

NORTHERN JARRAH FOREST  
PLANNING PERSPECTIVE

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NORTHERN JARRAH FOREST REGION  
FORESTS DEPARTMENT'S PLANNING PERSPECTIVE

1. SUMMARY

- 1.1 Further to folio 2, I have precised the planning perspective document (Appendices 1 to 6) and the notes below draw attention to those aspects which may be of particular interest to this Department. (raised script numbers in the notes below refer to page numbers in the Forests Department Planning Perspective Document). The main file and document were returned to you last month for referral to others for examination.
- 1.2 *HOWEVER, PARTICULAR NOTE SHOULD BE TAKEN OF SECTIONS 7, 20, 21, 22, 25 & 28 OF THE FORESTS ACT. BASICALLY, THE ACT STATES THAT THE FORESTS DEPARTMENT HAS "THE EXCLUSIVE CONTROL AND MANAGEMENT" OF ALL STATE FORESTS AND TIMBER RESERVES, AND ALL MATTERS OF FOREST POLICY (SECTION 7); LAND DEDICATED AS STATE FOREST SHALL NOT BE DEALT WITH OTHERWISE THAN IN PURSUANCE OF THE FORESTS ACT AND ITS DEDICATION SHALL NOT BE REVOKED OR ALTERED EXCEPT UNDER AUTHORITY OF THE ACT (SECTION 20). A FORMAL PROCEDURE IS LAID DOWN WHICH PROVIDES PARLIAMENT WITH THE POWER TO DISALLOW PROPOSED TOTAL OR PARTIAL REVOKATION OF STATE FOREST (SECTION 21); LAND DEDICATED AS A TIMBER RESERVE UNDER THE FORESTS ACT MAY BE TOTALLY OR PARTIALLY REVOKED BY THE GOVERNOR. (SECTION 25).*
- 1.3 The planning perspective document relates to a specific region and is subject to the Government's general forestry policy (Precis 1.7). It has been referred to the Department as a review draft only, for comment (folio 2), and the Forests Department intends to incorporate any new inputs into the document and, at some stage, it will be republished (folio 2; Precis 1.3, 1.4).
- 1.4 The document is essentially a statement of planning principles for the region and will be used by the Forests Department in its preparation of more detailed working plans for the implementation of forest policy (Precis 1.4, 1.7). Such a plan is now being prepared for the Dwellingup Forestry Division (between the Serpentine and Murray Rivers), which covers portions of both the Metropolitan and Bunbury M.R.D. Divisions (Precis 1.5). The first of a series of working plans should be publicly available later this year (Precis 1.7).

- 1.5 The region has been divided by the Forests Department into three N-S trending belts. However, the aspects of domestic water supply, dieback occurrence and disease quarantine provide further belts of use-intensity. Principles relating to communication lines and the extraction of road construction material and land uses of direct interest to the M.R.D. are indexed at Table 1.
- 1.6 The major points of interest to the M.R.D. are as follows:
  - 1.6.1 THE PLANNING PERSPECTIVE CONSIDERS THAT UNNECESSARY DEVELOPMENT SHOULD TAKE PLACE OUTSIDE OF THE REGION WHERE POSSIBLE, PARTICULARLY COMMUNICATION LINES (NOTES 3.3.1) WITHIN THE REGION, IT IS VISUALISED THAT THE MOST DESIRABLE LOCATION FOR INTENSIVE LAND USE IS WITHIN THE WESTERN HIGH RAINFALL BELT, PARTICULARLY ALONG ITS WESTERN MARGIN - WHICH IS HEAVILY INFECTED BY DIEBACK, IS OUTSIDE OF THE DISEASE QUARANTINE AREA, AND IS NOT UTILISED FOR DOMESTIC WATER SUPPLY (NOTES 3.3.2).
  - 1.6.2 THE PLANNING PERSPECTIVE DOES NOT APPEAR TO AFFECT THE M.R.D.'s PRESENT OPERATIONS IN REGARD TO QUARANTINE CONTROL. THIS MATTER HAS PREVIOUSLY BEEN DISCUSSED WITH THE FORESTS DEPARTMENT. FOLLOWING A MEETING ARRANGED BY THE FORESTS DEPARTMENT IN JUNE 1975, THE M.R.D. EXAMINED THE IMPACT OF THE QUARANTINE SYSTEM ON FUTURE ROAD CONSTRUCTION AND MAINTENANCE FOR THE THREE YEAR QUARANTINE PERIOD. NO PROBLEMS WERE ENVISAGED WITH M.R.D. DIVISIONS AFFECTED - METROPOLITAN, BUNBURY, AND NARROGIN (NOTES 3.3.2, 3.3.3; FILE 1061/72).
  - 1.6.3 PRINCIPLES OUTLINED IN THE PLANNING PERSPECTIVE CONCERNING THE EXTRACTION AND USE OF ROAD CONSTRUCTION MATERIAL ARE CONSISTENT WITH THOSE ALREADY ACCEPTED BY THE M.R.D. IT IS THE M.R.D.'s AIM TO ASSIST WITH MINIMISING THE SPREAD OF DIEBACK DISEASE BY ENDEAVOURING TO USE ROAD CONSTRUCTION MATERIAL FROM WITHIN AN INFECTED AREA INSIDE THE SAME INFECTED AREA, AND SIMILARLY WITH MATERIAL FROM UNINFECTED AREAS. THE M.R.D. HAS APPARENTLY ACCEPTED THE PRINCIPLE OF CONTACTING THE FORESTS DEPARTMENT BEFORE REMOVING GRAVEL OR OTHER SOILS FROM ANY PART OF THE STATE FOREST AREA - WHETHER IT IS QUARANTINED OR NOT. WHILE THE MAJOR EMPHASIS IN REGARD TO THE STATE'S DIEBACK CONTROL MEASURES IS UPON THE QUARANTINE AREA, IT IS CONSIDERED THAT CARE SHOULD BE EXERCISED ON THE WESTERN SCARP OF THE DARLING RANGE AND ON THE COASTAL PLAIN WHERE DIEBACK IS PREVALENT (APPENDIX 6 ).

1.6.4 IN JULY 1976 THE EPA RECOMMENDED TO THE STATE GOVERNMENT THAT THE FOREST ACT SHOULD BE AMENDED TO ENABLE THE ESTABLISHMENT OF "FOREST PARKS" WITHIN STATE FOREST, AND THAT ESTABLISHED FOREST PARKS ONLY BE ALTERED BY NOTICE IN THE GOVERNMENT GAZETTE SUBJECT TO PARLIAMENT NOT DISALLOWING SUCH ALTERATION. THIS RECOMMENDATION WAS ENDORSED BY CABINET IN OCTOBER. IMPLEMENTATION OF THIS MEASURE WILL PROVIDE FOREST PARKS UNDER THE FORESTS ACT WITH A STATUS SIMILAR TO THAT OF CLASS A RESERVES UNDER THE LAND ACT. ("CONSERVATION RESERVES FOR WA, AS RECOMMENDED BY THE EPA FOR SYSTEMS 1, 2, 3, 5"; PAGE X).

1.6.5 IN JULY 1976 THE EPA ALSO RECOGNISED THE NEED FOR THE M.R.D. AND LOCAL AUTHORITIES TO OBTAIN ROAD CONSTRUCTION MATERIALS FROM NATIONAL PARKS AND CLASS A RESERVES. IT EXPRESSED THE PHILOSOPHY THAT SUCH MATERIAL SHOULD ONLY BE SOUGHT WITH THE AGREEMENT OF THE RESERVE MANAGEMENT AUTHORITY, WHICH IN TURN SHOULD RECOGNISE THE STATUTORY RESPONSIBILITIES OF THE ROAD BUILDING INSTRUMENTALITY (CONSERVATION RESERVES FOR WA, AS RECOMMENDED BY THE EPA FOR SYSTEMS 1, 2, 3, 5; PAGE IV).

1.7 WHILE SOME COMMENT AND INPUT CONCERNING THE PLANNING PERSPECTIVE MAY BE POSSIBLE NOW, IT WOULD SEEM THAT ACCESS TO FURTHER INFORMATION FROM THE FORESTS DEPARTMENT IS NECESSARY FOR PROPER STUDY - PARTICULARLY ITS WORKING PLANS IN REGARD TO THE IMPLICATIONS OF FUTURE TIMBER PRODUCTION (NOTES 3.5.3, FILES 777/72.V2 & 44/67; NOTES 3.5.4, FILE 192/72 V2) AND TOWNSITE DEVELOPMENT (NOTES 3.6.3; FILE 72/192) AND ITS SUBMISSION TO THE EPA'S CONSERVATION THROUGH RESERVES COMMITTEE (NOTES 3.8.2; FILE 498/71-2).

1.8 Your attention is drawn to the following other points:

1.8.1 THE NEED EXISTS FOR THE M.R.D. TO DETERMINE WHICH ROADS IN LOCAL AUTHORITY DISTRICTS ARE LOCAL AUTHORITY ROADS RATHER THAN FORESTS DEPARTMENT ROADS. (NOTES 3.3.6, FILE 60/1143).

