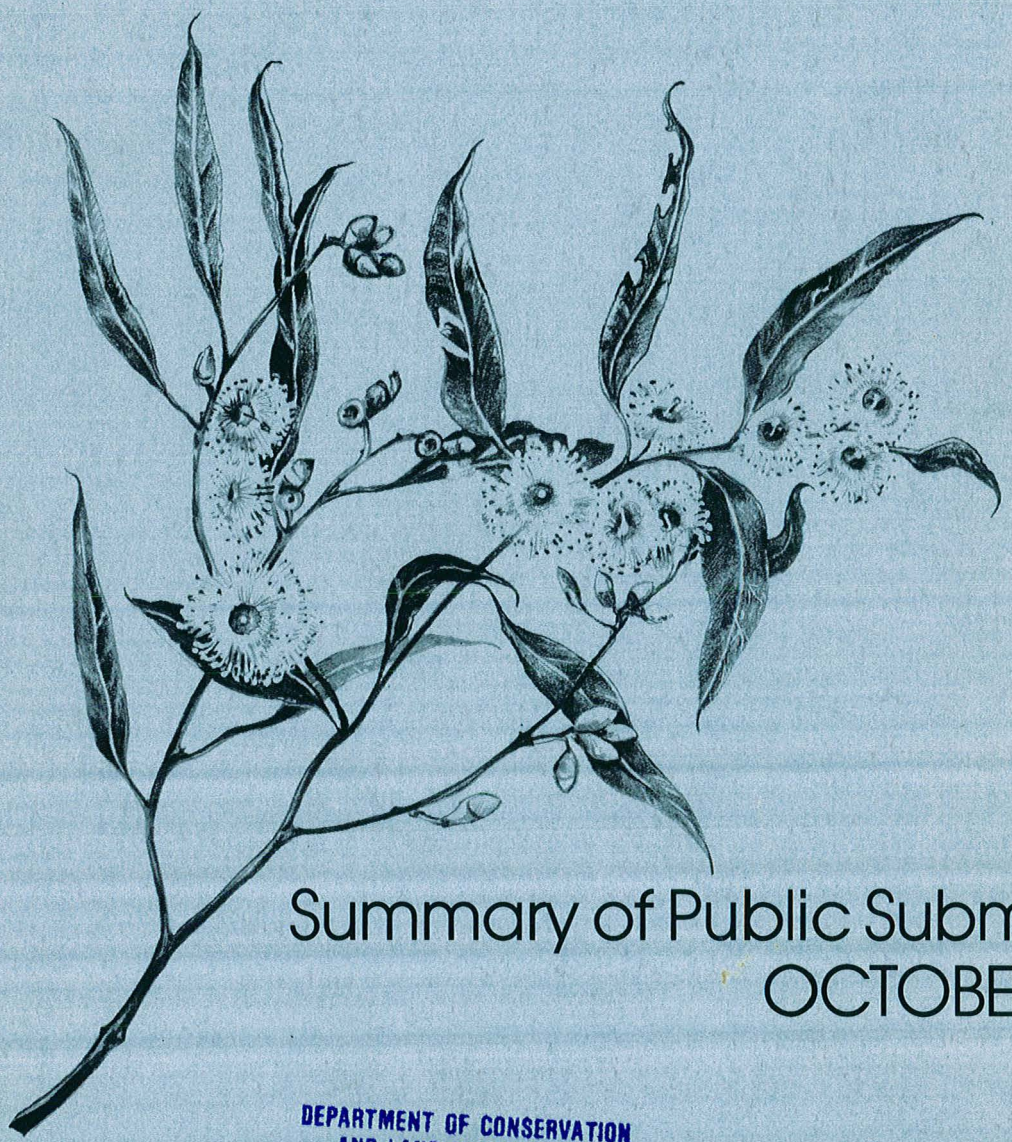
Department of Conservation and Land Management, W.A.

Mooradung Nature Reserve



Summary of Public Submissions OCTOBER 1985

Management Plan No 1.

