

Action Statement

Flora and Fauna Guarantee Act 1988

No. 141

Coastal Moonah Woodland

Description and Distribution

Coastal Moonah Woodland is dominated structurally by Moonah *Melaleuca lanceolata* subsp. *lanceolata*. The Moonah trees, which are often twisted into fascinating shapes, range in height from 5-10 metres (Barson and Calder 1976; Calder 1986; D. Tonkinson *pers. obs.*). Canopy cover of the community usually dictates classification by Specht and Specht (1999) as a low open-forest. However, Gillison (1994, p. 228) refers to woodland as a 'structural plant formation usually with a graminoid component, dominated by perennial woody plants over two metres tall which do not have their crowns touching'. As Gillison (1994) points out, this broad definition overlaps the open-woodland, woodland and open-forest definitions of Specht and Specht (1999).

Small-leaved Clematis *Clematis microphylla*, Coast Wirilda *Acacia retinodes* var. *uncifolia*, Coast Swainson-pea *Swainsona lessertiiifolia*, Thyme Rice-flower *Pimelea serpyllifolia* subsp. *serpyllifolia*, Coast Tea-tree *Leptospermum laevigatum*, Coast Beard-heath *Leucopogon parviflorus* and Kidney-weed *Dichondra repens* are considered characteristic species of Coastal Moonah Woodland (Calder 1986, SAC 1998). Twenty-two quadrats with five or more of these eight characteristic species were found in the Department of Sustainability and Environment's Flora Information System (FIS). These quadrats are scattered along the coast between Phillip Island and Lorne although some may represent communities other than Coastal Moonah Woodland, as structural and substrate information is not available for these sites. Recent survey and mapping on Phillip Island has indicated that floristically similar vegetation occurs on peaty soils (ARI 2000).

Although formal floristic survey details are not yet available, many small stands of Coastal Moonah Woodland are scattered on the Mornington Peninsula (G. Pergl *pers. comm.*), within and adjacent to Buckley Park Foreshore Reserve (WERM 1999) and elsewhere on the Bellarine Peninsula (R. Giddings *pers. comm.*). Similar vegetation is known from two small areas in the Anglesea district (G. Clark *pers. comm.*), and Barson and Calder (1976) indicate that Coastal Moonah Woodland occurs as scattered patches around Bridgewater Lakes, with likely occurrences elsewhere along the Discovery Bay coast in southwestern Victoria as far west as the mouth of the Glenelg River (A. Govanstone *pers. comm.*).

Current conservation status

Coastal Moonah Woodland has been listed as a threatened community under the **Flora and Fauna Guarantee Act 1988**.

Decline and Threats

In its final recommendation the Scientific Advisory Committee (SAC 1998) determined that Coastal Moonah Woodland:

- has a restricted distribution in the state due to the reliance on soil type and coastal influences;
- is in a demonstrable state of decline which is likely to result in extinction.

Coastal Moonah Woodland previously occupied significantly larger areas of coastal limestone in Victoria (Calder 1986; JCVRFASC 2000). On the Mornington Peninsula, for example, Coastal Moonah Woodland is thought to have covered some 12 500 ha prior to European settlement,

whilst its current extent is less than 1 000 ha (less than 9% of its original extent) most of which is significantly degraded (Tonkinson *et al.* 2002). Much of the community has been cleared for residential, agricultural, and other coastal developments, leaving remnants to become degraded due to weed invasion and recreational pressures (Port Phillip Authority 1982, Calder 1986). The distribution of Coastal Moonah Woodland has contracted and processes that degrade the community continue (SAC 1998).

Coastal Moonah Woodland is reserved in the Mornington Peninsula National Park, Phillip Island Nature Park, Buckley Park Foreshore Reserve and the Tyrone Bushland Reserve in Rye. Two occurrences are known from Commonwealth land (viz Norris Barracks at Point Nepean and Swan Island off Queenscliff). Many patches also occur on private land.

