



# Polyphagous shot-hole borer (PSHB) Frequently Asked Questions (FAQs)

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For the most current information on PSHB please visit [www.agric.wa.gov.au/borer](http://www.agric.wa.gov.au/borer)

## Contents

- Quarantine Area.....2**
  - How do I find out if I am in Zone A or Zone B? .....2
  - What are the Quarantine requirements for each Zone? .....2
  - Why are there two different Zones?.....3
  - What material does the Quarantine Area Notice (QAN) apply to? .....3
  - What if I cannot meet these requirements? .....4
  - Are succulents and Cacti subject to the Quarantine Area Notice? .....4
  - What is a PSHB host species? .....4
  - How do I apply to move host material? .....4
- Movement of wood and plant material .....4**
  - Will my local council continue collecting green waste (bins and verge collections)? .....4
  - I have plant material in a skip bin, trailer, etc. How can I dispose of this? .....5
  - Can I bring plants into the Quarantine Area (QA)? .....5
  - I deliver firewood. What are the restrictions? .....5
  - Does PSHB pose a risk to stacked timbers, wooden outdoor furniture, decking or timbers in my home? Can I remove these from my property?.....6
  - What are the restrictions for sawmillers, woodturners and those who handle/process green timber? .....6
  - I trade/sell plants and my business is located within the Quarantine Area, can I still sell plants?...6
- PSHB Inspections and surveillance .....7**
  - Will my property be inspected? Will all properties in the Quarantine Area (QA) be inspected? .....7
  - What are you doing during the inspections? What will you be looking for? .....7
  - If I report borers, or you find borers in my tree, are you going to cut it down? .....7
  - If my tree looks unhealthy, can you tell me what’s wrong with it? .....7
  - What about COVID?.....8
  - I have seen PSHB symptoms on a public tree in a street or park. Should I report it?.....8
  - What is DPIRD doing to manage general garden biosecurity when visiting between properties? ..8
- Treatments for PSHB.....8**

Is there any treatment for PSHB?.....	8
I don't want my tree to be cut down, can I use a chemical? .....	8
Is there any research into future treatments? .....	8
Can I join the chemical trial? .....	9
Which chemicals are you trialling? Are they safe?.....	9
<b>Actions to protect trees and minimise spread.....</b>	<b>9</b>
How can I protect my trees?.....	9
What can I plant that is safe from PSHB?.....	9
<b>How can I help? .....</b>	<b>10</b>

## Quarantine Area

A Quarantine Area Notice (QAN) has been issued under regulation 60 of the *Biosecurity and Agriculture Management Regulations 2013*.

The QAN describes the boundary of the Quarantine Area (QA) which includes the entire Perth Metropolitan Area. The QA is divided into two zones (Zone A and Zone B).

The QAN outlines the restrictions in place for each zone, to minimise the spread of the declared pest polyphagous shot hole borer (PSHB).

Further information including an interactive map of the Quarantine Area is available on the webpage: [www.agric.wa.gov.au/borer](http://www.agric.wa.gov.au/borer).

### How do I find out if I am in Zone A or Zone B?

The Quarantine area covers the whole of Perth's metropolitan area and has been split into two zones (Zone A and Zone B).

To find out which zone you are in, enter your address into the interactive Quarantine Area map on the PSHB webpage: [www.agric.wa.gov.au/borer](http://www.agric.wa.gov.au/borer). The map provides information on what zone you are in and what the restrictions are for your area.

### What are the Quarantine requirements for each Zone?

The new Quarantine Area has been split into two zones, with different movement requirements for unseasoned wood and living plants:

#### Zone A:

- cannot move untreated or unseasoned **wood** outside **Zone A**, unless chipped to pieces that are 2.5 cm or less in diameter;
- cannot move **plant materials**, including living plants, that are greater than 2cm in diameter outside **Zone A**;
- must ensure any machinery used to handle wood or plant material is cleaned before it can be moved outside **Zone A**.
- can move wood or plant materials, including living plants, **within Zone A**

#### Zone B:

- cannot move untreated or unseasoned **wood** outside the **Quarantine Area**, unless chipped to pieces that are 2.5 cm or less in diameter;
- cannot move **plant materials**, including living plants, that are greater than 2cm in diameter outside the **Quarantine Area**;
- must ensure any machinery used to handle wood or plant material is cleaned before it can be moved outside the **Quarantine Area**;
- can move wood, plant materials and living plants, **into Zone A and within Zone B**.

