National Hitchhiker (Contaminating) Plant Pest Action Plan 2022–2032: implementation schedule 2023

The success of the National Hitchhiker (Contaminating) Plant Pest Action Plan 2022–2032 depends on cooperation and collaboration between importers, shipping businesses, agricultural industries, all levels of government, non-government organisations and individuals, experts and research agencies. This implementation schedule will be used to:

- record the progress of actions set out in the plan
- document roles, responsibilities and funding mechanisms
- communicate progress with stakeholders.

Actions in this plan will complement actions in other national action plans for priority plant pests. Plant Health Committee (PHC) is responsible for endorsing plans and overseeing implementation. The Department of Agriculture, Fisheries and Forestry (DAFF) will host annual forums with key stakeholders to monitor and review implementation schedules. The purpose of these forums is to collect implementation information and discuss potential proposals to support the plan. PHC will be provided with forum findings. PHC will consider how implementation will occur where no lead has been identified for an action.

The overall success of the plan will be assessed against 6 measures:

1) High level of engagement and support from stakeholders (e.g. over 50 stakeholders at annual forums).
2) Improved diagnostic capacity and treatment capability since the development of the plan.
3) Increased awareness among importers, international and domestic shipping providers, Australian industry, governments and the general public, of the potential risks to Australian industry, the environment and social amenity from hitchhiker pests since the development of the plan.
4) Number of projects initiated to provide data to fill knowledge gaps, and number of projects successfully concluded since the development of the plan.
5) High level of confidence in national surveillance and diagnostic capability to provide evidence of Australia's pest-free status for hitchhiker pests.
6) Higher level of preparation among stakeholders to respond to a border incident or incursion of a hitchhiker pest since the development of the plan.

Implementation of the plan's actions are shown in Table 1 (prevention), Table 2 (detection), Table 3 (response) and Table 4 (cross-cutting). Indicative timeframes are short term (up to 3 years), medium term (4 to 8 years) and long term (up to 10 years).

Status key

	Completed – project finished
	On track – project commenced
	Ongoing – business as usual activity underway
	Pending – project or activity is yet to commence

Table 1 Implementation of activities for Area 1: Prevention

Action	Project or business as usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
Action 1.1: Undertake pest risk assessments for hitchhiker pest groupings, taking into account border interception data. **Expected benefit and outcome:** A pest risk assessment will support emergency responses and lead to more effective measures at the Australian border to minimise the risk of a hitchhiker pest incursion. **Priority:** high **Time frame:** medium term	1.1.1 Develop pest risk assessments, including consideration of biology, interception data modelling, and risk mitigation/management options	Ongoing – business as usual Pest risk assessments to be completed at species level, with functional groups being informed by this process External container risk assessment complete	Commonwealth (BPSSD)	Commonwealth (BOD, CED)	Supports: • National Khapra Beetle Action Plan action 1.1 • National Invasive Ant Biosecurity Plan action 1.1
	1.1.2 Review interception data to inform the pest risk assessment and, if possible, provide support to modelling	Ongoing – business as usual Interception data reviewed as part of external container risk assessment	Commonwealth (HHWG)	Commonwealth (BOD, BPSSD)	Supports many other action areas, including action 1.4
	1.1.3 Undertake a thorough risk assessment of pathways to inform the pest risk assessment	Ongoing – business as usual	Commonwealth (BPSSD, PPEBD)	Commonwealth (BOD)	Supports many other action areas
Action 1.2: Undertake a sea container pathway review to reduce the risk of hitchhiker pests being transported. **Expected benefit and outcome:** Addressing the risk of contaminated shipping containers will reduce the biosecurity risk of hitchhiking plant pests. **Priority:** high **Time frame:** medium term	1.2.1 Assess results of DAFF initiatives to target high-risk FCL/FCX containers for Khapra beetle for implications for other hitchhiker pests	Pending – project is yet to commence The Khapra beetle pest risk analysis - DAFF (agriculture.gov.au) is underway. Once finalised this assessment will determine implications for management of other hitchhiker pests.	Commonwealth (BOD)	Commonwealth (BPSSD, HHWG)	Relates to action 1.4 Supports: • National Khapra Beetle Action Plan action 1.4, 1.7
	1.2.2 Assess results of eDNA project for detection of Khapra beetle in sea containers for technology's potential applicability to other hitchhiker pests	Completed – Project finished (2023) Developed and validated eDNA tests for BMSB, red imported fire ant, electric ant, spotted lantern fly, spongy moth Varroa mite eDNA assay developed Biosecurity molecular screening using eDNA technology: Phase 5 —	Commonwealth (BPSSD, HHWG) University of Canberra	Commonwealth (BSRD, BOD)	Will be informed by Khapra beetle eDNA project and by eDNA investigations conducted by Khapra surveillance team and new eDNA surveillance team

