

Department of Primary Industries and Water

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The Secretary
 Agriculture, Fisheries and Forestry Committee
 RI.121
 House of Representatives
 PO Box 6021
 Parliament House
 CANBERRA ACT 2600

Inquiry into the future development of the Australian honey bee industry

Attached is a submission from the Tasmanian Department of Primary Industries and Water into the above inquiry.

Please note a number of Tasmanian Government agencies and Forestry Tasmania have been consulted in the preparation of this submission.

Yours sincerely

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Inquiry into the future development of the Australian honey bee industry

A submission to the House of Representatives Standing Committee on Agriculture, Fisheries and Forestry

Prepared by the Tasmanian Department of Primary Industries and Water

Introduction

This submission addresses the terms of reference of the inquiry from the perspective of Tasmania. Although this may be considered a parochial view, the Tasmanian situation is unique because of its geographical isolation and the dominance of leatherwood as a source of nectar. Despite these unique characteristics the Tasmanian industry is dependent on the Australian industry for supply of genetic material and some industry leadership.

Its current and future prospects

The Forests and Forest Industry Council of Tasmania has recently published a census report on the Tasmanian apiary industry – *Tasmanian Apiary Industry Profile FFIC 2005* <http://www.ffic.com.au/reports.html>.

The apiary industry currently annually contributes about \$180 million to the Tasmanian economy through the sale of honey and associated products and through provision of pollination services to plant based industries. At least 95% of this contribution is made indirectly by pollination.

The horticultural and seed production industries in Tasmania are expanding hence the demand for pollination services are also increasing. This has seen the emergence of specialist apiarists whose core business is providing pollination services.

The world price for honey fluctuates, with current commodity prices being at near record high levels. Until recently, almost all Tasmanian produced honey was sold as a commodity on the export market. Recently the industry has recognised the unique characteristics of leatherwood honey and the Tasmanian brand hence it is targeting higher value markets with branded products. Demand for these products is currently high hence there is optimism for expansion and or a move to niche products and markets. Further market development work is required.

Leatherwood is considered by Tasmanian apiarists to be central to the prosperity and sustainability of their industry because it is a source of high quality honey as well as providing valuable energy supplies to enable bee colonies to over-winter in good condition. The available area and the accessibility to leatherwood by apiarists are therefore the factors limiting the potential size of the Tasmanian apiary industry.

Almost 60% of all Tasmanian leatherwood occurs within public reserves, 34% is on State forest and the remainder is on other public land or private property.

Accepting leatherwood to be central to the Tasmanian honey industry, defining an upper size limit for the industry is dependent upon quantifying the leatherwood resource in terms of area and production potential. Reliable data on leatherwood area are available, but data on production potential are limited.

Production of leatherwood honey depends on access by apiarists to leatherwood rich forest, usually by road, as bees are limited by the distance they can fly from their hives. Hence the potential size of production is limited by the accessible resource.

Honey production data have been collated by the FFIC from the mid-1950s to 2000 (see *Sustainability Indicators for Tasmanian Forests 2001-2006* (<http://www.dpac.tas.gov.au/divisions/policy/rfa/>)). The data show that honey production varies considerably from year to year, believed to be largely reflective of seasonal climatic factors. Trend data (all honey and leatherwood) show production steadily increased

from the mid 1950s to the mid-1980s. Since the mid 1980s leatherwood production has largely stabilised. The mid 1980s coincides with the reservation of large areas of leatherwood forest in western Tasmania within the World Heritage Area and subsequent cessation of new forest road construction into these forests.

Its role in agriculture and forestry

As stated above agricultural industries such as stone fruit, essential oils, canola and legume seed production are dependent upon pollination provided by the apiary industry. The profitability of these industries is largely driven by yield per area, hence pollination is a major driver of their profitability. Although there is a background of wild bees and insects providing some pollination, these industries cannot afford to leave pollination to chance. Given that these industries are generally increasing and their demand for pollination is generally coincident, the demand for pollination services is also increasing.

Specialist pollinators claim their ability to provide such services is dependent upon access to leatherwood to provide their bees with sufficient reserves for winter. Accepting this assertion, and a finite leatherwood resource, pollination services can only increase if the price paid for them is greater than the price paid for leatherwood honey. The agricultural industry is gradually accepting the need to pay realistic commercial prices for pollination services just as the providers are accepting the need to provide high quality professional services.

If the supply of leatherwood is limiting supply of pollination services, an alternative to this species with the ability to provide bees with the required nutrition must be found. This may mean planting crops specifically for bees and or developing other agricultural crops with the dual purpose. Such crops may also be used to produce unique honey products thereby also increasing the quantity of honey produced.

Honey bees are recognised as the most efficient insect to pollinate plants typically farmed in temperate agriculture. It may however be useful to foster research aimed at determining what other insects may be useful pollinators and how they may be attracted to the target plants. This would help address the risk of insufficient supply of pollinating bees either because of food or disease limitations.

As a species leatherwood usually occurs in temperate rainforest or mixed eucalypt forests as an understorey companion to commercially valuable timber species. Although leatherwood is rarely harvested for its sawn timber or fibre value, harvesting and regeneration of companion forest species can lead to the felling of leatherwood trees. Subsequent regeneration of the logged forest often results in regeneration of leatherwood regrowth. However, the loss of mature leatherwood trees can result in a significantly lower nectar yield from the area for many years, until the regenerating forest has matured.

To minimise this impact, Forestry Tasmania has developed a Community Forest Agreement (TCFA) with the Tasmanian Beekeepers' Association Inc (TBA) which includes Guidelines for Beekeeping on State forest. These guidelines, together with the Forest Practices Code (2000), prescribe measures for the protection of leatherwood-rich forest in the planning and execution of forest harvesting operations. Since the implementation of these guidelines in 1993, less than 3% of leatherwood-rich State forest has been harvested. In addition, under the Tasmanian Community Forest Agreement (2005) (TCFA), there was a commitment to phase down the clearfelling of oldgrowth forest, where most leatherwood is located. This will also result in the preservation of further leatherwood-rich forest.

