The Senate

# Rural Affairs and Transport References Committee

## Science underpinning the inability to eradicate the Asian honey bee

Interim report

April 2011

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# Chapter 1

# Introduction

## Inquiry terms of reference

1.1 On 22 March 2011, the Senate referred the following matter to the Senate Rural Affairs and Transport References Committee for inquiry and report by 8 April 2011:

(a) the science underpinning the technical assumption that *Apis cerana*, the Asian honey bee, cannot be eradicated in Australia;

(b) the science underpinning the assumption that the Asian honey bee will not spread throughout Australia;

(c) the science relating to the impacts of the spread of the Asian honey bee on biodiversity, pollination and the European honey bee; and

(d) the cost benefit of eradication of the Asian honey bee.[1]

## Conduct of the inquiry

1.2 Notice of the inquiry was posted on the committee's website. The committee also advertised the inquiry in *The Australian* on Wednesday, 30 March 2011 and wrote to key stakeholder groups, organisations and individuals to invite submissions.

1.3 The committee received fifty-three submissions, including three supplementary submissions, which are listed at Appendix 1.

1.4 The committee held two public hearings in Canberra, on 24 and 31 March 2011. A list of witnesses who appeared at the hearing is at Appendix 2. Copies of the *Hansard* transcript are available on the internet at http://aph.gov.au/hansard.

## Background to the inquiry

### *Process for attempting to eradicate the Asian honey bee*

1.5 The attempt to eradicate the Asian honey bee following its incursion into Australia has been through existing processes for dealing with emergency plant pests.

1.6 The eradication of emergency plant pest incursions which pose a potential threat to Australia's agricultural industries is conducted in accordance with a coordinated national response plan, the National Emergency Preparedness and Response Plan (the response plan). The response plan specifies the procedures for

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1 The inquiry's terms of reference and other information are available on the committee's website at http://www.aph.gov.au/Senate/committee/rat_ctte/bees_2011/tor.htm.

handling emergency plant pest incursions at the national, state, territory and district levels.

1.7 Upon the detection of an emergency plant pest and declaration of an outbreak, the Consultative Committee on Emergency Plant Pests (CCEPP) meets to determine the feasibility of eradication. The CCEPP is Australia's key technical body for co-ordinating national responses to emergency pest incursions and assessing the technical feasibility for their eradicationo. The CCEPP makes recommendations to the National Management Group (NMG), which is the decision making body that determines whether to proceed with an eradication campaign and, if so, approves the national cost sharing arrangements to fund the campaign.[2]

1.8 Funding for eradication campaigns is allocated under the Emergency Plant Pest Response Deed (EPPRD), a formal cost sharing agreement covering industry and government funding arrangements for the eradication of emergency plant pests. Under the EPPRD, government and plant industry signatories share the costs of eradicating emergency plant pests based on an assessment of the relative private and public benefits of eradication of the pest (see Table 1 below).

**Table 1 – EPPRD cost sharing categories**

| **Category of disease** | **Cost share** |
|---|---|
| Category 1: Very high public benefits | 100% public funding |
| Category 2: High public benefits | 80% public funding<br>20 % private funding |
| Category 3: Moderate public benefits | 50% public funding<br>50% private funding |
| Category 4: Mostly if not wholly private benefits | 20% public funding<br>80% private funding |

### *Asian honey bee incursion at Cairns, May 2007*

1.9 In May 2007, a nest of Asian honey bees was detected within Australia's quarantine barrier in the mast of a fishing boat in dry dock in Cairns. Since that first detection, more than 350 colonies of the bee have been detected and destroyed in the Cairns region.

2 The NMG is chaired by the Commonwealth and comprises chief executive officers from the state and territory departments of agriculture and primary industries, as well as representatives of the Australian Honey Bee Industry Council and Plant Health Australia.