1.8.2 IF FUNDING ALLOCATED ANNUALLY TO THE FORESTS DEPARTMENT FOR FORESTRY IS DONE ON THE BASIS THAT THE ROADS ARE OPEN TO THE PUBLIC GENERALLY (i.e. NOT 'INDUSTRY' ROADS) THE M.R.D. MAY WISH TO EXAMINE FUTURE FORESTRY ROAD PROGRAMMES IN MORE DETAIL AND BE ASSURED THAT ROADS NOMINATED FOR FUNDING WILL IN FACT BE KEPT OPEN TO THE PUBLIC (i.e. NOT CLOSED FOR EXCLUSIVE INDUSTRY USE, OR BECAUSE OF QUARANTINING). (NOTES 3.3.7; FILE 777/72 V2).

1.8.3 A NUMBER OF UNCLASSIFIED ROADS APPEARING ON LOCAL AUTHORITY ROAD INVENTORIES CROSS THE NORTHERN JARRAH FOREST REGION. THE M.R.D. MAY WISH TO ASSIST THE FOREST DEPARTMENT IN ITS OBLIGATORY IMPLEMENTATION OF FOREST POLICY BY ENSURING THAT FUNDS ALLOCATED FOR WORK ON THESE ROADS CONFORMS WITH ADOPTED PLANNING PRINCIPLES. (NOTES 3.3.4; FILE 20/77).

1.8.4 AS THE M.R.D. PRODUCES AN ANNUAL TOURIST, NATIONAL PARK AND FISHING INDUSTRY ROADS PROGRAMME, IT MAY BE CONSIDERED PRUDENT TO EXAMINE FUTURE SUBMISSIONS FOR THE ALLOCATION OF FUNDS IN THE LIGHT OF THE PHILOSOPHY EXPRESSED IN THE FORESTS DEPARTMENT'S PLANNING PERSPECTIVE - TO ENSURE THAT THEY CONFORM WITH ADOPTED PLANNING PRINCIPLES. (NOTES 3.7.4; FILE 916/72).

1.8.5 THE DEPARTMENT IS PRESENTLY EXAMINING THE TRANSPORTATION ASPECT OF PINE THINNINGS RESOURCE UTILISATION ASSOCIATED WITH THE DARDANUP PARTICLE-BOARD FACTORY; IT MAY BE CONSIDERED WORTHWHILE TO EXTEND THIS STUDY TO THE TRANSPORT OF THINNINGS FROM NORTHERN AREAS (INCLUDING THE SWAN COASTAL PLAIN) TO THE PARTICLE BOARD FACTORY AT KENDALE (NOTE 3.5.4; FILE 192/72 V.2).

1.8.6 THE FOLLOWING POINTS CONCERNING ROAD VERGE CONSERVATION MADE IN THE PLANNING PERSPECTIVE COULD BE DRAWN TO THE ATTENTION OF THE C & ME:

(a) BURNING DURING THE WILDFLOWER DISPLAY IS DISCOURAGED ALONG MAJOR ROADS FOR CONSERVATION AND AESTHETIC REASONS;

(b) BURNING ROADSIDES OVER LONG DISTANCES SIMULTANEOUSLY IS TO BE AVOIDED FOR AESTHETIC REASONS.

(NOTES 3.8.3; FILE 393/72).

1.9 The following aspects do not appear to affect present M.R.D. operations:

1.9.1 MOST GRAVEL PITS ARE RELATIVELY SMALL AND MANY HAVE NOW BEEN REPLANTED, THEIR RESTORATION BY THE FORESTS DEPARTMENT BEING PLANNED ON A COMPOSITE BASIS, CATCHMENT BY CATCHMENT. SOME PITS COULD ABSORB THE MORE DAMAGING FORMS OF MOTORISED RECREATION. THE M.R.D. PROVIDES FUNDS ANNUALLY TO THE FORESTS DEPARTMENT FOR GRAVEL PIT RESTORATION. (NOTES 3.3.5; FILE 777/72).

1.9.2 PROPOSED M.R.D. POLICY REGARDING MAINTENANCE RESPONSIBILITY FOR DAM ACCESS ROADS IS UNDER CURRENT EXAMINATION. AN ACCEPTED POLICY MIGHT IDEALLY INCLUDE DEDICATION OF THESE ROADS. HOWEVER, IT WOULD SEEM

TABLE 1

ASPECTS	1. WESTERN HIGH RAINFALL BELT			2. INTERMEDIATE RAINFALL BELT		3. EASTERN LOW RAINFALL BELT	
	1A Non-Water Catchment/ Non-Quarantine	1B Water Catchment/ Non-Quarantine	1C Water Catchment/ Quarantine				
Lines of Communication	3.3.2	3.3.2	3.3.2	3.3.3	3.3.3	3.3.3	
Gravel & Sand Extraction	3.3.2	3.3.2	3.3.2	3.3.3	3.3.3	3.3.3	
Water Supply	3.4.4 3.6.2 3.7.1	3.4 3.6.2 3.7.1	3.4 3.6.2 3.7.1	3.4 3.1 3.7.2	3.4 3.1 3.7.2	3.4 3.6.2 3.7.2	
Timber Production	3.5 3.6.3	3.5 3.6.3	3.5 3.6.3	3.5	3.5	3.5	
Townsites	3.6.2	3.6.2	3.6.2	3.1	3.1	3.6.2	
Recreation	3.7.1 3.7.3	3.7.1 3.7.3	3.7.1 3.7.3	3.1 3.7.3	3.1 3.7.3	3.7.2 3.7.3	
Wildlife Conservation	3.8.3	3.8.3 3.8.1	3.8.3 3.8.1	3.8.3 3.8.1	3.8.3 3.8.1	3.8.3 3.8.1	

### 1.9.2 Cont'd...

THAT, WHERE ROADS ARE PROVIDED THROUGH STATE FOREST THEIR DEDICATION WOULD INVOLVE EXCISION, AND EXCISION OF LAND FROM STATE FOREST REQUIRES PARLIAMENTS CONSENT (NOTES 3.4.4; FILE 1033/67).

- 1.10 The M.R.D. files listed below deal with matters which may be influenced by the principles outlined in the planning perspective. It may be considered worthwhile in placing copies of these notes on those files:

#### Road Construction Material

Dieback quarantine	1061/72 (Notes 2.4, 3.3)
Conservation reserves	497/71-2 (Notes 3.3, 3.8.3)
Gravel pit rehabilitation programme	777/72 V.2 (Notes 3.3.5)

#### Communication Lines

Programme of Works	20/77	(Notes 3.3.4)
Local Authority Road Inventory	60/1143	(Notes 3.3.6)
Dam Access Roads	1033/67	(Notes 3.4.4)
Tourist Roads-General	1033/67	(Notes 3.7.4)
Tourist Roads-Programme	916/72	(Notes 3.7.4)
Timber Production-Programme	777/72 V.2	(Notes 3.5.3)
Timber Production- Pine Haulage	192/72 V.2	(Notes 3.5.4)
Timber Production-Wundowie Haulage	44/67	(Notes 3.5.3)
Townsite Development	72/192	(Notes 3.6.3)
Wildlife Conservation	497/71-2	(Notes 3.7.3)
Road Verge Conservation	393/72	(Notes 3.8.3)

Additionally, these notes may be of use to other officers examining the planning perspective document (file 72/22). As the M.R.D. Metropolitan, Bunbury, Narrogin and Northam Divisions are involved, the notes may also be of interest to the Principal Engineer (U) and Principal Engineer (S).

## 2. GENERAL

- 2.1 The region referred to as the northern jarrah forest basically extends between Mundaring (Great Eastern Highway/Chidlow-York Road) and Noggerup (Donnybrook-Kojonup Road). M.R.D. Divisions involved are Metropolitan, Bunbury, Narrogin and Northam.

## 2.1 Cont'd...

It is a large (784 000 ha) and heterogeneous area where both climate and geomorphology show a marked east-west gradient.<sup>5 7</sup> Three N-S trending belts, based on rainfall, have been defined:

Western high rainfall belt	(above 1150 mm)
Intermediate rainfall belt	(1025-1150 mm)
Eastern low rainfall belt	(below 1025 mm)

2.2 Extending into these belts are dissected river valleys (mainly in the west) broad valleys and depressions (mainly in the east), and monadnocks (mainly in the intermediate belt). As a consequence, the Forests Department has currently subdivided the region into seven management zones (Appendix 2):

High rainfall (west) - 1. dissected valleys and escarpments.  
- 2. lateritic uplands

Intermediate rainfall 7. not subdivided (transition zone)

Low rainfall (east) - 3. dissected valleys  
- 4. broad valleys and depressions  
- 5. lateritic uplands

Throughout region - 6. monadnocks

2.3 The primary objective of the Government's recently adopted forest policy will be the conservation of the forest estate and forest values, with special provision for service functions such as roads, dams, powerlines and mining (Precis, 1.7). Two important protection aspects influence the implementation of this objective - control of dieback disease and reduction of water salinity risk. Dieback is widespread in the western high rainfall belt and affects the intermediate rainfall belt, but is less extensive eastward; in the eastern low rainfall belt dieback occurrence and risk is low. The salinity risk is low in the western high rainfall belt, whereas to the east, the reverse applies as rainfall diminishes.

2.4 In an attempt to control the spread of dieback disease and to define the existing infection, the Forests Department has declared most of the eastern portion of the State Forest in the region to be subject to quarantine, under the act for the Amendment of the Forest Act (Prevention and Eradication of Disease) 1974. The areas under quarantine are those in which the disease is considered to be present in sufficiently low levels to warrant protection and corrective action. Basically the

high rainfall belt is not under quarantine nor the eastern part of the low rainfall belt. The quarantine area includes the intermediate belt and the western part of low rainfall belt. The planned quarantine period is three years, during which time all access is prohibited except on a few good quality roads (some restricted to dry weather use only).<sup>18</sup> Appendix 6 summarises the apparent impact of quarantining on the Department's operations.

