4

Biosecurity

4.1 The threat of pest and disease incursions is the most significant issue facing the honey bee industry and honey bee pollination dependent industries. Incursions of exotic bee pests and diseases have the potential to not only severely disrupt the honey bee industry, but also many of our agriculture and horticulture industries. Preventing the introduction of exotic pests and diseases must be a priority of governments and industry. Effective border security measures and strategies to deal with incursions are critical. Investment in research and development to identify and manage biosecurity threats is essential.

4.2 Furthermore, the industry faces a number of significant endemic disease threats. Endemic pests and diseases add considerably to the cost of production of honey, impact on the capacity to export live bees and other apiary products, create the need to impose domestic quarantine measures to prevent the spread of pests and diseases across Australia, and pose a threat to the industry's clean-green image through inappropriate use of antibiotics or chemical controls.

Exotic threats

4.3 The committee notes that there are a range of exotic pest and disease threats facing the Australian honey bee industry. The most immediate threat is an incursion of *Varroa destructor*. In its submission, AHBIC highlighted the potential costs of a Varroa incursion for the Australian honey bee industry:

> Should the Varroa mite become established in Australia it would continue to spread rapidly unless very expensive control measures were enforced. Most colonies not treated with acaricide would be killed. Control costs for the pest would very substantially add to costs of production and would have a devastating effect on the industry. Most small beekeepers would probably find it uneconomic to continue beekeeping. This pest is to the beekeeping industry what foot and mouth disease is to the livestock industry.[1]

4.4 AHBIC also highlighted the potential impact of Varroa on the Australian economy:

> There are substantial costs to the Australian economy from a Varroa mite incursion. Rather than wiping out honeybees in one fell swoop, it is expected that the Varroa mite will decimate feral honeybee colonies but will spread more slowly through managed honeybee populations as apiarists, agriculturalists and horticulturalist change their behaviour in an attempt to minimise the loss. It is expected that despite these efforts, the cost to the agriculture and horticulture industries will be between $21.9 million and $51.4 million per annum (Cook et al, 2005).[2]

4.5 In its submission, CSIRO gave evidence on the nature and scale of the Varroa threat. CSIRO noted that:

> The Varroa mite is considered the most serious global threat to beekeeping and is without question the most serious threat to the viability of the Australian honey bee industry. The mite is parasitic and feeds on the blood of adult and larval honey bees and reproduces on the bee brood. The mite also transmits viral and other pathogens, which rapidly kill entire bee colonies.[3]

4.6 The submission continues:

> Varroa mite has been highly invasive around the world. It originated in the Japan - Korea region in 1950 and spread to Europe in the 1970s. In 1987, it turned up in the USA and in 1990 in South America followed by Africa in 1997 and New Zealand in 2000. The only agricultural regions in the world free of Varroa mite are Australia and PNG. Varroa is, however, in Indonesia. In countries where Varroa mite is established, feral honey bees have

1 AHBIC, Submission no. 56, p. 26.
2 AHBIC, Submission no. 56, p. 30.
3 CSIRO, Submission no. 33, p. 9.

> been largely wiped out. In New Zealand feral bees virtually vanished from the North Island within four years of the invasion.
>
> Australia is one of the few remaining regions in the world still free of this destructive mite. Since switching from its primary host, the Asian honey bee *{Apis cerana)* some 50-60 years ago, the mite has spread around the world. It entered New Zealand in 2000 and is also now threateningly close to Australia in east Indonesia. In all regions where the mite has become established hived honey bee colonies have been reduced by about 25%, feral honey bees have been eliminated and managed pollination services severely damaged and unable to meet the demand for pollination services.[4]

4.7 The submission notes that Australia is particularly vulnerable to a Varroa incursion because our agricultural industries are particularly reliant on pollination by feral honey bees:

> The heavy reliance on feral honey bees has meant there has been a reduced demand for managed hives and, as a consequence, the managed pollination industry, by international standards is quite small and under developed. Given that the more numerous and sophisticated providers of managed hives in the USA and New Zealand have failed to keep pace with demand it is probable that those in Australia will be even less able. As a consequence the economic/market shock is likely to be greater and last longer.[5]

4.8 Besides the impact on agriculture, Varroa has other implications for the Australian honey bee industry. In her submission, Mrs Jodie Goldsworthy noted that:

> Should this pest be introduced into Australia there would be significant management required to ensure new food safety risks associated with products used to control for this disease were properly managed and did not threaten the current perception of Australian honey as healthy food.[6]

4.9 Chemical contamination of honey and other apiary products was also raised by beekeepers Frank Malfroy, Tim Malfroy and Lewin Goodwin-Brickhill in their submission. They noted that the arrival of Varroa would have a significant impact on packaged bee exports and Australia's 'clean-green' status as a honey producer:

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4 CSIRO, Submission no. 33, p. 9.

5 CSIRO, Submission no 33, p. 9.

6 Mrs Jodie Goldsworthy, Submission no. 69, p. 7.

> The current boom in live bee exports is due primarily to the fact that we have healthy mite-free honeybee stock. The ability of Australian beekeepers to supply replacement colonies for overseas commercial pollination has enormous potential at present. This trade advantage would be lost if *Varroa* becomes established.
>
> In addition, we are at present capable of supplying a chemical free honey (and other related bee products) to a discerning market both here and overseas. The current trend of consumers worldwide is towards buying 'organic' and chemical free produce. If *Varroa* enters Australia, beekeepers will need to start treating their hives with miticides, thereby greatly reducing our competitive advantage on the world market and the overall value of Australia honey and bee products.[7]

4.10 Dr Max Hunter, a Victorian beekeeper, highlighted the implications of Varroa for hobby beekeepers and home gardeners:

> The catastrophic impact of an incursion of varroa mite to the side-line beekeeper needs to be highlighted, despite its slow spread through such managed beehives. Side-line beekeepers could lose their entire bee stock and therefore find it very difficult to recover because new stock would need to be purchased with no rebate from government. There is, however, a more devastating consequence to a varroa mite incursion. Feral beehives would die out and this could lead to a serious outbreak of hive robbing causing the uncontrolled spread of mite and disease to managed beehives, and also the incidental pollination by such feral hives would not be enjoyed by orchardists or field-crop farmers. Thus these growers would need to buy in honeybee hives for their crop pollination. Home gardeners mostly enjoy the incidental pollination (at no cost) of their fruit trees and vegetables by honeybees from neighbouring back-yards where side-line apiarists mostly keep their hives. Lack of honeybees from whatever cause will most likely result in this vegetation generating inferior or even no produce.[8]

4.11 CSIRO has done economic modelling to estimate the cost of a Varroa incursion to the Australian economy, stating in its submission:

> Expressing results as an annual average, CSIRO estimates that the process of V. destructor naturalisation would cost Australian plant

7 Messrs Frank Malfroy, Tim Malfroy & Lewin Goodwin-Brickhill, Submission no. 35, p. 2.

8 Dr Maxwell Hunter, Submission no. 46, pp. 1–2.

> industries between $21.3 million and $50.5 million per year over the next thirty years if no response were mounted after an incursion. This analysis focuses specifically on the costs not the value of losses directly attributable to varroa, taking into account the expected spread of the mite over time. It is important to note that this analysis is not attempting to put a figure specifically on the total value of production by crops pollinated by honey bees, but rather that it is estimating the amount that could be afforded to be spent each year in keeping varroa out of Australia.[9]

4.12 Aside from Varroa, there are a number of other significant exotic pest and disease threats facing Australia. The Asian bee mite, Tropilaelaps (*Tropilaelaps clareae*), represents a threat as great in magnitude as Varroa, although an incursion is less likely. Tracheal mite (*Acarapis woodi*) is another potential pest threat. Other exotic bee species such as the Asian Honey Bee (*Apis cerana*) and the Giant Honey Bee (*Apis dorsata*) also represent a significant threat, both as a vector for pests and diseases and as competitors for *Apis mellifera*. Incursions by African honey bees (*Apis mellifera scutellata*) or aggressive Africanised hybrids also represent a threat. Incursions of all three species have been detected in Australia (all were destroyed and there is no evidence of established colonies). Another significant and growing threat is from the still ill-defined Colony Collapse Disorder.

4.13 In its submission to the inquiry, CSIRO identified the Asian bee mite, Tropilaelaps, as the 'second most important threat to the viability of the Australian honey bee industry'. The primary host of Tropilaelaps is the Giant Honey Bee (*Apis dorsata*), which has been intercepted at Australian ports in the past, and is present to our near north. The mite is present in western New Guinea, having been introduced with colonies of *Apis mellifera* from Java. Attempts to eradicate the mite from New Guinea have failed.[10]

4.14 The Asian bee mite, like Varroa, is a parasite that feeds on the blood of bee larvae and reproduces on bee brood. According to CSIRO, 'the impact of the Asian bee mite establishing in Australia will be similar to that of the varroa mite, but worse, as the Asian bee mite is able to multiply and kill European honey bee colonies much faster than the varroa mite'. However, the risk of entry of the Asian bee mite is less than

9 CSIRO, Submission no 33, p. 10.

10 CSIRO, Submission no. 33, p. 13.

that of Varroa as it cannot live and spread by attaching itself to adult bees, the most likely vector for pests and diseases entering Australia.[11]

4.15 Tracheal mites (*Acaparis woodi*) live in the airways of adult bees feeding on bee blood. Infected bees die through suffocation or micro-organisms entering their blood through damaged airways. Severe infestations reduce the life span of individual bees and cause the death of entire bee colonies. The principal effect of a successful tracheal mite incursion would be economic hardship for beekeepers and the need to use chemicals to control infestations. The most likely vectors for an incursion are European or Asian honey bees arriving on a vessel at a port.[12]

4.16 Exotic bee species have the potential to have a significant impact on the Australian honey bee industry should a successful incursion occur. Incursions of a number of significant pest species have been detected and destroyed, the latest and perhaps most significant being the discovery in Cairns in May 2007 of several colonies of *Apis cerana*.

