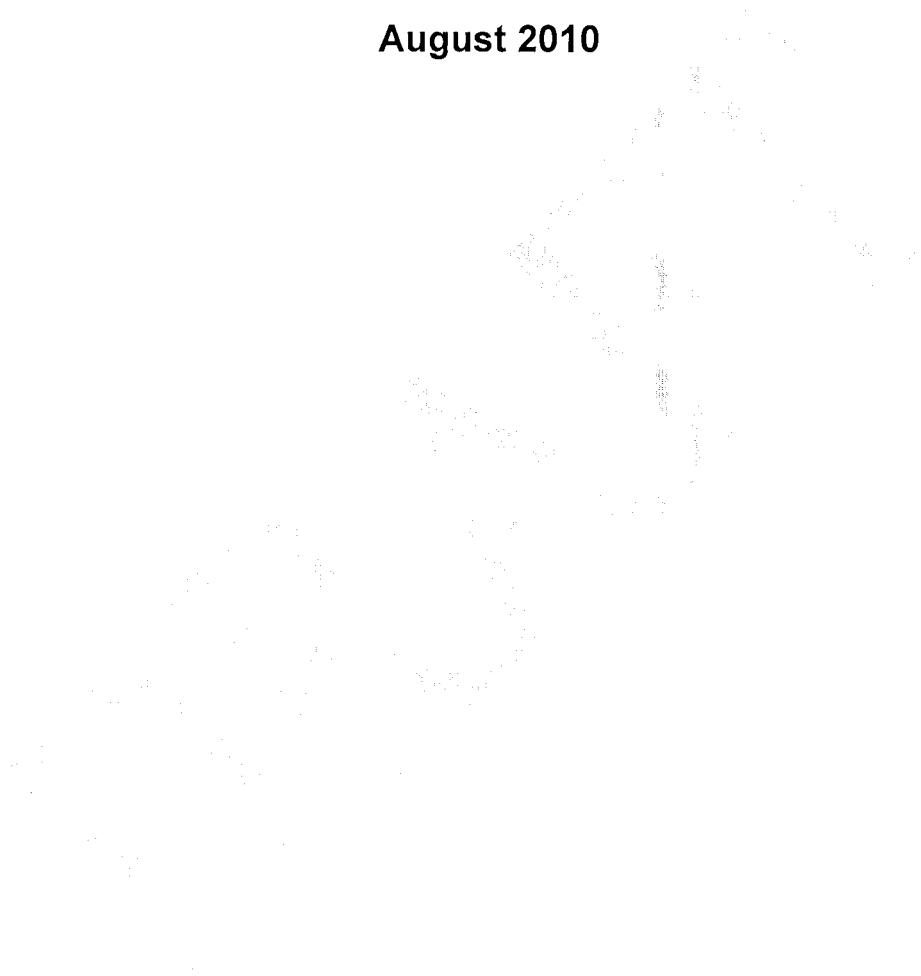


**Management of *Phytophthora* Dieback in  
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**August 2010**



# **Management of *Phytophthora* Dieback in Lesueur National Park and Coomallo Nature Reserve**

## **Introduction**

Phytophthora Dieback is recognised as a major threat to the conservation values of Lesueur National Park and Coomallo Nature Reserve due to their high level of floristic diversity and susceptibility. The purpose of this plan is to assist in the implementation of the Lesueur National Park and Coomallo Nature Reserve Management Plan 1995 – 2005 (N0. 31), in particular Section 7.1 Plant Diseases.

The document provides background to the disease status and previous management actions undertaken, it also provides a clear strategy for disease management and supporting management actions. Information on disease status and the biophysical aspects of the area are not considered complete therefore as new information becomes available this document will be updated as required.