### 3. MANAGEMENT STRATEGY

- 3.1 The Forests Department planning perspective visualises the western high rainfall belt as a comparatively intense activity area, with the eastern low rainfall belt capable of sustaining only low activity. Because the effects of management practices on hydrology is currently in doubt, it is intended, for the time being, to manage the central transitional belt (1 025 - 1 150 mm/annum rainfall) conservatively with the lower rainfall belt.<sup>6,8</sup>
- 3.2 The basic categories of land use identified within the region in the planning perspective document are water supply, sawn timber production and minor forest production (e.g. apiary sites), mining, agriculture, town development, recreation, wildlife conservation (flora and fauna) and communication lines. Of these, communication (e.g. roads), mining, (e.g. gravel) and wildlife conservation (e.g. road verges) are of direct interest to the M.R.D. , with water supply, sawn timber production and town development, and recreation being of particular interest in regard to communication planning.
- 3.3 Lines of Communication and Road Construction Material
- 3.3.1 The planning perspective considers that the optimum locations for lines of communication are the Swan Coastal Plain to the west of the region (Metropolitan and Bunbury M.R.D. Divisions) or the agricultural area to the east<sup>25</sup> (Narrogin and Northam M.R.D. Divisions).
- 3.3.2 Where it is essential that lines of communication must be through State Forests, they are best located in the western high rainfall belt, though conflicts with reservoirs and aesthetics do occur (Precis 4.2) Gravel, for use in areas where dieback is already widespread, should be obtained mainly from this area (Precis 4.2).
- 3.3.3 Construction of new lines of communication or upgrading of existing facilities in the eastern low rainfall belt must be minimal and planned with extreme care, so as not to spread dieback or increase the area

cleared (Precis 4.4). Gravel for local use should come from healthy areas (Precis 4.4). It would seem that it is intended that these principles be applied also to the intermediate rainfall belt (item 3.1 above); this principle is also outlined at Appendix 6.

3.3.4 ~~Most roads classified under the Main Roads Act are routed across the~~ region, between the Swan Coastal Plain and the agricultural area to the east. An exception is the North Dandalup-Dwellingup Road (S 89); with the unclassified Nanga road this route extends south through State Forest to Collie and beyond. Existing communication lines are shown at Appendix 4, and classified roads are tabulated at Appendix 5. However, a number of other unclassified roads appearing on the local authority road inventories also cross the region.

3.3.5 Gravel is obtained from the surface horizons of the lateritic profiles and has provided the foundation for most of the road systems in this zone. The Main Roads Department, Local Government, Forests Department and other public utilities are the principal users. Most pits are relatively small, and many have now been replanted.<sup>14</sup>

The restoration of dieback areas and mine pits is being planned on a composite basis, catchment by catchment, although some mine and gravel pits could absorb the more damaging forms of motorised recreation (Precis 4.2).

3.3.6 The M.R.D. allocates funds to both local authorities and the Forests Department for construction and maintenance of roads in the region. Examination of roads in forestry areas in both the Augusta-Margaret River (311/71, folios 35, 39-41, 44-51) and Manjimup Shires (1414/72 V2 folios 79-80), in the past has shown that some roads appearing on local authority inventories are in fact roads under the control and management of the Forests Department. The need exists for M.R.D. to determine which roads in other local authority districts are actually under a local authority's care, control and management as:

- a. the length of local authority road forms the basis of local authority road maintenance allocations.
- b. to determine whether a particular road is indeed a public road and therefore should attract funding (the Forests Department quarantine system does not appear to involve the closure of 'public' roads - see Appendix 6).

3.3.7 If funding allocated to the Forests Department for forestry roads is done on the basis that the roads are open to the public, the M.R.D. may wish to examine future programmes in more detail and obtain assurance that roads nominated will in fact be kept open to the public (e.g. not closed for the exclusive use of logging, or because of quarantining.)

#### 3.4 Water Supply: In the Western High Rainfall Belt

3.4.1 Dams constructed in the lower portions of the dissected valleys are usually of the pipehead type (e.g. Helena, Serpentine, and Burekup pipehead dams); large storage areas are provided further up the dissected valleys (e.g. Mundaring Weir, Serpentine Dam, Wellington Dam).<sup>21</sup> The more intensively developed passive recreation sites have been provided adjacent to most dams due to the attraction these sites have.

3.4.2 The limit of the water catchment resource in the region allocated for Metropolitan Perth's water supply is from the lower Helena in the north to the Murray in the south inclusive. A contract has recently been let for the construction of a dam on Wungong Brook and the M.R.D. has been involved with the provision of road access. With completion of the Wungong Dam, about eight more dams may be built in the Board's catchments, although on close investigation, it may turn out that some of the smaller dams can not be justified. It is likely that the earliest will be South Canning and Gooralong (MWB publication "Future Water Resources" 1974).

3.4.3 The upper Helena and catchments south of the Murray come under the jurisdiction of the Public Works Department and are utilised for country water supply and Swan Coastal Plain irrigation. It is known that the Public Works Department has been investigating a proposed dam site on the lower Collie, between the Burekup and Wellington Dams ("The Collie Valley, Western Australia: A Response to the Proposed Construction of a New Dam in the Collie Valley above Burekup", 1976; Conservation Council of W.A.).

3.4.4 The M.R.D. has been involved in providing road access to many dam sites during their construction and these have generally been built to serve subsequent tourist use. On file 1033/67, the question of maintenance responsibility has risen in regard to dam access roads and the matter has now been referred to Mr. Widdup for examination in connection with his work on the Policy Manual.

### **3.5 Timber Production**

- 3.5.1** Timber from hardwood forests is allocated to companies by either a sawmilling permit or license; permits provide intake on a short-term basis with little security of tenure, while licenses give holders the exclusive right to remove timber from an allocated area with considerable security of tenure. Because a direct relationship between mechanised logging and dieback incidence has been proven, the current logging system aims at a heavy cut to reduce the area traversed by logging equipment, and so minimise the amount of forest placed at risk from dieback. As a consequence, about 87% of the annual permissible intake is now covered by the more flexible permit system.<sup>15,16</sup>
- 3.5.2** Some 20% of the State's pine plantations are situated within the region, particularly in Zone 1 because of high soil fertility and high rainfall. Because they are subject to economic and environmental problems, future plantation programmes will concentrate on areas outside the region (e.g. Swan Coastal Plain, Blackwood Valley, Donnybrook Sunkland), except for areas around Collie; the region's contribution to the pine area will then decrease to about 10% of the total.<sup>16,20,21</sup> Pine plantation establishment will expand in Zone 5 within the disturbed parts of the Collie Coal Basin (Precis 5.5).
- 3.5.3** The more intense localised logging of hardwood forest in the region, particularly in Zone 2, might exert sporadic transportation pressures on the public road system. It may be considered worthwhile in examining the Forest Department's working plans when they become available (Precis 1.7). The use of the region to supply timber resources to the Wundowie-Charcoal-iron Industry should not be overlooked (File 44/67).<sup>19</sup>
- 3.5.4** Proposals for future pine plantation will concentrate on areas west of the region (e.g. Wanneroo-Yanchep, Clifton-Myalup) or to the south (e.g. Blackwood Valley, Donnybrook Sunkland). With the exception of plantation proposals in the Collie area, this form of forest production in the region would appear to exert little influence on the public road system. The Department is presently examining the transportation aspect of pine thinnings resource utilisation associated with the Dardanup particle-board factory (file 192/72 V2); it may be considered worthwhile to extend this study to the transportation of pine thinnings from northern areas (including the Swan Coastal Plain) to the particle-board factory at Kewdale.

### **3.6 Townsites and Industrial Establishments**

3.6.1 With the exception of Collie, all existing townsites lie within the western high rainfall belt. (Precis 3.6); Collie lies within the southern extremity of the intermediate rainfall belt. Although the area occupied by townsites is small, it is significant because adjacent land uses are subjugated by the creation of buffer zones; concentrated human activity increases the potential for water pollution and spread of dieback; and regional land use is affected by the provision of necessary communication lines.<sup>16,17</sup>

3.6.2 The environmental risks created by townships are greater in the eastern low rainfall belt, with its inherent hydrological problems (salinity) and low dieback incidence. Should the need arise for additional townships in the future, these should preferably be sited in the western high rainfall belt<sup>17</sup> (Precis 4.1). No further townships should be considered in the eastern low rainfall belt without environmental safeguards (Precis 4.3, 4.5).

3.6.3 Government policy to rationalise both the hardwood and softwood milling industries (Precis 1.7) will mean the relocation of part of the workforce; such re-location is likely to be to existing towns within the region or outside of it. Extension of bauxite mining activities may involve the creation of new settlements (e.g. Wagerup and Worsley). It may be considered worthwhile in ascertaining long range proposals relating to rationalisation of the milling industry when the Forests Department's working plans become available (Precis 1.7). Of existing town developments in the region, Dwellingup would appear to be the only one likely to be phased out; this may have some influence on the status of the North Dandalup-Dwellingup Road (S89) in the future. Further town development relating to bauxite mining activities are likely to be subject of formal agreements and be considered by the Planning and Co-ordinating Authority (file 72/192).

