12  Eucalyptus oil production

Eucalyptus oil production is often described as the first ‘truly Australian’ industry. In the Box-Ironbark study area it began after the 19th century gold rushes, when disused boilers and cheap labour for hand-cutting eucalypt foliage were readily available.

Production progressively focussed on areas of blue mallee, essentially in the same districts where harvesting now occurs. Many of the current producers are third and fourth generation descendants of the early producers. These historical associations, and the historical sites and relics associated with eucalyptus oil production, are an important feature of the current industry and are the basis of tourism associated with the industry.

12.1 Harvesting and management

Blue mallee is preferred for eucalyptus oil harvesting because it has the highest cineole content of Victorian eucalypt species. Cineole is the major active pharmaceutical component of eucalyptus oil. Public land harvesting is now done mechanically—chopping all vegetation to within a few centimetres of the ground across harvest plots of around 100 ha, every two to three years, by which time the eucalypts have usually regrown to 1 to 1.5 metres.

Harvesting generally targets areas where blue mallee is most abundant, principally within Broombush Mallee EVC (including its constituent community Gravelly-Sediment Broombush Mallee). Other less suitable species are often present in varying degrees, usually green mallee, and sometimes other species including non-eucalypts.

Public land harvesting is administered by NRE. Seven producers hold licences covering around 12 000 ha in total, near Inglewood, Bendigo, Wedderburn, St Arnaud and Rushworth. However, only around 2 780 ha (23%) of this is actually cut (approximately 800 ha per annum). The percentage of each licence area harvested, however, varies greatly, from about 8% to 100%.

Producers extract oil from the harvested foliage using simple steam distillation. Spent leaf is used to fuel boilers or is sold as ‘eucy’ mulch for gardens. Some public land producers also harvest from naturally occurring patches of mallee (as opposed to plantations) on private land. A recent feasibility study of a variety of potential farm forestry products concluded that eucalyptus oil production from fully-planned, private land blue mallee plantations may be profitable in many parts of the study area. Several people (including one public land producer) are now in the process of establishing such plantations, the most advanced of which has produced several high quality harvests within five years of planting.

12.2 Economics and employment

Oil producers are mainly family operations. The primary use of Victorian eucalyptus oil is in pharmaceuticals. The largest Victorian buyer of eucalyptus oil is a ‘vertically-integrated’ company based in Melbourne making pharmaceutical products from the oil. The company also imports oil from China for this purpose. One producer sells direct to the public only, in tandem with heritage-based tours of the distillery.

Currently, the economic value of public land eucalyptus oil production is around $125 000 per annum to producers, directly generating 5 to 10 full-time equivalent jobs. The industry generates relatively little indirect employment and capital investment is small.

Approximately $20 000 per annum is paid to the Government in royalties, from public land eucalyptus oil production.

12.3 Industry trends

Victorian eucalyptus oil production has declined from around 70 000 kg per annum in the 1950s to around 20 000 kg per annum presently. Market share has mostly been lost to China, which currently accounts for around 90% of global production.
Eucalyptus oil production

Victoria supplies less than 1% of the total world production of around 3,000 tonnes per year.² In recent years, a large-scale farm forestry program in the Western Australian wheatbelt has resulted in the establishment of blue mallee plantations to control salinity and produce large volumes of eucalyptus oil, predominantly for the industrial solvent export market. Plantings to date could produce in the order of 30 times the current Victorian production and, by 2020, production is planned to be about 20 times higher again. The quality and consistency of oil produced from public land in Victoria is compromised by the presence of other species and less efficient distilleries. The Western Australian oil will be of higher and more consistent quality than that produced from public land in Victoria and, due to economies of scale, production costs are likely to be considerably lower than for Victorian oil.

Early results from blue mallee plantations on private land in the study area show promise.

12.4 Issues

Biodiversity values

Public land eucalyptus oil harvesting is a significant threat to many biodiversity values. The following species are particularly affected:

Pink-tailed worm-lizard is endangered in Victoria and vulnerable nationally. About half of the Victorian population occurs in Broombush Mallee in the Whipstick–Kamarooka area, where around 300 ha of public land is harvested for eucalyptus oil. Further expansion of harvesting would destroy areas known to be habitat for the pink-tailed worm-lizard and adjacent to recorded populations.³ The existing harvest areas may be compromising the long-term viability of this species in Victoria.

Malleefowl is also an endangered species in Victoria and vulnerable nationally. Malleefowl were formerly widespread in Box-Ironbark forests and woodlands but are now restricted (in Box-Ironbark) to Broombush Mallee near Wedderburn. The current area of available habitat is too small for the population to survive in the long term. Around 300 ha of this forest near Wedderburn is currently harvested for eucalyptus leaf, and recovery of malleefowl will require larger patches of unharvested Broombush Mallee, not just at Wedderburn but also, in the long term, in areas away from Wedderburn (especially Inglewood and Bendigo).⁴

Whipstick westringia is a slender shrub which is endangered in Victoria and nationally. Apart from a very small population in the Little Desert, this species occurs only in Broombush Mallee adjacent to Whipstick–Kamarooka harvesting areas. It may occur in current harvesting areas and, if so, harvesting is likely to jeopardise the species’ long-term persistence within, and potentially adjacent to harvesting areas (by limiting population size below a viable level). Harvesting also reduces availability of suitable sites for re-introduction.⁵

Long-tail greenhood is an endangered orchid in Victoria and rare nationally. In Victoria it is found in a single small population in and adjacent to a eucalyptus oil harvesting area. Harvesting at this site is the main current threat to this species in Victoria.⁶,⁷

Fifteen other threatened species occur in Broombush Mallee, to varying extents, as do numerous non-threatened species (including many species not found elsewhere in the study area). Eucalyptus oil harvesting suppresses the natural biodiversity of Broombush Mallee, effectively reducing a complex community to a monoculture.

