

# Facts about Phytophthora

## How can I manage Phytophthora?

It is impossible to eradicate *Phytophthora* from infested areas so limiting further spread is critical to management efforts. You can reduce the chances of spreading the disease by:

- Preventing the movement of infected soil or plant material
- Cleaning your shoes when moving in or out of bushland areas
- Making sure your tools are clean before you start working
- Improving organic matter in your garden
- Ensuring your planting material comes from a reputable nursery.

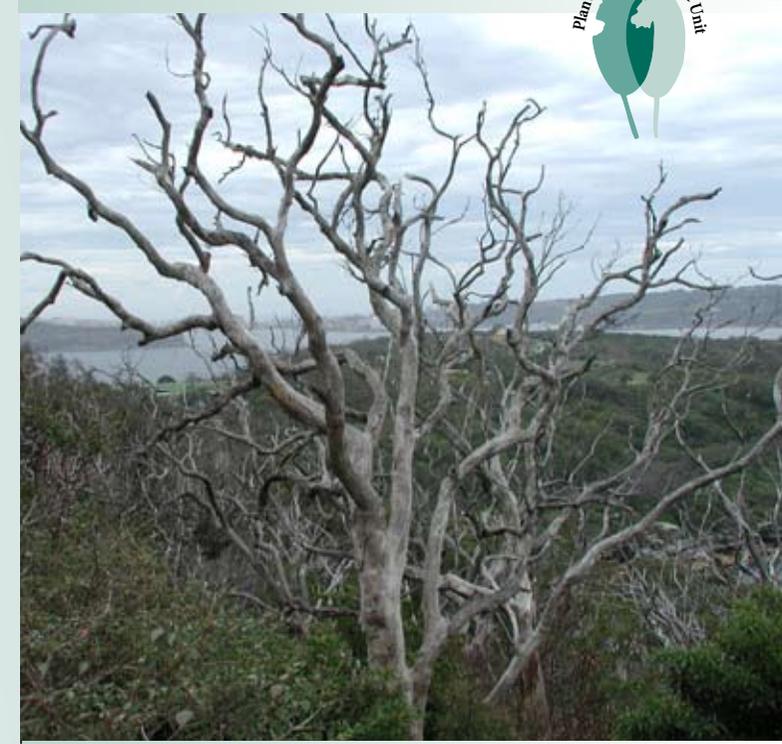
If you think you may have dieback you can have your soil tested for the presence of *Phytophthora*.

## What are the Royal Botanic Gardens doing?

In order to effectively manage the disease it is essential to understand where *Phytophthora* occurs. The RBG is surveying the occurrence and distribution of the pathogen. The location of *Phytophthora* will be mapped and information collected will be used to develop and implement management guidelines.

### For more information please contact

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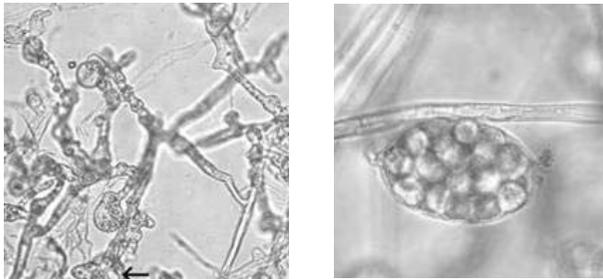


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# Phytophthora

## What is Phytophthora?

*Phytophthora* (pronounced Fy-toff-thora) is a microscopic organism that lives in soil and plant roots. The name *Phytophthora* is derived from the Greek meaning 'plant-destroyer'. *Phytophthora* causes root rot in a broad range of plant species, including many native Australian and ornamental plants. Around 60 *Phytophthora* species have been identified, but *P. cinnamomi* is the species that is most destructive in native Australian vegetation communities.



Hyphae (left), the vegetative state, and a sporangium with zoospores (right) the main reproductive propagule, of *Phytophthora cinnamomi*.

## How does Phytophthora affect plants?

*P. cinnamomi* attacks the roots and stems of plants, destroying the root system and reducing the ability of the plant to absorb water and nutrients. In susceptible plants, the young roots become dark and rot.



Dieback due to *Phytophthora* in a heathland community. *Xanthorrhoea* sp. are highly susceptible to *P. cinnamomi*.

Above ground, symptoms include wilting, yellowing and retention of dried foliage. Infection may result in the death of the plant. Symptoms are often more severe, and death more rapid, when plants are suffering from water stress (eg. in summer or drought).



Early symptoms on *Lambertia formosa* (left) compared to a healthy plant (right)

## Is Phytophthora a problem in NSW?

The extent of the occurrence of *Phytophthora* in NSW is only beginning to emerge, but the pathogen appears to be more widespread than originally thought. It has been identified in the World Heritage areas of northern NSW, including Barrington Tops NP, the Blue Mountains, including Wollemi NP, in southern NSW near Eden and in bushland reserves around Sydney Harbour.



## How is Phytophthora spread?

*Phytophthora* lives in soil and plant material. Any movement of infested soil or plants can spread the disease. This includes soil on tools, footwear and vehicles.

*Phytophthora* reproduces very quickly by producing millions of motile zoospores, particularly when the soil is moist and warm. The zoospores can be easily transported in drainage water, especially down slope. When conditions become less favourable, *Phytophthora* produces resistant chlamydospores, which enable it to survive until conditions become conducive again.



## Which plants are affected?

*Phytophthora cinnamomi* threatens the biodiversity of natural ecosystems. The pathogen is known to infect banksias, native peas, eucalypts and ornamentals such as rhododendrons and camellias. It also impacts on native fauna by destroying food sources and habitat.

