Management of *Phytophthora* Dieback for Human Access in Lesueur National Park and Coomallo Nature Reserve

Objective

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

Background

Lesueur National Park and the Coomallo Nature Reserve are recognised for their outstanding conservation value and are one of the three most important areas for flora conservation in Western Australia. The high species diversity and levels of endemism of these areas have contributed to the south-west of Western Australia being recognized 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 four Threatened Ecological Communities (TECs) and although it has not been extensively surveyed for fauna there has been 15 mammal, 124 bird, 48 reptile and 9 frog species 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).

Phytophthora Dieback has been identified as one of the major threats to Lesueur National Park and Coomallo Nature 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 Lesueur National Park, however three positive recoveries of *P. citricola* have been made in the past. The two most likely sources of the pathogen entering the park 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 is via a 18.5 km bitumen loop Rd that enters and exists 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 of visitor facilities and research. All of these activities are currently carried out under DEC's Policy Statement No. 3

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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 Lesueur National Park, but at least three infections of *P. citricola* have been observed, one of which occurs along Cockleshell Gully Road. 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.

Dieback Management Strategy

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

The following strategy for Phytophthora Dieback management has been developed in response to a recent audit of the Lesueur National Park and Coomallo 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 or spreading it from infestations within the park. This system will be supported by signposting, appropriate road maintenance and procedures.

Environmental 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 Coomallo Nature Reserve

Lesueur National Park is connected to the public road network via Cockleshell Gully Road, Banovich Road, and Indian Ocean Drive. Coomallo 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.

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- All DEC personnel and contractors are required to arrive with vehicles and machinery in a clean state, free of mud, dirt and vegetation material
- All DEC personnel and contractors 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.
- Would we put in a mobile wash down at the entry of loop road?
- Would we look to close access points to public with gates during summer rainfall events or permanently?

Vehicle Movement within the Lesueur National Park Road Network

The primary access to Lesueur National Park available to visitors is 18.5 km loop road that enters and exits the park from Cockleshell Gully Road. The loop road is a low risk hygiene 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 native vegetation. The use of limestone and bitumen as the roading building material further decreases the possibility infection.

- All public vehicle movement is restricted to the loop road. Use of other internal tracks and fire breaks intersecting the loop road is not permitted and are blocked with road closure signs and bollards (see Photograph 1).
- 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. Access to these is limited to DEC staff and contractors completing operational tasks.

- All DEC personnel and contractors are required to arrive with vehicles and machinery in a clean state, free of mud, dirt and vegetation material
- All DEC personnel and contractors will only undertake works in dry soil conditions
- All DEC Personnel and contractors will trained in appropriate hygiene procedures.
- Would we close all other access points to the public with bollards and signage?

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 must be certified free of Phytophthora Dieback prior to being imported to the site.
- Gravel or limestone material utilised from on-site sources must be verified as having originated from a Phytophthora Dieback free location.
- All pit holes, low wet areas of track degradation will be repaired to reduce the potential for Phytophthora Dieback survival.

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Track and Firebreak Network Maintenance Activities

Track and fire break 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.
- All machinery is required to be free of soil and vegetative material before entering Conservation Estate.
- All DEC Personnel and contractors will 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
- Rehabilitation should always be by seed

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 professional to ensure that hygiene conditions are met.
- Any soil or gravel required for recreational site development will be sourced fro certified Phytophthora Dieback free sources.

Pedestrian Hygiene

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

- Foot baths and shoe cleaning facilities will be placed along appropriate areas of the walk path network (Photograph 2)
- Signage in place to ensure walkers keep to tracks
- Boardwalks and bridges will be considered to avoid walkers entering mioture gaining sites where appropriate
- Discourage walkers when the soil is wet (how)???

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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 Coomallo Nature Reserve are met. Table 1 provides the basis from which the environmental performance of the management of Lesueur National Park and Coomallo Nature Reserve Management Plan / Policy No. 3 will be monitored.

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Table 1 Lesueur National Park Dieback Management Key Performance Indicators

Action Description	*Commitment*	*Results of Implementation / Audit?*
Access- Vehicle	Signage erected along loop road to inform all DEC staff, contractors and visitors of access requirements	
Access - Pedestrian	Signage erected to inform all pedestrians the requirement to use foot baths and how correctly use them.	
Education	Hygiene requirements and designated road network information is incorporated in park brochure	
Training	Training is provided to DEC staff and contactors regarding *Phytophthora* Dieback, its impact and management	
Signage	Inform visitors entering Park about *Phytophthora* Dieback and the precautions to be taken to ensure that *Phytophthora* Dieback is not brought in nor spread.	
Hygiene	Wash down station??	
Track and firebreak maintenance	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.	
Road Maintenance	Roads are maintained in good repair. Material imported for road maintenance to be verified as free from Phytophthora Dieback (documented)	
Rehabilitation	Rehabilitation plans and contracts include Phytophthora Dieback hygiene requirements.	
Secure areas	Secure management access tracks using signage and blocks (photograph 1) to prevent uncontrolled access.	
Regular testing	Regular sampling to ensure dieback – free status of the Park	