Coast Wattle in South West Victoria: friend or foe?

Introduction

Over the past century, many Australian native plants have declined in range and abundance due to habitat modification and other factors. Yet a few native species appear to have thrived with changes in disturbance regimes and dispersal. A small number of these have caused biodiversity impacts comparable to serious environmental weeds.

One such species is Coast Wattle, *Acacia longifolia* ssp. *sophorae*. Coast Wattle was previously associated with a narrow coastal habitat in the foredunes of south eastern Australia. Here it played an important role in stabilising dunes and was (and still is) valued by Traditional Owners. However there are now numerous accounts of Coast Wattle spreading into previously unoccupied heathland, grassland and woodland environments.

Where conditions are suitable, Coast Wattle can dominate these vegetation communities and create a dense shrubby layer that excludes many other species. In species-rich environments, the impacts can be substantial. These impacts include changes to vegetation structure, major declines in species richness, and a loss of habitat for threatened flora and fauna. Coast Wattle has been identified as a problem plant in many Parks Victoria reserves across south west Victoria (Figure 1), along with the closely related *A. longifolia* subsp. *longifolia*.

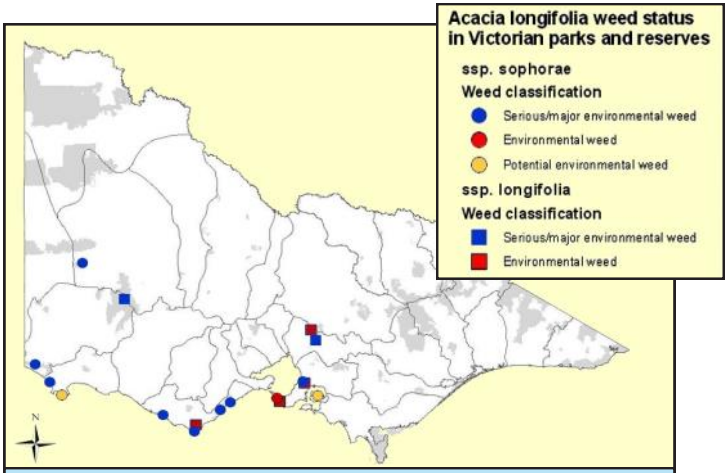

Figure 1: Locations of reserves where either subspecies of *A longifolia* has been identified as a 'weed' or potential weed/problem plant in recent management plans. Map: J. Emeny

Coast Wattle spread in south west Victoria
One of the most significant and earliest records of Coast Wattle spreading beyond its range has been in the Glenelg Plain Bioregion (South Australia to Portland Bay, and north to Edenhope). Satellite imagery indicated that Coast Wattle had colonised approximately 11,000 ha of native vegetation by 2002. In the Lower Glenelg National Park, historic data and aerial photography indicated there was a twenty fold increase from the 1960s to 2002.

Causes of spread
The causes of Coast Wattle spread are not fully understood. It is likely that a combination of the species' colonising attributes and environmental factors are responsible. In the Glenelg Plain bioregion, it appears that the spread of the species may be linked to changes in disturbance regimes over the past century. It is possible that the current distribution of Coast Wattle beyond its coastal habitat may be seen as an indicator of past intensive land use (e.g. grazing, clearing or burning) that has since shifted to non-intensive use (e.g. conservation and the associated suppression of disturbances). As an early coloniser, Coast Wattle is able to exploit open, disturbed vegetation. In the absence of further disturbance (the species is sensitive to fire and grazing) it can quickly form dense shrublands. Once present, its hard coated, soil-stored seed can germinate even if adult plants are removed.

Coast Wattle dominating the road to Point Danger, Portland. Photo: J. Emeny

Impacts of Coast Wattle encroachment

Coast Wattle spread and dominance has affected many other species. For example, coastal heathland occupied by Coast Wattle near Portland had only two-thirds the species diversity of unoccupied sites (McMahon et al. 2004). Similarly over half of all species were lost after 17 years of Coast Wattle dominance (Mitchell & Wilson 2006). The dramatic change in habitat structure has affected several threatened species in the region, including Mellblom's and Limestone Spider-orchids, Eastern Barred-bandicoot, and Heath Mouse.

The shade and dense leaf litter below a Coast Wattle stand allows very little else to grow, and alters the habitat structure for ground-dwelling animals. Photo: J. Emeny

After more than two decades without major disturbance, Coast Wattle thickets have been observed to decline, and reduce their cover. However, by this stage some plant species have been lost, and the vegetation community has changed significantly. Prior to colonisation when native vegetation was abundant and continuous, this process would be part of a natural mosaic. However, in the fragmented remnants of native vegetation of south west Victoria, Coast Wattle encroachment can come at a high cost to biodiversity.

Prostrate *Acacia longifolia* var *sophorae* in its natural environment near Thunder Point in Warrnambool.

What should we do about Coast Wattle?
What should you do if Coast Wattle appears, or is invading and dominating a vegetation community that you manage? Coast Wattle is a native species, so you should check with your local Council as a permit may be required for removal. If the Coast Wattle plants are outside their natural coastal range (particularly if there are planted specimens nearby), it is probably best to remove them sooner rather than later. Early removal increases the chance that biodiversity will recover. Control methods include hand-pulling seedlings, cut and paint with herbicide, or prescribed fire followed up with removal of regenerating seedlings. In small areas, removal of Coast Wattle leaf litter may assist in the regeneration of other plant species.

Where Coast Wattle has already colonised and dominated vegetation for several years, restoration of biodiversity values is more difficult. Reintroduction of occasional disturbance, such as prescribed fire or clearing, may increase germination of Coast Wattle rather than control it. Intensive follow-up of control of new seedlings may be required for years.

Should Coast Wattle be planted in home gardens and public open spaces? It depends on the site. If a site directly abuts a coastal reserve where Coast Wattle is indigenous and not impacting the environment, it may be okay to plant locally-sourced stock. Elsewhere, it is probably not a good idea. Coast Wattle is a weed in the wrong place, but it is a useful plant in the right place.

Jenny Emeny

Coast Wattle dominating vegetation at the Bulley Ranges near Nelson, following a wildfire in 2002. Photo: J. Emeny

Further reading

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