Coast Tea-tree Dominance

Many communities, including Coastal Moonah Woodland, along the Victorian coast have experienced significant changes in abundance, and in some instances invasion, of Coast Tea-tree *Leptospermum laevigatum*. It is thought that these changes in abundance have been facilitated by changes in soil nutrients, fire, grazing and other disturbance regimes. Within Coastal Moonah Woodland such changes are likely to have significantly affected the diversity and structure of the understorey in addition to preventing seedling establishment of Moonah itself. Changes to sub-canopy air movement and flammability are also likely to have occurred.

Clearing for residential development

Significant loss of this community has already occurred due to residential development and is likely to continue under existing planning arrangements. Residential development often results in the retention of a proportion of the large shrub and tree components of the community, but almost total loss of the smaller shrub and ground layer components. Regeneration of the retained taller components is rare (except Coast Tea-tree) within residential areas.

Lack of knowledge about recruitment of Moonah

Within most reserved examples of this community, regeneration of Moonah is rarely observed, resulting in a skewed age distribution that may lead to significant loss of the overstorey and associated degradation of the community in future decades.

Weeds

Bridal Creeper *Asparagus asparagoides* and Myrtle-leaf Milkwort *Polygala myrtifolia* are highly invasive weeds in Coastal Moonah Woodland. Other significant weeds include Italian Buckthorn *Rhamnus alaternus*, Boneseed *Chrysanthemoides monilifera*, Mirror-bush *Coprosma repens*, Panic Veldt-grass *Ehrharta erecta* and Annual Veldt-grass *Ehrharta longiflora*.

Wider Conservation Issues

The endangered Coast Bitter-bush *Adriana quadripartita* (pubescent form) and Rare Bitter-bush *Adriana quadripartita* (glabrous form), the rare Coast Wirilda and Trailing Coast Poa *Poa poiformis* var. *ramifer* have been recorded within Coastal Moonah Woodland (FIS). The vulnerable Soap Mallee *Eucalyptus diversifolia* subsp. *megacarpa* occurs adjacent to stands of the Coastal Moonah Woodland in southwestern Victoria (Barson and Calder 1976). The endangered Bellarine Yellow Gum *Eucalyptus leucoxylon* subsp. *bellarinensis* occurs in conjunction with Coastal Moonah Woodland away from the coast in the Barwon Heads area. The state and nationally vulnerable Leafy Greenhood *Pterostylis cucullata* is often associated with this community on the Mornington Peninsula (SAC 1998) but may also occur in stands in southwestern Victoria. The state and nationally vulnerable Spiral Sun-orchid *Thelymitra matthewsii* occurs at Point Roadknight in close proximity to, and possibly within, the Moonah Woodland

Species of regional significance for the Mornington Peninsula recorded from this community are Fluffy-fruit Wood-sorrel *Oxalis thompsoniae*, Coast Swainson-pea *Swainsona lessertiiifolia*, Coast Twin-leaf *Zygophyllum billardieri* and Australian Hound's-tongue *Cynoglossum australe* (Calder 1986; FIS). A disjunct occurrence of the Victorian Mallee species, Club-moss Daisy-bush *Olearia lepidophylla*, was recently recorded from Coastal Moonah Woodland in the Barwon Heads Foreshore Reserve (N. Walsh *in litt.*).

Conservation of Coastal Moonah Woodland has the potential to significantly contribute to the conservation of these taxa.

Previous Management Actions

Survey

No specific surveys for Coastal Moonah Woodland have been completed, although the Mornington Peninsula Shire is currently mapping and assessing the quality of all Coast Moonah Woodland within the municipality. Previous local and regional surveys of coastal areas have either been

incomplete or have failed to accurately locate Coastal Moonah Woodland occurrences.

