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DIEBACK POLICY 1982

FORESTS DEPARTMENT

WESTERN AUSTRALIA DECEMBER 1982

PRICE $3.00

DIEBACK POLICY 1982

ADOPTED AS A CONSEQUENCE OF THE 1982 DIEBACK REVIEW

FORESTS DEPARTMENT, S.H.Q., DECEMBER 1982

FOREWORD

The Revised Dieback Policy adopted by the Government of Western Australia and set out in this document is the culmination of nine years intensive work embracing research, operational trials and forest management planning.

The quarantine concept chosen by the State Government in 1974 was a bold move designed to meet the challenge posed by a disease of immense potential to damage the forest ecology and surface water supplies.

The success that has been achieved in restricting the spread of the disease has been made possible by the co-operation of the public at large and the forest users in particular, embracing the whole range from timber getting, mining to recreation and scientific study.

The guidelines for forest use set out in this publication provide a basis for safe re-entry to sections of the forest previously quarantined and it is anticipated this will give rise to increased employment opportunities.

I.J. LAURANCE
MINISTER FOR FORESTS

INTRODUCTION

Research into Dieback finalised in early 1982 gave rise to a much better understanding of the disease situation: As a consequence a review of dieback policy was initiated, a Task Force was nominated and guidelines for conducting the review were distributed on 27 July, 1982.

A comprehensive report by nineteen groups of experts was prepared and distributed during August. A seminar was held in late September 1982 and the Task Force distributed a discussion paper outlining major needs, conflicts and uncertainties and evaluating some policy options. Thirty officers attended the seminar and a report was distributed in October. This report contained suggested policies for four major areas:

Mapping

Priorities

Access and Quarantine

Forest Management

At all stages, the Task Force has maintained a close liaison with the Policy Review Group, Regions and Divisions.

The Task Force recommended a series of new policies which have been amended as necessary and are set out in this report.

A flow chart showing the stages in the introduction of quarantine and the development of this policy is appended to this report.

B.J. BEGGS
CONSERVATOR OF FORESTS

1. PROCEDURE

2. DEVELOPMENT OF POLICIES

3. IMPLEMENTATION

4. APPENDICES

1. PROCEDURES

INITIATION

The Conservator indicated his intention to instigate a review of dieback policy during the latter half of 1982. The last major review of dieback commenced in November 1973. Since then many developments have occurred, e.g., in research, in operational practices, in the interpretation and mapping of dieback, in the establishment of quarantine and in the needs of industry. A review of the current situation and an evaluation of policy options was desirable. The objective of this review was to propose forest management policies and practices so that:

(a) Forest operations are carried out hygienically, so that the disease is not spread into areas as yet unaffected.

(b) In areas free of the disease or those where the impact of the disease is minor the natural resistance can be increased.

(c) Where needed, areas affected by the disease can be rehabilitated.

(d) The forest ecosystem can be productively managed in the long term.

TERMS OF REFERENCE

(a) Review all factors and activities which affect or can be affected by dieback, especially -

forest operations - logging, mining etc.

forest protection - fire, disease control, catchments

management information - photo interpretation, mapping

research

quarantine and hygiene

public and industrial requirements - log supplies, recreation

communication lines - roads, pipelines, conveyors

(b) Identify areas of uncertainty, conflict or where adjustments between competing demands will be necessary.

(c) Prepare alternative policy options for evaluation by the Policy Review Group and the Conservator.

(d) Recommend methods of implementing the selected options, especially -

legislation
education and training
publicity and extension
control systems
structures.

PROCEDURE

The dieback problem is an example of a typical, complex, interfunctional system. Resolution involves a number of clearly defined stages -

* data collection - provided by groups of experts
* preparation of alternative options - Dieback Review Task Force
* evaluation of feasible alternatives - Policy Review Group
* selection of preferred options - Conservator
* recommendations for changes in policy - Conservator to Minister
* acceptance of new policy - Cabinet
* implementation - Forests Department

All complex biological problems involve elements of risk and uncertainty. Periodic reviews will be necessary. Because the task is complex and will involve many Departmental officers, a suitable organisational structure is necessary for success.

