

American Foulbrood 5-Year Strategy

2017 to 2022

Version 3.7 - Consultation Draft 2 - after the first round of submissions



APICULTURE
NEW ZEALAND

American Foulbrood Eradicated by 2030



\$25,000,000 and rising

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American Foulbrood Action Plan 2017 to 2022

Outcome:

American Foulbrood eradicated from New Zealand by 2030.

Our strategy to achieve the outcome:

Make the American Foulbrood management system effective in detecting and eliminating all cases of Foulbrood. Create a culture that supports compliance and a system of enforcement effective in dealing with non-compliance. Equip all participants to play their role.

Intermediate 5-year Outcome:

Reduce the measured incidence of clinical American Foulbrood to below 0.1% (from 0.32%) by 31 December 2022.

Our strategy to achieve the intermediate outcome:

Establish industry standards that:

- A. Recognise, reward and build on exemplary American Foulbrood management practice.
- B. Recognise and affirm fully compliant American Foulbrood management practice.
- C. Support non-compliant beekeepers to become compliant.
- D. Make ongoing non-compliance untenable.

System improvements

1. Legal reform	2. Resources	3. Measurement and monitoring	4. Communications	5. Compliance	6. Training
<p>Actions:</p> <p>1.1 Revise and update the American Foulbrood National Pest Management Plan Order 1998 to be fit for New Zealand apiculture now and in to the future.</p> <p>1.2 Work with and guide the Ministry for Primary Industries to develop New Orders in Council to give legal force to the updated National Pest Management Plan and a revised Levy order.</p> <p>1.3 Work with the Ministry for Primary Industries to upgrade enforcement powers through better offence provisions and powers for authorised persons.</p>	<p>Actions:</p> <p>2.1 Future proof the Levy Order provision to deliver the money needed to reach our outcomes while fairly apportioning costs amongst beekeepers.</p> <p>2.2 Attempt to establish cost sharing arrangements with other beneficiaries that matches contribution to the benefits they receive.</p>	<p>Actions:</p> <p>3.1 Fix the imputing, interaction, and reporting processes associated with the Apiweb system and institute checking and audit procedures.</p> <p>3.2 Extend surveillance, utilising new technology and tools to strengthen and increase targeted inspection frequency.</p> <p>3.3 Invest in new science and technology development, such as qPCR spore testing for bees and honey, detector dog surveillance, and other science based opportunities.</p> <p>3.4 Develop safe handling destruction capability for plastic infected hive ware.</p> <p>3.5 Institute rapid reporting to beekeepers and their neighbours of disease incidence.</p>	<p>Actions:</p> <p>4.1 Empower all beekeepers to actively shape an effective American Foulbrood management system by creating opportunities for meaningful engagement in the change processes.</p> <p>4.2 Make communications frequent, engaging and fit for beekeepers' needs.</p> <p>4.3 The AFB NPMP Board, MPI, and their contractors will drive culture change and improvement in systems and resources.</p>	<p>Actions:</p> <p>5.1 Actively create a culture of compliance with American Foulbrood National Pest Management Plan requirements through social marketing.</p> <p>5.2 Revise compliance systems to reward compliant operators with reduced administrative burdens and recognition for good practice.</p> <p>5.3 Support non-compliant operators to improve.</p> <p>5.4 Improve enforcement systems to make non-compliance untenable.</p> <p>5.5 Seek extension of the powers of authorised persons to enforce the requirements.</p> <p>5.6 Review the Biosecurity National Foulbrood Pest Management Plan Order and the Levy Order so they are fit for purpose for the apiculture industry going forward.</p>	<p>Actions:</p> <p>6.1 Structure American Foulbrood training into all levels of apiculture training including that for: beginner beekeepers, new industry staff, refreshers for experienced beekeepers, inspection, compliance, and enforcement personnel.</p> <p>6.2 Work actively with large beekeeping businesses to ensure their staff have the necessary American Foulbrood skills and qualifications to ensure full bee products compliance is achieved.</p> <p>6.3 Reduce language barriers.</p> <p>6.4 Increase uptake of beekeepers attending AFB refresher courses.</p> <p>6.5 Increasing access so that everyone needing training is being trained.</p> <p>6.6 Ensuring training standards and specifications are consistent and being adopted.</p>

Measures: The success of this Plan will be measured by timely implementation of these actions and by reduction in the measured incidence of Foulbrood in apiaries from 0.32% in 2016 (2,409 hives of 730,093 based on self-reporting) with the number initially rising with more accurate detection.

Why we need an Action Plan

Left unchecked American Foulbrood can adversely affect the health of our honey bees, and devastate both bee populations and the bee industry in New Zealand. From a biosecurity perspective, American Foulbrood free status would make it very hard to justify honey imports into New Zealand.

Eradication of Foulbrood as a problem in New Zealand is not only possible; it is practical in the medium term. *Varroa* has eradicated a lot of feral hives that were a potential source of American Foulbrood spores, so it's a lot more realistic to plan eradicate now, than in 1998 when the American Foulbrood National Pest Management Plan was notified.