Action	Project or business as usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
		University of Canberra Research Portal (finished Sep 2023)			
	1.2.3 Integrated Risk and Compliance Model: A revised policy approach for managing external risks associated with sea containers	On track – project commenced and will be delivered in tranches Tranche 1 is the management of external risk of sea containers scheduled for completion by later 2024.	Commonwealth (BPSSD)	Commonwealth (BOD, BSRD, DBD, HHWG)	Not applicable
Action 1.3 Assess whether current random verification requirements for air freight containers will effectively manage the emerging biosecurity risks on the hitchhiker pest pathway. **Expected benefit and outcome:** Determining the optimal level of random verification protocols for air freight containers will increase the effectiveness of risk mitigation measures for hitchhiker pests. **Priority:** high **Time frame:** short term	1.3.1 Assess whether random verification requirements for air freight containers is adequate by analysing airside biosecurity risk detections over the previous five years	On track – project commenced for completion in 2024	Commonwealth (BOD)	To be determined	Relates to action 1.4, 1.7, 3.2 and 3.3
Action 1.4 The Cargo Compliance Verification (CCV) program can be used to inform the biosecurity risk profile for hitchhiker pests. **Expected benefit and outcome:** CCV data is an important tool for testing the validity of a pest risk profile. **Priority:** high **Time frame:** ongoing	1.4.1 Analyse CCV program data to improve the validity of hitchhiker pest risk profiles	Ongoing – business as usual	Commonwealth (HHWG, CED)	Commonwealth (BOD)	Relates to action 1.2 Supports: • National Khapra Beetle Action Plan action 1.2
	1.4.2 Where applicable, leverage the CCV program to inform enhanced data collection to assist risk owners make policy decisions about hitchhiker pests	Ongoing – business as usual	Commonwealth (HHWG, CED)	To be determined	Relates to action 1.2 Supports: • National Khapra Beetle Action Plan action 1.2

Action	Project or business as usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
	1.4.3 CCV sweepings	Completed – project finished (2023)	Commonwealth (HHWG, CED)	To be determined	Relates to action 1.2 Supports: • National Khapra Beetle Action Plan action 1.2
	1.4.4 To increase the efficiency of biosecurity investment and to identify opportunities for improvement	Completed – project finished (2023) Consider the data from CCV outcomes and how they will be shared with policy areas for review.	Commonwealth (HHWG, CED)	Commonwealth (BOD)	Relates to action 1.2 Supports: • National Khapra Beetle Action Plan action 1.2
Action 1.5 Analysis of critical control points on the container pathway considering changes in known hitchhiker pest distribution. **Expected benefit and outcome:** Analysing critical control point data may assist in identifying high-risk container pathways and their change over time, for example, with changes in hitchhiker pest distribution. **Priority:** high **Time frame:** ongoing	1.5.1 Regularly analyse critical control points data on the container pathway and make recommendations for reducing risk of hitchhiker pests	Ongoing – business as usual The International Plant Protection Convention Sea Container Focus Group is developing several global strategies, including a global commercial proposal, where containers are checked and cleaned as required at each point in the supply chain supported by codes and guidelines. DAFF are actively working to implement new offshore quality systems in high-risk locations including through government-to-government arrangements.	Commonwealth (HHWG)	Commonwealth (BOD, BPSSD)	Relates to action 1

