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Lichens and bryophytes in Tasmanian wet eucalypt forest: floristics, conservation and ecology

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Abstract

A total of 452 species, comprising 262 lichens, 78 mosses and 112 liverworts, is recorded from *Eucalyptus obliqua* L'Hér. dominated wet forest in southern Tasmania. A classification of the species is presented, based on their distribution and ecology. Four groups are recognised: (i) mature wet forest species, subdivided further into species of old forests, species of old trees, and foliicolous species; (ii) species of open eucalypt forests; (iii) widespread and common species; and (iv) species of disturbed habitats, subdivided into transient colonisers and persistent early colonisers. Together with an assessment of conservation status of the species, this classification provides a tool whereby simple comparisons of floristic richness or species composition can be refined so that the ecological 'quality' of a site can be evaluated. A case study comparing the flora before and after burning demonstrates the usefulness of the approach. It showed that although the diversity of cryptogams recovers quite quickly, the species composition of the flora alters significantly. The classification represents the first of its kind for lichens and bryophytes in Tasmania's forests and will be extended in the future to incorporate other forest types and non-forest vegetation. Several lichens, including *Absconditella celata* Döbbeler & Poelt, *Arthonia didyma* Körb., *Calicium hyperelloides* Nyl., *Cladonia adspersa* Mont. & Bosch., *Coenogonium lutescens* (Vězda & Malcolm) Malcolm, *Coppinsia minutissima* Lumbsch & Heibel, *Dactylospora heimleri* (Zukal) Döbbeler & Triebel, *Micarea melaneida* (Nyl.) Coppins, *Opegrapha herbarum* Mont. and *Placynthiella uliginosa* (Schrad.) Coppins & James, are recorded in Tasmania for the first time.

Key words: cryptogams, classification, forestry, burning, regeneration

Introduction

The conservation and management of Tasmania's forests have been the subjects of extensive political, economic and scientific debate. Forest and woodland occupies approximately 3.3 million ha or 47% of Tasmania's area (Sustainable Development Advisory Council 1996) and comprises cool temperate rainforest, dominated mainly by *Nothofagus* Blume and conifer species, sclerophyll forests dominated by *Eucalyptus* L'Hér., and a range of less extensive forest types dominated by other taxa such as *Acacia* Mill., *Melaleuca* L., *Leptospermum* J.R.Forst. & G.Forst. and *Allocasuarina* L. Johnson. Lichens and bryophytes are a major component of the floristic diversity of these forests and, consequently, consideration of their ecology and species composition is important in assessing the natural values of forests (e.g. Kantvilas *et al.* 1996).

Contributing information on cryptogams in Tasmania can be particularly difficult due, not least, to there being relatively few specialists and a lack of general 'conventional wisdom' on cryptogams in the Tasmanian botanical community. This contrasts with the situation in vascular plants where there is a tradition of almost 200 years of botanical endeavour and widely disseminated information from which data can be derived or evaluated. The relatively small size of lichens and bryophytes mostly discourages anything more than general interest and contributes greatly to difficulties in communicating with land managers and others who are often completely unfamiliar with the groups. Other complications arise from applying concepts of rarity to such

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