



Chapter 6

Post-border biosecurity –
eradicating new plant pests



Biosecurity Queensland inspectors Roger Winton and Jodie Bocking access Torres Strait Island communities and some remote beach sites by helicopter to conduct blocking activities. Biosecurity Queensland is responsible for exotic fruit fly control using the male annihilation technique, commonly called blocking, by installing caneite blocks impregnated with a lure and insecticide. Image courtesy of Biosecurity Queensland

Post-border biosecurity – eradicating new plant pests

Even with a highly effective biosecurity system, including strong border controls, there is still a risk that new plant pests will enter the country. Passenger arrivals and imports are increasing with time and, together with natural routes of entry such as wind and water currents, the risk of exotic pest incursions is ever present.

As a result, Australia has post-border biosecurity mechanisms in place to rapidly and effectively respond to plant pests to minimise any negative impacts.

REPORTING A PLANT PEST OR DISEASE

**IF YOU SEE ANYTHING UNUSUAL,
CALL THE EXOTIC PLANT PEST HOTLINE**

1800 084 881

Reports of new plant pests and diseases are referred to state and territory departments of agriculture in the first instance. An Exotic Plant Pest Hotline has been set up for such reports. The national number, 1800 084 881, is directed to the state agency, and all calls are confidential and treated seriously.

A report to the Exotic Plant Pest Hotline triggers investigations by the state or territory agency to identify the pests or the unusual plant symptoms. Diagnosticians are tasked with identifying the pest and the state or territory agency will determine if the suspicious pest is indeed exotic. Information on Australia's diagnostic system is in Chapter 5.

PEST RESPONSE ARRANGEMENTS

In cases where a new pest is identified that warrants further action, state and territory agencies will take immediate steps as stipulated under Australia's pest response arrangements.

If a new pest is considered to primarily impact the environment or social amenity, and where the response is for the public good, the National Environmental Biosecurity Response Agreement (NEBRA) may be activated. NEBRA was signed by the Australian Government and state and territory governments in January 2012.

Serious exotic pests that would affect agricultural industries are dealt with under the provisions of the Emergency Plant Pest Response Deed (EPPRD), and the majority of this chapter focuses on those arrangements.

It may also be in the national interest to respond to an exotic weed of production, although at this time there is no formal national agreement in place to manage such detections.

The Emergency Plant Pest Response Deed

The **EPPRD** is a formal, legally binding agreement between PHA, the Australian Government, all state and territory governments, and 37 plant industry peak bodies (Industry Parties).

PHA is the custodian of the EPPRD, bestowing on the company the dual roles of helping to ensure that responses are carried out in accordance with the provisions of the agreement and of progressively improving the provisions to meet the needs of signatories (referred to as Parties).

In this chapter, terms defined under the EPPRD are identified through capitalisation. For the full list of definitions, refer to clause 1 of the EPPRD available at planthealthaustralia.com.au/epprd

This chapter uses the EPPRD definition of a Plant Pest, which is: *any species, biotype or strain of invertebrate pest or pathogen injurious to Plant Health, Unprocessed Plant Products, Bees or Fungi provided that it is discrete, identifiable and genetically stable, but excludes Genetically Modified Organisms.*

Note that the EPPRD definition of a Plant Pest does not include weeds.

DEFINITION OF AN EMERGENCY PLANT PEST

For a pest to be covered by the EPPRD, it must also be an Emergency Plant Pest (EPP) as defined in the agreement. Some Plant Pests have already been formally agreed as EPPs, through the process of categorisation, and these appear in schedule 13 of the EPPRD.

A Plant Pest is considered an EPP if it meets one of the following criteria:

- A known exotic Plant Pest that could have an adverse economic impact regionally and nationally if established in Australia.
- A variant form of an established Plant Pest which can be distinguished by appropriate investigative methods, and could have an adverse economic impact regionally and nationally if established in Australia.
- A serious Plant Pest of unknown or uncertain origin which may be an entirely new plant pest and could have an adverse economic impact regionally and nationally if established in Australia.
- A Plant Pest restricted to a defined area of Australia through the use of regulatory measures, that is not native to Australia or under a national instrument of management. The Plant Pest has been detected outside the defined area and is likely to have an adverse economic impact such that an emergency response is required to prevent an incident of regional and national importance.

The honey bee industry is also covered by the EPPRD, since a Plant Pest affecting honey bees would also affect plant industries that benefit from pollination.

DECISION MAKING UNDER THE EPPRD

The EPPRD is designed to support a rapid and effective response to the detection of an EPP, and provide certainty on the governance, decision making and funding of that response.

The EPPRD specifies Parties' roles in the decision making and operational processes of the EPP response, and how governments and Industry Parties will share the costs, based on an assessment of the relative public and private benefits of eradication.

The terms of the EPPRD ensure that no single Party is exclusively responsible for making decisions on responses to EPPs. Instead, formal committees are assembled to determine an appropriate approach to an EPP response. These committees are made up of representatives from government and Industry Parties that are Affected by the EPP. Only EPPRD signatories can take an active part in these decision-making groups.