Eucalyptus oil harvesting essentially represents an exclusive use of public land. Cut areas have limited value for recreational users, apiculture, or nature conservation. Soil compaction and erosion and weed invasion is evident at several eucalyptus oil harvesting sites.⁵,⁶,⁷ The royalty returned to the public, approximately $20,000 per year for a total area of around 2,500 ha harvested on a three-year cycle, does not appear to be commensurate with such an exclusive use.

The extent to which environmental values re-establish after exclusion of harvesting is unclear; but is likely to be variable. Malleefowl, for example, may find formerly harvested areas suitable for foraging within five years, but it may be many more years before there is sufficient loose soil and litter to allow the construction of nesting mounds.

12.5 Community views

There was significant community support to phase out or close public land eucalyptus oil harvesting, and add the areas currently set aside for harvesting to the conservation reserve system. However, the public land oil producers argue for continued access to current harvest areas, questioning the impacts on biodiversity associated with the industry and the
validity, in terms of nature conservation, of excluding eucalyptus oil harvesting from those areas recommended. Within the industry there is support for the recommendation of greater tenure of licences in the belief that this will increase investment opportunities, aiding the development of private land plantations. Others propose direct funding and support be available to investigate the viability of mallee plantations on private land.

12.6 Achieving a balance

Some areas currently licensed for eucalyptus oil harvesting are recommended to be included in the park and reserve system as priority areas for biodiversity conservation. Such areas support a number of threatened species dependent on Broombush Mallee EVC, including four species listed on the Flora And Fauna Guarantee Act 1988. Access to eucalyptus oil harvesting sites should not be continued where it threatens the protection of these and other species.

The ECC recommends that where access to current areas change, a six-year phase-out period apply except in one patch with particularly high conservation values where immediate cessation is recommended. Support should be provided to aid the development of freehold land plantations for future harvesting, reducing the impacts on current operations. The ECC recognises the need for long-term stability associated with continued use of areas for oil production and acknowledges support for the recommendation of greater tenure of licences.

The most optimistic long-term view is that eucalyptus oil production, based on public land harvesting, will remain as a minor industry with historical and tourism value. The industry is, however, continually under threat from overseas oil and high quality oil from local and interstate plantations.

The availability of public land at minimal charge for eucalyptus oil harvesting is a significant disincentive to existing producers shifting to more efficient, higher-value production based on appropriately planned freehold plantations.

While there may be some opportunity for local boutique producers, the most plausible long term future for the Victorian eucalyptus oil industry is as a producer of high quality oil for the highest value pharmaceutical use from freehold plantations. Such an industry has the potential to be considerably larger and more profitable than the existing industry. It is appreciated that this will require suitable assistance and support to initiate and maintain plantations during developmental stages.

Several existing public land producers should be able to move to more profitable production based on freehold plantations, and retain their traditional associations with eucalyptus oil production, and hence tourism based on this association. Such an industry would allow currently harvested public land areas to return in time to their natural state and be available for a wide range of uses, including protection and recovery of the distinctive and significant flora and fauna which depend upon Broombush Mallee vegetation.

Several areas are recommended below for removal from eucalyptus oil harvesting. These are priority areas for nature conservation that form important links between existing conservation reserves, or are important for key species.
RECOMMENDATIONS

R54  (a) Eucalyptus oil harvesting be immediately excluded from one currently-available patch of 7 ha near Rushworth and this area be incorporated into Whroo Nature Conservation Reserve (D4), as indicated on Map A; and
(b) within six years of the date of Government approval of these recommendations, eucalyptus oil harvesting be excluded from other specific currently-available areas at Whroo, and near Wedderburn, and Bendigo, and incorporated into Whroo Nature Conservation Reserve (Recommendation D4), Wychitella Nature Conservation Reserve (D3), and Greater Bendigo National Park (A4), respectively, as indicated on Map A.

R55  Comparable with the industry structural adjustment support recommended for timber industries affected by these recommendations (see Recommendation R1 in Chapter 3), appropriate assistance be offered to eucalyptus oil producers affected by these recommendations, to assist:
(a) in the termination of harvesting as recommended above; and
(b) with the establishment of plantations for oil production.

R56  Sites where eucalyptus oil harvesting has occurred since 1995 inclusive, in state forest at St Arnaud, Wedderburn, Inglewood, West Brenanah, Glenalbyn and Rushworth, be identified, zoned, and used to:
(a) produce eucalyptus oil;
(b) provide opportunities for prospecting;
and:
(c) drainage lines and an appropriate buffer strip not be harvested.

R57  Within the areas previously available for oil production, sites not harvested for eucalyptus oil since 1994 be identified, zoned and used to:
(a) conserve biodiversity, particularly threatened species and species which (in the study area) are dependent on Broombush Mallee EVC;
(b) produce honey;
(c) provide opportunities for prospecting;
(d) provide opportunities for open-space recreation and education;
and:
(e) these areas remain or become state forest under the provisions of the *Forests Act 1958*, and managed by NRE.

R58  Where areas are to be retained for eucalyptus oil production in the long term, longer tenure of licences be granted to encourage licensees to invest in eucalyptus oil plantations on freehold land.

Information Sources

1 Virtual Consulting Group (1999).
4 Benshemesh (1994).
5 Davies and Riley (1993).