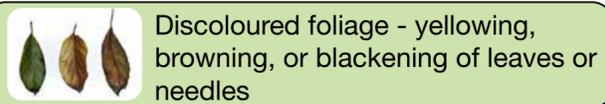


# Phytophthora Dieback

## How can I tell if I have Dieback on my property?

Symptoms of Dieback can vary depending on the type of plant, severity of infection and other factors. Examples of common symptoms include:



Discoloured foliage - yellowing, browning, or blackening of leaves or needles



Wilting or stunted growth - this is often rapid, over days or weeks



Death of branches or the entire plant - this is often rapid, over days or weeks



Root rot - infected plants may have a reduced root mass, and roots may appear discoloured or decayed

Some of these symptoms can also be caused by drought, nutrient deficiencies, insects or other plant diseases. A laboratory test may be needed to confirm that Dieback is the cause.

Even if native vegetation on your property has Dieback, it can still provide important habitat and anything you can do to slow the spread and keep it healthy is worthwhile.

## Native plants susceptible to Dieback

These are some of the native trees and shrubs known to be susceptible to Dieback (there are many others but these are some of the more easily identifiable species you might find on your property or verge).

For a comprehensive list of susceptible native plants, visit the Centre for Phytophthora Science and Management's website at [www.cpsm-phytophthora.org](http://www.cpsm-phytophthora.org).

### Trees



*Banksia grandis*  
(Bull banksia)



*Banksia littoralis*  
(Swamp banksia)



*Persoonia longifolia*  
(Snotty Gobble)



*Eucalyptus marginata*  
(Jarrah)

### Large shrubs



*Xanthorrhoea preissii*  
(Grass Tree/Balga)



*Macrozamia riedlei*  
(Zamia palm)



*Banksia sessilis*  
(Parrot Bush)

### Small shrubs



*Hibbertia hypericoides*  
(Native buttercup)



*Leucopogon capitellatus*  
(Beard Heath)



*Xanthorrhoea gracilis*  
(Slender Grass tree)

### Garden plants and horticultural crops

A range of horticultural crops and garden plants are also susceptible to Dieback.

This includes citrus, apple, peach, apricot and avocado trees, grapevines, radiata pine, camellias, azaleas, roses, proteas and rhododendrons.



## Native plants resistant to Dieback

Research conducted through Murdoch University in Shire reserves found that some native shrubs were able to survive when planted in Dieback affected areas. These include:

- *Acacia acuminata*
- *Banksia eideriana*
- *Callistemon phoeniceus*
- *Calothamnus gilesii*
- *Calothamnus sanguineus*
- *Hakea laurina*
- *Melaleuca seriata*
- *Rhagodia preissii*



These species may be useful for revegetation to restore habitat in Dieback affected areas. It is also worth noting that some native species vulnerable to Dieback may be able to tolerate the disease depending on the conditions (e.g. in dry, well-drained soils that limit spore reproduction).

For more information and a list of species that may be resistant to Dieback visit [www.cpsm-phytophthora.org](http://www.cpsm-phytophthora.org).

## What can I do to prevent introducing and spreading Dieback on my property?

Steps you can take to reduce the chances of introducing or spreading the disease include:

1. Try to schedule earthmoving and soil disturbance activities to low rainfall months when soil is dry (and less likely to stick to equipment, vehicles and machinery).



2. Avoid bringing soil, gravel or sand into bushland or other Dieback sensitive areas (unless you know it is from a disease free area).



3. Practice good hygiene - clean and disinfect work boots, tools, and equipment before and after each use to prevent spreading infected soil or plant material. Household bleach (diluted one part bleach to 10 parts water) or 70 percent methylated spirits in a spray bottle can be used to disinfect shoes and equipment after all dirt has been removed.



4. Source plants from NIASA accredited nurseries that maintain soil hygiene standards. If your nursery is not accredited, ask them what procedures are in place to ensure plants and potting mix are Dieback free.



