jilliga and Wadbilliga. This unit has also been observed on high slopes of Mount Dromedary.

Southern Scarp Ash Forest commonly grades into WSF e12 (Mountain Wet Fern Forest), WSF e10 (Southeast Mountain Wet Layered Forest) or WSF e15 (Southeast Mountain Wet Herb Forest) on sheltered slopes and gullies.

Little of Southern Scarp Ash Forest has been cleared, and most stands are within conservation reserves.

Floristic Summary:

Trees: *Eucalyptus fraxinoides*, *E. fastigata*. **Shrubs:** *Leucopogon lanceolatus*, *Platysace lanceolata*, *Acacia obliquinervia*, *Lomatia fraseri*, *Persoonia silvatica*. **Groundcover:** *Pteridium esculentum*, *Dianella tasmanica*, *Stylidium graminifolium*, *Poa meionectes*.

Vegetation structure:

Stratum	Frequency (n=33)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Emergent	-	- (-)	- (-)
Tree canopy	100	25.3 (4.8)	37.7 (15)
Small tree	27	9.9 (3.9)	22.1 (20.4)
Shrub	88	2.4 (1.1)	23.4 (20.9)
Ground cover	97	0.7 (0.3)	25.2 (20.3)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 7 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 15 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 7 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia obliquinervia</i>	1(1-1)	34	1(1-1)	1
<i>Acacia rubida</i>	1(1-1)	14	1(1-1)	1
<i>Acrotriche serrulata</i>	1(1-1)	22	1(1-1)	3
<i>Banksia canei</i>	1(1-1)	12	1(1-2)	<1
<i>Blechnum watsii</i>	1(1-1)	32	1(1-2)	2
<i>Choretrum candollei</i>	1(1-1)	23	1(1-1)	1
<i>Coprosma hirtella</i>	1(1-1)	29	1(1-1)	<1
<i>Derwentia perfoliata</i>	1(1-1)	12	1(1-1)	1
<i>Dianella tasmanica</i>	1(1-1)	80	1(1-1)	7
<i>Epacris impressa</i>	1(1-1)	23	1(1-1)	4
<i>Eucalyptus fastigata</i>	1(1-2)	22	2(2-3)	6
<i>Eucalyptus fraxinoides</i>	3(1-3)	97	2(1-2)	<1
<i>Eucalyptus sieberi</i>	1(1-2)	42	2(1-3)	16
<i>Gahnia sieberiana</i>	1(1-1)	17	1(1-1)	5
<i>Gonocarpus teucroides</i>	1(1-1)	34	1(1-1)	17
<i>Hierochloe rariflora</i>	1(1-2)	25	1(1-2)	4
<i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>	1(1-1)	89	1(1-1)	23

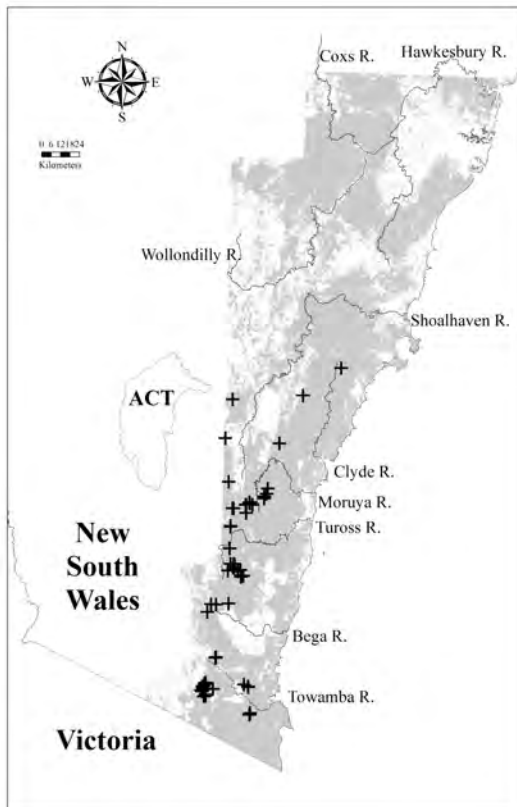
<i>Lomatia fraseri</i>	1(1-1)	22	1(1-1)	1
<i>Lomandra longifolia</i>	1(1-1)	65	1(1-1)	44
<i>Lomatia myricoides</i>	1(1-1)	14	1(1-1)	4
<i>Monotoca elliptica</i>	1(1-1)	11	1(1-1)	2
<i>Oxylobium ellipticum</i>	1(1-1)	34	1(1-1)	<1
<i>Ozothamnus cuneifolius</i>	1(1-1)	11	1(1-1)	1
<i>Persoonia silvatica</i>	1(1-1)	43	1(1-1)	1
<i>Platysace lanceolata</i>	1(1-1)	74	1(1-1)	12
<i>Poa meionectes</i>	1(1-1)	32	1(1-2)	16
<i>Polyscias sambucifolia</i>	1(1-1)	34	1(1-1)	6
<i>Pteridium esculentum</i>	1(1-2)	77	1(1-2)	37
<i>Sticherus lobatus</i>	1(1-4)	14	1(1-2)	1
<i>Stylidium graminifolium</i>	1(1-1)	51	1(1-1)	9
<i>Tasmania lanceolata</i>	1(1-1)	20	1(1-2)	1
<i>Tetrarrhena juncea</i>	1(1-2)	17	1(1-2)	5

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Billardiera scandens</i>	1(1-1)	34	1(1-1)	28

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Eucalyptus cypellocarpa</i>	1(1-1)	9	2(1-2)	10
<i>Eucalyptus dalrympleana</i> subsp. <i>dalrympleana</i>	1(1-1)	3	1(1-2)	3
<i>Eucalyptus elata</i>	2(1-2)	3	2(1-3)	5
<i>Eucalyptus globoidea</i>	1(1-1)	2	2(1-2)	12
<i>Eucalyptus latiuscula</i>	1(1-1)	2	1(1-1)	<1
<i>Eucalyptus nitens</i>	1(1-1)	6	2(2-3)	<1
<i>Eucalyptus obliqua</i>	1(1-2)	9	2(1-3)	4
<i>Eucalyptus pauciflora</i>	1(1-1)	3	1(1-2)	3
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	1(1-1)	12	2(1-3)	6
<i>Eucalyptus rubida</i> subsp. <i>rubida</i>	1(1-1)	2	1(1-2)	2
<i>Eucalyptus smithii</i>	2(1-2)	3	1(1-2)	2



Locations of survey sites allocated to WSF p78. Grey shading indicates extant native vegetation cover within the study area.

DSF p84: Ettrema Gorge Forest



Plate p84. Ettrema Gorge Forest (Map Unit p84) along the Shoalhaven River near Coolendel. *Eucalyptus punctata* grows above *Backhousia myrtifolia*, scattered *Astrotricha latifolia* and a sparse groundcover including ferns and vines.

Sample Sites: 3
 Area Extant (ha): 8800
 Estimated % remaining: >90%
 Area in conservation reserves (ha): 7400
 Estimated % of pre-clearing area in conservation reserves: 65-85%
 No. taxa (total / unique): 55 / 0
 No. taxa per plot (\pm sd): 31.7 (2.3)
 Class: Central Gorge Dry Sclerophyll Forests

Related TEC: n/a

Ettrema Gorge Forest (DSF p84) is equivalent to DSF 85 identified by Tindall *et al.* (2004), and is an open eucalypt forest with a dense mixed mesophyll-sclerophyll shrub stratum and an open groundcover. This unit occurs on the rocky slopes of the Ettrema, Shoalhaven, Danjera and Yarramunmun Gorges where sediments underlying the Sydney Basin are exposed between 150-500m ASL. Plentiful surface rocks and shallow loam soils dictate a sparse groundcover and rock scree slopes are common in areas of low stability. In sheltered gullies and on fire protected rocky screes, dry rainforest taxa may become increasingly dominant, and Temperate Dry Rainforest (RF p40) frequently adjoins this unit. Steep slopes and inaccessibility have largely precluded clearing, and the distribution of Ettrema Gorge Forest is entirely within Morton National Park.

Floristic Summary:

Trees: *Eucalyptus paniculata*, *E. punctata*. **Shrubs:** *Acacia cognata*, *Babingtonia pluriflora*, *Lomatia myricoides*, *Notelaea longifolia*, *Olearia viscidula*, *Pittosporum undulatum*, *Prostanthera incana*, *Stenocarpus salignus*, *Astrotricha latifolia*, *Backhousia myrtifolia*, *Goodenia ovata*, *Leucopogon attenuatus*. **Climber:** *Geitonoplesium cymosum*. **Groundcover:** *Lepidosperma laterale*, *Notodanthonia longifolia*, *Deyeuxia decipiens*, *Pellaea falcata*, *Plectranthus parviflorus*, *Pyrrosia rupestris*.

Vegetation structure:

Stratum	Frequency (n=3)	Height (m) (±StDev)	Cover (%) (±StDev)
Emergent	-	- (-)	- (-)
Tree canopy	100	18 (2)	28.3 (2.9)
Small tree	67	8 (-)	14 (8.5)
Shrub	100	2.2 (0.8)	51.7 (12.6)
Ground cover	100	0.6 (0.2)	16.7 (20.2)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 17 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 30 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 17 positive diagnostic species.