Research

Research into the management of Myrtle-leaf Milkwort *Polygala myrtifolia*, a highly invasive weed of coastal shrubland and woodland communities, has been undertaken in Moonah-dominated communities on the Mornington Peninsula (Woolfrey unpublished).

Site Management

Attempts at strategic weed control in Coastal Moonah Woodland have been undertaken on the Mornington Peninsula and at Anglesea. Fire and herbicides have been trialed in the former area, while at Anglesea attempts have been involved repeated hand weeding.

Monitoring

Tonkinson and Beardsell (1999) established two monitoring quadrats in Coastal Moonah Woodland at Point Nepean, one within a relatively intact, mature example, the other in very weedy regrowth. No other monitoring has been undertaken in this community.

Major Conservation Objectives

The major conservation objectives are to:

- conserve, and where possible enhance, the current extent and quality of the community;
- investigate and refine our understanding of the community.

Intended Management Actions

The intended management actions listed below are further elaborated in DSE's Actions for Biodiversity Conservation database. Detailed information about the actions and locations, including priorities, is held in this system and will be provided annually to land managers and other authorities.

Community description and relationships

1. Refine the description of Coastal Moonah Woodland and determine its relationship to similar communities, in particular Moonah-dominated coastal communities occurring on soils other than calcareous sands.

Responsibility: DSE (Biodiversity & Natural Resources Division)

Survey, mapping and condition assessment

2. Conduct surveys of all potential occurrences of Coastal Moonah Woodland. Flora surveys

should be carried out in winter and spring, in order to coincide with the growth and flowering of orchids.

Responsibility: DSE (Biodiversity & Natural Resources Division)

3. Map all existing remnants of Coastal Moonah Woodland and store information in appropriate NRE databases.

Responsibility: DSE (Biodiversity & Natural Resources Division), DSE Regions

4. Assess the condition of the remnants of Coastal Moonah Woodland using a suitable index. This will guide rehabilitation programs.

Responsibility: DSE (Biodiversity & Natural Resources Division), DSE Regions

Planning

5. Incorporate actions to protect, enhance and restore Coastal Moonah Woodland into relevant Regional Catchment Strategies or their subordinate strategies via Biodiversity Action Plans. Implement these actions, according to priority, as resources become available, in conjunction with other agencies, community groups and landholders.

Responsibility: Port Phillip Catchment and Land Protection Board, Corangamite and Glenelg Hopkins Catchment Management Authorities

6. Provide local government authorities with information, including maps, regarding significant remnants, for inclusion in environmental significance overlays as part of local planning schemes.

Responsibility: DSE Regions

7. Ensure that significant remnants of Coastal Moonah Woodland are protected from inappropriate development through the application of the Victorian Planning Provisions and local planning schemes.

Responsibility: Shires, DSE Regions

8. Ensure that relevant plans, including local fire protection plans and National Park and Conservation Reserve management plans, note the presence of significant remnants of Coastal Moonah Woodland and incorporate objectives and actions to protect them.

Responsibility: Shires, DSE Regions, Country Fire Authority, Parks Victoria

9. Pursue acquisition or transfer of significant remnants to augment extent of Coastal Moonah Woodland in conservation reserves, including, for example, incorporation of the Norris Barracks military area into the Mornington Peninsula National Park.

Responsibility: DSE (Biodiversity & Natural Resources Division)

Management

10. Develop and implement management prescriptions, based on research findings and/or adaptive management, to protect, enhance and restore remnants of Coastal Moonah Woodland.

Responsibility: DSE (Biodiversity & Natural Resources Division), DSE Regions, Parks Victoria, Crown land Committees of Management

Public awareness

11. Undertake public education and liaison to make landholders aware of significance of Coastal Moonah Woodland remnants that may occur on their properties, to encourage protection and enhancement of these remnants, through incentives, voluntary agreements and conservation covenants.

Responsibility: DSE Regions, Catchment Management Authorities, Shires

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Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website: <http://www.dse.vic.gov.au>

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