PSHB does not live, breed in or otherwise affect lawn clippings and grasses, so these can be disposed of as normal and with no restrictions.

A map of the quarantine area, including the boundary between Zone A and Zone B within the quarantine area, is published on the Department's website [www.agric.wa.gov.au/borer](http://www.agric.wa.gov.au/borer)

### Why are there two different Zones?

The expanded Perth metropolitan Quarantine Area is now divided into two zones to increase protection for Perth's urban tree canopy, WA's forests and agricultural industries.

Zone A includes suburbs within the inner Perth metropolitan area that have higher levels of infestation. Quarantine restrictions to stop the movement of wood and plant material from Zone A are in place to help stop the spread of PSHB from these suburbs.

Zone B includes suburbs within Perth's outer metropolitan area that have fewer or no infested trees. Zone B acts as a 'buffer zone' between areas of higher infestations and the remainder of the State. Heightened surveillance is underway to identify and quickly control infestations. DPIRD is responding rapidly to any new detections in Zone B, as early detection is vital to the eradication effort.

### What material does the Quarantine Area Notice (QAN) apply to?

The QAN applies to wood, green waste and plant material.

**Wood** means wood that is not treated.

Timber or wood that has been treated or seasoned for more than six months is not considered to be PSHB risk material and is not included in the definition of wood under the QAN. This includes:

- Firewood that has been seasoned for more than 6 months
- Treated or seasoned timber/wood used for construction, fencing or furniture.

**Green waste** includes cut branches or prunings, bark, plant mulch or wood chips. It does not include lawn clippings.

**Plants** means any plant or plant part (including plant cutting) with stems that are greater than 2cm in diameter.

**Machinery** means any vehicle, equipment or other mechanical apparatus of any kind that has been used in relation to arboriculture, gardening, mulching, wood chipping or handling of any other wood.

### What if I cannot meet these requirements?

The movement of risk material must be made in accordance with a Direction Notice issued by an inspector if you are unable to meet the requirements of the QAN.

The process includes an inspection from an authorised officer whereby they conduct a risk assessment and issue an inspectors' direction if certain conditions can be met.

### Are succulents and Cacti subject to the Quarantine Area Notice?

No. Thankfully succulents and Cacti are not hosts for PSHB and are not subject to the Quarantine Area restrictions.

### What is a PSHB host species?

PSHB host species are plants in which the beetle will attack and aim to establish the fusarium fungus and try to reproduce. There are over 500 plant species documented worldwide to be a host for PSHB.

Within this list there are both reproductive hosts and non-reproductive hosts:

- **Reproductive host** species are more susceptible to the damages from the beetle as PSHB can successfully establish the fungus and reproduce in the plant. Some reproductive hosts can be killed by PSHB.
  - *Amplifier species* are reproductive host plants in which the PSHB can breed prolifically, allowing the build-up of large populations of beetles.
  - *Preferred hosts* are reproductive host trees that are typically associated with moderate to heavy infestation levels
- **Non-reproductive hosts** can be attacked by PSHB, but the fungus does not establish, and the beetle is unable to create breeding galleries and cannot reproduce.

A list of host species can be found at [www.agric.wa.gov.au/borer](http://www.agric.wa.gov.au/borer)

### How do I apply to move host material?

To schedule an inspection and commence the process, email [pshb@dpird.wa.gov.au](mailto:pshb@dpird.wa.gov.au) with the following information.

- Your name and contact details.
- Business name (if applicable)
- Details of the material you wish to move.
- Locations where you wish to move the material from/to.
- Date you wish to undertake the movement of wood or plant material.

## Movement of wood and plant material

### Will my local council continue collecting green waste (bins and verge collections)?

Yes, you can dispose of green waste via bins and verge collection services if you don't have any PSHB infested plants or material on your property.