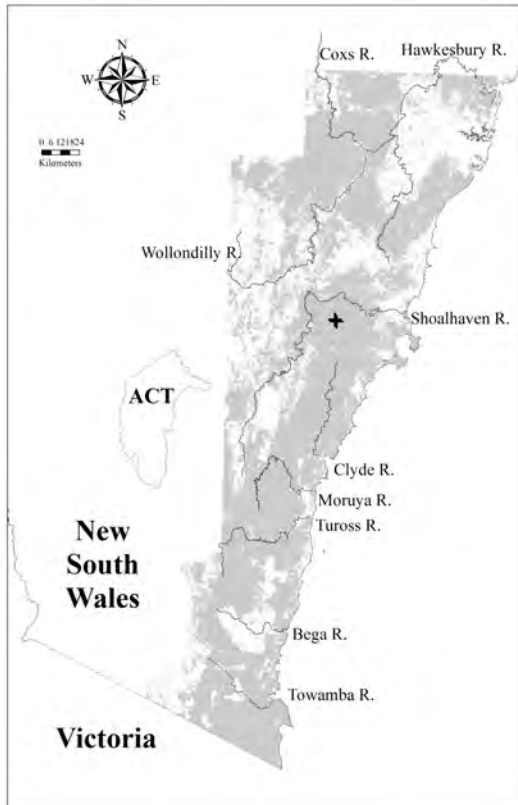
Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia cognata</i>	2(1-3)	100	1(1-2)	1
<i>Astrotricha latifolia</i>	1(1-1)	67	1(1-1)	2
<i>Babingtonia pluriflora</i>	1(1-1)	100	1(1-1)	1
<i>Backhousia myrtifolia</i>	1(1-1)	67	2(1-3)	5
<i>Beyeria viscosa</i>	4(4-4)	33	1(1-1)	<1
<i>Bursaria longisepala</i>	1(1-1)	33	1(1-1)	2
<i>Clematis microphylla</i> var. <i>leptophylla</i>	1(1-1)	33	1(1-1)	<1
<i>Cyperus gracilis</i>	1(1-1)	33	1(1-1)	2
<i>Deyeuxia decipiens</i>	1(1-1)	67	1(1-2)	<1
<i>Diospyros australis</i>	3(1-3)	67	1(1-2)	3
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	3(3-4)	100	1(1-2)	3
<i>Eucalyptus punctata</i>	3(1-3)	100	1(1-3)	9
<i>Geitonoplesium cymosum</i>	1(1-2)	100	1(1-1)	16
<i>Goodenia ovata</i>	1(1-1)	67	1(1-1)	7
<i>Hovea longifolia</i>	1(1-1)	33	1(1-1)	<1
<i>Lepidosperma laterale</i>	2(1-2)	100	1(1-1)	29
<i>Leucopogon attenuatus</i>	1(1-1)	67	1(1-1)	<1
<i>Logania albiflora</i>	1(1-1)	33	1(1-1)	1
<i>Lomatia myricoides</i>	1(1-1)	100	1(1-1)	4
<i>Notelaea longifolia</i> forma <i>longifolia</i>	1(1-2)	100	1(1-1)	8

<i>Notodanthonia longifolia</i>	2(1-2)	100	1(1-2)	5
<i>Olearia viscidula</i>	1(1-1)	100	1(1-2)	5
<i>Pellaea nana</i>	1(1-1)	33	1(1-1)	2
<i>Philothea trachyphylla</i>	3(3-3)	33	1(1-1)	<1
<i>Pittosporum undulatum</i>	1(1-1)	100	1(1-1)	14
<i>Plectranthus graveolens</i>	1(1-1)	33	1(1-1)	1
<i>Plectranthus parviflorus</i>	2(1-2)	67	1(1-1)	8
<i>Prostanthera incana</i>	4(3-4)	100	1(1-2)	<1
<i>Pyrrhosia rupestris</i>	1(1-1)	67	1(1-2)	6
<i>Stenocarpus salignus</i>	1(1-1)	100	1(1-1)	2

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Asplenium flabellifolium</i>	1(1-1)	67	1(1-1)	12
<i>Breynia oblongifolia</i>	1(1-1)	33	1(1-1)	12
<i>Bursaria spinosa</i>	2(2-2)	67	1(1-2)	14
<i>Cassytha pubescens</i>	1(1-1)	33	1(1-1)	8
<i>Cissus antarctica</i>	1(1-1)	33	1(1-2)	3
<i>Claoxylon australe</i>	1(1-1)	33	1(1-2)	3
<i>Clematis glycinoides</i> var. <i>glycinoides</i>	1(1-1)	33	1(1-1)	10
<i>Dichondra</i> spp.	1(1-1)	33	1(1-2)	25
<i>Einadia hastata</i>	1(1-1)	33	1(1-1)	3
<i>Elaeocarpus reticulatus</i>	1(1-1)	67	1(1-1)	12
<i>Entolasia marginata</i>	1(1-1)	33	1(1-1)	11
<i>Entolasia stricta</i>	1(1-1)	67	1(1-2)	34
<i>Eucalyptus agglomerata</i>	3(3-3)	33	2(1-3)	7
<i>Eustrephus latifolius</i>	1(1-1)	33	1(1-1)	19
<i>Indigofera australis</i>	1(1-1)	33	1(1-1)	9
<i>Lepidosperma urophorum</i>	4(4-4)	33	1(1-2)	7
<i>Marsdenia flavescens</i>	1(1-1)	33	1(1-2)	2
<i>Microlaena stipoides</i>	1(1-1)	33	1(1-2)	36
<i>Notelaea venosa</i>	3(3-3)	33	1(1-1)	12
<i>Opercularia diphylla</i>	1(1-1)	33	1(1-1)	7
<i>Pellaea falcata</i>	1(1-1)	67	1(1-1)	10
<i>Persoonia linearis</i>	1(1-1)	33	1(1-1)	29
<i>Platysace lanceolata</i>	2(2-2)	33	1(1-1)	13
<i>Podolobium ilicifolium</i>	1(1-1)	33	1(1-1)	9
<i>Tylophora barbata</i>	1(1-1)	67	1(1-1)	17



Locations of survey sites allocated to DSF p84. Grey shading indicates extant native vegetation cover within the study area.

DSF p85: Currambene-Batemans Lowlands Forest



Plate p85. Currambene-Batemans Lowlands Forest (Map Unit p85) at the intersection of Albatross Road and Yalwal Road, West Nowra. A tall canopy of *Corymbia maculata* stands over a sub canopy of *Eucalyptus longifolia* and *Melaleuca styphelioides*, scattered shrubs of *Acacia longifolia* subsp. *longifolia*, and a groundcover dominated by *Lomandra longifolia*, *Imperata cylindrica* var. *major* and *Entolasia stricta*.

Sample Sites: 49

Area Extant (ha): 24700

Estimated % remaining: 55-75%

Area in conservation reserves (ha): 5800

Estimated % of pre-clearing area in conservation reserves: 5-20%

No. taxa (total / unique): 361 / 2

No. taxa per plot (\pm sd): 45.2 (22.3)
 Class: South East Dry Sclerophyll Forests
 Related TEC: n/a

Currambene-Batemans Lowlands Forest (DSF p85) is equivalent to DSF 85 identified by Tindall *et al.* (2004). This unit is a eucalypt forest with an open shrub layer and a dense grassy groundcover, found on coastal lowlands on sandstones and shales below 100m ASL. Its distribution is primarily between Bomaderry and Cudmirrah, with the largest stands around Currambene State Forest between Nowra and Culburra. Small woodlots and remnant trees suggest the distribution may have extended northward along the extensively cleared footslopes between Bomaderry and Berry and on the lower slopes of Kangaroo Valley. Isolated records also exist to the south, from Tabourie and Termeil Lakes, Batemans Bay and Mogo areas, but these were not mapped by the current project. Currambene-Batemans Lowlands Forest shares a number of species with Murramarang Lowlands Forest (WSF p86) found further south. Examples are represented in a number of small conservation reserves, though the expansion of Nowra and its satellites and high frequency fires and grazing pose threats to some stands.

Floristic Summary:

Trees: *Allocasuarina littoralis*, *Corymbia gummifera*, *C. maculata*, *Eucalyptus pilularis*. **Shrubs:** *Pimelea linifolia*, *Banksia spinulosa*, *Persoonia linearis*, *Lomatia ilicifolia*. **Climbers:** *Billardiera scandens*, *Hardenbergia violacea*. **Groundcover:** *Entolasia stricta*, *Lomandra longifolia*, *Dianella caerulea*, *Lepidosperma laterale*, *Pteridium esculentum*, *Imperata cylindrica*, *Themeda australis*, *Lomandra multiflora*, *L. obliqua*.

Vegetation structure:

Stratum	Frequency (n=35)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Emergent	-	- (-)	- (-)
Tree canopy	100	23.9 (3.9)	27.8 (11.8)
Small tree	83	11 (5)	19.9 (13.7)
Shrub	51	2 (0.8)	20.7 (15.8)
Ground cover	100	0.9 (0.2)	56 (25.7)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 17 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 27 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 17 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia binervata</i>	1(1-2)	14	1(1-2)	2
<i>Acacia longifolia</i>	1(1-2)	33	1(1-2)	9
<i>Acacia myrtifolia</i>	1(1-1)	20	1(1-1)	4
<i>Acacia terminalis</i>	1(1-2)	33	1(1-1)	11
<i>Acacia ulicifolia</i>	1(1-1)	27	1(1-1)	10
<i>Allocasuarina littoralis</i>	2(1-2)	86	1(1-2)	16
<i>Amperea xiphoclada</i>	1(1-1)	31	1(1-1)	7
<i>Anisopogon avenaceus</i>	1(1-3)	29	1(1-2)	5
<i>Aristida vagans</i>	1(1-1)	39	1(1-2)	8
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	1(1-1)	63	1(1-2)	15
<i>Billardiera scandens</i>	1(1-1)	78	1(1-1)	27
<i>Boronia polygalifolia</i>	1(1-1)	18	1(1-1)	1
<i>Brunoniella pumilio</i>	1(1-1)	27	1(1-1)	4
<i>Cassytha glabella</i>	1(1-1)	24	1(1-1)	8
<i>Corymbia gummifera</i>	1(1-2)	71	2(1-2)	15
<i>Corymbia maculata</i>	3(1-4)	35	2(1-3)	3
<i>Daviesia ulicifolia</i>	1(1-1)	31	1(1-1)	6
<i>Dianella caerulea</i>	1(1-2)	76	1(1-1)	28