MOORADUNG NATURE RESERVE

SUMMARY OF PUBLIC SUBMISSIONS

OCTOBER 1985

BY

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MANAGEMENT PLAN NO. 1

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INTRODUCTION

This summary of public submissions is part of the Management Plan series produced by the W.A. Department of Conservation and Land Management. Each plan in the series is published as a draft for public comment. Following at least two months of public comment (as specified by Section 58 (a) of the Conservation and Land Management Act, 1984), a summary of public submissions incorporating all comments received is prepared. At the same time an amended draft is prepared based on the original and influenced by the public submissions. The amended draft, accompanied by the summary of public submissions, is then submitted to the National Parks and Nature Conservation Authority, Minister for Conservation and Land Management and the Bush Fires Board for approval. Once approval is given, the plan is published in its final form.

DISTRIBUTION OF THE DRAFT PLAN

The draft management plan (DMP) for Mooradung Nature Reserve was published on 10 November 1984 and was available for comment for four and a half months from 10 November 1984 to 29 March 1985.

The plan was distributed to two groups:

1. Standard Mailing List

   This is a standard list formerly held by the Department of Fisheries and Wildlife, and now held by the Department of Conservation and Land Management. It includes Commonwealth and State Government organisations, tertiary institutions and conservation groups, as well as naturalists and members of the public who have expressed a general interest in management plans for conservation areas.

2. Reserve Neighbours and Local Authorities

   This group includes adjacent landholders and all local Authorities who may have an interest in the management proposals for Mooradung Nature Reserve.

The establishment of a standard mailing list ensures that all interested parties receive copies of management plans of and are encouraged to comment. Therefore, individuals and groups from widely different backgrounds and with different areas of expertise have the opportunity to contribute to the management planning process, significantly enhancing plan preparation.

The practice of distributing copies of the draft plan to reserve neighbours and Local Authorities encourages all concerned to consider nature reserves as an integral part of their local environment. It also maximises opportunities for the local community to participate in the planning process.

Submissions were received from the following:

1. Standard mailing list

   State Government Organisations

   Bush Fires Board
   Department of Agriculture
   Department of Conservation and Environment
   Department of Lands and Surveys
   W.A. Museum

   Conservation Groups

   The Tree Society
   West Australian Wildflower Society

2. Members of the local community

   Local Authority

   Boddington Shire Council

   Local Bush Fire Brigades
   Marradong Brigade

Reserve Neighbours

Messrs F.W. Stevens, I.G. Batt and G. Batt

ISSUES RAISED IN SUBMISSIONS AND AMENDMENTS TO DRAFT PLAN

The tone of most submissions was favourable, indicating a positive response to the draft management plan (DMP). The following comment by The Tree Society is an example of the tone and sentiments expressed in many of the submissions:

> 'Thank you for forwarding the ... Plan for our comments. We welcome the involvement of the Authority and stress the importance in the management of reserves such as this.'

In the remainder of this document, issues are treated under the headings and order in which they appear in the management plan. A final section on general considerations covers issues of a less specific nature.

PART A. THE RESERVE

Submissions covering this part of the plan concerned placing the reserve in a regional context, rare flora and adequate documentation of survey methods.

1. THE RESERVE - SUMMARY

The W.A. Wildflower Society commended the Department on:

> '... the reserve description (which) is comprehensive and clear with a consistent use of common and scientific names.'

Such consistency of style and nomenclature is essential both within and between management plans, if they are to be recognised as part of a professionally-developed, ongoing series.

3. LOCATION AND PHYSICAL FEATURES

The W.A. Wildflower Society suggested that isohyets should be included in Figure 1:

'The Mooradung Nature Reserve is important because of its location. It falls within a radidly changing gradient of rainfall and this in turn affects soil and vegetation patterns. The inclusion of isohyets .... would highlight this.'

Figure 1 will be amended accordingly.

The Department of Conservation and Environment made several comments regarding the diagrams:

'(i) that block diagrams would better illustrate the contour map on page 12, and

'(ii) it is difficult to easily relate Figures 4, 5, and 6 therefore, it is suggested that these either be reduced in size to fit on one or opposing pages, or use a simple overlay system.'

Block diagrams are more easily interpreted than contour maps, however, the need to rationalise drafting resources makes it impractical to devote time to their production. On the second point, the existing plan layout allows for some semblance of overlaying. The only other option is reducing the size of the three figures to fit on one or opposing pages. This is not a viable alternative as it leads to substantial losses in detail.

