

The National Plant Biosecurity **Status Report**

2020

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Forewords



Message from the Hon David Littleproud, Minister for Agriculture and Northern Australia, Member for Maranoa, Queensland

I congratulate our plant industries for their incredible resilience through this time of challenge and uncertainty – as shown in this year’s National Plant Biosecurity Status Report.

The Australian Government is a strong supporter of Australia’s plant industries and is committed to protecting our world-class biosecurity system. With ever-increasing trade and changes in the regional prevalence of pests and disease, we need to be continually vigilant about biosecurity risks.

We are setting the foundations to give Australia’s agriculture industry what it needs for success and to reach the industry’s goal of \$100 billion in production by 2030.

A key piece is to build on our biosecurity measures at and beyond the border and being prepared if we do have an incursion. We are continuing our investment in innovation and biosecurity research is vital to the sustainability of Australian agriculture and the environment.

Last year we re-signed the Plant Biosecurity Research Initiative ensuring the continued coordination for research and development efforts for plant biosecurity. Under the initiative, 10 collaborative projects have been funded with a total value of \$50 million to support plant biosecurity research.

These projects are improving our understanding of *Xylella*, brown marmorated stink bug and fall armyworm, all of which are high priority threats for Australian plant industries and the environment.

Commonwealth Biosecurity 2030 is an important pillar in delivering biosecurity outcomes and the government’s Ag2030 plan. It is our roadmap for biosecurity, setting how we will address growing risks by making sure we have the best controls, tools, processes and networks in place. We will work with our biosecurity partners – industry, governments, research and tertiary institutions and the community – to develop a national biosecurity strategy.

Our commitments outlined in Commonwealth Biosecurity 2030 are supported by our Budget biosecurity investment of over \$400 million, which comes on top of our record spending on biosecurity and export services in 2020–21.

I am confident our continued strong government–industry partnership and collective commitment to biosecurity will ensure Australia’s plant resources and the industries and communities that are reliant on them are kept safe.

Hon David Littleproud
Minister for Agriculture and Northern Australia, Member for Maranoa, Queensland



Message from Steve McCutcheon, Chair Plant Health Australia

From droughts and bushfires continuing from late 2019 to a global pandemic, the past year has brought many challenges for agricultural industries in Australia. Showing grit and determination, Australian agriculture has been resilient and continued to be a pillar of the Australian economy. Overall, the agriculture industry is in a strong position, especially as expanding our export markets is being supported by the Australian Government.

The Covid-19 pandemic brought unwelcome changes, including the biggest economic downturn in activity on record for the global economy during the first half of 2020, forcing companies around the world to examine their supply networks and make changes to reduce vulnerabilities. However, the overall impact on agriculture from the pandemic appears to have not been a negative one and the future of the industry is looking secure.

In Australia, adaptation was required at our international borders, as commodities and goods were sourced from different parts of the world, altering the risk profile for exotic pest and disease arrivals on our shores. Plant Health Australia (PHA) has continued to create partnerships between government and industry to meet these challenges, and look for opportunities to formulate strategies with respect to the national biosecurity system. These strategies are designed to meet changing trading patterns and supply chains, shifts in geopolitics, merging of pest and disease regions, greater challenges at the border and post-border, and climate and land use change leading to ever-more expansive established pest ranges. And with every change in import and export, adjustments and allocation of biosecurity resources is needed at the international border and in negotiating market access arrangements.

Australia devotes considerable resources to plant biosecurity and we have a highly effective biosecurity system. PHA coordinates efforts and shared responsibility across a wide variety of stakeholders to help deliver a first-class biosecurity system capable of supporting sustainable plant production and environmental plant health while maintaining and enhancing market access.

First published in 2008, the annual National Plant Biosecurity Status Report provides a comprehensive overview of Australia's plant biosecurity system and the pre-border, border and post-border activities undertaken in 2020. It is also the only published source of biosecurity research, development and extension projects aimed at enhancing capability within the system.

Compiling the 2020 National Plant Biosecurity Status Report relies on input from more than 100 organisations, and without these contributors this report would not be possible. Thank you for your contribution. Together we can continue to build a strong and resilient national biosecurity system.

A handwritten signature in black ink, appearing to read 'Steve McCutcheon'.

Steve McCutcheon
Chair
Plant Health Australia







Introduction

Australia's plant resources

Australia is fortunate to be free from many serious plant pests that exist overseas, mainly due to our geographic isolation and more than a century of effective quarantine measures.

Our plant health status confers significant benefits to industry, government and community. Without biosecurity efforts, plant pests such as insects, fungi, bacteria and viruses spread, aided by the movement of people and goods to suitable host plants in new areas and countries.

Due to the wide range of climatic zones in Australia (see Figure 1), there are many types of natural ecosystems and crop species grown, each with a set of pests that pose a threat.

Almost half of Australia's total land area is used for agriculture. In the tropical and subtropical zones, crops such as bananas, sugarcane, pineapples, mangoes and ginger are grown. In southern temperate zones, pome and stone fruits, grapes, nuts, onions and potatoes can be cultivated. Vast areas with grassland climate are suited to broadacre production of grains, pulses, cotton, timber and pasture for livestock production, and vegetables are grown in many areas.

Plant industries make a significant contribution to agricultural production and exports. As at June 2020, around 377 million hectares was farmed by 87,800 crop and livestock businesses.¹

In 2019–20, plant industries represented a gross value of \$30 billion² (including forest products, honey and beeswax, see Figure 2) and plant exports were worth more than \$25 billion, mainly grains (such as wheat, barley and canola), sugar, wine, forestry, cotton and horticultural products.

Produce destined for overseas markets must meet the standards set for market access, which often includes evidence that production areas are free from certain pests. Production and trade could be jeopardised by an incursion of a new pest that makes its way into our fields, orchards and plantations.

Protection of plants in the environment and those planted for social amenity from the risks and negative effects of pests, weeds and diseases entering, emerging, establishing or spreading in Australia, is also a high priority.

Australia has a unique, biodiverse natural environment with more than 500 national parks covering more than 28 million hectares representing four per cent of the total land area. A further six per cent or more of Australia is protected and includes areas within state forests, nature reserves, indigenous protected areas and conservation reserves.³

Figure 1. Australia's varied climatic zones

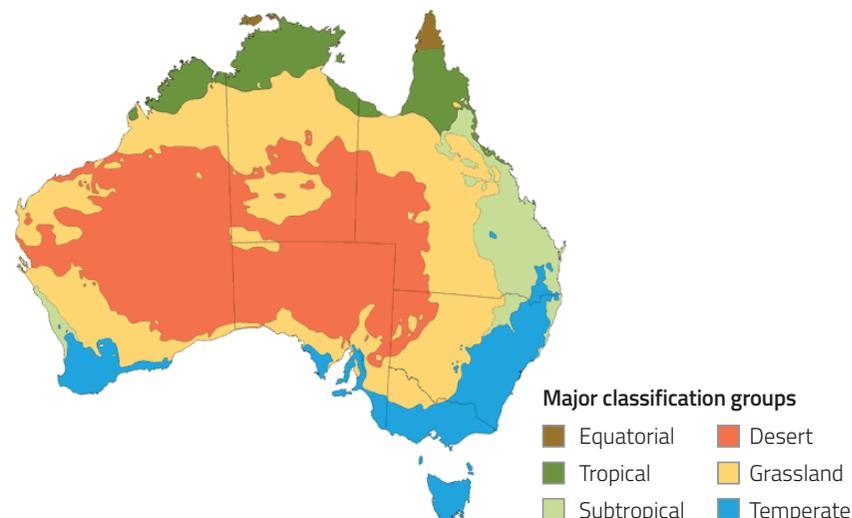


Image courtesy of the Bureau of Meteorology

In 2017 the Australian Bureau of Statistics estimated these areas brought more than \$6 trillion worth of benefits to Australia. Invasive exotic plant pests and weeds could threaten native species, disrupt ecosystems and change the face of these landscapes, along with social amenities such as parklands and other public amenities.⁴

The definition of a pest used in this report covers insects, mites, snails, nematodes, pathogens (diseases) and weeds that have the potential to adversely affect food, fibre, ornamental crops, bees and stored products, as well as environmental flora and fauna. Exotic pests are those not currently present in Australia. Established or regionalised pests are those present within Australia.

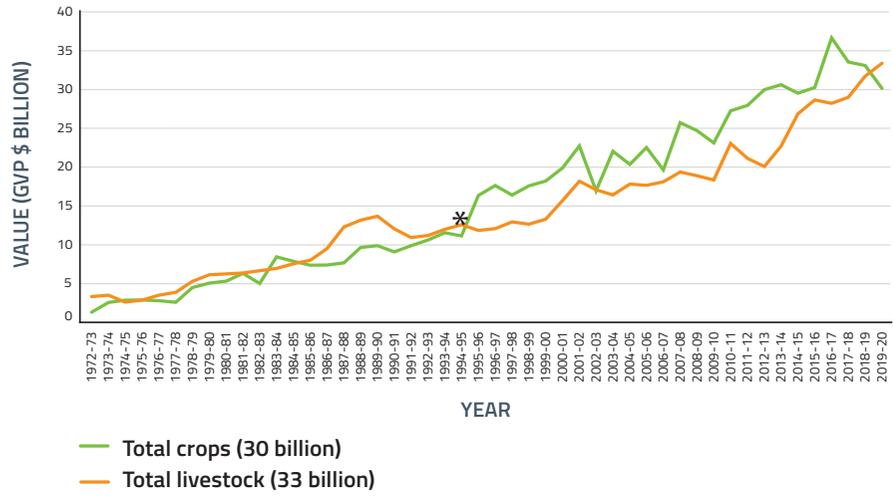
¹ Australian Bureau of Statistics. Value of Agricultural Commodities Produced, Australia. Accessed online 26 May 2021 <https://www.abs.gov.au/statistics/industry/agriculture/value-agricultural-commodities-produced-australia/latest-release>

² Australian Bureau of Agricultural and Research Economics and Sciences. Agricultural Commodities and trade data. Accessed online 26 May 2021 <https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook/data#agricultural-commodities>

³ Commonwealth of Australia. Conserving Australia: Australia's National parks, conservation reserves and marine protected areas. Accessed online 3 May 2021 www.aph.gov.au/Parliamentary_BusinessCommittees/Senate/Environment_and_Communications/Completed_inquiries/2004-07/nationalparks/report/index

⁴ Australian Bureau of Statistics. Australian environmental–economics accounts, 2017, Cat. No. 4655.0. Accessed online 3 May 2021 <https://www.abs.gov.au/ausstats/abs@.nsf/mf/4655.0>

Figure 2. Gross value of plant and animal production industries in Australia, 1972-2020*



*Includes forestry from 1995-96



Features of 2020

2020 was a very challenging year for plants in Australia, whether grown by plant industries, in natural environments or in urban settings.

The year commenced with much of Australia affected by severe drought, with extreme heat and widespread bushfires in eastern Australia. Starting as early as September 2019, the Black Summer Bushfires had a devastating impact on coastal bushland areas and some agricultural enterprises, continuing into the early part of 2020.

Heatwaves returned in November, affecting large parts of south-eastern and eastern Australia. 2020 was Australia's fourth-warmest year on record, with the annual national mean temperature 1.15°C above average, as shown in Figure 3, immediately following Australia's warmest year on record, 2019 (1.52°C above average).⁵

While the national rainfall average was four per cent above average for the year at 483.4 mm, some parts of Australia experienced rainfall that was highest on record and others lowest on record, as shown in Figure 4. Flooding affected eastern Australia during February and March, particularly through Queensland (QLD), but rainfall was below average in the west of Western Australia (WA), south-east QLD and western Tasmania (TAS). Notably, La Niña was officially declared in September, reaching moderate strength by the end of the year.

No sooner had most of the fires been brought under control and the air cleared of smoke, when a human biosecurity emergency emerged. Covid-19 caused 'biosecurity' to appear in news headlines like never before, with the threat felt by all Australians. A positive outcome of the Covid-19 pandemic has been an increased awareness of biosecurity related preventative measures – like hygiene, contact tracing and quarantine measures – much of which can be translated to plant biosecurity.

