

Roads and Traffic Authority

Pacific Highway Upgrade -
Oxley Highway to Kempsey
Flora and Fauna Working Paper


September 2010

GHD Pty Ltd
ABN 39 008 488 373
Level 3, GHD Tower
24 Honeysuckle Drive
NEWCASTLE NSW 2300
Phone: +61 2 4979 9999
Fax: +61 2 4979 9988
Email: ntlmail@ghd.com

Appendix H

Description of vegetation communities in the study area

Description of the vegetation communities within the study area (Ecotone 2007)

Community 1: Moist Floodplain Closed Forest with Rainforest Elements				
Stratum	Height (m)	% cover*	Dominant species	Description and comments
Tree layer (emergent)	25 - 30	50 - 70	<i>Syncarpia glomulifera</i> , <i>Lophostemon confertus</i> , <i>Eucalyptus propinqua</i> , <i>E. grandis</i> , <i>E. resinifera</i> , <i>E. pilularis</i>	Habitat: Narrow floodplains and lower slopes in gullies by creeks with permanent water, including creek beds; or sheltered moist gullies connecting to creeklines.
Sub-canopy layer	3 - 20	60 - 80	<i>Ficus coronata</i> , <i>Endiandra sieberi</i> , <i>Cryptocarya microneura</i> , <i>Glochidion ferdinandi</i> , <i>Acmena smithii</i> , <i>Melaleuca styphelioides</i> , <i>Acronychia oblongifolia</i> , <i>Callistemon salignus</i> , <i>Trochocarpa laurina</i> , <i>Hibiscus splendens</i> , <i>Backhousia myrtifolia</i> , <i>Hymenosporum flavum</i> , <i>Pittosporum revolutum</i> , <i>Guioa semiglaucula</i> , <i>Psychotria daphnoides</i> , <i>Lantana camara</i> .	Structure/Characteristics: Closed Forest with emergent eucalypts. Lower tree layer and understorey of rainforest species, some paperbarks, vines and epiphytes. Sparse ground layer. Ferns abundant. Distribution within Study Area: Confined to the floodplain of Barrys Creek and its major tributaries, in section 6 of the study area. All patches of the community occur within Ballengarra State Forest.
Ground layer	0 – 1.5	5 - 30	<i>Gahnia clarkei</i> , <i>Blechnum cartilagineum</i> , <i>Doodia aspera</i> , <i>Morinda jasminoides</i> , <i>Pittosporum spinescens</i> , <i>Tabernaemontana pandacaqui</i> <i>Cordyline stricta</i> , <i>Pseuderanthemum variabile</i> , <i>Schelhammera undulata</i> , <i>Dichondra repens</i> , <i>Lomandra longifolia</i> , <i>Oplismenus aemulus</i> , <i>Carex appressa</i>	Condition & Presence of Weeds: The community is generally in good condition and free of weeds, apart from some infestations of <i>Lantana</i> in patches and minor weeds at the boundaries of disturbed areas. Conservation Status: The habitat of the community together with the particular mix of sclerophyllous tree species and rainforest elements in the understorey indicates that the community qualifies as the EEC 'Subtropical Coastal Floodplain Forest' under the NSW TSC Act.
Vines / epiphytes			<i>Parsonsia straminea</i> , <i>Cissus hypoglauca</i> , <i>Dioscorea transversa</i> , <i>Smilax australis</i> , <i>Stephania japonica</i> , <i>Sarcopetalum harveyanum</i> , <i>Geitonoplesium cymosum</i> , <i>Cissus hypoglauca</i> , <i>Rubus hillii</i> , <i>Rubus parvifolius</i> , <i>Platyserium bifurcatum</i> .	
				


