

THE PLANTS OF THE TREVALLYN STATE RECREATION AREA, TASMANIA

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(with one table and one text-figure)

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A census of species of all plant groups, excluding free-growing fungi and algae, of the Trevallyn State Recreation Area near Launceston, Tasmania, is presented. The list of 232 species of flowering plants includes 15 species that are either rare or considered to be vulnerable, or are unreserved or poorly represented in state reserves. Although gazetted as a state recreation area, the management policy for the reserve is consistent with the preservation of existing native vegetation.

Key Words: Trevallyn State Recreation Area, vascular plants, bryophytes, lichens, Northern Tasmania, rare species, threatened species.

INTRODUCTION

The Trevallyn State Recreation Area (SRA) lies within 5 km of the centre of the City of Launceston and is the largest reserve near to Tasmania's second largest city, with an area of c. 400 ha. The SRA (fig. 1) is bounded on its western side by Trevallyn Lake, formed by the Trevallyn Dam on the South Esk River. Below the dam, the river flows southeastwards, turning northeastwards at the extreme southern tip of the SRA, ultimately forming the River Tamar at its junction with the North Esk River outside the boundaries of the Reserve. Private property and Reatta Road form part of the northern boundary of the SRA, with the northeastern boundary abutting on houses in the suburb of Trevallyn. At its extreme eastern side, the SRA shares a border with the Cataract Gorge Reserve.

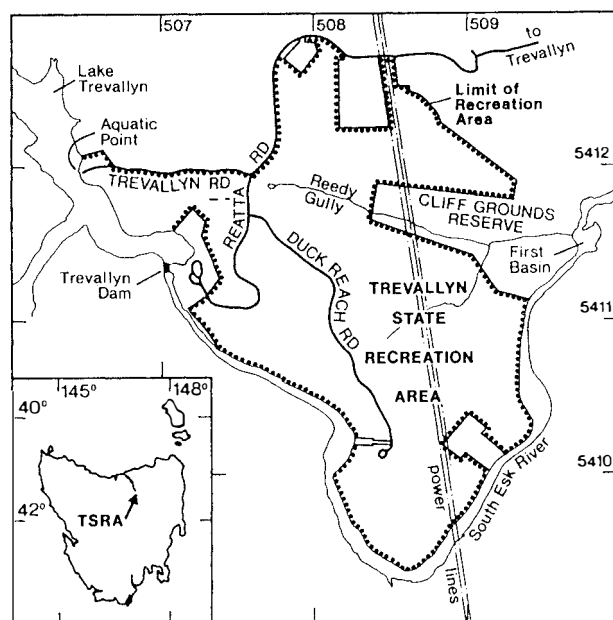


FIG. 1 — Location map for Trevallyn State Recreation Area.

The SRA has a bedrock of Jurassic dolerite. The soils on this have a topsoil that is mostly a brown or grey-brown loam, with a grey, sandy loam subsurface which changes sharply at about 0.3 m depth to a yellow-brown clay (Tasmanian Department of Agriculture 1981). Minor occurrences of lateritic soils are found throughout the area (see, for example, Longman 1964, 1966: 21). The soil depth is extremely variable, being very shallow and stony in some places where rock is exposed at the surface. Generally the soils are well drained, although they can become waterlogged in areas where there is a heavy clay subsoil and little slope (Tasmanian Department of Agriculture 1981).

The elevation of the SRA ranges from c. 25 m to c. 225 m, the terrain undulating considerably throughout the area and presenting a variety of aspects. The area is bordered on its southwestern and southeastern sides by the gorge of the South Esk River, a gorge cut by a stream enlarged by diversion into the drainage basin of the ancestral South Esk by a basalt flow near Evandale (Nicolls 1960).

Prior to 3 June 1980, the date the Trevallyn SRA was proclaimed, much of the area had been used as a farm. The management of the reserve, now carried out by the Parks and Wildlife Service, a division of the Department of Environment and Land Management, pursues a policy of allowing regrowth of native vegetation. However, controlled burning of some areas is undertaken for fire hazard reduction purposes because the reserve is situated on the outskirts of a major urban area. Also, during a severe drought during the mid-80s, cattle were agisted there intermittently.

SURVEY ZONES AND METHODS

For the botanical survey, the area of 400 ha constituting the Trevallyn SRA was divided into four zones to reflect fundamental differences in the various vegetation types present (fig. 1). By far the most extensive vegetation formation in the reserve is dry sclerophyll forest; its predominant large woody species include *Acacia dealbata*, *Eucalyptus amygdalina* and *E. viminalis*, with conspicuous quantities of *Lomandra longifolia* and *Pteridium esculentum* also present as an understorey. A second vegetation type, which may be described as riparian, is found along the gorge of the South Esk River. In addition to having certain common large species such as *Cassinia aculeata* and *Beyeria viscosa* which were less frequently

represented in the dry sclerophyll zone, this zone contains a locally abundant stand of *Prostanthera rotundifolia*, a species known only from a few localities in the north and east of Tasmania, and considered to be unreserved and vulnerable (Kirkpatrick *et al.* 1991). Also present in this zone is *Micranthemum hexandrum*, whose occurrence in Tasmania is exclusively northern and eastern (Orchard 1991). A third environment, which contains several fern species (of the Blechnaceae and Dicksoniaceae) not found elsewhere in the reserve, borders a perennial or intermittent creek (Reedy Gully, fig. 1). The fourth zone recognised in this survey is an area cleared of most trees and shrubs underneath the electricity lines that form part of the Hydro-Electric Commission's grid, which includes the Trevallyn Power Station on the Tamar River. This zone contains a large variety of herbaceous species.