4.17 The African honey bee (*Apis mellifera scutellata*) is notorious for its aggressive behaviour. It also interbreeds readily with European honey bees, producing aggressive hybrids known as 'killer bees'.[13] Keeping *Apis mellifera scutellata* and its hybridised progeny out of Australia requires not only careful border security, but diagnostic capabilities to detect africanised genes in imported breeding stock.[14]

4.18 Another African species, *Apis capensis*, has highly adaptive reproductive strategies which allow it to infiltrate European bee colonies and replace these populations with its own species.[15]

4.19 The Giant honey bee (*Apis dorsata*) is a native of Asia, a pest in its own right and host of Tropilaelaps.

4.20 The Asian honey bee (*Apis cerana*), is the original host of the Varroa species from which *Varroa destructor* evolved. According to the submission of the CSIRO, 'only populations from the Korea–Japan region carry the damaging forms of *Varroa destructor*. Other populations carry mites that are harmless to European honey bees.'[16] *Apis cerana* is therefore unlikely to be the vector for the entry of *Varroa destructor* into

11 CSIRO, Submission no. 33, p. 13.
12 CSIRO, Submission no. 33, p. 14.
13 Victorian Apiarists' Association, Submission no. 71, p. 27.
14 CSIRO, Submission no. 33, p. 16
15 Victorian Apiarists' Association, Submission no. 71, p. 27.
16 CSIRO, Submission no. 33, p. 13.

Australia. It is nonetheless a significant pest in its own right. In its submission, CSIRO notes:

> The establishment of the Asian honey bee in Australia would have a serious impact on Australian beekeepers. In Papua New Guinea and the Solomon Islands the bee has reduces hived European honey bee colonies through its aggressive foraging and robbing behaviour. Male Asian honey bees can also mate with European honey bee queens and reduce hive productivity. The bee has also become a major pest around cities and towns and, because it can nest in cavities much smaller than needed by swarms of the European honey bee, it has environmental concerns.[17]

4.21 The CSIRO submission further states that the 'present incursion of the Asian honey bee at Cairns, together with almost annual arrivals of the bee at Australian ports since the late 1990s, shows just how real the risk of invasion by this bee is'.[18]

4.22 **The most significant exotic bee threat, however, is from incursions of *Apis mellifera* itself.** In its submission, the Victorian Apiarists' Association noted that the 'most likely conduit for incursions of Varroa destructor and troplilaelaps clareae to occur in Australia are through Apis mellifera arriving at Australian ports from South East Asia and pathogens remaining undetected, or through illegal smuggling of Apis mellifera'.[19]

4.23 Two other exotic threats also pose significant challenges for the Australian honey bee industry. The first is Colony Collapse Disorder, an as yet ill-defined condition which has blighted the honey bee industry in North America. In its submission, CSIRO noted:

> Colony collapse disorder, or CCD, is a recent disorder of US honey bees. It was first reported in late 2006–early 2007 and, since then, it has been estimated to have wiped out up to a quarter of the US honey bee population. The disorder is characterized by the sudden disappearance of the worker bee population from a single bee colony followed by rapid collapse and death of the colony. The cause is not yet known, and several suspected causes are currently being investigated, including environmental stresses, malnutrition, unknown pathogens, mites, pesticides, emissions from cellular phones and genetically modified crops. There is no doubt that the

17 CSIRO, Submission no. 33, pp. 13–14.

18 CSIRO, Submission no. 33, p. 14.

19 Victorian Apiarists' Association, Submission no. 71, p. 27.

> impact of CCD on managed hives is quite severe, however to date the etiology remains undetermined and as a consequence it is not possible to assess the level of threat posed to the bee keeping industry in Australia.[20]

4.24 In its submission, AHBIC noted that CCD represented a real threat to the Australian honey bee industry:

> Although Australian beekeepers have not experienced colony collapse disorder, the unknown nature and the gradual spread of the disorder means it will be very hard to stop coming into the country or to control if there is an incursion. The impact this disorder has had on the US means any incursion into Australia is likely to significantly cost the industry and horticulture and agriculture industries that rely on pollination from honeybees.[21]

4.25 The other major risk is the apple disease fireblight. While bees are not affected directly by fireblight they are carriers of the disease. Bees found in fireblight affected areas are subject to destruction, a fact having significant implications for beekeepers providing pollination services. Several submissions alerted the committee to the issue of importation of apples from New Zealand, where fireblight is endemic, and the potential impact on Australian beekeepers should an outbreak occur. In her submission to the inquiry, Mrs Elwyne Papworth, a Victorian beekeeper, called for a plan of action to deal with outbreaks of fireblight and a scheme to compensate affected beekeepers.[22]

Meeting the threat

4.26 The committee notes that the threat of an incursion by exotic pests and diseases, and their potential to wreak havoc upon the apiary industry and other parts of the agriculture sector, raise serious issues about Australia's ability to prevent incursions and manage them effectively once they occur. This is particularly the case with Varroa. In its submission, the Victorian Apiarists' Association highlighted the need for industry and government to prepare for a Varroa incursion:

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20 CSIRO, Submission no. 33, p. 14.

21 AHBIC, Submission no. 56, p. 38.

22 Victorian Apiarists' Association, Submission no. 71, p. 31; Tasmanian Beekeepers' Association, Submission no. 63, p. 10; Mr Michael Leahy, Submission no. 61, p. 15; Mrs Elwyne Papworth, Submission no. 74, p. 6.

> Australia is the only continental inhabited land mass in the world to remain free of Varroa destructor. Drawing from the experience of overseas beekeeping and agricultural communities, of necessity trying to cope with the parasite's impacts, the challenge can be seen to be formidable. It would not only be sensible, but the VAA considers imperative that Australian stakeholders sooner rather than later should begin to prepare for the day when this country has to contend with endemic Varroa. The primary goal of such effort has to be the development and implementation of strategies that will maintain Australian managed honeybee populations, a key primary dynamic of much of the nation's future food production, till the end of time. Australia will not be alone in this endeavour. The world beekeeping and agricultural communities and governments, bound by common need, are already working hard though research, training and other means in this endeavour. It is a challenge that will be successful, for it must be successful.[23]

4.27 In its evidence to the committee, DAFF highlighted the various layers of biosecurity protecting the honey bee industry in Australia. DAFF plays a crucial role in the prevention and management of incursions of pests and diseases through quarantine and risk management. Areas of DAFF involved in biosecurity issues include Biosecurity Australia, the Australian Quarantine and Inspection Service (AQIS), the Product Integrity Animal and Plant Health (PIAPH) Division (including the Office of the Chief Veterinary Officer) and the Australian Biosecurity System for Primary Production and the Environment (AusBIOSEC) Taskforce.[24] Two other critical areas of government activity are the National Sentinel Hive Program (NSHP) and the bee quarantine facility (These will be dealt with separately below)

4.28 AHBIC is a member of both Animal Health Australia (AHA) and Plant Health Australia (PHA), which are the custodians of the Emergency Animal Disease Response Agreement in the case of AHA, and the Emergency Plant Pest Response Deed. The honey industry has also signed up to the Emergency Animal Disease Response Agreement (EADRA) for dealing with either competitor bees or diseases and so on, but it is not a party to the Emergency Plant Pest Response Deed.[25]

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23 Victorian Apiarists' Association, Submission no. 71, p. 23.

24 DAFF, Submission no. 20, p. 2.

25 Mr Steve McCutcheon, Executive Manager, Product Integrity Animal and Plant Health Division, DAFF, *Transcript of Evidence*, 13 June 2007, p. 10.

4.29 In its submission to the inquiry, DAFF explained the honey bee industry's place within the framework of the EADRA:

> AHBIC is a party to the Emergency Animal Disease Response Agreement (EADRA) which commenced in 2002. The EADRA provides certainty in funding for emergency animal disease threats to Australia and the infrastructure to facilitate rapid and effective responses. The Australian Government, state and territory governments and affected animal industry members share the eligible costs incurred in responding to emergency animal diseases. Other industries party to the EADRA include: sheep, cattle, dairy, egg, chicken, goat, and pig.
>
> AHBIC's funding liabilities under the EADRA are met through a statutory levy on honey—the Emergency Animal Disease Response levy (EADR levy). The operative rate for this levy is currently 0.5c/kg on honey, which is held in reserve by AHA on behalf of the industry.
>
> The costs of responding to emergency animal diseases (EADs) are shared by the affected parties. Under the EADRA, EADs are classified into four categories and a cost sharing formula is applied to each category ranging from Category 1 (very high public benefits with 100 per cent government funding) to Category 4 (low public benefits with 20 per cent government funding and 80 per cent industry funding).
>
> The EADRA is currently being reviewed in accordance with a requirement under its provisions. Issues being addressed include whether the EADRA is meeting its objective, coverage, and whether any changes are needed to address present and future needs. The AHBIC has asked that consideration be given to expanding the provisions of the arrangements to include honey bee pests. Currently the EADRA only covers emergency animal diseases, not pests.
>
> The consultant carrying out the review is to report to all parties to the EADRA with recommendations. These recommendations will be considered by the parties in late May 2007 at a meeting convened by AHA.[26]

4.30 The honey bee industry is also covered by the National Residue Survey (NRS):

26 DAFF, Submission no. 20, pp. 16–17.

> The National Residue Survey (NRS) programme for honey, together with the increasing use of quality assurance testing by the industry and the establishment of a code of practice, provide assurance to Australia's trading partners and domestic consumers of the high level of compliance of Australia's honey with national and international standards. NRS results are the basis for the AQIS certification for compliance with the residue requirements of importing countries and Australian standards.
>
> The NRS honey residue testing programmes cover a range of pesticides, metals, nitrofurans and chloramphenicol. Approximately 170 samples of honey will be collected in 2006-07. Sampling is conducted in each state on the basis of production volumes.
>
> Residue testing programmes are managed in accordance with agreed arrangements between AHBIC, AQIS and NRS.[27]

4.31 The industry is also protected by the Northern Australia Quarantine Strategy (NAQS):

> The Northern Australia Quarantine Strategy (NAQS) programme carries out surveys in coastal areas from Cairns to Broome and overseas in Indonesia, Papua New Guinea and Timor Leste to identify targeted pests and diseases that may enter through natural movements. Exotic bees, *Apis cerana, Apis dorsata* and *Apis florae* and exotic bee parasites *Varroa destructor, Tropilaelaps clareae* and *Acarapis woodi* are included on the NAQS targeted list.
>
> Surveillance for exotic bees and bee parasites is usually conducted in the course of general plant health surveys. During these surveys, bees are sampled when they are foraging flowering plants to check for exotic species and any parasitic burden. Bee swarms and tended hives are checked for bee parasites.[28]

4.32 Despite the range of measures in place to protect the Australian honey bee industry from exotic pest and disease incursions, there is a strong sense within the industry that these measures are inadequate. In their submission, Queensland beekeepers Trevor and Marion Weatherhead highlighted two recent biosecurity failures impacting directly on the industry:

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27 DAFF, Submission no. 20, p. 17.