Against this backdrop of extreme events, the gross value of agricultural production for 2020–21 was forecast to reach a record \$66 billion, boosted by Australia's second-biggest winter crop on record.⁶ Significantly larger harvests in every Australian state were forecast to result in a 59 per cent increase in the gross value of grains, oilseeds and pulses compared with the 2019–20 season. The value of crop exports was forecast to increase sharply in line with record production, up 12 per cent to \$24 billion.

⁵ Australian Government Bureau of Meteorology. Annual climate statement 2020. Accessed online 30 April 2021 <http://www.bom.gov.au/climate/current/annual/Aus>

⁶ Australian Bureau of Agricultural and Resource Economics and Sciences. Agricultural overview: March quarter 2021. Accessed online 30 April 2021 <https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook>

Figure 3. 2020 annual mean temperatures compared to historical temperature observations

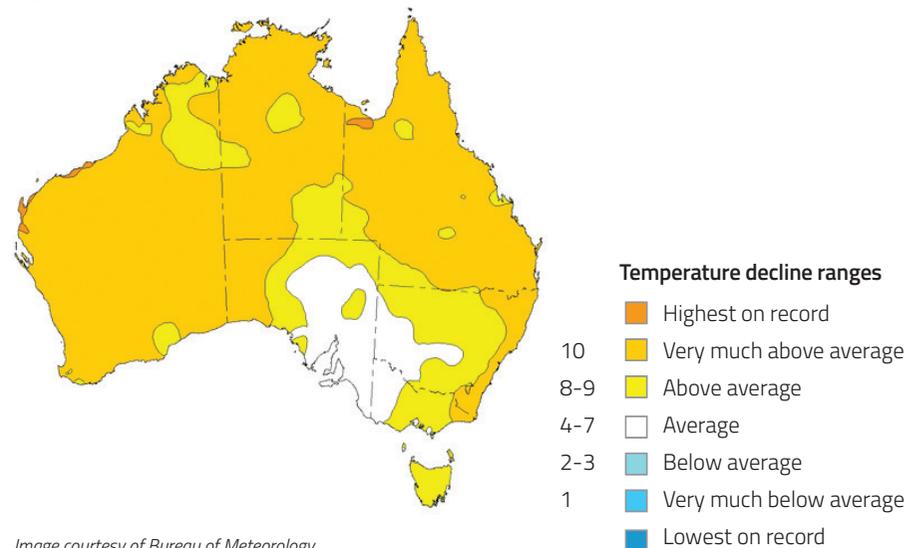


Image courtesy of Bureau of Meteorology

Figure 4. 2020 annual rainfall compared to historical rainfall observations

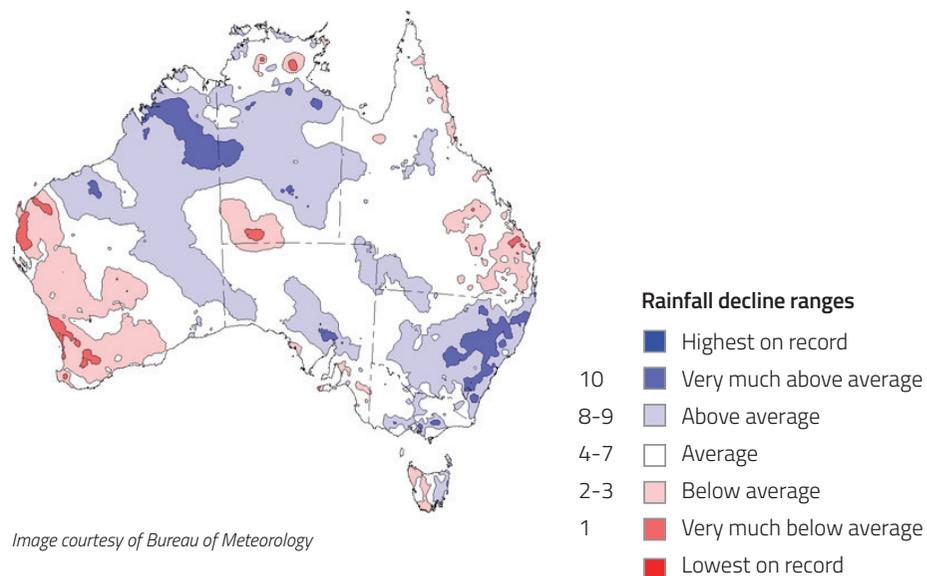


Image courtesy of Bureau of Meteorology

Growing threats to plant health

Factors such as globalisation, international and interstate movement, climate change, geopolitics, tourism and the increasing volume of goods transported around the globe all contribute to increasing biosecurity risks in Australia.⁷

Plant pests and diseases spread in three main ways:

- through trading goods and movement of people
- by environmental forces including water and wind
- carried by vectors such as insects.

To maintain Australia's favourable biosecurity status in this age of increased global trade and travel, a high priority is placed by all stakeholders on plant biosecurity. In general, the growth in trade and international movement of people presents biosecurity challenges for Australia. However, in 2020, Covid-19 caused dramatic shifts in the biosecurity risks from the movement of freight, passengers and mail items.

Pre-Covid-19, annually there was nearly 100 million tonnes of freight arriving by sea.⁸ In 2020, 0.9 million tonnes of freight arrived by air, down from 1.1 million tonnes in 2019.⁹

International air passenger traffic for 2020 was 9.3 million, a 78 per cent decrease over the nearly 42.5 million airline passengers in 2019. In response to the changed risk due to Covid-19 and less international flights, dogs were redeployed to primarily screen arriving mail items. In 2020, detector dogs intercepted approximately 13,500 risk items and screened 15,706,488 mail items.¹⁰

Some 408 High Priority Pests have been identified for Australia's plant industries through biosecurity planning by Plant Health Australia (PHA). The high priority plant pests for the environment were identified and listed for the first time in 2019 (see Chapter 2). Just as important as keeping exotic pests out of Australia, is the management of established or regionalised pests that are already present.

⁷ Commonwealth of Australia. Priorities for Australia's Biosecurity System: Response from Australian agriculture ministers (November 2018). Accessed online 3 May 2021 <https://www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/igab-review-response.pdf>

⁸ Department of Infrastructure, Transport, Cities and Regional Development. Australian Sea Freight 2016–17. Accessed online 3 May 2021 <https://www.bitre.gov.au/publications/2019/australian-sea-freight-2016-17>

⁹ Department of Infrastructure, Transport, Regional Development and Communication. Aviation: International airline activity December 2020. Accessed online 3 May 2021 https://www.bitre.gov.au/sites/default/files/documents/international_airline_activity_1220.pdf

¹⁰ Media release, the Hon David Littleproud. Super sleuth Ulf shows why he's top dog. Accessed online 3 May 2020 <https://minister.awe.gov.au/littleproud/media-releases/super-sleuth-ulf>

International Year of Plant Health 2020

The United Nations declared 2020 the International Year of Plant Health (IYPH) 'Protecting plants, protecting life'.

In Australia, the year was launched in February at Parliament House, with representatives from local and international governments, plant health industries and authorities, and the private sector.

Due to Covid-19, many of the face-to-face events were moved online. NSW Department of Primary Industries partnered with the Royal Botanic Gardens Sydney and the Australian Museum to develop an interactive Biosecurity Warrior webpage to explore how to keep plants healthy and identify pests.

Online profiles of 38 Plant Health Heroes were published detailing their work experience in plant health, exploring what motivates them, what their typical workday looks like and advice for newcomers.

A partnership with the Plant Biosecurity Research Initiative and the Youth Community Greening team from the Royal Botanic Garden & Domain Trust in Sydney saw the IYPH team working with the students from bushfire affected Cobargo Public School in south-east NSW to design, plant and care for a bush tucker garden.

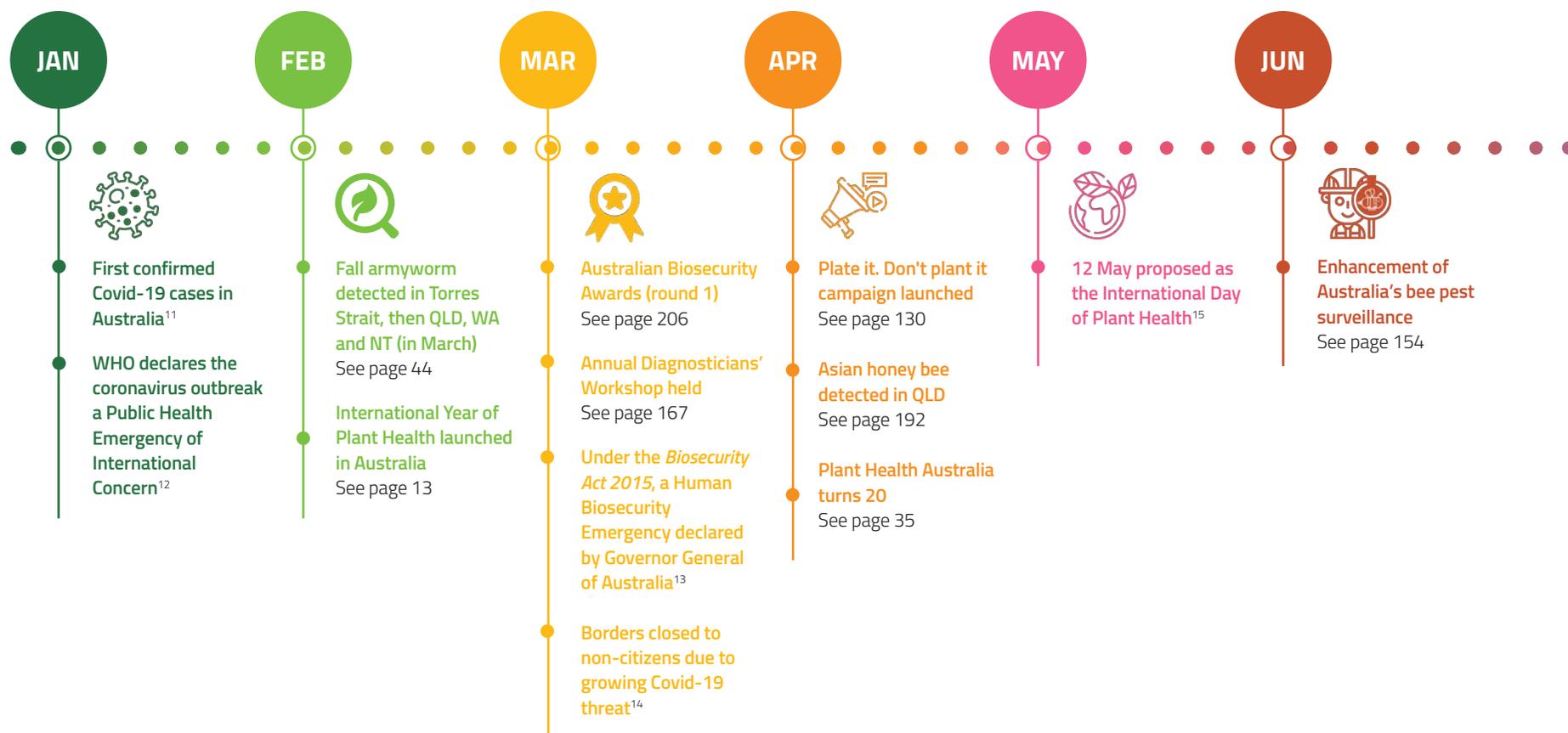
Due to the ongoing international impacts of Covid-19, IYPH was extended into 2021, with the closing ceremony scheduled for July in Helsinki, Finland.



Cobargo Public School students learning about setting up a bush tucker garden. Image courtesy of Michelle Portelli, IYPH Coordinator

Plant biosecurity highlights in 2020

Below is a timeline of some key biosecurity related events during 2020 that involved a broad range of stakeholders across Australia working to protect our plant resources. These events are referenced throughout the report.