The document should be read in conjunction with the Lesueur National Park and Coomallo Nature Reserve Management Plan 1995 – 2005 (N0. 31), DEC Policy Statement 3 *Management of Phytophthora and Disease Caused By It* (1998) and the Moora District Dieback Protection Plan (1990). DEC Policy Statement 3 places a distinct focus on the management of *Phytophthora cinnamomi* and hence this is the focus of this document.

This Management Plan was given District approval on day, month, 2010. The provision of funds for management actions outlined in this plan is dependent on budgetary and other constraints affecting DEC, as well as the need to address other priorities.

The Moora District Manager is responsible for the implementation of this plan through the Parks and Visitor Services and Nature Conservation Coordinators.

## **Objective**

- To prevent introducing plant diseases into disease-free areas and
- To control spread where it is already present  
(DEC Management Plan No. 31).

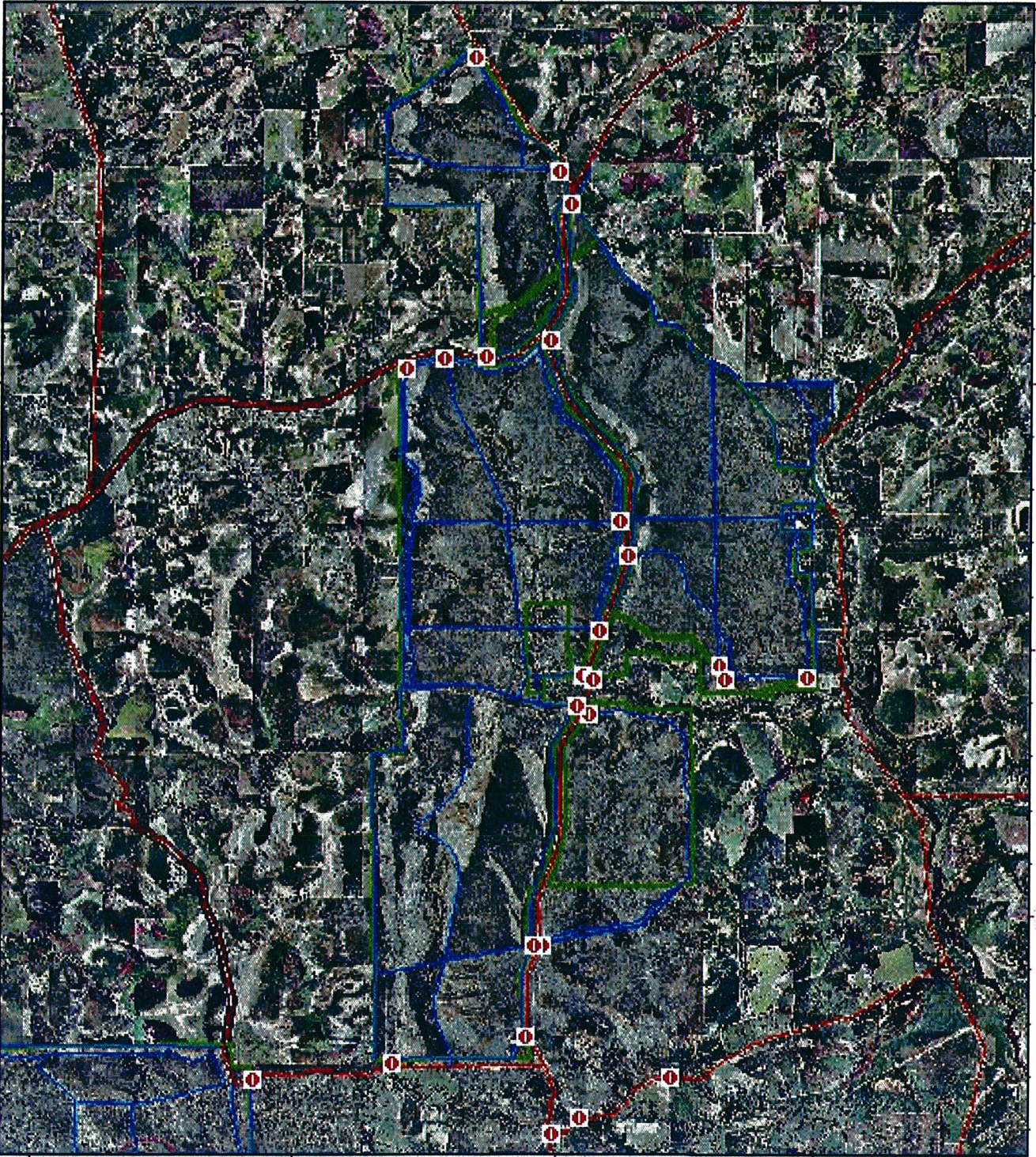
## **Background**

Lesueur National Park and the Coomallo Nature Reserve are recognised for their outstanding conservation value and together form one of the three most important areas for flora conservation in Western Australia. The high species diversity and levels of endemism of Lesueur and Coomallo have contributed to the south-west of Western Australia being recognised as a global biodiversity hotspot.

More than 900 plant species are known from Lesueur National Park of which 10 are Declared Rare Flora (DRF). The assemblage of flora includes 50 populations of DRF and more than 144 populations of Priority Flora. The area also contains three Threatened Ecological Communities (TECs) and although it has not been extensively surveyed for fauna, 15 mammal, 124 bird, 48 reptile and 9 frog species have been recorded.

The area has varying topography which includes lateritic breakaways, sandstone peaks, deeply dissected gullies, coastal sand dunes and areas of sandplain; this diversity in landforms has contributed to the high level of floristic diversity present. The area receives between 500 and 600 mm of rainfall annually, with the majority falling in the winter months; however summer rainfall events are experienced and are often associated with thunderstorms and deep west coast troughs. Further details about the biophysical attributes of the Park are contained in the Lesueur National Park and Coomallo Nature Reserve Management Plan 1995 – 2005, No. 31 (CALM 1995).





