

Guidance on Research Activities - PSHB Incident Response

Scope

This document provides guidance for research conducted on an Emergency Plant Pest (EPP) during a response. It addresses the regulatory and procedural requirements outlined in the Emergency Plant Pest Response Deed (EPPRD)¹, PLANTPLAN², and the *Biosecurity and Agriculture Management Act 2007* (BAM Act).

Although PLANTPLAN outlines provisions for research during various phases of an incident, these provisions are not designed to encompass activities undertaken by non-party researchers (i.e. providers not directly associated with the incident response). This document specifically addresses research led by non-party researchers, such as private laboratories, university researchers, and other entities not directly associated with the coordinated incident response.

In its current version (1.0), this document focuses on guiding non-party researchers in conducting research during the incident response on the Emergency Plant Pest (EPP) polyphagous shot-hole borer (PSHB) and its associated fungi.

Disclaimer

This document serves as a guide for research activities that may be permitted. DPIRD will evaluate research requests recommended to it by the WAARC, on a case-by-case basis.

Background

- In September 2021, *Euwallacea fornicatus* (polyphagous shot-hole borer, PSHB) and an associated symbiotic *Fusarium* sp. (AF-18) fungus was detected in Western Australia (WA). A Quarantine Area Notice (QAN) to establish a quarantine area (QA) was gazetted on 10 September 2021 under the BAM Act *Biosecurity and Agriculture Management Act 2007* (WA).
- The EPPRD's Consultative Committee on Emergency Plant Pests agreed that PSHB and the associated *Fusarium* fungus is an EPP complex with a three-year phased response plan for eradication approved by the National Management Group in October 2022.
- *Euwallacea fornicatus* (PSHB), *Fusarium* sp. AF-18 and *Graphium euwallacea* (associated fungi) are prohibited organisms under the BAM Act. These organisms may only be kept under the authority of a permit issued by DPIRD.

Research Categories

Potential research activities that will be considered for approval have been sorted into five categories (Table 1) noting that activities dealing with declared pests can only be done inside the QA.

Research activities outside the QA:

1. Research activities outside the designated QA in absence of PSHB or fungus.

Research activities inside the QA:

2. Observational study of PSHB infested or symptomatic trees.
3. Experiments on or in the immediate vicinity of trees, such as:
 - a. chemical treatments
 - b. testing of attractants/lures, or activities that may influence the movement of PSHB
 - c. sentinel PSHB hosts placed inside the QA
4. Laboratory work on PSHB and/or fungi in an approved facility located in the QA under the authority of a permit.

Research activities inside/outside the QA:

5. Use of DPIRD's intellectual property, including data, subject to contractual agreement(s) between DPIRD and the researcher.

¹ The EPPRD is a legally binding agreement between the Australian Government, state and territory governments, plant industry bodies, and Plant Health Australia (PHA). It establishes the framework for managing responses to EPP incursions, including governance, cost-sharing arrangements, and decision-making processes.

¹ PLANTPLAN outlines provisions for research during various phases of a biosecurity incident, including the operations phase, the transition to management, and activities specified in the Response Plan. However, these provisions primarily apply to research conducted within the framework of a cost-shared response by participating stakeholders under the EPPRD.

Table 1 Research Activities that may be considered during the PSHB Incident Response with appropriate permits and agreements in place. Note examples are provided, but unlisted activities that researchers propose will also be considered and evaluated. DPIRD has commented on legislation relevant to PlantPlan and the BAM Act, it is expected that researchers will do their due diligence according to other legislative requirements

