

TASMANIA'S ACTION PLAN FOR VARROA MITE: 2024 – 2034 (DRAFT PROPOSAL MARCH 2024)

Plan A aims to keep Tasmania free of varroa mite and is detailed in actions 1-4 of this plan.

Plan B aims to minimise the impacts of varroa mite if it establishes and is summarised at action 5.

Plan A: Keeping Tasmania free of varroa mite.

Introduction

Varroa mite (*Varroa destructor*) is regarded as the world's worst pest of honeybees. Until recently, Australia was the last country in the world free of this pest. Now that the varroa response in NSW has moved to Transition to Management (T2M), varroa is in Australia to stay. If varroa were to enter and establish in Tasmania, the impacts would be significant to commercial beekeepers, recreational beekeepers, pollination dependent horticultural and agricultural industries, exports of honey and bee related products, and home gardeners.

In commercial and recreational hives, varroa requires management using Integrated Pest Management (IPM) strategies¹ based on understanding the varroa lifecycle, rigorous monitoring, appropriate use of chemical control and implementing other control techniques such as cultural and mechanical controls. This would significantly increase costs and complexity of beekeeping, and production of honey without chemical control would be very difficult. Changes to hive management due to the presence of varroa would threaten Tasmania's natural advantage of clean, green production and has the potential to eliminate or significantly reduce organic honey production. As a result, many commercial and recreational beekeepers would likely exit the industry.

Establishment of varroa in Tasmania would also have a devastating impact on wild honeybee colonies throughout the state with the potential to reduce wild populations by around 95% as has been observed in other countries. This would practically eliminate the free pollination services provided to horticultural/agricultural industries and home gardeners from wild honeybees. The reduced free pollination services from wild European honeybees combined with a potential reduction in availability of pollination services from beekeepers will likely result in reduced availability of pollination services, increased costs of pollination services and reduced yields of many crops. This will directly threaten some pollination dependent horticultural and agricultural industries.

Varroa is not present in Tasmania but with future spread likely on the mainland, the risk to Tasmania will increase over time. With a sea border, Tasmania has a natural biosecurity advantage. However, there are still significant risks. Through a strong collaborative effort between Biosecurity Tasmania, beekeeping industries, recreational beekeepers, pollination dependent industries, the Tasmanian community and transition to management partners

¹ See current Australian IPM recommendations <https://www.dpi.nsw.gov.au/emergencies/biosecurity/current-situation/varroa-mite-emergency-response/managing-your-hives-with-varroa>

nationally (including the Commonwealth Government, jurisdictions, and industry bodies), this action plan aims to:

1. Reduce the risk of varroa mite entering, establishing and spreading in Tasmania.
2. Minimise impacts if it establishes.

Case study: The New Zealand experience

The first confirmed detection of varroa mite in New Zealand was in Auckland during April 2000. Subsequent surveillance and testing determined that varroa was present in clusters in nearby areas of the North Island (Hauraki Plains, Pukekohe and Helensville) and its presence in Auckland could have resulted from an introduction of varroa three to four years earlier.

Actions were implemented to control varroa included declaration of a controlled area, movement restrictions, delimiting surveillance and management activities. Although spread was slowed, varroa had spread to most of the North Island by 2004. In 2004, varroa was detected in Canterbury on the South Island, and local eradication was undertaken. In 2006 there was an incursion of varroa in the Nelson area of the South Island and a control zone was established. By 2009, varroa was detected in beekeeping operations outside of this control zone and movement controls on the South Island were revoked. By 2015, varroa was distributed across most of New Zealand.

The impacts of varroa to New Zealand includes increased costs of management to beekeepers, increased colony losses, reduction of free pollination services from feral bees and increased costs of pollination. An additional impact is reduced pollination of the clover component of pastures results in reduced seed set and reduced nitrogen fixation of clover in pastures leading to reduced pasture production and/or increased fertiliser costs. These impacts are not immediate and slowly kick in over 2-3 years as varroa populations build. Also contributing are the impacts of viruses. Varroa and increased virus levels, particularly deformed wing virus (DWV), lag the impacts of varroa and have a snowball effect over time in combination with varroa impacting bee colonies such as increasing colony losses in managed hives over winter.