The National Management Group (NMG) is responsible for making the key decisions on a response under the EPPRD. The group is formed when an EPP is detected and consists of representatives from PHA, the Australian Government, all state and territory governments and Industry Parties identified as affected by the EPP.

The NMG is responsible for approving a Response Plan, including the budget, if it is agreed that eradication of the EPP is technically feasible and cost-beneficial. The NMG is advised on technical matters by the Consultative Committee on Emergency Plant Pests (CCEPP).

The CCEPP is a technical committee that makes recommendations to the NMG on a response to an EPP. As with the NMG, the CCEPP is formed when an EPP, or a suspected EPP, is detected.

The CCEPP is comprised of the Australian Chief Plant Protection Officer, all state and territory Chief Plant Health Managers, and nominated representatives from the Australian Government, PHA and each Industry Party identified as Affected by the EPP.

The CCEPP is responsible for assessing the grounds for eradication and providing the technical advice needed for the NMG to make decisions. A Scientific Advisory Panel may be convened by the CCEPP, as required, to provide advice on specific technical matters.

PLANTPLAN

PLANTPLAN is the agreed technical response plan used in responding to a suspected EPP in accordance with the EPPRD. PLANTPLAN underpins the EPPRD as part of schedule 5 and is endorsed by all EPPRD Parties.

It provides nationally consistent guidelines for response procedures under the EPPRD, outlining the phases of an incursion (investigation and alert, operational, stand down and transition to management), as well as the key roles and responsibilities of industry and government Parties during each of these phases. It incorporates best practice in EPP responses and is reviewed annually to address relevant findings of Incident debriefs and simulation exercises or other observations from use of the EPPRD. PHA manages the continued development of PLANTPLAN on behalf of EPPRD Parties.

PLANTPLAN is supported by several documents that provide further detail and guidance on specific topics as required. In 2018, Parties endorsed a number of new and revised supporting documents, all of which are available at planthealthaustralia.com.au/plantplan

CATEGORISATION OF PESTS

Investment in a Response Plan by government and Industry Parties is guided by the Cost Sharing category of the EPP. Each of the four categories is based on the public versus private benefit of eradication of the EPP, as described in Table 53.

Assessments are made by a Categorisation Group comprising nominated representatives from the Affected Industry Parties, relevant technical experts nominated by government and Industry Parties, an economic expert, a standing member representing Industry Parties and an independent chair from PHA.

The Categorisation Group makes a recommendation on an EPP category to the Relevant (Affected) Parties. Relevant Parties must unanimously agree on the EPP category for it to be included in the EPPRD.

Table 53. Emergency Plant Pest categories and the associated Affected Party Cost Sharing splits

Category 1

The eradication of Category 1 EPPs would have very high public benefits and would be 100 per cent government funded. These are EPPs which, if not eradicated, would:

- cause major environmental damage to natural ecosystems; and/or
- potentially affect human health or cause a major nuisance to humans; and/or
- cause significant damage to amenity flora; and
- have relatively little impact on commercial Crops.

This category also covers situations where the EPP has a wide range of hosts, including native flora, and there is considerable uncertainty as to the relative impacts on Crops.

In short, it is almost impossible to properly determine which Cropping Sectors benefit from eradication and to what extent, and in any case the incursion primarily affects native flora and/or amenity plants, and/or is a major nuisance, if not a health risk to humans.

Category 2

The eradication of Category 2 EPPs would have high public benefits and would be funded 80 per cent by governments and 20 per cent by Affected Industry Parties.

These are EPPs, which if not eradicated, would:

- cause significant public losses either directly through serious loss of amenity, and/or environmental values and/or effects on households; or indirectly through very severe economic impacts on regions and the national economy, through large trade losses with flow on effects through the economy; and
- impose major costs on the affected Cropping Sectors such that the Cropping Sectors would benefit significantly from eradication.

Category 3

The eradication of Category 3 EPPs would have moderate public benefits and would be funded 50 per cent by governments and 50 per cent by Affected Industry Parties. These are EPPs, which if not eradicated, would primarily harm the affected Cropping Sectors, but there would also be some significant public costs as well (that is, moderate public benefits from eradication). The EPP could adversely affect public amenities, households or the environment, and/or could have significant, though moderate trade implications and/or national and regional economic implications.

Category 4

The eradication of Category 4 EPPs would mainly, if not wholly, have private benefits and would be funded 20 per cent by governments and 80 per cent by Affected Industry Parties. These are EPPs, which if not eradicated, would:

- have little or no public cost implications and little or no impacts on natural ecosystems. The affected Cropping Sectors would be adversely affected primarily through additional costs of production, extra control costs, or nuisance costs; and
- generally there would be no significant trade issues that would affect national and regional economies.

TRANSITION TO MANAGEMENT

In some cases, EPPs are not able to be eradicated through a response under the EPPRD. In 2016, a Transition to Management (T2M) phase was incorporated into the EPPRD following approval by all EPPRD Parties.