Request	Example	Permission needed	Permit Needed from DPIRD	Contact Person	Facilities Required	Relevant Legislation	Notes
Outside the QA							
Research activities outside the QA							
	Researcher notices trees that have PSHB symptoms, i.e. finds borer on tree outside the QA	Researcher is obligated to report a declared pest	No	MyPestGuide Reporter PaDIS	NA	Section 26 of the <i>Biosecurity and Agriculture Management Act 2007</i> (BAM Act)	
	Relocation of <i>Euwallacea fornicatus</i> and associated fungi (PSHB-Fungi) e.g. <ul style="list-style-type: none"> • Keeping, breeding or cultivation of PSHB-Fungi • Keeping, breeding or cultivation of a thing infested/infected with PSHB-Fungi • Releasing of PSHB-Fungi or infected/infested thing into the environment. • Intentional infecting/infestation or exposure of another thing with PSHB-Fungi. 	NOT PERMITTED outside of quarantine area	NA	NA	NA	Section 23 of the BAM Act	Activities associated with movement of the declared pest/s cannot be undertaken outside the QA
	Activities that do not involve a declared pest. e.g. use of hosts to act as a control etc.	An agreement between the researcher and owner/occupier of the infested land	No	NA	NA	Researcher must do their due diligence according to other legislative requirements not	

Request	Example	Permission needed	Permit Needed from DPIRD	Contact Person	Facilities Required	Relevant Legislation	Notes
		<p>may be required before research activities can commence.</p> <p>Researcher must make sure they obtain appropriate approvals ie. chemical/environmental such as <u>APVMA</u> permits</p>				specified under PlantPlan or the BAM act.	
INSIDE QA	Researcher notices trees that have PSHB symptoms, e.g. finds borer on tree or on traps.	Researcher is obligated to report a declared pest	No	<u>MyPestGuide Reporter</u> <u>PaDIS</u>	NA	Section 26 of the <i>Biosecurity and Agriculture Management Act 2007</i> (BAM Act)	
Observational study of PSHB/symptomatic trees in QA	<p>Record symptoms, make measurements. Attach sap flow monitors. Mount weather stations.</p> <p>***No sampling undertaken***</p>	<p>An agreement between the researcher and owner/occupier of the infested land may be required before research activities can commence.</p> <p>If researcher requested data from DPIRD e.g. infested premise location information this will be managed through a confidentiality agreement.</p>	No	NA	NA	Section 23 of the BAM Act	<p>DPIRD has the power to remove trees infested with PSHB at any time, even if research is being conducted on trees</p> <p>Researchers will be required to register any trees involved in this research with the PSHB response.</p>
Experiments on/around trees in QA	Chemical treatment of trees	An agreement between the researcher and owner/occupier of the infested land may be required before research	No	NA	NA	Section 23 of the BAM Act	<p>DPIRD has the power to remove trees infested with PSHB at any time, even if research is being conducted on trees</p> <p>Researchers will be required to register any trees involved in this research with Planning Manager of PSHB Response..</p>

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		<p>activities can commence.</p> <p>Researcher must make sure they obtain appropriate approvals ie. chemical/environmental such as <u>APVMA</u> permits</p> <p>If researcher requested data e.g. infested premise location information this will be managed through a confidentiality agreement.</p>					
	<p>Testing of attractants/lures or activities that may influence movement of PSHB</p>	<p>Yes if samples are to be collected, otherwise no.</p> <p>If researcher requested data e.g. infested premise location information this will be managed through a confidentiality agreement.</p>	<p>Only, if viable samples are to be moved from infested site.</p> <p>Then <u>Movement</u> and <u>Keeping</u> permit required</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>	<p>Testing cannot interfere with response's eradication plan/activities.</p> <p>Researchers will be required to register equipment that is to be left in place in QA with the PSHB Response.</p>
	<p>Use of sentinel hosts/cut logs wounded/non-wounded</p>	<p>No</p> <p>If researcher requested data e.g. infested premise location information this will be managed through a confidentiality agreement.</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>	<p>Researchers will be required to register sentinel hosts/cut logs that are to be left in place in QA with the PSHB Response.</p>