*projective canopy foliage cover

Community 2: Riparian Forest

Stratum	Height (m)	% cover*	Dominant species	Description and comments
Tree layer	20 - 25	20 - 40	<i>Eucalyptus grandis</i> , <i>E. tereticornis</i> , <i>E. microcorys</i> , <i>E. propinqua</i> , <i>Corymbia intermedia</i> , <i>Lophostemon confertus</i>	<p>Habitat: Steeper banks and floodplains immediately adjacent to creeks with permanent water, including creek beds, generally through flat land.</p> <p>Structure/Characteristics: Forest or Open Forest dominated by eucalypt species with rainforest and/or swamp elements in the understorey.</p> <p>Distribution within Study Area: Occurs in small patches associated with creeks and watercourses in 5 areas in the study area. These include Cooperabung Creek, Barrys Creek, Smiths Creek, Pipers Creek and Maria River.</p> <p>Condition & Presence of Weeds: Because of the proximity of the patches to the existing highway and cleared farming land in most of the areas where it occurs, and its characteristic narrowness, the community is generally highly invaded by weeds and in poor condition.</p> <p>Conservation Status: The habitat of the community together with the particular assemblage of species according to the Final Determination (NSW Scientific Committee 2004b) indicates that the community qualifies as the EEC 'Subtropical Coastal Floodplain Forest' under the NSW TSC Act.</p>
Sub-canopy layer	2 - 12	30 - 50	<i>Melaleuca styphelioides</i> , <i>M. linariifolia</i> , <i>Glochidion ferdinandi</i> , <i>Acmena smithii</i> , <i>Hibiscus splendens</i> , <i>Cordyline stricta</i> , <i>Acacia melanoxylon</i> , <i>Backhousia myrtifolia</i> , <i>Tristaniopsis laurina</i> , <i>Trochocarpa laurina</i> , <i>Endiandra sieberi</i> , <i>Ficus coronata</i> , <i>Gmelina leichhardtii</i> , <i>Lantana camara</i>	
Ground layer	0 – 1	30 - 90	<i>Adiantum aethiopicum</i> , <i>A. hispidulum</i> , <i>Blechnum cartilagineum</i> , <i>Pteridium esculentum</i> , <i>Morinda jasminoides</i> , <i>Christella dentata</i> , <i>Doodia aspera</i> , <i>Dichondra repens</i> , <i>Cordyline stricta</i> , <i>Lomandra longifolia</i> , <i>Imperata cylindrica</i> , <i>Oplismenus aemulus</i> , <i>Entolasia marginata</i> , <i>Carex appressa</i> , <i>Centella asiatica</i> , <i>Gymnostachys anceps</i>	
Vines / climbers	<i>Parsonsia straminea</i> , <i>Stephania japonica</i> , <i>Smilax australis</i> , <i>Clematis glycinoides</i> , <i>Dioscorea transversa</i> , <i>Rubus hillii</i> , <i>R. nebulosus</i> , <i>R. rosifolius</i> , <i>Geitonoplesium cymosum</i> , <i>Polymeria calycina</i> .			



*projective canopy foliage cover

Community 3: Paperbark Swamp Forest				
Stratum	Height (m)	% cover*	Dominant species	Description and comments
Tree layer	18 - 22	40 - 60	<i>Melaleuca quinquenervia</i> plus occasional <i>Eucalyptus tereticornis</i> , <i>E. robusta</i> , <i>E. resinifera</i> . <i>E. pilularis</i> or <i>Syncarpia glomulifera</i>	<p>Habitat: Low-lying permanently wet depressions with poor drainage, associated with floodplains of creeks with permanent water or fringes of dams.</p> <p>Structure/Characteristics: Forest or Open Forest dominated by paperbarks, usually with a sedge understorey with ferns. Eucalypts absent or uncommon.</p> <p>Distribution within Study Area: Occurs in small patches in the vicinity of Fernbank Creek (section 2), immediately north of the Hastings River (section 2), Cairncross State Forest (section 3) and in the floodplain to the north (section 4), and two very minor occurrences in sections 5 and 7.</p> <p>Condition & Presence of Weeds: Most patches of the community are generally in good condition and free of weeds. Patches of weeds, where they do occur in disturbed and edge areas, mainly consist of herbaceous weeds and some Crofton Weed.</p> <p>Conservation Status: The habitat of the community together with the particular assemblage of species according to the Final Determination (NSW Scientific Committee 2004c) indicates that the community qualifies as the EEC 'Swamp Sclerophyll Forest on Coastal Floodplains' under the NSW TSC Act.</p>
Sub-canopy layer	2 - 10	20 - 30	<i>Melaleuca linariifolia</i> , <i>M. styphelioides</i> , <i>M. sieberi</i> , <i>Callistemon salignus</i> , <i>Tristaniopsis laurina</i> , <i>Glochidion ferdinandi</i> , <i>Leptospermum polygalifolium</i> , <i>Acacia irrorata</i> , <i>Duboisia myoporoides</i> , <i>A. melanoxylon</i> , <i>Solanum mauritianum</i> .	
Ground layer	0 – 1	30 - 60	<i>Calochlaena dubia</i> , <i>Gahnia clarkei</i> , <i>G. sieberiana</i> , <i>Cordylina stricta</i> , <i>Imperata cylindrica</i> , <i>Oplismenus aemulus</i> , <i>Entolasia marginata</i> , <i>Paspalum</i> spp., <i>Lomandra longifolia</i> , <i>Juncus usitatus</i> , <i>Commelina cyanea</i> , <i>Carex appressa</i> , <i>Schelhammera undulata</i> , <i>Breynia oblongifolia</i> .	
Vines / climbers	<i>Parsonsia straminea</i> , <i>Smilax australis</i> , <i>Dioscorea transversa</i> , <i>Rubus hillii</i> , <i>Polymeria calycina</i>			
				