1.10 The Asian honey bee is an invasive species which adversely affects populations of European honey bees by competing for floral resources, robbing managed hives and transmitting disease. The strain of Asian honey bee found in the Cairns region is the Java strain, which is common in Asia, particularly in Indonesia and Papua New Guinea where it was introduced in the 1970s and 1980s. Since 1995, 10 swarms of Asian honey bees, mostly originating from the island of Papua New Guinea, have been intercepted and destroyed on vessels at Australian seaports. An incursion in June 1998 at Darwin was successfully eradicated.

1.11 The Asian honey bee is also a natural host for the *Varroa* mite, a parasite that attacks developing bee larvae or adult bees and which has been connected to colony collapse disorder. Because it is a vector for the *Varroa* mite, the Asian honey bee represents a significant threat to Australian beekeeping industries and industries that depend on managed honey bees for pollination.

1.12 The Department of agriculture, Fisheries and Forestry (the department) website describes the following effects of the *Varroa* mite:

> Attack by varroa mite weakens bees, shortens their lives, or causes death from virus infections that would otherwise cause little harm. In severely attacked colonies bees may have stunted wings, missing legs or other deformities. Unless urgent action is taken, the vitality of bees in the colony declines until all are dead.[3]

1.13 The department website also outlines a number of very significant risks to Australia should the *Varroa* mite establish itself through the Asian honey bee vector:

> The most obvious threat is to Australia's bee and honey industries. The Varroa mite would decimate Australia's feral bee population and cause a rapid increase in demand for pollination services. It is estimated that Varroa mite could cost Australian plant industries between $21.3 million and $50.3 million per year over thirty years…Apart from reduced honey production, apiarists would need to repeatedly treat their hives to ensure their survival.
>
> However, the major part of the cost of Varroa would probably be felt not by the honeybee industry but by other industries with crops that rely on honeybees for pollination, including almonds, avocadoes, cotton, stone fruits, pome fruit, melons and pumpkins.
>
> Varroa mites were discovered in New Zealand in 2000 and have already had a major economic impact, with significant control costs and losses of bees, hives, honey production, crop yields and export revenue.[4]

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3 Department of Agriculture, Fisheries and Forestry, 'Varroa mite', http://www.daff.gov.au/animal-plant-health/pests-diseases-weeds/animal/varroa-mite, accessed 7 April 2011.

4 Department of Agriculture, Fisheries and Forestry, 'Varroa mite', http://www.daff.gov.au/animal-plant-health/pests-diseases-weeds/animal/varroa-mite, accessed 7 April 2011.

### *Initial response*

1.14 The initial response following the detection of Asian honey bees in Cairns in May 2007 was managed under the provisions of the Emergency Animal Disease Response Agreement (EADRA), which is the equivalent set of arrangements to the EPPRD for emergency animal diseases. The incursion was managed under this agreement on the basis that the bee could act as a carrier of *Varroa* and other mites.[5] This approach was necessary because the Asian honey bee was not listed as a pest species and therefore was not, of itself, covered by any existing cost sharing arrangements under the EADRA or the EPPRD.[6]

1.15 In November 2009, the Primary Industries Ministerial Council (PIMC) agreed that the Asian honey bee eradication program should be managed in accordance with the EPPRD. This decision was based on the potential impact of the bee as a plant pest rather than an animal disease; and took into consideration parties that may be impacted by an incursion of a pest bee species, such as pollination-reliant industries.[7] Accordingly, in July 2009 the Asian honey bee was included as a 'pest bee' in, and its management transitioned to, the EPPRD.

1.16 The Asian honey bee is currently classed as a Category 2 pest, which means that the cost of eradication has been split 80/20 to public and private funding respectively (see Table 1 above). Activities to eradicate the Asian honey bee in the Cairns region to date have accordingly been funded by the Australian Government, state and territory governments and the Australian Honey Bee Industry Council (AHBIC).

1.17 The focus of this report is on the processes undertaken and decisions made under the EPPRD.

## Acknowledgement

1.18 The committee thanks those organisations and individuals who made submissions and gave evidence at the public hearing.

5 Ms Nicola Hinder, Department of Agriculture, Fisheries and Forestry, *Committee Hansard*, 31 March 2011, p. 4; and Department of Agriculture, Fisheries and Forestry, *Answers to questions taken on notice*, 24 March 2011, p. 2.