We can eradicate the clinical signs of American Foulbrood here before European Foulbrood arrives in New Zealand. With European Foulbrood here, eradication of American Foulbrood would get a lot harder, if not impossible. Given European Foulbrood is in Australia, the probability of arrival at some point is high.

Since 1998 the underlying management systems for American Foulbrood have been improved, but an outdated funding system has meant that these could not keep up with what was required. When first written, nobody envisaged hive numbers would triple and beekeeper numbers would reach 8,000. A potential opportunity to eradicate American Foulbrood was missed when attention shifted over an extended period to the challenges of *Varroa* mite management.

Parts of the American Foulbrood management system are no longer fit for purpose. The number of hives in New Zealand has nearly tripled since 1998. The value of honey exports jumped to \$317 million in 2017, a value of \$37 per kilo FOB, from just \$36 million a decade ago, and less than \$10 million in 1998. This means that the industry is now far bigger, far more complex, and far more important to New Zealand than when the American Foulbrood National Pest Management Plan was established. Over this time, new technologies have been developed that could change the management tools and beekeeper control systems for American Foulbrood management, but resource constraints and the legal/political framework (red tape) have prevented their further development and adoption.

New Zealand market access for our food products is under constant international pressure and, therefore, we need to show we have appropriate systems and controls in place. The apiary database is a critical element in the toolbox for stakeholders.

The American Foulbrood Pest Management Plan Board believes the industry should take this opportunity to link the needs relating to food security and traceability with a single national database upgrade, this view is under serious consideration by the relevant Government agencies.

Good management of American Foulbrood is now more important than ever. The value to New Zealand economy from the pollination provided by honey bees is conservatively estimated to have reached \$5,000,000,000 per annum. Markets require high levels of assurance about compliance and the quality of bee products. American Foulbrood is a potential risk that we must continually manage and strive to eradicate, particularly when our trading partners have the potential to use AFB spores as a market access regulatory tool.

Reform is timely and urgent. This Plan sets out the way forward.

Purpose

The purpose of this Strategy is to create practical steps that New Zealand beekeepers can take to eradicate American Foulbrood.

Scope

This Strategy is about management and eradication of American Foulbrood. It does not include the management of other pests, diseases, or other elements of apiculture.

Strategy

Diligently detecting and destroying infected bee colonies is sufficient to eradicate American Foulbrood.

Our strategy is to ensure that all bee colonies are exposed to detection, and that these detections are reported and acted on.

The beekeeping community is diverse. It includes the primary production segments of hobbyists, small and large scale commercial operators, and corporate enterprises, including exporters. There are also associated processing and marketing industries, those involved in administration and compliance work, and hive-ware importers/manufacturers and sales.

To lift industry standards, we propose to recognise four levels of practice (A to D)

- A. **Exemplars of good practice**, managing apiaries well beyond legal requirements, and active in supporting the success of beekeeping, including American Foulbrood control, across the sector. We will become active in recognising, rewarding, and building on their practice.
- B. **Beekeepers utilising current best practice**. These beekeepers are fully compliant with all American Foulbrood management requirements. We will recognise their good practice.
- C. **Beekeepers that are not compliant** with American Foulbrood regulations. In many cases these beekeepers do not have the skills and knowledge to fully comply. We will support these non-compliant practitioners to become compliant by providing education, information and advice.
- D. **Chronically non-compliant beekeepers**. Some **registered** beekeepers have the information to be compliant, but lack the motivation to accept their responsibilities to undertake the necessary actions. Our approach is to make continued non-compliance by these beekeepers untenable by rigorously and fairly enforcing the law. This method will also be used for beekeepers with **unregistered hives**. These beekeepers are either unaware of the requirements of the American Foulbrood regulations, or choose to ignore them. They are currently outside our management systems. We will increase surveillance to detect such operations and bring them into compliance, or shut them down.

We will assess the practice of all beekeepers to measure current compliance, and invest in **moving all into categories A or B**.

Consultation

This document is the basis of a dialogue between the American Foulbrood Pest Management Plan Board (the Board) and its levy payers, the bee keepers of New Zealand.

In December 2016 a draft of this Strategy, then called a 5-year Plan, was released and by early February 2017 420 submissions had been received. Those comments were collated and the Board formulated responses to the principal issues raised. In May 2017 the Board released the full text of the submissions, and its responses to support the dialogue.

This first stage resulted in a meeting with the Minister for Primary Industries and a closer working relationship with his Ministry. It allowed refocusing of the initial first draft 5-year Plan as an overarching Strategy and completion of the annual operational plan required under the Biosecurity Act. It has led to an understanding between the Board and the Minister that the National Pest Management Plan for American Foulbrood must be fully reviewed. This outcome forms a key foundation element for the Strategy and has allowed time lines and dependencies to be more confidently described.