*projective canopy foliage cover

Community 4: Swamp Mahogany / Forest Red Gum Swamp Forest

Stratum	Height (m)	% cover*	Dominant species	Description and comments
Tree layer	25 - 30	30 - 40	<i>Eucalyptus robusta</i> , <i>E. tereticornis</i> , <i>E. amplifolia</i> , <i>E. resinifera</i> , <i>Melaleuca quinquenervia</i> , <i>M. decora</i>	<p><u>Habitat</u>: Low-lying permanently wet flats or depressions with poor drainage on floodplains.</p> <p><u>Structure/Characteristics</u>: Forest or Open Forest dominated by swamp mahogany and/or forest red gum/cabbage gum with larger paperbarks. Usually has a sedge understorey with ferns and/or grasses. Eucalypts uncommon except for swamp mahogany, forest red gum and red mahogany in slightly more elevated drier areas.</p> <p><u>Distribution within Study Area</u>: Restricted to south of the Wilson River. Occupies small to moderate patches associated with creeks and watercourses in the Fernbank Creek area (section 2), Cairncross State Forest (section 3) and in the floodplain to the north (section 4). <u>Condition & Presence of Weeds</u>: Most patches of the community are generally in good condition and free of weeds. In disturbed areas (regularly grazed or subject to runoff from the existing highway), significant infestations of noxious lantana, crofton weed or blackberry occur.</p> <p><u>Conservation Status</u>: The habitat of the community together with the particular assemblage of species according to the Final Determination (NSW Scientific Committee 2004c) indicates that the community qualifies as the EEC 'Swamp Sclerophyll Forest on Coastal Floodplains' under the NSW TSC Act.</p>
Sub-canopy layer	3 - 18	30 - 40	<i>Melaleuca linariifolia</i> , <i>M. sieberi</i> , <i>M. nodosa</i> , <i>Callistemon salignus</i> , <i>Glochidion ferdinandi</i> , <i>Alphitonia excelsa</i> , <i>Leptospermum polygalifolium</i> , <i>Lophostemon confertus</i> , <i>Acacia irrorata</i> , <i>A. melanoxylon</i> , <i>Duboisia myoporoides</i> , <i>Acronychia oblongifolia</i> , <i>Lantana camara</i>	
Ground layer	0 - 1.5	30 - 60	<i>Gahnia clarkei</i> , <i>Morinda jasminoides</i> , <i>Schoenus melanostachys</i> , <i>Imperata cylindrica</i> , <i>Entolasia marginata</i> , <i>Paspalum</i> spp., <i>Breynia oblongifolia</i> , <i>Crinum pedunculatum</i> , <i>Viola hederacea</i> , <i>Juncus usitatus</i> , <i>J. prismatocarpus</i> , <i>Commelina cyanea</i> , <i>Carex appressa</i> , <i>Persicaria decipiens</i> , <i>Ranunculus inundatus</i> , <i>Philydrum lanuginosum</i> , <i>Oplismenus aemulus</i>	
Vines / climbers	<i>Parsonsia straminea</i> , <i>Marsdenia rostrata</i> , <i>Polymeria calycina</i> , <i>Glycine</i> spp., <i>Sarcopetalum harveyanum</i> , <i>Stephania japonica</i>			