STRUCTURE

To produce a review which is effective there is need for clarity in the structures used, the objectives at each stage, the task and role of each group and the timetabling needs. A Dieback Review Task Force of four officers (Messrs Havel (Chairman), Grace, Peet and Batini) was nominated to co-ordinate this review. Three of these officers were members of the 1973 Task Force.

Responsibilities for each group are shown below:

Departmental Experts	* Provide data inputs to D.R.T.F.
	* Interact with D.R.T.F.
	* Evaluate draft policy options.

Dieback Review Task Force (D.R.T.F.)	* Evaluates submissions from Departmental experts
	* Prepares and examines alternative policy options
	* Recommends preferred alternatives to P.R.G.
	* Co-ordinates the review providing liaison and executive staff functions (Mr. Batini).
Policy Review Group (P.R.G.)	* Evaluates policy alternatives offered by D.R.T.F.
	* Selects feasible options.
	* Recommends to Conservator
Conservator	* Evaluates recommendations from P.R.G. and D.R.T.F.
	* Advises Minister of selected policies or policy alternatives.
	* Liaises with Industry and Government departments regarding policy proposals.

2. DEVELOPMENT OF POLICIES

FOREST MANAGEMENT

This field is broad and policies could be developed for each land use category, or by forest type, or by the susceptibility of each site-vegetation type to the disease.

The Task Force has decided to adopt a systematic approach based on the following factors:

The OPERATION being contemplated.

The DEGREE OF HYGIENE which is specified.

The FOREST TYPE.

The likely IMPACT of P. cinnamomi on the forest type.

The specified LAND USE.

The CONSEQUENCES of impact on land use.

For this discussion impact may be defined as follows, and relates to the terminal effects of the disease:

few understorey species killed	-	low impact
many understorey species killed, some dead jarrah trees	-	moderate impact
many understorey species killed, many jarrah deaths, graveyards	-	high impact

An operation may be defined as any activity that might have an impact on the health of the forest. This systematic approach should be used both in proclaimed disease risk areas and in non-proclaimed areas.

Using these factors, an operation (e.g. logging), which has a high risk of introducing P. cinnamomi (e.g. in winter, no hygiene,), into a site where the impact on the forest would be high (e.g. Gunapin surface), in a critical land use category (e.g. buffer for Flora, Fauna, Landscape MPA), would have serious consequences, and should therefore be avoided.

These factors can be applied to any operation, forest type, and land use category. Considerations of risk, impact and consequences will lead to a decision to accept, reject or to modify the proposed activity.

1. POLICY PROPOSED:

BEFORE FOREST OPERATIONS ARE PERMITTED, THE FOLLOWING FACTORS MUST BE EVALUATED:

TYPE OF OPERATION

DEGREE OF HYGIENE

RISK OF INTRODUCING P. CINNAMOMI

FOREST TYPE

LIKELY IMPACT

LAND USE, AND

CONSEQUENCES OF IMPACT ON LAND USE

* * * *

Initially, major, new operational proposals arising from Chiefs of Division or Regions will be evaluated by Protection Branch and submitted by COD of Protection to the Policy Review Group for a decision.

2. POLICY PROPOSED:

A DECISION TO ACCEPT, REJECT OR MODIFY THE PROPOSED ACTIVITY WILL BE MADE ONLY AFTER THE RELEVANT FACTORS IN POLICY NO.1 HAVE BEEN EVALUATED.

Major, new decisions will initially be referred to the Policy Review Group. Once precedents have been set the responsibility for approval will be progressively transferred to COD Protection, Regional Superintendents and O.I.Cs. Divisions.

3. POLICY PROPOSED:

ONCE A DECISION TO PROCEED WITH AN OPERATION IS MADE, EXISTING GUIDELINES AND PRESCRIPTIONS WILL BE USED, OR NEW GUIDELINES WILL BE PREPARED.