Visits to the survey zones were made on a weekly or twice-weekly basis between September 1991 and May 1992. An attempt was made to cover as much of the area as possible, using all of the available tracks and also travelling cross-country wherever the terrain permitted. Species in planted beds along roadsides, landscaped picnic areas and a rubbish tip opposite the commercial Cable Hang Glider installation were omitted from the survey. Aside from these, the survey includes all other introduced species.

RESULTS

Table 1 lists the plant species recorded; it includes 232 species of flowering plants (of which 161 are native to Tasmania, including five endemics), ten fern species, 39 mosses, 18 liverworts and 57 lichens. For the flowering plants and ferns, a measure of abundance (local, rare, occasional, frequent or common) is given for each species in each zone. For the mosses and liverworts, no measure of abundance is given, because positive identification of a species in the field is difficult, but table 1 records the zones in which each species was found. For the lichens, which often require chemical analysis for determination, only the presence of species is recorded. The scientific names of the flowering plants and ferns follow Buchanan *et al.* (1989); those of the mosses follow Dalton *et al.* (1991); those of the liverworts follow Ratkowsky (1987). For the lichens, scientific names and authorities are given in full, as there have been many alterations and additions to the checklist previously published by Kantvilas (1989).

DISCUSSION

Among the flowering plants, 15 species are considered to be of interest because of their rareness, vulnerability or unreserved status. Kirkpatrick *et al.* (1991) classified all of Tasmania's native higher plants as to the extent to which they were present in national parks or "equivalent reserves", categories which do not include state recreation areas. Three species, *Brunonia australis*, *Goodia pubescens* and *Prostanthera rotundifolia*, are unreserved anywhere in Tasmania, and a fourth species, *Centipeda cunninghamii*, is reserved only at Lavinia Nature Reserve on King Island. A fifth species, *Myriophyllum integrifolium*, is reserved only at Epping Forest Nature Reserve and is considered to be vulnerable. The remaining ten species, *Hydrocotyle callicarpa*, *Cynoglossum australe*, *Myosotis australis*, *Crassula decumbens*, *Scutellaria*

humilis, *Persicaria prostrata*, *Aphelia gracilis*, *A. pumilio*, *Carex longibrachiata* and *Dichopogon strictus* are accorded the status "r2" by Kirkpatrick *et al.* (1991), which means that they are known to occur in 20 or less 10 km × 10 km National Mapping squares in Tasmania. Except for *Crassula decumbens*, which is known from five national parks or equivalent reserves, the other nine species are recorded from only one reserve each.

The most diverse families of flowering plants were the grasses (Poaceae) with 30 species (18 native), the daisies (Asteraceae) with 29 species (18 native), the wattles and "pea" flowers (Fabaceae) with 18 species (nine native), and the sedges (Cyperaceae) with 15 species (14 native). Only four orchid species were recorded.

None of the cryptogams was considered to be particularly noteworthy or unusual, with the possible exception of the lichen record reported here as *Bacidia cf. millegrana*, which requires comparison with type material to confirm its identity. Most of the species of moss and liverwort grew in moist or shady areas within dry sclerophyll environments. A few are adapted to the very dry conditions that prevail during the summer months, being capable of withstanding desiccation but returning to a healthy appearance once the autumn and winter rains bring moister conditions. The lichens were mainly collected from the bark of trees, with several growing on soil, rocks and stones at ground level. Most species are typical of dry sclerophyll forests in Tasmania. The most common species on trees are the foliose lichens, *Parmelina conlabrosa*, *P. pseudorelicina* and *Flavoparmelia rutidota*, and the tiny crustose species *Buellia disciformis*. On soil, *Heterodea muelleri*, *Cladia aggregata* and species of *Cladonia* predominate, whilst species of *Xanthoparmelia* are common on rocks. As with the bryophytes, lichens were often found growing in moister sites within the dry sclerophyll environment. Hence, the conditions that determine where these species occur are related more closely to the microclimate than to the broad-scale vegetation classification, such as dry sclerophyll, gorge, etc., used here.

