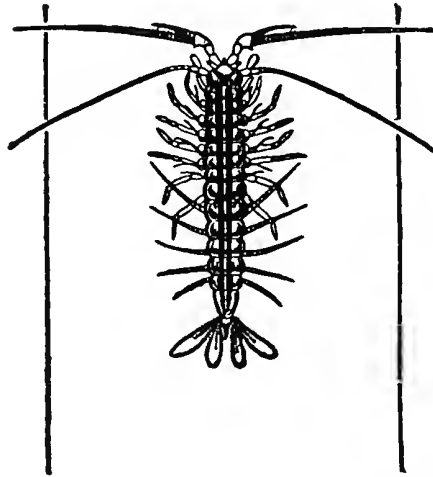


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Director of the Museum

A DRY SCLEROPHYLL WOODLAND MOSAIC: VEGETATION OF CHERRY TREE HILL, NEAR CRANBROOK, TASMANIA

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INTRODUCTION

The vegetation was surveyed on a block of uncommitted Crown Land, approximately 100 hectares in area, near Cherry Tree Hill on Tasmania's Central East Coast (Fig. 1). The area is known locally as "The Gap", and is located midway between the township of Cranbrook and the Coles Bay turnoff on the Tasman Highway. The Crown Land is bound on its southern side by the Tasman Highway, and is surrounded by private property. The southern boundary of an extensive area of State Forest lies one kilometre to the north of the Crown Land block.

The country comprising the Crown Land block is gently undulating, consisting of low rocky hills separated by flats with somewhat impeded drainage. Landforms are more varied in the surrounding private property and the nearby State Forest. Altitudinal range of the Crown Land block is 140 to 180 metres a.s.l. The rock-type is Jurassic dolerite, which is exposed on the slopes and crests of hills. Soil development on the ridgelines is minimal; surface rock cover decreases as lower slopes and flats are approached.

The area is located in the dry subhumid warm climatic zone (Gentili, 1972). Annual average rainfall at Cranbrook, seven kilometres to the south-west, is 648mm, with little variation between months. Temperature records from Swansea, 20 kilometres to the south-west, show an average daily maximum temperature of 17.6°C, and an average daily minimum of 7.5°C. January and February are the hottest months, July is the coldest.

The dominant vegetation of the area is uneven-aged dry sclerophyll woodland dominated by *Eucalyptus pulchella*. Mallee-form *Eucalyptus barberi* is widespread on dry sites. It is replaced by *Eucalyptus ovata* as drainage becomes more impeded on flats and soaks. *Eucalyptus pulchella* - *E. viminalis* ± *E. globulus* open-forest occurs locally on shaded slopes. On rocky, insolated slopes subject to severe drought stress, *E. pulchella* has been eliminated or reduced to mallee-form. In the northern section of the block, *Casuarina stricta* - *Leptospermum grandiflorum* - *E. barberi* open-shrubland covers an extensive area.

Casuarina stricta, *Casuarina littoralis*, *Callitris rhomboidea* and *Banksia marginata* are occasional components of a generally sparse shrub layer. The medium shrub layer is