This Strategy remains in draft as the dialogue needs to continue. It will be finalised, and implementation commenced following the publication of the completed proposal early 2018.

Governance and Management

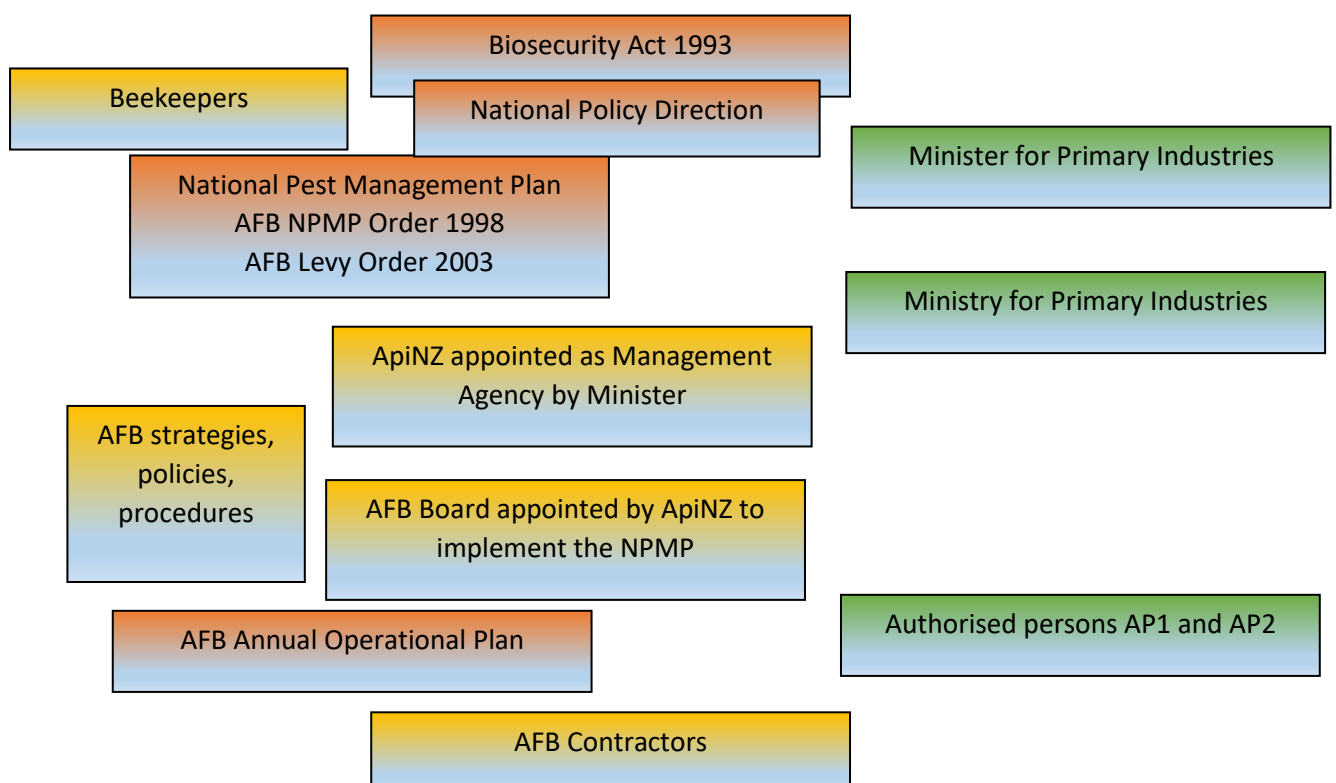
What's the issue?

Submissions on the draft 5-year Strategy, raised issues of governance and management, with a limited number of beekeepers indicating their wish for reform of management and governance arrangements.

Context

The Management Agency for the AFB NPMP is Apiculture NZ. It has delegated responsibility to the AFB Pest Management Plan Board to implement the Plan.

The relationships are illustrated in the diagram below:



There is a hierarchy. The National Policy Direction (NPD) must conform with the Act, the National Pest Management Plan with the NPD and the Act, the Management Agency and the AFB PMP Board, its operational plan and its contractors with all of these.

Equally, the Minister gains his authority from the Act, as does his Ministry, and that authority is delegated to authorised persons to enforce the requirements of the NPMP. Everyone in this chain can only act as the law empowers them to act.

ApiNZ, is the legal entity which holds Management Agency responsibility on behalf of all beekeepers in relation to the AFB NPMP. It must abide by its articles of incorporation and its rules. In acting as the Management Agency for the AFB NPMP it functions much like the Ministry for Primary Industries in having defined roles and responsibilities.

Beekeepers must comply with all directions and rules determined by AFB NPMP Policy, the Biosecurity Act, the Pest Management Plan, the Levy Order, and operate within the law.

The primary function of the AFB Pest Management Plan is to ensure compliance with the Act. How this is achieved and what it will cost is the core of this consultation document.

What needs to happen?