T2M may only be initiated under certain circumstances. Its aim is to provide a formalised structure for transitioning a response under the EPPRD from the eradication of an EPP under an approved Response Plan to management of the EPP outside of the EPPRD processes.

The objectives and activities undertaken during T2M are considered on a case-by-case basis and will depend on the biology of the pest and the circumstances relating to the stage of the response. Activities might include development of control options and tools to support pest management, research to improve knowledge of the pest or communication, engagement and training activities.

Prior to the inclusion of T2M in the EPPRD, the processes of the EPPRD ceased once a decision that an EPP was not eradicable had been made. This left no clear path for decision making and Cost Sharing of any further activities that are in the national interest and were required to support the response stand down process.

Parties agreed that the T2M phase in the EPPRD would only apply in a situation where an eradication program fails. That is where a Response Plan has been agreed and implemented and the NMG has subsequently determined that it is no longer feasible to eradicate the EPP.

EVALUATING ACTIVITIES UNDER THE EPPRD

To maintain the ongoing relevance and integrity of the EPPRD, Parties undertake continual evaluation of its performance, including specific response debriefs.

The Evaluation and Lessons Management Specialist Task Group is a skills-based working group that ensures best practice is applied to all processes and systems nationally, and that lessons learnt from evaluations are effectively shared across the biosecurity sectors.

For more information on the EPPRD go to planthealthaustralia.com.au/epprd



Local Land Services, industry representatives, Biosecurity Queensland and NSW DPI staff worked together during Exercise Border Bridge. Image courtesy of NSW DPI



Managing biosecurity incidents

BIOSECURITY INCIDENT MANAGEMENT SYSTEM

Across all sectors, biosecurity incidents are managed in accordance with the **Biosecurity Incident Management System (BIMS)**.

The system is an ‘all hazards’ approach, which:

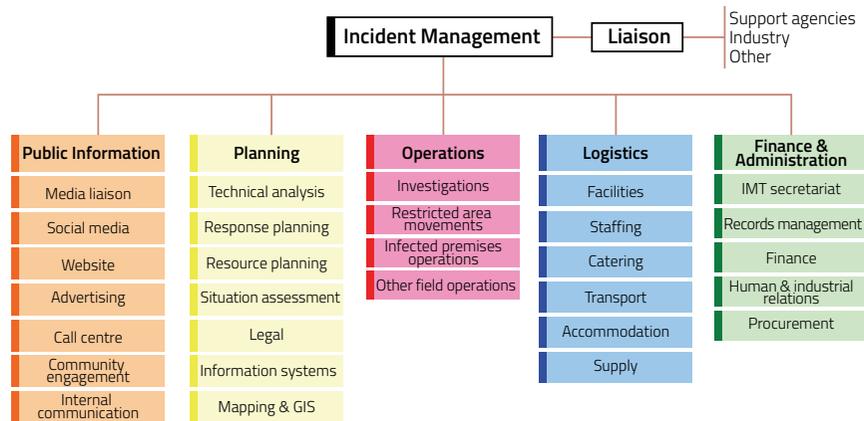
- co-exists with and complements current, sector specific and jurisdictional response arrangements
- can be applied to all biosecurity incidents, irrespective of sector or scale of response
- provides a guide for personnel working within operations centres established at national, state, territory, local and field levels.

Importantly, BIMS is consistent with contemporary incident management systems employed by other emergency response agencies across Australia and in other countries, including Australasian Inter Services Incident Management System, Australia Emergency Coordination System and the New Zealand Critical Incident Management System.

In a biosecurity incident, responses are managed by incident management teams. Figure 94 shows one example of an Incident Management Team structure. A range of positions and functions may be needed, depending on the level of the incident.

Since the system is consistent with other incident management systems, response capacity can be boosted more easily in the event of a large or long-term response. With roles consistent across the systems, people who have been involved in one response can be more readily co-opted and integrated into another.

Figure 94. Incident management team structure for biosecurity incursion responses



A range of positions and functions in the response team may need to be established, depending on the level of the incident. Image courtesy of the Department of Agriculture and Water Resources

THE NATIONAL BIOSECURITY RESPONSE TEAM

The National Biosecurity Response Team (NBRT) is a group of trained and experienced personnel, drawn from biosecurity agencies across Australia, who can be deployed to a jurisdiction to boost capacity temporarily to assist in a response to a biosecurity incident. Deployment might be in response to an animal, plant, aquatic or environmental biosecurity incident.

Members are government officers with knowledge, experience and training in emergency management, incident management or more specifically, responding to biosecurity incidents. They may be deployed in a State Coordination Centre or Local Control Centre to perform functions including incident management, liaison, public information, planning, operations and logistics.

The NBRT has two cohorts of members: a cohort of experienced functional response personnel and a cohort of highly experienced mentors. The NBRT program is managed by an Advisory Group, with standing members from the Australian Government Department of Agriculture and Water Resources, Animal Health Australia and PHA.

