Threat abatement
for *Phytophthora cinnamomi*

GOVERNMENT OF WESTERN AUSTRALIA
DEPARTMENT OF Conservation AND LAND MANAGEMENT
Conserving the nature of WA

DRAFT FOR PUBLIC COMMENT: MARCH 2004

Public Consultation on the Draft replacement Department of Conservation and Land Management (CALM) Policy Statement Number 3:

Threat abatement for *Phytophthora cinnamomi* and disease caused by it in native vegetation.

What is the draft policy for?

This draft policy seeks to replace the existing Policy 3, which is appended. CALM Policies give guidance to staff in the performance of their management and decision making functions relating to the land managed under the *Conservation and Land Management Act 1984* and also in relation to the broader functions of the Department under the *Wildlife Conservation Act 1950*.

The draft policy is designed to give guidance to staff in order to limit the detrimental impacts of *P. cinnamomi* on the biodiversity of Western Australia in relation to Departmental responsibilities.

What are we seeking comments on?

CALM is seeking comments on the draft policy in terms of its accuracy and suitability for application to CALM operations.

Your comments are welcome and need to be submitted by 7 May 2004 to be considered in the preparation of the final policy.

How to comment

Please prepare your written comments, referencing specific sections in (or omissions from) the draft policy and forward them to one of the addresses below by 5 pm Friday 7 May 2004.

(by mail)

Phytophthora Policy Comments
Dieback Coordinator
Department of Conservation and Land Management
Locked Bag 104
BENTLEY WA 6983

(by facsimile)

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DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
DRAFT REPLACEMENT POLICY STATEMENT No. 3

THREAT ABATEMENT FOR *PHYTOPHTHORA CINNAMOMI* AND DISEASE CAUSED BY IT IN NATIVE VEGETATION

INTERPRETATION

In this policy, unless the contrary intention appears:

"Adaptive management" means: a process of responding positively to change. The term adaptive management is used to describe an approach to managing complex natural systems that builds on common sense and learning from experience, experimenting, monitoring, and adjusting practices based on what was learned.

"Consequence" means: The outcome of the introduction of *Phytophthora cinnamomi* into an uninfested area of native vegetation being a loss, injury, disadvantage or gain.

"Hazard" means: a source of potential harm or a situation with the potential to cause loss.

"Management Plan" means: a management plan approved under section 60 of the *Conservation and Land Management Act 1984.*

"*Precautionary Principle*" has the meaning: Stated in the *Intergovernmental Agreement on the Environment (1992)*:

> *"Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*
> ***(i)*** *Careful evaluation to avoid, where-ever practicable, serious or irreversible damage to the environment: and,*
> ***(ii)*** *An assessment of the risk-weighted consequences of various options."*

"Precaution" means: an action(s) taken beforehand to avoid environmental degradation or to ensure a desirable environmental outcome.

"Protectable area" means: an area, including areas of high conservation and/or socio-economic value (e.g. a small uninfested area which contain a known population of a susceptible species of threatened flora) within the vulnerable zone that are:

- Situated in zones receiving > 600 mm per annum rainfall or are water gaining sites (e.g. granite outcrops, impeded drainage or engineering works which aggregate rainfall) in the 400-600 mm per annum rainfall zone;
- Not calcareous soil (e.g. not a Quindalup dune system);
- Determined to be free of the *P. cinnamomi* by a qualified Disease Interpreter (all susceptible indicator plant species are healthy, no plant disease symptoms normally attributed to *P. cinnamomi* are evident);
- Positioned in the landscape and are of sufficient size (e.g. > 4 ha with axis > 100m) such that a qualified Disease Interpreter judges that *P. cinnamomi* will not autonomously engulf them in the short term (a period of a few decades);
- Where human vectors are controllable (e.g. not an open road, private property)

"Risk" means: the chance of an uninfested area becoming infested through the autonomous actions of the pathogen (*Phytophthora cinnamomi*)or the actions of people and animals or a combination of these factors, measured in terms of the magnitude of consequences of that

event should it occur and the likelihood of the event and its consequences occurring and assessed in the context of existing controls.

"Risk analysis" means: the systematic use of available information to determine how often specified events may occur and the magnitude of their consequences.

"Risk control" means: that part of risk management that involves the implementation of policies, standards, procedures and physical changes to eliminate or minimise adverse risks.