Action	Project or business as usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
Action 1.6 Consider stronger measures with Approved Arrangements and First Points of Entry. **Expected benefit and outcome:** Information on post border movement of containers from likely source ports or containing known host commodities from pack/unpack sites under Approved Arrangements, and volumes and destinations would be valuable to increase the possibility of early detection for post border surveillance and avoid having to undertake a response. **Priority:** high **Time frame:** ongoing	1.6.1 Regularly analyse container movement information to strengthen Approved Arrangements and assist with post border surveillance for early detection	Ongoing – business as usual Hitchhiker surveillance project has identified high-risk non-Biosecurity Entry Points for surveillance and aims to better use data to identify high-risk Biosecurity Entry Points for surveillance	Commonwealth (HHWG)	Commonwealth (PPEBD) Jurisdictions	Relates to action 1.7 Supports: • National Invasive Ant Biosecurity Plan action 2.5, 2.9
	1.6.2 Consider outcomes of ant baiting at port project for transference to Approved Arrangements	Ongoing – business as usual The project 'Pilot prophylactic baiting for exotic invasive ants at high-risk sites' supports implementation of the National Biosecurity Invasive Ant Plan 2018-2028 – Action 2.9. Project due for completion 30 October 2023. Similar trials could also be undertaken for other hitchhiker pests if determined suitable to deliver program of work.	Commonwealth (PPEBD, BPSSD, CED) Jurisdiction	Industry	Supports: • National Invasive Ant Biosecurity Plan action 2.9
Action 1.7 Support an international shipping container standard and container cleanliness in general. **Expected benefit and outcome:** Support development of an international phytosanitary standard for shipping containers will reduce hitchhiker risks associated with shipping containers.	1.7.1 Contribute to the development of an international shipping container standard	Ongoing – business as usual The Sea Container Focus Group has agreed that an ISPM will be considered as a longer-term option. The group is revising the CPM recommendation on sea containers, to communicate the global risks associated with sea containers, encourage visual examinations and other measures to reduce risks, and is considering a range of regulatory and non-	Commonwealth (HHWG, PPEBD)	Commonwealth (PPEBD, BOD, TIDI) Industry	Supports: • National Khapra Beetle Action Plan action 1.4 • National Invasive Ant Biosecurity Plan action 1.4

Action	Project or business as usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
Priority: high **Time frame:** medium term		regulatory actions to minimise risks.			
	1.7.2 Investigate provisions to clean containers at container park facilities at the time of servicing and repair, as well as cleaning once sea containers reach the end of their transportation life and are sold as storage containers to the general public	Pending – project to commence when funding available Looking at ways to better utilise container parks for inspecting and cleaning containers subject to biosecurity control under Approved Arrangements	Commonwealth (BOD, HHWG)	Industry	Supports: • National Khapra Beetle Action Plan action 1.4 • National Invasive Ant Biosecurity Plan action 1.4
	1.7.3 Consider reviewing resource material and guidelines that will support container cleanliness	Pending – project to commence when funding available The Sea Container Focus Group has developed several material and guidelines, including a best practice guide to communicate measures that should be applied at various touchpoints in the supply chain, a pest management poster, and guidelines for NPPOs on how to undertake inspections and record inspection results.	Commonwealth (BOD, HHWG)	Industry	Supports: • National Khapra Beetle Action Plan action 1.4 • National Invasive Ant Biosecurity Plan action 1.4
	1.7.4 A project aimed at gaining a better understanding of the extent of the contamination of containers by lifting the floors for inspection and sampling.	On track – project commenced Two trials have been completed using eDNA and visual inspections.	Commonwealth (HHWG)	Commonwealth (BOD)	Supports: • National Khapra Beetle Action Plan action 1.4 • National Invasive Ant Biosecurity Plan action 1.4