*projective canopy foliage cover

Community 5: Swamp Oak Forest				
Stratum	Height (m)	% cover*	Dominant species	Description and comments
Tree layer	15 - 20	40 - 60	Mainly <i>Casuarina glauca</i> , with some <i>Melaleuca</i> species	<p>Habitat: Low-lying permanently wet depressions with poor drainage on floodplains, with some saline influence.</p> <p>Structure/Characteristics: Forest or Open Forest dominated by swamp oaks, occasional paperbarks and usually with a rush or sedge understorey. Eucalypts absent or uncommon.</p> <p>Distribution within Study Area: Restricted to one small patch in the terrestrial part of the project area, on the floodplain south of the Wilson River (section 4).</p> <p>Condition & Presence of Weeds: The one patch of the community is generally in good condition and free of weeds, although minor herbaceous weeds and exotic pasture grasses have invaded the understorey.</p> <p>Conservation Status: The habitat of the community together with the particular assemblage of species according to the Final Determination (NSW Scientific Committee 2004d) indicates that the community qualifies as the EEC 'Swamp Oak Floodplain Forest' under the NSW TSC Act.</p>
Sub-canopy layer	3 - 10	10 - 20	<i>Callistemon salignus</i> , <i>Guioa semiglauc</i> , <i>Myoporum acuminatum</i> , <i>Myrsine howittiana</i>	
Ground layer	0 – 1.5	30 - 60	<i>Gahnia sieberiana</i> , <i>Baumea juncea</i> , <i>Imperata cylindrica</i> , <i>Oplismenus aemulus</i> , <i>Phragmites australis</i> , <i>Viola hederacea</i> , <i>Lantana camara</i> , <i>Maclura cochinchinensis</i> , <i>Paspalum</i> spp., <i>Commelina cyanea</i> , <i>Carex appressa</i> , <i>Leptinella longipes</i>	



*projective canopy foliage cover

Community 6: Freshwater Wetland				
Stratum	Height (m)	% cover*	Dominant species	Description and comments
Tree layer (fringing)	8 - 15	20 - 40	<i>Melaleuca styphelioides</i> , <i>M. linariifolia</i> , <i>M. quinquenervia</i> , <i>Casuarina glauca</i>	<u>Habitat</u> : Depressions on floodplains associated with or near watercourses. <u>Structure/Characteristics</u> : Shallow fresh water containing or surrounded by macrophytes, sedges, rushes and other aquatic plants, generally less than 1.5 m height. Often fringed by paperbarks and swamp oaks.
Ground layer	<1.5	5 - 90	<i>Juncus kraussii</i> , <i>Philydrum lanuginosum</i> , <i>Cotula coronopifolia</i> , <i>Triglochin procerum</i> , <i>Isolepis inundata</i> , <i>Leptinella longipes</i> , <i>Apium prostratum</i> , <i>Bacopa monnieri</i>	<u>Distribution within Study Area</u> : Restricted to small to medium patches in two broad areas. Small patches occur along Fernbank Creek (section 2), and a series of small to larger patches occur in the floodplain both to the south and north of the Wilson River (section 4). The small patch to the north of the Wilson River is part of a SEPP 14 wetland. <u>Condition & Presence of Weeds</u> : Most occurrences of this community are in good condition and relatively weed-free, but often subject to grazing and therefore trampling by stock. Native species are often consequently replaced by weeds and exotic pasture grasses. <u>Conservation Status</u> : The habitat of the community together with the particular assemblage of species according to the Final Determination (NSW Scientific Committee 2004e) indicates that the community qualifies as the EEC 'Freshwater Wetlands on Coastal Floodplains' under the NSW TSC Act.