Managing bees in New Zealand with varroa now requires significantly increased running costs and labour inputs. For example, a New Zealand company that manages hives for seed production of crops like carrots, estimates that running costs have increased by approximately \$50 per hive on inputs such as varroa treatments. Labour inputs prior to varroa involved one beekeeper managing about 800-1000 hives, but they are now operating 500-600 hives per beekeeper following varroa establishment due to the increased effort required in hive management particularly mite monitoring and controls.

These increased management costs are coupled with reduced hive performance, reduced pollination performance, reduced wild honeybee population (collapse of wild colonies occurs approximately 2 years following varroa arrival in an area) and pressure to raise pollination fees. In New Zealand, life goes on with varroa but it is a lot harder for the beekeeper and pollination communities.

Action areas

1. PREVENTION: Maintain and improve activities to reduce the risk of varroa mite entry into Tasmania.
2. DETECTION: Assess and upgrade varroa mite detection capabilities in border inspection and post-border surveillance activities.
3. RESPONSE: Build enhanced capacity to rapidly respond to varroa mite detections.
4. COMBINED ACTIONS: Develop actions that contribute to at least two of the core actions of prevention, detection, or response.
5. PLAN B: Minimise the impacts of varroa mite if it were to establish.

1. Prevention

Objective: Maintain and improve activities to reduce the risk of varroa mite entry into Tasmania.

Tasmania has a strong biosecurity system with preventative measures in place such as strong import requirements, risk assessment capability and participation in decision making at a national level. With an evolving threat level from varroa, these activities will also need to evolve.

Actions	Status	Responsibility
1.1. Review and improve import requirements, including: <ol style="list-style-type: none"> a) Move from the current General Biosecurity Direction (Emergency) to permanent import requirements that balance risk with least trade restrictive controls. b) Assess the need for and consider actions to enable safe trade in queen bees, this may reduce the risk of illegal imports. 	Ongoing <ol style="list-style-type: none"> a) planned b) under consideration nationally 	Biosecurity Tasmania, national T2M partners
1.2. Undertake risk assessments ² to guide decision making.	In progress	Biosecurity Tasmania, national T2M partners
1.3. Review varroa entry pathways into Tasmania.	Planned	Biosecurity Tasmania
1.4. Participate in Transition to Management decision making at the national level through the Consultative Committee for Emergency Plant Pests, National Management Group and Plant Health Committee (including subcommittees).	In progress	Biosecurity Tasmania, national T2M partners
1.5. Ensure/enforce compliance with import requirements and other biosecurity obligations.	In progress	Biosecurity Tasmania

² Includes rapid risk assessments (2022, 2024), CEBRA report (in progress), assessments through Subcommittee on Market Access and Trade (SMART), full Varroa Pest Risk Analysis (in progress, dependent on completion of former items).

2. Detection

Objective: Assess and upgrade varroa mite detection capabilities in border inspection and surveillance activities.

Tasmania has robust detection systems in place through border inspections and post border surveillance. As the threat levels change over time, Tasmania will need to assess these changes and upgrade our detection systems to suit.

Actions	Status	Responsibility
2.1. Review barrier inspections and consider improvements, including: <ul style="list-style-type: none"> a) Imprint detector dogs on bees to better detect bees at the border. b) Consider methods to detect bee colonies on ships and shipping containers such as trialling thermal imaging cameras. 	Ongoing <ul style="list-style-type: none"> a) Complete b) In progress 	Biosecurity Tasmania
2.2. Improve post border varroa surveillance activities, including: <ul style="list-style-type: none"> a) Develop and implement short- and long-term surveillance plans³. b) Develop and maintain a robust apiary industry and recreational beekeeper surveillance program. c) Improve the capacity for rapid reporting of surveillance results and suspect detections. d) Launch BeeTAS registration to facilitate self-reporting. e) Investigate facilitating traceability of hive movements. 	Ongoing: <ul style="list-style-type: none"> a) In progress b) For consideration c) Planned d) Complete e) Planned 	Biosecurity Tasmania, commercial and recreational beekeepers, national T2M partners
2.3. Improve diagnostics and detection methods: <ul style="list-style-type: none"> a) Maintain and build diagnostic capability for varroa mite. b) Investigate rapid methods of varroa detection (eg molecular testing, eDNA, visual recognition technology, remote sensing technology). 	Ongoing	Biosecurity Tasmania, national T2M partners
2.4. Improve the capacity of Biosecurity Tasmania internal reporting, BeeTAS and Laboratory Information Management Systems.	In progress	Biosecurity Tasmania