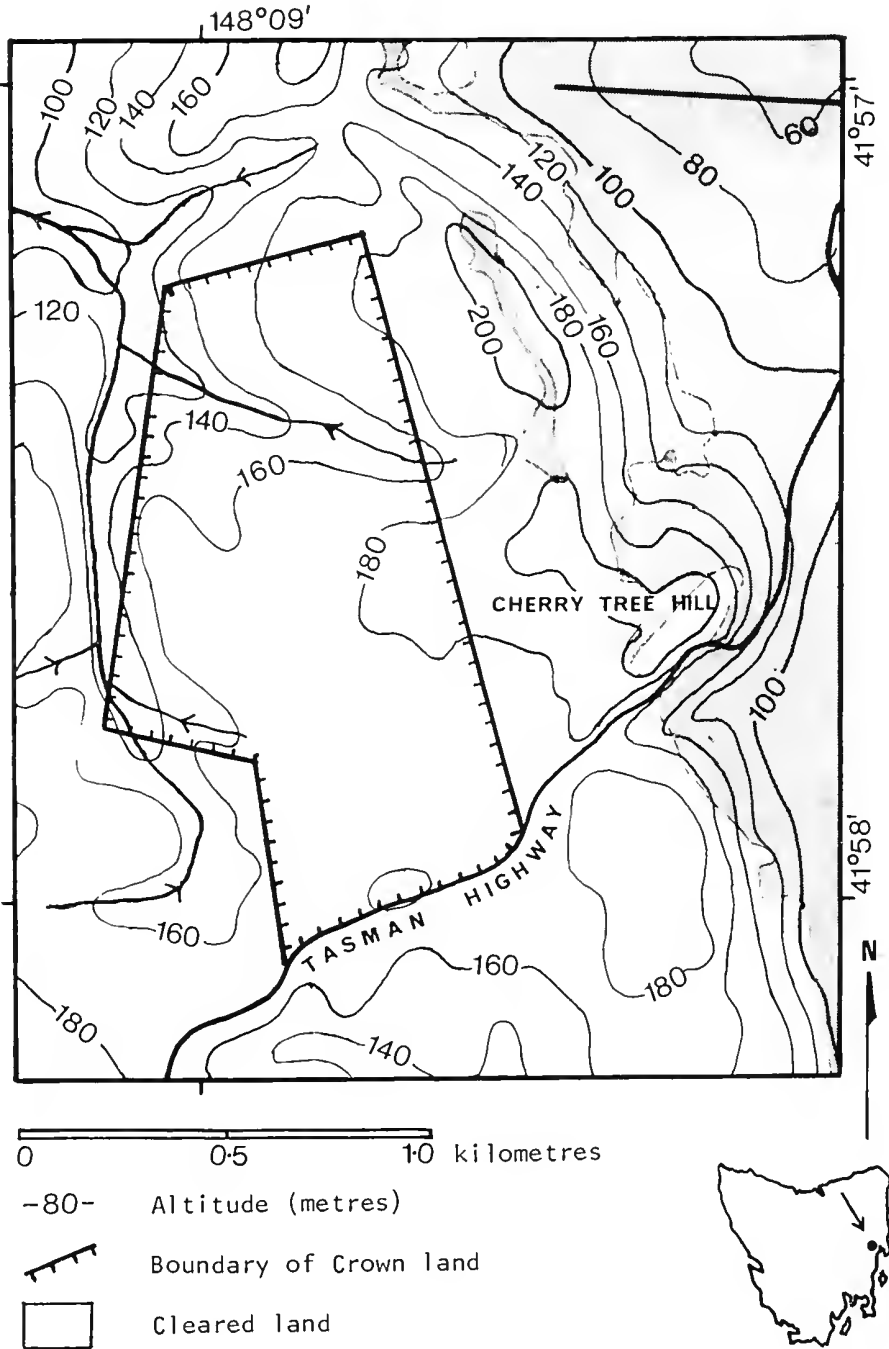


Fig. 1
Geography of survey area.

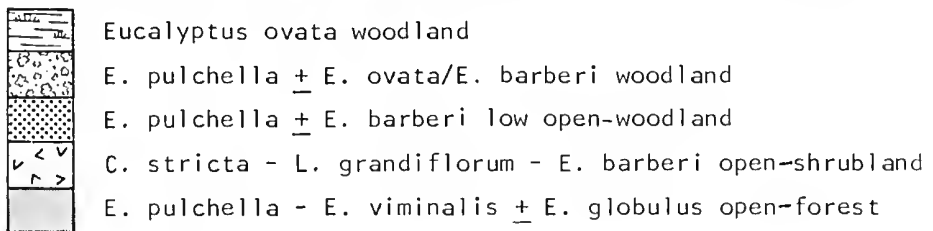


Fig. 2
Vegetation of survey area.

typically dense and is dominated by myrtaceous species (*Leptospermum* spp., *Melaleuca* spp., *Eucalyptus* spp.). *Xanthorrhoea australis* is widespread. Epacrids and *Hibbertia riparia* are the most common components of the low shrub layer. The ground layer is dominated by grass species and saggis.

No examination was made of tree sections to assess fire history. However, from the density of the shrub layer, the widespread distribution of the fire-sensitive *Callitris rhomboidea*, and the general absence of severe fire damage to the base of eucalypts, an average period between fires of 10 to 15 years might be estimated. It appears that the area has not been burnt for at least 20 years, however.

The Crown Land block has been lightly logged, though timber quality is very poor. Tea-tree cutting appears to be the main land use, but has had little permanent effect on that resource. Light grazing probably occurred in the past, and may still occur intermittently, because of the absence of fences around the Crown Land block. Open forest to the east of the block showed signs of regular grazing.

Roading within the Crown Land block was, until recently, restricted to very rough tracks which tended to weave unobtrusively through the open vegetation. In February 1983 a major forestry road (O Road) was cleared, which has left a much heavier imprint on the area and its vegetation. The road runs parallel to the eastern boundary of the block for most of its length, continuing for one kilometre through private property before entering State Forest. The road will provide access for integrated logging operations in the State Forest.

Despite the absence of prominent landmarks, the area is visually attractive. This is largely due to the open nature of the vegetation and, with the exception of recent roading, the lack of major disturbance. To the north a panoramic view can be obtained of, as yet, relatively undisturbed dry sclerophyll open-forests and woodlands which cloak the foothills of the Eastern Tiers.

VEGETATION

The Crown Land was field surveyed and, following analysis of aerial photographs, resurveyed. Sampling extended to private property to the east and south of the Crown Land block.