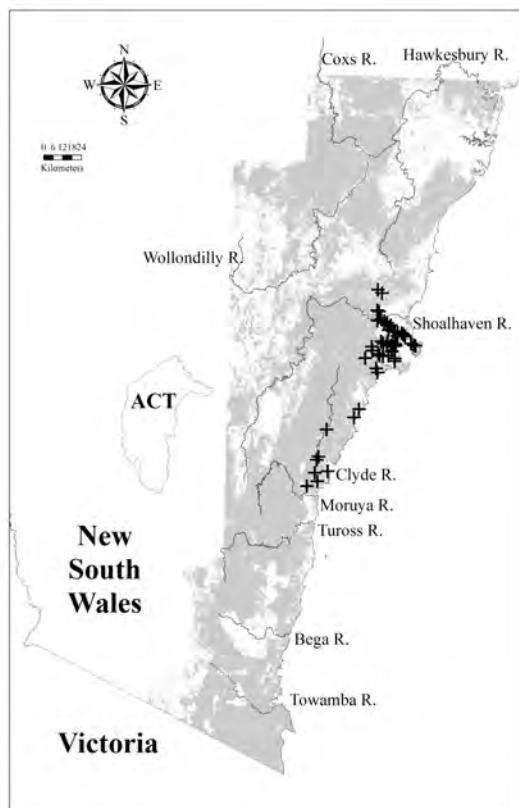
<i>Dodonaea triquetra</i>	1(1-3)	20	1(1-2)	6
<i>Entolasia stricta</i>	2(2-3)	94	1(1-2)	33
<i>Eucalyptus eugenioides</i>	1(1-2)	20	2(1-3)	4
<i>Eucalyptus globoidea</i>	2(1-2)	31	2(1-2)	12
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	2(1-3)	22	1(1-2)	3
<i>Eucalyptus pilularis</i>	2(1-3)	43	2(1-3)	5
<i>Eucalyptus sclerophylla</i>	2(1-3)	27	2(1-3)	4
<i>Goodenia heterophylla</i>	1(1-2)	18	1(1-1)	2
<i>Hakea sericea</i>	1(1-2)	20	1(1-1)	7
<i>Hardenbergia violacea</i>	1(1-1)	65	1(1-1)	17
<i>Hibbertia empetrifolia</i> subsp. <i>empetrifolia</i>	1(1-2)	27	1(1-1)	6
<i>Hypericum gramineum</i>	1(1-1)	35	1(1-1)	16
<i>Imperata cylindrica</i> var. <i>major</i>	1(1-1)	63	1(1-2)	9
<i>Lagenifera gracilis</i>	1(1-1)	20	1(1-1)	3
<i>Lepidosperma laterale</i>	1(1-2)	76	1(1-1)	28
<i>Leptospermum polygalifolium</i>	1(1-2)	29	1(1-2)	8
<i>Leucopogon juniperinus</i>	1(1-2)	18	1(1-1)	5
<i>Lindsaea linearis</i>	1(1-2)	39	1(1-1)	7
<i>Logania pusilla</i>	1(1-1)	18	1(1-1)	1
<i>Lomandra confertifolia</i> subsp. <i>rubiginosa</i>	1(1-2)	16	1(1-1)	4
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>	1(1-1)	29	1(1-1)	11
<i>Lomatia ilicifolia</i>	1(1-1)	53	1(1-1)	6
<i>Lomandra longifolia</i>	1(1-2)	73	1(1-1)	44
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	1(1-1)	47	1(1-1)	25
<i>Lomandra obliqua</i>	1(1-1)	51	1(1-1)	14
<i>Macrozamia communis</i>	1(1-2)	18	1(1-2)	4
<i>Opercularia aspera</i>	1(1-2)	29	1(1-1)	8
<i>Opercularia diphylla</i>	1(1-2)	35	1(1-1)	7
<i>Patersonia glabrata</i>	1(1-1)	35	1(1-1)	10
<i>Patersonia sericea</i>	1(1-1)	24	1(1-1)	9
<i>Persoonia linearis</i>	1(1-1)	57	1(1-1)	29
<i>Pimelea linifolia</i> subsp. <i>linifolia</i>	1(1-1)	61	1(1-1)	13
<i>Platylobium formosum</i>	1(1-1)	27	1(1-1)	3
<i>Podolobium scandens</i>	1(1-2)	14	1(1-2)	<1
<i>Pteridium esculentum</i>	1(1-2)	71	1(1-2)	37
<i>Pultenaea daphnoides</i>	1(1-1)	20	1(1-1)	4
<i>Pultenaea linophylla</i>	1(1-1)	14	1(1-1)	2
<i>Pultenaea retusa</i>	1(1-1)	39	1(1-1)	1
<i>Pultenaea villosa</i>	1(1-2)	27	1(1-2)	1
<i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i>	2(1-3)	35	2(1-3)	7
<i>Themeda australis</i>	1(1-2)	59	1(1-3)	17
<i>Xanthorrhoea concava</i>	1(1-2)	35	1(1-1)	4
<i>Xanthosia tridentata</i>	1(1-1)	22	1(1-1)	5

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Glycine clandestina</i>	1(1-1)	45	1(1-1)	26
<i>Leptospermum trinervium</i>	1(1-1)	31	1(1-2)	16
<i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>	1(1-1)	31	1(1-1)	24
<i>Microlaena stipoides</i>	1(1-2)	43	1(1-2)	36

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora floribunda</i>	1(1-1)	12	1(1-2)	9
<i>Eucalyptus agglomerata</i>	3(1-3)	8	2(1-3)	7
<i>Eucalyptus botryoides</i>	1(1-1)	6	2(1-3)	3
<i>Eucalyptus considianiana</i>	2(1-2)	8	2(1-2)	2
<i>Eucalyptus elata</i>	1(1-1)	2	2(1-3)	5
<i>Eucalyptus longifolia</i>	3(2-3)	10	1(1-2)	2
<i>Eucalyptus muelleriana</i>	1(1-1)	2	2(1-2)	6
<i>Eucalyptus piperita</i>	2(1-3)	16	2(1-3)	9
<i>Eucalyptus punctata</i>	1(1-3)	20	2(1-3)	9
<i>Eucalyptus resinifera</i> subsp. <i>resinifera</i>	1(1-1)	4	1(1-2)	1
<i>Eucalyptus scias</i> subsp. <i>callimastha</i>	2(1-2)	6	1(1-2)	1
<i>Eucalyptus sieberi</i>	2(2-3)	6	2(1-3)	16
<i>Eucalyptus sparsifolia</i>	1(1-1)	2	2(1-3)	2



Locations of survey sites allocated to DSF p85. Grey shading indicates extant native vegetation cover within the study area.

WSF p86: Murramarang-Bega Lowlands Forest

Plate p86. Murramarang-Bega Lowlands Forest (Map Unit p86) beside the Princes Highway at north Batemans Bay. The canopy here is dominated by *Corymbia maculata* and *Eucalyptus longifolia*, with a patchy cover of small trees and shrubs including *Allocasuarina littoralis*, *Notelaea longifolia* and *Leucopogon juniperinus*. Groundcover is also patchy and dominated by *Lomandra longifolia*, *Lepidosperma laterale* and *Entolasia stricta*.

Sample Sites: 31

Area Extant (ha): 7100

Estimated % remaining: 65-80%

Area in conservation reserves (ha): 1500

Estimated % of pre-clearing area in conservation reserves: 5-15%

No. taxa (total / unique): 269 / 0

No. taxa per plot (\pm sd): 44.2 (18.4)

Class: Southern Lowlands Wet Sclerophyll Forests

Related TEC: n/a

Murramarang-Bega Lowlands Forest (WSF p86) represents a revision and extension of WSF 86 identified by Tindall *et al.* (2004), based on additional samples over a larger study area. The revised WSF p86 includes a number of recent sites that were classified as Coastal Lowlands Grassy Forest by Beukers (undated).

WSF p86 is a eucalypt forest with an open shrub stratum and a prominent grassy groundcover. This unit is patchily distributed from Termeil and Tabourie Lakes south to Durras, Moruya, Bermagui and Kalaru, with northern outlying occurrences also recorded from the Jervis Bay hinterland near Callala and Currumbene Creek. Within this distribution, Murramarang-Bega Lowlands Forest occurs close to the coast on loamy flats and along drainage lines below about 50m ASL, where mean annual rainfall ranges from 1000 to 1250mm. Murramarang-Bega Lowlands Forest is replaced on more elevated parts of the landscape by Batemans Bay Cycad Forest (WSF p90) in the Batemans Bay region, by Southern Lowland Wet Forest (WSF p104) in the Murramarang area and by Currumbene – Batemans Lowlands Forest (DSF p85) near Jervis Bay.

Land clearing has reduced Murramarang-Bega Lowlands Forest to about half of its original extent. The occurrence of the remaining stands primarily on flat freehold land exposes this vegetation to continuing attrition as population pressures increase along the coastal lowlands.

Floristic Summary:

Trees: *Eucalyptus paniculata*, *Allocasuarina littoralis*, *E. longifolia*, *Corymbia maculata*. **Shrubs:** *Hibbertia aspera*, *Leucopogon juniperinus*, *Notelaea longifolia*. **Climbers:** *Glycine clandestina*, *Billardiera scandens*. **Groundcover:** *Lomandra longifolia*, *Imperata cylindrica*, *Pratia purpurascens*, *Entolasia stricta*, *Dianella caerulea*, *Lepidosperma laterale*, *Dichondra* spp., *Lagenifera stipitata*, *Oplismenus imbecillis*, *Brunoniella pumilio*, *Schelhammera undulata*.