Action	Project or business as usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
	1.7.5 Test use of quantitative mass spectrometers to detect brown marmorated stink bugs in containers and determine whether they are alive or dead.	Pending – project to commence when funding available The technology was tested during the BMSB season that commenced in September 2020. The project could be expanded to detect other biosecurity threats, including other stink bug species.	Commonwealth (BPSSD)	Commonwealth (CED, BOD)	Supports: • National Khapra Beetle Action Plan action 1.4 • National Invasive Ant Biosecurity Plan action 1.4

Table 2 Implementation of activities for Area 2: Detection

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
Action 2.1: Support ongoing investment in automatic scanning technology. **Expected benefit and outcome:** Develop technology to detect hitchhiker pests to full utility and commercialisation. **Priority:** high **Time frame:** short term	2.1.1 Technology to detect biosecurity risks on container surfaces: investigating the use of high-resolution cameras, combined with software algorithms to interpret the images, for automatic detection of biosecurity risks on the external surfaces of containers	Completed – project finished (2023) Extensive trials conducted from June 2022 to March 2023 showed the camera system could successfully capture images of biosecurity risk material on containers during discharge. However, further work and investment would be required to improve accuracy levels before it could be adopted operationally.	Commonwealth (HHWG, BPSSD, PPEBD) Trellis	Commonwealth (BOD) DP World	Relates to action 2.2. Supports: • National Invasive Ant Biosecurity Plan action 2.4
	2.1.2 Technology to detect pests in difficult to access areas of container and warehouses, and biosecurity sample processing: investigating the use of hyperspectral and visual spectrum camera technology combined with software technology for automatic detection of biosecurity risks on external surfaces of containers	On track – project commenced Project due to be completed 23–24 financial year. The project is currently focused on verifying the accuracy of the sample processing model. Further work and investment may be required to improve the accuracy of the other models for operational use.	Commonwealth (HHWG, BPSSD, PPEBD), ISD	Commonwealth (BOD)	Relates to action 2.2
	2.1.3 Novel technologies to assist rapid and sensitive detection of brown marmorated stink bug	Completed – project finished (2023) Hort Innovation | Novel technologies to assist rapid and sensitive detection of Brown Marmorated Stink Bug (AS19000) (horticulture.com.au)	Cesar Australia	Hort Innovation	Not applicable
	2.1.4 Exploration of advanced control and detection methods for varroa mite.	On track – project commenced The overall objective of this project is to catalogue and critically review innovations in detection methods and emerging biological and cultural control	Macquarie University	Hort Innovation	Not applicable

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
		methods for the Varroa mite (*Varroa destructor*). Hort Innovation | Exploration of advanced control and detection methods for varroa mite (PH22002) (horticulture.com.au)			
	2.1.5 Production of a robust classification and identification key of the *Halyomorpha* complex and allied taxa	On track – project commenced This project will clarify the identity and relationships of the *Halyomorpha* complex of stink bugs (Pentatomidae: *Cappaeini*), inclusive of the brown marmorated stink bug (BMSB) - *H. halys.* Duration of project: 2022–2026	University of New South Wales	Commonwealth	Not applicable
	2.1.6 Electrochemical pest detection	On track – project commenced BMSB is the first target organism. Hort Innovation | Electrochemical pest detection (BY22007) (horticulture.com.au)	Macquarie University	Hort Innovation	Not applicable
	2.1.7 Total environmental surveillance (HTS)	On track – project commenced Project developing quantitative total environmental surveillance post-border Proof of concept complete	CSIRO	CSIRO	Not applicable
	2.1.8 Development of genomic tracking and tracing technology for hitchhikers	Pending – project to commence when funding available. Pending proof of concept demonstrated in fall armyworm, coconut rhinoceros beetles, and stored grain beetle pest *Cryptolestes* spp. Hitchhiker-based deployment pending	CSIRO	CSRIO GRDC ACIAR	Not applicable