4. VEGETATION

Concern was expressed by the W.A. Wildflower Society at the lack of information given on the biology of the two species of rare flora found on the reserve:

'...it would be useful to know a bit about the habitat and biology of the two plants i.e. do they regenerate from see or rootstock? This additional information would help us assess the adequacy of the prescribed burning program. These species may depend on fire for regeneration and therefore leaving block 4 as an unburnt control may be detrimental.'

Unfortunately, very little is known about the distribution and status, let alone the biology, of most rare species. In most instances fire exclusion is advocated until more is known about the response of individual species to fire. In this way fire sensitive species are protected until more is known about their ecology. Thus, it is important to ensure that fire is completely excluded from at least part of the reserve, and in particular that part known to contain rare flora. For this reason this plan advocates leaving Compartment No. 4 unburnt. This compartment contains the gazetted rare species Grevillea circiifolia, as well as a southern outlier of the northern population of Eucalyptus decurva.

5. FAUNA

In their submission, the W.A. Museum suggested that the survey methods used to gather data for the management plan should be documented. The plan will be amended to include the trapping methods used - mammals, reptiles and frogs were trapped using pit fall and Elliot traps. Fauna were also surveyed by searching and direct observation. Given the limited time and resources available, the fauna details given in the plan are based on presence/absence rather than quantitative information.

One omission from the bird species list (App. II) was noted by the W.A. Museum. This will be rectified in the final plan.

6. CONSERVATION VALUES

The W.A. Wildflower Society emphasised the value of nature reserves such as Mooradung which lie between the forests of the Darling Scarp and the woodlands of the wheatbelt:

> 'It is important that we have nature reserves in between the forest and woodland where the primary purpose is the conservation of flora and fauna. It would be good to see such areas in the adjacent forests surveyed and managed in a similar way.'

PART B. PLAN FOR MANAGEMENT

Fire protection was the primary topic in the majority of submissions. Soil erosion, the control of Phytophthora cinnamomi, fencing and research were also of concern.

2. FIRE PROTECTION

Many submissions supported the fire suppression strategies proposed in the DMP:

> 'The Bush Fires Board is in general agreement with the fire protection proposals specified in the plan.'
>
> (Bush Fires Board)

However, eight areas of concern became apparent. These were:

(i) Block Size and Criteria for Selection of Fire Exclusion Block

Many submissions covering fire protection addressed the above two problems:

> '... glad to note the cautious approach ... adopted for prescribed burning and that Compartment No. 4 will not be burnt during this plan.'
>
> (The Tree Society)

In addition, The Tree Society recommended limiting frequent burning to the buffer area around the outer areas of the reserve. The W.A. Wildflower Society also advocated a cautious approach, with the additional proviso that:

> '... the burning program should be postponed for a few years until more information can be obtained. The effect of burning the external breaks will be apparent after a few years.'

Ideally, it would be best to exclude fire from this conservation reserve so as to retain a representative area of substantial size in an unburnt

state. However, this is not possible given the fire protection needs of the reserve and the beliefs of the adjacent landholders.

The submissions by the Boddington Shire Council, Marradong Brigade and F.W. Stevens, I.G. Batt and G. Batt expressed the concern that Compartment No. 4 (the fire exclusion block) was too large and that any fire exclusion block:

> '... should be reduced in size and located towards the centre of the reserve.'
>
> (F.W. Stevens, I.G. Batt and G. Batt)

Compartment No. 4 was selected because it:

(a) contains representative samples of most of the vegetation types which occur on the reserve;

(b) contains Eucalyptus decurva which is poorly represented in the region;

(c) contains Grevillea circiifolia which has been declared rare and endangered; and

(d) is the smallest of the four blocks.

The concept of a central unburnt block was considered, however, it would have necessitated the establishment of a greater number of blocks than the existing four. This in turn would lead to increased disturbance through firebreak construction and maintenance, plus the need to dedicate greater resources to the prescribed burning program.