Vegetation structure:

Stratum	Frequency (n=18)	Height (m) (±StDev)	Cover (%) (±StDev)
Tree canopy	94	21.7 (6.2)	31.6 (17.7)
Small tree	78	10.2 (4.7)	22.7 (20)
Shrub	67	1.9 (0.5)	16.3 (16.9)
Ground cover	100	0.9 (0.2)	54.4 (31.2)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 14 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 29 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 14 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia longifolia</i>	1(1-1)	55	1(1-2)	9
<i>Allocasuarina littoralis</i>	1(1-2)	68	1(1-2)	17
<i>Austrostipa rudis</i>	1(1-2)	29	1(1-2)	6
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	1(1-1)	39	1(1-2)	15
<i>Billardiera scandens</i>	1(1-1)	74	1(1-1)	27
<i>Brunoniella pumilio</i>	1(1-1)	61	1(1-1)	4
<i>Corymbia maculata</i>	2(1-3)	45	2(1-3)	3
<i>Dianella caerulea</i>	1(1-1)	77	1(1-1)	28
<i>Echinopogon ovatus</i>	1(1-1)	48	1(1-1)	14
<i>Entolasia stricta</i>	1(1-2)	87	1(1-2)	34
<i>Eucalyptus botryoides</i>	1(1-2)	39	2(1-3)	3
<i>Eucalyptus longifolia</i>	2(2-3)	42	1(1-2)	2
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	1(1-2)	45	1(1-2)	3
<i>Eucalyptus pilularis</i>	2(2-2)	29	2(1-3)	5
<i>Gahnia radula</i>	1(1-3)	29	1(1-2)	3
<i>Gahnia sieberiana</i>	2(1-2)	45	1(1-1)	4
<i>Glycine clandestina</i>	1(1-1)	71	1(1-1)	26
<i>Hardenbergia violacea</i>	1(1-1)	42	1(1-1)	17
<i>Hibbertia aspera</i> subsp. <i>aspera</i>	1(1-1)	65	1(1-1)	10
<i>Hibbertia scandens</i>	1(1-1)	23	1(1-1)	5
<i>Hydrocotyle peduncularis</i>	1(1-1)	26	1(1-1)	9
<i>Imperata cylindrica</i> var. <i>major</i>	1(1-1)	71	1(1-2)	9
<i>Kennedia rubicunda</i>	1(1-1)	39	1(1-1)	6
<i>Lagenifera stipitata</i>	1(1-1)	65	1(1-1)	14
<i>Lepidosperma laterale</i>	1(1-1)	68	1(1-1)	28
<i>Lepidosperma urophorum</i>	3(3-5)	23	1(1-2)	7
<i>Leptospermum continentale</i>	1(1-1)	23	1(1-1)	3
<i>Leptospermum polygalifolium</i>	1(1-3)	29	1(1-2)	8
<i>Leucopogon juniperinus</i>	1(1-1)	42	1(1-1)	5
<i>Lindsaea linearis</i>	1(1-1)	26	1(1-1)	7
<i>Lomandra longifolia</i>	1(1-2)	94	1(1-1)	44
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	1(1-1)	52	1(1-1)	25
<i>Macrozamia communis</i>	1(1-2)	32	1(1-2)	4

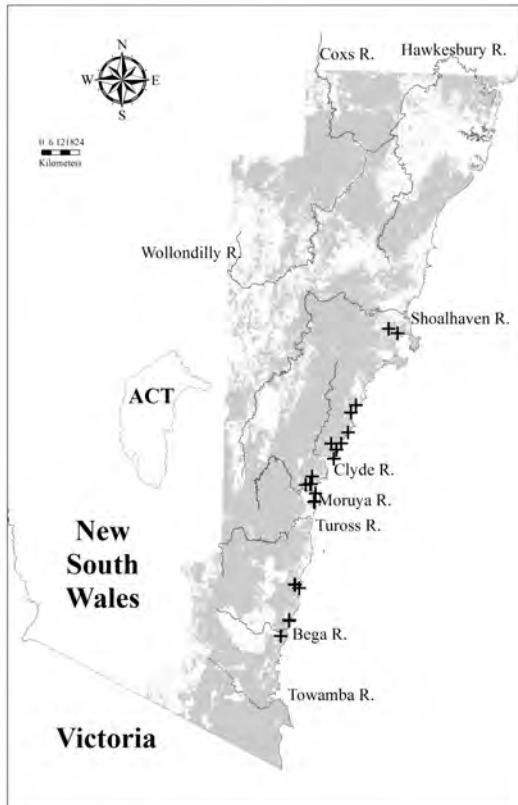
<i>Notelaea longifolia forma longifolia</i>	1(1-1)	32	1(1-1)	8
<i>Opercularia aspera</i>	1(1-1)	29	1(1-1)	8
<i>Oplismenus imbecillis</i>	1(1-1)	48	1(1-2)	14
<i>Panicum simile</i>	1(1-1)	32	1(1-1)	6
<i>Polymeria calycina</i>	1(1-1)	23	1(1-1)	1
<i>Pratia purpurascens</i>	1(1-1)	81	1(1-1)	17
<i>Pultenaea linophylla</i>	1(1-1)	29	1(1-1)	2
<i>Schelhammera undulata</i>	1(1-1)	48	1(1-1)	7
<i>Vernonia cinerea var. cinerea</i>	1(1-1)	32	1(1-1)	4

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Dichondra spp.</i>	1(1-1)	48	1(1-2)	25
<i>Gonocarpus teucroides</i>	1(1-1)	32	1(1-1)	18
<i>Hypericum gramineum</i>	1(1-1)	35	1(1-1)	16
<i>Microlaena stipoides</i>	1(1-1)	42	1(1-2)	36
<i>Persoonia linearis</i>	1(1-1)	35	1(1-1)	29
<i>Pittosporum undulatum</i>	1(1-1)	32	1(1-1)	14
<i>Pteridium esculentum</i>	1(1-2)	58	1(1-2)	37
<i>Themeda australis</i>	1(1-1)	35	1(1-3)	17

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora floribunda</i>	1(1-2)	16	1(1-2)	9
<i>Corymbia gummifera</i>	1(1-2)	19	2(1-2)	16
<i>Eucalyptus agglomerata</i>	2(2-2)	6	2(1-3)	7
<i>Eucalyptus baueriana</i>	1(1-1)	3	2(1-2)	1
<i>Eucalyptus bosistoana</i>	1(1-1)	3	1(1-2)	3
<i>Eucalyptus cypellocarpa</i>	1(1-1)	3	2(1-2)	10
<i>Eucalyptus eugenioides</i>	1(1-2)	13	2(1-3)	4
<i>Eucalyptus fibrosa</i>	1(1-1)	6	2(1-3)	3
<i>Eucalyptus globoidea</i>	2(1-2)	29	2(1-2)	12
<i>Eucalyptus muelleriana</i>	1(1-1)	3	2(1-2)	6
<i>Eucalyptus ovata</i>	1(1-1)	3	2(1-3)	1
<i>Eucalyptus piperita</i>	2(1-2)	6	2(1-3)	9
<i>Eucalyptus saligna X botryoides</i>	1(1-1)	3	2(1-3)	2
<i>Eucalyptus sieberi</i>	2(1-2)	10	2(1-3)	16
<i>Eucalyptus tereticornis</i>	2(1-2)	13	2(1-3)	7
<i>Syncarpia glomulifera subsp. glomulifera</i>	1(1-1)	3	2(1-3)	8



Locations of survey sites allocated to WSF p86. Grey shading indicates extant native vegetation cover within the study area.

WSF p87: Sydney Turpentine Ironbark Forest



Plate p87. Sydney Turpentine Ironbark Forest (Map Unit p87) at the end of Eucalypt Road in Deanei Reserve, Springwood. Here a canopy of *Eucalyptus deanei* towers above an intermittent sub canopy of *Syncarpia glomulifera* subsp. *glomulifera*, a sparse but moderately diverse shrub layer including *Pittosporum revolutum*, *Persoonia linearis* and *Allocasuarina torulosa* and a dense grassy groundcover dominated by *Themeda australis*, *Lomandra longifolia*, *Oplismenus imbecillis* and *Echinopogon ovatus*.

Sample Sites: 74

Area Extant (ha): 2300

Estimated % remaining: <10%

Area in conservation reserves (ha): 250

Estimated % of pre-clearing area in conservation reserves: <2%

No. taxa (total / unique): 401 / 2

No. taxa per plot (\pm sd): 47.2 (9.3)

Class: Northern Hinterland Wet Sclerophyll Forests

Related TECs: Sydney Turpentine-Ironbark Forest EEC (TSC) and Turpentine Ironbark Forest CEEC (EPBC).

Sydney Turpentine Ironbark Forest (WSF p87) is equivalent to WSF 87 identified by Tindall *et al.* (2004), and is a diverse eucalypt forest with an open shrub layer and grassy groundcover. Having been extensively cleared this unit now occurs predominantly as scattered remnants on shale derived soils on the rim of the Cumberland plain and in the lower Blue Mountains. Local concentrations remain near Thirlmere, Oakdale, Kurrajong, Dural and Pennant Hills. Within this distribution Sydney Turpentine Ironbark Forest occupies undulating terrain and broad ridgetops on shale up to 500m ASL with a mean annual rainfall between 850 and 1250mm. Sydney Turpentine Ironbark Forest shares a number of species with adjoining stands of Blue Gum High Forest (WSF p153) with higher rainfall.

Sydney Turpentine Ironbark Forest includes Turpentine Ironbark Forest and Turpentine Ironbark Margin Forest (Map Units 15 and 43) of Tozer 2003. Less than one-quarter of its original distribution remains, and the remaining fragments are threatened by continuing urban expansion, recreational overuse and weed invasion.

Floristic Summary:

Trees: *Syncarpia glomulifera*, *Eucalyptus punctata*, *E. pilularis*, *E. paniculata*. **Shrubs:** *Pittosporum undulatum*, *Polyscias sambucifolia* ssp A, *Acacia parramattensis*, *Breynia oblongifolia*, *Ozothamnus diosmifolius*, *Pittosporum revolutum*, *Allocasuarina torulosa*, *Leucopogon juniperinus*, *Notelaea longifolia*. **Climbers:** *Eustrephus latifolius*, *Pandorea pandorana*, *Glycine clandestina*. **Groundcover:** *Dianella caerulea*, *Lomandra longifolia*, *Microlaena stipoides*, *Pratia purpurascens*, *Entolasia marginata*, *Dichondra* spp., *Entolasia stricta*, *Pseuderanthemum variabile*, *Imperata cylindrica*, *Oplismenus imbecillis*.