*projective canopy foliage cover

Community 7: Moist Floodplain Forest

Stratum	Height (m)	% cover*	Dominant species	Description and comments
Tree layer	25 - 35	30 - 40	<i>Eucalyptus pilularis</i> , <i>E. microcorys</i> , <i>E. acmenoides</i> , <i>E. siderophloia</i> , <i>E. globoidea</i> , <i>E. resinifera</i> , <i>Corymbia gummifera</i> , <i>C. intermedia</i> , <i>Syncarpia glomulifera</i>	<u>Habitat</u> : Low-lying flat floodplain areas, usually dry but subject to occasional flooding. <u>Structure/Characteristics</u> : Forest or Open Forest dominated by eucalypts, usually with some paperbarks in the sub-canopy layer and an understorey consisting of a mix of dry sclerophyll and moist-tolerant or rainforest elements.
Sub-canopy / shrub layer	2 - 10	10 - 30	<i>Melaleuca quinquenervia</i> , <i>M. sieberi</i> , <i>Allocasuarina littoralis</i> , <i>A. torulosa</i> , <i>Banksia spinulosa</i> var. <i>collina</i> , <i>Melaleuca nodosa</i> , <i>Glochidion ferdinandi</i> , <i>Leptospermum polygalifolium</i> , <i>Persoonia stradbrokeensis</i> , <i>Myrsine howittiana</i> , <i>Pultenaea retusa</i> , <i>Acacia falcata</i> , <i>A. longifolia</i> , <i>A. fimbriata</i> , <i>A. longissima</i>	<u>Distribution within Study Area</u> : Occurs in sections 1, 2, 3, 5 and 7. Most common in sections 2 and 3 (Cairncross State Forest). <u>Condition & Presence of Weeds</u> : Most patches have been heavily logged and there are many areas of logging debris in past logging coupes. Most areas are in an early to advanced state of regrowth. Weeds are generally sparse, and limited to minor herbaceous weeds or exotic grasses in disturbed areas.
Ground layer	0 – 1	50 - 80	<i>Ptilothrix deusta</i> , <i>Entolasia stricta</i> , <i>Goodenia bellidifolia</i> , <i>Themeda australis</i> , <i>Imperata cylindrica</i> , <i>Pteridium esculentum</i> , <i>Polyscias sambucifolia</i> , <i>Laxmannia gracilis</i> , <i>Gahnia sieberiana</i> , <i>Austrostipa pubescens</i> , <i>Austrodanthonia</i> spp., <i>Dianella caerulea</i> , <i>Leucopogon juniperinus</i> , <i>Melaleuca thymifolia</i> , <i>Lomandra longifolia</i> , <i>L. multiflora</i> , <i>Hibbertia aspera</i> , <i>Cyrtostylis erecta</i> , <i>Pimelea linifolia</i> , <i>Juncus usitatus</i> , <i>Gompholobium pinnatum</i> , <i>Dampiera stricta</i> , <i>Dianella caerulea</i> , <i>Pteridium esculentum</i> , <i>Lepidosperma laterale</i>	
Vines / climbers	<i>Rubus hillii</i> , <i>Hardenbergia violacea</i> , <i>Kennedia rubicunda</i> , <i>Parsonsia straminea</i> , <i>Polymeria calycina</i>			<u>Conservation Status</u> : No particular conservation significance.




*projective canopy foliage cover

Community 8: Moist Gully Forest				
Stratum	Height (m)	% cover*	Dominant species	Description and comments
Tree layer	25 - 35	40 - 50	<i>Eucalyptus pilularis</i> , <i>E. microcorys</i> , <i>E. propinqua</i> , <i>E. tereticornis</i> , <i>Lophostemon confertus</i> , <i>Syncarpia glomulifera</i>	<p><u>Habitat</u>: Moist, sheltered, gullies in undulating terrain, typically at the base of steeper slopes. Usually abutting/merging into Community 9 at the drier end; and Communities 1, 2 or swamp forest at the wetter end. Generally associated with ephemeral drainage lines or minor creeklines (often without permanent water).</p> <p><u>Structure/Characteristics</u>: Forest or Open Forest dominated by eucalypts and brushbox, with a dense, moist understorey. Some paperbarks in the sub-canopy layer with ferns common in the shrub and ground layers.</p> <p><u>Distribution within Study Area</u>: Most common in Sections 6 & 8 where the topography is more undulating. Small patches also occur in sections 1, 2, 3, 5 and 7.</p> <p><u>Condition & Presence of Weeds</u>: Most patches of the community are generally in good condition and free of weeds, although major infestations of noxious weeds such as Lantana and Crofton Weed occur by streams and adjacent lower slopes in the gullies.</p> <p><u>Conservation Status</u>: No particular conservation significance.</p>
Sub-canopy / shrub layer	3 - 15	30 - 40	<i>Melaleuca quinquenervia</i> , <i>Livistona australis</i> , <i>Allocasuarina torulosa</i> , <i>Cordyline stricta</i> , <i>Acacia melanoxylon</i> , <i>Trochocarpa laurina</i> , <i>Callistemon salignus</i> , <i>Breynia oblongifolia</i> , <i>Glochidion ferdinandi</i> , <i>Hibiscus splendens</i> , <i>Lantana camara</i> , <i>Persoonia stradbrogensis</i>	
Ground layer	0 - 1	40 - 70	<i>Imperata cylindrica</i> , <i>Oplismenus aemulus</i> , <i>Leucopogon juniperinus</i> , <i>Entolasia marginata</i> , <i>Blechnum cartilagineum</i> , <i>Gompholobium pinnatum</i> , <i>Adiantum aethiopicum</i> , <i>Centella asiatica</i> , <i>Pteridium esculentum</i> , <i>Lomandra longifolia</i> , <i>Calochlaena dubia</i>	
Vines / climbers / epiphytes			<i>Hibbertia scandens</i> , <i>Eustrephus latifolius</i> , <i>Geitonoplesium cymosum</i> , <i>Smilax australis</i> , <i>Stephania japonica</i> , <i>Pandorea pandorana</i> , <i>Platynerium bifurcatum</i> , <i>Cissus hypoglauca</i>	