### **3.7 Recreation**

3.7.1 In the western high rainfall belt, the planning perspective considers that recreation should be directed to streams not dammed (e.g. Murray River); below existing dams and at the dam wall (e.g. Mundaring Weir, Araluen, Serpentine National Park, Lower Collie Valley); and around dams used for irrigation (e.g. Harvey River) (Precis 4.1). Recreation should not be channelled into areas used for domestic water supply

(Precis 4.2). The more damaging forms of motorised recreation could be absorbed in mine and gravel pits (Precis 4.2).

3.7.2 In the eastern low rainfall belt, motorised recreation should be excluded from water supply catchments other than on all weather roads, extensive recreation should be directed into areas which are not significant for water supply (Precis 4.4, 4.5). Recreation in the Upper Helena and Collie Valleys is virtually precluded because of legal constraints associated with water supply. The upper Murray Valley is still open to recreation but its potential is less than for Zone 1;<sup>26</sup> further recreation facilities will be developed in the Murray Valley where this does not conflict with quarantine needs (Precis 4.3).

3.7.3 The elevations of monadnocks give outstanding views and, with supporting vegetation, high aesthetic and recreational values result. Many of these features are readily accessible, as they occur close to Albany Highway and within 80 km from Perth. The zone is better suited for active than passive recreation, except where a road exists to the summit.<sup>31</sup> It is proposed that where all-weather roads exist (e.g. Mt. Dale), access will be restricted to one slope only; where there are no all-weather roads to the summit, vehicle access will be excluded (e.g. Eagle Hill, Mt. Cook); active recreation on foot should be encouraged where the danger of biological pollution is least, or where adequate parking and toilet facilities have been provided (Precis 4.6).

3.7.4 At Appendix 8 is a list of "tourist" roads in the Metropolitan and Bunbury divisions (taken from file 1033/67). Those associated with the northern jarrah forest region have been marked. The intensity of demands placed on forests for recreation is directly related to the major areas of population or tourist centres. Near the Metropolitan area, the jarrah forest attracts considerable numbers of visitors; further south, the developing Bunbury-Australind area exerts some influence on the forest between Harvey and Collie. The Forests Department will continue to provide access where there is no risk to the individual or the forest.<sup>11, 12</sup> As the M.R.D. produces an annual Tourist, National Park and Fishing Industry Roads Programme (file 916/72), it may be prudent to examine future submissions for inclusion in the light of the philosophy expressed in the Forests Department's planning perspective - as some proposals may be undesirable.

### 3.8 Wildlife Conservation

3.8.1 There are no large Wildlife Sanctuaries (i.e. managed by the Department of Fisheries and Wildlife) or National Parks in the region. However, the Forests Department has set aside a number of flora and fauna management priority areas within the State Forest, totalling 180 000 ha (70 000 ha of core area and an additional 110 000 ha of buffer; i.e. about 23% of the regions area).<sup>17</sup> In the dissected valleys of the western high rainfall zone, it is considered that wildlife conservation would be best achieved above or between dams;<sup>22</sup> elsewhere, wildlife is being surveyed to assist in the identification of areas for priority management.<sup>28,26,28,30</sup>

Wildlife Conservation in the region has apparently already been dealt with in a detailed submission to the E.P.A.'s Conservation Through Reserves Committee (CTRC).

3.8.2 Wildlife Conservation proposals in the region may impose further restrictions on M.R.D. lines of communication and the acquisition of road construction material. The latter problem is subject of a proposed submission to the CTRC by the M.R.D. (file 497/71-2). It may be considered worthwhile in obtaining a copy of the Forests Department submission to the CTRC for examination.

3.8.3 A number of alterations to forestry fire protection policy have resulted from decades of fire research and practice, which give greater emphasis to conservational environmental and aesthetic values - including the following:<sup>20,21</sup>

- (a) burning during the wildflower display period is discouraged along major roads for conservation and aesthetic reasons.
- (b) burning roadsides over long distances simultaneously is to be avoided for aesthetic reasons.

These are points which may be of interest to the C & ME who is the M.R.D. representative on the State's Road Verge Conservation Committee.

*G.E. Rundle*

G.E. Rundle  
CLERK-OPERATIONS

November 11 1976

## PRECIS

"A Perspective for Multiple Use Planning  
In the Northern Jarrah Forest" (1976)

(script numbers refer to page numbers in above document)

1. INTRODUCTION

- 1.1 A policy of multiple-use management has been adopted by the Forests Department in order to realise the fullest degree of public satisfaction from the available forest resources (see Forest Focus No. 17). The objective has been to accommodate as many compatible uses as possible within each land management category subject to the requirement of catchment protection which has special significance in the region.<sup>1</sup>
- 1.2 Within the framework of this policy, the Forests Department has prepared "A Perspective for Multiple Use Planning in the Northern Jarrah Forest" (i.e. Mundaring to Collie, basically). The objective of the planning perspective is to translate past experience and the salient results from the recently-expanded governmental and co-operative research effort into a practical basis for future multiple-use management of the northern jarrah forests. Existing economic and legal constraints as well as current management and resource use have also been taken into account.<sup>1</sup>
- 1.3 The planning perspective has been circulated to various authorities which have a direct involvement in the use of the forest, such as the Main Roads Department. Comment will also be sought from other responsible bodies and industries using the forest. This latter group has offered active co-operation in the implementation of these management proposals.<sup>2</sup>

1.4 As time progresses, it is intended that any new inputs will be incorporated and the study will also be amended in the light of new research data becoming available, thus continuously maintaining the relevance of the perspective. This is seen as a necessity as multiple use management is a constantly evolving dynamic process, the objectives of which require modification in the light of changes in public demand as well as changes in the resource base.<sup>2</sup>

1.5 In the meantime, the Forests Department is proceeding to apply these principles to prepare a detailed operational management plan for the Dwellingup Division, where substantial background data is already available (see Forest Focus No. 11). Similar plans will then be prepared and adopted as the basis for operational management of forest land throughout the northern jarrah region.<sup>2</sup>

1.6 The planning perspective document should be read in conjunction with the following (tied hereunder):

Forest Focus No. 11 (Sept 1973): Land Use Conflicts in the  
Northern Jarrah Forest

Forest Focus No. 17 (April 1976): Forest Policy

1.7 Forest Focus No. 17 is a statement of Government forest policy (page 3), which has recently been revised and approved by Cabinet (page 4). It emphasises multiple-use management of State Forest and Timber Reserves managed by the Forests Department; the primary objective will be the conservation of the forest estate and forest values, with special provision for service functions such as roads, dams, powerlines and mining (page 5).

Amongst other aspects, the policy provides for:

- WATER SUPPLY - protection of healthy forest catchment areas (page 5)
- regulation of all other uses of forested catchments (page 6)

- TIMBER PROTECTION - amalgamation of sawmills into a reduced number of units of economic size (page 6)
- relocation of mills and processing facilities in more socially-favoured localities (page 6)
  - transferring part of the workforce to manufacturing activities and into the developing pine processing industry (page 6)

- RECREATION - provision of further picnic sites and facilities (page 11)
- developing self-guiding scenic motor tours (page 11)
  - access for organised car club rallies (page 11)

- FOREST PROTECTION - control of forest pests and diseases (page 13)
- protection against the ravages of fire (page 13)

The first of a series of working plans covering various aspects of forest activities will be completed by the end of 1976. Once approved by the Government, they will become public documents and be available to interested parties. The working plans will be reviewed annually, taking into account changing conditions and forest research (page 14).

## 2. THE NORTHERN JARRAH FOREST

2.1 Recent amendments to the Forests Act have more clearly defined and enlarged the management role of the Forests Department. It is required to provide a multiplicity of benefits from the northern jarrah forest according to the inherent capabilities of the environment, the existing statutory constraints and the recognised public demand. This objective is considered attainable because sufficient data is now available for a comprehensive and environmentally responsible regional plan.<sup>3</sup>

2.2 The region referred to as the northern jarrah forest has an area of 784 000 hectares. It is flanked by the Helena catchment in the north, the Collie catchment in the south, the Darling Scarp on the west and the agricultural belt on the east. In addition, it

includes outlying timber reserves within the eastern agricultural belt, such as Boyagarring, Wandering, Marradong, Saddleback and Quindanning Blocks but excludes Dryandra.<sup>4</sup>

- 2.3 The document submitted for review sets the overall perspective for the development and subsequent implementation of detailed proposals. Data from research and management has highlighted environmental gradients across the forest and shown that the effects of various management practices on these can be broadly predicted, and the region has been currently divided into seven management zones based on geomorphology and climate. However, for detailed local planning it is envisaged that site vegetation zoning will be more appropriate and precise.<sup>3</sup>

### 3. LAND TENURE

- 3.1 The bulk of the land is State Forest dedicated in several stages under the 1918 Forest Act. Alienation can only take place with the consent of both houses of State Parliament. Timber Reserves under the Forest Act can be revoked by Executive Council proclamation.<sup>11</sup>
- 3.2 Numerous small reserves (e.g. water, conservation, camping, recreation, etc.) are vested in various authorities. Where they occur within or adjacent to State Forest they are usually managed in conjunction with it. No National Parks occur within the main forest belt although two small National Parks adjoin it (Lesmurdie and Serpentine).<sup>11</sup>
- 3.3 Much State Forest is also gazetted as water catchment. Where this occurs forest management practices are constrained by the regulations governing catchment protection. Irrespective of ownership, all land falling within gazetted catchments supplying water to the Metropolitan Region is subject to regulations proclaimed under the Metropolitan Water Supply, Sewerage and Drainage

Act (1909-1969). The other catchments (supplying Goldfields, agricultural and Great Southern towns, various local town supplies and irrigation requirements) are controlled by the Public Works Department (Country Areas Water Supply Act 1947-1964).<sup>11</sup>

- 3.4 A number of authorities have responsibility for construction and maintenance of major communication lines in the region, even though they traverse State Forest. These include:<sup>13</sup>

Rail: Westrail

Road: Main Roads Department, relevant Local Authorities,  
Forests Department

Powerlines: State Energy Commission

Pipelines: Public Works Department, Metropolitan Water Supply,  
Sewerage and Drainage Board

Airfields: Private property owners, Forests Department

Bauxite Conveyor Belts: ALCOA (Australia)

- 3.5 Other overlapping secondary land tenures comprise mainly mining tenements.