Animal Health Australia manages the NBRT outside of any biosecurity response activities. Members of the team participate in relevant professional development opportunities and maintain their skills in exercises and responses.



Participants at the inaugural meeting of the Biosecurity Emergency Response Training Australia Community of Practice held in Adelaide

COMMUNICATION IN AN EMERGENCY PLANT PEST RESPONSE

During an EPP response, the relevant state or territory government takes the lead in ensuring that the public and any stakeholders are kept informed about activities. Given the multiple Parties involved, messaging needs to be nationally consistent and coordinated. To help achieve this, nationally agreed talking points are developed with input from all Affected Parties.

National talking points are developed and circulated through members of the National Biosecurity Communication and Engagement Network (NBCEN) which consists of communication managers from the Australian Government, state and territory governments, and organisations including PHA and Animal Health Australia.

NBCEN's process for developing national talking points allows input from these agencies and relevant plant industry peak bodies. Agreed talking points are circulated to all members of the CCEPP which allows for consistent national messaging.

NBCEN also advances preparedness and prevention awareness activities for issues that warrant a national approach to communication and engagement activities.

The Biosecurity Incident Public Information Manual

Effective communication and engagement with those impacted by a biosecurity incident is vital. It aids response activities by informing growers of what they can do to prevent the pest or disease affecting their property, and how to comply with movement and other quarantine restrictions. It also helps the wider community to understand their role in biosecurity.

During a response, agricultural agencies and Affected industries refer to the Biosecurity Incident Public Information Manual (BIPIM), developed by NBCEN. The BIPIM is in line with the Public Information function set out in the Biosecurity Incident Management System. The use of BIPIM ensures that anyone performing a function in public information knows their role and how each of the jurisdictions work with industry to deliver consistent information to stakeholders and the public.

Having specific roles and job cards can help jurisdictions recruit additional resources promptly, when they are needed in a long-term or widespread biosecurity incident. The BIPIM is available as an AUSVETPLAN Resource document from the Animal Health Australia website animalhealthaustralia.com.au



Responses to Emergency Plant Pest incursions

Table 54 lists nine Cost Shared responses to EPPs that were ongoing or initiated in 2018 and includes descriptions of past actions and key activities undertaken for those responses. Some ongoing responses that have not progressed to a Cost Shared Response Plan, and for which significant activity occurred in 2018, are also included. In addition to the Cost Shared responses, a number of pests were detected that did not proceed to a Response Plan in 2018. Some have been assessed as requiring no further action, while others were still under investigation in 2018 and further actions may still be taken. These pest detections are listed in Table 55 (page 192).

In September 2018 the National Management Group agreed that T2M under the response plan for giant pine scale in Victoria and SA had been completed, bringing the response under the EPPRD to an end. During 2018, T2M activities under the response plan for tomato potato psyllid in WA continued. Extensive testing of psyllids and host plants has not detected *Candidatus Liberibacter solanacearum*.

Eradicating citrus canker in the north

The nationally coordinated citrus canker emergency response has made enormous progress towards eradicating the disease from Australia.

Citrus canker is a contagious disease caused by the bacteria *Xanthomonas citri* subsp. *citri* which can affect all citrus plants including species that are native to Australia. Of particular concern for the citrus industry, infected plants have lesions or cankers which severely impact fruit quality and yield.

In April 2018, the disease was first detected in Darwin, NT, and then in northern WA. It was found on potted lime plants, and all subsequent detections were restricted to potted plants in the home and garden sector. A nationally cost-shared response plan under the EPPRD is underway to eradicate citrus canker. A budget of up to \$18.72 million is available to fund response activities until 31 December 2019. The Australian Government, state and territory governments (except Tasmania and the ACT), along with Citrus Australia and Nursery and Garden Industry Australia, are contributing to the funding and implementing the emergency response.

Since citrus canker was detected, movement controls and quarantine measures have been in place to contain the disease. NT and WA residents have been urged to report any purchased citrus plants so they can be checked for signs of infection.

By the end of 2018, the response teams in the NT had removed and disposed of more than 12,000 host plants. In WA, over 1,500 host plants had been removed from restricted areas. Surveillance has demonstrated that citrus canker is not present in any commercial citrus orchards or in any other jurisdictions. The goal is to eradicate citrus canker and to reinstate Australia's 'country freedom' status from the disease.