The TCFA also offered some assistance to the beekeeping industry as part of a package to assist the Special Species timber industry. The package included \$3 million to provide access to Special Timbers Management Units (STMU) on State forest through low-impact roading, which would be available to the beekeeping industry to access additional leatherwood resource.

There is still an opportunity cost associated with managing production forests with a priority for retaining leatherwood as opposed to fibre production. This cost appears not to be well understood and thus should be the subject of specific economic research.

Access by apiarists to leatherwood stands has been enhanced by forestry activities by virtue of providing roading. Through construction of these roads, forestry has directly contributed towards the growth of the leatherwood honey industry by increasing the number of leatherwood sites available on State forest over time. This is not true for national parks and reserves, hence the majority of leatherwood stands are likely to be under-exploited for honey production.

Although at least one Tasmanian study, (Leatherwood nectar resource management report by Zeigler KI, Forests and Forest Industry Council of Tasmania, c1993), showed that honey bees do not have a detrimental effect on native flora this should be confirmed with a view to reviewing access to leatherwood in reserve areas by apiarists.

The biology and ecology of the leatherwood species is relatively poorly understood. Basic biology such as flowering triggers, intensity of nectar production and its relationship with companion forest species could be the subject of studies aimed at improving the yield of honey from it.

Biosecurity issues

The incursion of parasitic mites, other bee species and plant diseases such as fireblight are all potential threats to the Tasmanian and Australian honey industry.

Tasmania has been proactive in working to keep such threats out of the State through education of apiarists and establishment of sentinel and bait hive programs. The bait hive methodology is the preferred method of detecting incursions of exotic bees from ships because it provides an immediate home for the animals that are lured to it by pheromone attractant baits. A swarm was recently captured using this system at a Tasmanian wharf. Sentinel hives will only be effective in detecting disease once it has become well established and thus very difficult to eradicate. The Tasmanian Apiary industry would like the bait hive program to be adopted on a national basis and is working closely with the Queensland Department of Primary Industries to achieve this end.

Management of hobby and part time apiarists may be an issue in detecting pest or disease incursion. A strategy therefore needs to be developed to educate such operators and to know where they are located in order to manage the potential risk they pose to the commercial industry.

Trade issues

Markets for most products now require quality assurance and food safety protocols to be in place. The Tasmanian honey industry is addressing this issue from a market access perspective with a quality assurance program. Branding and truth in labelling are potential issues for the Tasmanian honey industry. In order to prevent honey produced in other regions and labelled as Tasmanian it would be advantageous to chemically characterise Tasmanian honey.

Impact of land management and bushfires

Eucalypt plantation forests are not likely to be a significant source of honey for the apiary industry because the trees are generally harvested before they reach floral maturity. Native forests are an important source of nectar.

Clover and other pasture legumes have long been used as a nectar source by the apiary industry. Unfortunately drought, grazing management and other factors have reduced the legume content of many Tasmanian pastures. Research programs usually focus on pasture legumes from the perspective of persistence and forage quality but perhaps future programs should include selection for honey production.

Agricultural chemicals, particularly wetting agents are generally lethal to bees. Commercial apiarists report significant losses by such chemicals being applied to crops near their apiary sites without their knowledge. Obviously there is an education component to the solution of this problem but warnings need to be made clearer on chemical containers. The labels on the containers of many agricultural chemicals do not mention toxicity to bees but experience by local apiarists suggests such chemicals are lethal to bees. Toxicity of agricultural chemicals to bees perhaps needs to be more comprehensively addressed through the registration process. Agronomists recommending the use of agricultural chemicals need to be more beef focused and responsible when making recommendations. Little or no chemicals are used in native forest containing leatherwood.

Bushfires can have a significant long term impact on the Tasmanian apiary industry especially when leatherwood rich forests are burnt. As previously mentioned, forestry regeneration burns can impact leatherwood apiary resources at the local level. This impact is being minimised through planning and consultation with apiarists and through modified regeneration practices now being implemented in such forests. This needs to be addressed in a holistic approach examining the interdependency of the apiary and forestry industries and the overall need to control fires on public land.

Research and development needs

Potential research issues have been highlighted above and thus are summarised below:

- Understanding leatherwood ecology and biology for resource and honey yield sustainability.
- Audit of the Tasmanian leatherwood resource leading to methodologies for determining apiary stocking rates.
- Economic study of the interdependencies of the apiary, horticultural, seed production and forestry industries.
- Alternatives to bees as pollination vectors.
- Alternative species to leatherwood as a basis for a commercial apiary industry.
- Impact of exotic bees on endemic flora and fauna in National Parks and reserves.
- Breeding for resistance to exotic bee diseases.
- Chemical characterisation of Tasmanian honey.
- Market and brand development for Tasmanian honey.
- Better labelling of agricultural chemicals in regard to toxicity to bees.
- Education and management of hobby apiarists to minimise their threat to the commercial industry.
- National adoption of the bait hive program as an early detection strategy for exotic pest and disease incursions.

Consultation

This paper has been prepared using information and experience gained by the Department of Primary Industries and Water through chairmanship of the Apiary Liaison Committee as well as general interaction with the industry. The Apiary Liaison Committee is the formal process whereby the Tasmanian apiary industry interacts with public land managers.

Department of Premier and Cabinet, Department of Infrastructure, Energy and Resources and Forestry Tasmania has been consulted in the preparation of this submission.

It is believed the Tasmanian Beekeepers Association will provide their own independent submission to this inquiry.