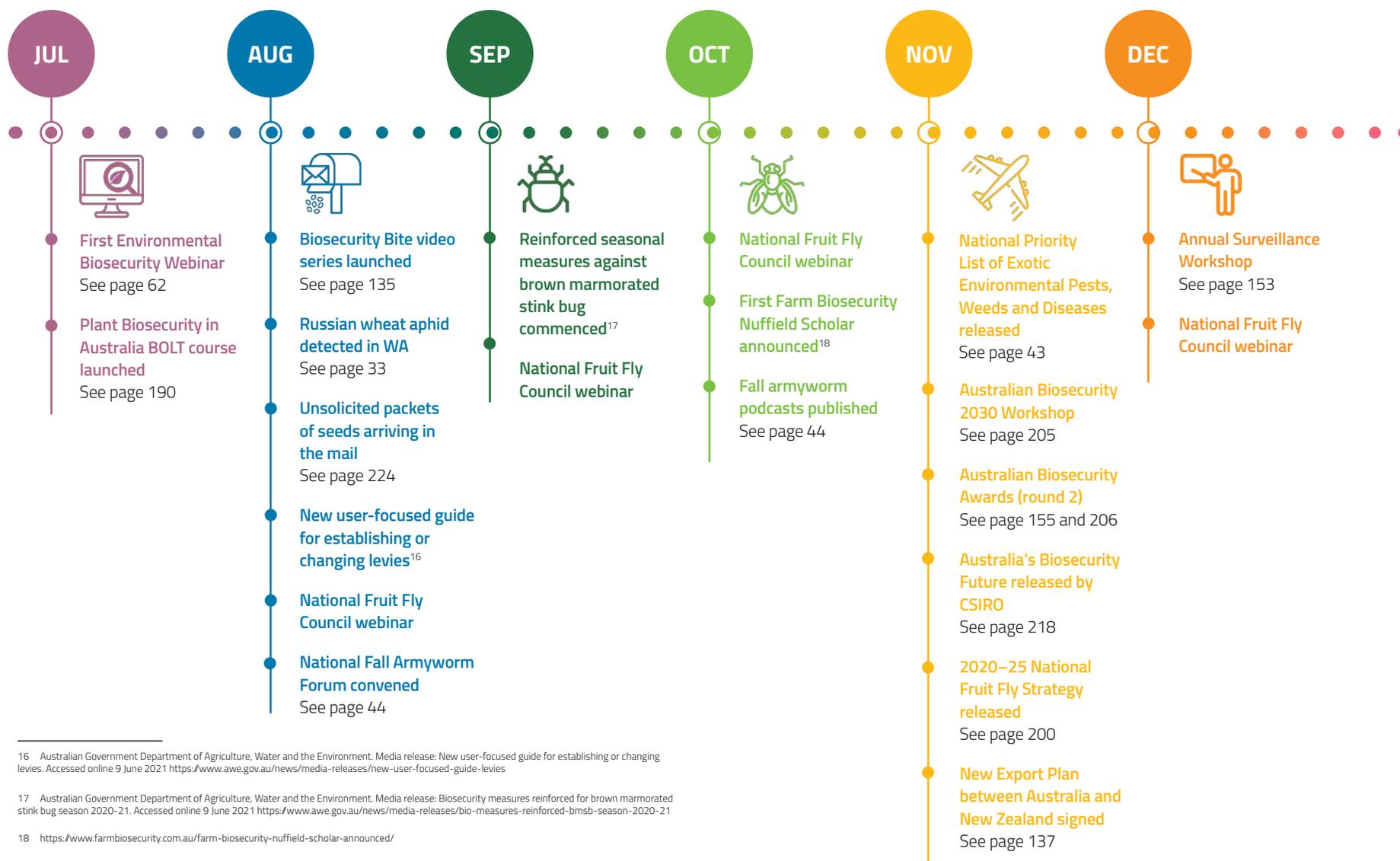
¹¹ Parliament of Australia. COVID-19: a chronology of state and territory government announcements (up until 30 June 2020). Accessed online 9 June 2021 https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp2021/Chronologies/COVID-19StateTerritoryGovernmentAnnouncements#_Toc52275790

¹² World Health Organisation. Timeline: WHO's COVID-19 response. Accessed online 9 June 2021 <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline>

¹³ Australian Government Federal Register of Legislation. Biosecurity (Human Biosecurity Emergency) (Human Coronavirus with Pandemic Potential) Declaration 2020. Accessed online 9 June 2021 <https://www.legislation.gov.au/Details/F2020L00266>

¹⁴ Parliament of Australia. COVID-19 Legislative response—Human Biosecurity Emergency Declaration Explainer. Accessed online 9 June 2021 https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/FlagPost/2020/March/COVID-19_Biosecurity_Emergency_Declaration

¹⁵ Food and Agriculture Organization of the United Nations. The FAO Council endorses the establishment of an International Day of Plant Health. Accessed online 9 June 2021 <https://www.ipcc.int/en/news/the-fao-council-endorses-the-establishment-of-an-international-day-of-plant-health/>





A close-up photograph of a green leaf, showing a detailed network of veins. The veins are a lighter green color, contrasting with the darker green of the leaf's surface. The veins form a complex, branching pattern across the leaf. The lighting is soft, highlighting the texture and structure of the leaf's surface.

Chapter 1

Australia's plant biosecurity system



Australia's plant biosecurity system

It takes great effort to keep exotic pests out of Australia. With a total coastline stretching almost 60,000 km, our borders are best protected from plant pests by collaborative partnerships and coordinated activities.

Australia works across the three layers of the plant biosecurity continuum – pre-border, at the border and post-border – with activities to help prevent the introduction, establishment and spread of pests. These three layers of protection and the whole of system assets are expanded upon throughout this report (see Figure 5).

Surveillance and monitoring of risk areas are critical to the integrity of the plant biosecurity system, along with border control activities which focus on assessing and managing potential biosecurity threats at Australia's airports, seaports and international mail centres at the national level, and between states and territories at the domestic level.

As global trade increases, biosecurity risks change, and pests have more opportunities to enter the country in more complex unpredictable pathways. The objective of the plant biosecurity system is to manage risk to a very low level – not to zero – to ensure the safe movement of people, animals, plants, food and cargo into Australia (see Chapter 4) and between states and territories. To do this, complementary measures are applied across the biosecurity continuum, pre-border, at the border and post-border.

The activities of the Australian Government, such as restrictions on what comes in at international arrival points, are often the most visible aspects of the plant biosecurity system. State and territory governments, importers, agricultural industries and all Australians have a role to play in keeping Australia free from new pests.

Key stakeholders with important roles to prevent the spread of pests include state and territory governments, peak industry bodies and their growers, local councils, grower groups, transporters, research organisations, gardeners, anyone who visits a farm or a natural area where plant health is at risk, (including utility providers such as electricity and water service staff), and international and domestic travellers.

This stakeholder effort is referred to as the plant biosecurity partnership. The principle of biosecurity partnerships was established in recognition that, in addition to plant producers and governments, the wider Australian community contribute to, and benefit from the biosecurity system. Benefits include improved productivity, product quality and cost, market access, trade, tourism, profitability, sustainability, and preservation of our unique natural environment and way of life.

Figure 5. Key components of Australia's plant biosecurity system, protecting agriculture and the environment

PRE-BORDER



- Analysing pest risks associated with proposed imports
- Inspecting, verifying and auditing overseas exporters
- Undertaking pest surveillance overseas
- Developing international standards
- Building capacity overseas
- Anticipating pest threats by gathering global pest intelligence
- Negotiating export market access
- Maintaining the Manual of Importing Country Requirements (MICO R) and Export Documentation System (EXDOC) to facilitate exports



AT THE BORDER



- Inspecting and monitoring arrivals of people, cargo, mail and plant products
- Raising awareness of plant pests and movement restrictions
- Imposing biosecurity measures at ports
- Encouraging the reporting of suspected new pests by port workers and importers
- Protecting Australia's north from exotic pests with the Northern Australia Quarantine Strategy (NAQS)
- Enforcing border restrictions
- Isolating newly arrived plant material in post-entry quarantine
- Prioritising exotic pests to target with preparedness and prevention activities



POST-BORDER



- Preventing the spread of regionalised pests
- Conducting surveillance for early warning of incursions of exotic pests
- Eradicating exotic pests under the Emergency Plant Pest Response Deed
- Managing risks under the control of everyday Australians
- Encouraging the reporting of anything unusual
- Managing established pests
- Maintaining the ability to diagnose plant pests
- Maintaining emergency response capacity
- Responding to environmental threats with the National Environmental Biosecurity Response Agreement
- Protecting farms with on-farm biosecurity measures
- Managing pest fruit flies on a national basis
- Managing weeds



Plant biosecurity framework and legislation

The framework for managing the cooperative partnership underpinning Australia's effective plant biosecurity system is supported by a suite of strategies, agreements, review reports, policies and legislation, developed over many years. These provide an overview of structure and a vision for how the plant biosecurity system should operate into the future.

THE INTERGOVERNMENTAL AGREEMENT ON BIOSECURITY

For governments, Australia's partnership approach to biosecurity is documented in the Intergovernmental Agreement on Biosecurity (IGAB).

The IGAB sets out commitments for the Australian, state and territory governments by outlining the agreed national goals and objectives and clarifying roles, responsibilities, and governance arrangements. It is signed by the Prime Minister, premiers and chief ministers.

The IGAB is an important part of Australia's biosecurity architecture. Its role is to enhance national collaboration among Australian governments in order to:

- strengthen Australia's biosecurity system
- support our biosecurity system to meet current and future challenges.

The latest agreement came into effect on 3 January 2019, replacing the previous IGAB which commenced in 2012. The current agreement was developed following a review of the IGAB undertaken in 2016–17, with agriculture ministers agreeing, or agreeing in principle, to all 42 recommendations in 2018.

Agriculture ministers agreed on four key priority reform areas for the national biosecurity system, which are:

- a unified, strategic framework for the national biosecurity system
- enhanced national capacity to manage risks associated with priority pests and diseases
- reduced impediments to maintaining and growing market access
- improved system performance and accountability.

NATIONAL PLANT BIOSECURITY STRATEGY

The National Plant Biosecurity Strategy (NPBS) aligns with the IGAB and sets the strategic direction for Australia's plant biosecurity system to 2020.

Since being developed by Plant Health Australia (PHA) in 2010, the NPBS has driven the way governments, plant industries and the community work closely together to strengthen the national plant biosecurity system.

The NPBS sets out ten strategies to respond to the challenges facing the system (see Table 1). Each strategy is supported by a series of recommendations and actions that focus on key areas of improvement.

Implementation of the NPBS is supported by the National Plant Biosecurity Diagnostic Strategy (2012) and the National Plant Biosecurity Surveillance Strategy (2013) and ensures that the plant biosecurity system continues to:

- protect Australia and Australians from the negative impacts of plant pests
- assist plant production industries to gain and maintain market access
- sustain Australia's high quality food supply
- support long-term sustainable production practices.

PHA has commenced development of a revised ten-year NPBS to build on the achievements of the 2010–20 NPBS and provide continued benefits for the national plant biosecurity system. Work on the revised 2021–31 NPBS is being informed by development of a new preparedness strategy and updated diagnostic and surveillance strategies. It is planned that the revised NPBS will be completed by the end of 2021.

Table 1. Key strategies that form the basis of the NPBS (2010–20)

Strategy 1
Adopt nationally consistent plant biosecurity legislation, regulations and approaches, where possible, within each state and territory government's overarching legislative framework
Strategy 2
Establish a nationally coordinated surveillance system
Strategy 3
Build Australia's ability to prepare for, and respond to, pest incursions
Strategy 4
Expand Australia's plant biosecurity training capacity and capability
Strategy 5
Create a nationally integrated diagnostic network
Strategy 6
Enhance national management systems for established pests
Strategy 7
Establish an integrated national approach to plant biosecurity education and awareness
Strategy 8
Develop a national framework for plant biosecurity research
Strategy 9
Adopt systems and mechanisms for the efficient and effective distribution, communication and uptake of plant biosecurity information
Strategy 10
Monitor the integrity of the plant biosecurity system

NATIONAL COMMITTEES

While state and territory governments have responsibility for implementing many biosecurity activities within their borders, coordination is required between the jurisdictions and with the Australian Government. National committees provide a formal mechanism for developing and coordinating key plant biosecurity policy and procedures that are nationally consistent. As such, Australia's plant biosecurity committee structure plays a major role in facilitating partnerships between governments. Figure 6 shows the structure of Australian government biosecurity committees that are tasked with national coordination of plant biosecurity.