The Dieback Hygiene Guide contained in Jarrah 81 will be used as a prototype in planning each operation.

* * * *

ACCESS

There is ample evidence to demonstrate that the disease can be spread by activities in the forest, as well as by natural means. Some control over access is available because of Forest Diseases Regulations. Additional control is obtained by specifying access routes, coupes etc. and through negotiations with interested parties.

Access to areas of forest will be required and control of this aspect is important.

4. POLICY PROPOSED:

HYGIENE REQUIREMENTS MUST BE CONSIDERED BEFORE VEHICULAR ACCESS TO THE FOREST WILL BE PERMITTED. THE DEGREE OF CONTROL EXERCISED WILL BE RELATED TO THE DEGREE OF RISK OF INTRODUCING THE DISEASE AND THE MAGNITUDE OF THE CONSEQUENCES.

5. POLICY PROPOSED:

VEHICULAR ACCESS TO THE FOREST WILL BE PERMITTED ONLY WHERE AND WHEN THE RISK OF DISEASE INTRODUCTION IS LOW, AND WHERE CONSEQUENCES OF INFECTION ARE ACCEPTABLE.

For proclaimed disease risk areas, reliable dieback maps will usually be required before access is permitted.

* * * *

Some access to the forest is difficult, if not impossible to control. Most access is by road, and road closure is an effective mechanism for control.

6. POLICY PROPOSED:

A BASIC ROAD NETWORK, BASED WHEREVER POSSIBLE ON EXISTING ROADS WHICH MINIMISE DISEASE SPREAD WILL BE DEFINED. PROCEDURES AND DEADLINES WILL BE ESTABLISHED BY THE OPERATIONS DIVISION.

This road system will need to cater for approved needs (access to private property, roads for fire control etc.).

7. POLICY PROPOSED:

ALL OTHER ROADS WILL BE CLOSED.

Active closure would involve ripping, seeding, and planting of trees and understorey for distances of up to 50 metres. Closures with signs or logs are considered to be inadequate. Ditches are considered to be unsafe and banks unsightly.

* * * *

Where possible, roads low in the profile should be preferred. However, new road construction should be reduced to the absolute minimum.

8. POLICY PROPOSED:

CONSTRUCTION OF NEW ROADS WILL TAKE PLACE ONLY WHERE ABSOLUTELY ESSENTIAL. WHERE NEW ROADS ARE NECESSARY, THESE MUST BE LOCATED AND CONSTRUCTED SO AS TO MINIMISE THE RISK OF DISEASE INTRODUCTION OR THE IMPACT OF ADDITIONAL SPREAD.

These roads will generally be located lower in the profile but not so low as to cause problems of stability or damage to the environment. Care should be taken not to deliberately spread the disease during construction. In the longer term however, we must accept the risk that disease may be introduced along the full length of all major forest roads. The design and location of cut-offs and culverts is therefore of great significance.

* * * *

Substantial, additional spread of disease along major forest roads constructed many years ago is unlikely and these roads could be retained.

9. POLICY PROPOSED:

THERE WILL BE GREATER FLEXIBILITY IN APPLYING HYGIENE MEASURES. SUCH MEASURES AS HYGIENE GRADING AND GRAVELLING ON MAJOR FOREST ROADS, LOCAL AUTHORITY ROADS AND HIGHWAYS WILL ONLY BE PRACTISED WHERE THEY INTERSECT SIGNIFICANT AREAS OF DIEBACK-FREE FOREST.

FOREST DISEASE RISK AREAS

Amendments to the Forests Act (77 of 1974) allowed for the proclamation of forest disease areas or forest disease risk areas to "control and eradicate such forest diseases as are detected in such areas". The Forest Diseases Regulations 1975 provided a means to control vehicular access to these areas and suitable penalties for breaches of the Act.