"Risk evaluation" means: the process used to determine risk management priorities.

"Risk management" means: the culture, processes and structures that are directed towards the effective management of potential opportunities and adverse effects.

"Risk treatment means: the selection and implementation of appropriate options for dealing with risk.

"Susceptible" means: influenced or harmed by the pathogen *Phytophthora cinnamomi*.

"Threat" means: an indication that serious or irreversible environmental damage may occur.

"Uninfested" means: an area that an accredited person has determined may be free of plant disease symptoms that indicate the presence of the pathogen (*Phytophthora cinnamomi).*

"Vulnerable" means: susceptible to physical injury.

"Vulnerable zone" means: that part of the South West Land Division and the areas adjoining it to the north west and the south east that receive with mean annual rainfall greater than 400 mm in which susceptible native plants occur in conjunction with the environmental factors required for the pathogen *Phytophthora cinnamomi* to establish and persist.

1. OBJECTIVES

This policy provides guidance to CALM staff with a view to limiting the threat posed by *Phytophthora cinnamomi* and disease caused by it to the biodiversity conservation values of native vegetation in Western Australia.

2. BACKGROUND

2.1 The Pathogen (*Phytophthora cinnamomi*) and Disease Caused by it in Native Vegetation

The introduced soil borne water mould *P. cinnamomi* is known for its capacity to invade and destroy the function of the root systems of a wide range of Western Australia's native plants across numerous ecosystems. This slow moving epidemic of root disease in native vegetation in Australia is known as "*Phytophthora* dieback". The impact of this now widespread pathogen varies greatly across the landscape but almost always results in the permanent removal from infested sites of one or more susceptible species. At worst, mass collapse of ecosystems occurs along with significant disruption to important ecological processes.

Dieback caused by the root-rot fungus *P. cinnamomi* has been listed as a 'key threatening process' under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* effective from 16 July 2000.

It has been estimated through trials that 49% of the State's threatened flora species are susceptible to *P. cinnamomi*. In some cases the few remaining wild populations of susceptible threatened flora and some threatened ecological communities have been invaded by *P. cinnamomi*. Approximately 40% of the flora of the South West Botanical Province is susceptible.

In Western Australia *P. cinnamomi* will continue its autonomous spread from all its established disease fronts via root to root growth amongst host plants and through the dispersal of zoospores in free flowing water. Native animals, feral animals and people, including their vehicles and machinery act as vectors for *P. cinnamomi*.

The most important means of limiting the impact of *P. cinnamomi* is through direct management action to reduce the incidence of human vectoring of *P. cinnamomi* into uninfested areas. This can be achieved by closing and rehabilitating unwanted roads from within uninfested areas and through the application of rigorous hygiene regimes that minimize the risk that people, who have a valid reason to enter uninfested areas are carrying *P. cinnamomi*. Effective management action depends upon the prior analysis of the likely presence or absence of *P. cinnamomi* and accurate demarcation of disease boundaries.

Limited control, but not eradication, of *Phytophthora cinnamomi* and the disease it causes is possible over small areas through repeat application of the chemical phosphate. Phosphite can be used to increase the resistance of some susceptible threatened flora, threatened ecological communities and, as a consequence, the habitat of threatened native fauna.

The options for the restoration of areas that have suffered serious environmental damage through the introduction of *P. cinnamomi* or for the successful translocation of threatened flora, are limited.

In the case of threatened flora that is susceptible to, and threatened by, *P. cinnamomi,* conservation actions include: collection and *ex situ* storage of germ-plasm for the purpose of maintaining gene pools and the investigation of germination processes, cultural requirements; and, field establishment methods for the species collected, including site selection protocols to determine the suitability of areas for the reintroduction of a particular species..

2.2 Principles of Sustainability

Section 19(2) of the *Conservation and Land Management Act 1984* establishes the principles of ecologically sustainable forest management and incorporates the precautionary principle. These principles have been used as a guide by the Department to ensure that this policy statement includes a clear commitment to the principles of sustainability.

3. LEGISLATIVE BASE

The Department is responsible for the administration and implementation of the *Wildlife Conservation Act 1950* and the *Conservation and Land Management Act 1984* that together provide the primary legal basis for the conservation of biodiversity in Western Australia.