The absence of sharp geological and topographical boundaries, and the low relief of the landscape, has resulted in boundaries between communities being gradational rather than distinct.

The *E. pulchella* - dominated woodlands respond to slight changes in aspect, slope and drainage by forming a mosaic of intergrading communities which are difficult to delineate and map from aerial photographs.

Six vegetation communities have been distinguished; these are indicated in Fig. 2. Two of the woodland communities are combined for the purpose of mapping. Vegetation of the surrounding private property has also been mapped. However, for the most part, mapping of vegetation outside the Crown Land block is on the basis of aerial photograph interpretation, without the benefit of field verification.

The vegetation communities are described below.

1. *Eucalyptus ovata* open-woodland

Eucalyptus ovata open-woodlands are located in drainage basins between low hills. Sites are subject to periodic waterlogging, particularly in the middle of the depressions. Rock cover is less than 5 percent.

The community is dominated by *E. ovata* of poor form, which reaches a maximum height of 15 metres. Canopy cover is less than 10 percent.

Banksia marginata and *E. ovata* regrowth comprise a sparse medium-tall shrub layer, 2.5 to 5 metres in height. *Leptospermum scoparium* dominates a dense low-medium shrub layer (1 to 2.5 metres). Low shrubs (< 1 metre) include *Epacris impressa*, *Astroloma humifusum* and *Lissanthe strigosa*.

Ground layer density is high. Saggs (*Lepidosperma filiforme*, *L. laterale*, *L. longitudinale*, *Lomandra longifolia*) and grasses (*Poa rodwayi*, *Deyeuxia quadriseta*, *Stipa nervosa*, *Themeda australis*) cover 70 to 90 percent of the ground surface. Thatch saw-sedge (*Gahnia radula*) is locally abundant. Clumps of cutting grass (*G. grandis*) are occasional, reaching a height of 2 metres. Herbaceous species include *Stylidium graminifolium*, *Bossiaea prostrata*, *Microseris scapigera*, *Wahlenbergia quadrifida*, *Brachyscome spathulata* and *Hypoxis glabella*.

Eucalyptus ovata open-woodland grades into *E. pulchella* - *E. ovata* woodland as drainage improves towards the edge of swamps. *Eucalyptus pulchella* - *E. ovata* woodlands are also found on flats less prone to waterlogging.

2. *Eucalyptus pulchella* woodland

Eucalyptus pulchella ± *E. ovata* woodlands and *E. pulchella* ± *E. barberi* woodlands occur in a mosaic pattern difficult to differentiate on aerial photographs. The former community occupies sites with drainage to some extent impeded; the latter is present on drier, free-draining slopes. The two *Symphymyrtus* species hybridise readily, *Eucalyptus barberi* × *E. ovata* and backcross individuals demonstrating a range of morphological characters (leaf, fruit, growth-form) encompassing the full spectrum between the putative parental species.

2a. *Eucalyptus pulchella* ± *E. ovata* woodland

Eucalyptus pulchella ± *E. ovata* woodlands are located on extensive flats and small local hollows which receive run-off from surrounding slopes. Most sites are subject to occasional waterlogging. Rock cover is less than 20 percent. These woodlands contain elements from the swampland *E. ovata* open-woodlands and the *E. pulchella* ± *E. barberi* woodlands occupying rocky slopes.

Height of *E. pulchella* varies from 10 to 15 metres, providing a canopy cover of 15 to 25 percent. Most trees are second growth, but occasional old growth trees are also present. *Eucalyptus ovata* occurs as a subdominant or minor species.

The medium-tall shrub layer is typically sparse, though *Leptospermum grandiflorum* and *Melaleuca pustulata* may form dense thickets locally. Other species are *Banksia marginata* and, on rockier sites, *Callitris rhomboidea* and *Casuarina littoralis*. The low and medium shrub layers vary in density; component species are *Leptospermum scoparium*, *L. grandiflorum*, *Melaleuca pustulata*, *Melaleuca gibbosa*, eucalypt regrowth, *Epacris impressa* and *Acacia genistifolia* (erect shrubs) and *Astroloma humifusum* and *Lissanthe strigosa* (procumbent shrubs). Coppice of *Leptospermum* spp. is dense in areas recently cut-over for tea-tree poles. *Xanthorrhoea australis* is widespread as a minor species, and also occurs locally as the understorey dominant.

The ground layer is dense, and is dominated by grasses (*Poa rodwayi*, *P. labillardieri*, *Stipa nervosa*, *Danthonia dimidiata*, *Themeda australis*) and sags (*Lepidosperma filiforme*, *L. laterale*, *L. lineare*, *L. lineare* var. *inops*, *Lomandra longifolia*). *Gahnia radula* is occasional. Herbaceous species include *Hypoxis glabella*, *Arthropodium milleflorum*, *Eriochilus cucullatus*, *Stylidium graminifolium*, *Microseris scapigera*, *Bossiaea prostrata*, *Wahlenbergia* spp. and *Brachyscome* spp.