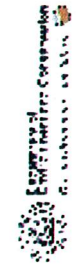
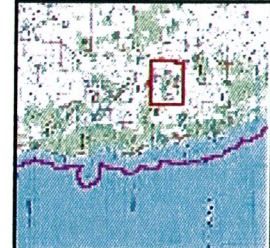
# Appendix 1b Lesueur and Coomallo Dieback Management Plan

## Legend

- Clean on Entry (Barrier and Sign)
- Playbph from off-road
- Lesueur Water Point
- Fire Break
- Proposed Walk Trail
- Walk Trail
- Firebreak
- MDA/EST Unsealed Road
- MDA/EST Sealed Road
- Lesueur NP Boundary
- Coomallo NR Boundary



Projection: Universal Transverse Mercator  
MGA Zone 50, Datum: GDA94



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Lesueur National Park and Coomallo National Reserve

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## **Management of *Phytophthora* Dieback in Lesueur National Park and Coomallo Nature Reserve**

*Phytophthora* Dieback has been identified as one of the major threats to the biodiversity values of Lesueur National Park (the park) and Coomallo Nature Reserve (the reserve). The heath communities of the area are dominated by Proteaceous species and the introduction of *Phytophthora* Dieback would greatly reduce species diversity, community structure and the associated habitat values and could potentially lead to the extinction of some species of threatened flora.

There are no known infestations of *Phytophthora cinnamomi* within the park or reserve, however three positive recoveries of *P. citricola* have been made from the park in the past. Both the park and the reserve have had a long history of unmanaged access including extensive exploration for mineral resources such as coal until 1991 when the areas were set aside for conservation. Now the two most likely sources of the pathogen entering the park and reserve are through recreational and operational activities.

The park is frequented by visitors interested in wildflowers and the unique landscapes of the area, the main visitor access to the park is via an 18.5 km bitumen loop road that enters and exits the park from Cockleshell Gully Road. This loop road was constructed in 2004, prior to this visitor access was via a series of sandy tracks. There are currently two formalized walk tracks within the park with a third walk track planned for construction in the future.