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
Action 2.2: Review surveillance and diagnostic methodologies and tools. **Expected benefit and outcome:** Reliable and affordable surveillance and trapping methods and tools, which can be deployed in the field, will assist rapid and accurate identification of hitchhiker pests. **Priority:** high **Time frame:** short term	2.2.1 Develop surveillance and trapping methods and tools to assist with the detection of hitchhiker pests	On track – project commenced and due for completion in 2023 Review methods regularly to address risk of emerging hitchhiker pests	Commonwealth (HHWG, PPEBD, BPSSD)	SPHD SNPHS Jurisdictions PHC	Relates to action 1.7 Supports: • National Khapra Beetle Action Plan action 2.2 • National Invasive Ant Biosecurity Plan action 2.7, 2.7 and 3.5
	2.2.2 Develop training workshops on identification of hitchhiker pests for selected businesses, with some of these businesses being considered for participation in the development/field-testing of cost-effective hitchhiker trapping/surveillance methods	On track – project commenced Online training has been developed. Biosecurity Online Training – Plant Health Australia However, new project requires development/field-testing of cost-effective hitchhiker trapping/surveillance methods and is yet to occur.	Commonwealth (PPEBD, BPSSD, BOD)	Jurisdictions Industry PHA	Relates to action 1.7 Supports: • National Khapra Beetle Action Plan action 2.2 • National Invasive Ant Biosecurity Plan action 2.7, 2.8 and 3.5
	2.2.3 Deep learning artificial intelligence for BMSB image triage: involves the use of a phone app that uses artificial intelligence for real time identification of brown marmorated stink bug	Completed – project finished (2023) This will assist with prioritising high-risk inspections on vessels and containers. Biosecurity Innovation Program - DAFF (agriculture.gov.au)	CSIRO	Commonwealth (BOD) Industry	Relates to action 1.7 Supports: • National Khapra Beetle Action Plan action 2.2 • National Invasive Ant Biosecurity Plan action 2.7, 2.8 and 3.5
	2.2.4 Improved molecular diagnostic to detect exotic bee mites	Completed – project finished (2023) The aim of this project was to develop a single test to detect all five priority honeybee mites. Assays were developed and validated. Information was shared	Commonwealth (HHWG, BPSSD, PIC), CSIRO	Commonwealth	Not applicable

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
		with key stakeholders including SPHD members from state and territory organisations. CSIRO have also trialled and optimised sampling and extraction to improve efficacy and efficiency. Online training will be provided to participants and the protocol shared for proficiency testing. F2F training was proposed in 2024 as part of Annual Diagnostics Workshop. Rapid molecular test to detect multiple honeybee pests was developed in partnership with CSIRO, which is up to 42% faster than current morphological methods; the test was used in the recent NSW *Varroa destructor* response. Plant Innovation Centre - DAFF (agriculture.gov.au			
	2.2.5 The use of artificial intelligence for the identification of brown marmorated stink bug, *Halyomorpha halys* and exotic bees – Phase 3	On track – project commenced Duration of project 2022–2023	CSIRO	Commonwealth	Not applicable
	2.2.6 Hazard area analysis for brown marmorated stink bug	Completed – project finished (2023) Working through data sharing policies Victoria has incorporated the hazard risk analysis into the NPHSP BMSB network for 2023/24.	Commonwealth (PPEBD)	Commonwealth NPHSP Jurisdictions	Not applicable

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
Action 2.3: Develop and implement national surveillance programs using best practice methodologies and tools. **Expected benefit and outcome:** Biosecurity at Australia's borders will be strengthened by national surveillance protocols that reflect the ability of hitchhiker pests to enter through non-commodity pathways, such as shipping containers and personal effects. **Priority:** high **Time frame:** short term	2.3.1 Develop and implement national diagnostic protocols for hitchhiker pests, as well as guide the development of surveillance design processes to provide nationally agreed benefits	Pending – Project to commence when funding available Note: national diagnostic protocols will already exist for some pests	Commonwealth (PPEBD) Jurisdictions SNPHS	Industry	Relates to action 1.1, 1.2, 1.5, 1.7 Supports: • National Khapra Beetle Action Plan action 2.3 • National Invasive Ant Biosecurity Plan action 2.4 and 2.6
	2.3.2 Identify high-risk non-commodity pathways for surveillance and review methods of reducing the risk including additional intervention	Pending – Project to commence when funding available For example, the appropriate employment of an approved methodology, combining targeted visual surveillance and trapping methods, etc Regularly review surveillance methods and address gaps identified	Commonwealth (CED)	SNPHS	Relates to action 1.1, 1.2, 1.5, 1.7 Supports: • National Khapra Beetle Action Plan action 2.3 • National Invasive Ant Biosecurity Plan action 2.4 and 2.6
	2.3.3 Develop HTS-based, high-throughput screening technology for hitchhiker pests, as a screening and surveillance tool to improve outcomes from national diagnostics efforts	Pending – Project to commence when funding available Successful proof of concept already completed post-border, and CSIRO also has a growing genomic database of hitchhiker species genomes for deployment	CSIRO	CSIRO	Not applicable
	2.3.4 National Bee Pest Surveillance Program: Transition Program	On track – project commenced Hort Innovation | National Bee Pest Surveillance Program: Transition program (MT21008) (horticulture.com.au) Related projects:	PHA	Hort Innovation	Not applicable

