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RESOURCE NOTES

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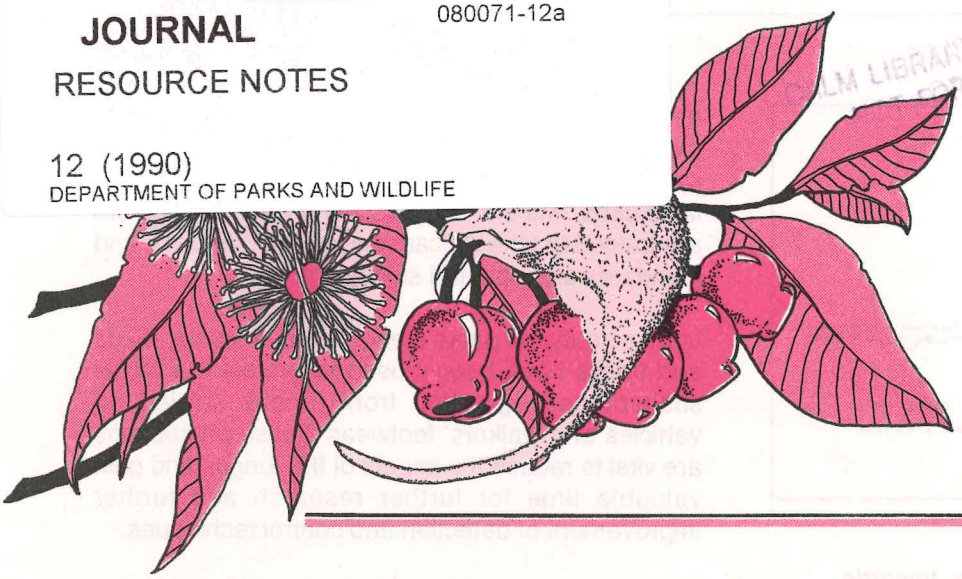
DEPARTMENT OF PARKS AND WILDLIFE



Resource Notes

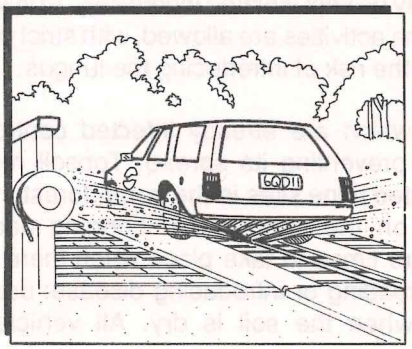
Number 12 January 1990
Department of Conservation and Land Management, W.A.

CONTROLLING DIEBACK IN W.A.'S NATIONAL PARKS AND FORESTS

The fungus *Phytophthora cinnamomi*, which causes dieback disease, is a major threat to plants in this State and in many parts of the world. It is known to attack at least 1000 plant species. Unfortunately, this fungus is too well established in W.A. to be eradicated, so care is needed to prevent its spread.

Phytophthora cinnamomi is thought to have been introduced to this State early this century before strict quarantine measures were introduced. It has spread from the original source, and is now distributed in patches, from north of Eneabba to east of Esperance. Its effect can be seen in parts of the jarrah forest, the Swan coastal plain and across the heath vegetation of the south coast.

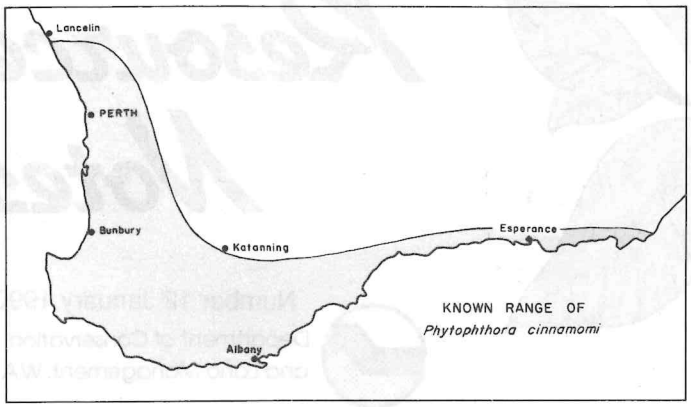
To spread naturally the fungus requires moisture or root contact, passing from infected roots to healthy roots where they come in contact. The spores of *Phytophthora cinnamomi* can swim over short distances but are mainly carried in surface water or ground water, or move through moist soil, spreading quickly down slopes. Consequently, damp low-lying areas are often heavily infected. A more serious problem is the artificial spread of the fungus, particularly in soil adhering to vehicles. When conditions are wet and roads are muddy, infected soil can collect in tyres and under vehicles and be transported great distances, spreading the fungus to previously healthy areas. Any activity which disturbs the soil can spread dieback, especially those (such as road building) which involve heavy equipment



moving lots of soil; but people, machines and animals may spread dieback simply by collecting even a small amount of infected soil and moving it to another site.