2b. *Eucalyptus pulchella* ± *E. barberi* woodland

Eucalyptus pulchella ± *E. barberi* woodlands are mainly found on free-draining slopes. Soils are shallow and rock cover varies from 20 to 60 percent.

The community is uneven-aged, though most trees observed were second growth. Height of *E. pulchella* varies from 12 to 18 metres, and canopy cover from 10 to 20 percent. Small groups of *E. barberi* individuals occupy widely separated sites, mainly in the mid-slope region. Most *E. barberi* are of mallee-form, with stem height 2 to 4 metres. Occasional shrubs are of sapling form, to a height of 6 metres. Pure-form *E. barberi* were distinguished by their cylindrical capsules, non-glaucous juvenile leaves, and mallee habit. *Eucalyptus barberi* × *E. ovata* hybrids were observed on lower slopes, and on slight depressions and drainage lines on mid-slopes and upper slopes.

The tall shrub layer (>5 metres) is typically sparse. *Leptospermum grandiflorum* and *E. pulchella* regrowth are the most frequent components, and *Casuarina stricta*, *C. littoralis* and *Callitris rhomboidea* are widespread but occasional. Density is higher in the medium shrub layer; species present include *L. grandiflorum*, *E. barberi*, *Acacia genistifolia*, *Epacris tasmanica* (frequent) and *Leptospermum scoparium*, *Melaleuca pustulata* and *Xanthorrhoea australis* (occasional). Density decreases again in the low shrub layer; component species are *Astroloma humifusum*, *Hibbertia riparia*, *E. tasmanica* (frequent) and *E. impressa*, *Cyathodes divaricata*, *Lissanthe strigosa* (occasional). *Lomatia tinctoria* and *Callistemon pallidus* were observed on a small patch of ironstone lag in the north-eastern corner of the block.

The ground layer varies in density from 30 to 60 percent and is dominated by sags (*Lepidosperma lineare* var. *inops*, *L. laterale*, *Lomandra longifolia*) and grasses (*Poa rodwayi*, *P. labillardieri*, *Stipa nervosa*, *Microlaena stipoides*).

Eucalyptus pulchella ± *E. barberi* woodlands grade into *E. pulchella* ± *E. ovata* woodlands as sites with impeded drainage are approached. On upper slopes the community grades into *E. pulchella* ± *E. barberi* low open-woodland.

3. *Eucalyptus pulchella* ± *E. barberi* (low open) woodland

Eucalyptus pulchella ± *E. barberi* (low open) woodland is located on rocky hilltops and ridgelines. Drainage is related to microtopographical variation; on slight slopes drainage is free, while minor hollows receive run-off and retain moisture for longer periods. Surface rock cover is from 50 to 90 percent.

Eucalyptus pulchella trees are old growth and second growth, of poor form. Height varies from 8 to 12 metres, and canopy cover from 10 to 15 percent. The recent prolonged drought on the East Coast may be responsible for the death of second growth *E. pulchella*, observed on some hilltops.

The tall shrub layer provides a canopy cover of 5 to 20 percent, the main components being *Casuarina stricta*, *E. pulchella* regrowth and *Leptospermum grandiflorum*. The latter species dominates the medium shrub layer, forming dense thickets which may exceed 50

percent canopy cover. Occasional species are *E. barberi*, *Hakea epiglottis*, *Bursaria spinosa*, *Xanthorrhoea australis* and, associated with minor hollows, *Melaleuca pustulata*. The sparse low shrub layer contains *Astroloma humifusum*, *Epacris impressa*, *E. tasmanica*, *Cyathodes divaricata* and *Hibbertia riparia*.

Ground layer coverage is less than in other *E. pulchella* - dominated communities, varying from 10 to 30 percent. The ground layer is dominated by sags (*Lepidosperma lineare* var. *inops*, *L. laterale*, *Lomandra longifolia*) and grasses (*Poa rodwayi*, *P. labillardieri*, *Stipa nervosa*, *S. mollis*, *Danthonia dimidiata*). Scattered patches of rock fern (*Cheilanthes tenuifolia*) are conspicuous.

Eucalyptus pulchella ± *E. barberi* low open-woodland grades into *C. stricta* - *L. grandiflorum* - *E. barberi* open-shrubland as sites subject to severe drought-stress are approached.

Casuarina stricta - Leptospermum grandiflorum - Eucalyptus barberi open-shrubland

Casuarina stricta - *L. grandiflorum* - *E. barberi* open-shrubland occupies an extensive basin-like area in the northern section of the Crown Land block. It also occurs on private property to the north. The community is located on exposed slopes, mainly with a northerly or westerly aspect. Rock cover is as high as 95 percent. The degree of insolation is indicated by foliar flaking observed on dolerite outcrops and boulders. Slope is approximately 10 percent over much of the community's range, however the land dips sharply into the west-flowing gully. The community extends some distance up the steep, rocky south-facing slopes on the northern side of the gully, grading into *E. pulchella* ± *E. barberi* (open) woodland on more moderate slopes. Around its southern edge, *C. stricta*-*L. grandiflorum* - *E. barberi* open-shrubland grades into *E. pulchella* - *E. barberi* low open-woodland. The southern rim of the basin affords an excellent view of the dry sclerophyll forests and woodlands of the Eastern Tiers.