Operational activities also provide a means for which the pathogen may be introduced to the area, operational activities currently undertaken include but are not limited to, track and firebreak maintenance, planned burning, maintenance and development of visitor facilities, feral animal control and research. All of these activities are currently carried out under DEC's Policy Statement No. 3, *Management of Phytophthora and Disease Caused By It*.

### **Scope**

This Dieback Management Plan applies to the following activities within Lesueur National Park and Coomallo Nature Reserve:

- All DEC personnel, contractor and visitor access
- All related vehicle movement on the road and firebreak network
- Road, track and firebreak maintenance activities
- All recreational activities
- All operational activities conducted by DEC personnel and contractors

### **Hygiene Status**

No known infections of *Phytophthora cinnamomi* occur in the park or reserve, however at least three infections of *P. citricola* have been observed in the park, one of which occurs along Cockleshell Gully Road (Appendix 1). No broad scale *Phytophthora* Dieback interpretation has occurred within Lesueur National Park or Coomallo Nature Reserve; however *Phytophthora* Dieback interpretation was conducted along the alignment of the newly constructed loop road prior to construction. This interpretation was undertaken by a qualified DEC interpreter (Jodie Watts), in 2004 and no infestations were recorded during this survey. Interpretation of the fire break network in the park east of Cockleshell Gully Rd was also undertaken in 2007 by qualified DEC interpreters (Anthony Raudino and Mark Spice); numerous samples were collected however no positive recoveries were made.



# **Management of *Phytophthora* Dieback in Lesueur National Park and Coomaloo Nature Reserve**

## **Dieback Management Strategy**

Management of *Phytophthora* Dieback is currently, and will continue to be, conducted according to DEC's Policy Statement No. 3 *Management of Phytophthora and Disease Caused By It* and the Moora District Dieback Protection Plan (1990).

The following strategy for *Phytophthora* Dieback management has been developed in response to the 2006 audit of the Lesueur National Park and Coomaloo Nature Reserve Management Plan 1995 – 2005, No. 31 and the existing status of the disease and hygiene related factors:

*A Phytophthora Dieback free or low risk road network will be maintained to minimise the risk of introducing the pathogen from outside the national park and nature reserve or spreading it from infestations within. This system will be supported by signposting and appropriate hygiene procedures for all operations undertaken by all DEC staff, contractors and visitors.*

## **Management Actions**

A list of management actions supporting the implementation and maintenance of the dieback management strategy are contained in the following sections:

### **Access to Lesueur National Park and Coomaloo Nature Reserve**

Lesueur National Park is connected to the public road network via Cockleshell Gully Road, Banovich Road, and Indian Ocean Drive. Coomaloo Nature Reserve is connected to the public road network via Banovich Road, Jurien East Road, Marchagee Track and Brand Highway. A series of unsealed tracks enter the park and reserve from these roads and therefore the following management actions are designed to minimize the risk of introducing and spreading *Phytophthora* Dieback through these access points.

- All DEC personnel and contractors are required to arrive with vehicles and machinery in a clean state, free of mud, dirt and vegetation material. (Clean on Entry)
- All DEC personnel and contractors are required to utilize established road network and follow road signs provided.
- DEC will maintain signage at the road and track entrances to and within the Park and Reserve (Clean on Entry Signage).

### **Vehicle Movement within Road Network**

The primary access to Lesueur National Park available to visitors is an 18.5 km loop road that enters and exits the park from Cockleshell Gully Road. The loop road is considered a low risk road that discourages the establishment and survival of *Phytophthora* Dieback by being constructed low in the profile, providing few opportunities for the pathogen to survive in wet areas or have contact with native vegetation. Limestone and bitumen were used as the road building material to further decrease the possibility of infection.