Table 54. Responses to plant pests under EPPRD arrangements*

Scientific name	Common name	Crops affected	Region	Past action	Situation as of 31 December 2018
<i>Bactrocera dorsalis</i>	Oriental fruit fly	Various fruits and vegetables	Torres Strait	Exotic fruit flies are sporadically detected in the Torres Strait and eradicated to protect mainland Australia. In November 2015 the National Management Group (NMG) endorsed the Exotic Fruit Flies in the Torres Strait Response Plan for the period July 2015 to June 2018. Surveillance and eradication activities occur on an annual basis.	Surveillance and eradication activities in the Torres Strait were ongoing in response to sporadic fruit fly detections.
<i>Bactrocera trivialis</i>	New Guinea fruit fly				
<i>Zeugodacus cucurbitae</i>	Melon fly				
<i>Bactericera cockerelli</i>	Tomato potato psyllid	Tomatoes, vegetables, production nurseries	WA	Detected in Perth in February 2017. NMG endorsed a Response Plan for eradication however subsequently agreed that it was not feasible to eradicate tomato potato psyllid. A Response Plan incorporating Transition to Management activities was approved by the NMG and is aimed at managing ongoing risks and impacts of the psyllid and providing proof of freedom from the pathogen it can vector, <i>Candidatus Liberibacter solanacearum</i> (haplotypes A and B).	Transition to Management activities under the Response Plan continued in 2018. Extensive testing of psyllids and host plants had not detected <i>Candidatus Liberibacter solanacearum</i> .
<i>Candidatus Liberibacter solanacearum</i> haplotypes D and E	Vegetative disorder, yellows decline	Vegetables, production nurseries	NSW	Haplotypes D and E detected in July 2017 in imported parsley seed. Tracing of imported seed was undertaken. The bacterium has only been detected in unsown imported seeds and not within any host crops being grown in Australia.	Tracing and surveillance activities were ongoing in 2018.
<i>Cryphonectria parasitica</i>	Chestnut blight	Chestnuts	Vic	First detected in September 2010. Response Plan endorsed by the NMG in November 2010 and eradication activities undertaken. Following extensive surveillance activities sporadic detections occurred in 2014, 2016 and 2017. Infected trees and surrounding host trees were destroyed. Response Plan subsequently revised and most recent version endorsed by the NMG in 2017. A Scientific Advisory Panel convened to consider technical information on spore dispersal and latency of the pathogen and recommendations informed revision of the response strategy.	The Response Plan for eradication of chestnut blight was under review. Containment measures remained in place and surveillance activities were ongoing in 2018.

Table 54. Responses to plant pests under EPPRD arrangements* (continued)

Scientific name	Common name	Crops affected	Region	Past action	Situation as of 31 December 2018
<i>Fusarium mangiferae</i>	Mango malformation disease (MMD)	Mangoes, production nurseries	Qld, NT	Fusarium species associated with suspected MMD symptoms were first detected in 2007.	The NMG agreed that the Incident of <i>F. mangiferae</i> in Qld and one Incident of <i>F. mangiferae</i> in NT had been eradicated. A third Incident of <i>F. mangiferae</i> in the NT remained under consideration by the CCEPP. A targeted surveillance program was to be undertaken to inform the course of action. The incidents of <i>F. proliferatum</i> , <i>F. pseudocircinatum</i> and <i>F. parvisorum</i> were resolved by the NMG.
<i>F. proliferatum</i>				The CCEPP agreed that three unrelated Incidents of <i>F. mangiferae</i> should be considered separately, consistent with the EPPRD.	
<i>F. pseudocircinatum</i>				Following consideration of advice from a Scientific Advisory Panel the CCEPP made recommendations to the NMG on the EPP status and technical feasibility of eradication of <i>F. proliferatum</i> , <i>F. pseudocircinatum</i> and <i>F. parvisorum</i> .	
<i>F. sterilihyphosum sensu lato</i> (redesignated as <i>F. parvisorum</i>)					
<i>Halyomorpha halys</i>	Brown marmorated stink bug (BMSB)	Various fruits and vegetables, hazelnuts, cotton, grains, production nurseries	NSW	Detected in 2017 in imported cargo at two sites in Western Sydney. Treatment, surveillance, trapping and tracing activities undertaken. A Response Plan was endorsed by the NMG in December 2017.	Treatment and surveillance activities continued under the Response Plan. The NMG agreed that BMSB had been eradicated. General surveillance and early reporting were promoted through awareness activities.
<i>H. halys</i>	BMSB	Various fruits and vegetables, hazelnuts, cotton, grains, production nurseries	WA	New incursion in 2018.	BMSB were detected in Perth in February 2018 in a consignment of electrical goods from Italy. A Response Plan was approved by NMG. Treatment and surveillance activities were undertaken. No further BMSB have since been detected.
<i>Marchalina hellenica</i>	Giant pine scale	Pine trees, production nurseries	SA, Vic	Detected in Vic and SA in October 2014. Response Plan endorsed by NMG in March 2015 and eradication activities undertaken. In October 2016 NMG agreed that it was not technically feasible to eradicate <i>M. hellenica</i> . A revised Response Plan incorporating Transition to Management was endorsed by NMG, aimed at preparing industry and the community for ongoing management of the pest and minimising future impacts.	In September 2018 the NMG agreed that Transition to Management under the Response Plan had been completed, bringing the response under the EPPRD to an end.
<i>Phyllosticta cavendishii</i>	Banana freckle	Bananas, production nurseries	NT	Detected in July 2013. NMG endorsed a Response Plan in October 2013 and eradication activities were undertaken. Destruction of host material continued and host free period commenced May 2015. Sentinel planting phase commenced May 2016 with the controlled reintroduction of banana plants and ongoing surveillance activities.	Surveillance activities continued to support proof of freedom from banana freckle and the response remained on track to achieve eradication.