6 Ms Nicola Hinder, Department of Agriculture, Fisheries and Forestry, *Committee Hansard*, 31 March 2011, p. 4; and Department of Agriculture, Fisheries and Forestry, *Answers to questions taken on notice*, 24 March 2011, p. 2.

7 Department of Agriculture, Fisheries and Forestry, *Answers to questions taken on notice*, 24 March 2011, p. 2.

## Note on references

1.19 References in this report to individual submissions are to those submissions as received by the committee, not to a bound volume. References to the committee *Hansard* are to the proof *Hansard*; page numbers may vary between the proof and the official (final) *Hansard* transcript.

# Chapter 2

# The science underpinning the decision that the Asian honey bee is not eradicable

2.1 The central issue before the committee in this inquiry was the scientific information underpinning the conclusion or decision that the Asian honey bee (*Apis cerana*), following its incursion into Australia in 2007, is now an ineradicable pest species.

## Outcomes of the Consultative Committee on Emergency Plant Pests and the National Management Group meetings

2.2 As outlined in Chapter 1, the National Management Group (NMG) had primary responsibility for decision-making in relation to the response to the Asian honey bee incursion, and in particular for decisions concerning an eradication campaign. The NMG was informed by the Consultative Committee on Emergency Plant Pests (CCEPP), the technical committee that makes recommendations to the NMG on incursion management responses. The committee's focus was therefore on the proceedings of, and decisions arising from, the two meetings of the CCEPP, on 29 October 2010 and 25 January 2011.

### *CCEPP meeting outcome*

*Scope of the meeting*

2.3 Representatives from the Department of Agriculture, Fisheries and Forestry (the department) advised the committee that the CCEPP deliberation was a purely technical exercise concerned only with the narrow question of whether eradication was technically feasible:

> The question that the consultative committee considers is the technical feasibility of eradication, not the long term economic impact of not eradicating. It looks at what technology is available and what scientific approaches are available, whether it is spraying, harvesting, burning – all sorts of different things—to eradicate the pest. It does not look at the long-term economic implications for not eradicating. It looks at: can this pest be eradicated?[1]

2.4 The committee notes, however, that the Australian Emergency Plant Pest Response Plan (the response plan) indicates that such factors as the costs and overall benefits of eradication are relevant to this technical question. The response plan states:

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1 Ms Rona Mellor, Department of Agriculture, Fisheries and Forestry, *Committee Hansard*, 31 March 2011, p. 25.

> At any stage of incursion management the CCEPP may decide that eradication cannot be justified and will recommend to NMG that eradication should either not be attempted or should cease. *The costs of eradication, likelihood of success, overall benefits and technical feasibility of removing the organism from the Australian landscape are all factors here*. In cases where little information is available, the CCEPP may recommend to NMG that cost sharing commences to preserve opportunities for eradication until more information becomes available [emphasis added].[2]

2.5 Dr Denis Anderson, a Principal Research Scientist with the Commonwealth Scientific and Industrial Research Organisation (CSIRO), and a member of the CCEPP, commented that, in his view, the deliberations of the CCEPP at its October meeting had not strictly addressed the relevant technical issues in question. Dr Anderson commented:

> By the time the meeting had ended…in my opinion, the whole meeting had shifted and it was disappointing for me. It was…getting off the technical [consideration]…and getting more into a personal decision…amongst the members that were there.[3]

*Outcome*

2.6 The committee heard that, following the October 2010 and January 2011 meetings of the CCEPP, there persisted a division of views among its members regarding the eradicability of the Asian honey bee.[4] The CCEPP was unable to reach a consensus on whether the Asian honey bee should be considered ineradicable or if the eradication effort and data collection should continue for six months to enable an informed decision to be made.

2.7 Given this division of opinion, rather than present a unified recommendation to the NMG on the question of eradicability, the CCEPP instead presented the NMG with the individual positions of each of the CCEPP's members to consider.