5. Dieback thrives in moist, warm soil. Avoid overwatering plants and try to minimise waterlogging. Managing runoff entering your property from roads and drains can also help.



6. Monitor your plants - keep an eye on your plants for any signs of Dieback, such as sudden deaths. If you suspect an infection, contact a registered Dieback Interpreter for advice.



**Remember - prevention is the key since there is no cure. By following good hygiene practices and monitoring your plants for signs of infection, you can help to protect your plants and the environment from this devastating disease.**

## Phosphite treatment

Dieback cannot be eradicated from a site once it becomes infected. However, a biodegradable fungicide called phosphite can slow spread of the disease by boosting the ability of plants to resist (or recover from) infection.

Phosphite treatment is via stem injection of trees or spraying onto shrubs. Treatment can last three to five years in trees and one to two years in shrubs. You can find phosphite products at garden centres.

An integrated approach for preventing and treating Dieback may involve phosphite treatment in combination with other measures such as minimising access to infected areas, controlling drainage problems and following hygiene protocols.

For more information on correct and safe use of phosphite, download the free guide 'Managing Phytophthora Dieback in Bushland' from the Dieback Working Group's website: [www.dwg.org.au](http://www.dwg.org.au)



## More information

### Shire of Mundaring

More information and a short video can be found on the Shire's website [www.mundaring.wa.gov.au](http://www.mundaring.wa.gov.au)  
Call us on (08) 9290 6666 and ask to speak to an Environmental Officer or email [environment@mundaring.wa.gov.au](mailto:environment@mundaring.wa.gov.au)

### Dieback Working Group

The Dieback Working Group's website lists registered Dieback Interpreters and laboratories that provide Phytophthora Dieback identification and testing services. You can also download their free guide 'Managing Phytophthora Dieback in Bushland' at [www.dwg.org.au](http://www.dwg.org.au)

The Dieback Green Card Biosecurity Training course provides industry and the wider community with skills and knowledge to reduce the risk of spreading Phytophthora Dieback. For more information visit [www.dwg.org.au](http://www.dwg.org.au)

### Centre for Phytophthora Science and Management

For more information on Phytophthora Dieback and a brochure 'Native Garden Plants Resistant to Dieback' visit CPSM's website at [www.cpsm-phytophthora.org](http://www.cpsm-phytophthora.org)

### Department of Biodiversity, Conservation and Attractions

For more information on distribution, identification and management of Phytophthora Dieback in Western Australia visit DBCA's website at [www.dbca.wa.gov.au](http://www.dbca.wa.gov.au)