Given that the AFB NPMP will be reviewed in its entirety, any review of governance and delivery should follow. To begin changing the administrative structure in advance would confuse things and make it hard to have a good review. Therefore, the Board has resolved to proceed with the review and then, based on the requirements of the new Plan, ApiNZ as the Management Agency, will, if required, propose revised governance and delivery arrangements for its implementation.

Details on the review process and why it is needed are found in the next section.

Action 1 - Legal reform

Goal

Our goal is that the legal framework, regulations, and rules are up to date and fit for purpose.

What's the problem?

The bee keeping industry faces a range of legal impediments and inadequacies. Some of these directly relate to American Foulbrood Pest Management Plan management under the Biosecurity Act, and others involve related legislation and systems. Outside of the scope for this Strategy are other aspects of beekeeping such as food safety.

In terms of American Foulbrood Pest Management Plan management under the Biosecurity Act:

- The current American Foulbrood National Pest Management Plan (1998) no longer best serves the needs of a rapidly growing sector.
- The American Foulbrood National Pest Management Plan (1998) does not meet the requirements of the National Pest Management Policy Direction, the Minister has directed and ApiNZ is legally required, to review and update it in a timely manner
- The Levy Order is ineffective in funding the outcomes and the targets that have been set, eradication at present is virtually impossible at this level of funding. Non-compliance and inexperience is undermining progress, and our enforcement powers are inadequate to deal with this.

What will we do?

- 1.1 Revise and update the American Foulbrood National Pest Management Plan Order 1998 to be fit for New Zealand apiculture now and in to the future.
- 1.2 Work with and guide the Ministry for Primary Industries to develop New Orders in Council to give legal force to the updated National Pest Management Plan and a revised Levy order.
- 1.3 Work with the Ministry for Primary Industries to upgrade enforcement powers through better offence provisions and powers for authorised persons.

What will it cost us?

You will decide.

Planning and costing this work is an urgent action. Currently the American Foulbrood Pest Management Plan levy provides \$0.8 million to support to an apiculture sector worth \$550 million annually, and underpins an estimated \$5 billion each year for the agriculture and horticulture sectors through pollination.

When will this happen?

The Minister for Primary Industries has determined that the American Foulbrood National Pest Management Plan (1998) does not comply with the new legal requirements of the National Policy Direction for Pest Management. The Ministry for Primary Industries has provided guidance and advice on the specific areas of non-compliance and the requirements of the review process. The Board together with the Ministry for Primary Industries will begin the review process in the third quarter of 2017. The process will take around 18 months to complete.

Proposed steps:

1. July 2017 Apiculture New Zealand conference: summary of current position and announcement of the next consultation round for 5 Year Strategy.
2. October to December 2017 consultation round 2.
3. January 2018 submission analysis and final Strategy confirmed by Board.
4. 1 March 2018 proposed revised AFB National Pest Management Plan Order & Levy review released for submissions.
5. 15 May 2018 submissions close.
6. 30 June submissions analysis and revised Plan to Board.
7. 31 July 2018 Board consideration.
8. Goal of 30 August 2018 full revised AFB NPMP, Levy Order and all supporting documents to Minister (this may be delayed due to complexity of change)
9. 30 November 2018 Orders in Council.

Action 2 - Resources

Goal

Our goal is to have the finance, human resource, technology, knowledge, systems, and processes in place to eradicate American Foulbrood from New Zealand by 2030.

What's the problem?

- Currently we do not have the resources and key elements required to eradicate American Foulbrood from New Zealand.
- The Levy Order is our major source of income; it is insufficient and does not deliver the money needed to achieve the targets set now or eradication in the future.
- Other beneficiaries, associated industries, and Government are not contributing in proportion to the benefits they receive (noting Government represents the public and whole of New Zealand interest).

Each year beekeepers in New Zealand are burning approximately 2,000 hives and the associated pollination and crop potential at an estimated cost (give or take) of up to \$2,400 per hive, therefore American Foulbrood is costing the industry a minimum of \$24 million in direct costs over five years at current levels of operation and infection. On top of this are the current direct costs of administering and enforcing the system, \$800,000 through levies, plus the training and other costs directly paid by industry stakeholders annually meaning the real costs of Foulbrood are in the order of \$30 million over 5 years. Market impact costs have not been included.

Assuming a further doubling in hive numbers, with infection remaining at current levels, eradication of American Foulbrood in New Zealand would save the industry at least \$10 million per annum in direct costs by 2030. This is certainly an underestimate as the value of the undetected hives and the downstream costs have not been factored in.

Consider this, what would be the benefit and return on investment over 14 years if we reduced the level of AFB to 0.01% by 2022 and achieved eradication by 2030?

Being really conservative but as a realistic guide, we can project based on the 2016 prices for honey, propolis and beeswax, using an average value, but excluding any pollination value. This gives a figure give or take of \$1,000 per hive plus \$1,000 for the product it contained or would have produced in that year.