The W.A. Museum expressed concern regarding burning compartments 1 and 2 as they respectively contain the only areas of Jarrah-Marri-Wandoo woodland and lithic complex on the reserve. This concern serves to emphasise the importance of the suggested monitoring program wich will cover all formations on the reserve.

(ii) Buffers and Firebreaks

Buffer width and placement concerned the Bush Fires Board:

> 'It is recommended ... that the buffer surrounding Compartment 4 (the "no burn control") is maintained to a width of 100 m as opposed to the 50 m prescribed in the plan. The additional width is required to safeguard the control when fuel reduction burning is being carried out in adjacent compartments.'

The W.A. Museum, on the other hand, were:

> '... concerned at the proposal to establish 50 m breaks around the perimeter (one- twelth of the total area of the reserve). While they may provide some protection from fire, they will constitute a region of continuing disturbance around the reserve, encouraging the invasion of exotics, possibly altering the water table and resulting in greater exposure of formations 2 and 3.'

Obviously, any buffer will have an adverse impact on the integrity and viable area of a conservation reserve, as well as providing a region of continuing disturbance susceptible to weed invasion. However, such management is necessary in this instance to provide fire protection. A 50 m buffer is the best compromise as it provides a barrier to fire movement, while at the same time minimising the area of disturbance. Furthermore, the laterite substrate over much of the reserve area will discourage weed invasion.

Firebreak widths and placement also caused concern. The Boddington Shire Council, the Marradong Brigade and F.W. Stevens, I.G. Batt and G. Batt drew attention to the need to widen both the internal and perimeter firebreaks:

> 'Both internal and external firebreak to be bulldozed wider. This would assist in reducing the risk with protective burning of the buffer strip.'
>
> (Marradong Brigade)

Two factors will minimise this risk: firstly, selection of the correct weather conditions before burning the buffer strip; and secondly, reference to the proviso given in the plan, that of encouraging adjacent landholders to contact the Department if they perceive that fuel levels in the buffer strip have reached an unacceptable level.

The amalgamation of the Wildlife section of the Department of Fisheries and Wildlife with the Forests Department and the National Parks Authority to form the Department of Conservation and Land Management, has enabled more resources to be allocated to the management of Mooradung. As such, the buffers will be closely monitored, and rather than being burnt no more than once every five years, parts of each buffer strip will be burnt annually by the Dwellingup District Office (Department of Conservation and Land Management) when fuel levels exceed 7-8 tonnes/ha. This will further reduce the fire risk on the reserve.

This group of submissions also recommended grading the internal firebreaks:

> '... so as to facilitate access of fire fighting vehicles.'

The reasons for ploughing, rather than grading, are threefold. Firstly, grading cuts a shallow depression, encouraging water to flow along the firebreak as if it were a stream bed. Mooradung is particularly susceptible to erosion, and grading the firebrakes would only exacerbate this problem. Secondly, grading damages the vegetation edging the firebreak to a far greater degree than does ploughing. Thirdly, it is cheaper to maintain firebreaks by ploughing rather than by grading.

Placement of firebreaks was discussed in the submission from the W.A. Museum:

> 'It appears that the western edge ... is the quarter from which most fires threaten. However, the proposed firebreaks divide the reserve into what appear to be rather arbitrary ... blocks. Would breaks that ran parallel to the western edge instead of at right angles to it not be more effective?'

Given the topography of the reserve, such an approach is not realistic. The rugged topography of the western side precludes further firebreak construction. Furthermore, the landholders to the south and south-east of the reserve require fire protection, which cannot be achieved by implementing fire protection measures on the western side alone. Thus, the four compartment system minimises the need to construct firebreaks through the rugged, erosion-prone parts of the reserve, as well as minimising the fire risk to all adjacent landholders.

(iii) Frequency of Burning

This was an issue of common concern in many of the submissions, particularly those received from Marradong Brigade, the Boddington Shire Council and F.W. Stevens, I.G. Batt and G. Batt. These submissions covered the frequency of burning of both buffer strips and compartments. All three submissions advocated burning the buffer strips on a minimum three year cycle:

> '... to reduce the level of combustible material thus reducing the risk of a hot fire during protective burning operations.'
>
> (Boddington Shire Council)

Burning at such a high frequency will encourage invasion by grasses and other flammable weed species. These species return rapidly after fire and exhibit rapid rates of fuel accumulation. The end result is an increase, rather than a decrease, in fire hazard. Furthermore, native species which regenerate only from seed (obligate-seeders) will disappear if they are burnt more frequently than the minimum time taken to set seed. For most obligate-seeders it is at least three years post-fire before they produce their first crop of viable seed.