Agriculture Senior Officials' Committee

The Agriculture Senior Officials' Committee (AGSOC) is responsible for primary industry policy issues. The committee comprises the heads of primary industry government departments from the Australian Government, Australian states and territories and the New Zealand Government. AGSOC provides for cross-jurisdictional cooperative and coordinated approaches to matters of national interest. It also supports the Agriculture Ministers' Meeting (AMM) in achieving its objectives.

National Biosecurity Committee

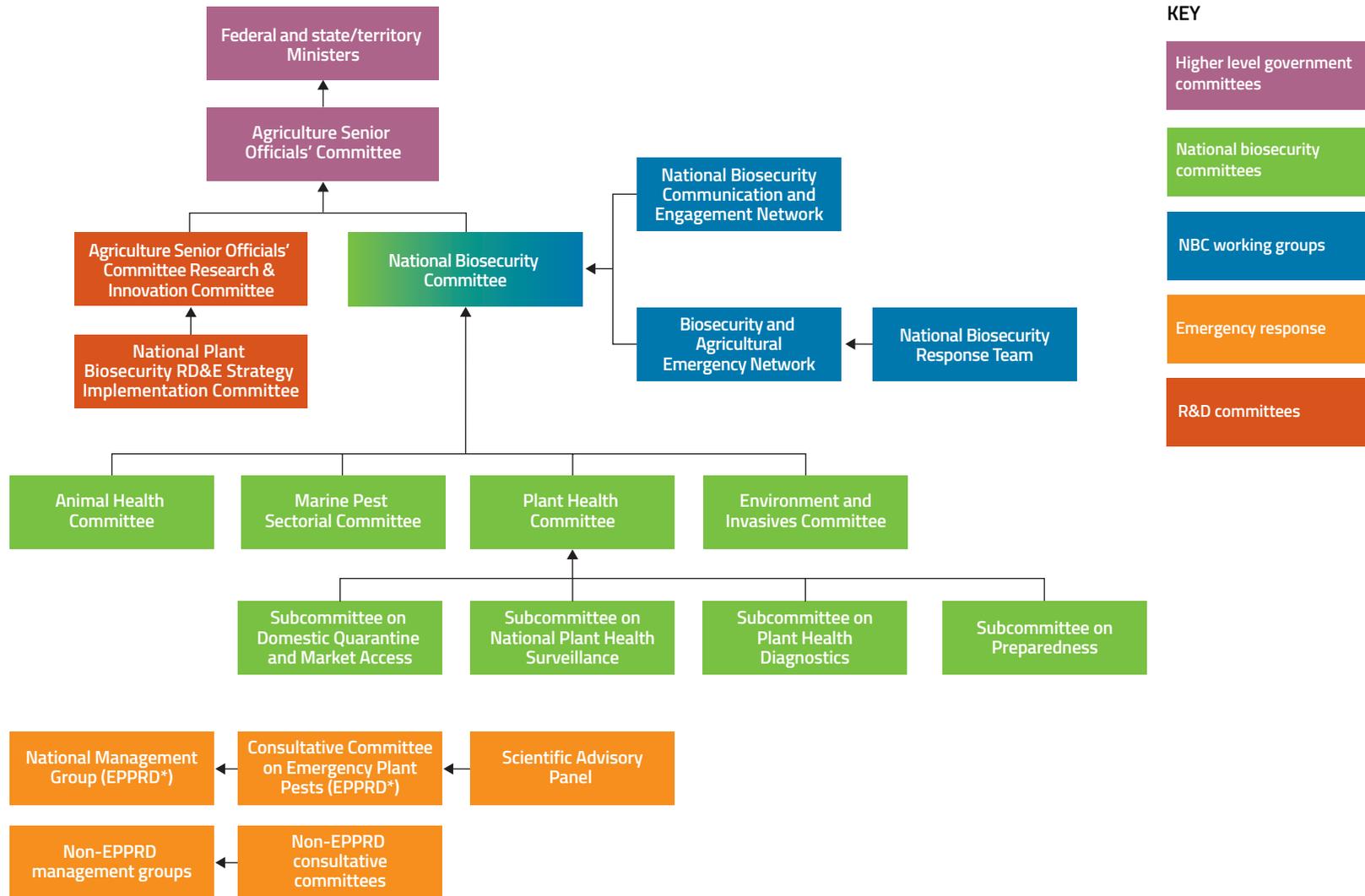
The National Biosecurity Committee (NBC) is responsible for managing a national, strategic approach to biosecurity issues and threats relating to plant and animal pests and diseases, marine and aquatic pests, and the impact of these on agriculture production, the environment, community wellbeing and social amenity. It does this by focusing its efforts on areas identified as priority reforms for the national biosecurity system, as well as managing ongoing or 'normal' commitments.

A core objective of the NBC is to promote cooperation, coordination, consistency and synergies across and between Australian governments. The NBC provides advice to the AGSOC on national biosecurity matters and progress towards implementing the IGAB and priority reform areas.

The NBC was established through the IGAB and is chaired by the Secretary of the Australian Government Department of Agriculture, Water and the Environment (DAWE), or their delegate. Membership of the NBC comprises senior officials from the Australian, state and territory primary industry and/or environment departments, as well as the New Zealand Government. PHA, Animal Health Australia (AHA), and the Australian Local Government Association are observers.

The NBC is supported by four sectoral subcommittees, comprising officers from the Australian, state and territory governments: the Animal Health Committee, Plant Health Committee, Environment and Invasives Committee, and Marine Pest Sectoral Committee.

Figure 6. National government biosecurity committees and working groups with plant focus



*Emergency Plant Pest Response Deed (EPPRD)

Plant Health Committee

Plant Health Committee (PHC) is the peak government plant biosecurity policy forum. Its role is to maintain or improve plant health in Australia to support the economy, environment and community. PHCs membership comprises representatives from the Australian, state and territory governments. PHA and the chairs of PHC subcommittees attend meetings with observer status.

PHC reports to the NBC and provides strategic policy, technical and regulatory advice, and national leadership on plant biosecurity matters. It is responsible for overseeing the implementation of the government aspects of the NPBS and the IGAB with respect to plant health.

Andrew Bishop, Chief Plant Protection Officer (TAS), was chair of PHC until November 2020, when Dr Rosa Crnov, Chief Plant Health Manager (VIC), commenced a two-year term as chair.

During 2020, PHC continued the implementation of the NPBS, using the document as one of the main guiding principles when determining work area priorities. PHC also continued to progress various lines of work to support and maintain trade and market access, both domestically and internationally.

In 2020, the PHC Plant Biosecurity Preparedness Working Group was formed. This working group aims to improve priority plant pest and system preparedness through national coordination of government preparedness activities.

Through its subcommittees, the PHC also facilitates a consistent national approach to legislative outcomes and standards within the plant biosecurity sector.

Environment and Invasives Committee

The Environment and Invasives Committee (EIC) provides national policy leadership on the identification, prevention and management of invasive plant, vertebrate and invertebrate species that adversely impact the environment, economy and community. The EIC provides a national forum for identifying and resolving national priorities for freshwater aquatic and terrestrial invasive species as well as other species where there is an environmental or community biosecurity impact, that are not within the scope of another NBC subcommittee.

Membership of the EIC comprises representatives from the DAWE and state and territory primary industry and environment departments. Jurisdictions may have up to two representatives and the EIC chair rotates every two years. Dr John Tracey, the Deputy Director General of the Department of Primary Industries (NSW), is the chair for 2020–22.

Representatives from the Commonwealth Scientific and Industrial Research Organisation (CSIRO), PHA, AHA, Wildlife Health Australia, the Australian Bureau of Agricultural and Resource Economics and Sciences, and the Centre for Invasive Species Solutions are observers on the committee.

The EIC is also advised by a community sector Environmental Biosecurity Advisory Group, which includes the Invasive Species Council, the Centre of Excellence for Biosecurity Risk Analysis, WWF Australia, Bush Heritage Australia, Natural Resource Management Regions Australia, Landcare, EcoTourism Australia, Ecological Society of Australia, Council of Australasian Weed Societies, the Indigenous Advisory Committee, NAILSMA and the Australian Local Government Association.

There are also several committees with government and industry representatives that oversee biosecurity. They include groups such as the Northern Australia Biosecurity Reference Group and the National Fruit Fly Council amongst others, such as biosecurity reference groups for each industry.

Table 2. Plant, honey bee and environmental biosecurity legislation across Australia

Jurisdiction	Administering authority	Legislation
Commonwealth	Department of Agriculture, Water and the Environment	<ul style="list-style-type: none"> ▪ <i>Biosecurity Act 2015</i>, except to the extent administered by the Health Minister ▪ <i>Biosecurity (Consequential Amendments and Transitional Provisions) Act 2015</i>, except to the extent administered by the Health Minister ▪ Biosecurity (Exposed Conveyances – Exceptions from Biosecurity Control) Determination 2016* ▪ Biosecurity Regulation 2016 ▪ Biosecurity (Prohibited and Conditionally Non-prohibited Goods) Determination 2016 ▪ <i>Environment Protection and Biodiversity Conservation Act 1999</i>** ▪ Environment Protection and Biodiversity Conservation Regulations 2000
Australian Capital Territory	Environment Planning and Sustainable Development Directorate	<ul style="list-style-type: none"> ▪ <i>Animal Diseases Act 2005</i> ▪ <i>Plant Disease Act 2002</i> ▪ <i>Pest Plants and Animals Act 2005</i>
New South Wales	Department of Primary Industries	<ul style="list-style-type: none"> ▪ <i>Biosecurity Act 2015</i> ▪ Biosecurity Regulation 2017 ▪ Biosecurity Order (Permitted Activities) 2019 and other supporting legislations such as Control Orders
Northern Territory	Department of Industry, Tourism and Trade	<ul style="list-style-type: none"> ▪ <i>Livestock Act 2008</i> ▪ Livestock Regulations 2009 ▪ <i>Plant Health Act 2008</i> ▪ Plant Health Regulations 2011

Jurisdiction	Administering authority	Legislation
Queensland	Department of Agriculture and Fisheries	<ul style="list-style-type: none"> ▪ <i>Biosecurity Act 2014</i> ▪ Biosecurity Regulations 2016
South Australia	Department of Primary Industries and Regions	<ul style="list-style-type: none"> ▪ <i>Livestock Act 2007</i> ▪ Livestock Regulations 2013 ▪ <i>Plant Health Act 2009</i> ▪ Plant Health Regulations 2009
Tasmania	Department of Primary Industries, Parks, Water and Environment	<ul style="list-style-type: none"> ▪ <i>Biosecurity Act 2019</i>
Victoria	Department of Jobs, Precincts and Regions	<ul style="list-style-type: none"> ▪ <i>Livestock Act 2007</i> ▪ Livestock Regulations 2013 ▪ <i>Plant Health Act 2009</i> ▪ Plant Health Regulations 2009
Western Australia	Department of Primary Industries and Regional Development	<ul style="list-style-type: none"> ▪ <i>Biosecurity and Agricultural Management Act 2007</i> ▪ Biosecurity and Agriculture Management Regulations 2013 ▪ Biosecurity and Agriculture (Identification and Movement of Stock and Apiaries) Regulations 2013 ▪ Biosecurity and Agriculture Management (Quality Assurance and Accreditation) Regulations 2013 ▪ Biosecurity and Agriculture Management (Agriculture Standards) Regulations 2013 ▪ Agriculture and Related Resources Protection (European House Borer) Regulations 2006 ▪ <i>Exotic Diseases of Animals Act 1993</i>

*This legislation impacts any kind of goods that enter Australia on an exposed conveyance, and is in itself, not specific to bee or plant biosecurity, but rather goes towards when a conveyance becomes subject to biosecurity control.

**The *EPBC Act 1999* aims to protect the environment and conserve biodiversity. Biosecurity contributes to achieving these.