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
		National honey bee Pest Surveillance Program (MT12011) Enhanced National Bee Pest Surveillance Program (MT16005)			

Table 3 Implementation of activities for Area 3: Response

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
Action 3.1: Continuous improvement of post biosecurity detection responses. **Expected benefit and outcome:** Post biosecurity detection responses need to adapt to changing pest detection profiles and would benefit from incorporating lessons learnt from previous responses. **Priority:** high **Time frame:** short term	3.1.1 Continue improvements for co-ordination and optimising responses to post biosecurity pest detections	Ongoing – business as usual Project being carried out by Victoria – Streamlining Plant Pest Contingency Plans for Integration – completed. This project will develop an IT system to contain modular plans. Adoption of an incident management recording tool (e.g., MAX platform) by all jurisdictions	Commonwealth (PPEBD, BPSSD, BOD)	To be determined	Relates to action 1.7 Supports: • National Khapra Beetle Action Plan action 3.1 • National Invasive Ant Biosecurity Plan action 3.1
	3.1.2 Review response guidelines and previous response strategies to improve future response planning, coordination, and communication	Ongoing – business as usual Project being carried out by Victoria – Streamlining Plant Pest Contingency Plans for Integration-completed. This project will develop an IT system to contain modular plans. Adoption of an incident management recording tool (e.g., MAX platform) by all jurisdictions. NSW adopted MAX platform.	Commonwealth (PPEBD, BPSSD, BOD)	Jurisdictions.	Relates to action 1.7 Supports: • National Khapra Beetle Action Plan action 3.1 • National Invasive Ant Biosecurity Plan action 3.1
	3.1.3 Protecting pollinators form pesticides: Developing safer, selective pesticides targeting Varroa mite and small hive beetle hormone receptors	On track – project commenced Hort Innovation | Protecting pollinators from pesticides: Developing safer, selective pesticides targeting Varroa mite and small hive beetle hormone receptors (PH20003) (horticulture.com.au)	The University of Sydney	Hort Innovation	Not applicable