If the costs of control to achieve eradication rose to \$2 million per annum by 2022, and then dropped back to \$400,000 per annum in 2030 (to sustain qPCR surveillance of every apiary):

- By 2022 we would have made net savings from hive losses of \$2.5 million while costs of control would have risen by a total of \$2.5 million over the period meaning we had reached break even.
- By 2027 we would have made net savings from hive losses of \$15 million for a net benefit of \$7million.
- By 2031 with clinical AFB eradicated we would have a net benefit of \$31 million over the 15 years.
- If we factor in the productivity of those lost hives for 2 years each, there are savings of \$38 million at today's crop value. In total combining the costs of lost hives and lost production the net saving is approximately \$70 million over 15 years or \$4.7 million per year.

Question - would you be prepared to invest 10% of this benefit annually to eradicate AFB in New Zealand? If you say yes, the cost per hive would rise from the current \$1.00 per hive per year to between \$1.50 and \$2.00 per hive per year before dropping back to less than \$0.50 per hive.

The costs of control have only been estimated, and the true costs may turn out to be double these. This would mean that the cost per hive could rise as high as \$3.00 per year, but is very unlikely to be higher; would you be prepared to invest at this level of contribution?

Cost estimates will be refined in developing new Levy proposals based on two logical options, accelerated reduction of AFB targeting less than 0.1%, or full blown eradication goal.

PROJECTED LEVY REQUIREMENTS

Guide only (tbc)

(Hive numbers 850,000)

	2017/18	%	2018/19	%	2019/20	%	2020/21	%	2021/22	%
Management & Administration	\$404,000	36%	\$427,000	20%	\$427,000	14%	\$427,000	14%	\$427,000	14%
(Secretariat, Facilities, Legal, Plan & Levy Order update, Operational Plan, Governance)										
Training & Education	\$101,000	9%	\$265,000	13%	\$365,000	12%	\$365,000	12%	\$365,000	12%
(Funded activity over recovery)										
Contractor -ApiWeb	\$315,000	28%	\$465,000	22%	\$515,000	17%	\$515,000	17%	\$515,000	17%
(Database management, Surveillance plan)										
Compliance Activities	\$291,000	26%	\$950,000	45%	\$1,800,000	58%	\$1,800,000	58%	\$1,800,000	58%
(Fieldwork, lab testing, auditing, science)										
	\$1,111,000		\$2,107,000		\$3,107,000		\$3,107,000		\$3,107,000	

What will we do?

- 1.1 Future proof the Levy Order provision to deliver the money needed to reach our outcomes while fairly apportioning costs amongst all beekeepers.
- 1.2 Open discussions which focus on cost sharing arrangements with other beneficiaries that matches the contribution to the benefits they receive.

What will it cost us?

Apart from changing the regulations, the main cost for us in getting more funding is the time of staff and Board members. The process is critically dependent on active engagement from senior Ministry for Primary Industries staff, and this support has been assured by the Minister. A key member of the MPI Directorate now sits at the AFB PMP Board table, and an active joint working group has been established.

When will this happen?

Updating the Levy Order will be done in conjunction with the review of the National Pest Management Plan with the goal of completion by mid to late 2018 with Ministry for Primary Industries assistance. Getting the resources to reform the system, however, cannot wait that long, so cost sharing arrangements and other sources of funding will be investigated as a matter of urgency.

Proposed steps

1. August 2017 commence the Levy review as part of the NPMP review.
2. Late 2018, a new Levy Order that reflects the true costs of eradicating American Foulbrood.
3. 2019 to 2022 institute the revised levies progressively as the eradication programme ramps up.

Action 3 - Measurement and monitoring

Goal

Our goal is to have robust measurement and monitoring systems to support eradication of American Foulbrood from New Zealand by 2030.

What's the problem?

- The Apiweb system has reached a critical point, it is not compatible with all modern technology platforms, and this potentially compromises the accuracy of the data, and the interactive ability of those who wish to use the system.
- Surveillance using traditional activity is insufficient to detect unregistered hives or to sufficiently identify reporting failure to enable corrective action to be taken.
- Beekeepers have not historically been receiving timely information about infection detections.

What will we do?

- 3.1 Fix the imputing, interaction, and reporting processes associated with the Apiweb system and institute checking and audit procedures.
- 3.2 Extend surveillance, utilising new technology and tools to strengthen and increase targeted inspection frequency.
- 3.3 Invest in new science and technology development, such as qPCR spore testing for bees and honey, detector dog surveillance, and other science based opportunities.
- 3.4 Develop safe handling destruction capability for plastic infected hive ware.
- 3.5 Institute rapid reporting to beekeepers and their neighbours of disease incidence.