BIOSECURITY LEGISLATION

Australia's biosecurity system operates under Commonwealth, state and territory legislation administered by the respective government agencies. Plant, honey bee and environmental (where applicable) biosecurity legislation, as at 31 December 2020, is listed in Table 2.

The DAWE administers a range of Commonwealth legislation to manage Australia's biosecurity system, manage imports and regulate export certification of agriculture, fish and forest products. The department also carries the responsibility for monitoring compliance with import and export legislation.

There is also legislation covering the collection of primary industry levies to cover the costs of biosecurity activities, reporting of suspicious pests and biosecurity incident responses.

The *Biosecurity Act 2019* (Tasmania) received Royal Assent on 26 August 2019, aligning with the *Biosecurity Act 2014* (Queensland), and the *Biosecurity Act 2015* (New South Wales), both of which introduced into law the principle that everyone has a responsibility for mitigating biosecurity risks under their control, known as the general biosecurity obligation or duty. Some of the other state and territory governments have indicated that they will also formalise this responsibility in legislation in the future.

BIOSECURITY EMERGENCY RESPONSE AGREEMENTS

Emergency Plant Pest Response Deed

The Emergency Plant Pest Response Deed (EPPRD) is a formal, legally binding agreement between PHA, the Australian Government, all state and territory governments, and 38 plant industry peak bodies (as at 31 December 2020). PHA is the custodian of the EPPRD which came into effect in October 2005. More information about the EPPRD and emergency responses can be found in Chapter 6.

National Environmental Biosecurity Response Agreement

The National Environmental Biosecurity Response Agreement (NEBRA) establishes national emergency response arrangements for responding to newly detected pests and diseases that primarily impact the environment or social amenity. The agreement was signed by the Australian, state and territory governments in January 2012. The DAWE is the custodian of the NEBRA. A requirement of the NEBRA is that the agreement is reviewed within five years of commencement. Public consultation on a draft revised NEBRA closed in July 2019, however a final approved version was not available as of 31 December 2020.

PLANT BIOSECURITY STATUTORY LEVIES

The DAWE collects, administers and disburses agricultural levies and charges on behalf of Australia's primary industries.¹⁹

Many of Australia's primary industries rely on the levy system and the support it provides for research and development (R&D), marketing and promotion, chemical residue testing, and plant health programs.

The rural research and development corporations (RDCs, see Chapter 8) are funded primarily by statutory R&D levies (or charges) on various commodities, with matching funding from the Australian Government. Much of the biosecurity R&D listed in Chapter 8 is funded via the levy system.

Levy and charge revenue can be directed to biosecurity preparedness and emergency plant pest and animal disease responses, residue testing, marketing and research and development. It is the decision of a primary industry to determine the proportion of how a levy or charge is directed to each of these activities.²⁰

Plant biosecurity levies, imposed under the *Plant Health Australia (Plant Industries) Funding Act 2002*, include the PHA levy and the Emergency Plant Pest Response (EPPR) levy which can be used as follows:

Plant Health Australia (PHA) levy

The PHA levy can be used by industries to meet membership subscriptions to PHA and may also be used to undertake specific plant biosecurity projects, such as preparation of biosecurity manuals, holding workshops or training sessions and developing pest fact sheets.

Emergency Plant Pest Response (EPPR) levy

EPPR levies enable industries to raise funds in relation to Emergency Plant Pests (EPPs) (as defined by the EPPRD). This includes meeting their financial obligations for cost-shared national response plans in the event of an incursion (see Chapter 6). Once established, EPPR levies are generally set at zero and can be activated when needed, following industry agreement to a cost-shared response plan.

¹⁹ Australian Government Department of Agriculture, Water and the Environment. Levies and charges. Accessed online 17 February 2021 <https://www.agriculture.gov.au/ag-farm-food/levies>

²⁰ Australian Government Department of Agriculture, Water and the Environment. Levies and charges. Accessed online 17 February 2021 <https://www.agriculture.gov.au/ag-farm-food/levies>

Government roles

THE AUSTRALIAN GOVERNMENT

Protecting Australia's world-class biosecurity system and our enviable status as a pest and disease-free nation continues to be a major priority for the government. The Australian Government has committed around \$873 million for biosecurity and export programs in 2020–21, an increase of \$243 million since 2014–15.

Under national legislation, the Australian Government has responsibility for the bulk of biosecurity activities pre-border and at the border, such as screening and compliance at the multiple entry points that make up the nation's border, international phytosanitary (plant health) obligations, carrying out risk analysis for proposed imports, and post-entry plant quarantine. These activities benefit not only our plant industries, but also our unique environment and way of life.

As well as regulating imports, the Australian Government's biosecurity activities play a key role in supporting the export of Australian produce. The Australian Government assists in market access negotiation by working with states and territories and plant industry peak bodies to collect and analyse plant health surveillance data, to provide trading partners with evidence of freedom from pests and diseases. The Australian Government also undertakes negotiations to determine what, if any, treatments or conditions need to be met to send Australia's plant products overseas.

In addition to bilateral and multilateral trade negotiations, Australia plays a leading role in developing and implementing international standards that aim to prevent the spread of plant pests. Under the Agricultural Competitiveness White Paper, Stronger Farmers, Stronger Economy,²¹ the Australian Government invested \$200 million into improving biosecurity surveillance and analysis, to better target critical biosecurity risks and improve market access for Australian producers.



²¹ Commonwealth of Australia (2015). Agricultural Competitiveness White Paper, Stronger Farmers, Stronger Economy, Canberra

Department of Agriculture, Water and the Environment

agriculture.gov.au

Most of the responsibilities of the Australian Government are delivered through the agriculture portfolio, in collaboration with other agencies described in the following pages. The Department of Agriculture, Water and the Environment (DAWE) was formed in 2020 and focuses on maintaining a strong and resilient biosecurity system that will protect Australia from new biosecurity challenges, whatever they may be.

The millions of people, mail parcels, baggage, ships, animals, plants and cargo containers that enter Australia every year are screened and inspected by departmental staff, supported by x-ray machines, surveillance activities and detector dogs. Of equal importance are the pre-border measures to prevent pests and diseases from arriving in the country. Managing Australia's biosecurity is a big job and the department promotes a shared responsibility with clients, stakeholders and the general public, all of whom have a role to play.

DAWE also pursues international market access for Australia's plant production industries and access to the Australian market for our trading partners through bilateral, regional and multilateral engagement. Priority is given to:

- working to remove barriers to international trade
- progressing and resolving market access priorities and issues
- facilitating targeted technical assistance and agricultural cooperation
- assisting the development and implementation of international standards.

This work is supported and enhanced by a network of agricultural counsellors located in Belgium, China, Dubai, Europe, France, India, Indonesia, Italy, Malaysia, Japan, Taiwan, Korea, the Middle East, Thailand, Saudi Arabia, Vietnam, Chile, Mexico, the United Kingdom and the United States.

The agricultural counsellors' role is to build and maintain key relationships with Australia's trading partners. Counsellors organise and lead discussions, receive and respond to requests for information, facilitate visits and inspections to progress market access requests and promote Australian products. They work closely with industry, overseas authorities and the department in the process. The negotiations for access to overseas markets, including technical consultations about the importing nation's biosecurity requirements, can sometimes take years to work through. DAWE's overseas officers play a key role in facilitating this process. The outcome of a 2020 review of the overseas network is available on the DAWE website.²²

Within the department, Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) provides current scientific and economic advice to decision makers to support the plant biosecurity system. DAWE also contributes to the development of national policies on invasive pests, weeds and diseases that cause harm to the environment.

²² Department of Agriculture, Water and the Environment. Our agriculture counsellors. Accessed online 15 July 2021 www.agriculture.gov.au/market-access-trade/overseas-network

The *Biosecurity Act 2015* (Commonwealth) establishes that a biosecurity risk includes diseases or pests that can cause harm to the environment, including invasive pests. Complementing this, the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) is used to establish the list of live animal specimens considered suitable for live import into Australia, known as the Live Import List. While imports of live plants are managed separately by the DAWE, live animal imports can also impact on plant health and the natural environment. The import of live plants and animals should not be inconsistent with the *Biosecurity Act 2015* (Cwlth).

DAWE is responsible for ensuring that Australia complies with its obligations under the Convention on Biological Diversity and its Aichi Targets and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), manages permits for the import of CITES listed species (plants or animals), and works with the Australian Border Force to implement the conventions.

Department of Foreign Affairs and Trade

dfat.gov.au

The Department of Foreign Affairs and Trade helps make Australia stronger, safer and more prosperous by promoting and protecting our interests internationally and contributing to global stability and economic growth. The department helps progress Australia's international trade interests, by promoting Australia's strong biosecurity system to trading partners. Other agencies within the portfolio include:

Austrade – Australia's trade and investment promotion agency. Its global network of advisers are experts in connecting Australian businesses to the world to help them go further, faster.

Australian Centre for International Agricultural Research (ACIAR) – a statutory authority that is part of the Australian Government's development cooperation programs. ACIAR brokers partnerships with public and private research institutions to improve the productivity and sustainability of agricultural systems and the resilience of food systems in the Indo-Pacific region.

Department of Home Affairs and the Australian Border Force

homeaffairs.gov.au

The Department of Home Affairs, formed in 2017, manages the security and integrity of Australia's borders. It works closely with other government and international agencies, in particular the Australian Federal Police, DAWE and the Department of Defence to facilitate the movement of goods and people across the Australian border. When the Australian Border Force detects unlawful importation of wildlife and exportation of Australian wildlife, it refers them to DAWE for investigation.

The Inspector-General of Biosecurity

igb.gov.au

Australia's biosecurity system relies on various government programs, in cooperation with industry, to ensure the safe international movement of people and goods.

The Inspector-General of Biosecurity (IGB) position was established to enhance the integrity of Australia's biosecurity systems through independent evaluation of the performance of these programs pre-border and at the border.

The position is independent of DAWE and its Minister. However, the Inspector-General may:

- consider requests for review(s)
- review the performance of functions and the exercise of powers by the Director of Biosecurity (who is also the Secretary of DAWE)
- make recommendations for improvement to the overall system.

The Inspector-General role does not cover the assessment and review of issues related to international trade and market access opportunities.

On 25 July 2019, the Minister appointed Mr Rob Delane as the IGB to independently evaluate and verify the performance of DAWE's biosecurity risk management measures and systems.

A review program – set annually in consultation with the Minister for Agriculture and the Director of Biosecurity – is published on the website. In 2019–20, the Inspectors-General completed and progressed the following reviews:

1. Adequacy of preventative border measures to mitigate the risk of African swine fever (23 March 2020).
2. Biosecurity risk management of international express airfreight pathway for non-commercial consignments (3 July 2020).
3. Confidence testing for at border delivery of critical biosecurity functions (in progress).
4. Adequacy of the department's operational model to effectively mitigate biosecurity risks pre-border and at the border in evolving risk and business environments (in progress).

Other Australian Government organisations

For a list of Australian Government organisations that support plant biosecurity research, development and extension, such as the CSIRO, see Chapter 8.

Other Australian Government agencies that contribute to maintaining Australia's plant biosecurity system include the Australian Pesticides and Veterinary Medicines Authority and the Office of the Gene Technology Regulator.

STATE AND TERRITORY GOVERNMENTS

While the Australian Government has responsibilities for the majority of pre-border and border biosecurity activities, state and territory governments are responsible for the delivery of biosecurity operations and the relevant legislation within their borders.

Each state and territory has a different approach to their role, primarily due to the varied climatic conditions and legislative frameworks across the country. Jurisdictions each provide a number of core services, most of which involve the community.

Broadly, these are activities concerned with preventing the spread of existing plant pests within Australia, including any newly detected exotic pests. State and territory government responsibilities include:

Managing domestic imports and exports into and out of their jurisdiction, primarily to prevent the spread of regionalised pests around Australia. There are two components to this:

- domestic quarantine services for the clearance of passengers, cargo, mail, plants and plant products moving interstate
- export and market access support for producers who want to sell their produce across state boundaries. This includes plant health certification services, surveys and inspections to support area freedom, and the accreditation and auditing of export compliance arrangements (see page 198).