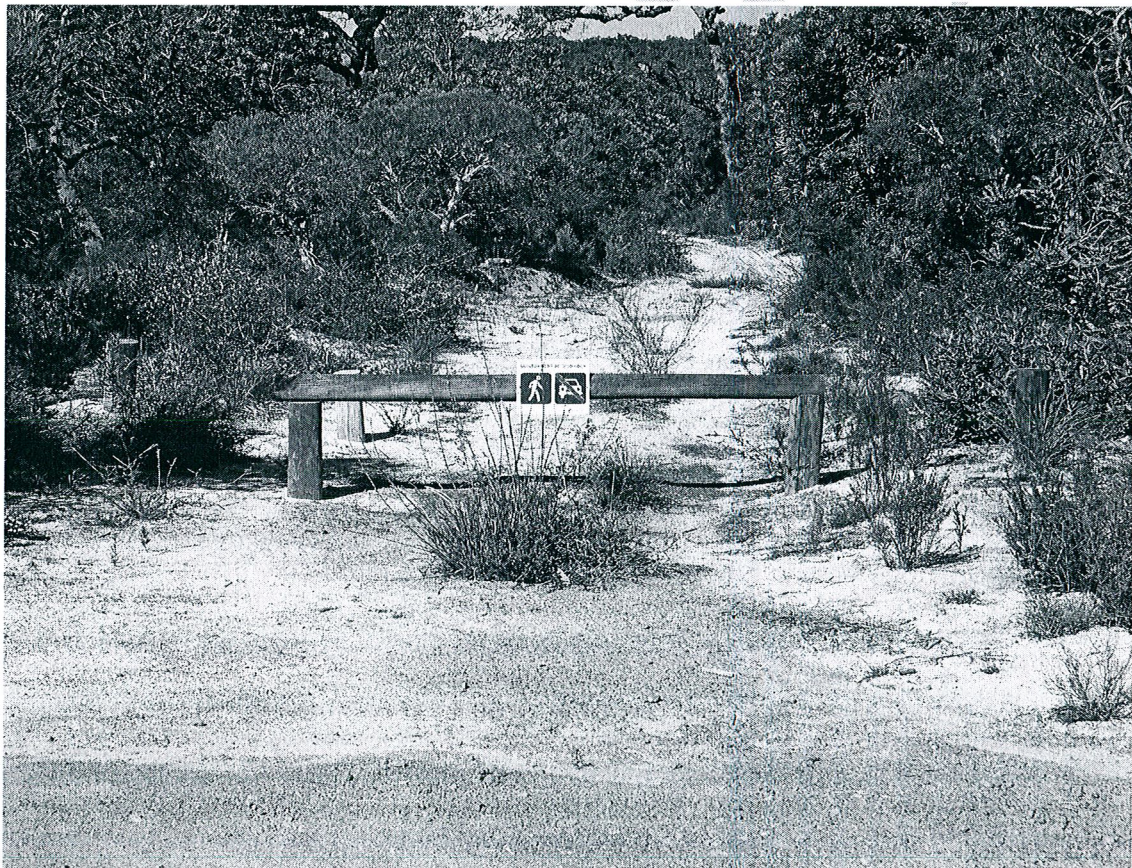
- All general public vehicle movement is to be restricted to the loop road..
- Public vehicles are not permitted to enter areas of native vegetation and must remain on the designated loop road at all times

Vehicle movement beyond the loop road is restricted to a network of tracks and firebreaks that run through the park and reserve. Access to these is limited to DEC staff, contractors completing operational tasks and others holding a current Regulation Four Permit (*Conservation and Land Management Regulations 2004*).