There is opportunity to use information technology platform to automate key elements, for example:

- New information technology systems that allow feeds to harvest declaration reports and tutin¹ test results with a cross benefit of automation to meet the traceability needs of the Ministry for Primary Industries.
- Automated GPS² location data for apiaries when they are moved.
- Reporting processes for unregistered and or abandoned apiaries.
- 6-monthly targeted follow-ups if an American Foulbrood event is recorded in an area.
- Text notification of American Foulbrood incidents to beekeepers in agreed radius.
- Email notification of American Foulbrood rob outs in an agreed radius

¹ Tutin is a poisonous plant derivative found in the New Zealand tutu plant (*Coriaria* genus, several different species). It is sometimes associated with outbreaks of toxic honey poisoning when bees feed honeydew exudate from the sap-sucking insect commonly known as the passion vine hopper, when these vine hoppers (*Scolypopa australis*) have been feeding on the sap of tutu bushes. Toxic honey is a rare event and is more likely to occur when comb honey is eaten directly from a hive that has been harvesting honeydew from passion vine hoppers feeding on tutu plants.

² Global Positioning System

Well resourced, we may consider regionally undertaking a complete audit of a geographic area over a month or six weeks, hit the area and see:

- a) How many unregistered hives exist.
- b) qPCR American Foulbrood spore test of live bee sample collection for every apiary.
- c) Detector dog follow up of “positive” apiaries finds from qPCR.
- d) Physical examination of all positive hive “finds” from dog notifications.
- e) Quarantine all “positive” beehives/colonies.
- f) See what American Foulbrood incidence we find vs what is being reported. This could then be extrapolated over the national picture to see whether the reporting was widely inaccurate.

When will this happen?

This needs to happen as soon as possible, but Apiweb³ upgrades and increased surveillance are dependent on financial resources being available. The minimum time possible, if other parties do not contribute additional resources, is to:

1. Immediately institute rapid reporting to beekeepers.
2. Commence the Apiweb rebuild by early 2018.
3. Deploy expanded surveillance once the tools have been scientifically verified and financial resources become available.

What will it cost us?

The rapid reporting to beekeepers can be instituted within current resources.

The Apiweb system rebuild, has been indicatively costed at \$300,000 to \$400,000 and could be more. The AFB NPMP andASUREQuality have jointly funded the initial Apiweb design cost and scoping development prior to going out for tender.

The expectation is that the re-build cost will be shared between the AFB NPMP, ASUREQuality and the Ministry for Primary Industries, how cost share sits has yet to be determined.

The costs of expanded surveillance require further analysis. For example, qPCR spore testing of apiaries is estimated at an initial guide cost of \$10 to \$20 per apiary. It would realistically be funded directly by the beekeeper, with results via compulsory reporting forming the basis of an epidemiological national survey of all apiaries in NZ.

Proposed steps:

1. New text and email notification procedures to institute rapid reporting to affected parties were implemented March 2017.
2. September/October 2017 complete design of the ApiWeb rebuild and confirm final cost and funding options.
3. September/October 2017 design expanded surveillance proposal for consultation with beekeepers.
4. December 2017 finalise surveillance, monitoring, and reporting design to feed into revision of the National Pest Management Plan and its costing.

³ ApiWeb displays the information held on registered beekeepers. This system displays information in both textual and geospatial formats.

5. February 2019 roll out new surveillance, monitoring and reporting programme utilising technology options including real time in field reporting.

Action 4 - Communications and engagement

Goal

Our goal is informed, involved, and committed beekeepers shaping effective American Foulbrood eradication.

What's the problem?

- There are beekeepers who are not confident in the system or its management, and who do not feel in control, and fail to take ownership of their Pest Management Plan.
- Some beekeepers do not understand the need for urgent action, and thus are not providing the support needed to reduce the incidence of American Foulbrood.
- Those that are compliant are paying for those less vigilant to be targeted.

What will we do?

- 4.1 Empower all beekeepers to actively shape an effective American Foulbrood management system by creating opportunities for meaningful engagement in the change processes.
- 4.2 Make communications frequent, engaging and fit for beekeepers' needs.
- 4.3 The AFB NPMP Board, MPI, and their contractors will drive culture change and improvement in systems and resources.

When will this happen?

Improved communication practice has commenced and will be developed further over time.

What will it cost us?

Immediate improvement can happen with current resources. The need for money to improve systems and resources will emerge as practice changes. An active learning approach with periodic review of resource requirements will be adopted.

Proposed steps:

1. October to December 2017 consultation feedback used to shape and direct the review of the National Pest Management Plan.

Action 5 - Compliance

Goal

Our immediate goal is to improve compliance with American Foulbrood National Pest Management Plan requirements.

What's the problem?

- The compliance culture has been compromised by the rapid influx of new beekeepers, increased hive numbers, the 30-day site registration rule, and the incentives created by high honey prices.
- Targeting of problem areas requires resources to deliver a stepped programme of AFB reduction and ultimately eradication.
- Enforcement is not robust enough to deter ongoing non-compliance, there are no consequences or outcomes.
- Non-compliant beekeepers may be ignorant of the requirements.
- Enforcement depends on Ministry for Primary Industries which has limited resources across many sectors and AP1 appointees who have specific warranted duties (AP1 - Authorised Persons under the Biosecurity Act with limited enforcement powers).
- AP2s (Authorised Persons under the Biosecurity Act with inspection powers) hold limited warrants and resources, physical and financial, are stretched.