### *NMG meeting outcome*

2.8 On 31 January 2011, the NMG met to consider the information provided by the CCEPP, and concluded that it was no longer technically feasible to eradicate the Asian honey bee from Australia. Dr Colin Grant, Executive Manager, Plant Biosecurity, who chaired the meeting, explained that:

> The CCEPP's advice to the NMG was a split piece of advice as I have indicated. The NMG's final position, having discussed all of that, split in

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2 Plant Health Australia, 'PLANT PLAN: Australian emergency plant pest response plan: Emergency preparedness and response guidelines for Australia's agricultural industries', November 2010, version 2, p. 56.

3 *Committee Hansard*, 31 March 2011, p. 7.

4 *Committee Hansard*, 31 March 2011, pp 6 and 10.

> the same way. The advice coming from the CCEPP on behalf of New South Wales, Victoria, the ACT, Tasmania, Western Australia and us, the Australian government, was that it was not eradicable, in our views. And the view of South Australia, the Northern Territory and Queensland, and of the industry sector, AHBIC, was that further work, if it were done, might allow us to make that call with more basis.[5]

## Main sources of scientific opinion and evidence

2.9 The two main sources of expert scientific advice around these meetings were reports prepared by Dr Evan Sergeant (the Sergeant report) and Dr Roger Paskin (the Paskin report).

2.10 In addition to these two reports, expert opinion was available to members of the CCEPP through the expertise of members. The Commonwealth Government was also advised by a number of 'in-house' experts with experience in relation to bees.[6]

2.11 Dr Grant confirmed that the Sergeant and Paskin reports had been central to CCEPP discussions, along with the expertise of participating members.[7] Dr Grant stated:

> What we had was experts sitting around the table, people who are experienced in eradication, supported by knowledgeable, technologically-competent people in all the jurisdictions. Their views were taken into account based on analysis of what was in front of them – some analysis provided by two parties. The end result of that was – and as I have said, there were a number of jurisdictions' views in the CCEPP and then in the national management group – a direct reflection of the two. The views of a number of them – and they were judgements – were that it was not eradicable. A number of them held the view that, if we had more work done over a six-month period, we would perhaps be able to arrive at a position where we would know whether or not it was eradicable. That extra six months work might assist us to get there. That was the position that was discussion. It was a judgement call. It was not absolute, but that was the call that was made.[8]

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5 Dr Colin Grant, Department of Agriculture, Fisheries and Forestry, *Committee Hansard*, 31 March 2011, p. 8.

6 *Committee Hansard*, 31 March 2011, p. 11.

7 Dr Colin Grant, Department of Agriculture, Fisheries and Forestry, *Committee Hansard*, 31 March 2011, p. 7.

8 Dr Colin Grant, Department of Agriculture, Fisheries and Forestry, *Committee Hansard*, 31 March 2011, p. 7.

### *The Sergeant report*

*Main analysis and conclusions*

2.12 The committee notes that the Sergeant report identified the main indicators of the potential for eradication as being:

- the number of nests and swarms detected. A decreasing number of nests and swarms detected would indicate a potential for eradication while an increasing number would indicate the reverse;
- the numbers of swarms present and detected. This is a function of the numbers of nests present (assuming that the efficiency of swarm detection remains unchanged). A decreasing number of swarms detected would therefore indicate a potential for eradication while an increasing number would indicate the reverse; and
- the age of nests detected. A decreasing average age of detected nests would indicate that an eradication program was succeeding.[9]

2.13 In relation to the number of swarms and nests detected, the Sergeant report noted that the number of 'nests and swarms detected have increased dramatically during 2010'. Critically, however, this was seen to reflect 'the substantially increased staff numbers' and introduction of more targeted and sophisticated strategies for detection since July 2010.[10]

2.14 In relation to the trends in respect of swarm detections, the Sergeant report found that there was 'currently…a downward trend since June 2010, but more data is required to confirm this trend'.[11]