The entire northern jarrah forest is covered by three leases for the mining of bauxite under special mining agreements. The leases confer upon the holders the right to mine bauxite on all Crown land within the lease, including State Forest and Timber Reserves. Rehabilitation of the mined areas to the satisfaction of the Conservator of Forests is a condition of the lease. Coal mining has been carried out to the south-east of Collie for some 80 years and leases are granted under the Mining Act 1904-1971. Rehabilitation of mined areas is a condition in some of these leases. Gravel leases and licenses are issued primarily to Government bodies under the Forest Act. These are widespread in the forest belt, adjacent to areas of development.<sup>14</sup>

3.6 Private land forms large continuous blocks along the eastern and western perimeters of State Forest, corridors along rivers and roads, and small individual developments. Properties are generally small to medium sized and owned by individuals. A few large forested holdings owned by timber companies occur alongside State Forest. The townsites of Mundaring Weir, Jarrahdale, Dwellingup and Collie, together with the Karnet Rehabilitation Centre, occur within the region; town planning measures are controlled by the relevant local authority by the Local Government Act and the Town Planning and Development Act. The State Forests are bounded by agricultural land on all sides. In addition, there are several enclaves of private property, especially in the Helena and Wellington catchments.<sup>11 12 14</sup>

#### 4. MANAGEMENT STRATEGIES

##### 4.1 Zone 1 Major Valleys and Escarpments in the High Rainfall Zone - (more than 1 150 mm/annum)

This unit includes the Helena and Darkan surfaces of Mulcahy et al. (1972).<sup>7 35</sup>

Principal existing land uses are water storage, recreation, silviculture of pines, conservation of flora and fauna, silviculture of indigenous hardwoods, stock grazing on improved and rough pastures, horticulture and other forms of intensive farming.

Management Strategy - recreation should be directed to streams not dammed (e.g. Murray River

- below existing dams and at the dam wall (e.g. Collie River)
- around dams used for irrigation (e.g. Harvey River)
- should the need arise for additional townsites, they should be located in this western zone.

4.2 Zone 2 Lateritic Uplands in the High Rainfall Zone (more than 1 150 mm/annum)

This unit includes the laterite-mantled uplands (Mulcahy) and several minor occurrences of other surfaces.<sup>7</sup>

Principal existing land uses are hardwood silviculture, bauxite mining, catchment protection, recreation, conservation of flora and fauna.

- Management Strategy - the residual healthy stands of upland jarrah forest will be managed for timber production. This involves the restriction of motorised access and silviculture to maximise increment on the crop trees.<sup>24</sup>
- recreation should be channelled into areas not used for domestic water supply. The more damaging forms of motorised recreation could be absorbed in mine and gravel pits.<sup>24</sup>
  - restoration of dieback areas and mine pits is being planned on a composite basis, catchment by catchment.<sup>24</sup>
  - where it is essential that lines of communication (e.g. S.E.C. transmission lines) must be through State Forest, they are best located here, though conflict with reservoirs and aesthetics do occur.<sup>25</sup>

- gravel (for use in areas where dieback is already widespread) should be obtained mainly from this zone.<sup>25</sup>

4.3 Zone 3 Major River Valleys in the Low Rainfall Zone (less than 1 025 mm/annum)

This unit includes the Darkan surface of Mulcahy and refers to the valleys of the Murray, Dale, Collie and Helena Rivers. <sup>7 35</sup>

Principal existing land uses are catchment protection, mixed farming, hardwood silviculture, silviculture of pines, conservation of fauna and flora, recreation.

Management Strategy - further recreational facilities will be developed in the Murray Valley, where this does not conflict with quarantine needs.<sup>26</sup>

- no further townships should be considered without adequate environmental safeguards.<sup>26</sup>

4.4 Zone 4 Broad Valleys and Depressions in the Low Rainfall Zone (less than 1 025 mm/annum)

Includes the Beraking and Goonaping surfaces of Mulcahy and the Randall surface of Havel (1975), and is strongly developed in the Collie Coal Basin. Locally it is desirable to separate Mulcahy's Beraking surface, with sands over dense mottled clays on the valley floors, from the Goonaping surface, with grey and yellow sands on low divides and heads of gullies. In terms of salinity, the former generally has salt and saline groundwater close to the surface, whereas the latter is predominantly salt free. The yield of water from this unit tends to be low, due to a combination of mild slopes, deep porous soils (Goonaping only) and low rainfall.<sup>7 8 35</sup>

Principal existing land uses are hardwood silviculture, catchment protection, conservation of flora and fauna, agriculture.<sup>26 27</sup>

- Management Strategy - motorised recreation should be excluded from water supply catchments other than on all-weather roads. Extensive recreation should be directed into areas which are not significant for water supply.<sup>28</sup>
- construction of new lines of communication or upgrading of existing facilities must be minimal and planned with extreme care, so as not to spread dieback or increase the area cleared.<sup>28</sup>
  - gravel for local use should come from healthy areas.<sup>28</sup>

4.5 Zone 5 Lateritic Uplands in the Lower Rainfall Zone (less than 1 025 mm/annum)

Includes the gently undulating laterite mantled uplands, the steeper Nockine surface and the dissected lateritic slopes of Mulcahy.<sup>8 35</sup>

Principal existing land uses are catchment protection, agriculture, hardwood silviculture and conservation of flora and fauna.<sup>28 29</sup>

- Management Strategy - pine planting establishment will be expanded within the Collie Coal Basin.<sup>30</sup>
- areas used as sand leases must be carefully selected, so as to minimise the risk if dieback is introduced.<sup>31</sup>

- lines of communication (including roads) should be re-routed if possible.<sup>31</sup>
- no further townships should be considered without environmental safeguards.<sup>31</sup>
- motorised recreation should be excluded from water supply catchments, other than on all-weather roads. Extensive recreation should be directed into areas which are not important for water supply.<sup>30</sup>

4.6 Zone 6 Monadnocks (found mainly in the intermediate and low rainfall zones; less than 1 150 mm/annum)

Comprises the high granite residuals of Mulcahy and the Cooke surface of Havel (1975).<sup>8 35</sup>

Principal existing land uses are catchment protection, flora and fauna conservation and recreation.<sup>31</sup>

- Management Strategy
- where there are no all-weather roads to the summit, access will be excluded (e.g. Eagle Hill, Mt. Cook).<sup>32</sup>
  - Where an all weather road exists (e.g. Mt Dale) access will be restricted to one slope only.<sup>32</sup>
  - active recreation on foot should be encouraged where the danger of biological pollution is least, or where adequate parking and toilet facilities have been provided.<sup>32</sup>

4.7 Zone 7 Intermediate Rainfall Belt (1 025 mm - 1 150 mm/annum rainfall zone)

This is considered to be a critical management zone because of possible salinity and the interaction between timber, bauxite mining and conservation values (flora and fauna).

It requires intensive evaluation and monitoring (especially with respect to hydrology and dieback) before responsible management decisions on future use can be taken. Current management prescriptions should reflect extreme caution.

For all land uses with a hydrological and dieback impact (mining, agriculture, sawmilling) the constraints appropriate to the low rainfall zone should apply, at least until the situation is clarified. The maintenance and restoration of a disease-free, deep-rooted, perennial crop on these sites is of vital importance.<sup>33</sup>

Due to its transitional nature, relatively narrow width and uncertainties regarding future management, detailed discussions of land uses is considered premature at this stage.<sup>33</sup>

