

# CASE STUDY:

# ASIAN HONEY BEE

UPDATED: NOVEMBER 2017

**A case study of a prematurely abandoned eradication effort.**

## Species

Asian honey bee (*Apis cerana javana*).

## Origin

Asia and some Asian Pacific islands. The Javan strain is native to Indonesia and has spread to Papua New Guinea.

## Australian occurrence

The Asian honey bee was first detected in the Cairns region in 2007 and as of October 2012 was established across 500,000 hectares in far north Queensland.<sup>1</sup> They could establish in tropical and coastal regions in many parts of Australia.<sup>2</sup>

## Potential ecological impacts

Poorly known due to limited research. Asian honey bees have a broad floral appetite and will compete for pollen and nectar with native birds, mammals and insects, and for nesting sites in tree crevices. In Asia they often exclude other pollinators by swamping flowers, and this has also been seen in north Queensland.<sup>3</sup> They are likely to suppress native pollinators, become pollen robbers, reduce seed production, and alter the genetic structure of plant populations. There is a risk that native pollinator systems will collapse 'under the pressure of these super-consumers of floral resources that perform poorly as pollinators and exclude native pollinators through resource depletion'.<sup>4</sup>

## Potential economic impacts

Asian honey bees are likely to impact on commercial beekeepers and farmers who rely on the pollination services of managed honey bees. By competing for floral resources, robbing managed hives and transmitting disease, Asian honey bees could have detrimental impacts on European honey bees, which themselves are an invasive species that harm the natural environment. Asian honey bees are also a natural host for the varroa mite,

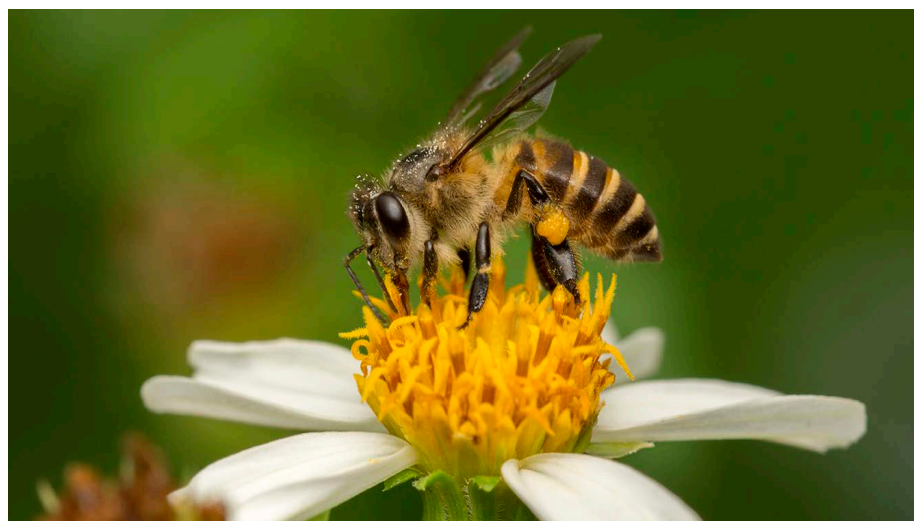


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a parasite of honey bees.<sup>5</sup> Asian honey bees carrying varroa mites were detected in Townsville in June 2016 and destroyed. Several million dollars have been spent controlling Asian honey bees.<sup>6</sup>

## Potential social impacts

Stings can cause anaphylactic reactions in susceptible people.

## Pathways

The species is thought to have arrived as a nest inside parts of a ship from Papua New Guinea or Indonesian Papua.<sup>7</sup>

## BIOSECURITY ISSUES

### Summary

This incursion was subject to a failed eradication program, regarded by many as prematurely abandoned because some states did not want to provide financial support. A senate inquiry (by the Rural Affairs and Transport Reference Committee in 2011), triggered by concerns about the impacts on commercial beekeepers and farmers that depend on managed honey bees for pollination, concluded that the response to the Asian honey bee was flawed in several respects, including that the decision to abandon the eradication effort was not well justified and failed to apply the precautionary principle.<sup>8</sup> The committee also criticised the risk assessment for Asian honey bees used

to justify the initial eradication effort as having failed to assess their potential impacts on biodiversity.

## Surveillance

The Asian honey bee has been spreading from Asia over the past 30 years. It was detected in Papua New Guinea in 1986, then in Sabai, Dauan and Boigu (Torres Strait islands) in 1993. There has been active surveillance for Asian honey bees since a single bee was detected at the Port of Brisbane in 2003/04 on a ship from Papua New Guinea. Surveillance included monitoring of vessels by AQIS at all international ports in Queensland, and collaboration by Biosecurity Queensland and AQIS to establish and monitor bait hives and log traps close to wharves that provide attractive nesting sites for exotic bee swarms.<sup>9</sup> There have been several detected incursions into Australia, most of single bees or swarms or nests that were dead or easily destroyed.<sup>10</sup>

## Emergency response

In May 2007, a nest of Asian honey bees was detected in the mast of a fishing boat in dry dock in Cairns and seven live colonies were found.<sup>11</sup> The Queensland government attempted to eradicate the bees throughout 2007 and it was thought eradication had been successful but more nests were detected in July 2008. In March 2009 Queensland





Low temperature scanning electron micrograph of varroa mite on a honey bee host.

submitted a proposal for national cost sharing, and in July 2009 the National Management Group agreed to share the costs of eradication split in the following way: 40% federal, 40% states and territories, 20% industry. However, funding ceased less than two years later due to a majority decision by the National Management Group that the bee was no longer eradicable. This was despite an independent review saying that more information was needed to determine whether eradication was possible.