Casuarina stricta and *L. grandiflorum* form an emergent shrub layer 2.5 to 5 metres in height. Mallee-form *E. barberi* individuals are scattered throughout the community, with occasional mallee-form *E. pulchella* also present near the perimeter of the open-shrubland. *Spyridium obovatum* var. *obovatum* is found along the gully itself. The 1 to 2.5 metre shrub stratum is dense (30 to 60 percent cover); species present are *C. stricta*, *L. grandiflorum*, *E. barberi*, *Melaleuca pustulata*, *Hakea epiglottis*, *Helichrysum lycopodioides* and *Epacris tasmanica*. *Xanthorrhoea australis* is local, occurring mainly on gentle slopes towards the edge of the community. On steep slopes leading into the gully, *H. lycopodioides* forms spectacular thickets. Density decreases in the low shrub layer, which contains *L. grandiflorum*, *M. pustulata*, *E. tasmanica*, *H. lycopodioides* and *Cyathodes divaricata* (erect shrubs), and *Astroloma humifusum* and *Hibbertia riparia* (procumbent shrubs).

The rocky nature of the substrate, and the extent of outcropping dolerite, has limited ground layer development. *Lepidosperma lineare* var. *inops* is the main ground layer component; *L. laterale* and grass species (*Poa labillardieri*, *Danthonia dimidiata*, *Stipa mollis*) are occasional. *Cheilanthes tenuifolia* occurs in scattered patches; most fronds were dead or had been badly burnt, indicating the severity of both the prolonged drought, and the open-shrubland environment. Other herbs survive in shaded micro-habitats amongst the boulders, or in the immediate gully area. Species include *Pelargonium inodorum*, *Oxalis corniculata*, *Viola hederacea* and *Wahlenbergia quadrifida*.

A curious feature of the community was the widespread presence of dead stems of mallee-form eucalyptus, protruding above the shrub canopy. Height of the stems is 5 to 7 metres, indicating a previous canopy height of 8 to 10 metres. Diameter of stems at breast height is circa 10 centimetres. The stem density points to a previous crown cover of less than 10 percent.

The height of the stems indicates that they were those of *E. pulchella*. *Eucalyptus barberi* in the vicinity appeared healthy. The site is the most drought susceptible in the area surveyed. The stems had been dead for many years and were in the process of breaking up, adding heavy fuel to the litter layer. Many of the stems had been burnt, probably by a fire which had passed through the area after the death of the trees.

Annual rainfall at Cranbrook was below average every year from 1961 to 1968 inclusive, although 1964 and 1966 figures were less than 5 percent below average. The effect of prolonged drought on such insolated slopes, possibly exacerbated by wildfire, may have been responsible for the demise of the *E. pulchella* dominants.

A similar mechanism may be responsible for the extension of *C. stricta* - *L. grandiflorum* - *E. barberi* open-shrubland into the adjacent *E. pulchella* ± *E. barberi* (low open) woodland. Annual rainfall at Cranbrook was well below average in 1979, 1980 and 1982. Many *E. pulchella* trees in the transition zone showed signs of drought stress, with severe leaf abscission from outer branches, and shedding of limbs. Build-up of fine and solid fuel around the base of some trees was very high. Continuation of drought could lead directly to death of the dominants through water stress, or indirectly as a result of wildfire. The high fuel levels would substantially increase the severity of fires and duration of high temperatures around the trees, leading to crown, butt and root damage. This effect would be exacerbated by low soil moisture levels.

5. *Eucalyptus pulchella* - *E. viminalis* ± *E. globulus* open-forest

Eucalyptus pulchella - *E. viminalis* ± *E. globulus* open-forest is restricted to sites with comparatively high moisture availability. These comprise relatively steep south and east-facing slopes, which terminate in gullies or creeks. The community extends only a short distance up the north and west-facing slopes leading out of the watercourses. Soils are shallow, and rock cover is high.

Trees are old growth and second growth of better form than those in the surrounding woodlands. The dominants reach a height of 25 metres on the most favourable sites. *Eucalyptus pulchella* - *E. viminalis* open-forest occupies partly-shaded slopes. Within the Crown Land block *E. globulus* is restricted to the margin of the watercourses, but may occur on steep slopes with a south-easterly aspect on private property to the north and east.