# MULTIPLE LAND USE PLANNING NORTHERN JARRAH FOREST MANAGEMENT CATEGORIES

SCALE 1:50,000

## LEGEND

STATE FOREST, TIMBER RESERVES  
FORESTS ACT AND OTHER LAND  
UNDER CONTROL OF FORENS DPT

NATIONAL PARKS

FINE PLANTATIONS

ISOLATES

MONADNOCKS

DISSECTED RIVER VALLEYS

BROAD VALLEYS & DEPRESSIONS

LATERITIC UPLANDS

High Rainfall

Intermediate

Low Rainfall

ROAD COMMUNICATIONS LINES

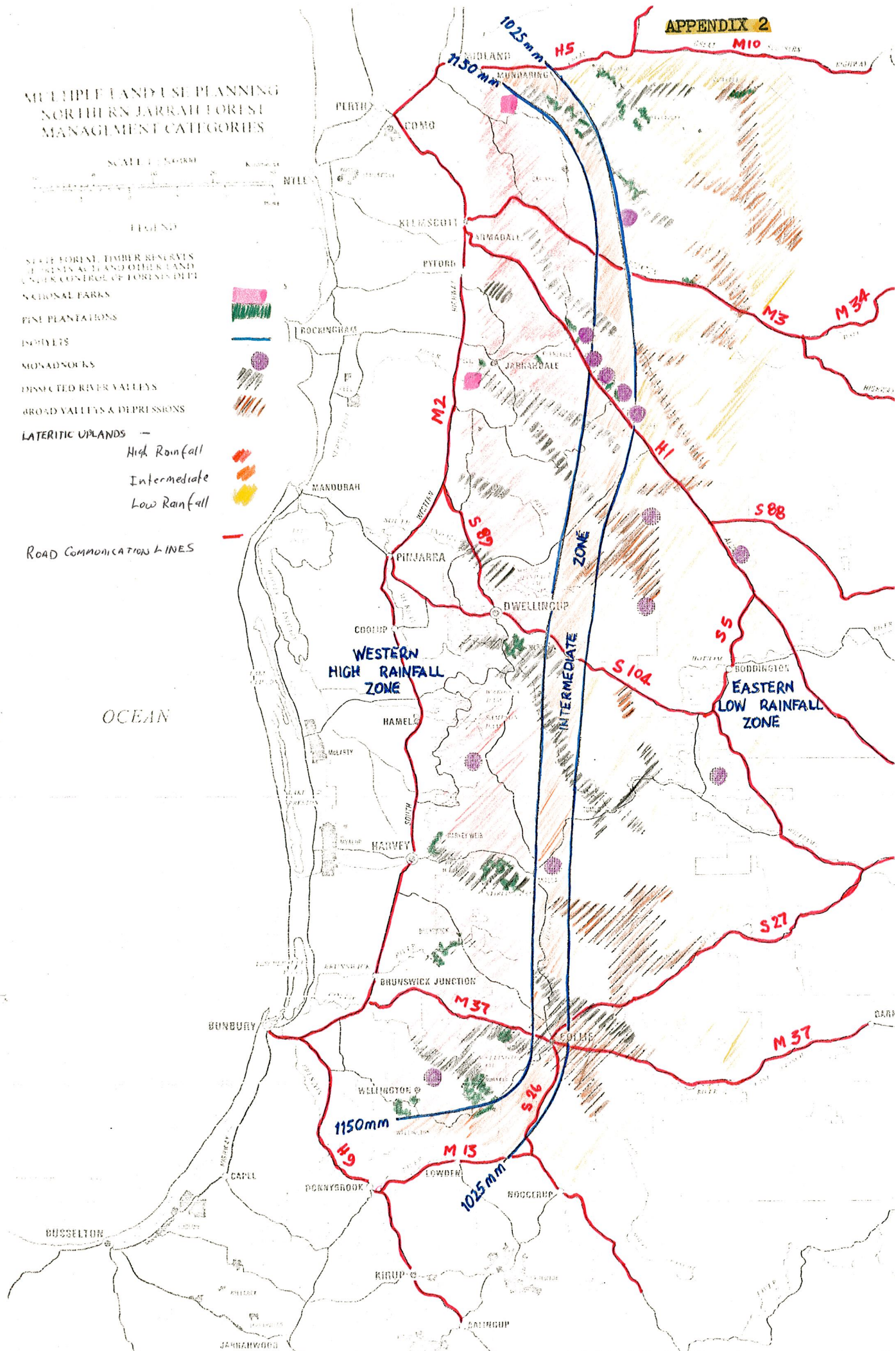


TABLE 1


ZONE		WESTERN HIGH RAINFALL (More than 1 150 mm p.a.)	
LANDFORMS		Scarp and Major Valleys	Lateritic Plateaux
UNCLASSIFIED LANDFORM SHAPE			
SURFACES	Name	"Helena, Darkin"	"Lateritic uplands"
	Type	Erosional	Stable
SOILS		Red earths	Laterites
VEGETATION	Dominants	Jarraah Marri Wandoo Blackbutt	Jarraah Marri
	Height (metres)	30 + m	30 + m
FIREBACK - Occurrence		moderate	high
Susceptibility		mod. - low	moderate
Protection from Natural Spread		non protectable	protectable
WATER YIELD		high	moderate
WATER STORAGE		low	low-moderate
CURRENT MAJOR USES		Agriculture Hardwoods National Parks Pine Plantations Quarrying Recreation Water storage	Bauxite mining Hardwoods Recreation
PROPOSED MAJOR USES Within State Forest		Water Supply Water storage Recreation Hardwoods Flora/Fauna Pine Plantations	Water Supply Bauxite mining Hardwoods Flora/Fauna Recreation

TABLE 1 Continued

CENTRAL, INTERMEDIATE RAINFALL  
(1 025 to 1 150 mm p.a.)

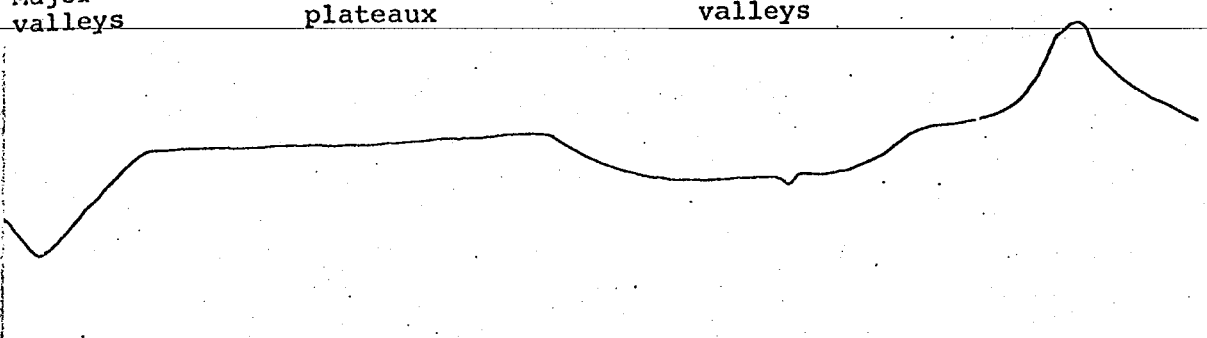
Major valleys	Lateritic plateaux	Broad valleys	Monadnocks
			
"Darkin"	"Lateritic uplands"	"Beraking Goonaping"	"Residuals, Cooke"
Erosional	Stable	Depositional	Erosional
Red earths	Laterites	Sands and clays	Rock, shallow earths
Blackbutt Marri Jarrah	Jarrah Marri	Jarrah Marri	Jarrah Marri Rock Sheoak
30 m	25 - 30 m	25 - 30 m	25 m
moderate	mod. - low	mod. - high	low
low	moderate	high	moderate
non protectable	protectable	non protectable	protectable
high	mod. - low	low	high
low - mod.	mod. - high	low	low
Agriculture Hardwoods Pine plantations Recreation Water storage	Hardwoods	Agriculture Coal mining Hardwoods	Hardwoods Recreation
Water Supply Flora/Fauna Hardwoods Recreation Pine Plantations	Water Supply Hardwoods Flora/Fauna	Flora/Fauna Hardwoods Coal Mining Pine Plantations) (In the Collie Basin)	Flora/Fauna Recreation

TABLE 1 Continued

EASTERN, LOW RAINFALL  
(Less than 1 025 mm p.a.)

Major alleys	Lateritic plateaux	Broad valleys	Monadnocks
"Darkin"	"Lateritic uplands, Nockine"	"Beraking, Goonaping"	"Residuals, Cooke"
Erosional	Stable	Depositional	Erosional
Red earths	Laterites	Sands & Clays	Rock, shallow earths
Wandoo Jarrah	Jarrah Wandoo Powder Bark	Jarrah (sands) Wandoo (clays)	Jarrah Marri Rock Sheoak
25 m	25 m	20 - 25 m	25 m
low	low	low	low
low	mod. - low	high	moderate
non protectable	protectable	non protectable	protectable
moderate	low	low	high
mod. - high	high	low (sands) high (clays)	low
Agriculture Hardwoods Pine plantations Recreation	Hardwoods	Agriculture Coal Mining Hardwoods	Hardwoods Recreation
Water Supply Conservation Hardwoods Recreation	Hardwoods Flora/Fauna	Flora/Fauna Hardwoods Coal Mining Pine Plantations) (In the Collie Basin)	Flora/Fauna Recreation

## APPENDIX 4

### LEGEND

STATE FOREST, TIMBER RESERVES,  
(FORESTS ACT) AND OTHER LAND  
UNDER CONTROL OF FORESTS DEPT.