2.15 In relation to the age of nests detected, the Sergeant report noted that at that time there was 'a slight downward trend in the mean age of nests detected since the beginning of 2010' (with a brief upward spike associated with increased surveillance activity).[12]

2.16 Based on the findings outlined, the Sergeant report concluded that the eradication of the Asian honey bee 'appears to be still feasible'. However, given the widespread distribution and continuing detections of older nests and isolated bees, 'successful eradication' was 'not certain'. Given the uncertainty of the available data, it recommended that the eradication program 'continue for another six months to allow a

9 Dr Evan Sergeant, 'Eradicability of Asian honeybees in Queensland', 25 October 2010, p. 5.

10 Dr Evan Sergeant, 'Eradicability of Asian honeybees in Queensland', 25 October 2010, p. 5.

11 Dr Evan Sergeant, 'Eradicability of Asian honeybees in Queensland', 25 October 2010, p. 5.

12 Dr Evan Sergeant, 'Eradicability of Asian honeybees in Queensland', 25 October 2010, p. 5.

clear trend in the…[relevant] indicators to develop, with re-evaluation of progress at that time'.[13]

*Identification of problems with available data*

2.17 Dr Anderson commented on the Sergeant report's analysis of shortcomings of the available data at that time:

> He told the committee that he had looked at the data collected about the colonies that had been detected over the period from 2007 to 2010, but when he started to do the analysis he found that most of the data was not relevant because the amount of people involved with the effort on the ground in Cairns increased in about April 2010. It increased from just a handful of people when I think there were 36 additional people, or some number like that, put on the ground. It was after that that detections of colonies started to rise very steeply, which is not unsurprising. Then he said, 'Okay, the data we had before that is not much use to us. We will have to look at the data from April through to October.' In fact, I think it was a bit shorter than that because he had to prepare the report.[14]

2.18 In light of these problems with the available data, Dr Sergeant concluded that:

> …there was not enough evidence to say for certain that there was any trend developing; whether the bee was actually on the increase or whether it was tapering off. He [therefore] recommended…that eradication be continued for another six months to collect data that would indicate some sort of trend.[15]

*Criticisms*

2.19 The committee notes that certain conclusions of the Sergeant report were criticised in the Paskin report.

2.20 Noting that the Sergeant report had identified increased detections as possibly being due to the increased detection effort around April 2010, Dr Paskin stated that such a conclusion 'begs a number of questions'. He asked:

> If surveillance has been recently improved, how many hives went undetected during the earlier period of 'poor' surveillance?...[and] If the increase in detections is due to a combination of both improved surveillance and a much increased 'visibility' of bees due to their greater numbers, is the [estimated distribution ratio] not an indication of the tip of the iceberg?[16]

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13 Dr Evan Sergeant, 'Eradicability of Asian honeybees in Queensland', 25 October 2010, p. 5.

14 *Committee Hansard*, Thursday, 24 March 2011, p. 3.

15 Dr Denis Anderson, CSIRO, *Committee Hansard*, 24 March 2011, p. 3.

16 Dr Roger Paskin, 'Asian Honeybee incursion into Queensland: eradicable?', August 2010, pp 1-2.

### *The Paskin report*

2.21 The committee notes that the Paskin report identified the following parameters as relevant to assessing the potential for eradication:

- extent of spread;
- apparent rate of multiplication (calculated from the number of new detections over a regular time interval); and
- number of detections compared to estimated number of colonies based on known reproductive rates.[17]

2.22 In relation to the extent of spread, the Paskin report noted that, at that time, the Asian honey bee had spread over an area of 'several thousand kilometres', and questioned the 'ability to maintain a consistent and effective surveillance effort over such a large area'.[18]

2.23 In relation to the apparent rate of multiplication, the Paskin report noted that the estimated dissemination ratio of the Asian honey bee indicated that it was a 'rapidly propagating', and 'out of control' epidemic.[19]

2.24 In relation to detections versus predicted colony numbers, the Paskin report noted the high reproductive rate of the Asian honey bee, and predicted that there should be 'well over a thousand colonies in existence at present', with only 'about 230 – 250 detected'. This finding indicated that 'present detection methods are only finding between 20 per cent and 30 per cent of colonies'.[20]

