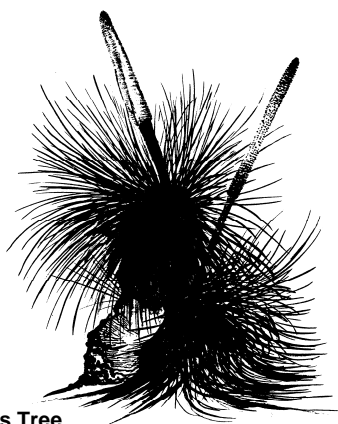


Cinnamon Fungus

A sinister invader

Cinnamon Fungus (*Phytophthora cinnamomi*) is a microscopic, soil borne pathogen (disease causing organism) that attacks and destroys plant root systems causing plants to die through lack of water and nutrients. Patches of dead or dying vegetation can indicate the presence of this silent killer and grass trees are particularly susceptible. It is spread through infected plants and the movement of contaminated soil and gravel, and there is no known cure.



Grass Tree

This distinctive native species is under increasing threat from Cinnamon Fungus.

Plant killer

Known variously as die back, root rot and Jarrah dieback, PC and *Phytophthora*, Cinnamon Fungus derives its name from the bark of Cinnamon trees where it was initially isolated in Sumatra in 1922. *Phytophthora* literally means plant killer and this pathogen has lived up to its name, destroying vast tracts of vegetation around the world.

It is listed in the top 100 of the world's most invasive species and is Victoria's most significant plant pathogen affecting both native ecosystems and the horticultural industry.

Initially thought to be a fungus, new research has found it to be a soil borne water mould closely related to brown algae.

On the move

Cinnamon fungus was first detected in Australia in 1935 and has since spread across the country infecting hundreds of thousands of hectares of native vegetation in Victoria, Tasmania, South Australia, Western Australia and Queensland. Heathlands, coastal woodlands and dry Eucalypt forests are most at risk.

Within Victoria, the pathogen has had serious impacts in the Brisbane Ranges, Grampians, Great Otway, Lower Glenelg, Point Nepean, Kinglake, Croajingalong and Wilsons Promontory National Parks in addition to Lerderberg State Park, Lake Tyers, Anglesea Heathlands and the coastal forests of east and south Gippsland.

Help stop the rot

Parks Victoria is working in conjunction with other State and Federal Government agencies to control Cinnamon Fungus and you can help too. Taking the following measures will help to minimise the spread of this pathogen (and noxious weed species) through both private land and our precious parks and reserves.

- Be clean on entry and exit. Vehicles, tyres, machinery, footwear and camping gear should be free of soil, gravel and mud prior to entering or leaving any park, reserve or campsite (particularly in high risk areas). Don't bring soil or gravel in – and don't take any home!
- Where available, use boot cleaning stations and vehicle wash down bays – they are there for a reason.



Boot cleaning station at Brisbane Ranges National Park



For further information
Call Parks Victoria on **13 1963**
or visit www.parks.vic.gov.au

- Remain on formed roads, tracks and pathways at all times. Moving from infected to uninfected areas can spread the pathogen - particularly during wet weather when soils are wet and sticky.
- Obey all track and road closure signs. Do not enter areas of vegetation that have been quarantined.
- Avoid travelling through areas infected with *Phytophthora*. If in doubt – ask! Call Parks Victoria on **13 1963**.
- Do not remove plants or plant material from parks and reserves – they are protected by law.

Death of a grass tree...

The grass tree is a native plant species highly susceptible to Cinnamon Fungus. Once infected, the plant quickly develops distinct signs of dieback.

An uninfected grass tree will show healthy displays of growth radiating out from the crown of a central trunk (below left).



When the grass tree is initially infected, the root system is attacked and the plant is unable to take up water and nutrients. As a result, the crown collapses and the leaves begin to wilt and turn brown (above right).



As the disease progresses, more leaves are lost and the plant begins to die.



Eventually all that remains is the rotted trunk of a once magnificent plant.

Deceiving appearance

Without proper soil testing, this microscopic pathogen is difficult to detect. It is more actively spread in moist soils during warm weather and can survive drought. It can be present even if vegetation appears healthy as not all plants are susceptible. Infected plants appear drought affected and develop signs of 'dieback' as shown above. Infected plants are rarely in the same stage of decline at any one time.

Easily spread

While the pathogen can spread locally through soil or water via tiny swimming spores, it is more commonly spread through the movement of contaminated soil and gravel carried by vehicle or foot traffic. It can also be spread through infected plant material and potting mix.

Long-term impacts

The presence of Cinnamon Fungus threatens not only vegetation communities – it can alter the ecology of entire ecosystems. As susceptible plant species like shrubs and colourful wildflowers gradually die out, they are replaced by resistant species like grasses and sedges.

Birds, insects, reptiles and mammals that depend on the original plant species for their survival also decline in numbers as shelter and food sources disappear.

For further information

Visit the following websites and enter *Phytophthora* into their search engines for more information:

Department of Sustainability and Environment, Victoria www.dse.vic.gov.au

Department of Environment and Heritage, South Australia www.environment.sa.gov.au

Conservation and Land Management, Western Australia www.calm.wa.gov.au

Dieback Working Group, Western Australia www.dwg.org.au

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