Since much of the survey area had been used as a farm prior to 1980, the current composition of the vegetation is undoubtedly vastly different from what it was prior to European settlement. The present management policy of the Parks and Wildlife Service is for minimal interference, allowing for natural regrowth of the vegetation. Nevertheless, because of the reserve's location on the outskirts of Tasmania's second largest urban area, the Service also has the responsibility to reduce fire hazards by occasional burning for fuel reduction. It is possible, however, that increasing wildlife populations will lessen the need for hazard reduction burning to some extent in the future. Another unpredictable factor is the possibility of future periods of severe drought, resulting in a shortage of feed for farm animals. Should that happen, it is possible that the Tasmanian Government may require that the reserve be used for cattle agistment, as it did in the mid-80s. Consequently, it is not possible to guarantee that the vegetation will be allowed to achieve a "climax community" in any sense, nor predict that the diversity of plant species in the reserve will increase in the future.

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TABLE 1
List of species found in Trevallyn SRA

Zones: D, dry sclerophyll; G, slopes of the gorge of the South Esk River; C, Reedy Gully Creek and environs; P, areas cleared underneath electricity power lines.

Abundances: l, local (growing in a few places only, sometimes abundantly); r, only 1–3 plants observed, rare; o, widespread but only occasional; f, widespread and frequent; c, widespread and common.

(I) following a species name indicates that this species has been introduced to Tasmania. All other species are considered to be native. (E) indicates species endemic to Tasmania.

Species	Zones D G C P	Species	Zones D G C P
DICOTYLEDONES			
APIACEAE			
<i>Conium maculatum</i> (Hemlock) (I)	l	<i>Senecio jacobea</i> (Ragwort) (I)	r r
<i>Daucus glochidiatus</i> (Austral Carrot)	r r r	<i>Senecio linearifolius</i> (Fireweed)	r r f
<i>Hydrocotyle callicarpa</i> (Pennywort)	f r c	<i>Senecio minimus</i> (Fireweed)	l
<i>Hydrocotyle hirta</i> (Hairy Pennywort)	f	<i>Senecio quadridentatus</i> (Cotton Fireweed)	l r l
ASTERACEAE			
<i>Arctotheca calendula</i> (Cape Weed) (I)	r	<i>Solenogyne gunnii</i> (Solenogyne)	o o
<i>Bedfordia salicina</i> (Blanket Leaf) (E)	r	<i>Sonchus asper</i> (Prickly Sow Thistle) (I)	o o
<i>Brachyscome</i> sp. (Field Daisy)	r r	<i>Taraxacum officinale</i> (Dandelion) (I)	o o o o
<i>Carduus tenuiflorus</i> (Winged Slender Thistle) (I)	o o o o	BORAGINACEAE	
<i>Cassinia aculeata</i> (Dolly Bush)	o c f r	<i>Cynoglossum australe</i> (Hound's-Tongue)	r
<i>Centipeda cunninghamii</i> (Sneezeweed)	l	<i>Cynoglossum suaveolens</i> (Hound's-Tongue)	r
<i>Centipeda minima</i> (Sneezeweed)	l	<i>Lithospermum officinale</i> (Gromwell) (I)	r r l r
<i>Chrysanthemoides monilifera</i> (Boneseed) (I)	l	<i>Myosotis australis</i> (Forget-me-not)	r
<i>Cirsium vulgare</i> (Spear Thistle) (I)	f o o f	<i>Myosotis discolor</i> (Forget-me-not) (I)	r
<i>Cotula australis</i> (Common Cotula)	r	<i>Myosotis sylvatica</i> (Forget-me-not) (I)	r
<i>Cotula reptans</i> (Creeping Cotula)	r	BRASSICACEAE	
<i>Filago gallica</i> (French Filago) (I)	l r	<i>Cardamine hirsuta</i> (Bittercress) (I)	r r r
<i>Hypochoeris glabra</i> (Smooth Cat's Ear) (I)	r	<i>Rorippa dictyosperma</i> (Bittercress)	f
<i>Hypochoeris radicata</i> (Flat-weed; Cat's Ear) (I)	o o o o	BRUNONIACEAE	
<i>Lagenifera stipitata</i> (Blue Bottle-Daisy)	o r	<i>Brunonia australis</i> (Blue Pincushion)	r l
<i>Leontodon taraxacoides</i> (Hawkbit) (I)	f o o c	CAMPANULACEAE	
<i>Leptorhynchus squamatus</i> (Scaly Buttons)	r	<i>Pratia pedunculata</i> (Matted Pratia)	r
<i>Microseris lanceolata</i> (Native Dandelion)	r	<i>Wahlenbergia gymnoclada</i> (Bluebell)	o r
<i>Olearia stellulata</i> (Daisy Bush)	r r r	<i>Wahlenbergia stricta</i> (Bluebell)	o o
<i>Pseudognaphalium luteo-album</i> (Cudweed)	c f c f	CAPRIFOLIACEAE	
<i>Senecio glomeratus</i> (Fireweed)	l l	<i>Sambucus gaudichaudiana</i> (Native Elder)	l r
<i>Senecio hispidulus</i> (Scabrid Fireweed)	l l	CARYOPHYLLACEAE	
		<i>Cerastium glomeratum</i> (Sticky Mouse-eared Chickweed) (I)	o o
		<i>Sagina apetala</i> (Annual Pearlwort) (I)	l
		<i>Stellaria pungens</i> (Prickly Starwort)	r f f

Table 1 cont.