28 DAFF, Submission no. 20, p. 20.

> Australia has had two (2) breaches of quarantine in the past that have affected our industry. In the early 1990's chalkbrood (*Ascopheara apis*) was found in Queensland and has since become endemic in most of Australia. In 2002, the small hive beetle (*Aethina tumida*) was found in New South Wales and Queensland. These breaches have resulted in quarantine lapses of some kind and have been costly for our industry.[29]

4.33 The discovery of Asian honey bees (*Apis cerana*) in Cairns in May 2007 also raised questions about the effectiveness of border protection measures. Mr Rex Carruthers, vice-president of the Queensland Beekeepers' Association, told the committee:

> In May this year, apis cerana was discovered in Cairns. It is not my intention to criticise the Queensland government with regard to the way that this matter was handled, but rather that both government and industry should learn from the experience we had. I was directly involved with that incursion and a fair few things were done wrong.
>
> The facts were that the Asian honey bees had arrived in Cairns undetected. They had set up in the port region for six months before they were discovered. If this hive of bees had been carrying varroa mites, the task ahead confronting government and industry would have been very expensive, not only in dollar terms but also in man-hours. Border security issues must be taken more seriously by all concerned. History shows that varroa, once in a country, is impossible to eradicate. So from an industry point of view—and, no doubt, from the broader community point of view—it makes sense to try to stop this pest crossing our borders rather than trying to deal with it when it gets here.[30]

4.34 In evidence before the committee, Dr Max Whitten argued that the events in Cairns demonstrated that government agencies are simply not ready to effectively respond to an incursion:

> So that you really understand what happens with the Asian honey bee situation: when a colony was detected like it was in Cairns, the electrician and the owner rang up the department, to be told, 'Go find a beekeeper,' or, 'Here's the name of a beekeeper to remove that,' because it was a nuisance hive. Luckily, that beekeeper was able to identify that it was the Asian honey bee. It was then a long

29 Trevor and Marion Weatherhead, Submission no. 42, p. 6.

30 Mr Rex Carruthers, *Transcript of Evidence*, 10 August 2007, p. 39.

> weekend. You can talk to people here who were directly involved in that process. There was no preparedness. Nobody knew how to control that swarm. Nobody knew what to do with the material: where it was to go; how it was to be analysed. There were turf wars within the department here over advice from one part of the department to the other. AQIS at the time did not want to know about it because they regarded it as a post-entry issue and not their concern.[31]

4.35 For Dr Whitten and others the critical issue here was that if it had been an incursion of European honey bees, possibly carrying Varroa, it would have remained undetected. Dr Whitten explained:

> The Asian honey bee I think was a minor risk compared to the European honey bee, and there are examples of detections of swarms in the Port of Brisbane where it was assumed that they came from local hives. If the mite is going to come into Australia it is likely to come in on the European honey bee. The empirical evidence is that we are not well prepared. Worse still, you will not get, I believe, honest and open advice from any of those organisations.[32]

4.36 Mr Trevor Weatherhead also argued that the experience in Cairns emphasised serious weaknesses in Australia's border security measures. In a supplementary submission to the inquiry, he explained:

> It has been recognised that the major threat to the beekeeping industry in Australia is the introduction of *Varroa destructor* and the most likely way is on our European honey bee *Apis mellifera.* There have been several instances at the Port of Brisbane where there have been swarms of European bees reported to the Queensland Department of Primary Industries (QDPI) and they have referred the enquirer onto a beekeeper to come and collect these bees. They assumed the bees had swarmed from a local hive or a feral hive in the mangroves.
>
> I would submit that this is a high risk practice as these swarms could have come off a ship, from say New Zealand, and be carrying the Varroa mite. The action of the beekeeper helping out by collecting the swarm and taking it home would mean that the Varroa is spread immediately and this then reduces dramatically the chance of any eradication. In one instance, it was only the

31 Dr Max Whitten, *Transcript of Evidence*, 10 August 2007, p. 20.

32 Dr Max Whitten, *Transcript of Evidence*, 10 August 2007, p. 21.

> beekeeper ringing me that alerted me to the situation and I was able to put appropriate actions in place.
>
> There was also another occasion where there was swarm which established itself under a container at the port. The QDPI were sampling adult bees from this colony for mites. I raised the point that by the time they found phoretic mites, the mites would be at very high levels and would have already spread to other hives in the area. After consulting with an expert from New Zealand, they then destroyed this hive.
>
> This shows that there is a lack of recognition of the threat to our industry by these swarms which appear at ports. I would submit that any swarms, or feral hives, found in the vicinity of a port in Queensland should be treated as suspect and be immediately sampled and destroyed. The present practice of asking beekeepers to collect these is not a good Biosecurity practice.
>
> The same should apply in other ports in Australia.[33]

4.37 Other concerns have been raised about the effectiveness of customs and quarantine services. In its submission, the South Australian Farmers' Federation expressed concern over perceived shortcomings in the Northern Australia Quarantine Strategy:

> It has come to our attention that the NAQS is not adequately resourced and maintained, especially in the Northern Territory. One Apiary Officer for the entire NT is manifestly inadequate and it appears that the 'Readiness Team' of beekeepers (those who respond quickly to any incursion in NT) have left the industry.
>
> We would recommend a thorough review of the Northern Australia Quarantine Strategy, specifically as it relates to bees, which would include resourcing and incursion response issues.[34]

4.38 In evidence before the committee, Mr Julian Wolfhagen, president of the Tasmanian Beekeepers' Association, related an incident on returning to Australia from New Zealand of AQIS staff who were apparently ignorant of Varroa and the threat it posed,[35] an incident corroborated by Mr Peter McDonald, a Victorian beekeeper. Mr McDonald wrote in his submission:

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33 Mr Trevor Weatherhead, Submission no. 87, p. 2.

34 South Australian Farmers' Federation, Submission no. 14, p. 3.

35 Mr Julian Wolfhagen, *Transcript of Evidence*, 3 September 2007, p. 9.

> To assist in preventing an incursion in the first place, AQIS staff education is critical. When we returned from NZ, myself and a beekeeper from Tasmania had to explain and educate the AQIS staff there about what the Varroa Mite was and it's potential impact on our industry. It astounded us that they didn't already know. They need to, now.[36]

4.39 In evidence before the committee, Dr Ben McKee, representing Capilano Honey Limited, highlighted the potential impact of the loss of key personnel in biosecurity agencies, citing the example of AQIS:

> An essential component of trade issues is the ongoing expertise and resources which are present within AQIS devoted to assisting companies such as Capilano with facilitating export and dealing with regulatory issues in international markets. I can recount many occasions on which we have had to seek the support of the Australian Quarantine and Inspection Service to support our positions on facilitating export. At present, a lady by the name of Jenny Barnes is a great resource for this industry. She is at retirement age, and I have some simple questions. Will she be replaced? What is the succession plan for that position? That position provides not only advice on quarantine issues but a significant commercial gain for the industry, and industry has to provide the incumbent or replacement a lot of education about some of the details of the industry so that AQIS can assist us in fighting battles overseas with regulatory authorities.[37]

4.40 In their submission, Messrs Frank Malfroy, Tim Malfroy and Lewin Goodwin-Brickhill adverted to holes in Australia's biosecurity management at the state level, citing the management of the Small Hive Beetle (SHB) incursion:

> There is great concern in the beekeeping community about the capabilities of Australian Quarantine to properly prevent and manage an outbreak. This outlook is a result of recent past failures to properly address the introduction of Small Hive Beetle.
>
> The structure and capabilities of Bio-Security services is inadequate and needs to be reviewed. Currently AQIS contracts State DPI offices to carry out its Bio-Security duties, and at present there are not enough resources available for these agencies to carry out this function.

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36 Mr Peter McDonald, Submission no. 45, p. 3.

37 Dr Ben McKee, *Transcript of Evidence*, 10 August 2007, p. 2.

> In the case of the introduction of SHB, NSW DPI failed at every stage in dealing with this issue. To begin with, there were no staff trained to identify SHB which resulted in a 4 month delay in any initial response. Once it was formally identified, there was no clearly defined 'plan of action'. As if to cover their poor response, NSW DPI issued misleading information on the potential severity of SHB, causing confusion in the beekeeping industry and further hampering the control of SHB. There was also no clearly defined plan for compensation if the destruction of a beekeepers hives were necessary to limit the spread of SHB.
>
> An enquiry into the gross failings of NSW DPI could have provided valuable information, and established a framework for the management of future incursions. We feel that Bio-Security is too important an issue to be left to the resources of State agencies. A separate Federal body needs to be established to manage such important issues.[38]

4.41 The need to prepare for the arrival of Varroa through pre-registration of chemicals was also raised in several submissions. In its submission, the Central Victorian Apiarists Association stated:

> As discussed, safe control options need to be developed and approved for use before these pests/diseases reach Australia. The industry will not have time to wait for them to be developed and approved for use once the problem is already in Australia. Although, there are control options for Varroa, most are based around chemical use in the hive. Most Australian apiarists would like to avoid using chemicals in the hive to maintain our "clean, green" product image and would therefore support further research into other possible control options—such as traps outside the hive for Small hive beetle.
>
> Future costs of treating pest/disease could make many apiarists unviable. Financial support may be needed for apiarists to treat future pest/disease outbreaks such as Varroa mite to maintain a viable apicultural industry.[39]