There is no requirement for the National Management Group to publish reasons justifying its decisions. The process is biased towards no action – to proceed with eradication requires consensus by all deed parties but the decision to abandon it needs only a majority.

The decision to abandon was subject to an inquiry by The Rural Affairs and Transport References Committee of the Australian Senate, which concluded that due to scientific uncertainty and the potential environmental, economic and social impacts of the Asian honey bee in Australia, 'there were no reasonable grounds on which to favour the conclusion that the pest was ineradicable'.<sup>12</sup>

The committee said it was 'not convinced that the processes in place for the initial response to emergency plant and animal disease incursions are sufficiently capable

of being appropriately adapted to deal with specific cases or incursions'. They questioned whether sufficient resources were applied to the eradication effort.<sup>13</sup> They were concerned that national and technical oversight, as well as funding, for initial eradication efforts are insufficient.

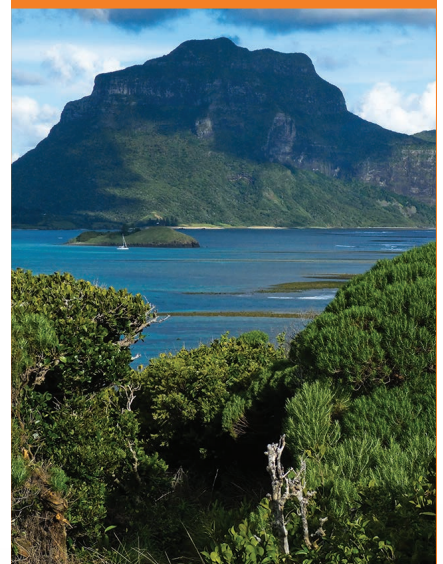
In response to the senate inquiry, the consultative committee again reviewed the technical advice, but failed to reach consensus on whether eradication was feasible. In May 2011 the National Management Group again concluded by majority that eradication should not be pursued. The federal government allocated \$2 million to support a national pilot program for working out how to manage Asian honey bees.<sup>14</sup> In July 2011, a transition to management program was started.

### Risk assessment

The Senate Rural Affairs and Transport References Committee was critical that the risk assessment for the Asian honey bee incursion 'did not include an assessment of the impact on Australia's biodiversity'.<sup>15</sup> This is symptomatic of the general lower priority accorded to environmental risks. The committee recommended that the environment department and relevant scientific organisations be consulted as soon as an incursion is reported to provide advice on the biodiversity consequences of the establishment and spread of

## OUR MISSION

To protect the environment from harmful new invasive species through prevention and early action.



Stronger biosecurity is vital to protect the highly endemic wildlife of Australia and its many special wild places. This is Lord Howe Island, where invasive species have already caused several extinctions. Photo: Robert Whyte



the pest and that a written response is made to the relevant agencies as soon as possible setting out the biodiversity consequences.<sup>16</sup> ISC considers the only way to ensure the environment is adequately considered is to meaningfully involve environmental NGOs and environment departments in decision-making.

### Precautionary principle

The Senate Rural Affairs and Transport References Committee recommended that the Consultative Committee on Emergency Plant Pests 'specifically apply the precautionary principle to areas of scientific uncertainty in its reconsideration' of whether the Asian honey bee was eradicable.<sup>17</sup> The precautionary principle is particularly important for environmental risks because often too little is known to make a fully informed decision about the likely impacts or potential for eradication.

## CHANGES NEEDED

### Eradication decisions

- Arrangements for emergency responses must ensure that environmental issues are comprehensively considered in decision-making.
- The requirement for consensus by all deed parties to proceed with national cost-shared eradications is an unacceptable barrier to sensible and precautionary decision-making, and should be replaced with majority decision-making rules.
- The precautionary principle must be applied when full scientific information is lacking about the potential impacts of a species or the feasibility of eradication.
- Environment departments and environmental experts should be involved in decision-making about responses to incursions of environmentally invasive species.

## ABOUT OUR CASE STUDIES

Our case studies illustrate the need for changes in how Australia prevents the establishment of new invasive species. They were compiled using publicly

available information at the time of the last update. We would welcome new information or updates to biosecurity response for inclusion in future updates.

## CONTACT US

- Visit [invasives.org.au](http://invasives.org.au) for more information about the Invasive Species Council and to get in touch.

## REFERENCES

Biosecurity Queensland. 2010. Response Plan for *Apis cerana* in North Queensland. Queensland Government Department of Agriculture, Fisheries and Forestry.

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## ENDNOTES

- 1 Koetz (2012).
- 2 Gross (2015).
- 3 Gross (2015).
- 4 Gross (2015).
- 5 The Senate Rural Affairs and Transport References Committee (2011).
- 6 The Senate Rural Affairs and Transport References Committee (2011).
- 7 Biosecurity Queensland (2013).
- 8 The Senate Rural Affairs and Transport

References Committee (2011).

9 Biosecurity Queensland (2010).

10 Biosecurity Queensland (2010).

11 The Senate Rural Affairs and Transport References Committee (2011), Commerford and Koetz (2013).

12 Department of Agriculture, Fisheries and Forestry (2011).

13 The Senate Rural Affairs and Transport References Committee (2011).

14 The Senate Rural Affairs and Transport References Committee (2011).

15 The Senate Rural Affairs and Transport References Committee (2011).

16 The Senate Rural Affairs and Transport References Committee (2011).

17 The Senate Rural Affairs and Transport References Committee (2011).