Once established the fungus is almost impossible to eradicate, so every effort is made to prevent it from spreading. In the forests and national parks of the south-west many methods are used to help prevent the disease spreading.

In 1976 the Forests Department (now the Department of Conservation and Land Management) isolated large areas of State forest by closing roads and preventing logging and mining. These parts of the forest were called Disease Risk (Quarantine) Areas. They were closed to prevent the spread of the disease within the areas, to allow time for signs of dieback already present in the soil to appear, to accurately map the location of dieback and to find out more about the disease.

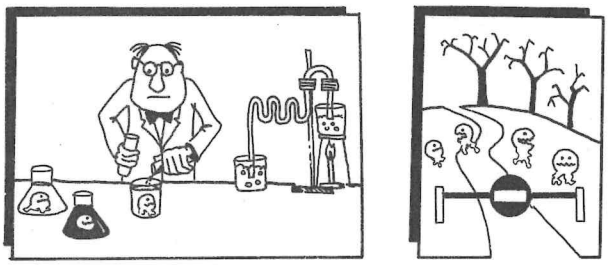


Considerable progress has been made towards these ends, but the demand for bauxite, sawlogs and SEC poles means that controlled access has been allowed back into some of these areas.

These activities can spread dieback, so elaborate precautions are taken to minimize the risk. The first priority is to identify areas which can be safely used. By analysis of vegetation and topography and interpretation of aerial photographs, it is possible to assess the likely impact of *Phytophthora cinnamomi* on uninfected areas, and to identify those areas already infected. This information is used to plan the use of all State forest (including former Disease Risk Areas). Areas which are highly susceptible to the fungus may be kept isolated indefinitely. In lower-risk areas some activities are allowed, with strict controls to reduce the risk of introducing the fungus.

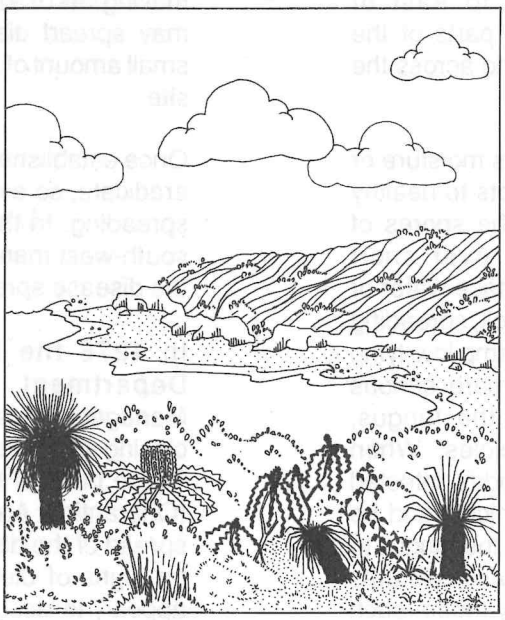
In areas which are already infected controls are aimed at preventing its spread. Topsoil removed from infected mine sites in the jarrah forest must be replaced on the same sites. Logging and road building are timed to take place when there is little risk of spreading or introducing disease: usually in summer when the soil is dry. All vehicles and machinery have to be thoroughly washed down when moving from one area to another; roads and drainage systems are carefully planned and kept low in the landscape. Miners, loggers, rangers and foresters are trained to take precautions against dieback, and standards are high and strictly enforced.

In some national parks along the south coast, roads and tracks have been closed to protect the highly susceptible vegetation from fungus carried on vehicles and walkers' footwear. These precautions are vital to reduce the impact of the fungus and gain valuable time for further research and further improvement of detection and control techniques.



Researchers have not found a cure for dieback, but like most other diseases proper precautions assist control. People who use forests and national parks are in the best position to help fight dieback. They can assist by obeying "road closed" signs and keeping to well-formed and well-drained roads where *Phytophthora cinnamomi* is unlikely to survive. By keeping vehicles clean, reviewing our activities to see if they could spread the disease and helping keep other people informed, we can all work to control dieback.

For more information, see CALM's Research Bulletin No. 3.



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