Along watercourses *Leptospermum grandiflorum* forms a dense thicket. Other species include *Melaleuca pustulata*, *Acacia verticillata*, *Notelaea ligustrina* and *Bursaria spinosa*. *Callitris rhomboidea* and *Acacia dealbata* are occasional emergents. Development of the low shrub and ground layers is inhibited by the density of the taller shrub strata.

On drier sites, away from the immediate watercourse environment, the understorey is more open. Medium-tall shrubs include *Casuarina littoralis*, *C. stricta*, *Leptospermum grandiflorum*, *Callitris rhomboidea*, *Bursaria spinosa* and eucalypt regrowth. Low shrub species include *Cyathodes divaricata*, *Epacris impressa*, *Hibbertia riparia*, *H. serpyllifolia* and *Astroloma humifusum*. The area sampled in the Crown Land block featured a diverse ground layer, dominated by saggs (*Lomandra longifolia*, *Lepidosperma laterale*, *L. lineare* var. *inops*), grass species (*Poa labillardiere*, *Microlaena stipoides*, *Stipa semibarbata*) and herbs. Herbaceous species were much more common than in adjacent *E. pulchella* woodlands. Species observed included *Viola hederacea*, *Stylidium graminifolium*, *Helichrysum scorpioides*, *Lagenophora stipitata*, *Dichondra repens*, *Acaena novae-zelandiae*, *Bossiaea prostrata* and *Gonocarpus tetragynus*.

The east-facing slope on private property to the east of the Crown Land block supported *E. pulchella* - *E. viminalis* open-forest with an open understorey. The community has been

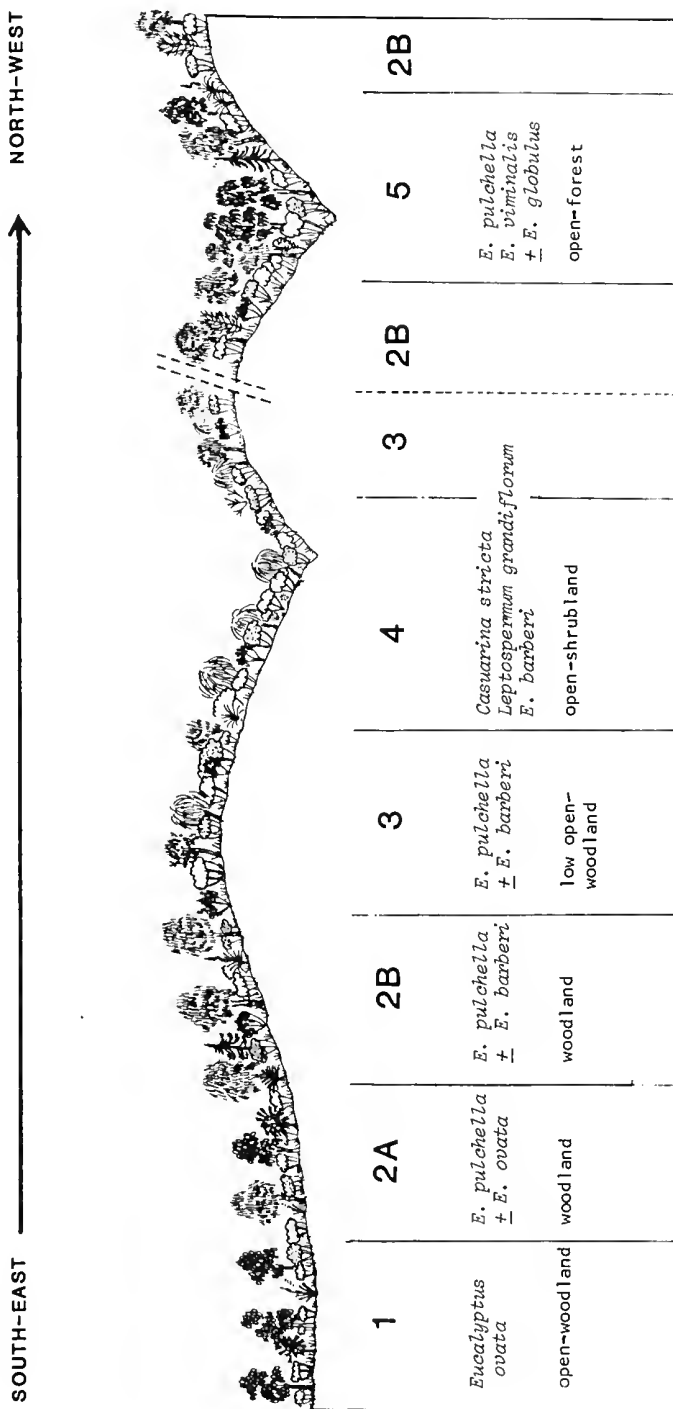


Fig. 3. Relationship between vegetation and landform on Crown Land near Cherry Tree Hill. The profile follows a line trending north-west from community 1. Approximate vertical exaggeration is 3:1.

cut-over and grazed. Fire frequency appears to be considerably higher than the fire frequency on the Crown Land. The medium and tall shrub layers were sparse. The ground layer was dominated by bracken (*Pteridium esculentum*), saggs and grass species. Introduced herbs (*Cirsium vulgare*, *Hypochaeris radicata*) were also observed in this stand.