2.25 Based on the findings outlined, the Paskin report concluded that the Asian honey bee would 'continue to spread undetected in Queensland, and that the incursion was therefore 'not eradicable'.[21]

*Criticisms*

2.26 The committee heard a number of valid criticisms of the Paskin report.

2.27 In his submission to the inquiry, Dr Max Whitten, a former Chief of the CSIRO Division of Entomology, observed that Dr Paskin's conclusion that the 'incursion is not seen as eradicable', was unqualified and did not consider the possibility that eradication strategies could be and had been improved through the course of the eradication effort. Dr Whitten noted:

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17 Dr Roger Paskin, 'Asian Honeybee incursion into Queensland: eradicable?', August 2010, p. 1.

18 Dr Roger Paskin, 'Asian Honeybee incursion into Queensland: eradicable?', August 2010, p. 1.

19 Dr Roger Paskin, 'Asian Honeybee incursion into Queensland: eradicable?', August 2010, p. 1.

20 Dr Roger Paskin, 'Asian Honeybee incursion into Queensland: eradicable?', August 2010, pp 3-4.

21 Dr Roger Paskin, 'Asian Honeybee incursion into Queensland: eradicable?', August 2010, p. 4.

> A difficulty with Dr Paskin's analysis is that it presumes the eradication campaign is static in the sense that there is no scope for improvements in current eradication tactics; or, more importantly that new control strategies are not available. For example, it is conceivable that nest detection (by active searching and bee lining) is capable of improvements (eg enhanced skills of the field team and greater community awareness and engagement). It is also conceivable, indeed probable, that there are alternative control options for adaptation and adoption (eg bait stations).
>
> ...
>
> Bait trials using Fipronil as the active ingredient within the Cairns [restricted area] have shown promise. However, these trials were only conducted after the field workers had been laid off, and subsequent to Dr Paskin's Report.[22]

2.28 Dr Anderson also commented on the potential of improved methods of eradication:

> There has been some recent work done since the decision was made and that is the use of fipronil poisoning. We used fipronil in the Solomon Islands as a way of getting the bees out of the environment to allow people that keep managed European honey bees to survive. It worked very well—it was extremely good—and they have done two trials, I believe, recently on the ground in Cairns and they have found that it looks very promising.[23]

2.29 Dr Whitten, while noting that the Paskin report was 'not trivial' and demanded 'careful consideration', felt that its analysis was potentially flawed. This was because it considered the likely spread of the Asian honey bee as being analogous to that of a virus or bacterium, whereas the pest would be susceptible to improved baiting and detection programs.[24]

2.30 Finally, Dr Anderson noted that Dr Paskin's conclusions were not conclusive as they could only be balanced against the Sergeant report's findings. Taking into account the views of people working on the ground as part of the eradication effort, Dr Anderson commented that the Paskin report did not change his own opinion that the Asian honey bee was still eradicable:

> After I read the [Paskin] report I then said, 'Well okay, there's a view'. His view looking at one part of the data was that it was not eradicable. He only looked at one part of that data…[The Sergeant report had said] that it [is] still eradicable, but it is not certain. Also at the October meeting, we had a report from people who were on the ground in Cairns doing the actual incursion. These were government people and they informed the committee that they believed that it was eradicable. So you had these varying opinions: one saying that was definitely, no, you could not eradicate it; one saying

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22 Dr Max Whitten, *Submission 1*, p. 3.

23 *Committee Hansard*, Thursday, 24 March 2011, p. 12.

24 *Committee Hansard*, Thursday, 24 March 2011, p. 17.