ALWAYS

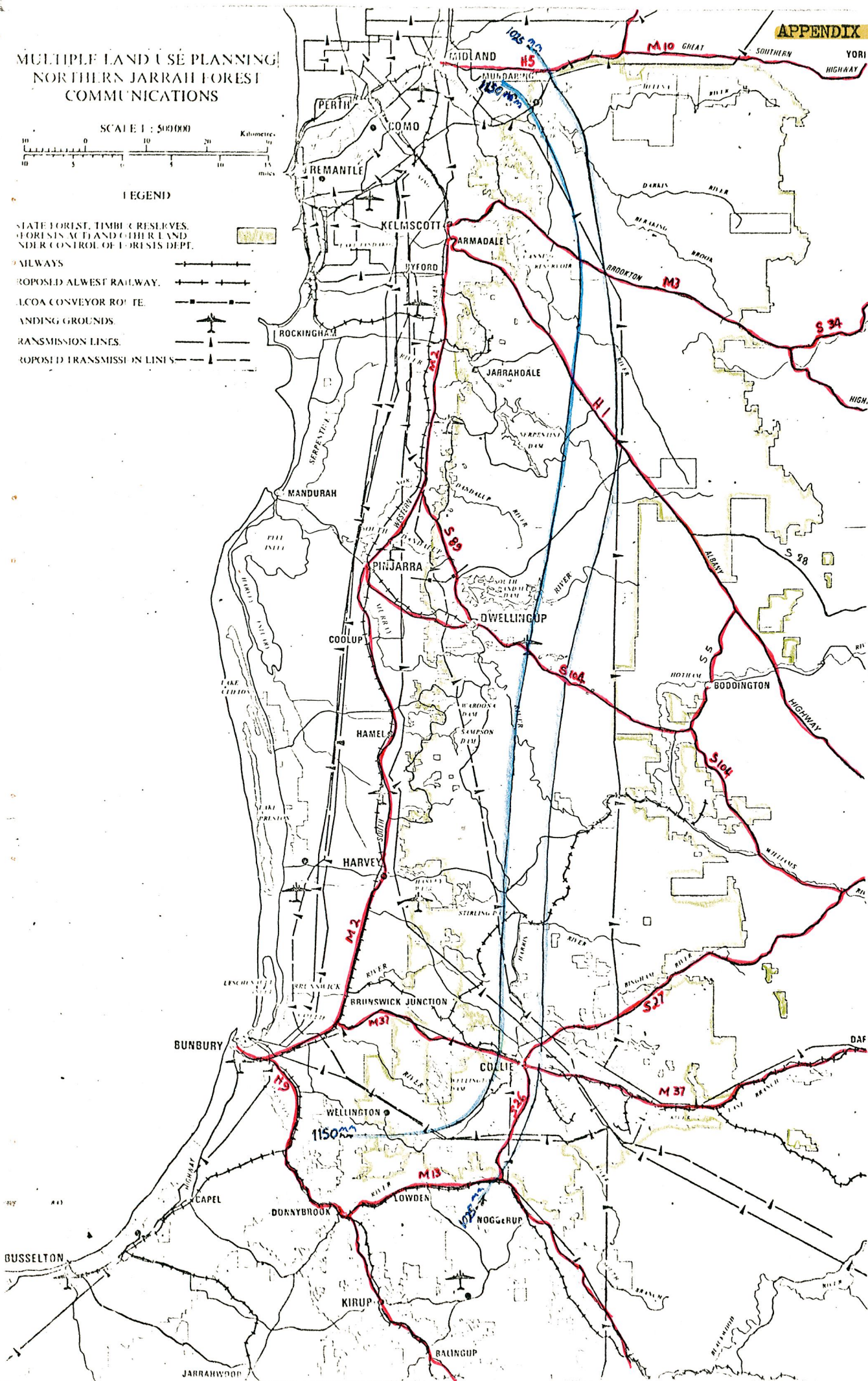
PROPOSED ALWEST RAILWAY.

ALCOA CONVEYOR ROUTE

### LANDING GROUNDS.

TRANSMISSION LINES.

### PROPOSED TRANSMISSION LINES



NORTHERN JARRAH FOREST  
LIST OF CLASSIFIED ROADS

<u>No.</u>	<u>Name</u>	<u>Local Authority</u>	<u>Divisions</u>
H1	Albany Highway	Armada-le-Kelmscott Wandering) Bodington)	Metropolitan Narrogin
H5	Great Eastern Highway	Mundering	Metropolitan
M3	Armada-le-Ravensthorpe Road	Armada-le-Kelmscott Beverley	Metropolitan Narrogin
M10	Chidlows-York Road	Mundaring Northam) York )	Metropolitan Northam
M37	Roelands-Lake King Road	Harvey Collie West Arthur	Bunbury
S5	Bannister-Marradong Road	Boddington	Narrogin
S26	Collie-Mumballup Road	Donnybrook Collie	Bunbury
S27	Collie-Williams Road	Collie Williams	Bunbury Narrogin
S88	North Bannister-Pingelly Road	Wandering	Narrogin
S89	North Dandalup-Dwellingup Rd	Murray	Bunbury
S104	Pinjarra-Williams Road	Murray Boddington	Bunbury Narrogin

IMPACT OF STATE FOREST DIEBACK QUARANTINE  
ON M.R.D. OPERATIONS  
(from file 1061/72)

1. While the major emphasis in regard to dieback control is upon the quarantine area, it is considered that care should still be exercised on the western scarp of the Darling Range and on the coastal plain where dieback is prevalent.
2. In the Northern Jarrah Forest, and adjacent forest areas and coastal plain, the only successful way to help reduce the spread of dieback is to use diseased gravel in diseased areas, and non-diseased gravel in non-diseased areas. The M.R.D. has apparently accepted the principle of contacting the Forests Department before removing gravel or other soils from any part of the State Forests area, whether it is quarantined or not. However, in those areas where the disease is already rampant, the problems are not as great in the proposed quarantine areas.
3. It is the M.R.D.'s aim to try and use material from within an infected area inside the same infected area, and in this way prevent the cartage of material from one area to another. Similarly with material from uninfected areas.
4. The best months for carrying out roadworks to minimise the spread of the disease are between December and mid March, providing there is no heavy rain. However, in perched, moist areas the fungi will grow all the year round. It grows best and is most active at about 15°C under moist conditions.
5. Following a meeting arranged by the Forests Department in June 1975, to explain the quarantine system, this Department examined its impact on future road construction and maintenance for the three year period of quarantine implementation. No problems are envisaged with this Department's works in the Metropolitan, Bunbury or Narrogin Divisions.

6. Jarrah dieback is recognised as one of the most serious forest diseases in Australia, and already some 9% of State Forest in Western Australia has been affected. The disease is diagnosed from visible symptoms in the vegetation. For the Forests Department's hygiene programme to be fully effective, the location of the disease must be known

accurately; this can only be achieved by mapping after a suitable period of quarantine. In 1974 the Forests Act was amended to enable the implementation of quarantine measures, and quarantine areas have since been proclaimed.

7. In the Northern Jarrah Forest, dieback is quite prevalent in the western slopes of the Darling scarp and this area is not quarantined. The highlands are quarantined in an endeavour to prevent the spread of dieback in an easterly direction. As dieback takes  $1\frac{1}{2}$  to 2 years to show its presence, the exclusion of all unnecessary activity from the quarantine area is hoped to indicate whether dieback is present in these areas or not. The quarantine area covers the Metropolitan, Bunbury and Narrogin Divisions.

8. Within the quarantine area all access to vehicles is restricted. However, the area is crossed by a number of roads and transmission lines; access along 'public' roads is not generally prohibited, but the driving of vehicles off these roads is prohibited.

9. Within the quarantine area, forest access roads are physically barricaded with notices informing people that access is prohibited. Any access tracks to gravel pits or borrow areas are similarly barricaded and signed. Permits are available for unavoidable activities off the road system within the quarantine area. Permits are apparently needed for any surveying or preliminary investigations, or similar activities carried out by the Department.

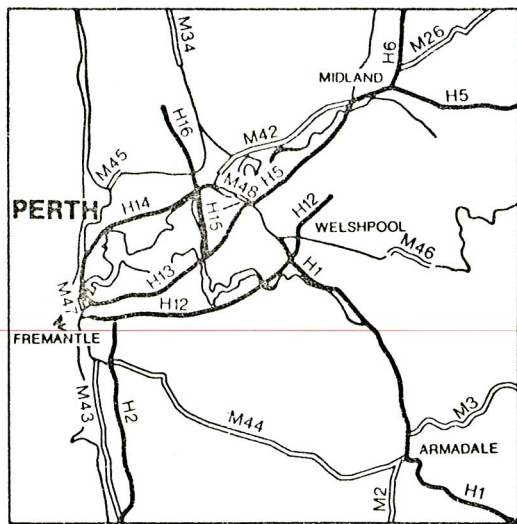
10. Copies of the plans of the proposed quarantine areas were forwarded to the Albany Division (for information only) and the Metropolitan, Bunbury and Narrogin Divisions. The locations of all pits expected to be required over the next three years in the quarantine area (both those that are partly worked out and possible new ones) were marked on the

maps. Following identification, it was arranged for inspections by the M.R.D. and the Forests Department to determine which pits are diseased and which are not.

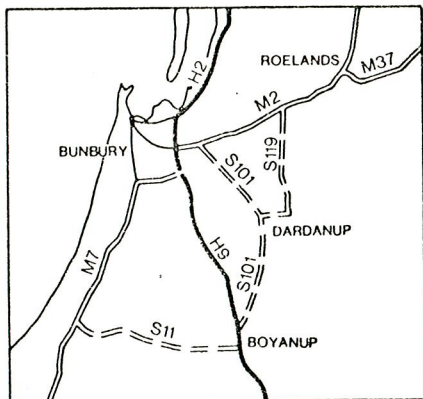
11. The Forests Department has prepared strip maps of the major roads through the area showing those sections infected and uninfected by the disease. These strip maps cover about 1 km each side of the road. As the disease is continuously spreading, such strip maps will need updating at regular intervals.