Finally, if adjacent landholders are concerned about the fuel levels of the buffer adjacent to their property, there is provision within the plan to:

> '... contact the Dwellingup District Office (of the Department of Conservation and Land Management), if they perceive that fuel levels in the buffer strip have reached unacceptable levels.'
>
> (DMP)

The frequency of burning of the compartments came under a similar level of scrutiny:

> 'All four blocks should be burnt every five years in the early Autumn.'
>
> (Marradong Brigade)

> '... there is no justification as to why a 10 year period is proposed and is burning to be in autumn or spring?'
>
> (W.A. Museum)

The burning regime given in the DMP was based on the following rationale. A period of 10 years between last burn and assessment of fuel levels to determine if another burn is required for fuel reduction purposes, was a compromise between biological requirements (at least 15 years between fires) and local pressure (to burn the whole reserve every 5 years). This regime does not advocate burning every 10 years, but rather 10 years between the last burn and assessment of fuel levels and determination of further fire prescriptions.

The prescribed burning program given in the draft plan has been altered following the premature burning of Compartment No. 3 in 1985, rather than 1988 as originally advocated (see table below).

Compartment No.	Year Last Burnt	Proposed for Burning
1	part burnt 1981	1991, subject to assessment
2	1973	1988
3	1985	1995, subject to assessment
4	1973	control - no burn

The autumn burning regime proposed by the Marradong Brigade agrees with that given in the DMP.

If adjacent landholders are concerned about fire protection, particularly aspects such as the frequency and pattern of block burning, this plan

contains provision for them to draw this to the attention of the Executive Director.

(iv) Section 34 of the Bush Fires Act

Under this section of the Bush Fires Act the acceptance of a management plan by the Bush Fires Board negates the need for Bush Fire Control Officers and adjoining landholders to enter the reserve and carry out fire protection works. Furthermore, there is no need for them to carry out fire protection works on the reserve, as all necessary works are detailed in the management plan and will be implemented by the Dwellingup District Office.

(v) Notifiable Authority

Concern was expressed regarding the expense of ringing STD (if the Department of Conservation and Land Management becomes a Notifiable Authority) to notify the Department every time an adjacent landholder wishes to burn. This expense can be considered well justified if it prevents a wildfire moving through the reserve and the associated costs of loss of fencing and fire-fighting. It is essential therefore that the Department (the Dwellingup District Office) as a responsible landholder, is informed prior to burning off. This aim has been legally achieved by the Department becoming a Notifiable Authority.

(vi) Construction of a Dam

The Boddington Shire Council, Marradong Brigade and F.W. Stevens, I.G. Batt and G. Batt suggested:

> '... that consideration be given to constructing a dam on the reserve which would serve the twofold purpose of encouraging fauna to water in the area rather than moving onto adjoining properties and also to provide a backup supply for fire suppression.'
>
> (Boddington Shire Council)

Unfortunately, experience by this Department indicates that constructing dams on reserves does not reduce the movement of kangaroos onto farmland. Construction of a dam for fire control is also unwarranted, as the

reserve is too small to need an on-site water source. Furthermore, movement of vehicles on the reserve, even in a fire situation, must be minimised because of the risk posed by Phytophthora cinnamomi. Construction of a dam will only increase vehicle movement, with fire-fighters using the dam to replenish their water supply.

(vii) Insurance

The Boddington Shire Council expressed concern regarding insurance. In a fire situation, any volunteers are covered by the Shire policy.

(viii) Soil Erosion

The Department of Agriculture drew attention to the soil erosion hazards arising from the fire protection proposals in the DMP.