Request	Example	Permission needed	Permit Needed from DPIRD	Contact Person	Facilities Required	Relevant Legislation	Notes
	Pathogenicity trials in the field	NOT PERMITTED	NA	NA	NA	NA	NA
Work on PSHB in an approved facility in the QA							
	Researcher collects PSHB/infested material and processes it onsite to render it non-viable	No permission from DPIRD needed, however there may need to be an agreement between the researcher and owner/occupier of the infested land. Researcher will need to state in grant proposal methodology and data/research supporting proposed methodology to render an organism non-viable.	No	NA	NA	NA	Once no longer viable, it is not considered an “organism” and BAM/Plant Plan does not apply The below documents may provide some guidance on appropriate handling, processing and transport of materials. 1. <u>Guidelines for Collection of suspect EPPs</u> 2. <u>Guidelines Transport and Packaging of suspect EPPs</u> 3. <u>Disinfection and Decontamination Guidelines</u>
	Researcher wants to keep, breed, cultivate PSHB inside the QA e.g. <ul style="list-style-type: none"> • Collect and work with symptomatic plant material • Collect and work with asymptomatic plant material • Collect and work with <i>E. fornicatus</i> • Isolation of fungi from <i>E. fornicatus</i> or their galleries • Infest live hosts/host material i.e. potted plants/cut logs 	Yes	<u>Movement and Keeping</u> permit	Permit applications must be emailed to: <u>PBPermit@dpird.wa.gov.au</u>	Laboratories handling suspected EPP samples will be either Class 5.2 (Biosecurity Containment [BC] Level 2) or Class 5.3 (BC Level 3) Approved Arrangements, as appropriate to the pest in question.	<ul style="list-style-type: none"> • To move PSHB- Regs 16, 17 and 25 • To keep breed and cultivate PSHB- Reg 9 • To permit to keep, breed, and cultivate PSHB infested plant- Reg 10 and 11 	<p>Researcher will need to distinguish between Zone A and Zone B in the QA area in their movement permit.</p> <p>Researchers will need to report isolation of unlisted/declared pests (i.e. viruses, bacteria, fungi, including new genotypes of <i>Fusarium</i> sp. AF 18 and <i>E. fornicatus</i> to PaDIS.</p> <p>Refer to <u>https://www.outbreak.gov.au/prepare-respond/report/plant-pathogen-organism</u></p> <p>Request to undertake PHA BOLT training</p>

Request	Example	Permission needed	Permit Needed from DPIRD	Contact Person	Facilities Required	Relevant Legislation	Notes
							https://www.planthealthaustralia.com.au/training/biosecurity-online-training-bolt/
Use of data collected as part of the PSHB response	Digital data types e.g.: <ul style="list-style-type: none"> • Host species visited • Host species infested • Infestation level of host • Beetle numbers on traps • Life stages of <i>E. fornicatus</i> host observed on samples • Treatments completed • Treatments tested • Treatments revisited • IP location (GIS) • Trap locations (GIS) • Sequence data 	Yes	Agreement in place between DPIRD and researcher	NA	NA	section 185 of the BAM Act	If a proposal is evaluated favourably WAARC and DPIRD will work with researcher to develop an appropriate agreement. This will also include publication of results relating to declared pests.
	Physical data types e.g.: <ul style="list-style-type: none"> • live infested wood, <i>E. fornicatus</i> and associated fungi • non-viable infested wood, <i>E. fornicatus</i> and associated fungi 	Yes	<u>Movement and Keeping</u> permit	Permit applications must be emailed to: PBPermit@dpiird.wa.gov.au	Laboratories handling suspected EPP samples will be either Class 5.2 (Biosecurity Containment [BC] Level 2) or Class 5.3 (BC Level 3) Approved Arrangements, as appropriate to the pest in question.	section 185 of the BAM Act <ul style="list-style-type: none"> • To move PSHB- Regs 16, 17 and 25 • To keep breed and cultivate PSHB- Reg 9 • To permit to keep, breed, and cultivate PSHB infested plant- Reg 10 and 11 	Physical samples may be shared if appropriate and agreed with DDLS. Additionally, if they can be retrieved in a timely manner, under an appropriate data sharing agreement, and may be charged for cost recovery. If a proposal is evaluated favourably WAARC and DPIRD will work with researcher to develop an appropriate agreement. The below documents may provide some guidance on appropriate handling, processing and transport of materials. <ol style="list-style-type: none"> 1. <u>Guidelines for Collection of suspect EPPs</u> 2. <u>Guidelines Transport and Packaging of suspect EPPs</u> <ol style="list-style-type: none"> 1. 3. <u>Disinfection and Decontamination Guidelines</u>