DISCUSSION

The vegetation of the Crown Land block, and the surrounding private property, is shown in Fig. 2. The relationship between the communities and landforms within the area is illustrated in Fig. 3.

Although the Crown land block is not characterised by a particularly high degree of floristic diversity, it has a high conservation value.

The area contains several endemic species, and poorly reserved dry sclerophyll communities. The absence of exotic species, the comparatively low fire regime, the lack of major habitat disturbance, and the views obtained from the northern section of the Crown Land block are additional features.

No symptoms of infection by the root rot pathogen, *Phytophthora cinnamomi*, were observed in the Crown Land block. *Xanthorrhoea australis* is particularly susceptible to *P. cinnamomi*, and all individuals observed appeared healthy, except for those which were in the path of recent roading operations. Soils derived from dolerite may be suppressive to *P. cinnamomi* (c.f. Kirkpatrick, Brown and Moscal, 1980).

Eucalyptus pulchella ± *E. viminalis* ± *E. globulus* open-forests and woodlands are widespread in south-eastern Tasmania, where they occupy insolated ridges and slopes on dolerite. The community is located in Maria Island National Park. *Eucalyptus pulchella*-dominated open-forests and woodlands occur extensively in State Forest on the Eastern Tiers, and in the Buckland Army Training Area. Clinal gradation between *E. pulchella* and *E.* is common in cooler and moister climatic zones in the south-east.

Eucalyptus pulchella - *E. barberi* (low open) woodlands are restricted to the central East Coast, where they occur on rocky isolated slopes on the drier eastern fringe of the Eastern Tiers, and on the lowland plain between Cranbrook and Bicheno. The upland woodlands are largely restricted to State Forest. The community extends onto private property and the Buckland Training Area at the southern limit of its range. The community does not occur in any State Reserves, but is present in two proposed Nature Reserves.

The range of *Casuarina stricta* - *Leptospermum grandiflorum* - *Eucalyptus barberi* open-shrubland is probably more restricted than the range of *E. pulchella* - *E. barberi* woodland. The community is characterised by the presence of several endemic species of geographical importance (Kirkpatrick, Brown and Moscal, 1980).

Eucalyptus ovata (open) woodlands have a widespread but local distribution throughout eastern Tasmania. The community is located in several State Reserves, including Maria Island and Freycinet National Parks, on Lands Department Coastal Reserves, on uncommitted Crown Land in the Friendly Beaches area, in State Forest, in Buckland Training Area, and on private property. Extensive valley flats and coastal plains, which originally supported extensive *E. ovata* woodlands, have been cleared for pasture over most of their range.

"The Gap" Crown Land block provides a valuable opportunity to conserve stands of these communities, which have not been subject to major disturbance or modification. In

particular, conservation of *E. pulchella* ± *E. barberi* woodlands and *C. stricta* - *L. grandiflorum* - *E. barberi* open-shrubland has a high priority. Private property in the area presently supports similar communities, however in the future they may well provide fodder for the Triabunna woodchip mill, and fuel for windrows.

Fourteen endemic species were recorded by us on the Crown Land block. They include *Eucalyptus barberi*, *Helichrysum lycopodioides*, *Melaleuca pustulata* and *Spyridium obovatum* var. *obovatum*, which were included by Kirkpatrick, Brown and Moscal (1980) in their survey of threatened plants of the Central East Coast. They also recorded *Cyathodes pendulosa* as occurring in sampled grid squares adjacent to the Crown Land block, however only *C. divaricata* was recognised in the present survey. Moscal (pers. comm.) has also found the endemic sedge *Gahnia graminifolia* in the area.

The type location of *E. barberi* is adjacent to the Tasman Highway, 7.2 kilometres north of Cranbrook (Hall and Brooker, 1974). This location is less than one kilometre from the survey area. *Eucalyptus barberi* is included by Pryor (1981) in *Australian Endangered Species: Eucalypts*.

A total of 90 vascular plant species were recorded on the Crown Land block. These comprised 2 ferns, 1 gymnosperm, 25 monocotyledons from 6 families and 62 dicotyledons from 28 families. A species list, with endemics indicated, is included in the Appendix. The abundance of species within the six communities is also given.

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APPENDIX

Checklist of Vascular species recorded on Crown Land near Cherry Tree Hill.

Except where indicated, species nomenclature follows Curtis (1963, 1967) and Curtis and Morris (1975) for dicotyledons and gymnosperms, Willis (1970), Vickery (1970) and Townrow (1973) for monocotyledons, and Jones and Clemesha (1981) for pteridophytes.