What will we do?

- 5.1 Actively create a culture of compliance with American Foulbrood National Pest Management Plan requirements through social marketing.
- 5.2 Revise compliance systems to reward compliant operators with reduced administrative burdens and recognition for good practice.
- 5.3 Support non-compliant operators to improve.
- 5.4 Improve enforcement systems to make non-compliance untenable.
- 5.5 Seek extension of the powers of authorised persons to enforce the requirements.
- 5.6 Review the Biosecurity National Foulbrood Pest Management Plan Order and the Levy Order so they are fit for purpose for the apiculture industry going forward.

Overall, our approach will be to create a culture of voluntary compliance backed up by active enforcement:

- a) Move implementation of the National Pest Management Plan away from an honesty based system, to more regular audits (and possibly instant fines). This will audit all beekeepers nationally. Audits may be physical inspections, bee samples, detector dogs or future new technology.
- b) Seek approval to commence the automatic analysis of honey samples sent in for tutin and international compliance testing to look for hotspots of American Foulbrood.
- c) Look to sample bees from all apiaries annually using qPCR⁴ technology.
- d) Work with Ministry for Primary Industries to integrate harvest declaration data so we

⁴ Polymerase chain reaction (**PCR**) is a technique used in molecular biology to amplify a single copy or a few copies of a piece of DNA across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence.

know where honey yields are coming from, and that they accurately reflect beekeepers registered hives. This should be part of a wider information technology strategy. It is possible the existing registry could also be data-mined to look for beekeeper proximity and American Foulbrood incidence and see if there are any statistical correlations.

- e) Change the legal framework so that those who flagrantly breach the rules receive a binding fine and/or have their registration revoked.
- f) Seek extension of AP1 and AP2 powers.

When will this happen?

Improvement will commence immediately through better communications, a revision of targeting, and increased training opportunities. Improvements to enforcement will be made immediately where possible, but major changes can only happen after the Orders in Council have been changed. This means that substantially better enforcement can be expected from early 2019.

What will it cost us?

Immediate improvement can happen with current resources. The costs of better enforcement will need to be known for the National Pest Management Plan review, so these will need to be considered in September (notice just received from Minister) for consideration by December 2017.

Proposed steps:

1. July 2017 - 5 Year Strategy presentation at Conference.
2. October 2017 to December 2017 consultation on improvements to compliance and enforcement systems as part of National Pest Management Plan review.
3. April 2018 new systems designed and cost for new National Pest Management Plan
4. February 2019, subject to the “orders in council” review process institute new systems.

Action 6 - Training

Goal

Our goal is that every beekeeper in New Zealand apiculture knows how to comply with the American Foulbrood National Pest Management Plan requirements within the scope of their role.

What's the problem?

- Training standards and specifications, while available, are not being adopted universally across the industry.
- Not everyone who needs to be trained is getting trained.
- Insufficient uptake on refreshers.
- Issues with language barriers.

What will we do?

6.1 Structure American Foulbrood training into all levels of apiculture training including that for: beginner beekeepers, new industry staff, refreshers for experienced beekeepers, inspection, compliance, and enforcement personnel.

Support this by:

- Including AFB training into the Beekeeping Code of Ethics.
- Developing education for all those associated with beekeeping but not involved in keeping bees.
- Requiring a competency assessment for all inspection, compliance, and enforcement personnel to demonstrate a high level of skill and understanding.

6.2 Work actively with large beekeeping businesses to ensure their staff have the necessary American Foulbrood skills and qualifications to ensure full bee products compliance is achieved.

Support this by:

- Making training and the AFB education course material available to the in-house tutors under a formal agreement requiring demonstration of standards being met.

6.3 Reduce language barriers by:

- Having the test papers written by an interpreter in Filipino, Mandarin and Korean and making these readily accessible.
- Delivering the AFB training course documents and content in Filipino, Mandarin and Korean. Tutors may be contracted to the AFB PMB or employed within industry organisations. They will have attended the relevant training by the AFB Pest Management Agency.
- Having interpreters available at some courses with multilingual tests in the key geographical areas.
- Including a section on the AFB web site in Filipino, Mandarin and Korean of the options available.
- Including other languages as the need arises and the volume supports it.

6.4 Increase uptake of beekeepers attending AFB refresher courses by:

- Promoting subsidised refresher courses through the Hubs, clubs and groups to improve access.
- Promoting as ongoing professional development within beekeeping companies.
- Encouraging as many of these to be held before Spring as possible.
- Developing the current test on the AFB web site to meet the standard of a Refresher course.
- Making refreshers available on-line, thereby reducing the barriers to access for some in remote geographical areas.
- Change scenarios and content. Any long answer responses will need to be assessed by a tutor therefore this is a mid to long term option due to current resource constraints.