*projective canopy foliage cover

Community 9: Moist Slopes Forest				
Stratum	Height (m)	% cover*	Dominant species	Description and comments
Tree layer	25 - 35	30 - 50	<i>Eucalyptus pilularis</i> , <i>E. microcorys</i> , <i>E. acmenoides</i> , <i>E. propinqua</i> , <i>E. siderophloia</i> , <i>E. globoidea</i> , <i>Lophostemon confertus</i> , <i>Corymbia maculata</i> , <i>C. gummifera</i> , <i>C. intermedia</i> , <i>Syncarpia glomulifera</i>	<p><u>Habitat</u>: Slopes or low ridges with a moist/sheltered aspect and good drainage in undulating terrain. Generally occurs between Dry Ridgetop Forest and Moist Gully Forest, Swamp Forest or Rainforest.</p> <p><u>Structure/Characteristics</u>: Forest or Open Forest dominated by eucalypts and brushbox with a moist, open understorey.</p> <p><u>Distribution within Study Area</u>: The single most abundant natural community in terms of area – widespread in all sections except section 4 (floodplain).</p> <p><u>Condition & Presence of Weeds</u>: Most patches of the community are generally in good condition and free of weeds. Most patches have been subject to past logging. Patches of weeds, where they do occur in disturbed and edge areas, mainly consist of herbaceous weeds. Some patches of lantana occur.</p> <p><u>Conservation Status</u>: No particular conservation significance.</p>
Sub-canopy / shrub layer	2 - 15	20 - 40	<i>Allocasuarina littoralis</i> , <i>A. torulosa</i> , <i>Trochocarpa laurina</i> , <i>Notelaea longifolia</i> , <i>Melaleuca nodosa</i> , <i>Acacia floribunda</i> , <i>Breynia oblongifolia</i> , <i>Banksia spinulosa</i> var. <i>collina</i> , <i>Cordyline stricta</i> , <i>Leptospermum polygalifolium</i> , <i>Persoonia stradbrokeensis</i> , <i>Pultenaea retusa</i> , <i>Acacia longifolia</i>	
Ground layer	0 – 1	30 - 70	<i>Imperata cylindrica</i> , <i>Oplismenus aemulus</i> , <i>Austrostipa pubescens</i> , <i>Dichelachne micrantha</i> , <i>Platylobium formosum</i> , <i>Polyscias sambucifolia</i> , <i>Pratia purpurascens</i> , <i>Lindsaea linearis</i> , <i>L. microphylla</i> , <i>Gompholobium pinnatum</i> , <i>Echinopogon caespitosus</i> , <i>Imperata cylindrica</i> , <i>Pratia purpurascens</i> , <i>Dampiera stricta</i> , <i>Dianella caerulea</i> , <i>Breynia oblongifolia</i> , <i>Zieria smithii</i> , <i>Themeda australis</i> , <i>Pteridium esculentum</i> , <i>Lomandra longifolia</i> , <i>L. multiflora</i> , <i>Viola betonicifolia</i> , <i>Xanthorrhoea macronema</i>	
Vines / climbers / epiphytes	<i>Hibbertia scandens</i> , <i>Smilax glyciophylla</i> , <i>S. australis</i> , <i>Glycine microphylla</i> , <i>Pandorea pandorana</i>			
				