> 'Points of concern made in the draft plan are:
>
> '(a) Present tracks in the reserve (mostly to be closed) are eroding (p. 25).
>
> '(b) The proposal that future firebreaks will provide access for four-wheel drive vehicles (p. 25) and for neighbouring farmers (p. 30).
>
> '(c) That part of an existing track to be retained as a firebreak appears to be located in a steep part of the reserve.
>
> '(d) The proposal that the internal edge of perimeter fire buffer strips will be defined by a single bulldozer cut (p. 26). Such a cut could increase soil erosion by confining and concentrating run-off water.'

The erosion hazard of the existing tracks has been realised; their closure was advocated in the DMP. Concern was also expressed, by the Department of Agriculture, regarding traffic along the firebreaks. Vehicle use of the reserve will be negligible, with all firebreaks being closed except for reserve management purposes. Retention of a steep section of firebreak on the western boundary was also highlighted as an

area of some concern by the Department of Agriculture. This section forms an essential part of the complete perimeter break, and therefore can not be closed. Re-routing, the only other viable management option, would push the firebreak deeper into rugged country. Thus, the existing alignment appears the most suitable. Measures will be taken to limit the erosion hazard of this section and other sections of firebreak prone to erosion. In most places this will involve the construction of low diversions.

The final concern expressed by the Department of Agriculture was the position of internal firebreaks in relation to topography. The internal firebreaks on Mooradung have been located in the optimal position, taking into account topography and the need to divide the reserve into four roughly equal compartments.

3. CONTROL OF PHYTOPHTHORA CINNAMOMI

The W.A. Wildflower Society expressed:

> ' ... concern that the construction and maintenance of an internal firebreak system will increase the risk of Phytophthora cinnamomi and weed infection, especially when the work is carried out by local farmers.'

This emphasises the importance of cleaning down all equipment before it is taken onto the reserve. In all instances, the severity of the dieback problem and its continuing spread should not be under-estimated:

> 'It cannot be stressed enough how important hygiene is in the control of Phytophora cinnamomi. We are still finding more species of shrubs and smaller plants affected by it.'
>
> (W.A. Wildflower Society)

As such vehicular use of the reserve will be limited to reserve management vehicles. The draft plan will be amended accordingly.

4. DECLARED PLANTS AND ANIMALS

Fencing, and particularly problems with grey kangaroos, concerned adjacent landholders F.W. Stevens, I.G. Batt and G. Batt:

'Fencing - As present fence design is not for reserve fauna, there are several points to be investigated.

'(a) Design and erect a fence to keep reserve fauna from straying on to adjoining farmland.

'(b) Carry out repairs to the existing fencing.

'(c) Assist with half the cost of new fence when it is to be replaced.'

If landholders consider kangaroo numbers to be unacceptably high, control measures can be applied. These are detailed in the management plan. The Government's long-standing policy on fencing provides answers to points (b) and (c). This policy is based on the requirement that private landholders prevent their stock from wandering onto Crown land. This is best achieved by constructing and maintaining adequate fencing. If the State Government were to become responsible for fencing all Crown land, it would place an inordinately high burden on all tax-payers. Such a responsibility would cover not only nature reserves, but also all national parks and road and railway reserves. As such, it is not an economically or politically feasible responsibility.

5. RESEARCH AND MANAGEMENT RECORDS

The W.A. Wildflower Society commended the Department on setting up monitoring sites.

The W.A. Museum and The Tree Society felt that careful quantitative monitoring of the biological effects of a range of frequencies, intensities and seasons of burns should be carried out. Such detailed studies are not possible due to limited resources. However, monitoring sites and a simple inventory system will be established by Dwellingup Research (Department of Conservation and Land Management).

No detailed research plan is given in this management plan. This information is generally not included in management plans as it greatly increases the complexity of the document with little gain for most readers. However, details will be available from Dwellingup Research.

GENERAL CONSIDERATIONS

Only one submission, that received from the W.A. Wildflower Society, dealt with general issues. Two points were raised. Firstly, the Society drew the Department's attention to its wish to be involved in the planning process. This, it felt, would be best achieved by being notified of areas being considered for future plans so that excursions could be organised and local involvement encouraged. Secondly, the Society commended the preparation of this plan by a regional Reserve Management Officer and is looking forward to further similar documents. This emphasises the importance of regional involvement in planning, and one of the major strengths of the new Department - a regional approach to conservation and land management.