Providing quarantine services involving activities to prepare for, and respond to, plant pest incursions in their jurisdiction, including communicating with communities.

Responding to emergency pest and diseases by maintaining the capacity and capability to deliver responsibilities under the Emergency Plant Pest Response Deed (see Chapter 6), which is activated when a suspected Emergency Plant Pest is detected in their jurisdiction. Responsibilities may include setting up and enforcing quarantine zones, informing the public, and treating pests and plants. The lead agency also carries out surveillance to find out how far pests have spread, and at the end of the response, to confirm that eradication has been achieved and national freedom from the pest or disease can be re-established.

Undertaking pest surveillance in partnership with industry and community volunteers. There are 104 surveillance programs carried out by state and territory governments, requiring significant resourcing. Pest surveillance is crucial for the early detection of new pests, discovering the extent of pest spread (delimiting), and providing evidence of area freedom to facilitate market access.

Providing diagnostic services to identify plant pests (both endemic and exotic) found in their jurisdiction, or to assist other jurisdictions. This includes holding reference collections for comparison of species.

Developing and maintaining information systems to support routine and emergency plant biosecurity management.

Providing public information to raise awareness of biosecurity threats and calls to action and raising awareness in the community of the importance of biosecurity.

Carrying out science-based risk analyses to identify pest threats and inform plant biosecurity policy and operations.

Funding and providing research, development and extension to support the continued improvement of pest management and protection capabilities.

Developing and administering plant biosecurity policies and legislation and working on national committees to ensure that they are in line with other governments around Australia.

State and territory governments coordinate their activities through the IGAB, the PHC and subcommittees, through PHA and through the Emergency Plant Pest Response Deed (EPPRD).

Australian Capital Territory

Lead agency: Environment Planning and Sustainable Development Directorate (EPSDD)
environment.act.gov.au

The ACT Government manages plant biosecurity through the EPSDD, together with the Transport Canberra and City Services (TCCS) Directorate. EPSDD is responsible for policy development and shares operational implementation with TCCS.

Plant biosecurity activities in the ACT are underpinned by the *Plant Diseases Act 2002* and the *Pest Plants and Animals Act 2005*. Although the ACT does not have many plant production industries within its boundaries, the government participates on national committees during plant pest emergency responses and in the development of associated national frameworks and strategies when it has expertise to contribute. It has particular expertise in forestry, urban tree management and national parks.

Following the release of the ACT Biosecurity Strategy 2016–26, the ACT has commenced development of a comprehensive Biosecurity Bill to modernise the ACT's biosecurity legislative framework and align it with similar legislation in other jurisdictions, particularly NSW.

Modern biosecurity tools with enhanced emergency response powers, combined with regular plant surveillance activities to check for exotic pests (like fruit flies, gypsy moths and bee pests) around the airport will help address the increased biosecurity risks presented by international flights to Canberra Airport.

There have been several major plant health incidents in the ACT in 2020. The ACT in collaboration with DAWE, NSW Department of Primary Industries and other jurisdictions will be undertaking ongoing surveillance as part of national response plans. Earlier in the year a suspected potato wart report was found to be root knot nematode. The ACT also participated in initial investigations within the ACT where the serpentine leaf miner was suspected as part of the outbreak in NSW.

New South Wales

Lead agency: Department of Primary Industries (NSW DPI)
dpi.nsw.gov.au

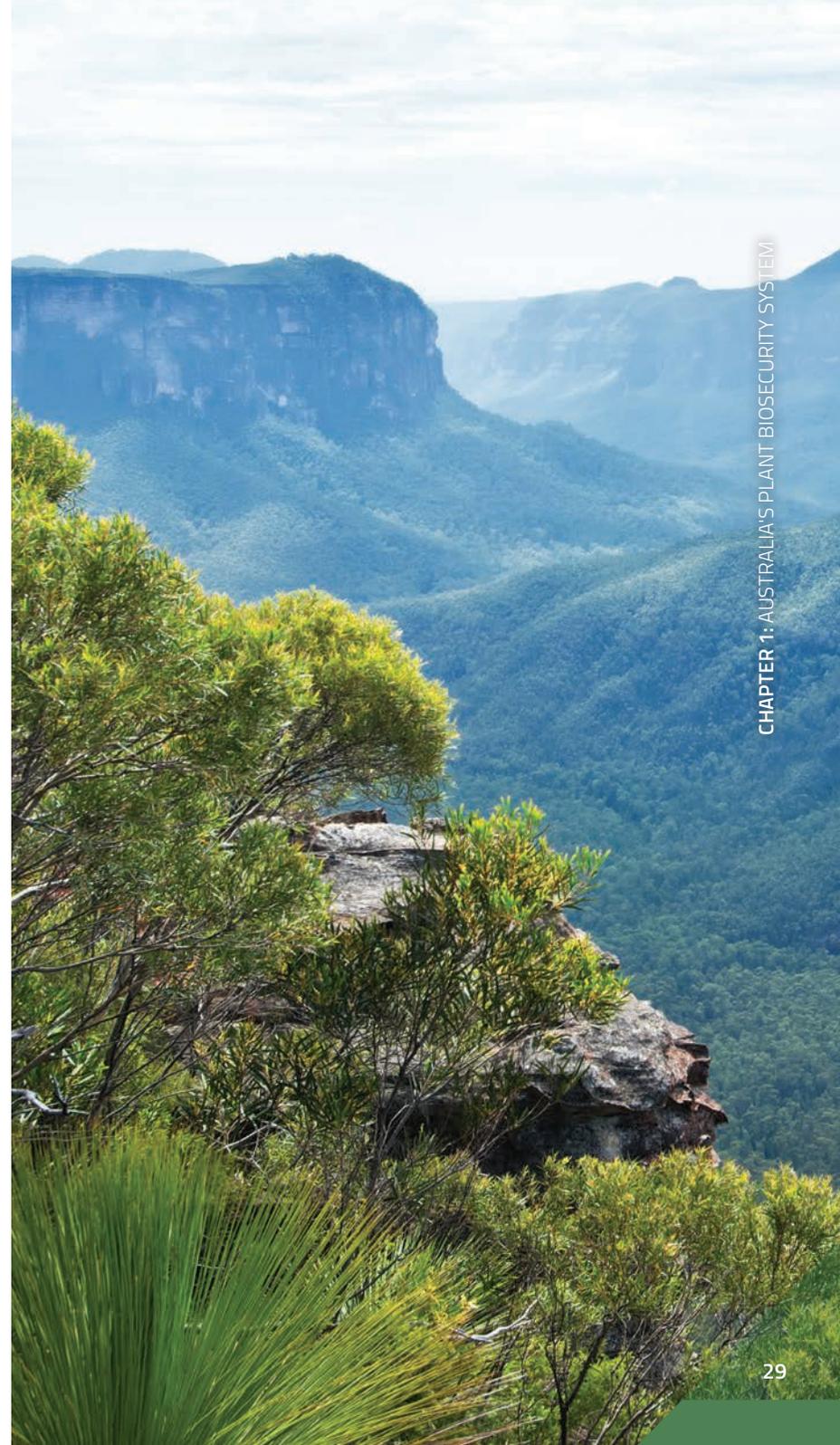
NSW DPI is the principal agency responsible for plant biosecurity in the state, ensuring that policies, management and procedures are in place to minimise the impact of existing, invasive and Emergency Plant Pests. NSW DPI maintains rapid response mechanisms for pest incursions in order to protect trade and market access, agricultural resources, regional economies and the environment.

The NSW Biosecurity Strategy 2013–21 defines how NSW DPI, in partnership with other government agencies, industry and the public, manages biosecurity risks to NSW.

Within the DPI, the Plant Biosecurity and Product Integrity unit develops plant pest policy directions and has oversight of operational responses to Emergency Plant Pests. The group provides advice to, and participates actively in, national decision-making forums for plant pests of national significance and interstate market access for NSW plants and plant products.

Surveillance and diagnostic activities are supported by the Plant Health Diagnostic Service at the Elizabeth Macarthur Agricultural Institute, the Biosecurity Collections Unit at Orange Agricultural Institute, the state-wide network of compliance officers, Local Land Services and the emergency management First Response Team. Close collaboration with entomology and plant pathology researchers is integral to these activities.

Following the commencement of the *Biosecurity Act 2015* in 2017, all NSW plant biosecurity incursions, infringements and investigations have been successfully managed under this new legislative structure. The act has proven to be an innovative and positive step forward in the way NSW DPI manages biosecurity.



Northern Territory

Lead agency: Department of Industry, Tourism and Trade (DITT)
industry.nt.gov.au

Plant biosecurity in the Northern Territory (NT) is managed by the Plant Biosecurity Branch, within NT DITT's Biosecurity and Animal Welfare Branch. The Plant Biosecurity Branch is responsible for the development and implementation of plant biosecurity policies, programs and procedures aimed at maintaining NT's freedom from plant pests that could adversely impact trade, market access, public health and the environment.

The NT agricultural sector provides over \$610 million to the Australian economy each year. Horticultural industries contribute almost half of this value (\$278 million in 2018), with a significant proportion of that being derived from production of iconic NT produce such as mangoes and melons. Other markets offer growth opportunities. To protect this, the environment and social amenity, the Plant Biosecurity Unit undertakes the following services:

- maintaining and improving the plant health status of the plant and plant product industries of NT
- minimising the risk of exotic pests entering NT through education, engagement, surveillance and compliance
- facilitating interstate trade of plant and plant products through certification, inspection and the Interstate Certification Assurance program
- conducting active and passive pest surveillance to support market access nationally and within NT
- conducting active surveillance for the early detection of a range of exotic pests
- preparing effective response mechanisms in the event of an incursion
- developing, implementing and reviewing NT's plant health policy and legislation.

In 2015, browsing ant was detected in the NT. The NT Government, through the National Browsing Ant Eradication Program, is on track to eradicate browsing ant.

In 2018, citrus canker was detected in the NT. The NT Government is in the process of eradicating this pest under the National Citrus Canker Eradication Program and working towards declaring proof of freedom from citrus canker at the end of 2020.

Fall armyworm were detected in agricultural areas around the NT in March 2020. The NT government continues to work closely with other jurisdictions, industry groups and communities to manage this pest.

Plant biosecurity programs in the NT are underpinned by the *Plant Health Act 2008* and Plant Health Regulations 2011. In addition, the *Agricultural and Veterinary Chemicals (Control of Use) Act* and the *Biological Control Act* support NT work. A major review of the Plant Health Regulations 2011 was undertaken during 2020. The review effectively contemporised the regulations, and sought to clarify a number of regulations to remove potential ambiguities in their interpretation.

Queensland

Lead agency: Department of Agriculture and Fisheries (DAF)
daf.qld.gov.au

Biosecurity Queensland is the lead agency within the DAF, responsible for managing biosecurity risks within the state. The Plant Biosecurity and Product Integrity program within Biosecurity Queensland is responsible for: developing policies, standards, delivery systems and services to reduce the risk of introducing exotic plant pests; minimising the impacts of new plant pest incursions on QLD's plant industries, environment and communities; facilitating market access for QLD's plant-based industries; and managing risks associated with the use of agriculture and veterinary chemicals.

The Plant Biosecurity and Product Integrity program is responsible for the implementation of programs for the prevention and preparedness, detection, diagnosis, response, control, containment and eradication of high priority plant pests.

Other DAF business groups also contribute to managing the risk of plant pest threats.

Links with other Queensland Government departments provide access to a range of relevant expertise across all plant production sectors, including native and plantation forestry.

Key links include:

DAF Agri-Science Queensland, which provides science, research, innovation and associated services, including additional diagnostic capability, surveillance and integrated management packages to limit the impacts of pests within farming systems.

Department of Environment and Science, which plays a role in managing the natural environment and environmental plant pests.

Queensland Museum, which specialises in the identification of molluscs, mites and spiders.

The *Biosecurity Act 2014* and Biosecurity Regulation 2016 provide the framework for plant biosecurity management in QLD. The act is underpinned by the concept of shared responsibility, where everyone has a general biosecurity obligation to take all reasonable and practical steps to manage biosecurity risks that are within their control.