## Management of *Phytophthora* Dieback in Lesueur National Park and Coomaloo Nature Reserve

- All DEC personnel, contractors and regulation four permit holders are required to arrive on entry to the Park and reserve with vehicles and machinery in a clean state, free of mud, dirt and vegetation material (Clean on Entry). To achieve this washdown prior to entering the park may be required.
- All DEC personnel, contractors and regulation four permit holders will only be permitted to undertake works in dry soil conditions to limit the movement of soil.
  - Dry soil conditions occurs where the top 200 mm of soil is determined to be “dry”. Indicators of dry soil include, soil must not stick to tires, tracks or underbody parts of vehicles or machinery. Where soil is sticking to vehicle tires, machinery tracks or the underbody of vehicles the soil is considered to be damp or wet (and not dry), and all works must be stopped.
- Creek crossings will be upgraded to limit the movement of soil in areas subject to inundation.
- All DEC Personnel and contractors will be trained in appropriate hygiene procedures.
- All access to internal tracks and firebreaks via the public road network by the general public will be restricted; signage and where appropriate physical barriers will be to achieve this (photograph 1).
- Monitoring of public access to restricted areas will be undertaken by DEC.



Photograph 1: Restricted Access Sign and Bollards



## **Management of *Phytophthora* Dieback in Lesueur National Park and Coomaloo Nature Reserve**

### **Road Network Maintenance Activities**

Road maintenance is critical to maintaining a low risk hygiene road.

- The loop road will be maintained in a well formed condition using bitumen, gravel or limestone at all times.
- Gravel or limestone material utilised for road maintenance will be sourced from areas considered to be free from symptoms of *Phytophthora* Dieback.
- All pot holes and low wet areas of road degradation will be repaired to reduce the potential for *Phytophthora* Dieback survival.

### **Track and Firebreak Network Maintenance Activities**

Track and firebreak maintenance is required to be undertaken in a sensitive manner to ensure the introduction and spread of *Phytophthora* Dieback is avoided.

- All track and firebreak maintenance will be conducted under dry soil conditions (see Vehicle Movement within Road Network).
- All machinery is required to be free of soil and vegetative material before entering Conservation Estate.
- All DEC Personnel and contractors will be trained in appropriate hygiene procedures.

### **Rehabilitation**

All rehabilitation works will be undertaken in a way to minimise the potential introduction and spread of *Phytophthora* Dieback.

- Tracks no longer required for operations will be rehabilitated under dry soil conditions to minimize access requirements and potential access from visitors to the Park.
- Rehabilitation plans will include hygiene requirements.

### **Recreation Site Development**

All recreation site development works will be undertaken in a way to minimise the potential introduction and spread of *Phytophthora* Dieback.

- Contracts established to procure site development services will include *Phytophthora* Dieback hygiene requirements.
- Contract operations will be supervised by a suitably qualified officer to ensure that hygiene conditions are met.
- Location and design of recreational sites will discourage the establishment and survival of *Phytophthora* Dieback by providing few opportunities for the pathogen to survive in wet areas or have contact with native vegetation.
- Any soil or gravel required for recreational site development will be sourced from areas considered to be free from symptoms of *Phytophthora* Dieback.