*projective canopy foliage cover

Community 10: Dry Ridgetop Forest

Stratum	Height (m)	% cover*	Dominant species	Description and comments
Tree layer	25 - 30	30 - 40	EITHER <i>Eucalyptus pilularis</i> , <i>E. microcorys</i> , <i>E. acmenoides</i> , <i>E. globoidea</i> , <i>Corymbia gummifera</i> , OR <i>Corymbia maculata</i> , <i>Eucalyptus siderophloia</i> , <i>E. fibrosa</i> , <i>E. acmenoides</i> , <i>E. propinqua</i> , <i>E. globoidea</i> , <i>Syncarpia glomulifera</i>	<u>Habitat</u> : Higher, drier and more exposed Ridgetops and upper slopes in undulating terrain, or more elevated and exposed areas above the floodplain in flatter terrain. <u>Structure/Characteristics</u> : Dry Open Forest dominated either by blackbutt / tallowwood or spotted gum / ironbark. Generally sparse and grassy sclerophyllous understorey
Sub-canopy / shrub layer	2 - 10	20 - 30	<i>Allocasuarina littoralis</i> , <i>Acacia falcata</i> , <i>A. fimbriata</i> , <i>Ozothamnus diosmifolius</i> , <i>Notelaea longifolia</i> , <i>Pultenaea villosa</i> , <i>Breynia oblongifolia</i>	<u>Distribution within Study Area</u> : Moderately common in all sections except 4 and 5 where the topography is more low-lying.
Ground layer	0 - 1	30 - 50	<i>Themeda australis</i> , <i>Imperata cylindrica</i> , <i>Entolasia stricta</i> , <i>Austrostipa pubescens</i> , <i>Gompholobium pinnatum</i> , <i>Leucopogon juniperinus</i> , <i>Daviesia ulicifolia</i> , <i>Pomax umbellata</i> , <i>Hibbertia aspera</i> , <i>Austrodanthonia</i> sp., <i>Dianella caerulea</i> , <i>Vernonia cinerea</i> , <i>L. multiflora</i> , <i>Cheilanthes sieberi</i>	<u>Condition & Presence of Weeds</u> : Most patches of the community are generally in good condition and free of weeds. Most patches have been subject to past logging. Invasions of weeds, where they do occur in disturbed and edge areas, mainly consist of minor herbaceous weeds. <u>Conservation Status</u> : No particular conservation significance.
Vines / climbers	<i>Hardenbergia violacea</i> , <i>Kennedia rubicunda</i> , <i>Pandorea pandorana</i> .			



*projective canopy foliage cover

Community 11: Cleared, Open Grassland / Derived Pasture with Scattered Trees

Description and comments

Dominant Species: Remnant trees from the above communities (mostly from Community 7)

Habitat: Mostly on the southern flat floodplain of the study area.

Structure/Characteristics: Scattered mature to regrowth paddock trees, sometimes in clumps, with cleared understorey replaced with pasture – minor clumps of remnant native shrubs at tree bases.

Distribution within Study Area: Mainly occurs in section 4, 5 and 7 with minor occurrences in sections 1, 2 and 8.

Condition & Presence of Weeds: Generally in poor condition due to the extent of past clearing, ongoing disturbance due to grazing, sparse presence of native species and presence of weeds and introduced pasture grasses.

Conservation Status: No particular conservation significance.



Community 12: Plantation / Cropland / Market Garden etc.

Description and comments

Dominant Species: Vegetables, crops, vineyards, cultivated 'tea-tree' etc.

Habitat: Various, usually on flatter land.

Structure/Characteristics: No particular structure – usually artificially planted in rows and cultivated.

Distribution within Study Area: Minor occurrences in sections 2 and 5.

Condition & Presence of Weeds: Artificial condition and usually artificially kept weed-free.

Conservation Status: No conservation significance.



Community 13: Totally Cleared Open Pasture / Weedy Fallow / Roads

Description and comments

Dominant Species: Native and Introduced pasture grasses, weeds

Habitat: Various

Structure/Characteristics: Open grassland; weedy open fallow or bare, hard surfaces (mainly roads).

Distribution within Study Area: Covers the largest single area – widespread in all sections except 3 and 6 (heavily vegetated areas).

Condition & Presence of Weeds: Very poor condition due to the extent of clearing, ongoing disturbance, lack of native species and presence of weeds and introduced pasture grasses.

Conservation Status: No conservation significance.