Species	Zones D G C P	Species	Zones D G C P
CASUARINACEAE		LAURACEAE	
<i>Allocasuarina verticillata</i> (She-Oak)	f f f o	<i>Cassytha melantha</i> (Native Dodder)	o o c o
CONVOLVULACEAE		LINACEAE	
<i>Dichondra repens</i> (Kidney-weed)	f f f o	<i>Linum trigynum</i> (French Flax) (I)	l l l
CRASSULACEAE		MYRTACEAE	
<i>Crassula decumbens</i> (Spreading Crassula)	l l f	<i>Calytrix tetragona</i> (Fringe Myrtle)	l
<i>Crassula peduncularis</i> (Purple Crassula)	o o	<i>Eucalyptus amygdalina</i> (Black Peppermint) (E)	c c c o
DILLENIACEAE		<i>Eucalyptus ovata</i> (Swamp Gum)	l
<i>Hibbertia hirsuta</i> (Guinea Flower) (E)	l r	<i>Eucalyptus viminalis</i> (White Gum, Manna Gum)	c c c o
<i>Hibbertia riparia</i> (Guinea Flower)	r r	<i>Leptospermum lanigerum</i> (Woolly Tea-tree)	f
DIPSACAEAE		OLEACEAE	
<i>Dipsacus sylvestris</i> (Teasel) (I)	l	<i>Notelaea ligustrina</i> (Native Olive)	f o
DROSERACEAE		ONAGRACEAE	
<i>Drosera peltata</i> ssp. <i>peltata</i> (Sundew)	f c	<i>Epilobium billardierianum</i> ssp. <i>cinereum</i> (Willowherb)	l
<i>Drosera peltata</i> ssp. <i>peltata</i> var. <i>gracilis</i> (Sundew)	l o	<i>Epilobium gunnianum</i> (Willowherb)	r
<i>Drosera pygmaea</i> (Pigmy Sundew)	f	OXALIDACEAE	
EPACRIDACEAE		<i>Oxalis corniculata</i> sens. lat. (Yellow Wood Sorrel)	c c c c
<i>Acrotriche serrulata</i> (Ant's Delight)	o r	PASSIFLORACEAE	
<i>Astroloma humifusum</i> (Native Cranberry)	o r r	<i>Passiflora cinnabarina</i> (Passion-flower) (I)	r r o r
<i>Epacris impressa</i> (Common Heath)	c o o o	PITTOSPORACEAE	
<i>Lissanthe strigosa</i> (Peach Berry)	o	<i>Billardiera scandens</i> (Apple Berry)	r r r r
ERICACEAE		<i>Bursaria spinosa</i> (Australian Prickly Box)	f c c o
<i>Erica lusitanica</i> (Spanish Heath) (I)	r r r	<i>Pittosporum bicolor</i> (Cheesewood, Tallow-wood)	r l
EUPHORBIACEAE		PLANTAGINACEAE	
<i>Beyeria viscosa</i> (Pinkwood)	o c f	<i>Plantago coronopus</i> (Buck's-horn Plantain) (I)	o
<i>Micranthemum hexandrum</i> (Box Micranthemum)	l	<i>Plantago lanceolata</i> (Ribwort) (I)	l
<i>Poranthera microphylla</i> (Small-leaf Poranthera)	o o o o	<i>Plantago varia</i> (Variable Plantain)	f r
FABACEAE		POLEMONIACEAE	
<i>Acacia dealbata</i> (Silver Wattle)	c c c o	<i>Navarretia squarrosa</i> (Californian Stinkweed) (I)	r
<i>Acacia mearnsii</i> (Black Wattle)	f o o r	POLYGALACEAE	
<i>Acacia melanoxylon</i> (Blackwood)	f c c o	<i>Comesperma volubile</i> (Blue Love Creeper)	o o o o
<i>Acacia mucronata</i> (Narrow-leaved Wattle)	o o	POLYGONACEAE	
<i>Bossiaea prostrata</i> (Creeping Bossiaea)	r r	<i>Persicaria prostrata</i> (Creeping Knotweed)	l
<i>Cytisus scoparius</i> (Broom) (I)	r	<i>Rumex acetosella</i> (Sheep's Sorrel) (I)	o o
<i>Daviesia latifolia</i> (Bitter Leaf)	r	<i>Rumex obtusifolius</i> (Broad-leaf Dock) (I)	l
