# PHYTOPHTHORA DIEBACK IN BUSHLAND

## SMALL LANDHOLDER INFORMATION SHEET

Perth NRM

Phytophthora Dieback (Dieback) is a plant disease caused by a group of microscopic organisms that attack the roots of susceptible plants. It is unfortunately widespread throughout the southwest of WA and is a common issue in natural ecosystems.

**Once introduced to an area, Dieback cannot be eradicated.**

In Western Australia, *Phytophthora cinnamomi* is the most well-known dieback species, causing sudden death in around 40% of native plant species and having a significant negative impact on our natural bushland.

As a soilborne disease, it is spread through the movement of contaminated groundwater and soil. Common methods of spread include:

- **Autonomous spread -** the natural spread of the disease downhill through groundwater. The disease can also spread uphill slowly via root-to-root contact with infected plants.
- **Anthropogenic spread -** disease spread through human activities such as earthworks, extraction of gravel and sand, and the movement of plant or equipment. Muddy four-wheel drive tyres, boots, bikes, or even horse hooves can also spread the disease.
- **Spread via wild, feral, and domestic animals -** any animal which moves dirt has the potential to spread disease. Phytophthora has even been known to survive in the digestive tracts of feral pigs, meaning that it can be spread through faeces.

## Know the symptoms

**Indicators -** deaths of certain species can indicate a Dieback infestation. Look for Grass Trees (*Xanthorrhoea*), Banksias, Isopogons, Leucapogons, and Jarrah trees. Species that are not susceptible include WA peppermints, wattles (Acacia) and native peas (*Fabaceae*).

**Complete deaths -** since Dieback attacks the roots of susceptible plants, it inhibits the plants' ability to transport water through its vascular system, mimicking drought. Deaths will be complete, rather than individual limbs dying off.

**Chronology -** as Dieback moves through the soil it will infect and then kill plants, creating a disease edge. A chronology or timeline of deaths with the freshest deaths being next to healthy bush is suggestive of Dieback.

**Sampling -** if you suspect that Dieback is causing species deaths in your patch of bush, one option is to collect a soil sample and send it for laboratory testing to confirm the diagnosis.

*Phytophthora Dieback (Dieback) is a plant disease that affects certain plant species including Grass Trees (Xanthorrhoea).*

*Image: mrwhyte / iNaturalist*

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**How to sample for Dieback:**

- Visit the Vegetation Health Service website for prices and a sample sheet: www.dbca.wa.gov.au/parks-and-wildlife-service/threat-management/plant-diseases/phytophthora-dieback/vegetation-health-service
- Identify which plants you want to sample. The most reliable samples are collected from recent deaths.
- Sterilise your tools and collect your sample. For best results, collect moist soil from approximately 50cm below the surface. For smaller plants, dig up the entire plant and include roots in your sample.
- Place roots and soil into a sturdy plastic bag. Collect enough to fill a standard plastic takeaway container. Seal the bag shut and write the sample number and location on the container with permanent marker.
- Post or deliver your sample and sample sheet to: Vegetation Health Service, 17 Dick Perry Avenue, Kensington, WA, 6151.

## Hygiene to prevent disease spread

There are simple and attainable ways to prevent the spread of this devastating plant disease on your property:

- **Clean on Entry, Clean on Exit -** always clean down vehicles, bikes, horse hooves, etc., before entering natural bushland.
- **Avoid wet conditions -** wet soil sticks, dramatically increasing the chances of spreading disease. Try to limit access to bushland areas during and directly after wet weather. Creek crossings are another risky area for picking up contaminated soil.
- **Access control -** fencing off healthy bushland to prevent entry by animals and unwanted vehicles.
- **Hygiene in the field -** a spray bottle or pressure sprayer with a solution of 70% methylated spirit and 30% water is a cheap, simple, but effective disinfectant for shoes and equipment. Be sure to physically remove dirt with a pick or brush before spraying.

## Treatment

**Phospite treaments -** if Dieback is impacting your bushland and there are species or areas you wish to protect, plants can be treated with a chemical called Phosphite which boosts the immunity of plants and suppresses the disease. Phosphite treatment must be repeated every 1-3 years and is delivered through stem injection or foliar spray.

For further information, contact your local Dieback treatment professional:

- **BARK Environmental** (*Perth and surrounds*): www.facebook.com/barkenvironmental/
- **TerraTree** (*Perth and surrounds*): www.terratree.com.au
- **Glevan Consulting** (*Pinjarra and surrounds*): www.glevan.com.au
- **Great Southern Bio Logic** (*Albany and surrounds*): www.gsbiologic.com.au

## Additional information

- **My Pest Guide Reporter** can be used to report Dieback and any other disease symptoms to the Department of Primary Industries and Regional Development (DPIRD): www.agric.wa.gov.au/apps/mypestguide-reporter
- **Green Card Training** for environmental biosecurity hygiene is available through the Dieback Working Group: www.dwg.org.au/green-card-training
- **South Coast NRM's Project Dieback**: www.dieback.net.au
- **Department of Biodiversity, Conservation and Attractions (DBCA)**: www.dbca.wa.gov.au/parks-and-wildlife-service/threat-management/plant-diseases

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