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
	3.1.4 Expansion of flies as berry crop pollinators.	On track – project commenced Hort Innovation | Expansion of flies as berry crop pollinators (MT22007) (horticulture.com.au)	The University of New England	Hort Innovation	Not applicable
	3.1.5 Taxonomic study of *Trissolcus mitsukurii* and its efficacy in control of *Halymorpha halys*, the brown marmorated stink bug (BMSB)	Completed – project finished (2023) Searching for the Samurai (wasp) - CSIRO	CSRIO	Commonwealth (PPEBD)	Not applicable
	3.1.6 Australia Priority Plant & Disease Model (AAPDIS) modelling for management decisions- Khapra beetle and HPPPs Modelling the incursion and spread of hitchhiker and windborne plant pests in Australia	On track – project commenced https://aadis.org/projects/ Modelling the incursion and spread of hitchhiker and windborne plant pests in Australia (grdc.com.au)	CEBRA	GRDC	Supports: • National Khapra Beetle Action Plan action 3.1
Action 3.2: Improve capability to trace shipping containers and to access their history. **Expected benefit and outcome:** The ability to effectively track goods following a pest detection will reduce biosecurity risk through permitting a rapid emergency response. **Priority:** high **Time frame:** medium term	3.2.1 Investigate methods to improve container and goods tracking to target the movement of hitchhiker pests	Ongoing – business as usual	Commonwealth (CED, BOD)	Commonwealth (BOD)	Supports: • National Khapra Beetle Action Plan action 3.2
Action 3.3: Identify and assess effective eradication treatment methods for buildings, goods, and shipping containers. **Expected benefit and outcome:** There is a need for effective treatments for the eradication and control of hitchhikers in buildings,	3.3.1 Identify and assess effective treatments for responding to hitchhikers in buildings, goods, and shipping containers to reduce the likelihood of hitchhikers establishing and spreading in Australia.	Ongoing – business as usual DAFF is currently a member of the methyl bromide alternative working group. Need to take into account specific industry needs, such as avoiding	Commonwealth (CED, PSARA, HHWG)	Jurisdictions Industry RDCs	Relates to action 1.6 and 1.7. Supports: • National Khapra Beetle Action Plan action 1.6 and 3.3

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
goods, and shipping containers. There is currently no single treatment that fits all goods and situations. **Priority:** high **Time frame:** long term		damage to rubber seals in vehicle imports.			• National Invasive Ant Biosecurity Plan action 3.2 and 3.3
Action 3.4: Consider development of standardised response procedures for hitchhiker pests. **Expected benefit and outcome:** Developing standardised response(s) for hitchhiker pests will strengthen response procedures when a hitchhiker pest is detected. **Priority:** medium **Time frame:** medium term	3.4.1 Develop a standardised response(s) for hitchhiker pests	Pending – project to commence when funding available Consider Action 3.1 of the *National Biosecurity Invasive Ant Plan 2018-2028*[1] – Develop standardised response procedures for invasive ants	Commonwealth (BPSSD, PPEBD)	Commonwealth (CED, BOD)	Supports many other action areas Supports: • National Khapra Beetle Action Plan action 3.4 • National Invasive Ant Biosecurity Plan action 3.1
	3.4.2 Develop Commonwealth Places Policy	Pending – project to commence when funding available	Commonwealth (BPSSD, PPEBD)	Commonwealth (CED, BOD)	Supports many other action areas Supports: • National Khapra Beetle Action Plan action 3.4 • National Invasive Ant Biosecurity Plan action 3.1
	3.4.3 Develop Commonwealth Near Border Policy	On track – Project commenced Draft in development	Commonwealth (BPSSD, PPEBD)	Commonwealth (CED, BOD)	Supports many other action areas

[1] *Exotic invasive ants imported with goods and conveyances: Guidelines for preparing response strategies* (DAFF, as at April 2021).

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
					Supports: • National Khapra Beetle Action Plan action 3.4 • National Invasive Ant Biosecurity Plan action 3.1

Table 4 Implementation of activities for Area 4: Cross–cutting

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
Action 4.1: Develop an overarching communication and engagement strategy and deliver targeted activities relevant to each stakeholder group (industry, traveller, community, government). **Expected benefit and outcome:** There is a need for national awareness of biosecurity and understanding of the risks posed by hitchhiker plant pests, and to encourage reporting. The communication and engagement strategy will need to emphasise biosecurity is everyone's responsibility and include activities to target the import supply chain, production industries, the general public and travellers. **Priority:** high **Time frame:** short term	4.1.1 Develop an overarching communication and engagement strategy	Ongoing – business as usual Activity paused until people capacity is regained. The strategy: • will identify ways for business and members of the general public to report suspect pests and receive feedback on their submissions. The significant issue of non-reporting of suspect pests through fear of job loss or a detrimental impact on the business also needs to be addressed in the strategy. The lack of awareness in the general public also needs to be addressed • will consider ways to encourage reporting, interactive training on recognising exotic hitchhiker pests, noting it may also be mandated for importers receiving consignments from high-risk pathways and for Approved Arrangements • will consider businesses in the export supply chain as a key communication target in relation to at-risk commodities • will include activities to target the import supply chain, production industries, the general public and travellers • needs to consider likely reporting volumes and ensure a feedback	Commonwealth (HHWG, PPEBD)	Plant Health Australia Industry	Supports many other action areas Supports: • National Khapra Beetle Action Plan action 4.1 • National Invasive Ant Biosecurity Plan action 6.10