4.42 In their submission, Trevor and Marion Weatherhead informed the committee that:

> Many years ago, Trevor worked with the late Dr. David Banks of Biosecurity Australia to have in place approvals for certain

38 Messrs Frank Malfroy, Tim Malfroy and Lewin Goodwin-Brickhill, Submission no. 35, p. 3.

39 CVAA, Submission no. 22, pp. 2–3.

> treatments if varroa did happen to arrive in Australia. When varroa was found in New Zealand in 2000, it took so long for the approvals of the acaricides to be approved that many more hives, than were necessary, were lost to the mite.
>
> Dr. Banks put in place the necessary paperwork so that if varroa did turn up in Australia, it would only have taken the stroke of a pen to have these acaricides approved for use by the beekeepers.
>
> Trevor has recently made enquiries of the Australian Pesticides and Veterinary Medicines Authority (APVMA) to make sure this was still the case. The reply received was that it was not the place of APVMA to do this but it was Biosecurity Australia that would put this in place. Enquiries to Biosecurity Australia say this is not their job. So where do we now stand? It would seem that the process Dr. Banks put in place is no longer in existence. It would also seem that Australian beekeepers will suffer the same way that New Zealand beekeepers did in approvals not being at the ready to put in place when varroa arrives.
>
> There are current approvals with APVMA for fluvalinate (Apistan), flumethrin (Bavaryol) and thymol (Apiguard) to be used in a diagnostic and surveillance mode but there is no approval for general use which is understandable as we do not have the mites at the present time.
>
> We would ask that this Committee recommends that a pre approval process be put in place so that, if varroa arrives, immediate steps can be taken to start coping with this pest.[40]

4.43 Information on response planning was also needed at the grassroots level. In its submission, the Central Victorian Apiarists Association stated:

> Apiarists require information on what will occur if an outbreak occurs to better prepare them for an incursion. Decisions on whether or not eradication will be initiated should be made with protocols in place to follow. These decisions should be being made now and advertised to the Apiary industry so that everyone is aware of the policy that will be followed. For example, if moving of hives will be restricted or prohibited then apiarists can be factoring this into their management decisions. If eradication is not successful apiarists will need control measures which have already been approved for use in beehives in Australia. Research needs to

40 Trevor and Marion Weatherhead, Submission no. 42, p. 8.

> be increased so that Apiarists have options available and the best advice to deal with any possible new problems.[41]

4.44 In his submission, Mr Lloyd Hancock, a hobby beekeeper from Queensland, noted the lack of information filtering to the grassroots level, stating:

> One fact I would like to comment on is that if there is a plan of action in the event of an incursion of the Varroa mite then it has not been passed down to our beekeeping Assn. I would have thought it would be essential to have a plan worked out in advance so people will know how to react rather than wait until the pest has spread beyond any control.[42]

4.45 In its submission, the South Australian Apiarists' Association noted that the following steps needed to be taken to prepare for pest and disease incursions:

- Exotic pests and diseases need stringent quarantine and surveillance (keeping pests and diseases out of Australia is more cost effective than eradication programs).
- Need to increase knowledge of management and identification of all apiary pests and diseases by apiarists.
- Requirement to have compulsory training in the identification and management of major pests and diseases.
- Recognised treatments of exotic pests and diseases must be pre-registered for use should an incursion occur.
- Readiness and incursion teams must be continued and all members highly trained.
- Reliant pollination industries need to be made aware of the affects exotic pests will have on our industry and gain support from them to strengthen our surveillance and preparedness.[43]

4.46 One important biosecurity measure identified in the evidence is the registration of beekeepers, hives and bee sites. In its submission, the NSW Government stated:

> The NSW *Apiaries Act 1985* establishes a regulatory system requiring owners to register their hives and display their

41 CVAA, Submission no. 22, p. 2.

42 Mr Lloyd Hancock, Submission no. 50, p. 4.

43 South Australian Apiarists' Association, Submission no. 7, pp. 2–3.

> registration number on each hive. This assists with disease control and compliance with export requirements for some countries.[44]

4.47 Registration is not compulsory in all jurisdictions. In its submission, the Geelong Beekeepers Club noted:

> In Victoria approximately 2,000 beekeepers are registered and we estimate another 1,000 are not. This would make it harder to control a disease out break. An advertising campaign is required to locate unregistered beehives and the New Zealand idea of registering the locations bees are kept may be beneficial.[45]

4.48 Registration of hives is also voluntary in Tasmania. Mr Peter Ewington, a beekeeper and apiary representative on the Forests and Forest Industry Council in Tasmania, stated that, 'We are doing fairly well in bringing most people in with voluntary registration, but the trouble is there are a lot of people out there who own beehives in backyards that are not part of our industry'; Mr Lindsay Bourke, President of the Tasmanian Crop Pollination Association and FFIC member, argued for that, 'All hive registrations in Tasmania should be compulsory because if we get an incursion of varroa we should know where to go to look for it and to protect it. That should be compulsory'.[46]

4.49 Mr Robin Thompson, representing the Tasmanian Department of Primary Industries and Water, argued that registration was a matter of costs versus benefits. He explained:

> It is all about risk management, I guess. Certainly, knowing where every hive was would be a very significant advantage. There is no point having a registration system unless you can police it, and that requires the input of resources. It is the same when we talk about FMD and whatever risks we might perceive. I think that increasing public awareness is perhaps the first step. If hobbyists can be signed up, if you like, in the context that they are contributing to biosecurity issues, it is the carrot and big stick sort of approach, in that we might bring them along with the carrot rather than the big stick.[47]

4.50 He continued:

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44 NSW Government, Submission no. 79, p. 3.

45 Geelong Beekeepers Club, Submission no. 64, p. 1.

46 Mr Peter Ewington, Mr Lindsay Bourke, *Transcript of Evidence*, 3 September 2007, p. 34.

47 Mr Robin Thompson, Tasmanian Department of Primary Industries and Water, *Transcript of Evidence*, 3 September 2007, p. 41.

> You can use lots of instruments, I suppose, for getting practice change. There is a whole range from passive to legislation. As we said, legislation is perhaps the least preferred because it does require a lot of resources to enforce. If we can get some passive compliance then that is much better, but the whole gambit requires an injection of resources. I suppose, if you are taking a totally pragmatic view, resources for agriculture and the apiary industry are competing on a state basis with resources for health and education, and we know how high profile they are at the moment.[48]

4.51 However, as Mr Gavin Jamieson explained to the committee, unregistered hives pose a real risk to biosecurity despite the bests efforts of government and industry:

> One of the other submitters, John Edmonds, is a beekeeper and ex-president of the Victorian Apiarists Association. He heads a group in Geelong that meets regularly. For 10 years he has been managing one of the national surveillance hives next to the Corio refinery in the vicinity of Geelong Grammar School, north of Corio itself. That sentinel hive is monitored on a monthly basis so that, if varroa, tracheal mites or one of several other things were to come in off a tanker, there would be an opportunity to deal with an early detection of the outbreak. There is a national program which is part funded by the Commonwealth and part funded by the state. That program has improved in recent years compared with what it was five, eight or 10 years ago. It is essential that adequate funding be given to maintain proper biosecurity. An illustration of this is that in the last couple of months John Edmonds, even though he is very knowledgeable about who keeps bees where, discovered in the vicinity of Geelong Grammar School 30 hives that he had never known to be there before. So we have one central hive doing its bit within the refinery grounds—and it is not easy to get occupational health and safety approval for entry to a refinery by a beekeeper when he needs to be there—and here is another group of hives that could already have unwittingly been the source of a disease outbreak and it is not being monitored. In New Zealand all bee sites are required to be registered. Wherever you put bees you are required to tell the government. That does not happen in Victoria. One of the things that Bob McDonald's son Peter said was that New Zealanders felt that that was a really valuable part of

48 Mr Robin Thompson, Tasmanian Department of Primary Industries and Water, *Transcript of Evidence*, 3 September 2007, p. 42.

> attempting to control the varroa when it got to New Zealand because they knew where all the apiary sites were.[49]

National Sentinel Hive Program

4.52 The National Sentinel Hive Program (NSHP) is Australia's principal means of border security against incursions of bee pests. Sentinel hives work by using miticidal strips to collect specimens of bee parasites for identification. The program was established in 2000, through consultation between Biosecurity Australia, state departments of primary industries and the honey bee industry, to enhance early detection of incursions of Varroa, Tropilaelaps, tracheal mite and the Asian honey bee. The program operates by locating sentinel hives in the vicinity of identified 'high risk' sea ports.

4.53 In 2006, the NSHP operated and inspected hives on a quarterly basis. There were:

- 37 inspections of log traps at seven different locations for Asian honey bees;
- 105 hive inspections at 37 sites for external mites (Varroa, Tropilaelaps); and
- 116 hive inspections at 34 sites for tracheal mites (*Acarapis woodi*).

4.54 No exotic insects or mites were detected.[50]

4.55 In its submission, DAFF outlined the history and current status of the NSHP, stating:

> The National Sentinel Hive Program (NSHP) was established in 2000 and until July 2006 was managed by Biosecurity Australia. Responsibility for the NSHP was then transferred to the Office of the Chief Veterinary Officer (OCVO) within DAFF. Many essential contributions from personnel in the programme are currently provided as uncosted in-kind contributions.
>
> In February 2007, the Primary Industries Health Committee (endorsed by the Primary Industries Standing Committee (PISC)) agreed that DAFF should develop a business plan to detail and formalise the current operating arrangements for the NSHP. A draft version of the business plan is currently being prepared and will outline:

49 Mr Gavin Jamieson, *Transcript of Evidence*, 25 July 2007, p. 25.

50 DAFF, Submission no. 20, p. 15.

- a proposed funding model for the future;
- roles and responsibilities for jurisdictions and industries within the proposed revised NSHP that will be administered by Animal Health Australia (AHA);
- a work plan targeted at maintaining and enhancing activities conducted under the existing NSHP; and
- management (operational and funding) arrangements to achieve those ends.