Endemic species are prefixed by an 'e'.

The observed occurrence of species within the six communities described is indicated.

Abundance		Communities					
+	rare						
o	occasional or local						
a	abundant or widespread						
		1. Eucalyptus ovata (open) woodland 2a. E. pulchella ± E. ovata woodland 2b. E. pulchella ± E. barberi woodland 3. E. pulchella (low open) woodland 4. Casuarina stricta - Leptospermum grandiflorum - E. barberi open-shrubland 5. E. pulchella - E. viminalis ± E. globulus open-forest					
PTERIDOPHYTA : FILICINAE		COMMUNITY					
		1	2a	2b	3	4	5
Dennstaedtiaceae	Pteridium esculentum			+			
Sinopteridaceae	Cheilanthes tenuifolia			+	+	o	
GYMNOSPERMAE							
Cupressaceae	Callitris rhomboidea		+	o	+		+
ANGIOSPERMAE : DICOTYLEDONES							
Asteraceae	e Brachyscome spathulata subsp. glabra (DC.) Stace	+	+				+
	e Brachyscome aculeata (Labill.) Less.		+				
	Gnaphalium collinum					+	
	Helichrysum leucopsidium		+				
	e Helichrysum lycopodioides			+	+	a	
	Helichrysum scorpioides	+	+	+			+
	Lagenophora stipitata						a
	Microseris scapigera	o	a	+			

		1	2a	2b	3	4	5
Campanulaceae	<i>Wahlenbergia quadrifida</i>	+	+	+	+	+	
	<i>Wahlenbergia tadgelli</i>		o				
Casuarinaceae	<i>Casuarina littoralis</i>		o	o	+		+
	<i>Casuarina stricta</i>			o	a	a	+
Convolvulaceae	<i>Dichondra repens</i>						+
Dilleniaceae	<i>Hibbertia riparia</i>						+
	<i>Hibbertia serpyllifolia</i>			+			+
Epacridaceae	<i>Acrotiche serrulata</i>		+	+			
	<i>Astroloma humifusum</i>	o	a	a	a	a	o
	<i>Cyathodes divaricata</i>			+	+	o	+
	<i>Epacris impressa</i>	o	a	+	o		
	<i>Epacris tasmanica</i>	+	+	o	o	a	
	<i>Lissanthe strigosa</i>	+	+	+			
Geraniaceae	<i>Pelargonium inodorum</i>				+	o	
Goodeniaceae	<i>Goodenia lanata</i>		+	+	+		
Haloragaceae	<i>Gonocarpus tetragynus</i>	o	a	+	+	+	o
	<i>Gonocarpus aff. teucrioides</i>					+	
Hypericaceae	<i>Hypericum gramineum</i>	+	+				+
Lauraceae	<i>Cassytha melantha</i>				+		
	<i>Cassytha pubescens</i>			+	+		
Leguminosae (Mimosoideae)	<i>Acacia dealbata</i>			+		+	+
	<i>Acacia genistifolia</i>	+	o	o	+		
	<i>Acacia melanoxylon</i>	+					
	<i>Acacia myrtifolia</i>			+			
Leguminosae (Papilionatae)	<i>Bossiaea prostrata</i>	o	o	+			+
	<i>Daviesia ulicifolia</i>			+			
	<i>Gompholobium huegelii</i>			+			
Myrtaceae	<i>Callistemon pallidus</i>			+			
	<i>Eucalyptus barberi</i>		+	a	o	o	
	<i>Eucalyptus globulus</i>						o
	<i>Eucalyptus ovata</i>	a	a	+			
	<i>Eucalyptus pulchella</i>		a	a	a	o	a
	<i>Eucalyptus viminalis</i>			+	+		o

		1	2a	2b	3	4	5
Gramineae	<i>Agrostis avenacea</i>	+					
	e <i>Danthonia dimidiata</i>		+	+	+	+	
	<i>Deyeuxia quadriseta</i>	o	+				
	<i>Dichelachne rara</i>						+
	<i>Microlaena stipoides</i>		+	+			+
	<i>Poa rodwayi</i>	a	a	a	a	+	+
	<i>Poa labillardieri</i>	o	o	a	a	o	a
	<i>Stipa mollis</i>			+	o	+	
	<i>Stipa nervosa</i>	o	o	o	o		
	<i>Stipa semibarbata</i>						o
	<i>Themeda australis</i>	o	o				
Hypoxidaceae	<i>Hypoxis glabella</i>	o	a	+			
Liliaceae	<i>Arthropodium milleflorum</i>	+	o				
	<i>Dianella revoluta</i>		+				+
Orchidaceae	<i>Eriochilus cucullatus</i>		+	+			
Xanthorrhoeaceae	<i>Lomandra longifolia</i>	o	a	a	o	+	o
	<i>Xanthorrhoea australis</i>		o	o	o	o	+

* A. Moscal, pers. comm.