> that it was still a possibility; and the other ones saying that it was eradicable. With the two scientific reports and the fact that the people on the ground were saying that they felt like they were on top of it, when I weighed that up in my mind against the possible impacts of this mite, it did not really sway my mind from the position I took from that first October meeting.
>
> **Acting Chair** – I [want]…to clarify the point you have just made: the decision you had at the October meeting was that it was still eradicable?
>
> **Dr Anderson** – It was a position I took.
>
> **Acting Chair** – But it was not certain?
>
> **Dr Anderson** – It was not certain, that is right. It was a possibility, but it was not certain, and that further data was need for you to make a certain decision.[25]

2.31 Similarly, Mr Trevor Weatherhead, from the Australian Honey Bee Industry Council (AHBIC), noted:

> From my assessment, it is one all at the moment—one for, one against—and I do not think you can really know [whether the Asian honey bee is eradicable based on the Sergeant and Paskin reports].[26]

## Likely spread and impacts of the Asian honey bee in Australia

2.32 As noted above, the response plan indicates that the overall impact of a pest incursion is a legitimate factor to consider in assessing the technical question of whether or not that pest is eradicable.

2.33 The committee heard that, based on the spread of the Asian honey bee through a range of environments in other countries, the pest will spread 'throughout most of Australia'. Dr Anderson commented:

> If the bee is not eradicated it is likely that it will spread to most parts of the country that the European honey bee has inhabited.[27]

2.34 Dr Anderson noted that the likely wide spread of the Asian honey bee in Australia would have a number of negative impacts on the 'environment and biodiversity, the beekeeping industry, human health and society, pollination and trade'.[28]

2.35 This view was supported by Dr Whitten, who commented that:

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25 Dr Denis Anderson, CSIRO, *Committee Hansard*, Thursday, 24 March 2011, p. 5.

26 *Committee Hansard*, Thursday, 24 March 2011, p. 15.

27 *Committee Hansard*, Thursday, 24 March 2011, p. 2.

28 *Committee Hansard*, Thursday, 24 March 2011, p. 2.

> …the European honey bee has probably been the most valuable insect ever imported to Australia, and by contrast the Asian bee I would regard as perhaps the worst exotic insect ever to establish in Australia…I believe no stone should be left unturned in our effort to eradicate it.[29]

## Committee view

### *Science underpinning the inability to eradicate the Asian honey bee*

2.36 The committee notes that the scientific evidence available to the CCEPP and the NMG regarding the eradicability of the Asian honey bee was contradictory, with the arguments on either side fairly balanced, and legitimate grounds for criticising the conclusions of the two main expert reports. The information on which both the Sergeant report and the Paskin report were based was problematic due to the absence of comparable data.

2.37 In view of this, and the potential spread and environmental, economic and social impacts of the Asian honey bee in Australia, the committee considers that there were no reasonable grounds on which to favour the conclusion that the pest was ineradicable, as a number of CCEPP members did at the October 2010 meeting.

2.38 Further, because certain CCEPP members came to a position (that is, that the Asian honey bee was not eradicable) based on incomplete data and evenly balanced expert opinion, the reasoning that led to that position remains opaque. The committee is concerned therefore that there is a very real possibility that CCEPP members may have been influenced by factors not strictly relevant to the eradication question. Such considerations may have included, for example, an assessment that the Asian honey bee was unlikely to spread to a particular state or jurisdiction and that that state or jurisdiction should therefore not want to contribute to an eradication effort.

2.39 Given the evidence that there is a significant possibility that the Asian honey bee will spread extensively throughout Australia, the committee is concerned that states may have supported the conclusion that the pest is ineradicable based on a mistaken view that they would not be directly impacted, and therefore should not contribute to the cost of an eradication effort.

2.40 In contrast, the committee strongly supports the view of a number of other jurisdictions and the Australian Honey Bee Industry Council, through the CCEPP, that further information must be obtained in the context of a full eradication effort in order to properly inform the decision as to whether the Asian honey bee is eradicable. This conclusion is not only a fair reflection of the state of the scientific evidence available, but also an appropriately precautionary approach given the potential impacts of the Asian honey bee.

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29 *Committee Hansard*, Thursday, 24 March 2011, p. 17.