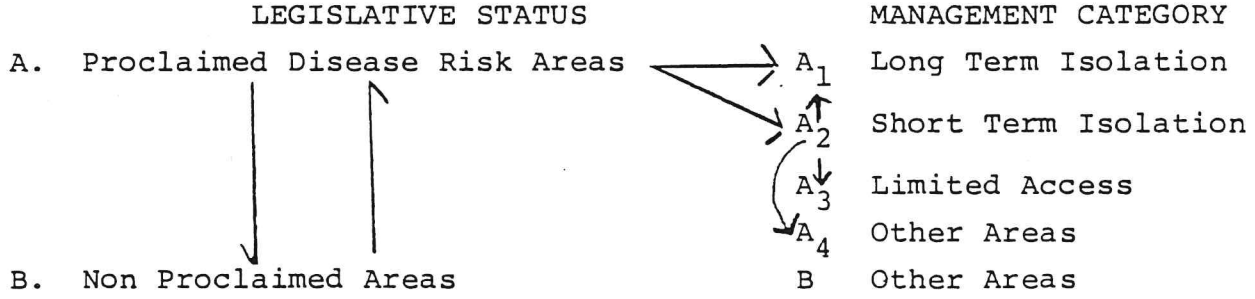
Substantial areas of State forest were proclaimed as Disease Risk Areas in 1976 and 1977. The purpose of this was to allow symptoms of disease to express themselves, to control spread of disease whilst symptoms were developing, to develop techniques for mapping the disease and to allow time for research developments to occur.

In the past 6 years symptoms have had time to be expressed, control over access by major users has been achieved, techniques for mapping and hygiene management have been refined and our research knowledge has improved.

In the proclaimed Disease Risk Areas, access to natural resources has been severely constrained. There is mounting pressure for access into these areas for poles, sawlogs and mineral exploration. Experimental logging trials have been conducted in these areas at Dwellingup (commenced 1980) and at Nannup (1982).

Sawlog resources within proclaimed Disease Risk Areas are required in 1984 (Southern Region), 1985 (Central Region) and 1985 (Northern Region). Lead time to enable adequate planning, road construction and stabilisation, is at least 18 months. The anticipated pole shortfall is about 17 000 poles in 1983 alone. It is apparent that a review of the existing policy on access to resources in proclaimed Disease Risk Areas is warranted.

Areas of forest, where the risk of disease introduction is high and the consequences of disease introduction are serious, should be retained as Disease Risk Areas and placed in long term isolation. Other Disease Risk Areas, after a period of isolation to allow for symptom expression and mapping, may then be assigned to limited access and be available for resource use. This is shown schematically below:



A. Proclaimed Disease Risk Areas

A_1 Long Term Isolation

These are areas where there is a high risk of infection, or where the disease would have high consequences; where exclusion of the disease is the aim and where continued capability for mapping the disease is necessary.

A_2 Short Term Isolation

These are areas where the disease would have low or uncertain consequences, where the location of the disease is not accurately known.

They are isolated for mapping purposes, to determine whether an area should go into categories A_1, A_3 or A_4.

A_3 Limited Access

Areas available for operations (e.g. logging, mining, exploration), once mapped for disease occurrence, and where disease risk legislation is still applicable.

A_4 Other Areas of Forest

Areas which are not considered to be at risk, e.g. tuart, karri, wandoo forests and some softwood plantations.

Areas of jarrah forest where the disease risk is considered to be low, e.g. red loams on Murray and Helena landforms.

Forest disease areas.

B. Non Proclaimed Areas

10. POLICY PROPOSED:

LAND UNDER THE CONTROL OF THE FORESTS DEPARTMENT SHOULD BE CATEGORISED ACCORDING TO THE FOLLOWING CLASSES -

A PROCLAIMED DISEASE RISK AREAS

B NON PROCLAIMED AREAS OF FOREST

WITHIN THE DISEASE RISK AREAS, FOUR CLASSES SHOULD BE DELINEATED -

A_1 LONG TERM ISOLATION

A_2 SHORT TERM ISOLATION (TEMPORARY CLASS)

A_3 LIMITED ACCESS

A_4 OTHER AREAS OF FOREST

* * * *

11. POLICY PROPOSED:

WHERE THERE IS A DEMONSTRATED NEED, ACCESS TO RESOURCES WITHIN LIMITED ACCESS DISEASE RISK AREAS WILL BE PERMITTED.