6.5 Increasing access so that everyone needing training is being trained by:

- Developing advertising for a variety of media types, including social media, to ensure all beekeepers are aware of the AFB website and AFB training options.
- Promoting the AFB app to assist as a diagnosis tool at every opportunity.
- Acknowledging that not everyone chooses to sit the test and apply for a DECA, but promoting attendance at a course or refresher as being very acceptable and accessible to all.
- Exploring the opportunity to combine exotic bee disease identification with the AFB training to make the most of the learning opportunity, increase biosecurity knowledge and awareness, and increase course or refresher appeal.

6.6 Ensuring training standards and specifications are consistent and being adopted by:

- Performance monitoring of trainers.
- Trialling open book tests.
- Reviewing test papers to ensure understanding and knowing how to access the information needed in identifying and dealing with AFB.
- Making training of tutors, and the AFB education course material, available to other entities that include AFB in their training with agreement on the minimum standards to be achieved.

When will this happen?

Work will start immediately and continue through to April 2018.

What will it cost us?

Some training improvement can be designed within current resources. Full implementation costs will be known once the overall package is designed. Full implementation may need to wait until resourcing issues have been resolved.

Proposed steps:

1. Late July 2017 - launch train the trainer programme with large beekeeping companies and tertiary providers.
2. October 2017 training development plan finalised and costed for National Pest Management Plan review.
3. April 2018 training delivery commences.

Risk Management

American Foulbrood management faces substantial risks over the next 5 years that could affect delivery of this Plan:

New pests and diseases

New pests may affect the viability of American Foulbrood eradication. In particular, European Foulbrood that is already in Australia.

Probability of occurrence is moderate for most pests and diseases, but high for arrival of European Foulbrood. Consequence for most pests is low to very high depending on the organism and its spread and very high for European Foulbrood.

The risk of further introductions of pests and diseases can be best reduced by stringent border control and increasing beekeeper engagement across the biosecurity system.

The Apiculture sector engaging in GIA⁵ offers an opportunity for enhancing this engagement and establishing a strong working relationship with key government agencies. If European Foulbrood enters New Zealand, then this Plan will face a serious challenge and potentially no longer be viable and will need to be reviewed.

Change in terms of trade

Probability of occurrence high. Consequence moderate to very high.

A global down turn in honey prices, or barriers to important markets, could affect the viability of the honey industry and potentially lead to the abandonment of hives creating a reservoir of disease and a loss of Levy income to manage American Foulbrood.

Conversely, higher prices could accelerate the pace of change in New Zealand, adding further pressure on American Foulbrood management systems.

In either case, building more American Foulbrood management capability will reduce the chance of these consequences becoming unmanageable. Given that the constraining factor is the financial resources available under the Levy, Government support will be sought to accelerate capability development.

Major changes in the terms of trade, will trigger a review of this Plan and its implementation.

Government Agencies

The need for adequate resourcing for key government agencies particularly MPI is critical, failure to deliver agreed outcomes around consequence and compliance would seriously undermine the intent of the 5-year Strategy.

Industry apathy

Failure of industry to engage with the AFB NPMP will also have serious implications on the ability of the NPMP to function correctly. It is important to learn from the past, but focus on the future and utilise the financial resources correctly.

⁵ Government Industry Agreements for Biosecurity Readiness and Response

Measures

The success of this Plan will be measured by

1. Timely implementation of these actions.
2. Reduction in the measured incidence of Foulbrood in apiaries.

A fully costed implementation plan will be adopted by the American Foulbrood Board which will meet quarterly to review progress. Progress reports will be made available to industry stakeholders after each meeting via the AFB NPMP website.

Measurement will move from reported incidence, to an objective and scientifically valid measurement of incidence. This will be designed in consultation with the stakeholders and implemented as soon as resources allow. In the interim reported incidence will continue to be used.

Review

The Plan will be reviewed every five years, or sooner if the American Foulbrood National Pest Management Plan changes or if measures show that our targets are not being achieved.

Appendix - Work Streams

The following work streams have been established by the American Foulbrood Board to implement this Plan. Initial membership of each working group will be extended with willing shareholders and stakeholders as the projects proceed:

Legal Reform

Lead: John Hartnell

Support members: Kim Poynter, Mike Harre (MPI)

Resources

Lead: John Hartnell

Support members: Russell Marsh

Measurement and monitoring

Lead: Gabriel Torres

Support members: Byron Taylor (AsureQuality)

Communications and Engagement

Lead: Russell Marsh

Support members: Karen Kos (CEO ApiNZ)

Compliance

Lead: Jason Ward

Support members: Tony Roper (AsureQuality), Jason Prior, Mark Goodwin

Training

Lead: Kim Poynter

Support members: Stewart Fraser (ApiNZ Education), Frank Lindsay