Vegetation structure:

Stratum	Frequency (n=36)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Emergent	3	20 (-)	5 (-)
Tree canopy	100	23.5 (5.7)	30.1 (14.1)
Small tree	94	11.2 (3.7)	26.6 (19.1)
Shrub	58	2.3 (0.6)	11.7 (11.3)
Ground cover	100	0.9 (0.2)	53.2 (26.9)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 23 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 40 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 23 positive diagnostic species.

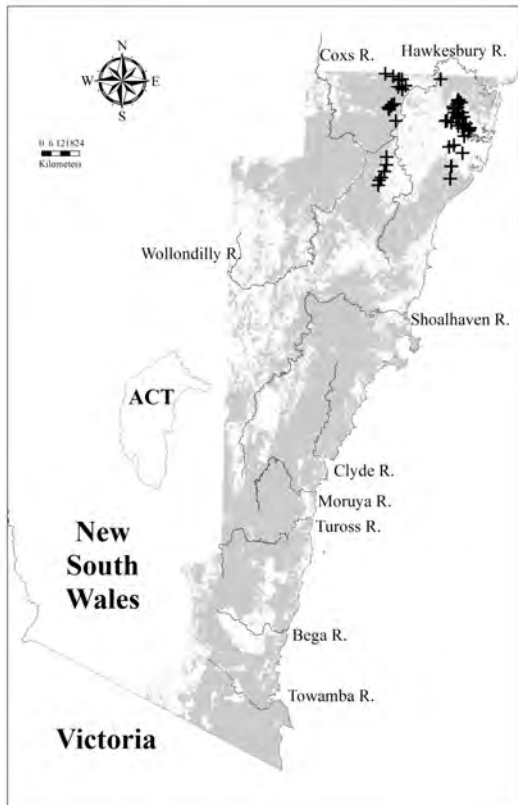
Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia falcata</i>	1(1-1)	11	1(1-1)	1
<i>Acacia floribunda</i>	1(1-1)	27	1(1-2)	2
<i>Acacia implexa</i>	1(1-1)	16	1(1-1)	6
<i>Acacia parramattensis</i>	1(1-1)	58	1(1-2)	4
<i>Adiantum aethiopicum</i>	1(1-2)	41	1(1-1)	9
<i>Allocasuarina torulosa</i>	1(1-2)	50	1(1-3)	4
<i>Angophora costata</i>	1(1-2)	39	2(1-3)	7
<i>Anisopogon avenaceus</i>	1(1-2)	16	1(1-2)	5
<i>Aristida vagans</i>	1(1-1)	24	1(1-2)	8
<i>Arthropodium milleflorum</i>	1(1-1)	15	1(1-1)	5
<i>Austrostipa rudis</i>	1(1-2)	22	1(1-2)	6
<i>Billardiera scandens</i>	1(1-1)	49	1(1-1)	27
<i>Breynia oblongifolia</i>	1(1-1)	53	1(1-1)	12
<i>Brunoniella australis</i>	1(1-1)	15	2(1-2)	4
<i>Brunoniella pumilio</i>	1(1-2)	20	1(1-1)	4
<i>Bursaria spinosa</i>	1(1-1)	47	1(1-2)	14

<i>Cayratia clematidea</i>	1(1-2)	18	1(1-1)	2
<i>Centella asiatica</i>	1(1-1)	26	1(1-1)	4
<i>Cheilanthes sieberi</i>	1(1-2)	27	1(1-1)	14
<i>Clematis glycinoides</i> var. <i>glycinoides</i>	1(1-2)	39	1(1-1)	10
<i>Clerodendrum tomentosum</i>	1(1-1)	22	1(1-1)	5
<i>Commelina cyanea</i>	1(1-1)	15	1(1-1)	4
<i>Desmodium rhytidophyllum</i>	1(1-1)	11	1(1-1)	1
<i>Dianella caerulea</i>	1(1-1)	81	1(1-1)	28
<i>Dianella longifolia</i>	1(1-1)	16	1(1-1)	4
<i>Dichelachne inaequiglumis</i>	1(1-2)	11	1(1-1)	3
<i>Dichondra</i> spp.	1(1-2)	69	1(1-2)	25
<i>Digitaria parviflora</i>	1(1-1)	19	1(1-1)	2
<i>Dodonaea triquetra</i>	1(1-2)	24	1(1-2)	6
<i>Doodia aspera</i>	1(1-2)	27	1(1-2)	11
<i>Echinopogon caespitosus</i> var. <i>caespitosus</i>	1(1-1)	42	1(1-1)	6
<i>Echinopogon ovatus</i>	1(1-2)	42	1(1-1)	14
<i>Einadia hastata</i>	1(1-1)	12	1(1-1)	3
<i>Entolasia marginata</i>	1(1-2)	69	1(1-1)	11
<i>Entolasia stricta</i>	1(1-2)	64	1(1-2)	33
<i>Eucalyptus acmenoides</i>	2(1-3)	9	2(1-2)	<1
<i>Eucalyptus deanei</i>	3(2-3)	14	3(1-3)	1
<i>Eucalyptus eugenioides</i>	1(1-3)	12	2(1-3)	4
<i>Eucalyptus fibrosa</i>	1(1-3)	12	2(1-3)	3
<i>Eucalyptus globoidea</i>	1(1-2)	24	2(1-2)	12
<i>Eucalyptus notabilis</i>	1(1-1)	8	1(1-2)	1
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	2(1-3)	27	1(1-2)	3
<i>Eucalyptus pilularis</i>	2(1-3)	28	2(1-3)	5
<i>Eucalyptus punctata</i>	2(1-2)	35	2(1-3)	8
<i>Eucalyptus resinifera</i> subsp. <i>resinifera</i>	1(1-3)	15	1(1-1)	1
<i>Eucalyptus saligna</i> X <i>botryoides</i>	3(1-3)	19	2(1-3)	2
<i>Eustrephus latifolius</i>	1(1-1)	64	1(1-1)	19
<i>Exocarpos cupressiformis</i>	1(1-1)	20	1(1-1)	5
<i>Gahnia aspera</i>	1(1-3)	16	1(1-1)	4
<i>Glochidion ferdinandi</i> var. <i>ferdinandi</i>	1(1-1)	8	1(1-1)	2
<i>Glycine clandestina</i>	1(1-2)	55	1(1-1)	26
<i>Glycine microphylla</i>	1(1-2)	34	1(1-1)	5
<i>Glycine tabacina</i>	1(1-1)	26	1(1-1)	7
<i>Hibbertia aspera</i> subsp. <i>aspera</i>	1(1-1)	43	1(1-1)	10
<i>Hibbertia diffusa</i>	1(1-2)	18	1(1-1)	3
<i>Hydrocotyle peduncularis</i>	1(1-2)	27	1(1-1)	9
<i>Imperata cylindrica</i> var. <i>major</i>	1(1-2)	47	1(1-2)	9
<i>Kennedia rubicunda</i>	1(1-1)	23	1(1-1)	6
<i>Kunzea ambigua</i>	1(1-1)	12	1(1-2)	4
<i>Leucopogon juniperinus</i>	1(1-1)	47	1(1-1)	5
<i>Lindsaea microphylla</i>	1(1-1)	15	1(1-1)	5
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>	1(1-1)	27	1(1-1)	11

<i>Lomandra longifolia</i>	1(1-2)	81	1(1-1)	43
<i>Maytenus silvestris</i>	1(1-1)	30	1(1-1)	1
<i>Microlaena stipoides</i>	2(1-3)	84	1(1-2)	36
<i>Notelaea longifolia forma longifolia</i>	1(1-1)	50	1(1-1)	7
<i>Omalanthus populifolius</i>	1(1-1)	12	1(1-1)	1
<i>Oplismenus aemulus</i>	1(1-2)	43	1(1-2)	5
<i>Oplismenus imbecillis</i>	1(1-2)	47	1(1-2)	14
<i>Oxalis exilis</i>	1(1-2)	19	1(1-1)	3
<i>Ozothamnus diosmifolius</i>	1(1-1)	53	1(1-1)	8
<i>Pandorea pandorana</i>	1(1-1)	58	1(1-1)	18
<i>Panicum simile</i>	1(1-1)	30	1(1-1)	6
<i>Paspalidium distans</i>	1(1-2)	9	1(1-2)	3
<i>Passiflora herbertiana</i> subsp. <i>herbertiana</i>	1(1-1)	19	1(1-1)	1
<i>Persoonia linearis</i>	1(1-1)	47	1(1-1)	29
<i>Pittosporum revolutum</i>	1(1-1)	53	1(1-1)	8
<i>Pittosporum undulatum</i>	1(1-2)	70	1(1-1)	14
<i>Poa affinis</i>	1(1-2)	36	1(1-2)	1
<i>Polyscias sambucifolia</i>	1(1-1)	65	1(1-1)	6
<i>Pomaderris intermedia</i>	1(1-1)	8	1(1-1)	<1
<i>Pratia purpurascens</i>	1(1-2)	81	1(1-1)	17
<i>Pseuderanthemum variabile</i>	1(1-2)	64	1(1-2)	8
<i>Pultenaea villosa</i>	1(1-1)	8	1(1-2)	1
<i>Rapanea variabilis</i>	1(1-1)	27	1(1-1)	3
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	1(1-1)	19	1(1-1)	7
<i>Solanum prinophyllum</i>	1(1-1)	41	1(1-1)	6
<i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i>	3(1-3)	76	2(1-3)	7
<i>Themeda australis</i>	1(1-3)	45	1(1-3)	17
<i>Trema tomentosa</i> var. <i>viridis</i>	1(1-2)	16	1(1-1)	1
<i>Tylophora barbata</i>	1(1-2)	42	1(1-1)	17
<i>Veronica plebeia</i>	1(1-1)	30	1(1-1)	10
<i>Zieria smithii</i>	1(1-2)	12	1(1-1)	2
Constant:				
Species	C/A	Freq	C/A O	Freq O
<i>Desmodium varians</i>	1(1-1)	35	1(1-1)	21
<i>Gonocarpus tetragynus</i>	1(1-1)	34	1(1-1)	20
<i>Lepidosperma laterale</i>	1(1-1)	45	1(1-1)	28
Other tree species occurring less frequently in this community:				
Species	C/A	Freq	C/A O	Freq O
<i>Angophora bakeri</i>	2(2-2)	1	1(1-2)	2
<i>Angophora floribunda</i>	2(1-3)	14	1(1-2)	9
<i>Corymbia eximia</i>	1(1-1)	1	1(1-2)	2
<i>Corymbia gummifera</i>	1(1-1)	14	2(1-2)	16
<i>Corymbia maculata</i>	4(4-4)	1	2(1-3)	3
<i>Eucalyptus agglomerata</i>	1(1-1)	3	2(1-3)	7
<i>Eucalyptus crebra</i>	2(1-3)	5	2(1-3)	3

<i>Eucalyptus haemastoma</i>	1(1-1)	1	1(1-2)	2
<i>Eucalyptus moluccana</i>	1(1-1)	3	3(1-3)	2
<i>Eucalyptus piperita</i>	1(1-3)	7	2(1-3)	9
<i>Eucalyptus siderophloia</i>	3(3-3)	1	2(1-2)	<1
<i>Eucalyptus sparsifolia</i>	1(1-3)	4	2(1-3)	2
<i>Eucalyptus sturgissiana</i>	2(2-2)	1	2(1-2)	<1
<i>Eucalyptus tereticornis</i>	2(1-2)	5	2(1-3)	7
<i>Eucalyptus umbra</i>	2(2-2)	1	1(1-2)	<1



Locations of survey sites allocated to WSF p87. Grey shading indicates extant native vegetation cover within the study area.