12. The Forests Department will peg the roads going through the quarantine area to show those sections which have the disease and those which do not. Personnel working on the road will have a readily recognisable means of knowing where the disease was present. In addition, the Forests Department is prepared to inspect gravel in borrow pits to see whether the gravel was likely to be infected, and is willing to indicate where gravel could be obtained for each diseased and non-diseased section within the quarantine area. The Department is also willing to attend preliminary inspections and any later inspections of proposed roads to provide advice on the best ways of carrying out works so as to minimise the spread of dieback.

# APPENDIX 7



10 5 0 10 20  
KILOMETRES


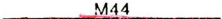
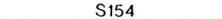
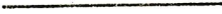



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KILOMETRES

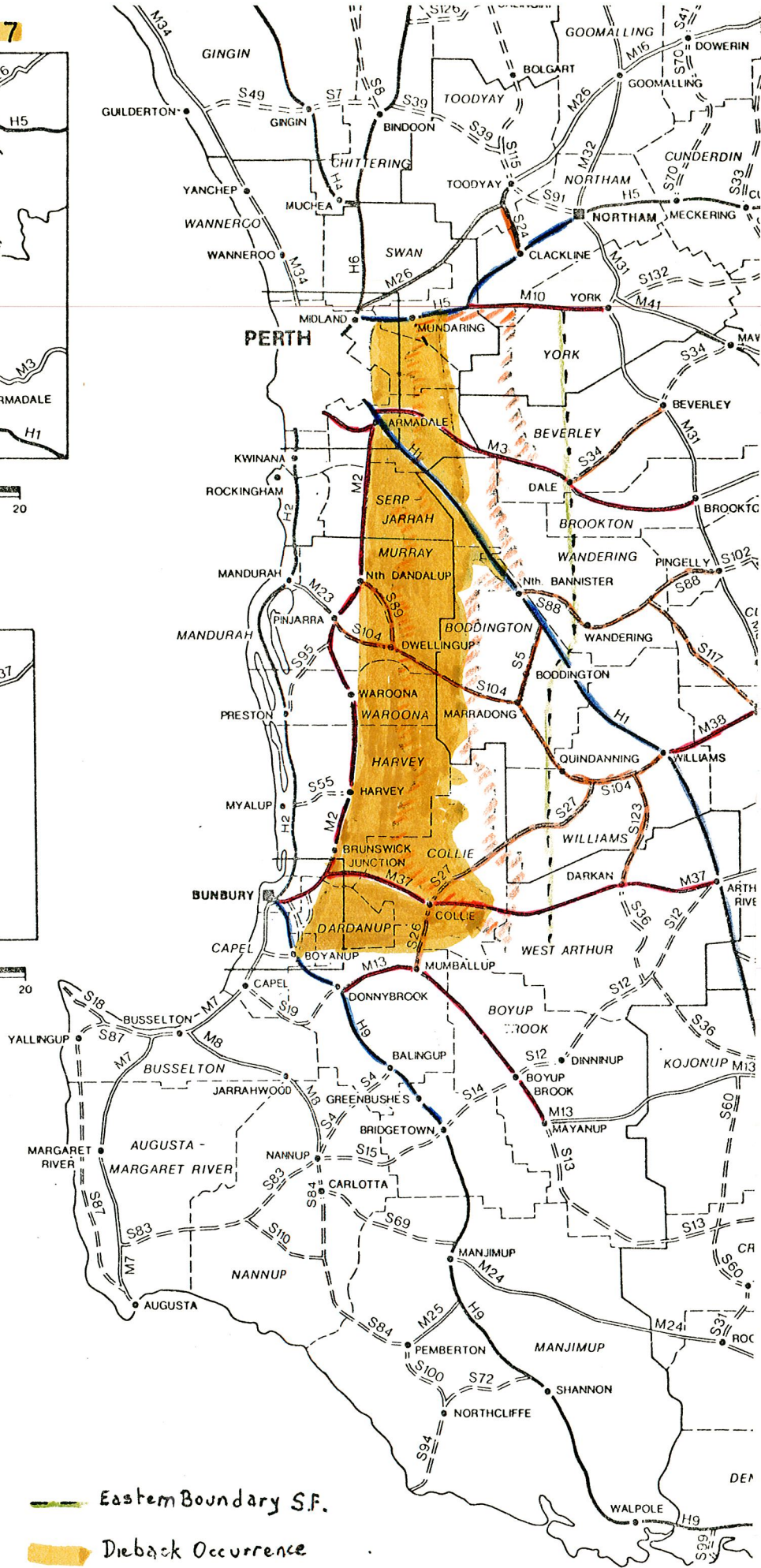
MAIN ROADS DEPARTMENT

## WESTERN AUSTRALIA

0 20 40 60 80 100  
KILOMETRES

- HIGHWAYS  H17
- MAIN ROADS  M44
- SECONDARY ROADS  S154
- DIVISION BOUNDARIES 
- SHIRE BOUNDARIES 

1976



Eastern Boundary S.F.

Dieback Occurrence

Quarantine Area

TOURIST ROADS - BUNBURY/METRO DIVISIONS

FILE 1033/67

Northern Jarrah Forest region

M.W.S.S. & D.B. Dams - Bunbury Division

Folio 168 South Dandalup Dam Access Murray Shire Council

NOT LISTED : North Dandalup Pipehead dam

M.W.S.S. & D.B. Dams - Metro Division

Folio 185 Churchman's Brook Dam Access Some maintenance by M.R.D.

" " Serpentine Dam Access (&amp; Serpentine Pipehead Dam?) Maintained by M.R.D.

" " Canning Dam access " " "

NOT LISTED : Victoria Reservoir  
Helen Pipehead dam  
Bickley Reservoir  
Wungong Dam (Under construction)P.W.D. Dams - Bunbury Division

Folio 168 Pinjarra Pipehead dam access P.W.D. maintain as private road.

" " Waroona dam access Maintained by Waroona S/C.

" " Samson Brook Dam access Maintained by " "

Logues Brook Dam Access " " Harvey S/C.

" " Harvey Weir/Stirling Dam access " " " "

" " Wellington Dam access " " Collie S/C.

NOT LISTED : Glen Mervyn Dam

P.W.D. Dams - Metro Division

Folio 185 Mundaring Weir access Maintained by P.W.D.

Parks - Bunbury Division

Folio 168 Meelup/Eagle Bay Maintained by Busselton S/C (public recreation reserves vested in S/C)

" " Old Vasse Road Maintained by Forests Department (N.P. vested in Pemberton N.P. Board)

" " Warren National Park Maintained by Forests Department (N.P. vested in Pemberton N.P. Board)

" " Beedalup National Park Maintained by Forests Department (N.P. Vested in Pemberton N.P. Board)

6 in Sec. Rd.  
from 1/7/76

Folio 168	Knoll Drive, Walpole-Nornalup N.P.	Maintained by Manjimup S/C (N.P. vested in W.A. N.P. Board)
NOT LISTED : Cape Naturaliste Reserve - vested in Busselton S/C.		
Yallingup N.P. - vested in W.A. N.P. Board		
<hr/>		
	Cowaramup N.P.	" " " " "
	Hamelin Bay N.P.	" " " " "
	Cape Leeuwin N.P.	" " " " "
	Yalgorup N.P.	" " " " "
Misc. cave reserves vested in Augusta-Margaret River S/C.		
Other roads, Walpole-Nornalup N.P.		

Parks - Metro Division

Folio 184	Gooseberry Hill N.P.	Maintained by Kalamunda S/C (vested in W.A. N.P. Board)
" "	Kalamunda N.P.	? (vested in W.A. N.P. Board)
" "	Greenmount N.P.	Maintained by W.A. N.P. Board
" "	John Forrest N.P.	Minor maintenance by W.A. N.P. Board
" "	Walyunga N.P.	" " "
" "	Lesmurdie Falls N.P.	Maintained by Kalamunda S/C (vested in W.A. N.P. Board)
" "	Serpentine N.P.	Minor maintenance by W.A. N.P. Board
" "	Yanchep N.P.	" " "
Folio 185	Rottnest Island	Maintained by M.R.D./Rottnest Board of Control
" "	Kings Park	Maintained by M.R.D./Kings Park Board

NOT LISTED : Various large riverside reserves (e.g. Point Walter)  
Lake Gnangara  
Neerabup National Park  
Bold Park  
Mussel Pool

Outside Forests Department Northern Jarrah Forest region  
- but similar planning principles might apply

State Forest - Bunbury Division

Folio 168	Gloucester Tree Access	Maintained by Manjimup S/C
	Rainbow Trail	Maintained by Forests Department

NOT LISTED : Various Forests Department recreation areas off major roads - e.g. Cascades, Brockman Saw Pit, Boranup Scenic Drive.

State Forest - Metro Division

NOT LISTED : Numerous Forest Department recreation sites off major roads, e.g. Mt. Dale, Langford Park.

Scenic Drives - Bunbury Division

Folio 165	Dunsborough - Cape Naturaliste	Maintained by Busselton S/C
" "	Augusta - Cape Leeuwin	Maintained by Augusta-M.R. S/C
" "	Collie River	Maintained by Collie S/C
" "	Leschenault Estuary	Maintained by Harvey S/C

NOT LISTED : Harvey Estuary scenic drive  
Geographe Bay Road

Scenic Drives - Metro Division

Folio 185	Darling Escarpment Scenic Drive (various sections completed)	Generally appropriate L.A.
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NOT LISTED : various local riverside roads  
(e.g. Esplanade, Dalkeith)  
various local coastal roads  
(e.g. Acadia Drive, Safety Bay)