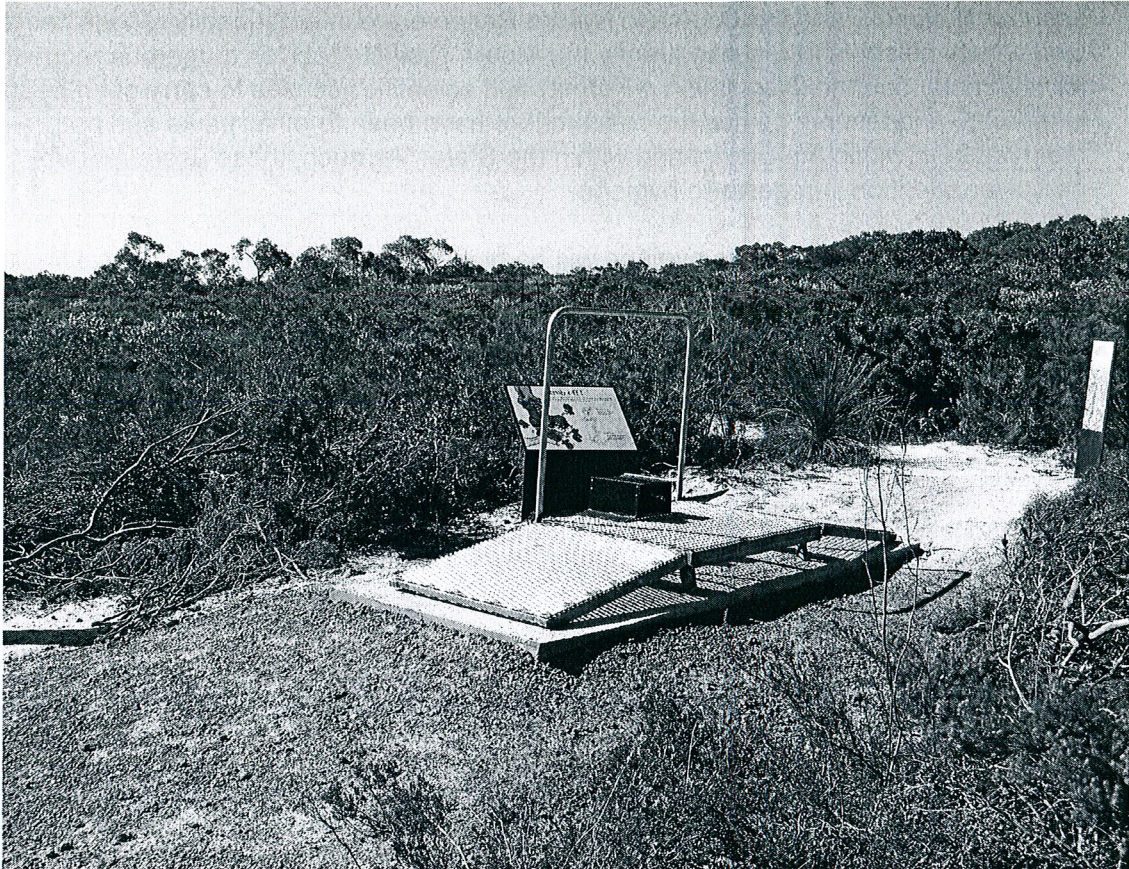
### **Pedestrian Hygiene**

All formalized walk tracks should be constructed and maintained to prevent the introduction and spread of *Phytophthora* Dieback.



## Management of *Phytophthora* Dieback in Lesueur National Park and Coomallo Nature Reserve

- Foot baths and shoe cleaning facilities will be placed at appropriate areas of the walk path network (Photograph 2) *+ interpretation.*
- Signage will be maintained to ensure walkers keep to tracks
- Boardwalks and bridges will be considered to avoid walkers entering moisture gaining sites where appropriate



Photograph 2: Shoe Cleaning Facility – Gairdner Walk Trial

### Feral Animal Control

Feral animals (pigs, goats and horses) pose a threat to the park in regards to the potential spread of the disease.

- A feral pig control program will be developed for the park and reserve with the aim reducing feral pig numbers.
- To assist in the development and continual improvement of feral pig control program, information relating to the location of pig activity will be recorded and monitored for symptoms of *Phytophthora* Dieback.

*? other spp*

### Unplanned Works – Wildfire

In the event of a wildfire in the park or reserve environmental considerations such as hygiene will be a high priority. Environmental considerations will be included in the standing orders of the Moora District Wildfire Preparedness and Response Plan.

These standing orders will include:

- Where possible the establishment of an Environmental Officer in the Planning Section of IMT, where possible this role will be filled by local staff.
- Where possible the establishment of an Environment Division in the Operations Section of the IMT to implement appropriate hygiene protocols and establish clean down facilities.



## Management of *Phytophthora* Dieback in Lesueur National Park and Coomaloo Nature Reserve

- All DEC Personnel and contractors will be trained in appropriate hygiene procedures.