* * * *

Resource use must be planned so as to minimise the introduction or artificial spread of the disease. Strict control of each operation will be necessary and the results should be monitored both in the short and long term.

12. POLICY PROPOSED:

ACCESS TO RESOURCES WITHIN DISEASE RISK AREAS WHERE ACCEPTABLE DIEBACK-FREE MAPS ARE AVAILABLE WILL BE ALLOWED UNDER PERMIT SUBJECT TO THE MOST UP-TO-DATE HYGIENE CONDITIONS.

* * * *

13. POLICY PROPOSED:

SELECTED AREAS WILL BE SUITABLY MONITORED AT REGULAR INTERVALS TO ASSESS THE EFFECTS OF EACH OPERATION ON THE INTRODUCTION, THE RATE OF SPREAD AND THE INTENSIFICATION OF THE DISEASE.

* * * *

It may be desirable to expand the area currently proclaimed as Disease Risk, to include further areas of State forest or other public lands and to exclude some areas where the risk of disease is no longer recognised.

14. POLICY PROPOSED:

THE BOUNDARIES OF EXISTING DISEASE RISK AREAS WILL BE REVIEWED PERIODICALLY AND CONSIDERATION GIVEN TO INCLUDING OR EXCLUDING CERTAIN AREAS.

* * * *

MAPPING

The dieback review has highlighted the need to relate the use of 70 mm air photo interpretation to the capacity to interpret these photographs. This is about 60 000 ha per year.

The current procedure is to delineate the extent of the disease by mapping the location of dead indicator species. Ground surveys can be used to do this, but 70 mm photography is preferred as it provides the necessary complete coverage at a much lower cost and also provides a permanent record. The dieback-free maps which are produced do not indicate the severity of the disease in terms of impact on the jarrah forest. However, black and white 1:25 000 and 1:50 000 scale, or 70 mm formal colour photographs can all be used to show this impact. A considerable area of forest has already been mapped from 70 mm photographs.

15. POLICY PROPOSED:

WHEN ALLOCATING RESOURCES, PREFERENCE WILL BE GIVEN TO AREAS FOR WHICH DIEBACK-FREE MAPS PRODUCED FROM 70 MM PHOTOGRAPHS ARE AVAILABLE, AND WHERE THE CONSEQUENCES OF INTRODUCING THE DISEASE ARE ACCEPTABLE (REFERENCE POLICY NO.3).

(This will ensure that the resources of the Inventory and Planning Division (I. & P.) are used to best advantage).

16. POLICY PROPOSED:

PRIORITIES FOR FUTURE INTERPRETATION AND MAPPING WILL BE BASED ON THE NEEDS OF INDUSTRY AND FOREST USERS, CONCENTRATING PRIMARILY BUT NOT EXCLUSIVELY, ON JARRAH FOREST WITHIN PROCLAIMED DISEASE RISK AREAS.

* * * *

There is not sufficient coverage of maps based on 70 mm photography for all resource inventory and management needs. Dieback distribution as mapped from 1:50 000 black and white photographs should be quite adequate for this task. When 70 mm dieback-free maps are not available, alternative methods of delineating the extent of the disease need to be used. These include ground survey, black and white photographs or the 1976 dieback plans based on the 1:50 000 photographs, although all these methods are less accurate than when 70 mm photographs are used.

Delineating the extent of infection is only a first step in the process. Much additional information is required before an operation can proceed. Examples of data needed include: forest type, impact on the jarrah forest, site susceptibility, access roads, mini-catchments, wash-down points, coupe boundaries, etc.