Securing the future of the NSHP will require the adoption of the proposed business plan and a commitment to participation and funding by state and territory governments, AHA, and both the honey bee and horticultural industries.[51]

4.56 In a supplementary submission DAFF noted:

> The draft business plan for the NSHP will shortly be submitted to Animal Health Committee for comment. This will commence the process of seeking endorsement and funding for the business plans from jurisdictions and industries. The business plan proposes that the fully funded NSHP commence on 1 July 2008 for an initial period of three years.[52]

4.57 Several issues surrounding the funding and management of NSHP have been raised with the committee during the course of the inquiry.

4.58 In its submission, the Victorian Apiarists' Association was critical of the time being taken to renew the NSHP following the 2005 review of the program. The VAA argued for greater urgency in placing the program on a more permanent footing and increased resources:

> Among this review's recommendations was that an analysis of the cost and benefits of the program be conducted, and who should pay for the cost of the program, including the operation over the long term. In 2006, responsibility for the program was transferred to the CVO, DAFF. The VAA understands that the Primary Industries Standing Committee in February 2007 agreed that DAFF should develop a business plan to map the future of the Sentinel Hive Program, and it should also conduct a review of the long term funding and the co-ordination of the program. The VAA submits while the bureaucracy grinds on, the urgency, the imminent risk factor has all but overtaken us, and concerted action is needed to strengthen quarantine and surveillance systems. The

51 DAFF, Submission no. 20, pp. 13–14.

52 DAFF, Submission no. 82, p. 10.

> VAA submits, although the Australian honeybee industry is a key stakeholder, it has limited financial resources to contribute. The VAA submits, however, it has beekeeping industry participants living in all main coastal populations centres, some of whose expertise and honey bee colonies could easily be co-opted into an expanded sentinel hive program. As an adjunct to the sentinel hive program, the strategic deployment of pheromone equipped bait hives within or near port precincts would significantly strengthen surveillance procedures.[53]

4.59 Likewise, in its submission, the Queensland Beekeepers' Association argued the need to increase the National Sentinel Hive Program:

> A National Sentinel Hive Program was put in place in 2000. This consists of 'Sticky Mat' surveillance hives place at sea ports around Australia to facilitate the early detection of exotic pests and diseases. The Queensland Beekeepers Association Inc. assessed the risks involved with the possibility of an incursion because of our close proximity to PNG and the Torres Strait Islands. Earthmoving equipment and other cargo frequently move between these South East Asian centres and the ports in North Queensland and Brisbane. It was thought prudent to double the number of surveillance hives in Queensland to enhance the chances of an early detection of these unwanted pests. The surveillance effort in Queensland now consists of 40 Government sticky mat mite surveillance hives and 40 Industry stick mat mite surveillance hives with more mite surveillance hives planned…
>
> The establishment and monitoring of statistically significant numbers of sticky mat surveillance hives around the ports throughout Australia should be a matter of priority for AQIS, State Primary Industry Departments, Agricultural and Horticultural Associations and State Beekeeping Associations.[54]

4.60 One way of increasing the program identified in evidence presented to the committee was to make greater use of hobby beekeepers in the program. In evidence before the committee, Dr Max Hunter, a hobby beekeeper from Victoria, stated:

> They could be employed in that regime simply because they seem to have their hives spread throughout all of Victoria, particularly around the seaboard and the borders between the other states. Not

53 Victorian Apiarists' Association, Submission no. 71, p. 28.

54 Queensland Beekeepers' Association, Submission no. 67, pp. 5–6.

> only can incursions come from the seaboard through shipping but also from aircraft freight and across borders through trucks and the like. Employing sideline beekeepers for that is an excellent suggestion. All beekeepers who have hives in Victoria—not just sideline beekeepers—could be the sentinels for incursions of diseases and exotic pests. All of them could be paid for their effort and should be trained sufficiently.[55]

4.61 Some support in the way of provision of equipment and payment was regarded as appropriate. In his submission, Mr Gavin Jamieson, a Victorian beekeeper, noted that:

> Individuals incur costs with the Sentinel Hive Program yet State and Federal officers are paid to provide the service. WorkCover and indemnity are not provided to the volunteers. Horticulture has a real financial interest yet they have not shared the costs.[56]

4.62 Mr Lloyd Hancock, a hobby beekeeper from Brisbane, also identified hobbyists as an underutilised resource that could be effectively employed at minimal cost. He told the committee:

> My point is that we are hobbyists in a club. We are interested in all developments, and we talk about the flora, the fauna, whatever else. We are vitally interested when a hive beetle comes and knocks off our hives. How did it get there? Who let it through? We are trained, through practice and whatever else, to know what we are looking for. The DPI people come and tell us, we go to field days and we read overseas journals, so we are aware of it. We would be better trained than many people to do it.
>
> The point was made that we are hobbyists. We do it in our spare time, and there is a cost to visiting beehives, in petrol or whatever. If we are asked to do it as volunteers, we will do it in our time, when we want to. If we are contracted and paid by the government or whoever to do it, then that is an obligation and it means that it is better reporting for the government. They know that the hives are reported on each month, each week—whatever you want. That is not wishy-washy stuff; it is a different arrangement—we do it or we do not do it—and the clubs are a method by which this could be coordinated. But, equally, the clubs are run by volunteers and they would want something out of it.[57]

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55 Dr Max Hunter, *Transcript of Evidence*, 25 July 2007, pp. 32–3.

56 Mr Gavin Jamieson, Submission no. 10, p. 3.

57 Mr Lloyd Hancock, *Transcript of Evidence*, 10 August 2007, p. 83.

4.63 The need to increase funding and resources for the NSHP was highlighted in the evidence presented to the committee. Mr Peter Barnes, related his view of the New Zealand experience with Varroa and its implications for Australia. He informed the committee that despite testing up to one-in-five hives that Varroa still managed to enter New Zealand's South Island undetected; and that a similar scale of testing in Queensland would require the regular inspection of some 600 hives as against the current 80. He told the committee:

> We have 80. But we also have dangerous parallels with when it first occurred in Auckland, as far as our department of primary industry office is run. They were at the same level that we are, where the Queensland government is scaling back the department's surveillance officers and increasing the workload. That is what happened in New Zealand about the same time. I would also like to point out that, with the incursion in Cairns, we were lucky. It was the fact that they were a different species of bee that allowed them to be detected. If that had been our honey bees, it may have been a different case. The guy might have just put them in a box and taken them home. That is probably the more dangerous point: the fact that varroa comes in on a swarm of our bees and then some hobbyist takes them home without realising it. That is one of the rumours about what happened to cause the outbreak on the southern island of New Zealand.[58]

4.64 In evidence before the committee, Mr Des Cannon highlighted the difference in spending between Australia and New Zealand, noting that in comparison Australia is well behind:

> New Zealand was spending something like $800,000 a year in surveillance and monitoring of hives, physically examining hives and checking with sticky mats in the south island alone. The beekeeping industry was paying $200,000 of that. The other $600,000 was coming from a general levy on ratepayers on the south island of New Zealand…My understanding is that we are spending as a country in the order of $10,000 to $20,000.[59]

4.65 In its submission, the South Australian Government noted that:

> In an environment of limited funds, exotic surveillance provides the biggest return on investment to the economy. It is arguable that Australia's early mite detection system ($250,000 per annum) is

58 Mr Peter Barnes, *Transcript of Evidence*, 10 August 2007, p. 43.

59 Mr Des Cannon, RIRDC, *Transcript of Evidence*, 8 August 2007, p. 11.

> inadequate when compared to New Zealand's South Island surveillance program. A review of this system by Biosecurity Australia, state jurisdictions and AHBIC is urgently required.[60]

4.66 The issue of bait hives was raised in evidence presented in Tasmania. Bait hives use pheromones to attract bees and have the advantage over sentinel hives of providing evidence of an incursion in a much shorter time frame. In its submission, the Tasmanian Department of Primary Industries and Water stated:

> 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.[61]

4.67 In his submission, Mr Des Willmott, a Tasmanian beekeeper, explained the rationale and costs associated with bait hives:

> Since visiting New Zealand in 2002 I have been, like many others, been concerned about the likely hood of an incursion of Varroa Mite into Tasmania. As the President of the National Council of Pollination Associations and their Delegate to AHBIC I lobbied AQIS on the need to improve on the sentinel hive program because we, (Tasmanian pollination providers) know it to be inadequate in the light of the New Zealand experience. Varroa was first found in sentinel hives which surrounded a large international Shipping Container Depot in Auckland. AQIS were not able to assist in the set of a trial Bait Hive Program which would be a more appropriate surveillance system we believe. The emphasis being on catching a swarm which leaves a newly arrived ship thereby avoiding an incursion which will not be detected until the Varroa number build up and migrate to sentinel hives (hence the horse has bolted). As a TCPA representative on the Tasmanian Apiary Industry Liaison Committee I sought a grant of $5,000 from the

60 Government of South Australia, Submission no. 73, p. 7.

61 Tasmanian Department of Primary Industries and Water, Submission no. 72, p. 4.

> State Government to assist with the costs to set the trail myself under the auspices of the Department of Primary Industry and Water, (DPIW) with the full cooperation of AQIS and Tasmanian Ports Authority. There are Bait Hives in six of the seven major Ports where we believe we are vulnerable from direct shipping from Asia and New Zealand. The seventh port will be covered soon.
>
> The cost to date has been about $9600 to set up our program, the additional costs over and above the initial grant have been covered by my business and the day to day costs associated with checking and maintaining the bait hives is met by the volunteers who look after the port in their area. In addition to the set up costs we estimate (DPIW) the attractant pheromones will cost around $2,000 per year. The programme will be expanded to include Coconut Palm log hives for the Asian Honey Bee as soon as Dr Denis Anderson can procure them for us.
>
> Through AQIS we have provided assistance to Victoria who I understand are trialling a similar setup.[62]

4.68 In its submission, the South Australian Government recommended that the NSHP be maintained and expanded and that other surveillance initiatives, such as bait hives, sniffer dogs and on-farm testing, be introduced.[63]

Quarantine

4.69 The bee quarantine facility is essential for the safe importation of fresh genetic stock. The need for a bee quarantine facility in Australia was recognised by government in the 1970s, leading to the establishment of the current facility at Eastern Creek in 1983. Day-to-day husbandry of live bee consignments is managed by officers of the New South Wales Department of Primary Industries under a Memorandum of Understanding with AQIS. All consignments of live bees are held at the quarantine station where they are checked for Varroa and tracheal mites.[64] The quarantine process is stringent, ensuring that none of the imported insects are released, only their offspring:

> The process that is applied in AQIS to manage those imports is that the queen and the attendants would be examined microscopically,

62 Mr Des Willmott, Submission no. 89, p. 1.

63 Government of South Australia, Submission no. 73, p. 7.

64 DAFF, Submission no. 20, p. 19.

> the queen would be separated and put into a cage and introduced to some new attendant bees drawn from a clean hive that was maintained by AQIS while the worker bees would be destroyed and then dissected and examined in detail for the presence of any mites or other diseases. After a period in quarantine of some months with the new clean attendant bees, the queen would again be separated and put into a starter hive to produce larvae. The former small group of attendant bees would again be destroyed, dissected and examined to see if there were any pests or diseases associated with them. The queen would then be allowed to produce brood larvae and we would then get a person or a specialist to come in and remove the larvae and put them into graft cells, which would then be removed from quarantine and introduced to a normal hive. The imported queen bee, all the attendant bees and the starter hive that had been set up within quarantine would then be destroyed. There is a stepped process to check at each step of the way to make sure that there are no pests or diseases associated with it. In fact, none of the animals from the original importation actually make it out of quarantine.[65]

4.70 In its submission, DAFF noted that in the last two years AQIS has issued five import permits for live bees. Of these, 'the permit issued for the United States consignment was withdrawn on advice from Biosecurity Australia, three consignments were destroyed in quarantine (two due to the presence of mites, one due to inadequate certification and the consignment not meeting import conditions) and there was one successful import from Italy'.[66]

4.71 According to the Victorian Apiarists' Association (VAA), the facility has 'greatly strengthened Australia's ability to safely access overseas honeybee blood lines through stringent protocols and the establishment of one national entry point'.[67]

4.72 The forecast closure of the current facility in 2010 or 2015 is a matter of great concern to the beekeeping community. As the VAA noted in its submission:

> Clearly, any diminution of importation arrangements, inhibiting safe access to overseas blood lines and increasing incentives to smuggle honeybees into the country would be a very poor

65 Mr Peter Liehne, National Manager, Animal and Plant Quarantine, DAFF, *Transcript of Evidence*, 13 June 2007, p. 21.

66 DAFF, Submission no. 20, p. 19.

67 Victorian Apiarists' Association, Submission no. 71, p. 29.

> outcome not only for the beekeeping industry, but more importantly in economic terms, the national interest. In what form, and the location of replacement facilities are issues central to industry concern needing satisfactory resolution sooner rather than later.[68]

4.73 In its submission, AHBIC urged that if the quarantine facility was relocated, 'then the new facility should be run to the same high standards that are currently being undertaken at the Eastern Creek quarantine station, and that current funding arrangements for the maintenance of the program should continue'.[69]

4.74 One of the key recommendations and outcomes of the Honeybee Industry Linkages Workshop, held in Canberra in April 2007, was that 'Quarantine is vital for the pollination industry and a replacement facility is required for Eastern Creek in Sydney'.[70]

4.75 The need for a new quarantine facility was highlighted in the Committee's 2007 report, *Skills: Rural Australia's Need*, when the committee recommended that 'the Australian Government guarantees the long-term future of the honey bee quarantine facility currently housed in the Eastern Creek Quarantine Facility or makes alternative arrangements for a permanent site, as a matter of urgency'.[71] In its submission to the inquiry, DAFF advised the Committee that the current lease on the Eastern Creek site will not be renewed and that the department is currently investigating alternatives. The submission states:

> The Eastern Creek Quarantine Station has been leased by AQIS since 2001 and the current lease is due to expire in 2010. There is a further five year option available to AQIS after 2010, but AQIS has been advised by the lessor that a further lease beyond 2015 will not be possible.
>
> In light of these developments, AQIS is developing a range of alternatives for the future provision of post-entry quarantine facilities for consideration by the Australian Government. A meeting between AQIS and AHBIC was held in late 2006 and the

68 Victorian Apiarists' Association, Submission no. 71, p. 29.

69 AHBIC, Submission no. 56, p. 40.

70 RIRDC, Honeybee Industry Linkages Workshop, April 2007, RIRDC Publication no. 07/067, p. vii.

71 House of Representatives Standing Committee on Agriculture, Fisheries and Forestry, *Skills: Rural Australia's Need*, Parliament of Australia, February 2007, p. 149.

> views of AHBIC have been taken into consideration as part of this process.[72]

4.76 The lack of progress on a replacement quarantine facility, despite the obvious need, is a source of frustration within the honey bee industry. In evidence before the committee, Dr Max Whitten, an eminent scientist and former head of CSIRO Entomology, stated:

> As you know, the developers now want to do other things with that facility, and so does AQIS, so let us accept that that is a reality. I mentioned that there is no evidence that AQIS is effectively pursuing the alternative. I say that because the likely party to be involved in that is the New South Wales Department of Primary Industries, and I know that there are no negotiations taking place between AQIS and the New South Wales department which currently manages that facility, so there is strong evidence that nothing is happening.[73]

4.77 The need for a new facility, Dr Whitten argued, was urgent, but the inaction of government in this issue had also created an opportunity—the opportunity to integrate quarantine within a broader research capacity, organised and funded by government and industry within the context of a pollination industry alliance. He told the committee:

> But let us make a virtue out of that by saying, 'Let's build a new quarantine facility that is a state-of-the-art facility and that has a research capability.' That then becomes an element of what you have been talking about: a new alliance, a new network in Australia which is focused on that facility but reaches out to all the different research and teaching organisations in Australia.[74]

4.78 Dr Whitten's own suggestion is for the establishment of a honey bee quarantine facility, with a containment laboratory for research on honeybee genomics and biotechnology, at the Elizabeth Macarthur Agricultural Institute (EMAI) at Camden. Locating the quarantine facility at EMAI Camden has the following advantages:

- EMAI is close to Sydney airport;
- The current management arrangements could be easily transferred to the new facility;

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72 DAFF, Submission no. 20, p. 20.

73 Dr Max Whitten, *Transcript of Evidence*, 10 August 2007, p. 21.

74 Dr Max Whitten, *Transcript of Evidence*, 10 August 2007, p. 21.

- EMAI is central to other research providers concerned with honeybee and pollination research such as the University of Western Sydney, University of Sydney and CSIRO; and
- EMAI is the New South Wales centre for Animal and Plant Biosecurity.

4.79 Dr Whitten notes that:

> The establishment of a Honeybee Quarantine Facility at EMAI is consistent with and would complement the creation of the envisaged new industry alliance, Pollination Australia. Its integration with EMAI and its proximity to other teaching and research institutions would strengthen the R&D and training elements in the Business Plan currently being developed under the broad direction of RIRDC and the Steering Committee.[75]

Drone semen

4.80 A related issue is the importation of drone semen for improving genetic stock. In evidence before the committee, Mr Weatherhead stated:

> One of the things that can be done to improve stock or to raise stock within Australia that is suitable for export is the importation of drone semen. Under the present protocol with Eastern Creek and the quarantine station at Wallgrove, the importation of queen bees involves a long process. It is certainly a very worthwhile situation. I do not see drone semen replacing the importation of queen bees. But by importing drone semen you then are able to capture the benefits of those particular genetics very quickly by introducing them into your stock that you are breeding; therefore, it gives you a quicker and easier way to do it, because with queen introduction, for instance, you run the risk of the queen dying in quarantine or something like that, whereas it is very easy to bring drone semen in and to use it straightaway…
>
> The biggest risk is the importation of the Africanised gene, but I would put it to you that there is no bigger risk than actually bringing in the queen bees themselves, because the risk is that most of the DNA work that is done to detect the Africanised gene is done on the mitochondrial DNA, which is the female side, and the drone side, being the male side, is not easily able to be checked for the Africanised gene. But when bringing in queens in the same way, you are only able to check the female side, you cannot check

75 Dr Max Whitten, Submission no. 92, pp. 1–2.

> the drone side. That is the biggest risk in importing semen—the Africanised gene. There are no other risks, I do not think. Viruses have been brought up, and I think recently it has been shown that viruses can be imported in semen, but most of the viruses around the world are common to most beekeeping countries.[76]

4.81 However, as the Weatherheads noted in their submission, although a draft import risk analysis (IRA) for the importation of drone semen was prepared in 2002, there was as yet no protocol in place for the importation of drone semen.[77] In its submission, the Western Australian Beekeepers' Association expressed frustration at this situation and urged urgent action to get the necessary protocols put in place:

> Another issue this organisation would like to raise is the inordinate amount of time taken by Biosecurity Australia to process the import risk assessment for import of honey bee semen. This process has been ongoing for approximately 6 years, when it was originally anticipated to take 10 months. This is of particular concern to WA, since unlike the industry on the eastern seaboard, beekeepers here are not able to access imported genetic material through the Wallgrove Quarantine facility in NSW, because of State Government restrictions on interstate transfer of live bees, queen cells and grafted eggs. Semen import is the only method whereby WA can safely import new genetic stock. An IRA has been completed in WA for semen import from NSW, and a quarantine apiary site has been approved within the HMAS Stirling Naval Base on Garden Island that conforms to the requirements of the AUSVETPLAN. DAFWA [Department of Agriculture and Food, Western Australia] have established a protocol to monitor any imports through a 12 month quarantine process which limits any risk to the industry. So we are now in an ideal position to receive and safely process imported semen shipments through a quarantine procedure in WA. There is an outstanding application for semen import from NZ to WA that was lodged with Biosecurity Australia in July 2005.
>
> However, this agency has indicated that there are higher priorities for its limited resources, than the completion of this IRA. Given this explanation, unless something is radically changed, the IRA

76 Mr Trevor Weatherhead, *Transcript of Evidence*, 10 August 2007, p. 57.

77 Trevor and Marion Weatherhead, Submission no. 42, p. 7.

> will never be completed! In our view this simply is NOT GOOD ENOUGH.[78]