DSF p88: Burrarorang Escarpment Forest

Plate p88. Burrarorang Escarpment Forest (Map Unit p88) on a steep upper slope above Ritson Elbow on the lower Kowmung River. A canopy dominated by *Syncarpia glomulifera* subsp. *glomulifera* and *Eucalyptus punctata* grows above a small tree layer of *Allocasuarina torulosa*, scattered shrubs including *Breynia oblongifolia* and *Olearia viscidula* and a sparse but diverse groundcover including *Stypandra glauca*, *Doodia aspera* and *Geitonoplesium cymosum*.

Sample Sites: 74
 Area Extant (ha): 13200
 Estimated % remaining: >95%
 Area in conservation reserves (ha): 12700
 Estimated % of pre-clearing area in conservation reserves: >90%
 No. taxa (total / unique): 447 / 3
 No. taxa per plot (\pm sd): 51.9 (12.1)
 Class: Central Gorge Dry Sclerophyll Forests
 Related TEC: n/a

Burrarorang Escarpment Forest (DSF p88) is equivalent to DSF 88 identified by Tindall *et al.* (2004), and is an open eucalypt forest with a mixed understorey of shrubs, vines, forbs and grasses. This forest is distributed along the escarpment slopes of the Burrarorang, Grose, Jamison, Kedumba, Nattai and Little valleys, where mean annual rainfall is 820 - 1000mm and sediments from the Permian Illawarra Coal measures and the Berry Formation are exposed. These substrates yield loamy soils, and Burrarorang Escarpment Forest generally occupies the dry rocky slopes between 100 and 650m elevation.

Large areas of Burrarorang Escarpment Forest are represented in Blue Mountains National Park.

Floristic Summary:

Trees: *Allocasuarina torulosa*, *Eucalyptus punctata*. **Shrubs:** *Indigofera australis*, *Breynia oblongifolia*, *Persoonia linearis*, *Olearia viscidula*. **Climbers:** *Tylophora barbata*, *Geitonoplesium cymosum*, *Glycine clandestina*, *Billardiera scandens*, *Pandorea pandorana*, *Eustrephus latifolius*. **Groundcover:** *Desmodium gunnii*, *Lomandra longifolia*, *Dichondra* spp., *Adiantum aethiopicum*, *Dianella caerulea*, *Pratia purpurascens*, *Microlaena stipoides*, *Oplismenus imbecillis*, *Pteridium esculentum*, *Lepidosperma laterale*.

Vegetation structure:

Stratum	Frequency (n=67)	Height (m) (±StDev)	Cover (%) (±StDev)
Emergent	6	22.5 (7.7)	8 (5.6)
Tree canopy	99	26.2 (7.5)	29.6 (16.3)
Small tree	88	13.3 (4.5)	26.9 (21.3)
Shrub	63	2.2 (0.7)	17.2 (17.6)
Ground cover	100	0.8 (0.3)	42.1 (27)

Diagnostic Species:

A 0.04ha plot located in this Map Unit is expected to contain at least 26 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 42 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 26 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia implexa</i>	1(1-1)	28	1(1-1)	6
<i>Acacia paradoxa</i>	1(1-2)	12	1(1-2)	<1
<i>Acacia parramattensis</i>	1(1-2)	31	1(1-2)	4
<i>Adiantum aethiopicum</i>	1(1-2)	72	1(1-1)	9
<i>Adiantum hispidulum</i>	1(1-1)	11	1(1-1)	2
<i>Allocasuarina torulosa</i>	2(1-3)	77	1(1-3)	4
<i>Angophora floribunda</i>	1(1-3)	30	1(1-2)	9
<i>Astrotricha latifolia</i>	2(1-2)	36	1(1-1)	2
<i>Austrostipa ramosissima</i>	1(1-1)	15	1(1-2)	1
<i>Backhousia myrtifolia</i>	1(1-5)	22	2(1-3)	5
<i>Billardiera scandens</i>	1(1-1)	57	1(1-1)	27
<i>Brachychiton populneus</i> subsp. <i>populneus</i>	1(1-1)	19	1(1-1)	3
<i>Brachyscome angustifolia</i>	1(1-1)	20	1(1-1)	2
<i>Brachyscome graminea</i>	1(1-1)	8	1(1-1)	<1
<i>Breynia oblongifolia</i>	1(1-1)	57	1(1-1)	12
<i>Brunoniella australis</i>	1(1-2)	12	2(1-2)	4
<i>Brunoniella pumilio</i>	1(1-1)	12	1(1-1)	4
<i>Bursaria longisepala</i>	1(1-2)	12	1(1-1)	1
<i>Bursaria spinosa</i>	1(1-2)	28	1(1-2)	14
<i>Cayratia clematidea</i>	1(1-1)	27	1(1-1)	2
<i>Cheilanthes austrotenuifolia</i>	1(1-2)	15	1(1-1)	1
<i>Cheilanthes sieberi</i>	1(1-1)	30	1(1-1)	14
<i>Cissus antarctica</i>	1(1-1)	15	1(1-2)	3
<i>Cissus hypoglauca</i>	1(1-1)	47	1(1-2)	9
<i>Clematis aristata</i>	1(1-1)	35	1(1-1)	20
<i>Clematis glycinoides</i> var. <i>glycinoides</i>	1(1-1)	30	1(1-1)	10
<i>Clerodendrum tomentosum</i>	1(1-1)	35	1(1-1)	5
<i>Cymbidium suave</i>	1(1-1)	9	1(1-1)	2
<i>Desmodium varians</i>	1(1-2)	78	1(1-1)	21
<i>Dianella caerulea</i>	1(1-1)	73	1(1-1)	28
<i>Dichondra</i> spp.	2(1-2)	76	1(1-2)	25
<i>Dodonaea triquetra</i>	1(1-3)	15	1(1-2)	6

<i>Doodia aspera</i>	1(1-2)	46	1(1-2)	11
<i>Elaeocarpus reticulatus</i>	1(1-1)	26	1(1-1)	12
<i>Entolasia marginata</i>	1(1-2)	46	1(1-1)	11
<i>Eucalyptus crebra</i>	1(1-3)	19	2(1-3)	3
<i>Eucalyptus deanei</i>	3(1-3)	35	3(1-3)	1
<i>Eucalyptus eugenioides</i>	3(1-3)	31	2(1-3)	4
<i>Eucalyptus fibrosa</i>	3(1-3)	28	2(1-3)	3
<i>Eucalyptus hypostomatica</i>	1(1-3)	12	3(1-3)	<1
<i>Eucalyptus punctata</i>	3(1-3)	72	1(1-3)	8
<i>Eucalyptus tereticornis</i>	1(1-3)	18	2(1-3)	7
<i>Eustrephus latifolius</i>	1(1-1)	50	1(1-1)	19
<i>Exocarpos strictus</i>	1(1-1)	36	1(1-1)	9
<i>Ficus rubiginosa</i>	1(1-1)	9	1(1-3)	1
<i>Gahnia aspera</i>	1(1-1)	12	1(1-1)	4
<i>Gahnia melanocarpa</i>	1(1-2)	42	1(1-1)	5
<i>Galium binifolium</i>	1(1-1)	11	1(1-1)	3
<i>Galium propinquum</i>	1(1-1)	20	1(1-1)	7
<i>Geitonoplesium cymosum</i>	1(1-1)	70	1(1-1)	15
<i>Geranium homeanum</i>	1(1-2)	19	1(1-1)	3
<i>Glycine clandestina</i>	1(1-2)	59	1(1-1)	26
<i>Glycine microphylla</i>	1(1-2)	28	1(1-1)	5
<i>Goodenia ovata</i>	2(1-4)	28	1(1-1)	7
<i>Hardenbergia violacea</i>	1(1-1)	47	1(1-1)	17
<i>Helichrysum rutidolepis</i>	1(1-2)	12	1(1-1)	1
<i>Helichrysum scorpioides</i>	1(1-1)	22	1(1-1)	7
<i>Hibbertia aspera</i> subsp. <i>aspera</i>	1(1-1)	30	1(1-1)	10
<i>Hibbertia scandens</i>	1(1-1)	24	1(1-1)	5
<i>Howittia trilocularis</i>	1(1-2)	9	1(1-1)	1
<i>Hydrocotyle geraniifolia</i>	1(1-2)	15	1(1-1)	2
<i>Indigofera australis</i>	1(1-2)	59	1(1-1)	9
<i>Jacksonia scoparia</i>	1(1-1)	9	1(1-1)	2
<i>Kennedia rubicunda</i>	1(1-2)	41	1(1-1)	6
<i>Lepidosperma laterale</i>	1(1-2)	53	1(1-1)	28
<i>Leucopogon juniperinus</i>	1(1-1)	22	1(1-1)	5
<i>Libertia paniculata</i>	1(1-1)	19	1(1-1)	2
<i>Lissanthe strigosa</i>	1(1-1)	20	1(1-1)	8
<i>Lomandra longifolia</i>	1(1-2)	80	1(1-1)	43
<i>Melaleuca styphelioides</i>	1(1-3)	43	2(1-3)	1
<i>Microlaena stipoides</i>	2(1-2)	61	1(1-2)	36
<i>Notelaea longifolia</i> forma <i>longifolia</i>	1(1-1)	45	1(1-1)	7
<i>Olearia viscidula</i>	1(1-1)	54	1(1-2)	5
<i>Opercularia hispida</i>	1(1-1)	19	1(1-1)	3
<i>Oplismenus aemulus</i>	1(1-2)	19	1(1-2)	5
<i>Oplismenus imbecillis</i>	1(1-2)	57	1(1-2)	14
<i>Oxalis chnoodes</i>	1(1-1)	8	1(1-1)	1
<i>Oxalis exilis</i>	1(1-1)	14	1(1-1)	3