Table 54. Responses to plant pests under EPPRD arrangements* (continued)

Scientific name	Common name	Crops affected	Region	Past action	Situation as of 31 December 2018
<i>Varroa jacobsoni</i>	Varroa mite	Honey and various pollination-reliant crops	Qld	Detected on Asian honey bee (<i>Apis cerana</i>) in Qld in June 2016. Response Plan endorsed by the NMG in September 2016 and eradication activities undertaken. Surveillance activities ongoing.	There were no further detections of Asian honey bee or <i>V. jacobsoni</i> . Proof of freedom surveillance activities were ongoing.
<i>Xanthomonas citri</i>	Citrus canker	Citrus, production nurseries	NT, WA	New incursion in 2018.	Initially detected in Darwin, NT, in April 2018. Subsequent tracing activities identified additional infected plants in northern WA. The Incident was restricted to potted plants in the home and garden sector and there have been no detections in commercial citrus orchards. NMG endorsed a Response Plan in May 2018. Eradication activities were ongoing. This included implementation of containment measures to prevent spread of the disease, surveillance and tracing activities, and destruction of all infected plants as well as host plants within surrounding Restricted Areas. Community engagement and awareness activities were also a focus of activity.

* This table may not reflect all Cost Shared responses in 2018.



Table 55. Plant Pest detections notified under the EPPRD in 2018*

Scientific name	Common name	State
New detections		
<i>Aleurothrixus trachoides</i>	Capsicum whitefly	Qld (Torres Strait)
<i>Apricot latent virus</i>	Apricot latent virus	Vic
<i>Asian prunus virus 2</i>	Asian prunus virus 2	Tas
<i>Barley virus G</i>	Barley virus G	Vic
<i>Citrus viroid V</i>	Citrus viroid V	Qld (Torres Strait), NSW
<i>Citrus viroid VI</i>	Citrus viroid VI	NSW
<i>Columnea latent viroid</i>	Columnea latent viroid	NSW
<i>Cosmopolites sordidus</i>	Banana weevil borer	Norfolk Island (external territory)
<i>Didymella aliena</i>	No common name	Vic
<i>Diplodia scrobiculata</i>	Diplodia dieback	Qld
<i>Discus rotundatus</i>	Rotund disc snail	Vic
<i>Elsinoë citricola</i>	Citrus scab	Qld
<i>Endive necrotic mosaic virus</i>	Endive necrotic mosaic virus	NSW
<i>Erysiphe syringae</i>	Lilac powdery mildew	Vic
<i>Faba bean Breeza virus</i>	Faba bean Breeza virus	NSW
<i>Fusarium</i> sp. AF-7	No common name	Qld
<i>Halyomorpha halys</i>	Brown marmorated stink bug	Vic (Clayton)
<i>Halyomorpha halys</i>	Brown marmorated stink bug	Qld (Fisherman Island)
<i>Halyomorpha halys</i>	Brown marmorated stink bug	NSW (Horsley Park)
<i>Halyomorpha halys</i>	Brown marmorated stink bug	Qld (Lytton)
<i>Halyomorpha halys</i>	Brown marmorated stink bug	Qld (New Chum)
<i>Heliooccocus</i> nr <i>summervillei</i>	Pasture mealybug	Qld
<i>Impatiens necrotic spot virus</i>	Impatiens necrotic spot virus	NSW
<i>Kilifia deltoides</i>	Coconut scale	Christmas Island (external territory)
<i>Macrophomina pseudophaseolina</i>	No common name	Qld
<i>Nectarine stem-pitting associated virus</i>	Nectarine stem-pitting associated virus	Tas, Vic
<i>Ophiostoma angusticollis</i>	Blue stain fungus	NSW

Scientific name	Common name	State
New detections (continued)		
<i>Ophiostoma dentifundum</i>	No common name	NSW
<i>Ophiostoma pallidulum</i>	Blue stain fungus	NSW
<i>Ozognathus cornutus</i>	Ptinid beetle	NSW
<i>Phodoryctis caerulea</i>	Bean miner	Qld
<i>Phyllosticta cavendishii</i>	Banana freckle	Christmas Island (external territory)
<i>Phyllosticta maculata</i>	Banana freckle	Cocos (Keeling) Island (external territory)
<i>Pseudocercospora opuntiae</i>	Cactus leaf spot	NSW
<i>Pseudomonas syringae</i> pv <i>actinidiae</i>	PSA disease	Vic
<i>Pterocomma populeum</i>	Poplar bark aphid	Tas
<i>Puccinia striiformis</i> f. sp. <i>tritici</i> pathotype 199 E76A	Wheat stripe rust	Vic
<i>Pyrrhocoris apterus</i>	European firebug	Vic
<i>Ramularia collo-cygni</i>	Ramularia leaf spot	WA
Relative of <i>Candidatus</i> <i>Phytoplasma noviguineense</i>	No common name	Qld
<i>Schizentaspidus</i> nr <i>silvicola</i>	Circular hard scale	Qld
<i>Trogoderma glabrum</i>	Glabrous cabinet beetle	SA
<i>Xerotricha conspurcara</i>	Snail	Vic
<i>Xyleborinus sculptilis</i>	Bark beetle	Qld
Extensions of geographic and/or host range		
<i>Agrobacterium tumefaciens</i> biovar 1	No common name	Qld
<i>Apis cerana</i>	Asian honey bee	NT
<i>Araecerus fasciculatus</i>	Coffee bean weevil	WA
<i>Ceroplastes stellifer</i>	Stellate wax scale	Qld
<i>Claviceps africana</i>	Ergot of sorghum	NT
<i>Diplodia sapinea</i>	Diplodia blight	Vic
<i>Nasonovia ribisnigri</i>	Currant lettuce aphid	Vic
<i>Neofusicoccum australe</i>	No common name	SA