Green waste over 2.5cm cannot leave infested premises. If you have a PSHB infested plant on your property, you must follow the inspector's directions on the Pest Control Notice (PCN). Please contact your case manager to discuss the requirements for the removal of green waste.

## I have plant material in a skip bin, trailer, etc. How can I dispose of this?

If the waste is located within the QA, you will need to dispose of it at a facility that is also located within the same Zone. A map of the quarantine area, including the boundary between Zone A and Zone B within the quarantine area, is published on the Department's website [www.agric.wa.gov.au/borer](http://www.agric.wa.gov.au/borer)

In certain cases, waste can be disposed of at an approved facility outside the QA and needs to be transported in a fully sealed and covered skip bin, trailer or truck. To find out if a facility is approved for PSHB waste disposal, check the list of [PSHB Waste Management Facilities](#).

If unintentional or inappropriate disposal of PSHB host plants and material occurs, or is suspected to have occurred, please immediately contact the Pest and Disease Information Service (PaDIS) via email [padis@dpird.wa.gov.au](mailto:padis@dpird.wa.gov.au) or phone 9368 3080.

## Can I bring plants into the Quarantine Area (QA)?

Yes, plants can enter the QA, but they cannot leave the QA unless they meet the QA requirements. We do not recommend introducing PSHB preferred host species or material into the QA during the PSHB incident response. Transiting / driving through the QA is allowed (providing the plants have not been sourced from inside the QA).

## I deliver firewood. What are the restrictions?

Firewood that has been seasoned for more than 6 months is not considered to be PSHB risk material and is not included in the definition of wood under the QAN.

The following movement restrictions apply for firewood that has been recently cut down or has not been seasoned for longer than 6 months.

### Quarantine Area Zone A:

Untreated or unseasoned firewood:

- can be moved **into** Zone A
- can be moved **within** Zone A
- **cannot leave** Zone A
- Any machinery used to handle wood and plant material must be cleaned before it can be moved outside Zone A

### Quarantine Area Zone B:

Untreated or unseasoned firewood:

- can be moved **into** Zone A and Zone B
- can be moved **within** Zone B
- **cannot leave** Zone A
- **cannot leave** the Quarantine Area
- Any machinery used to handle wood and plant material must be cleaned before it can be moved outside the Quarantine Area

A map of the quarantine area, including the boundary between Zone A and Zone B within the quarantine area, is published on the Department's website [www.agric.wa.gov.au/borer](http://www.agric.wa.gov.au/borer)

## Does PSHB pose a risk to stacked timbers, wooden outdoor furniture, decking or timbers in my home? Can I remove these from my property?

Treated or seasoned (> 6 months) timber or wood products that are in use for construction, fencing, furniture or packaging and pallets are not considered to be PSHB risk material

If you see evidence of borer damage, report it via the MyPestGuide® Reporter app or online ([mypestguide.agric.wa.gov.au](http://mypestguide.agric.wa.gov.au)) so it can be assessed. If you need to move items with suspect borer damage, please contact the Pest and Disease Information Service (PaDIS) on 08 9368 3080 or [pshb@dpird.wa.gov.au](mailto:pshb@dpird.wa.gov.au) to discuss your situation so it can be assessed.

## What are the restrictions for sawmillers, woodturners and those who handle/process green timber?

Untreated or recently felled wood can be PSHB host material. For this reason, we encourage those who handle/process green timber to contact the Pest and Disease Information Service (PaDIS) via email [padis@dpird.wa.gov.au](mailto:padis@dpird.wa.gov.au) or phone 9368 3080 for an inspection and assessment.

## I trade/sell plants and my business is located within the Quarantine Area, can I still sell plants?

Yes, you can continue to sell plants as long as you meet the requirements of the QAN. Living plants with stems greater than 2cm must not leave the QA except under specific conditions (specified in the Quarantine Area Notice exemptions for the movement of host material by incorporated associations).

The following movement restrictions apply for Living plants with stems greater than 2cm.