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
		loop is in place between reporter and assessment.			
Action 4.2: Establish governance arrangements to coordinate and monitor national actions. **Expected benefit and outcome:** Clear governance arrangements to guide implementation of the Plan and coordinate national effort to ensure Australia is as prepared as possible for a post border detection or incursion. **Priority:** high **Time frame:** short term	4.2.1 Develop/improve governance arrangements to coordinate and monitor national actions and review effectiveness at regular intervals	Ongoing – business as usual	Commonwealth (PPEBD)	Jurisdictions	Supports many other action areas Supports: • National Khapra Beetle Action Plan action 4.2 • National Xylella Action Plan action 4.3
	4.2.2. Collaborate with regional neighbours to align prevention and preparedness activities	Ongoing – business as usual	Commonwealth (PPEBD, TID)	Jurisdictions	Supports many other action areas Supports: • National Khapra Beetle Action Plan action 4.2 • National Xylella Action Plan action 4.3
	4.2.3 Establishment of a regional research alliance Asian Pacific Bioprotection Research Alliance (APBRA) to align research strategies on prevention and preparedness activities	Ongoing – business as usual	CSIRO	Commonwealth	Not applicable
Action 4.3: Identify research and development priorities for investment and to support national and international collaboration. **Expected benefit and outcome:** Research and development, delivered in collaboration with national and international experts, is	4.3.1 Identify research and development priorities for investment	Ongoing – business as usual	Commonwealth Jurisdictions PBPWG (or similar) CSIRO (APBRA)	Commonwealth Plant Health Australia Jurisdictions RDCs	Supports many other action areas Supports: • National Khapra Beetle Action Plan action 4.3 • National Xylella Action Plan action 4.5

Action	Project or business-as-usual activity	Status	Lead organisation	Contributors (financial and in-kind)	Dependencies
an important means to provide information, skills, and tools to prevent entry of hitchhiker pests, or to effectively respond if detected in Australia. **Priority:** medium **Time frame:** medium term	4.3.2 Support national and international collaboration	Ongoing – business as usual	Commonwealth (BPSSD, PPEBD) CSIRO (Fall armyworm, APBRA target lists, Coconut rhinoceros beetles)	Commonwealth (TID)	Supports many other action areas Supports: • National Khapra Beetle Action Plan action 4.3 • National Xylella Action Plan action 4.5

Glossary

Term	Definition
ACIAR	Australian Centre for International Agriculture Research
APBRA	Asian Pacific Bioprotection Research Alliance
BOD	Biosecurity Operations Division (DAFF)
BPSSD	Biosecurity Plant and Science Services Division (DAFF)
BSRD	Biosecurity Strategy and Reform Division (DAFF)
BMSB	brown marmorated stink bug
CEBRA	Centre of Excellence for Biosecurity Risk Analysis
CCV	Cargo Compliance Verification
CED	Compliance and Enforcement Division (DAFF)
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
DBD	Digital Business Division (DAFF)
HHWG	Hitchhiker Working Group
ISD	Intelligent System Design
PBPWG	Plant Biosecurity Preparedness Working Group (under PHC)
PHA	Plant Health Australia
PHC	Plant Health Committee
PIC	Plant Innovation Centre (DAFF)
PPEBD	Plant Protection and Environmental Biosecurity Division (DAFF)
PSARA	Plant Sciences and Risk Assessment (DAFF)
RDCs	Rural Research and Development Corporations
SNPHS	Subcommittee on National Plant Health Surveillance (under PHC)
SPHD	Subcommittee on Plant Health Diagnostics (under PHC)
TID	Trade and International Division (DAFF)

Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.