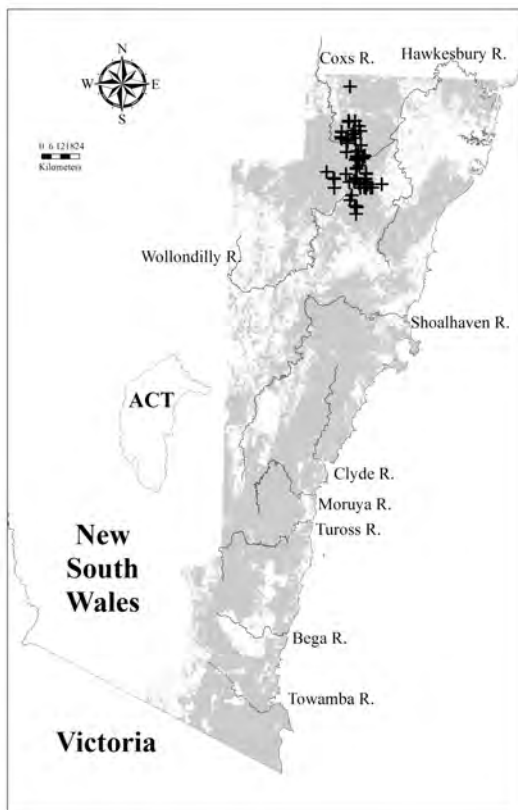
<i>Pandorea pandorana</i>	1(1-1)	50	1(1-1)	18
<i>Passiflora herbertiana</i> subsp. <i>herbertiana</i>	1(1-2)	12	1(1-1)	1
<i>Persoonia linearis</i>	1(1-1)	55	1(1-1)	28
<i>Phyllanthus gunnii</i>	1(1-1)	19	1(1-1)	2
<i>Pittosporum revolutum</i>	1(1-1)	30	1(1-1)	8
<i>Plantago debilis</i>	1(1-1)	32	1(1-1)	7
<i>Plectranthus parviflorus</i>	1(1-2)	41	1(1-1)	7
<i>Podocarpus spinulosus</i>	1(1-1)	8	1(1-2)	1
<i>Pomaderris ferruginea</i>	1(1-2)	9	1(1-1)	1
<i>Poranthera corymbosa</i>	1(1-1)	9	1(1-1)	1
<i>Pratia purpurascens</i>	1(1-1)	64	1(1-1)	17
<i>Pseuderanthemum variabile</i>	2(1-2)	42	1(1-2)	9
<i>Rapanea variabilis</i>	1(1-2)	12	1(1-1)	4
<i>Rubus parvifolius</i>	1(1-1)	45	1(1-1)	9
<i>Sarcopetalum harveyanum</i>	1(1-1)	27	1(1-1)	4
<i>Schoenus melanostachys</i>	1(1-3)	12	1(1-2)	2
<i>Senecio vagus</i> subsp. <i>eglandulosus</i>	1(1-2)	11	1(1-2)	<1
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>	1(1-1)	22	1(1-1)	7
<i>Smilax australis</i>	1(1-2)	39	1(1-1)	16
<i>Solanum prinophyllum</i>	1(1-1)	36	1(1-1)	6
<i>Stephania japonica</i> var. <i>discolor</i>	1(1-1)	39	1(1-1)	6
<i>Stypandra glauca</i>	2(1-2)	30	1(1-2)	5
<i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i>	3(1-4)	31	2(1-3)	7
<i>Trema tomentosa</i> var. <i>viridis</i>	1(1-1)	12	1(1-1)	1
<i>Tylophora barbata</i>	2(1-2)	73	1(1-1)	16
<i>Vernonia cinerea</i> var. <i>cinerea</i>	1(1-1)	22	1(1-1)	4
<i>Veronica plebeia</i>	1(1-2)	43	1(1-1)	10

Constant:

Species	C/A	Freq	C/A O	Freq O
<i>Entolasia stricta</i>	1(1-1)	49	1(1-2)	34
<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	1(1-1)	32	1(1-1)	25
<i>Pteridium esculentum</i>	1(1-2)	51	1(1-2)	37
<i>Viola hederacea</i>	1(1-1)	34	1(1-1)	22

Other tree species occurring less frequently in this community:

Species	C/A	Freq	C/A O	Freq O
<i>Angophora bakeri</i>	1(1-1)	1	1(1-2)	2
<i>Angophora costata</i>	1(1-1)	5	1(1-3)	7
<i>Eucalyptus agglomerata</i>	3(1-3)	11	2(1-3)	7
<i>Eucalyptus bosistoana</i>	1(1-1)	1	1(1-2)	3
<i>Eucalyptus cypellocarpa</i>	2(1-3)	7	2(1-2)	10
<i>Eucalyptus elata</i>	3(3-3)	1	2(1-3)	5
<i>Eucalyptus globoidea</i>	3(1-3)	3	2(1-2)	12
<i>Eucalyptus moluccana</i>	3(1-3)	8	3(1-3)	2
<i>Eucalyptus piperita</i>	1(1-3)	9	2(1-3)	9
<i>Eucalyptus sclerophylla</i>	1(1-1)	3	2(1-3)	4



Locations of survey sites allocated to DSF p88. Grey shading indicates extant native vegetation cover within the study area.

DSF p89: Batemans Bay Foothills Forest



Plate p89. Batemans Bay Foothills Dry Forest (Map Unit p89) on a dry ridge adjacent to the Kings Highway east of Government Bend. The overstorey is dominated by *Eucalyptus sieberi*, *A. agglomerata* and *Angophora floribunda*, the shrub layer contains *Persoonia linearis*, *Acacia obtusifolia* and *Allocasuarina littoralis*, and tussocks of *Lepidosperma urophorum* are prominent in the sparse ground layer.

Sample Sites: 95

Area Extant (ha): 67100

Estimated % remaining: >90%

Area in conservation reserves (ha): 35200

Estimated % of pre-clearing area in conservation reserves: 45-65%

No. taxa (total / unique): 301 / 1
 No. taxa per plot (\pm sd): 28.5 (10.2)
 Class: South East Dry Sclerophyll Forests
 Related TEC: n/a

Batemans Bay Foothills Forest (DSF p89) represents a revision and extension of DSF 89 identified by Tindall *et al.* (2004), based on a larger sample pool over a larger study area. The revised DSF p89 includes a small number of sites that were classified by Keith & Bedward (1999) as unit 49 Coastal Dry Shrub Forest, and a number of recent sites that were classified by Beukers (undated) as Lowlands Bloodwood Dry Shrub Forest or Coastal Silvertop-Stringybark Dry Slopes Forest.

DSF p89 is a eucalypt woodland with an open understorey of sclerophyll shrubs, grasses and forbs. This unit is distributed from the Yadboro River and southern slopes of the Morton plateau to the eastern foothills of the Budawang Range and the Deua valley, south to Nerrigundah and Cobargo. Within this distribution, Batemans Bay Foothills Forest occurs on ridges and dry slopes with sandy loams generally between 100-600m ASL and within a mean annual rainfall range of 850 - 1200mm. Batemans Bay Foothills Forest is replaced by Batemans Bay Cycad Forest (WSF p90) to the east, and on lower slopes and in gullies where the two units overlap.

Most of Batemans Bay Foothills Forest's distribution has escaped land clearing in conservation reserves and state forests.

Floristic Summary:

Trees: *Eucalyptus agglomerata*, *E. sieberi*, *E. consideriana*, *Corymbia gummifera*. **Shrubs:** *Persoonia linearis*, *Acacia obtusifolia*, *Platysace lanceolata*, *Podolobium ilicifolium*, *Tetratheca thymifolia*, *Banksia spinulosa*, *Allocasuarina littoralis*. **Groundcover:** *Entolasia stricta*, *Dianella caerulea*, *Lomandra confertifolia* ssp *similis*, *Pomax umbellata*.

Vegetation structure:

Stratum	Frequency (n=55)	Height (m) (\pm StDev)	Cover (%) (\pm StDev)
Tree canopy	100	21.6 (4.9)	22.9 (10.2)
Small tree	73	9.2 (3.7)	17.2 (14.3)
Shrub	58	2 (0.6)	19.8 (14.6)
Ground cover	98	0.9 (0.2)	31 (21.7)

Diagnostic Species:

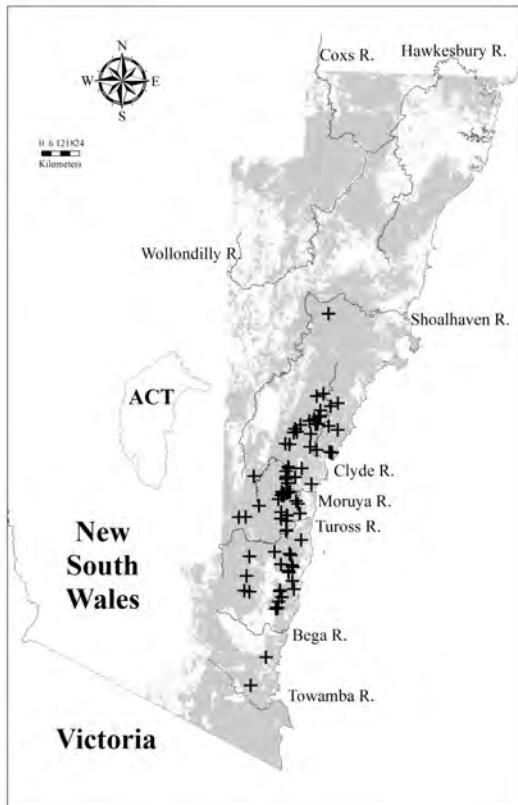
A 0.04ha plot located in this Map Unit is expected to contain at least 12 positive diagnostic species (95% confidence interval) provided that the total number of native species in the plot is 20 or greater. A 95% confidence interval means that five percent of plots sampled (1 in 20 plots) in this Map Unit may contain fewer than 12 positive diagnostic species.