The data required and the types of maps needed have not been clearly identified as yet. This aspect requires further action and development. At present, it is considered that three types of map may be necessary -

dieback location map

hygiene or management map

operations map

17. POLICY PROPOSED:

THE MAPPING PROGRAMME AND SPECIFICATIONS WILL BE CONTINUOUSLY REVIEWED BY A SELECTED GROUP OF EXPERTS.

* * * *

A major need which is recognised, is to be able to consistently and cheaply delineate high impact, susceptible sites, from low impact, tolerant and resistant site types in the jarrah forest.

Additional research is required and the 70 mm photographs could be a useful tool. The I & P interpreters have gained valuable experience in recognising the symptoms of the disease and its expression, in a range of field situations. Their extensive knowledge should be collated and recorded.

18. POLICY PROPOSED:

THE DEFINITION OF SITE SUSCEPTIBILITY WILL BE ENCOURAGED AND GIVEN PRIORITY.

19. POLICY PROPOSED:

THE RESPECTIVE PRIORITIES BETWEEN PRODUCTION AND PROJECT WORK BY I & P INTERPRETERS WILL BE REVIEWED TO GIVE PROJECT STUDIES OF RATE OF SPREAD, INTENSIFICATION, METHOD OF NATURAL SPREAD AND SYMPTOMOLOGY HIGHER PRIORITY.

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In some sites, the field expression of the disease is subtle. Errors in recognising and in plotting the dieback boundaries could easily occur. The I & P interpreters are the most experienced and conversant persons within the cell they have interpreted. Boundaries marked by them would be most cost-effective. Training of Divisional staff could be included if these worked in conjunction with I & P.

In some cases there will be no need to mark the actual dieback boundary, as roads, tracks or survey lines may suffice as the management boundary.

20. POLICY PROPOSED:

OPERATIONS STAFF ARE PRIMARILY RESPONSIBLE FOR DELINEATING OF DIEBACK BOUNDARIES, SUBJECT TO INITIAL TRAINING BY AND, IN PROBLEM AREAS, ANY NECESSARY ASSISTANCE FROM,I & P INTERPRETERS.

* * * *

PRIORITIES

Experience of the past two decades has clearly demonstrated that dieback is a problem of major importance. The area of forest affected is large and where the component species are susceptible, the impact is major and long term.

21. POLICY PROPOSED:

THE FORESTS DEPARTMENT WILL GIVE HIGH PRIORITY TO DIEBACK CONTROL AND ACTIVITIES RELATED TO DIEBACK. THE LEVEL OF COMMITMENT WILL BE DETERMINED BY THE POLICY REVIEW GROUP.

* * * *

Additional staff and financial resources will be requested from Government to implement the objective above.

22. POLICY PROPOSED:

IF ADDITIONAL RESOURCES CANNOT BE OBTAINED, RESOURCES WITHIN THE FORESTS DEPARTMENT WILL BE REDIRECTED.

* * * *

Because of constraints on staff and money it is necessary set priorities for the allocation of resources.

23. POLICY PROPOSED:

IN SETTING PRIORITIES, THE AIM WILL BE TO ACHIEVE LONG TERM SOLUTIONS, RATHER THAN SHORT TERM, LOCALISED NEEDS.

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Much information has been gathered about the dieback problem and the stage has now been reached when this can be put into practice in the field.

24. POLICY PROPOSED:

HIGH PRIORITY WILL BE GIVEN TO COLLATING AND DISSEMINATING RESEARCH AND OTHER DATA, AS A BASIS FOR TRAINING AND FOR DEVELOPING MANAGEMENT PRESCRIPTIONS AND TO ASSIST IN GAINING PUBLIC AWARENESS AND UNDERSTANDING.

* * * *

3. IMPLEMENTATION

FUTURE ACTION

Once the proposed policies have been accepted, implementation of these policies will be required. This will include several major aspects:

* Legislation - there is no apparent need for changes to existing Legislation.