³ A summary of a surveillance plan will be included in the final version of this action plan as an appendix.

3. Response preparedness

Objective: Build enhanced preparedness to respond to varroa mite detections.

Tasmania has the capacity to respond to biosecurity incursions. However, the significant threat of varroa requires Biosecurity Tasmania to build a specific response capacity and capability in collaboration with commercial and recreational beekeepers, pollination dependent industries and T2M partners.

Action	Status	Responsibility
3.1. Develop a Tasmanian specific contingency plan for varroa mite.	Planned	Biosecurity Tasmania, beekeeper industry bodies, pollination dependent industry bodies
3.2. Pre-establish a list of trained Industry Liaison Officers and people trained in handling bees.	Planned	Biosecurity Tasmania
3.3. Undertake preparedness activities (eg simulation exercises).	Planned	Biosecurity Tasmania, beekeeper industry bodies, pollination dependent industry bodies, national T2M partners
3.4. Undertake a scenario analysis to pre plan different scenarios in the event of varroa detections in Tasmania.	In progress	Biosecurity Tasmania, beekeeper industry bodies, pollination dependent industry bodies
3.5. Investigate optimising traceability of hive movements.	Planned	Biosecurity Tasmania, beekeeper industry bodies

4. Combined actions

Objective: Develop actions that contribute to at least two of the core actions of prevention, detection, or response.

Actions	Status	Responsibility
4.1. Develop a communication plan incorporating: a) Increased awareness of varroa and beekeeper self-surveillance/reporting through BeeTAS b) Industry and recreational beekeeper involvement in development of strategy/action plan. c) Industry/beekeeper involvement in surveillance. d) Develop a client management information system.	In progress	Biosecurity Tasmania
4.2. Undertake stakeholder engagement including:	In progress	Biosecurity Tasmania

<ul style="list-style-type: none"> a) Create a Tasmanian Varroa Mite Task Force to advance and promote industry surveillance activities. Membership to include representatives from Biosecurity Tasmania, beekeeper industries, and pollination dependent industries (eg Fruit Growers Tasmania). b) Engagement of shipping and transport industries to educate on swarm detection and encourage reporting of swarms. c) Engagement of Australia Post and courier companies regarding live bee imports. d) Determine the best mechanisms for bringing experienced beekeepers into a response. e) Enhance stakeholder contact information management. 		
4.3. Identification of market access opportunities (domestic or export) for maintaining varroa free production (eg Queen bee exports).	Planned	Biosecurity Tasmania, beekeeper industry bodies, pollination dependent industry bodies
4.4. Investigate mechanisms to establish volunteer engagement.	Planned	Biosecurity Tasmania, beekeeper industry bodies, pollination dependent industry bodies

5. Plan B: Minimising the impact of varroa mite

In the event of varroa establishment in Tasmania, the Plan B objective is to minimise the impacts of varroa mite.

Actions	Status	Responsibility
5.1. Plan B: Action areas are based on the National Varroa Mite Transition to Management Plan , and includes the following: <ul style="list-style-type: none"> a) Building industry resilience b) Slowing the spread of varroa mite c) Future ready industries 	In progress	Biosecurity Tasmania, national T2M partners, beekeeper industry bodies, pollination dependent industry bodies (eg FGT and TasFarmers), Tasmanian Institute of Agriculture, other research organisations (eg SeedPurity), Agrigrowth