*• All vehicles will be inspected upon arrival to the fireground and stood down if not free of soil & vegetative material*

**Researchers**

Lesueur National Park and Coomaloo Nature Reserve are internationally recognized as biodiversity hotspots and subsequently the Moora District receives numerous requests for both entry permits (Regulation 4 Permit) and scientific licenses to carry out research in the park and reserve. Often the researchers have been to other parks and nature reserves both within the District and within the State. As such, these users require particular attention in regards to hygiene.

- Conditions relating to hygiene will be placed on licenses.
- Spot checks to be conducted to ensure hygiene conditions are being adhered to.
- A one page summary sheet detailing information on hygiene will be developed and will be provided with entry permits and licenses.

### Apiarists

Lesueur National Park and Coomaloo Nature Reserve contain registered apiary sites. In managing their hives apiarists travel large distance and access many other parks and reserves as well as private property. As such, these users require particular attention in regards to hygiene.

- Conditions will be placed on license to ensure hygiene requirements are clearly articulated.
- Spot checks to be conducted to ensure hygiene conditions are being adhered to.
- A one page summary sheet detailing information on hygiene will be developed and will be provided with apiary licenses.

### Interpretation

Ongoing interpretation and sampling is required to ensure any infestations of *Phytophthora* Dieback are detected and appropriate management can be applied.

- DEC staff will be trained in recognizing the symptoms of *Phytophthora* Dieback infestations and in collecting samples.
- Soil and tissues samples will be collected and processed by DEC's Vegetation Health Service
- Where required and as opportunities arise, broad scale interpretation by qualified DEC interpreters will be pursued.

### Dieback Management Key Performance Indicators / Commitments

The Moora District is committed to the management outlined in Table 1 to ensure environmental performance objectives for Lesueur National Park and Coomaloo Nature Reserve are met. Table 1 provides the basis from which the environmental performance of the management of Lesueur National Park and Coomaloo Nature Reserve Management Plan / Policy No. 3 will be monitored. Table 1 will be completed on an annual basis, with records stored on the Moora District Files.



**Management of *Phytophthora* Dieback in  
Lesueur National Park and Coomaloo Nature Reserve**

**Table 1 Lesueur National Park Dieback Management Key Performance Indicators**

<i>Action Description</i>	<i>Commitment</i>	<i>Results of Implementation / Audit</i>
<b>Access- Vehicle</b>	Restricted Access Signage erected along loop road to inform all DEC staff, contractors and visitors of access requirements (Clean on Entry)	
<b>Access - Vehicle</b>	Restricted Access Signage and bollards erected to deter public access to firebreak network	
<b>Access - Pedestrian</b>	Signage erected to inform all pedestrians the requirement to use foot baths and how correctly use them. <i>+ why.</i>	
<b>Education</b>	Development and distribution of a one page summary sheet detailing information on hygiene	
<b>Training</b>	Training is provided to DEC staff and contractors regarding Phytophthora Dieback, its impact and management	
<b>Track and firebreak maintenance</b>	Vehicles to be clean and operate in dry soil conditions. Operating personnel (DEC staff and or contractors) to receive a job prescription containing hygiene requirements. <i>inspections</i>	
<b>Road Maintenance</b>	Roads are maintained in good repair. Material imported for road maintenance sourced from areas to be considered to be free from symptoms of Phytophthora Dieback. (documented)	
<b>Rehabilitation</b>	Rehabilitation plans and contracts include Phytophthora Dieback hygiene requirements.	
<b>Sampling/interpretation</b>	Regular sampling to determine Phytophthora Dieback status of the Park <i>2 annual how many</i>	
<b>Recreation site development and Maintenance</b>	Operating personnel (DEC staff and or contractors) to receive a job prescription containing hygiene requirements. <i>inspection of vehicle/machinery -</i>	

**Appendix 1 - Signage, Roding and Track Plan**