4. POLICY

4.1 Risk Management

Management plans, interim management guidelines, interim recovery plans and recovery plans for threatened flora and threatened ecological communities, as well as plans for necessary operations or compatible operations on lands managed by the Department, and plans for the management of *P. cinnamomi* and disease caused by it in native vegetation will incorporate measures for:

- assessing the threat to the conservation of Western Australian biodiversity posed by *P. cinnamomi,* including the threat to uninfested areas of high conservation value and to the residual conservation values of infested areas;
- assessing and evaluating the risk of introduction of *P. cinnamomi* into uninfested ‘protectable’ areas;

- identifying, evaluating and, where practical and reasonable, applying effective and efficient risk treatment measures to limit serious and irreversible environmental damage in uninfested areas;
- evaluating the degree of precaution to be used when applying preventative measures;
- identifying, evaluating and applying, where appropriate, measures for the restoration of infested areas with serious environmental damage, including recovery or re-introduction of populations of threatened flora and where necessary *ex situ* conservation of genetic resources;
- evaluating the need for, and levels of, scientifically based monitoring and audit of the implementation of, and compliance with, preventative measures for the conservation of Western Australian biodiversity;
- developing and progressively implementing agreed priority research programs that may reasonably be expected to impact on the effectiveness and efficiency of the abatement of the threat posed by *P. cinnamomi* to the conservation of Western Australian biodiversity; and,
- designing and implementing appropriate programs for public consultation and education and for the provision of information.

4.2 Commitment to the Principles of Sustainability

The decision-making processes used in the development of management plans, interim management guidelines, interim recovery plans and recovery plans for threatened flora and threatened ecological communities, plans for necessary operations or compatible operations on lands managed by the Department, and plans for the management of *P. cinnamomi* and disease caused by it in native vegetation, will:

- integrate both long-term and short-term economic, environmental, social and equity considerations;
- consider the need for the application of the precautionary principle;
- ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations; and
- ensure that the conservation of biological diversity and ecological integrity is a fundamental consideration in the decision-making process.

5. POLICY IMPLEMENTATION REQUIREMENTS

The Department will cross-reference this policy statement as appropriate with its other policy statements and encourage the:

- use of a consultative approach to determine the degree of threat posed by *P. cinnamomi*, in the assessment, evaluation and treatment of risk; and in the determination of the degree of precaution to be taken when applying preventative measures;
- progressive development of environmental management systems that comply with the *International Standards Organisation (ISO) 14000 Series of Standards for Environmental Management Systems*.
- use of adaptive management on lands managed by the Department that incorporates the results of monitoring of environmental effects to either confirm the appropriateness of continuing established environmental management programs or, where there is evidence of serious or irreversible environmental damage, ensure the modification or cessation of any deleterious practices.

- development of manuals and guidelines that describe best practice management methods and standards and codes of practice that guide responsible environmental behaviour amongst industries, land user groups and the community.

- preparation and delivery of education, training and information programs.

6. ASSOCIATED POLICIES/STRATEGIES

Policy No. 9 - *Conservation of threatened flora in the wild, 1992*

Policy No. 29 - *Translocation of threatened flora and fauna, Revised July 1995*

Policy No. 33 - *Conservation of threatened and specially protected fauna in the wild, 1991*

Policy No. 56 - *Risk management, 2000*

7. CUSTODIAN

The Director of Nature Conservation is accountable for the recording, storage and dissemination of this policy statement.

8. EXECUTIVE DIRECTOR APPROVAL

Approved on ……..

By Keiran McNamara ……..
EXECUTIVE DIRECTOR

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

MANAGEMENT OF *PHYTOPHTHORA* AND DISEASE CAUSED BY IT

POLICY STATEMENT No.3 of OCTOBER 1998

PREAMBLE

This document replaces Department of Conservation and Land Management (CALM) Policy Statement No.3 of January 1991 and should be read in conjunction with other Policy Statements and the background paper :-

> *"Management of Phytophthora and disease caused by it: A revision of Department of Conservation and Land Management Policy Statement No.3 of January 1991" prepared by F.D. Podger & K.R. Vear July 1998*

INTRODUCTION

1. CALM has a responsibility to monitor the health of native plants and ecological communities and respond according to need on a case by case basis.