<i>Genista monspessulana</i> (Canary Broom) (I)	r	PRIMULACEAE	
<i>Goodia pubescens</i> (Silky Clovertree)	l l	<i>Anagallis arvensis</i> ssp. <i>arvensis</i> (Pimpernel) (I)	o o r
<i>Hovea</i> sp. (Hovea)	r	RANUNCULACEAE	
<i>Indigofera australis</i> (Native Indigo)	r r	<i>Clematis aristata</i> (Australian Clematis)	o o f r
<i>Lotus pedunculatus</i> (Greater Trefoil) (I)	l	<i>Ranunculus lappaceus</i> (Buttercup)	o o
<i>Lotus subbiflorus</i> (Hairy Bird's-foot Trefoil) (I)	l	RHAMNACEAE	
<i>Lotus tenuis</i> (Slender Bird's-foot Trefoil) (I)	l	<i>Pomaderris apetala</i> (Dogwood, Native Hazel)	f c c
<i>Trifolium dubium</i> (Yellow Suckling Clover) (I)	r r r	ROSACEAE	
<i>Trifolium repens</i> (White Clover, Dutch Clover) (I)	l	<i>Acaena echinata</i> (Sheep's Burr)	f f f f
<i>Trifolium subterraneum</i> (Subterranean Clover) (I)	l o	<i>Acarina novae-zelandiae</i> (Buzzy, Biddy-widdy)	f c c f
<i>Ulex europaeus</i> (Gorse, Furze) (I)	o o o o	<i>Crataegus monogyna</i> (Hawthorn) (I)	r r
FUMARIACEAE		<i>Rosa canina</i> (Dog Rose) (I)	r
<i>Fumaria muralis</i> (Fumitory) (I)	r	<i>Rubus fruticosus</i> (Blackberry) (I)	l o l
GENTIANACEAE		<i>Rubus parvifolius</i> (Native Raspberry)	f f f f
<i>Centaurium erythraea</i> (Common Centaury), (I)	f o o f	RUBIACEAE	
<i>Cicendia filiformis</i> (Slender Cicendia) (I)	o c	<i>Asperula conferta</i> var. <i>conferta</i> (Common Woodruff)	l
<i>Sebaea ovata</i> (Yellow Sebaea)	r	<i>Coprosma quadrifida</i> (Native Currant)	r
GERANIACEAE		<i>Galium aparine</i> (Cleavers, Goosegrass) (I)	o o o
<i>Erodium moschatum</i> (Musk Storksbill) (I)	o r	<i>Galium australe</i> (Tangled Bedstraw)	o o o
<i>Geranium potentilloides</i> (Geranium)	c c c c	<i>Galium gaudichaudii</i> (Rough Bedstraw)	o o o o
<i>Pelargonium inodorum</i> (Pelargonium, "Geranium")	o o	<i>Galium murale</i> (Small Bedstraw) (I)	o o o
GOODENIACEAE		<i>Opercularia ovata</i> (Broad-leaf Stinkweed)	r
<i>Goodenia elongata</i> (Lanky Goodenia)	l	<i>Sberardia arvensis</i> (Field Madder) (I)	r r
<i>Goodenia lanata</i> (Native Primrose)	o r o	RUTACEAE	
<i>Goodenia ovata</i> (Parrot's Food)	r	<i>Correa lawrenciana</i> (Native Fuchsia)	l
HALORAGACEAE		<i>Correa reflexa</i> (Native Fuchsia)	r o
<i>Gonocarpus tetragynus</i> (Common Raspwort)	c f o o	SALICACEAE	
<i>Myriophyllum integrifolium</i> (Water Milfoil)	l	<i>Salix "fragilis"</i> (Crack Willow) (I)	f
LAMIACEAE		SANTALACEAE	
<i>Mentha pulegium</i> (Pennyroyal) (I)	l l	<i>Exocarpos cupressiformis</i> (Native Cherry)	f f f o
<i>Prostanthera rotundifolia</i> (Round-leaf Mint-bush)	l	SAPINDACEAE	
<i>Prunella vulgaris</i> (Self-heal) (I)	o l	<i>Dodonaea viscosa</i> (Native Hop)	o f
<i>Scutellaria humilis</i> (Dwarf Skullcap)	r	SCROPHULARIACEAE	
		<i>Gratiola latifolia</i> (Broad-leaf Brooklime)	l l l