Table 55. Plant Pest detections notified under the EPPRD in 2018* (continued)

Scientific name	Common name	State
Extensions of geographic and/or host range (continued)		
<i>Neofusicoccum luteum</i>	No common name	Vic
<i>Neoscytalidium dimidiatum</i>	No common name	NT
<i>Nothophoma quercina</i>	Brown spot of jujube	SA, Vic
<i>Phytophthora</i> sp. <i>kelmania</i>	No common name	Qld
<i>Phytophthora multivora</i>	Phytophthora dieback	Qld
<i>Sporothrix stenoceras</i>	No common name	Vic
<i>Tuberolachnus salignus</i>	Giant willow aphid	Qld

* These pests may be new detections, extensions of geographic range or new host records. Some pests that are not listed in this table are still under investigation. If further action is implemented these pests may be reported in future publications.



Brown marmorated stink bug. Image courtesy of Gary Bernon, USDA APHIS, Bugwood.org

Maintaining the capacity to respond to incursions

The effective delivery of Emergency Plant Pest (EPP) responses is supported by preferentially utilising trained and experienced personnel at all levels of the response. This includes representatives from industry and government, and covers the roles on national decision-making committees through to members of control centres and field-based officers.

Provision of this training is primarily provided by state and territory governments, the Australian Government, PHA and peak plant industry bodies, and is offered in a variety of forms, from short presentations and e-learning courses, through to formal educational qualifications.

Parties also undertake simulation exercises, where responders are put through their paces under a simulated incursion scenario, on a regular basis. This provides both practice in EPP responses and improved preparedness by identifying any aspects of the system that need improvement.

Evaluation of incursions and of simulated response exercises are also critical for effective EPP responses and the ongoing relevance and integrity of response systems in Australia. Regular evaluation activities are undertaken by all stakeholders, including PHA.

In addition to emergency response training, a range of related skills-based training is offered to members of the plant biosecurity system. For example, plant pest taxonomic identification and technique-based training is available to members of the National Plant Biosecurity Diagnostic Network to address any gaps in skills or capacity (see Chapter 5).

OVERSIGHT OF BIOSECURITY EMERGENCY PREPAREDNESS TRAINING

The Training Specialist Task Group (TSTG) is a skills-based working group that guides policy and training standards for cross-sectoral biosecurity training. In its national capacity, the group identifies risks, gaps and duplication in biosecurity emergency training, and provides advice and support to trainers. It also ensures that biosecurity emergency training is consistent with contemporary emergency management practices.

The TSTG reports to the National Biosecurity Emergency Preparedness Expert Group and supports delivery of schedule 7 of the Intergovernmental Agreement on Biosecurity (see page 20).

QUALIFICATIONS FOR BIOSECURITY EMERGENCY RESPONSES

Three biosecurity emergency response qualifications have been developed and nationally endorsed as part of the Public Safety Training Package. These align with the emergency response role training delivered by jurisdictions, allowing people to achieve formal qualifications based on their work experience and training.

Achieving these qualifications puts biosecurity response personnel on the same footing as those in other emergency response areas, such as police and firefighters. The system ensures that biosecurity emergency response training across the country meets the desired standard.

Qualifications available are:

- PUA33112 – Certificate III in Public Safety (Biosecurity Response Operations)
- PUA42912 – Certificate IV in Public Safety (Biosecurity Response Leadership)
- PUA52412 – Diploma of Public Safety (Biosecurity Response Management).

Some Australian universities offer graduate and post-graduate qualifications in biosecurity. These university courses increase awareness in the biosecurity system and provide students with a good grounding for entering the biosecurity workforce.

Examples of the university courses are:

- Graduate Certificate in Plant Biosecurity (Murdoch University)
- Master of Biosecurity (Murdoch University)
- Graduate course in Biosecurity (Australian National University)
- Bachelor of Biosecurity Science (Box Hill Institute).