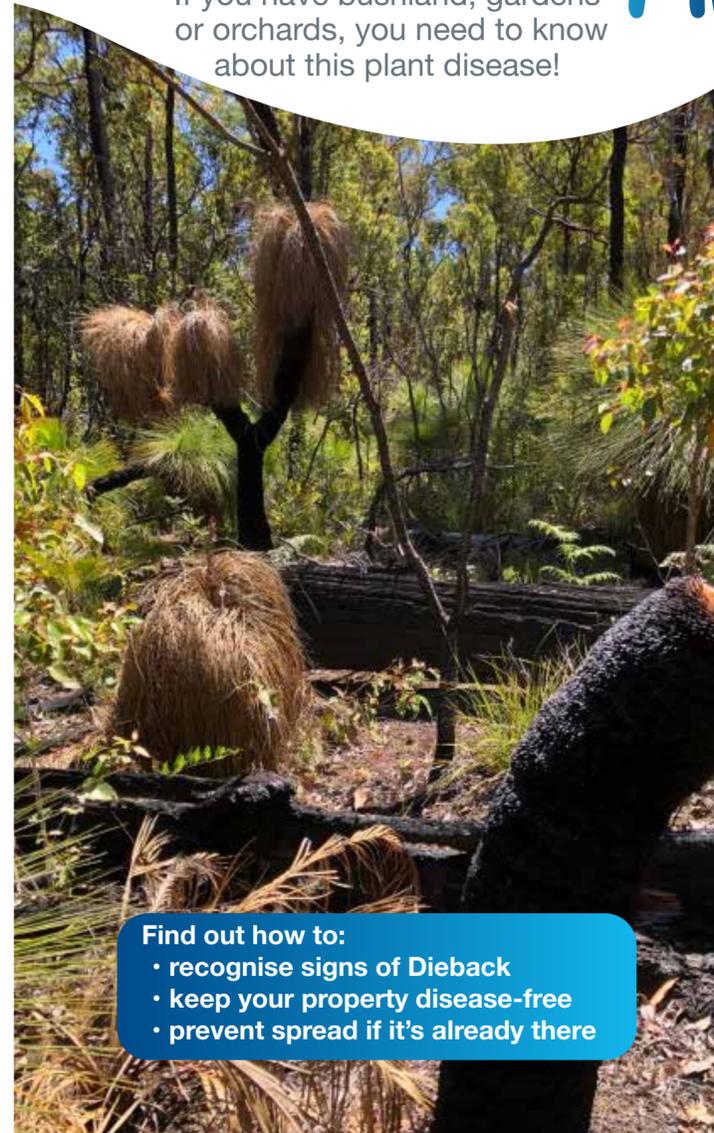


Cover photo courtesy Joe Grehan

# Phytophthora Dieback



If you have bushland, gardens or orchards, you need to know about this plant disease!



#### Find out how to:

- recognise signs of Dieback
- keep your property disease-free
- prevent spread if it's already there

## What is Phytophthora Dieback?

Phytophthora Dieback (Dieback) is a plant disease caused by an introduced water mould *Phytophthora cinnamomi*. It lives in soil and plant tissue and attacks the roots of plants.



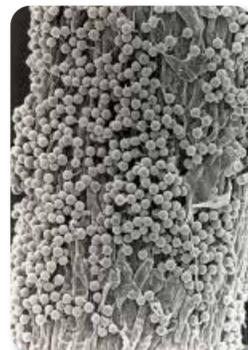
Infected plants can die very quickly as the roots rot and they are unable to absorb enough water and nutrients. Dieback is found in some areas of the Shire including road verges, parts of bush reserves and on private properties.

Dieback affects many native plants including jarrah, grass trees, banksias and zamia palms. It can also affect garden plants such as roses, camellias, azaleas, proteas, apple, apricot, peach and avocado trees. Once plants and soil are infected, plants can be treated but not cured.

This means that many plants in your garden, orchard or native bushland could die off. In bushland areas, this can also affect native animals that rely on those plants for food and shelter.

## How does Dieback spread?

The microscopic spores of *Phytophthora cinnamomi* spread through water, soil and root-to-root contact between plants. They can spread about one metre per year in root-to-root contact. In sloping areas, it can spread more quickly downhill in surface and sub-surface water flow.



Phytophthora spores attacking plant roots  
Photo courtesy Adrienne Hardham

Phytophthora spores are also easily spread when soil sticks to shoes, bikes, vehicles and equipment, especially in wet conditions. Earthworks and construction are particularly high risk activities for spreading Dieback.



**The good news is you can reduce the risk of Dieback entering your property. If Dieback is already present, you can slow its spread and help vulnerable plants resist (or recover from) the disease.**

## What are the impacts of Dieback?

The south west of WA is a global biodiversity hotspot and home to a large number of native plant and animal species found nowhere else on Earth. Unfortunately, over 40 percent of native plant species are susceptible to the disease, including many rare and endangered species.

Dieback is already causing significant damage to forests.

Severe infestations can lead to loss of biodiversity and disappearance of food sources for native animals.

As habitat disappears, native animals may also be at increased risk of predation from foxes and cats.

Loss of plant cover can also result in bare soil areas and increased risk of weed invasion or erosion.

Fortunately, there are still many forest and bushland areas that can be protected from the disease through careful management.