Table 1 cont.

Species	Zones				Species	Zones			
	D	G	C	P		D	G	C	P
<i>Parentucellia latifolia</i> (Common Bartsia) (I)				l	<i>Aira caryophylla</i> (Silvery Hair Grass) (I)	f	o		f
<i>Parentucellia viscosa</i> (Sticky Bartsia) (I)	l			o	<i>Aira elegantissima</i> (Elegant Hair Grass) (I)	f	o	o	o
<i>Verbascum virgatum</i> (Twiggy Mullein) (I)	r			l	<i>Anthoxanthum odoratum</i> (Sweet Vernal Grass) (I)	r			
<i>Veronica calycina</i> (Speedwell)		r			<i>Briza maxima</i> (Quaking Grass) (I)				l
<i>Veronica gracilis</i> (Speedwell)		o		o	<i>Briza minor</i> (Lesser Quaking Grass) (I)		o		o
STACKHOUSIACEAE					<i>Bromus hordeaceus</i> (Brome) (I)		l		
<i>Stackhousia monogyna</i> (Native Mignonette, Candles)		r	r		<i>Cynosurus cristatus</i> (Crested Dog's-tail) (I)	r	r		r
STYLIDIACEAE					<i>Danthonia caespitosa</i> (Wallaby Grass)		o	r	o
<i>Stylidium graminifolium</i> (Trigger Plant)		r			<i>Danthonia dimidiata</i> (Wallaby Grass) (E)		o		o
URTICACEAE					<i>Danthonia pilosa</i> (Wallaby Grass)		o	o	o
<i>Urtica incisa</i> (Nettle)		l			<i>Danthonia racemosa</i> (Wallaby Grass)		o		r
VIOLACEAE					<i>Danthonia setacea</i> (Wallaby Grass)		o	o	o
<i>Hymenanthera dentata</i> (Tree Violet)		l			<i>Deyeuxia quadriseta</i> (Bent Grass)		o	r	r
<i>Viola hederacea</i> (Ivy-leaf Violet)	c	c	c	c	<i>Dichelachne rara</i> (Plumegrass)		r		l
MONOCOTYLEDONES					<i>Ehrharta distichophylla</i> (Ricegrass)		c	f	f
CENTROLEPIDACEAE					<i>Ehrharta stipoides</i> (Weeping Grass)		o	o	o
<i>Aphelia gracilis</i> (Slender Aphelia)	l			l	<i>Holcus lanatus</i> (Yorkshire Fog) (I)		o	o	o
<i>Aphelia pumilio</i> (Dwarf Aphelia)	o			o	<i>Paspalum dilatatum</i> (Paspalum) (I)		l		
<i>Centrolepis aristata</i> (Pointed Centrolepis)	l			l	<i>Pentapogon quadrifidus</i> (Five-awned Speargrass)				r
<i>Centrolepis strigosa</i> (Hairy Centrolepis)	o			o	<i>Poa annua</i> (Annual Poa) (I)		o	o	o
CYPERACEAE					<i>Poa labillardieri</i> (Tussock Grass)		c	c	c
<i>Carex appressa</i> (Tall Sedge)	o	o	o	o	<i>Poa rodwayi</i> (Tussock Grass)		l	l	
<i>Carex gaudichaudiana</i> (Sedge)	l			l	<i>Stipa mollis</i> (Speargrass)		l	r	
<i>Carex inversa</i> (Sedge)	r				<i>Stipa pubinodis</i> (Speargrass)		f	o	o
<i>Carex longibrachiata</i> (Drooping Sedge)	o	o	o		<i>Stipa stuposa</i> (Speargrass)		o	o	o
<i>Cyperus eragrostis</i> (Umbrella Sedge) (I)	l	l			<i>Themeda triandra</i> (Kangaroo Grass)		f	f	f
<i>Cyperus tenellus</i> (Tiny Flat-sedge)	o	o	o		<i>Vulpia bromoides</i> (Squirrel-tail Fescue) (I)		r	r	r
<i>Eleocharis acuta</i> (Common Spike-rush)	l			l	POTAMOGETONACEAE				
<i>Eleocharis sphacelata</i> (Tall Spike-rush)	l			l	<i>Potamogeton tricarlinatus</i> (Floating Pondweed)		l		
<i>Isolepis fluitans</i> (Floating Club-rush)	f	o	f		TYPHACEAE				
<i>Isolepis platycarpa</i> (Club-rush)	l			o	<i>Typha latifolia</i> (Cats'-tail, Bulrush) (I)		l	l	l