Endemic threats

4.82 While exotic pests and diseases represent the most significant threat to the Australian honey bee industry, there are also a number of endemic pests and diseases which have the capacity to significantly affect the profitability and viability of the industry. The most serious of these pests and diseases are American Foulbrood (AFB), European Foulbrood (EFB), and Small Hive Beetle (SHB). Other pests and diseases include wax moth, Braula Fly (Tasmania) and chalkbrood. The potential problems and costs associated with endemic diseases was identified in the submission of the NSW Apiarists' Association, which noted that:

> Endemic pests and diseases do cause the Industry production and financial losses and in some cases can affect the Agricultural sector by diseases which may affect bees in certain areas, causing beekeepers to avoid those areas as disease clean up of hives is too expensive, (e.g. American Foul Brood (AFB) in Macadamia Nut pollination areas on the North Coast of New South Wales).[79]

4.83 The most serious endemic threat facing the industry is AFB. In its submission to the inquiry, AHBIC stated:

> American Foulbrood is the greatest disease concern for the industry as it is highly infectious and actions by one beekeeper whose hives are infected can cause the disease to spread rapidly, thereby imposing costs on many other beekeepers. Most activities of state agencies are directed at controlling this disease.
>
> Although AFB infects and kills only the bee larvae, if unchecked it will affect the hive and honey production and eventually the colony will die out. The disease is spread in many ways, including naturally such as infected bees drifting into healthy hives, healthy bees robbing a weak infected hive, healthy bees feeding on contaminated honey or where watering places are contaminated by infected dead bees. The disease can also be spread by beekeeping practices, for example through the interchange of combs of brood and honey between infected and healthy hives. In order to reduce

78 Western Australian Beekeepers' Association, Submission no. 32, pp. 13–14.

79 NSW Apiarists' Association, Submission no. 65, p. 2.

> the spread of the disease, beekeepers must be vigilant in testing for the disease in their hives.
>
> Control of AFB is regulated in all states and territories with each state having its own legislation. Use of OTC to control the disease is not permitted except in Tasmania. Indiscriminate use of OTC for treating EFB can suppress symptoms of AFB and resistance may be built up to this antibiotic. A contamination of any honey with OTC could severely damage the industry's image and result in reduced honey consumption.[80]

4.84 AHBIC noted that under current state-based arrangements AFB was difficult to control, but that a national approach had failed for lack of commitment form governments:

> Even though AFB is a notifiable disease, it is very difficult for state agencies to enforce compliance of their state legislation due to the migratory nature of commercial beekeeping operations, the very large number of small hobby beekeepers and the limited and, in some cases, decreasing resources of state agencies devoted to beekeeping inspection activities. The Australian Capital Territory has no apiary inspection officers and some states are scaling back their inspection services. In some states, general stock inspectors are now required to take up the task of apiary inspections.
>
> Despite all measures to control the disease, evidence suggests that it continues to spread, although to a degree, the reported increase in occurrences could be due to better detection methods. A report on a national approach to management and control of AFB has already been prepared and state agencies are focused primarily on control of this disease. AHA has also prepared a proposal for a nationally coordinated program for the improved management and control of AFB (AHA 2003–04). It is proposed that AHA would manage the implementation of this national program. Its key elements are:
>
> - enhanced research and development;
> - review of current state legislation and control mechanisms and uniform management techniques;
> - better quality assurance and biosecurity systems by having beekeepers formally adopt biosecurity measures;
> - national monitoring and surveillance and reporting program; and
> - a communication and awareness program.

80 AHBIC, Submission no. 56, pp. 36–7.

> Due to the serious threat of AFB, the industry proposed that a national approach to management and control of AFB should be funded through agreement between industry, state/territory governments and the Australian government. Unfortunately this proposal was dropped due to the government's unwillingness to commit resources to the plan. However the industry believes a program of this type is essential for an efficient and effective approach to controlling AFB.[81]

4.85 In their submissions, the Central Victorian Apiarists Association and Mrs Papworth highlighted the success of Victoria's AFB Smart program in controlling the disease. Mrs Papworth recommended this as a national model for compulsory testing and control of AFB; while the CVAA urged the continuation of government funding and commitment to maintain the program.[82]

4.86 In its submission, Capilano Honey Limited stated:

> The State and Territory Government control of AFB is a key to ensuring the disease is managed and that the temptation for widespread antibiotic use in the industry is not required. This is a key competitive advantage for Australian honey.
>
> A national approach to the management and control of AFB, as has been proposed by Animal Health Australia (AHA), is considered appropriate and likely to better AFB control.[83]

4.87 Small Hive Beetle and wax moth also impose significant control costs on industry and require chemical control. In its submission, AHBIC noted:

> Although wax moth does not pose as much a threat to the industry as some pests, the control cost is still significant. Similarly, the control of small hive beetle imposes a significant cost on the industry but in this case the problem is still growing so the costs could become quite large.[84]

4.88 Small Hive Beetle arrived in Australia in 2000 and has spread rapidly in New South Wales and Queensland. As reported in the submission of the Australian Queen Bee Breeders Association, the impact of SHB can be significant, it's control very expensive, and the search for solutions requires more funding:

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81 AHBIC, Submission no. 56, p. 37.

82 Central Victorian Apiarists Association, Submission no. 22, p. 3; Mrs Elwyne Papworth, Submission no. 74, pp. 5–6.

83 Capilano Honey Limited, Submission no. 55, p. 4.

84 AHBIC, Submission no. 56, p. 35.

> This predator is very difficult to control. Left unchecked it can destroy strong colonies in a matter of days. By the time the adult beetle lays its eggs, they hatch (2-3 days), the larvae quickly go about destroying the brood, wax and defecating in the honey. The adult bees are unable to defend their colony and abscond into the environment. All the beekeeper is left with are boxes of slimy muck. These can be cleaned with a pressure cleaner before the beekeeper can recolonise the boxes.
>
> This was a breach of quarantine and after the initial surveillance the pest was declared endemic. Industry was promised by government $'s to assist beekeepers to live with and manage the pest. To date very little research has been done & besides the government matching $ for $ assistance through RIRDC industry finds itself trying to solve a multi million $ problem with less than 2 men's salary. What happened to the promise?[85]

4.89 The Australian Queen Bee Breeders Association urged a tax deduction on the purchase of cold room equipment as one way of controlling SHB:

> Industry sought assistance for a tax benefit of 100–150% deduction for cold room installation and was told to hire them. That is okay if cold rooms are required for a short time. With SHB cold rooms are a necessary not a luxury. Also, beekeepers, being primary producers, have fluctuating incomes especially in the current drought conditions and to be able to receive a full tax deduction for the cost, in one year, would assist greatly.[86]

4.90 Aside from the costs of the pests and diseases themselves, and the control costs, endemic diseases cause other problems for the industry. One of the major stumbling blocks to the movement of queen bees and packaged bees, particularly for export, is endemic pests and diseases. In its submission, the Department of Agriculture and Water, Western Australia, stated:

> Most countries to which bees are sent for pollination purposes are not concerned about the existence of the diseases present in apiaries in Australia. For example, the United States will accept bees from American foulbrood (AFB) affected hives, as long as this is advised in export documents. This is so that bees can be managed appropriately on arrival. However, the export process is unnecessarily complicated by the need to trans-ship at major

85 Australian Queen Bee Breeders Association, Submission no. 60, p. 2.

86 Australian Queen Bee Breeders Association, Submission no. 60, p. 2.

> airports. In particular, a container of bees from WA destined for the United States may require change of aircraft at Melbourne or Sydney. However, evidence of AFB in the exporting hives prevents this trans-shipment, due to state quarantine requirements. The risks posed by trans-shipping are very small (probably insignificant) and legislation needs to be amended to facilitate this trade.[87]

4.91 Tasmanian beekeepers face similar problems because of Braula Fly, which is endemic to Tasmania but absent from the mainland. In its submission, the Tasmanian Beekeepers' Association stated:

> There are also problems with the international trade of bees. Tasmanian bee keepers are in the ideal position to take advantage of and value-add through the growing market for packaged bees in both USA and EU. The package bee industry has the potential income of around $100 per hive or approximately $2 million dollars per annum for the State. However due to restrictions placed on the movement of Tasmanian bees due to the Braula fly the bees can not be transhipped interstate prior to transport overseas.[88]

4.92 In a supplementary submission, the Tasmanian Department of Primary Industries and Water informed the committee:

> With regard to the export of package bees from Tasmania, I have spoken to the apiary Inspectors in Victoria and NSW about the problem of having to transit through Sydney or Melbourne. Their concern seems to be that regardless of how the bees are packed at some stage during transhipment from domestic flights to international flights someone will accidentally damage the container and allow bees to escape. Once the bees have escaped it would be impossible in their view to kill or recapture them.
>
> The experience with Chalkbrood and Small Hive Beetle on the mainland has been that once a disease or pest gets into the bees it will be spread around the country by migrating beekeepers and they fear the same could happen with Braula, they have never been able to successfully quarantine areas.
>
> I have suggested that one approach could be to pack the bees into an air freight container in Tasmania. This would be much less likely to be damaged to the extent that bees would escape. Some

87 Department of Agriculture and Food, Western Australia, Submission no. 24, p. 5.

88 Tasmanian Beekeepers' Association, Submission no. 63, p. 11.

> airfreight containers (AV series) used for domestic movements can also be used for international freight. Victorian and NSW quarantine inspectors will consider any proposals but they will take a very risk averse approach.[89]

Borders

4.93 Another significant issue confronting the honey bee industry is cross border regulation and control, generally in response to endemic disease management, a critical issue for an industry that is migratory in nature. In his submission, Mr Michael Leahy, a beekeeper from the border region of New South Wales and Victoria, informed the committee of his experience with restrictions on the movement of hives following the outbreak of Small Hive Beetle:

> I wish to make a comment on current problems with the movement of bees across state boundaries.
>
> In 2005 I shifted bees to the south coast of NSW on to a spotted gum honey flow. I obtained the necessary health certificate to shift bees back to almonds in Victoria…In 2003 there had been an outbreak of small hive beetle in NSW around Sydney/Richmond, and later in Queensland due to bees being shifted to Queensland from this area. It was suspected that the pest came to Australia during the 2000 Olympics, had bred for three years approx. and after an initial response was deemed not possible to contain and therefore deemed to be endemic to Australia. This was agreed to by AHBIC. All states are members of this body through FCAAA [Federal Council of Australian Apiarists' Associations] so you would expect that to be the end of the issue. Come conference in 2005 (June) there was a concerted push by individuals within the VAA, included in this the DPI Victoria to exclude all bees coming from the NSW South Coast from entering Victoria. All the science available on the pest said that the pest would multiply in humid wet conditions, but would not do so for the most part inland because the window of opportunity to breed would not be available. Nobody wanted to accept the science. This science has since been proven correct as two years later we still do not have an issue in 2007 inland.
>
> The position in Victoria was that I could not come to Victoria to the almonds but Victorian beekeepers could after the almonds come to

89 Tasmanian Department of Primary Industries and Water, Submission no. 91, p. 1.

> NSW and sit their bees beside mine to work a honey flow. When you consider the pest can fly up to 18 kms non stop at a time then there is a major problem in the logic of the industry leaders.[90]

4.94 Mr Trevor Monson, Australia's biggest pollination contractor, urged the removal of border restrictions, 'especially in the Eastern States, enabling one Health Certificate to allow beehives free movement between the States'.[91] In evidence before the committee, he stated:

> In Australia I would take away the borders in the eastern states. I would leave Tasmania and Western Australia separate. A health certificate from Queensland that is applicable for me to have bees in Victoria would be a great help to me as a pollination coordinator, so that I do not have to have three certificates to get across three states.[92]

4.95 Mr Adrian Jones, a Queensland beekeeper, wrote in his submission that:

> Different states have different access laws. The time has come to abolish different rules in different states. For beekeeping alone, state laws impact on registration as a beekeeper, access to public land, recognition of the worth of the industry, Workplace Health and Safety Legislation, Transport rules and requirements, and I believe but am not certain, regulations concerning employee's rights.
>
> The EC [EU] has been working to remove boundaries between countries on the same continent. We are unable to remove boundaries between STATES in the same country.[93]

4.96 In a similar vein, the South Australian Apiarists' Association argued for the removal of border restrictions, dividing 'Australia into 4 main quarantine regions being Tasmania, Kangaroo Island, Western Australia, Eastern Seaboard including South Australia'.[94]

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90 Mr Michael Leahy, Submission no. 61, pp. 4–5.

91 Mr Trevor Monson, Submission no. 86, p. 1.

92 Mr Trevor Monson, *Transcript of Evidence*, 8 August 2007, p. 18.

93 Mr Adrian Jones, Submission no. 81, p. 2.

94 South Australian Apiarists' Association, Submission no. 7, p. 3.

Committee conclusions

4.97 The committee notes that the Australian honey bee industry faces a number of significant biosecurity challenges. The Varroa mite (*Varroa destructor*) has the capacity to annihilate feral bee populations and place severe pressure upon managed bee populations. Scientists who have studied the progress of this pest believe that it is only a matter of time before it arrives in Australia and devastates the honey bee population. This has significant implications for industries relying on honey bees for crop pollination. More over there are a number of other significant pest and disease threats facing the industry which must be addressed and managed.

4.98 Addressing the biosecurity threats facing the honey bee industry will require a range of actions. There must be a commitment by government and industry to border security. That there are significant shortcomings in this area was revealed by the incursion of Small Hive Beetle, which is now endemic to Australia, and the incursion of *Apis cerana* in Cairns. Border security must be strengthened. This requires:

- Expansion of the National Sentinel Hive Program;
- Use of bait hives as part of NSHP;
- Pre-registration of chemicals necessary to respond to and manage a Varroa incursion, thereby reducing response times;
- Better education of those charged with border protection;
- Improved diagnostic capacity for pests and diseases;
- The establishment of national diagnostic protocols to ensure that widely known and consistent procedures are followed in the event of an incursion or suspected incursion;
- The establishment of a national integrated pest and disease management protocol, to ensure that bees do not fall between the gap between animal health and plant heath emergency response arrangements, and that any emergency response is adequately funded;
- Establishment of a new honey bee quarantine centre, preferably as part of a research facility; and
- Establishment of a comprehensive biosecurity research program to ensure that Australia is ready should an incursion of Varroa or some other pest and disease occur.

4.99 The committee is of the view that the need to maintain and enhance the National Sentinel Hive Program is critical. The need to expand the program to achieve greater geographical coverage, use bait hives as well as sentinel hives, and ultimately to make every beekeeper a sentinel is vital to border security. This requires significantly increased organisation and funding, and a shift to payment for services by beekeepers involved in the program. The committee notes that the current funding for the NSHP, the bulk of which is in-kind contributions from industry, is manifestly inadequate.

4.100 The committee also understands the need for pre-border security—the capacity to monitor the progress of bee pests and diseases in the nations to our immediate north, particularly Papua New Guinea. The ability to identify potential incursions before they occur will save time and money in the long run.

Recommendation 8

4.101 **The committee recommends that the Australian Government maintain and enhance the National Sentinel Hive Program with a view to ensuring that:**

- **all major ports are covered by sentinel and bait hives;**
- **all beekeepers are brought under the program, with priority given to those operating in the vicinity of port facilities;**
- **arrangements are made for an effective program of pre-border security; and**
- **government provides funding adequate to achieving the above objectives.**

Recommendation 9

4.102 **The committee recommends that the Minister for Agriculture, Fisheries and Forestry request that the Australian Pesticides and Veterinary Medicines Authority fast track the pre-registration of pesticides and other chemicals necessary to combat a Varroa incursion.**

Recommendation 10

4.103 **The committee recommends that the Australian Government improve the nation's incursion response capacity by providing for:**

- **Better education of those charged with border protection;**
- **Improved diagnostic capacity for pests and diseases;**
- **The establishment of national diagnostic protocols;**
- **The establishment of a national integrated pest and disease management protocol; and**
- **The establishment of a comprehensive biosecurity research program for the honey bee and pollination dependent industries.**

4.104 It is also the committee's view that the need for a new honey bee quarantine facility is clear and urgent. Moreover, given the small size of the honey bee industry and its importance to agriculture, funding for such a facility must come from the Australian Government.

4.105 There are clear advantages to establishing the new honey bee quarantine facility in proximity to the existing facility, in that current management arrangements would stay in place. This would reduce the time needed to commission the new facility. Furthermore, the facility would remain close to the main entry point for bee imports—Sydney Airport. Locating the new honey bee quarantine facility at the Elizabeth Macarthur Agricultural Institute, Camden, would appear an ideal solution.

4.106 The committee also supports placing the new quarantine facility within geographical proximity to centres for honey bee research, and to integrate it organisationally within a national centre for honey bee research (see Chapter 5).

4.107 The committee also urges the rapid completion of the import risk analysis for drone semen.

Recommendation 11

4.108 **The Committee recommends that the Minister for Agriculture, Fisheries and Forestry establish a new honey bee quarantine facility as a matter of urgency, this facility to be commissioned prior to the closure of the current facility at Eastern Creek, and that:**

- **This facility is integrated into a national honey bee and pollination research centre;**
- **This facility have a containment laboratory for research on honeybee genomics and biotechnology;**
- **The Minister for Agriculture, Fisheries and Forestry enter into immediate negotiations with his New South Wales counterpart to establish the new honey bee quarantine facility at the Elizabeth Macarthur Agricultural Institute, Camden, or some other suitable location.**

Recommendation 12

4.109 **The Committee recommends that the Minister for Agriculture, Fisheries and Forestry direct Biosecurity Australia to complete the import risk analysis for drone semen by the end of 2008.**

4.110 Several endemic pests and diseases also pose management challenges for the honey bee industry in Australia, mainly in terms of maintaining effective control while avoiding chemical contamination of honey bee products. The main threats include Small Hive Beetle, American Foulbrood, and European Foulbrood.

4.111 Management of these pests, and any exotic pests that become naturalised, requires national coordination. There should be a national endemic pests and diseases management program to complement work on exotic pets and diseases.

4.112 The evidence presented to the committee indicates that a State by State approach to endemic pest and disease management is not effective and imposes considerable burdens upon the honey bee industry—particularly biosecurity regions based upon State borders. The committee supports the idea of creating biosecurity regions based on natural boundaries, i.e.:

- Eastern Australia, including New South Wales, Victoria, Queensland, Australian Capital Territory and South Australia;
- Tasmania;
- Western Australia;
- Northern Territory; and
- Kangaroo Island.

4.113 The committee is also of the opinion that a nationally consistent approach to beekeeper and hive registration, and the registration of apiary sites, is an essential ingredient to biosecurity. It is important that those charged with responsibility for biosecurity can find and identify hives and their owners.

4.114 Finally, the committee supports tax deductibility for the purchase of cold rooms for the management of Small Hive Beetle.

Recommendation 13

4.115 **The Committee recommends that the Australian Government, in conjunction with State and Territory governments, establish and fund a national endemic bee pest and diseases control program.**

Recommendation 14

4.116 **The Committee recommends that the Australian Government, in conjunction with State and Territory governments, establish bee biosecurity regions based on natural boundaries, being:**

- **Eastern Australia, including New South Wales, Victoria, Queensland, Australian Capital Territory and South Australia;**
- **Tasmania;**
- **Western Australia;**
- **Northern Territory; and**
- **Kangaroo Island.**

Recommendation 15

4.117 **The Committee recommends that the Australian Government, in conjunction with State and Territory governments, establish a national system of registration for beekeepers, bee hives and apiary sites.**

4.118 In highlighting the objectives and recommendations set out above, the committee notes the estimates of spending identified by CSIRO as appropriate to respond to the threat of Varroa—$21–$50 million per annum. The committee believes that, given what is at stake, a research and border protection effort of $50 million per annum in support of the honey bee industry and pollination dependent industries is a reasonable expectation, and that the Australian Government should take the lead in organising and funding this effort.

Recommendation 16

4.119 **The Committee recommends that the Australian Government commit $50 million per annum in pursuit of biosecurity measures and research in support of the Australian honey bee industry and pollination dependent industries.**