PRACTICAL TRAINING FOR BIOSECURITY EMERGENCY RESPONSES

National Emergency Plant Pest (EPP) Training Program

PHA conducts the National EPP Training Program on behalf of its members, delivering training to industry and government representatives, growers and other biosecurity stakeholders. Training is delivered through a combination of face-to-face sessions and simulation exercises. The aim is to highlight the key elements of the EPPRD and PLANTPLAN, ensuring that members can effectively fulfil their roles and obligations as EPPRD Parties.

Simulation exercises

Practical training in emergency response via simulation exercises is an important component of the National EPP Training Program. These exercises support the other forms of training delivered and test specific aspects of member's biosecurity emergency preparedness. Simulation exercises are run from a national perspective by PHA working with states and industry groups, and also on a state basis. Examples include Exercise Bee Prepared (see page 196) and Exercise Fastidious (see right) which were run by PHA.

Other training scenarios include:

Exercise Border Bridge – On 5–9 March 2018, Exercise Border Bridge was held to test how NSW and Queensland would respond to a biosecurity incident occurring across both jurisdictions. The simulation exercise was run by NSW Department of Primary Industries, Queensland Department of Agriculture and Fisheries, and the National Biosecurity Response Team Advisory Group. Both NSW and Queensland had recently introduced new biosecurity legislation at that time, so the focus of the exercise was the use of legislation, IT systems and existing arrangements to respond to a biosecurity incident.

Exercise Orange Juice – In October 2018, NSW's Department of Primary Industries (DPI) and Local Land Services (LLS) held a discussion exercise in Griffith, NSW, to test the state's preparedness for a detection of citrus canker. A focus of the exercise was the dynamic between DPI and LLS in an emergency response. Participants from both branches and key stakeholders in the NSW citrus industry considered the hypothetical scenario of citrus canker being discovered in a retail outlet in NSW. PHA, Citrus Australia, Nursery & Garden Industry Australia (including NSW & ACT branch) and NSW Farmers also attended the exercise.

Exercise Fastidious tests response to xylella

On 14–15 November 2018, Exercise Fastidious, held in Brisbane, tested elements of a response to a detection of *Xylella fastidiosa*, Australia's number one plant pest threat. The exercise was funded by Hort Innovation and conducted by PHA.

There were 59 attendees at the two-day exercise with representatives from the Australian Government, all state and territory governments, 13 industries, PHA, Hort Innovation, CSIRO and representatives from New Zealand (government and industry). They were asked to test elements of a response to a fictional detection of *Xylella fastidiosa*, with a focus on the production nursery sector and the broader implications to all industries, using the EPPRD framework and principles.

Participants considered the technical feasibility of eradication, complexes (i.e. the combination of xylella and an insect vector), and whether there are any Australian native insect vectors of the disease. They also identified gaps in Australia's preparedness to respond to xylella and developed research questions to fill some of the gaps.



Exercise Bee Prepared

Between March and October 2018, PHA facilitated workshops across the country to test varroa mite (*Varroa destructor*) response arrangements and the availability of resources.



The Australian Government and each state and territory government hosted an Exercise Bee Prepared activity to improve the readiness of governments and the beekeeping industry for a detection of varroa.

At each event, departmental staff and beekeepers worked together on a fictional scenario to develop a response strategy to eradicate varroa mite from a peri-urban environment. Working through this process highlighted ways to improve how Australia responds to exotic pest detections.

To wrap-up the exercise, the Chief Plant Health Managers and Australian Honey Bee Industry Council representatives assessed these elements at a national workshop to decide on an appropriate response and agree on a national approach.



Exercise Bee Prepared near Hobart in Tasmania in July 2018

ONLINE TRAINING IN BIOSECURITY

The e-learning platform BOLT (Biosecurity Online Training), managed by PHA, supports the National EPP Training Program.

Current courses available on BOLT are:

- **PHA Foundation Course** – provides a summary of the Australian biosecurity system and how emergency responses to plant pests are managed under the EPPRD.
- **National EPP Response Management** – introduces the purpose of the CCEPP and the NMG, the roles and responsibilities of and their members, and the decision-making process in an incident.
- **Reporting a Suspect Emergency Plant Pest** – provides information on when and how to report an exotic plant pest.
- **Bee Biosecurity Awareness** – a short awareness course that adds to the information in the Biosecurity Manual for the Honey Bee Industry. It provides an introduction to biosecurity best practice, hive inspections, surveillance, moving hives and how to report a suspect EPP.
- **Biosecurity for Beekeepers** – provides advice on keeping honey bees healthy using industry best practice. This course supports the Australian Honey Bee Industry Biosecurity Code of Practice.

In 2018, the courses were completed just over 1,160 times, with the PHA Foundation Course being completed 395 times, and the Reporting Suspect Emergency Plant Pest and Biosecurity for Beekeepers courses being completed 96 and 486 times respectively. Since BOLT was launched, courses had been completed a total of 3,895 times by the end of 2018.

BOLT courses are open to all plant biosecurity stakeholders and can be accessed through planthealthaustralia.com.au/bolt.