<i>Lepidosperma elatius</i> var. <i>ensiforme</i> (Tall Sword-sedge)	o	o	f	o	XANTHORRHOACEAE				
<i>Lepidosperma inops</i> (Little Sword-sedge) (E)	l			l	<i>Lomandra longifolia</i> (Sagg)		c	c	c
<i>Lepidosperma laterale</i> (Variable Sword-sedge)	o	o			PTERIDOPHYTES				
<i>Lepidosperma lineare</i> (Narrow Sword-sedge)	r				ASPIDIACEAE				
<i>Schoenus apogon</i> (Common Bog-rush)	c	c	c	c	<i>Polystichum proliferum</i> (Mother Shield-fern)		r		f
HYPOXIDACEAE					ASPLENIACEAE				
<i>Hypoxis glabella</i> (Yellow Star)	f			c	<i>Asplenium flabellifolium</i> (Necklace Fern)		f	f	f
<i>Hypoxis hygrometrica</i> (Golden Weather-glass)	o			r	BLECHNACEAE				
IRIDACEAE					<i>Blechnum nudum</i> (Fishbone Water-fern)				f
<i>Diplarrhena moraea</i> (White Iris)	r	r		o	<i>Blechnum watsii</i> (Hard Water-fern)				l
<i>Gladiolus undulatus</i> (Wild Gladiolus) (I)	l				DENNSTAEDTIACEAE				
JUNCACEAE					<i>Pteridium esculentum</i> (Austral Bracken)		c	c	c
<i>Juncus articulatus</i> (Jointed Rush) (I)	l	l	l	l	DICKSONIACEAE				
<i>Juncus bufonius</i> (Toad Rush)	f			f	<i>Culcita dubia</i> (Common Ground-fern)				l
<i>Juncus pallidus</i> (Pale Rush)	o	o	o	o	<i>Dicksonia antarctica</i> (Soft Tree-fern, Manfern)				r
<i>Juncus procerus</i> (Robust Rush)				l	HYMENOPHYLLACEAE				
<i>Juncus subsecundus</i> (Finger Rush)	o	o	o	o	<i>Hymenophyllum cupressiforme</i> (Common Filmy-fern)				l
<i>Luzula densiflora</i> (Woodrush)	o	o	o	o	POLYPODIACEAE				
LILIACEAE					<i>Microsorium diversifolium</i> (Kangaroo-fern)				o
<i>Bulbine bulbosa</i> (Bulbine Lily)	o	o	r	r	SINOPTERIDACEAE				
<i>Burchardia umbellata</i> (Milkmaids)	r			r	<i>Cheilanthes austrotenuifolia</i> (Rock-fern)		f	f	o
<i>Dianella revoluta</i> var. <i>revoluta</i> (Flax-lily)				o	MOSESSES (Only zones are given, no abundances)				
<i>Dianella tasmanica</i> (Blueberry Flax-lily)				r	AMBLYSTEGIACEAE				
<i>Dichopogon strictus</i> (Chocolate Lily)	r			r	<i>Acrocladium chlamydoxylum</i>		x	x	x
<i>Scilla hispanica</i> (Spanish Bluebell) (I)	r				BARTRAMIACEAE				
<i>Wurmbea dioica</i> (Early Nancy)	o	r		c	<i>Bartramia ithyphylla</i>		x	x	x
<i>Wurmbea uniflora</i> (Single-flower Wurmbea)				r	<i>Breutelia affinis</i>		x	x	x
ORCHIDACEAE					<i>Philonotis tenuis</i>				x
<i>Diuris sulphurea</i> (Tiger Orchid)		r			BRYACEAE				
<i>Microtis unifolia</i> (Common Onion-orchid)	r	r			<i>Bryum argenteum</i>				x
<i>Pterostylis pedunculata</i> (Maroonhood)				r	<i>Bryum billardieri</i>		x	x	x
<i>Thelymitra pauciflora</i> (Slender Sun-orchid)	r			r	<i>Bryum pacytheca</i>				x
POACEAE					DICRANACEAE				
<i>Agrostis aemula</i> (Blown Grass)	o				<i>Campylopus clavatus</i>		x	x	x
<i>Agrostis avenacea</i> (Blown Grass)	o								
<i>Agrostis capillaris</i> (Brown-top Bent) (I)	o			o					