### Quarantine Area Zone A:

Living plants with stems greater than 2cm:

- can be moved **into** Zone A
- can be moved **within** Zone A
- **cannot leave** Zone A
- Any machinery used to handle wood and plant material must be cleaned before it can be moved outside Zone A

### Quarantine Area Zone B:

Living plants with stems greater than 2cm:

- can be moved **into** Zone A and Zone B
- can be moved **within** Zone B
- **cannot leave** Zone A
- **cannot leave** the Quarantine Area
- Any machinery used to handle wood and plant material must be cleaned before it can be moved outside the **Quarantine Area**

A map of the quarantine area, including the boundary between Zone A and Zone B within the quarantine area, is published on the Department's website [www.agric.wa.gov.au/borer](http://www.agric.wa.gov.au/borer)

Living plants may be moved when inspected and found free of any signs or symptoms of PSHB infestation, by a person who is certified as completing the Department's training on PSHB and when moved within 7 days of that inspection. To register and gain access to this course contact [plantbiosecuritypolicy@dpird.wa.gov.au](mailto:plantbiosecuritypolicy@dpird.wa.gov.au)

# PSHB Inspections and surveillance

## Will my property be inspected? Will all properties in the Quarantine Area (QA) be inspected?

Inspections and surveillance are being conducted throughout the Perth metropolitan area, both within and outside of the QA. These activities are guided by an overarching surveillance strategy.

If Field Surveillance Officers visit your property, please allow them to inspect the trees and plants in both the front and backyard. If you aren't home, they will leave a calling card in the mailbox. Please call the phone number provided to schedule an appropriate time for an inspection.

If your property has not been inspected, don't worry. Please monitor your trees and report any signs of borer activity via the MyPestGuide® Reporter app or online at [www.mypestguide.agric.wa.gov.au](http://www.mypestguide.agric.wa.gov.au).

## I don't have any of the top hosts. Do you still need to inspect my property?

Yes. Although PSHB has preferred hosts there are over 500 species of plants that have been reported as hosts of PSHB globally, including more than 100 reproductive hosts.

## What are you doing during the inspections? What will you be looking for?

During an inspection, the Field Surveillance Officers will check risk plants on the property for signs and symptoms of PSHB. Please allow access to the backyard via a side gate or garage and restrain your dog during the visit.

If surveillance officers find suspect symptoms of PSHB, they will request permission to take a small sample from the tree to be tested at our laboratory. The staff will not be able to confirm the presence of PSHB at this initial visit.

If the sample tests positive for PSHB, you will be contacted by a DPIRD officer and guided through the next steps.

## If I report borers, or you find borers in my tree, are you going to cut it down?

The presence of PSHB does not necessarily result in removal of the plant or tree unless it poses a significant risk to safety or the spread of this exotic pest. When an infested tree is detected, it is assessed by subject matter experts including arborists, entomologists and pathologists.

## If my tree looks unhealthy, can you tell me what's wrong with it?

Our Field Surveillance Officers are exclusively looking for signs of PSHB and are unable to diagnose or provide comments regarding your tree's general health during a visit.

Tree health enquiries are complex, and poor tree health or death often has multiple contributing factors including pests, disease, and environmental stresses.

## What about COVID?

Please advise any visiting staff if you have COVID or are unwell. Staff will be following COVID safe practices and will be following any relevant COVID health advice from WA Health authorities.

## I have seen PSHB symptoms on a public tree in a street or park. Should I report it?

Yes. If you see signs of PSHB please report the symptoms as soon as possible via the MyPestGuide® Reporter app or online [www.mypestguide.agric.wa.gov.au](http://www.mypestguide.agric.wa.gov.au). Please include a photo of the suspected borer activity (with a ruler or pen for scale).

## What is DPIRD doing to manage general garden biosecurity when visiting between properties?

Field equipment, including tools used to sample from trees are regularly cleaned and disinfected. Field Surveillance Officers take measures to reduce the risk of soil-borne or plant disease transfer between properties, as well as practicing good personal hygiene.

# Treatments for PSHB

## Is there any treatment for PSHB?

Currently, there are no known effective chemical treatments for PSHB globally.

PSHB infestations can only be effectively treated through the pruning or removal of infested branches, stems or trees, and subsequent wood chipping to less than 2.5cm in diameter.