This legislation is complemented by a number of other acts, including the *Chemical Usage (Agricultural and Veterinary) Control Act 1988* and the *Agricultural and Veterinary Chemicals (Queensland) Act 1994*.

South Australia

Lead agency: Department of Primary Industries and Regions SA (PIRSA)

pir.sa.gov.au

Biosecurity SA, a division within PIRSA, develops and implements plant biosecurity policies, programs and procedures aimed at maintaining SA's freedom from pests that could adversely impact trade, market access, public health, food safety, the rural economy and the environment.

PIRSA prepares for and responds to a range of plant pests but, given SA's freedom from fruit flies of economic significance, PIRSA has a major focus on operations to prevent their entry and establishment. Activities include a dedicated state-wide fruit fly trapping grid, static quarantine stations and random roadblocks, targeted awareness and education campaigns, regulatory arrangements for importers, and specific measures to effectively respond to and eradicate any fruit flies that are detected.

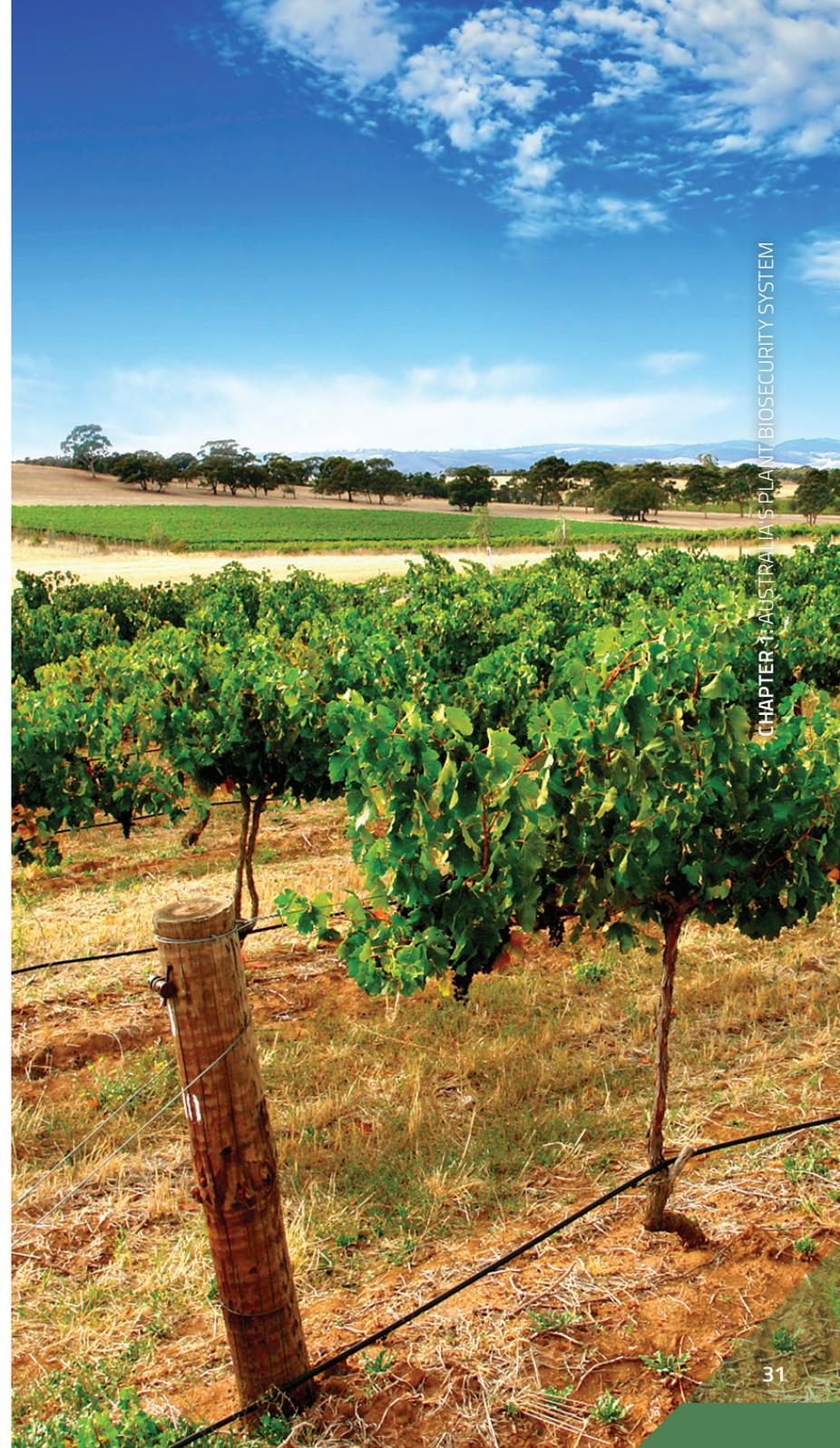
Currently the National Sterile Insect Technology Facility in Port Augusta produces 20 million sterile Queensland fruit flies per week for supply to Lindsay Island and Cobram in VIC, and Hillston in NSW, as well for eradication responses as required nationally, such as is in Perth.

The South Australian Research and Development Institute (SARDI) is the principal research institute and provides Biosecurity SA with plant diagnostic, pathology and entomology capacity and advice.

SARDI also undertakes targeted research and development to reduce losses from plant diseases in the cereal, pulse, pasture, viticulture and horticulture industries. This includes delivery of plant health diagnostic services to state and national plant biosecurity authorities, growers and consultants.

The group collaborates closely with breeding companies, pre-breeding programs and the private sector to develop disease resistant plant varieties.

Plant biosecurity programs in SA are underpinned by the *Plant Health Act 2009* and Plant Health Regulations 2009. In addition, the Plant Quarantine Standard for South Australia has been established under the act to identify the relevant conditions of entry for fruit, vegetables, plants, plant products, machinery and equipment of biosecurity concern.





Tasmania

Lead agency: Department of Primary Industries, Parks, Water and Environment (DPIPWE)
dpiipwe.tas.gov.au

DPIPWE's Biosecurity Tasmania Division manages biosecurity policy and programs for plant pests. The Plant Biosecurity and Diagnostics Branch of the division supports and maintains the TAS biosecurity system in the development of plant biosecurity policy and the delivery of plant health diagnostic, market access, surveillance, and associated areas. It does this via programs across three areas: plant biosecurity policy and administration; plant health diagnostics (entomology); and plant health diagnostics (plant pathology). The branch also contains a market access unit in relation to plants and plant products, a plant biosecurity surveillance unit that manages the policy and smaller operational aspects of surveillance, and delivers on communication services specific to plant biosecurity.

The branch also provides diagnostic and control advice for plant pests and diseases in primary industry, horticulture and biosecurity situations. Plant Diagnostic Services, administered by the branch, provides state-wide laboratory services that supply a range of tests for plant pests and pathogens, using microbiological, molecular, ELISA and electron microscopy techniques on a wide range of plants and seeds for private industry, government research bodies and certification schemes.

The branch maintains and develops TAS's capability to effectively respond to and recover from plant biosecurity emergencies, compiles and maintains official pest records to assist market access and trade, and leads the implementation of plant biosecurity risk analysis activities consistent with the Tasmanian Import Risk Analysis Framework.

The Biosecurity Operations Branch implements regulatory requirements with respect to the import of plants and plant products into TAS, and undertakes a range of surveys for plant pests, including Queensland and Mediterranean fruit fly.

TAS's new biosecurity legislation, the *Biosecurity Act 2019*, received Royal Assent on 26 August 2019. Work is underway to implement the changes, which will be rolled out in a way that minimises the impact on businesses and the community.

Until those changes are made, the regulations made under the many separate pieces of legislation (including the *Plant Quarantine Act 1997*) that were previously used to manage biosecurity, will remain in place as the main compliance tools. This is until the provisions of the new act are proclaimed.

Full implementation will take three to four years and will involve consultation and ongoing participation between government, industry and community.

Victoria

Lead agency: Department of Jobs, Precincts and Regions (DJPR)
agriculture.vic.gov.au

Within DJPR, Agriculture Victoria provides a clear identity to the agricultural services and initiatives delivered. There are five branches within Agriculture Victoria, including the Biosecurity and Agriculture Services (BAS) Branch, which has the responsibility for delivering biosecurity and product integrity programs across the agriculture, horticulture, forest and amenity plant sectors. Activities are guided by the BAS Strategy which aims to minimise the impact of emergency plant and apiary pest incidents on production systems and the environment, and maintain access to local and overseas markets.

The Chief Plant Health Officer Unit, within BAS, is responsible for the development, review and monitoring of policies, protocols and procedures in accordance with national and international obligations. They are also the lead for preparedness and response activities and policy relating to plant and apiary pests.

The Plants, Chemicals and Invasives Unit within BAS operates from metropolitan and regional centres according to technical standards and protocols that are underpinned by the *Plant Biosecurity Act 2010* and *Livestock Disease Control Act 1994* and implemented by the Plant Biosecurity Regulations 2016 and Livestock Disease Control Regulations 2017.

Opportunities are provided under the legislation for producers and marketers to adopt quality assurance arrangements which are subject to regular audits and improvement.

Scientific and diagnostic support is provided by the staff of Agriculture Victoria Research, including expert technical advice on suspect and exotic plant and apiary pests, and assistance with incursion responses, market access programs and other biosecurity initiatives. The research team, and its associated Crop Health Services diagnostic business, supports biosecurity by conducting research and providing diagnostic services in the areas of entomology, mycology, nematology, virology and bacteriology. Staff also help develop and review biosecurity plans for industries, conduct pest risk analyses and import risk analyses and serve on national committees and working groups.

Agriculture Victoria invests extensive resources into emergency preparedness planning, surveillance and training to prevent the entry and establishment of exotic plant and apiary pests and diseases that threaten agricultural industries.

Western Australia

Lead agency: Department of Primary Industries and Regional Development (DPIRD)
dpird.wa.gov.au

DPIRD is the lead agency responsible for plant biosecurity in Western Australia (WA), with development and implementation of plant biosecurity policies, programs and procedures delivered under the Sustainability and Biosecurity organisational pillar. This includes biosecurity, resource management, operations and compliance functions. It is largely regulatory and market access focused, helping WA to maintain its reputation as a producer of safe, sustainable and biosecure agricultural and aquatic products.

Plant biosecurity in WA is mainly managed under the Biosecurity and *Agriculture Management Act 2007*, designed to prevent declared pests and diseases from entering the state and manage those that are already present. The act provides for a modern biosecurity system to control the entry, establishment, spread and impact of harmful organisms (pests and diseases), control the use of agricultural and veterinary chemicals, establish standards to ensure the safety and quality of agricultural products and raise funds for biosecurity related purposes. Throughout 2020, WA responded to several biosecurity incidents and increased surveillance and preparedness activities to strengthen readiness for future incursions.

- Fall armyworm (FAW) was detected in the state in February 2020. A network of pheromone traps were initially established in the Kimberley, Pilbara and Gascoyne district. When FAW was detected in the northern grain belt outside of Geraldton, the surveillance network was expanded to include the wider grain belt of the south-west of the state.
- Russian wheat aphid was detected in August 2020 on properties along the south coast of the state. Delimiting surveillance activity was undertaken and, while it was not widespread, it was not eradicable.
- Queensland fruit fly was detected in Dalkeith through DPIRD's permanent grid of approximately 2,000 surveillance lure traps located across the Perth metropolitan area, triggering an incident on 26 March 2020. The response expanded to cover an area of 2,049 hectares and more than 13,500 premises, with over 300 personnel working on the incident at the height of the response. An additional 600 surveillance lure traps, 1,250 biolure traps and 13,000 bait and kill traps were deployed, which supplemented bait spraying, the primary eradication tool. Sterile Queensland fruit fly were released from December 2019 to January 2020.
- The Carnarvon Area Wide Freedom surveillance program of trapping at 100 sites concluded in June 2020. There were no detections of targeted pests, including tomato potato psyllid, glassy winged sharpshooter, exotic fruit flies, Asian citrus psyllid, brown marmorated stink bug, invasive ants, and vectors of plant diseases such as thrips, leaf hoppers and plant hoppers.
- The annual WA Biosecurity Blitz event was conducted from 19 October to 16 November 2020 and promoted the International Year of Plant Health 2020. The blitz is a citizen science project, aimed at improving community engagement in science and building an understanding that biosecurity is a shared responsibility.