Positive Diagnostic Species:

Species	C/A	Freq	C/A O	Freq O
<i>Acacia obtusifolia</i>	2(1-2)	81	1(1-2)	9
<i>Acacia terminalis</i>	1(1-1)	34	1(1-1)	11
<i>Allocasuarina littoralis</i>	1(1-2)	56	1(1-2)	16
<i>Amperea xiphoclada</i>	1(1-1)	32	1(1-1)	7
<i>Angophora costata</i>	2(1-2)	18	1(1-3)	7
<i>Angophora floribunda</i>	1(1-1)	35	1(1-2)	9
<i>Banksia spinulosa</i> var. <i>spinulosa</i>	1(1-1)	45	1(1-2)	15
<i>Bossiaea obcordata</i>	1(1-2)	40	1(1-2)	7
<i>Cooperookia barbata</i>	1(1-1)	16	1(1-1)	1
<i>Correa reflexa</i>	1(1-1)	19	1(1-1)	5
<i>Corymbia gummifera</i>	2(1-2)	39	2(1-2)	15
<i>Daviesia mimosoides</i>	2(1-3)	7	1(1-2)	2
<i>Daviesia ulicifolia</i>	1(1-1)	23	1(1-1)	6
<i>Dianella caerulea</i>	1(1-1)	69	1(1-1)	28
<i>Entolasia stricta</i>	1(1-1)	81	1(1-2)	33
<i>Eucalyptus agglomerata</i>	2(1-2)	49	2(1-3)	7
<i>Eucalyptus consideriana</i>	2(1-2)	39	1(1-2)	2

<i>Eucalyptus globoidea</i>	1(1-2)	29	2(1-2)	12
<i>Eucalyptus paniculata</i> subsp. <i>paniculata</i>	1(1-2)	15	1(1-2)	3
<i>Eucalyptus sieberi</i>	2(1-2)	66	2(1-3)	15
<i>Gompholobium latifolium</i>	1(1-1)	15	1(1-1)	3
<i>Hardenbergia violacea</i>	1(1-1)	36	1(1-1)	17
<i>Hibbertia aspera</i> subsp. <i>aspera</i>	1(1-1)	26	1(1-1)	10
<i>Hibbertia empetrifolia</i> subsp. <i>empetrifolia</i>	1(1-1)	24	1(1-1)	6
<i>Joycea pallida</i>	2(1-3)	22	1(1-2)	8
<i>Kennedia rubicunda</i>	1(1-1)	15	1(1-1)	6
<i>Lepidosperma laterale</i>	1(1-1)	45	1(1-1)	28
<i>Lepidosperma urophorum</i>	1(1-2)	43	1(1-2)	6
<i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>	1(1-1)	51	1(1-1)	23
<i>Logania pusilla</i>	1(1-1)	8	1(1-1)	1
<i>Lomandra confertifolia</i> subsp. <i>rubiginosa</i>	1(1-1)	19	1(1-2)	4
<i>Lomandra confertifolia</i> subsp. <i>similis</i>	1(1-2)	64	1(1-1)	2
<i>Lomandra cylindrica</i>	1(1-1)	16	1(1-1)	4
<i>Lomatia ilicifolia</i>	1(1-1)	41	1(1-1)	6
<i>Macrozamia communis</i>	1(1-1)	23	1(1-2)	4
<i>Marsdenia suaveolens</i>	1(1-1)	25	1(1-1)	2
<i>Patersonia glabrata</i>	1(1-1)	45	1(1-1)	9
<i>Persoonia linearis</i>	1(1-1)	92	1(1-1)	28
<i>Phyllanthus hirtellus</i>	1(1-1)	27	1(1-1)	14
<i>Platysace lanceolata</i>	1(1-1)	77	1(1-1)	12
<i>Podolobium ilicifolium</i>	1(1-1)	60	1(1-1)	8
<i>Pomax umbellata</i>	1(1-1)	42	1(1-1)	13
<i>Pteridium esculentum</i>	1(1-1)	54	1(1-2)	37
<i>Pultenaea ferruginea</i>	1(1-2)	5	1(1-2)	1
<i>Pultenaea spinosa</i>	1(1-1)	5	1(1-2)	<1
<i>Scaevola ramosissima</i>	1(1-1)	17	1(1-1)	3
<i>Tetradlea thymifolia</i>	1(1-1)	68	1(1-1)	6
<i>Xanthosia atkinsoniana</i>	1(1-1)	14	1(1-1)	<1
<i>Xanthorrhoea australis</i>	1(1-1)	6	1(1-2)	1
<i>Xanthorrhoea concava</i>	1(1-1)	31	1(1-1)	4
<i>Xanthosia pilosa</i>	1(1-1)	29	1(1-1)	7
Constant:				
Species	C/A	Freq	C/A O	Freq O
<i>Billardiera scandens</i>	1(1-1)	40	1(1-1)	27
Other tree species occurring less frequently in this community:				
Species	C/A	Freq	C/A O	Freq O
<i>Corymbia maculata</i>	1(1-2)	7	2(1-3)	3
<i>Eucalyptus blaxlandii</i>	2(2-2)	1	1(1-3)	1
<i>Eucalyptus cypellocarpa</i>	1(1-1)	2	2(1-2)	10
<i>Eucalyptus fibrosa</i>	1(1-1)	2	2(1-3)	3
<i>Eucalyptus longifolia</i>	1(1-2)	5	1(1-2)	2
<i>Eucalyptus muelleriana</i>	1(1-2)	14	2(1-2)	6

<i>Eucalyptus pilularis</i>	2(1-3)	5	2(1-3)	5
<i>Eucalyptus piperita</i>	2(1-3)	8	2(1-3)	9
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	1(1-1)	2	2(1-3)	6
<i>Eucalyptus saligna</i> X <i>botryoides</i>	1(1-1)	1	2(1-3)	2
<i>Eucalyptus scias</i> subsp. <i>callimastha</i>	1(1-1)	1	1(1-2)	1
<i>Eucalyptus smithii</i>	3(3-3)	1	1(1-2)	2
<i>Eucalyptus stenostoma</i>	1(1-1)	1	2(1-2)	<1
<i>Eucalyptus tricarpa</i>	1(1-1)	1	1(1-2)	1



Locations of survey sites allocated to DSF p89. Grey shading indicates extant native vegetation cover within the study area.

WSF p90: Batemans Bay Cycad Forest

Plate p90. Batemans Bay Cycad Forest (Map Unit p90) beside the Kings Highway near its junction with the Western Distributor Road, Monga National Park. An overstorey of *Corymbia maculata* grows over a sparse small tree layer of *Acacia irrorata* subsp. *irrorata*, occasional tall shrubs including *Persoonia linearis*, a prominent layer of *Macrozamia communis*, and a sparse groundcover including *Lomandra longifolia* and *Lepidosperma urophorum*.

Sample Sites: 90

Area Extant (ha): 56100

Estimated % remaining: >85%

Area in conservation reserves (ha): 14000

Estimated % of pre-clearing area in conservation reserves: 15-25%

No. taxa (total / unique): 375 / 0

No. taxa per plot (\pm sd): 39.7 (10.2)

Class: Southern Lowland Wet Sclerophyll Forests

Related TEC: n/a

Batemans Bay Cycad Forest (WSF p90) represents a revision and extension of WSF 90 identified by Tindall *et al.* (2004), based on additional samples over a larger study area. The revised WSF p90 includes a number of sites that were classified by Beukers (undated) as Coastal Spotted Gum-Ironbark Forest.

WSF p90 is a eucalypt forest with an open shrub stratum and a grassy groundcover. This unit is most extensive north-west to south-west of Batemans Bay, from Currowan State Forest south to the Moruya River and west along the Deua River to Merricumbene. It is also extensive in Bodalla State Forest, and scattered occurrences continue as far north as Yadboro in Morton National Park, and south to Narooma and Bermagui. It dominates large areas of forest on the coastal lowlands (below 250m ASL) surrounding Nelligen, Batemans Bay, Mogo and to the west of Moruya where mean annual rainfall is between 950 and 1250mm. Batemans Bay Cycad Forest shares a number of species with Batemans Bay Foothills Dry Forest (DSF p89), which is generally found further west and at higher elevations. Where the distribution of these two units overlap Batemans Bay Cycad Forest tends to occupy lower slopes and gullies while Batemans Bay Foothills Dry Forest occurs on ridgetops and exposed slopes.

About four-fifths of the original distribution of Batemans Bay Cycad Forest remains, including significant areas in state forest and conservation reserves.

Floristic Summary:

Trees: *Eucalyptus globoidea*, *Corymbia maculata*, *Allocasuarina littoralis*, and *Eucalyptus paniculata*. **Shrubs:** *Macrozamia communis*, *Persoonia linearis*, *Platysace lanceolata*, *Hibbertia aspera*, *Podolobium ilicifolium*, and *Leucopogon lanceolatus*. **Climbers:** *Hardenbergia violacea*, *Glycine clandestina*. **Groundcover:** *Entolasia stricta*, *Dianella caerulea*, *Lepidosperma laterale*, *Lomandra multiflora*, and *Imperata cylindrica*.