2. At least 8 distinct species of Phytophthora recur at various places in native plant communities of Western Australia. Whilst the potential importance of several of them still require some further elucidation, P. cinnamomi alone represents by far the greatest ongoing threat to conservation and other benefits to society which native plant communities provide. This policy therefore concentrates on P. cinnamomi.

MANAGEMENT OBJECTIVES

1. Identify uninfested protectable areas and manage human access to them so that the role of humans as vectors in establishing new centres of infestation is reduced to the lowest possible level,

2. Manage already infested and unprotectable areas in a manner which sustains an appropriate level of environmental and social benefits,

3. Implement, as a component of broader management programs to protect threatened flora, threatened ecological communities and the habitat of threatened fauna, a program for the use of the protective chemical phosphite,

4. Implement programs of interagency research and liaison which are closely linked with :-

    a. management requirements, and
    b. other Western Australian, interstate, Commonwealth and international institutions involved in research and management on Phytophthora.

5. Encourage community interest and participation particularly through support of the Dieback Consultative Council (DCC) and its prospective Regional Coordination Groups.

MANAGEMENT STRATEGIES

A. MANAGEMENT OF UNINFESTED AREAS WHICH ARE PROTECTABLE

1. Establish and maintain a set of protocols, founded on science and logic, which guide land managers in identifying and managing protectable areas and prioritise the allocation of available resources for protecting them.

2. Implement a long term management system of hygienic access to protectable areas which incorporates the following elements :-

    a. The use of accredited Interpreters to prepare up-to-date maps of the distribution P. cinnamomi through the detection and analysis of the disease symptoms characteristic of root rot disease caused by P. cinnamomi in native plants.

    b. The identification of protectable areas, which are free of the evidence of infestation by P. cinnamomi, and which are amenable to being protected from the establishment of new centres of infestation arising from the activities of man through the imposition of hygienic management practices.

    c. The documentation, implementation and regulation of plans for hygienic human access to all protectable areas.

    d. The implementation of appropriate monitoring and review programs.

3. Provide protection, as appropriate, through phosphite application.

4. Provide and maintain appropriate management guidelines and training programs.

B. MANAGEMENT OF LANDS ALREADY INFESTED WITH P. CINNAMOMI OR THOSE THAT ARE NOT PROTECTABLE

1. Develop and maintain a set of protocols, founded on science and logic, which establish guidelines for identifying and managing infested and unprotectable areas and for setting priorities among management options for them.

2. Where appropriate provide protection through the application of phosphite.

3. Provide appropriate management guidelines and training programs.

C. PROTECTION OF THREATENED FLORA, THREATENED ECOLOGICAL COMMUNITIES AND THE HABITAT OF THREATENED FAUNA BY THE USE OF A SCHEDULE OF TIMED APPLICATIONS OF THE PROTECTIVE CHEMICAL PHOSPHITE

1. Develop and maintain a set of protocols founded on science and logic which :-

    a. guide land managers in identifying threatened flora, threatened ecological communities and the habitat of threatened fauna that may benefit from protection through phosphite application, and

    b. may be used to establish realistic priorities for use of available resources.

2. Implement and monitor a program using scheduled applications of the protective chemical phosphite for protection of threatened flora, threatened ecological communities and the habitat of threatened fauna.

D. RESEARCH AND LIAISON

As a component of broader programs of research and liaison:-

1. Implement coordinated programs of research and collaboration, which are closely linked to management requirements, and involve other Western Australian, interstate, federal and international land management and research institutions.

2. Through interaction with the Phytophthora Research Coordinating Group establish clear research priorities and agreed allocation of those priorities amongst relevant institutions.

3. Provide appropriate levels of support to the Dieback Consultative Council, the Regional Coordination Groups, and the team responsible for the implementation of the National Threat Abatement Plan for *Phytophthora spp*.

E. ENCOURAGE COMMUNITY INTEREST AND PARTICIPATION

1. Encourage community interest and participation particularly through support of the Dieback Consultative Council (DCC) and its prospective Regional Coordination Groups.

2. Provide appropriate levels of information to the public on the matters related to P. cinnamomi and root rot caused by it.

Responsibility for the maintenance and review of this policy rests with the Executive Director.

Dr S Shea
Executive Director

October 1998