Table 1 cont.

Species	Zones D G C P	Species	Zones D G C P
<i>Campylopus introflexus</i>	x x	MARCHANTIACEAE	
<i>Dicnemoloma pallidum</i>	x	<i>Lunularia cruciata</i>	x x x
<i>Dicranoloma billardieri</i>	x	METZGERIACEAE	
<i>Dicranoloma menziesii</i>	x	<i>Metzgeria furcata</i>	x x
<i>Eccremidium pulchellum</i> (?)	x x	PLAGIOCHILACEAE	
DITRICHACEAE		<i>Plagiobhila fasciculata</i>	x x
<i>Ceratodon purpureus</i>	x x	<i>Plagiobhila strombifolia</i>	x
FISSIDENTACEAE		RADULACEAE	
<i>Fissidens vittatus</i>	x	<i>Radula buccinifera</i>	x x
FUNARIACEAE		LICHENS (Only species are given, no zones or abundances)	
<i>Funaria hygrometrica</i>	x x	<i>Arthothelium ilicinum</i> (Taylor) P. James	
GRIMMIACEAE		<i>Bacidia</i> cf. <i>millegrana</i> (Taylor) Zahlbr.	
<i>Grimmia laevigata</i>	x	<i>Buellia disciformis</i> (Fr.) Mudd aggr.	
<i>Grimmia pulvinata</i>	x x	<i>Candelariella xanthostigmoides</i> (Müll. Arg.) R.W. Rogers	
<i>Racomitrium crispulum</i>	x x	<i>Cladia aggregata</i> (Sw.) Nyl.	
HYPNACEAE		<i>Cladia schizopora</i> (Nyl.) Nyl.	
<i>Hypnum cupressiforme</i>	x x x x	<i>Cladonia capitellata</i> (J.D. Hook. & Taylor) Church. Bab. var. <i>capitellata</i>	
<i>Isopterygium limatum</i>	x	<i>Cladonia corniculata</i> Ahti & Kashiwadani	
HYOPTERYGIACEAE		<i>Cladonia pyxidata</i> (L.) Hoffm.	
<i>Hypopterygium rotulatum</i>	x x	<i>Cladonia ramulosa</i> (With.) Laundon	
LEMBOPHYLLACEAE		<i>Cladonia rigida</i> (J.D. Hook. & Taylor) Hampe var. <i>rigida</i>	
<i>Campylopus arbuscula</i>	x x	<i>Cladonia sulcata</i> Archer var. <i>wikonii</i> (Archer) Archer	
<i>Lembophyllum divulsum</i> var. <i>divulsum</i>	x x	<i>Flavoparmelia haysomii</i> (Dodge) Hale	
NECKERACEAE		<i>Flavoparmelia ruidota</i> (J.D. Hook. & Taylor) Hale	
<i>Thamnobryum pumilum</i>	x	<i>Graphis</i> cf. <i>desquamescens</i> (Fée) Zahlbr.	
ORTHOTRICHACEAE		<i>Heterodea muelleri</i> (Hampe) Nyl.	
<i>Macromitrium acheri</i>	x	<i>Heterodermia obscurata</i> (Nyl.) Trevis.	
<i>Orthotrichum tasmanicum</i>	x	<i>Hypocnomyce australis</i> Timdal	
<i>Zygodon intermedius</i>	x x x x	<i>Lecidea</i> sp. A	
POLYTRICHACEAE		<i>Lecidea</i> sp. B	
<i>Polytrichum juniperinum</i>	x x	<i>Lecidea</i> sp. C	
POTTIACEAE		<i>Lecidea</i> sp. D	
<i>Barbula calycina</i>	x x	? <i>Lecidea</i> sp.	
<i>Barbula crinita</i>	x x x x	<i>Maronea constans</i> Hepp	
<i>Tortula muralis</i>	x	<i>Menegazzia caesiopruinosa</i> P. James	
<i>Triquetrella papillata</i>	x x x	<i>Menegazzia nothofagi</i> (Zahlbr.) D. Galloway	
PTYCHOMNIACEAE		<i>Menegazzia platytrema</i> (Müll. Arg.) R. Sant.	
<i>Ptychomnion aciculare</i>	x x	<i>Menegazzia subpertusa</i> P. James & D. Galloway	
RACOPILACEAE		<i>Neofuscelia pulla</i> (Ach.) Esslinger	
<i>Racopilum convolutaceum</i>	x x	<i>Parmelia cunninghamii</i> Crombie	
SEMATOPHYLLACEAE		<i>Parmelia erumpens</i> Kurok.	
<i>Rhaphidorrhynchium amoenum</i>	x x x	<i>Parmelia signifera</i> Nyl.	
<i>Wijkia extenuata</i>	x	<i>Parmelina conlabrosa</i> (Hale) Elix & Johnston	
THUIDIACEAE		<i>Parmelina pseudorelicina</i> (Jatta) Kantvilas & Elix	
<i>Thuidium furfuriosum</i>	x x x	<i>Parmelinopsis afrorevoluta</i> (Krog & Swinscow) Elix & Hale	
<i>Thuidium laevisculum</i>	x x	<i>Parmotrema chinense</i> (Osbeck) Hale & Ahti	
LIVERWORTS (Only zones are given, no abundances)		<i>Pertusaria gibberosa</i> Müll. Arg.	
AYTONIACEAE		<i>Phlyctis subuncinata</i> Stirton	
<i>Asterella drummondii</i>	x	<i>Pseudocyphellaria glabra</i> (J.D. Hook. & Taylor) Dodge	
FOSSOMBRONIAACEAE		<i>Pseudocyphellaria neglecta</i> (Müll. Arg.) Magnusson	
<i>Fossombronia</i> sp.	x	<i>Punctelia subrudecta</i> (Nyl.) Krog	
FRULLANIACEAE		<i>Pyrrhospora laeta</i> (Stirton) Hafellner	
<i>Frullania falciloba</i>	x x	<i>Ramalina inflata</i> (J.D. Hook. & Taylor) J.D. Hook. & Taylor	
<i>Frullania monocera</i>	x	<i>Ramalina inflata</i> ssp. <i>australis</i> G.N. Stevens	
GEOCALYCEAE		<i>Rimelia reticulata</i> (Taylor) Hale & Fletcher	
<i>Chiloscyphus</i> sp.	x	<i>Rinodina</i> sp.	
<i>Chiloscyphus biciliatus</i> (?)	x x	<i>Tephromela atra</i> (Hudson) Hafellner	
<i>Chiloscyphus bispinosus</i> (?)	x	<i>Thysanothecium scutellatum</i> (Fr.) D. Galloway	
<i>Chiloscyphus semiteres</i>	x x	<i>Usnea confusa</i> Asahina	
JUNGERMANNIACEAE		<i>Usnea inermis</i> Motyka	
<i>Jamesoniella colorata</i>	x	<i>Usnea oncodes</i> Stirton	
LEJEUNEACEAE		<i>Usnea rubicunda</i> Stirton	
<i>Lejeunea drummondii</i>	x	<i>Usnea scabrida</i> Taylor ssp. <i>tayloriana</i> G.N. Stevens	
<i>Cheilolejeunea mimosa</i>	x x	<i>Usnea subciliata</i> (Motyka) Swinscow & Krog	
LEPIDOLAENACEAE		<i>Xanthoparmelia flaviscentireagens</i> (Gyelnik) D. Galloway	
<i>Gackstroemia weindorferi</i>	x x	<i>Xanthoparmelia isidiigera</i> (Müll. Arg.) Elix & Johnston	
LEPIDOZIACEAE		<i>Xanthoparmelia tasmanica</i> (J.D. Hook. & Taylor) Hale	
<i>Lepidozia</i> sp.	x		