2.41 This view is also in keeping with the requirements specified by the Australian Emergency Plant Pest Response Plan (the response plan), which states:

> In discharging its responsibilities the CCEPP must develop a rational process to assess the grounds for eradication. Quality technical advice is essential for sound risk management decision making.[30]

2.42 The requirement for the CCEPP to 'develop a rational process to assess the grounds for eradication' based on 'quality technical advice', provides further support for the committee's view that the only legitimate conclusion open to the CCEP on the evidence before it was that further information was needed on which to base its assessment.

2.43 Finally, the committee is deeply concerned that the deliberations of the CCEPP and, subsequently, the NMG did not sufficiently take into account the potential spread and environmental, economic and social impacts of the Asian honey bee in Australia. The committee notes that these broader issues should form part of assessing whether the Asian honey bee is eradicable, as these cost-benefit factors determine resource allocation which in turn influences whether eradication is technically feasible.

2.44 The committee is of the view that a decision regarding the eradicability of a given pest must, of necessity, balance questions of cost against the consequences of a failure to eradicate. This is true both as a matter of common sense and as a stated requirement of the response plan, which states:

> At any stage of incursion management the CCEPP may decide that eradication cannot be justified and will recommend to NMG that eradication should either not be attempted or should cease. *The costs of eradication, likelihood of success, overall benefits and technical feasibility of removing the organism from the Australian landscape are all factors here*. In cases where little information is available, the CCEPP may recommend to NMG that cost sharing commences to preserve opportunities for eradication until more information becomes available [emphasis added].[31]

### *Committee recommendations*

2.45 In summary, the inquiry identified a number of concerns regarding the adequacy of the scientific evidence drawn on to support the conclusion that the Asian honey bee is not eradicable. The committee also found that there is a very real possibility that the position adopted by CCEPP members reflected considerations that

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30 Plant Health Australia, 'PLANT PLAN: Australian emergency plant pest response plan: Emergency preparedness and response guidelines for Australia's agricultural industries', November 2010, version 2, p. 56.

31 Plant Health Australia, 'PLANT PLAN: Australian emergency plant pest response plan: Emergency preparedness and response guidelines for Australia's agricultural industries', November 2010, version 2, p. 56.

were not relevant to the question of whether or not the Asian honey bee is technically eradicable.

2.46 Further, the committee notes that there is significant uncertainty as to the potential extent of the spread of the Asian honey bee in Australia, and the associated environmental, economic and social costs. However, even a conservative view of these factors suggests that there would be very high public benefits from a successful eradication of the Asian honey bee. Given this, the reconsiderations of these issues should apply the precautionary principle to areas of scientific uncertainty.

2.47 In its final report, the committee intends to re-visit the issues raised in this report in the light of further evidence received and any relevant developments. The committee also intends to consider in detail the initial response to the 2007 Asian honey bee incursion, and the extent of the contribution of industries that are reliant on or related to the honey bee industry.

**Recommendation 1**

**2.48 The committee recommends that the Consultative Committee on Emergency Plant Pests (CCEPP) reconsider the question of whether the Asian honey bee is eradicable from Australia; and, following that reconsideration, make a fresh recommendation to the National Management Group (NMG) on the Asian honey bee incursion management response; the CCEPP should specifically consider this question in light of evidence relating to the potential for the insect's spread and resulting environmental, economic and social costs; the CCEPP should specifically apply the precautionary principle to areas of scientific uncertainty in its reconsideration of these issues.**

**Recommendation 2**

**2.49 The committee recommends that, on receipt of a fresh recommendation from the Consultative Committee on Emergency Plant Pests (CCEPP), the National Management Group (NMG) reconsider the question of whether it is technically feasible to eradicate the Asian honey bee from Australia; the NMG should specifically apply the precautionary principle to areas of scientific uncertainty in its reconsideration of this issue.**

**Recommendation 3**

**2.50 The committee recommends that, in the event that the full Asian honey bee eradication program is reinstated, a scientific program of data collection concerning the detection, spread and eradicability of the Asian honey bee from Australia be initiated in order to properly inform future decision making regarding this emergency plant pest.**

**Senator the Hon Bill Heffernan**
**Chair**