Non-government roles

PLANT HEALTH AUSTRALIA

www.planthealthaustralia.com.au

PHA is the national coordinator of the government–industry partnership for plant biosecurity in Australia. The not-for-profit company facilitates this partnership and drives action to improve policy, practice and performance of Australia's plant biosecurity system and to build capability to respond to plant pest emergencies. PHA independently advocates on behalf of the national biosecurity system to benefit plant industries and the environment.

PHA's efforts help to:

- minimise plant pest impacts
- enhance Australia's plant health status
- assist trade domestically and internationally
- safeguard the livelihood of producers
- support the sustainability and profitability of plant industries and the communities that rely on them
- preserve environmental health and amenity.

Plant Health Australia members

PHA members comprise all major plant industry peak bodies that represent Australia's growers and beekeepers, the Australian Government and all state and territory governments, a total of 58, as at 31 December 2020. Table 3 gives a full list of industry, government and associate members. The honey bee industry is a member of PHA because of the benefits that pollination brings to crop yield.

Being a PHA member enables parties to stay up to date on plant biosecurity issues and to collaborate on strengthening all aspects of the system. Membership also gives members the option of being a signatory to the Emergency Plant Pest Response Deed (EPPRD, see Chapter 6).

Through PHA, current and future needs of the plant biosecurity system can be mutually agreed upon, issues identified and solutions to problems found.

PHA's autonomy fosters an impartial approach to servicing member needs, allowing the company to put the interests of the plant biosecurity system first, as well as supporting a long-term view.

PHA's main activities are funded from annual subscriptions paid by members. The number of plant biosecurity partnerships are increasing over time, and the model is proving highly successful.

Table 3. Plant Health Australia members

Industry members		
Almond Board of Australia	Australian Processing Tomato Research Council	Cotton Australia
Apple and Pear Australia	Australian Sweetpotato Growers	Dried Fruits Australia
Australian Banana Growers' Council	Australian Table Grape Association	Grain Producers Australia
Australian Blueberry Growers' Association	Australian Tea Tree Industry Association	Greenlife Industry Australia*
Australian Forest Products Association	Australian Truffle Growers' Association	GROWCOM
Australian Ginger Industry Association	Australian Walnut Industry Association	Hazelnut Growers of Australia
Australian Grape and Wine Inc	AUSVEG Limited	Onions Australia
Australian Honey Bee Industry Council	Avocados Australia	Passionfruit Australia
Australian Lychee Growers' Association	CANEGROWERS	Pistachio Growers' Association
Australian Macadamia Society	Canned Fruit Industry Council of Australia	Raspberries and Blackberries Australia
Australian Mango Industry Association	Cherry Growers Australia	Ricegrowers' Association of Australia
Australian Melon Association	Chestnuts Australia	Strawberries Australia
Australian Olive Association	Citrus Australia	Summerfruit Australia
Government members		
Australian Capital Territory Government	Northern Territory Government	Tasmanian Government
Commonwealth of Australia	Queensland Government	Victorian Government
New South Wales Government	South Australian Government	Western Australian Government
Associate members		
AgNova Technologies	Horticulture Innovation Australia	Victorian Farmers' Federation
Cotton Research and Development Corporation	Northern Territory Farmers' Association	Vinehealth Australia
CSIRO	Protected Cropping Australia	Wine Australia
Grains Research and Development Corporation	Sugar Research Australia	

*Formerly Nursery and Garden Industry Australia

In close consultation with stakeholders, PHA formulates the strategies, plans and reports that contribute to government and industry policy development, facilitate improved national coordination and collaboration, and target member efforts and investment to best effect. The National Plant Biosecurity Strategy, biosecurity plans for industries and the series of annual plant biosecurity status reports are examples of this work.

PHA facilitates and manages emergency responses to exotic plant pests

Another central role for PHA is the establishment of funding and management arrangements for effective responses to incursions. PHA undertakes this role through its custodianship and administration of the EPPRD, and its operational guide PLANTPLAN, which sets out the agreed approach that government and industry stakeholders will take whenever an Emergency Plant Pest (a new exotic pest of significance) is found (see Chapter 6).

PHA works with members to mitigate risks posed by pests

Beyond its contribution to response arrangements, PHA supports the national plant biosecurity system by coordinating and assisting efforts to reduce the risks posed by pests. This is achieved in large part by supporting industries and governments to develop strategies and plans that improve biosecurity standards and by providing assistance to implement agreed risk mitigation measures.

Biosecurity plans, manuals for producers and awareness raising extension services are examples of activities that PHA undertakes with and on behalf of members. See more in Chapter 2 and Chapter 7.

PHA also works to ensure that the system is supported with assets such as information systems, diagnostic expertise, targeted research, development and extension activities, and surveillance protocols and provides information on exotic pests on the Pest Information Document Database. This online information resource holds publicly available fact sheets and other kinds of information on serious exotic pests, which is frequently used by PHA members.

PHA is also commissioned to undertake many risk-mitigation projects by individual members, groups of members in partnership, and non-members. Often these non-subscription funded projects boost biosecurity preparedness for particular industries. Examples of such projects include industry funded biosecurity outreach officers, response simulations, and biosecurity manuals to inform growers.

20 years of improving national biosecurity

Established in 2000, with a long-term goal of developing and maintaining an internationally outstanding plant health management system, Plant Health Australia (PHA) is the national plant biosecurity coordinator of the government–industry partnership bringing together plant industry stakeholders to share biosecurity responsibility.

Under the first Chair, Andrew Inglis, PHA identified national priorities in plant health management, reviewed existing systems, structures and programs, consulted members and established operating procedures.

2001 brought:

- consolidation of past work
- projects to resolve gaps and improve coordination and consistency of the national system
- a new website
- the launch of the Australian Plant Pest Database (APPD) with 46,000 pest records.

The introduction of the *Plant Health Australia (Plant Industries) Funding Act 2002* gave plant industry members the choice of using a levy mechanism to meet their yearly membership subscriptions.

In the following three years, PHA progressed the ratification of the world-first Emergency Plant Pest Response Deed (EPPRD), a more effective and transparent means to manage and reduce the cost of Emergency Plant Pests, and a crucial component of a world-class plant health system based on partnerships. EPPRD ratification was achieved in 2005 with the Australian Government, four state governments and 12 plant industry members as signatories. Another milestone was the production of PLANTPLAN, the first nationally consistent emergency response plan for Emergency Plant Pests.

The first decade of the millennium was characterised by tough conditions for producers, with the first application of the EPPRD in the first nationally funded response and successful plant pest eradication of Khapra beetle in WA.

In the 2010s, PHA focused on mitigating risks of post-border biosecurity and reducing pest impacts through improved national response capability.

The next decade saw increased EPPRD activity and the launch of the National Plant Biosecurity Strategy – the first national blueprint for building a better, coordinated national plant biosecurity system capable of rising to the expected challenges in the next 10 years.

PHA entered 2020 with 59 members, 48 EPPRD signatories, 35 staff and new CEO, Sarah Corcoran. Under her leadership PHA is developing a new five-year strategic plan, with a mission to deliver on priorities for plant health, manage change and provide the foundation for long-term agricultural, economic and biosecurity outcomes for Australia.

PEAK PLANT INDUSTRY BODIES

Australia's farmers have peak representative bodies that act on their behalf on a range of activities of collective importance, including biosecurity.

Most plant industry peak bodies represent producers of one crop, such as avocados, or a group of similar crops such as vegetables. In addition to broadacre farmers and horticulture producers, industry peak bodies represent truffle growers, foresters and beekeepers (due to the importance of honey bees as pollinators for many crops), and most of these peak bodies are members of PHA (see Table 3).

Industry bodies consider biosecurity to be important because it underpins the sustainability of their industry. New plant pests can make production more expensive due to increased use of pesticides, greater labour costs or additional procedures. Pests can lower yields, reduce quality or cause damage to stored produce. In some cases, these factors mean it is no longer viable to grow a particular crop in a region. Pests can also cause loss of access to markets so that some growers have fewer market options to sell their crops.

As a result of these potential biosecurity threats to sustainability, Australia's peak industry bodies are proactive about biosecurity risk mitigation. Most have joined PHA to be a part of the plant biosecurity partnership, which ensures that they are kept up to date on biosecurity and can contribute to strengthening the plant biosecurity system. The majority (38 of 39 industry members) of PHA's plant industry members are also signatories to the EPPRD. Importantly, plant industry bodies represent growers in an incursion, which can be a significant commitment. They also contribute to scientific advisory panels when information is needed to make decisions in emergency responses. More information about the role of industries during incursions is in Chapter 6.

Plant industry peak bodies also:

- work with government departments to negotiate international market access
- take part in government consultation events
- communicate with growers about the need for on-farm biosecurity and other biosecurity risk mitigation activities
- work with government departments on pest surveillance activities
- develop information on exotic pests, often in collaboration with the relevant state or territory department of agriculture or PHA.

Levies or funding mechanisms at regional, state or national levels are increasingly being used to fund specific plant biosecurity preparedness activities that benefit the industry, such as research and development projects or industry outreach programs. Other initiatives may include the funding of surveillance activities for early detection of high-risk pests or the development of contingency plans to facilitate the preparation of a response plan in the event of an incursion.

Peak industry bodies have contributed to industry profiles in Chapter 3 of this report.

PRIVATE SECTOR

The private sector makes a large contribution to the plant biosecurity system.

Plant producers and beekeepers have a responsibility to protect their enterprises and those of others in their region and industry from new pests and weeds by using on-farm biosecurity measures and resources (see Chapter 7).

Trade, transport and logistics companies include importers (commercial and non-commercial), customs brokers, freight forwarders and agents, integrated logistic suppliers, vessel and port operators. They are required to follow strict guidelines to ensure exotic pests do not enter Australia on plant products or on cargo, and do not move around Australia.

Private consultants and advisers provide extensive plant biosecurity advice across a range of crop types, and in most key production areas. Commercial agronomists also provide local services through the major distribution chains. They are backed by national technical networks which provide a comprehensive suite of services to agricultural industries.

Australian societies and associations have members that include scientific professionals who are linked with plant biosecurity. These organisations contribute to the development of Australia's plant biosecurity system through a range of activities including:

- peer reviews and publication of research findings
- provision of pest, disease and weed notes
- scientific reviews
- convening forums to share plant biosecurity research
- independent comment and input into the development and implementation of plant biosecurity policy and the development of international phytosanitary standards
- encouraging professionalism amongst plant scientists and technicians.

Key associations include the Australasian Plant Pathology Society, the Australian Society for Microbiology, the Australian Entomological Society, the Australian Society of Agronomy, the Ag Institute of Australia and the Council of Australian Weed Societies.

RESEARCH FUNDERS AND PROVIDERS

Research funders and scientists ensure that scientific research, development and extension (RD&E) activities provide answers to pest problems faced by Australian producers.

Researchers have a responsibility to protect Australia from biosecurity risks and are required to report any findings of biosecurity concern, such as finding new variants or species of pests in the course of their work.

They also have a responsibility to protect Australia's plant resources through safe biosecurity practices when conducting research, particularly when doing field work.

Research activities are carried out by university, government and industry researchers, and are often funded through cooperative funding organisations like research and development corporations (RDCs) and the Plant Biosecurity Research Initiative (PBRI), a joint initiative of the seven plant-based RDCs, PHA and the DAWE. Research includes methods to identify pests (diagnostics), effective management techniques and work to breed resistant crop varieties. More on plant biosecurity RD&E is in Chapter 8.

THE COMMUNITY

The community includes the general Australian public and others such as local governments, landholders, travellers returning from overseas, tourists, home gardeners and anyone moving goods into or around the country or visiting rural areas.

Primarily, community members have post-border biosecurity responsibilities, although people returning from overseas and those importing goods from overseas must abide by international border restrictions to prevent incursions of exotic pests. The roles of community in preserving the integrity of Australia's plant biosecurity status are explained in Chapter 7.