## I don't want my tree to be cut down, can I use a chemical?

No, unfortunately there are no known effective chemical treatments for PSHB globally. There are also no chemical products registered for use against PSHB in Australia. Chemical treatments are generally ineffective because:

- The beetles do not feed directly on the tree tissue, instead they feed from the *Fusarium* fungus that they farm inside the tree.
- Bark sprays do not penetrate the tree enough to reach the beetle.
- Systemic insecticides and fungicides are unable to reach the beetle within the tree due to the disruption in the trees vascular system caused by the symbiotic *Fusarium* fungus carried by PSHB.

## Is there any research into future treatments?

DPIRD is currently engaged in trials to test the efficacy of certain chemicals on early infestations of PSHB. DPIRD scientists are operating under an Emergency Permit issued by the Australian Pesticides and Veterinary Medicines Authority (APVMA).

The trials will be used to inform potential non-destructive methods of eradication of PSHB in host trees with low levels of infestation. It will also be used to inform potential preventative measures to protect high value trees from becoming infested.

DPIRD is also liaising with global experts in California and South Africa to understand the latest research on treatment and preventative options.



## Can I join the chemical trial?

In general, trials are being conducted on public properties, in conjunction with the associated local government.

## Which chemicals are you trialling? Are they safe?

DPIRD is currently trialling chemicals called Emamectin benzoate and Bifenthrin. When applied correctly as per supplier guidelines, these products present a low risk to pollinating insects, such as bees, and there is no risk to human health. These chemicals are being tested both as a method to protect healthy trees from becoming infested and to cure already infested trees.

# Actions to protect trees and minimise spread

## How can I protect my trees?

The best option for protecting your trees is improving general tree health and regularly checking them for signs of pests and diseases.

- Use grass clippings or compost as mulch, as wood chips greater than 2.5cm may spread PSHB.
- Disinfect pruning tools to minimise the chance of transferring diseases.
  - 70% Ethanol is the preferred disinfectant.
- Avoid moving plant material or wood products from known PSHB infestation areas.

If you see signs of PSHB or any other pests report them as soon as possible via the MyPestGuide® Reporter app or online [www.mypestguide.agric.wa.gov.au](http://www.mypestguide.agric.wa.gov.au).

## What can I plant that is safe from PSHB?

PSHB has a known host range of more than 500 plant species. Information on host species (PSHB Host Lists) and planting guidance is available on [www.agric.wa.gov.au/borer](http://www.agric.wa.gov.au/borer).

**Reproductive hosts** are susceptible plants in which PSHB can successfully establish fungus galleries and reproduce. Infested reproductive hosts can die within two years.

**Non-reproductive hosts** are plants that are attacked by PSHB but the beetles do not establish breeding galleries. The fungus may or may not cause disease.

In WA, the top three reproductive host trees for PSHB are the Box elder maple (*Acer negundo*), Black Locust (*Robinia pseudoacacia*) and Coral trees (*Erythrina x sykesii*). It is recommended to avoid planting these host trees as they are preferred by PSHB.

The reproductive host range of PSHB in WA is still being determined. Some native species appear to be less susceptible.

# How can I help?

## **Assist with inspections as/if required.**

Property inspections are being conducted across the Perth metropolitan area. Reports of suspect borer activity are helping to inform inspection activities and prioritisation.

## **Look and report!**

If you see suspect borer activity, please report it via:

- MyPestGuide® Reporter app, or
- Webpage: ([www.mypestguide.agric.wa.gov.au](http://www.mypestguide.agric.wa.gov.au)), or
- Phone: Pest and Disease Information Service (PaDIS): (08) 9368 3080, or
- Email: [padis@dpird.wa.gov.au](mailto:padis@dpird.wa.gov.au).

## **MyPestGuide® Reporting Tips.**

To help with pest identification please include:

- Photos showing the whole tree/plant, suspected bore holes, beetles, or symptoms (include a ruler or pen next to any borer holes to help estimate the size).
- Information on the pest location, plant species or common name (if known), and any concerns/changes you've noticed.

## **Important Disclaimer**

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