* Publicity (internal/external) - there is a major need to explain the proposed changes both within and outside of the Department.

* Training - there is a recognised need for training. Two schools are planned for 1983.

* Control Systems, Budgets and Structures - there is a need to review Departmental structures, budgets and control systems, and propose changes where necessary.

* Terminology, Job Instructions, Manuals, Prescriptions - there is a need to integrate current prescriptions, terminology and job instructions into a manual.

Action will be necessary by several branches of the Department, primarily:

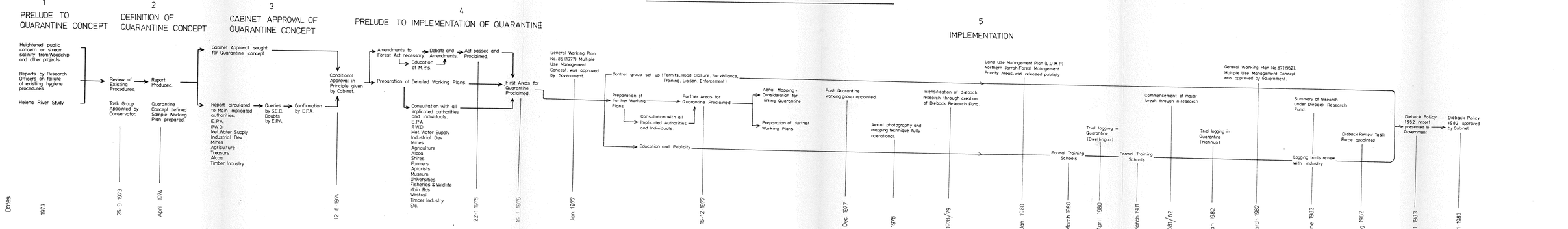
Protection
Extensions
Training
Regions
I & P
Research

4. APPENDICES

DIEBACK REVIEW 1982 - CHRONOLOGY

DATE	ACTION
11.6.82	TASK FORCE SELECTED
24.6.82	FINAL DRAFT OF PROPOSAL ACCEPTED
8-13.7.82	CONTACT WITH EXPERTS, 6 MEETINGS, 45 EXPERTS
27.7.82	CONSERVATOR'S LETTER (299/82) TO EXPERTS
27-29.7.82	CONTACT WITH EXPERTS, FIELD
11 & 12.8.82	CONTACT WITH EXPERTS, FIELD
17.8.82	DIEBACK TASK FORCE MEETS
20.8.82	EXPERTS' REPORTS RECEIVED
27.8.82	EXPERTS' REPORTS PRINTED AND DISTRIBUTED (55 COPIES)
.2.9.82	DIEBACK TASK FORCE MEETS
10.9.82	DIEBACK TASK FORCE MEETS
17.9.82	DISCUSSION PAPER FOR SEMINAR DISTRIBUTED
29.9.82	DIEBACK REVIEW SEMINAR, 30 ATTENDED
30.9.82	DIEBACK TASK FORCE MEETS
1.10.82	SEMINAR REPORTS DISTRIBUTED (55 COPIES)
25.10.82	POLICY (DRAFT) DISTRIBUTED TO TASK FORCE
27.10.82	DIEBACK TASK FORCE MEETS
29.10.82	TASK FORCE POLICIES (DRAFT NO.1) GO TO POLICY REVIEW GROUP
2.11.82	DIEBACK TASK FORCE MEETS
3.11.82	DIEBACK TASK FORCE MEETS
12.11.82	TASK FORCE POLICIES (DRAFT NO.2) GO TO POLICY REVIEW GROUP
16.11.82	DIEBACK TASK FORCE MEETS
26.11.82	DIEBACK TASK FORCE REPORT GOES TO POLICY REVIEW GROUP AND TO CONSERVATOR
CONTINUOUS	CONTACT WITH REGIONS, O.I.Cs DIVISIONS, INSPECTION OF FIELD OPERATIONS

STAGES IN THE INTRODUCTION OF QUARANTINE



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