RECREATION PLANNING IN STATE FOREST: A PROPOSED PROGRAMME FOR THE DEVELOPMENT AND IMPLEMENTATION OF RECREATION LAND USE PLANS.

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1.0 INTRODUCTION

Both the results of past visitor surveys and the deteriorating condition of many of our developed recreation sites indicates that the number of recreational visits made to State Forest has increased substantially over the past several years. As in other developed countries, this upsurge in outdoor recreation activity can be largely attributed to increases in leisure time, disposable income, mobility, population and urbanization as well as to a growing public interest in and awareness of the natural environment.

When viewed in relation to other land use demands and constraints in the south-west, this increase in recreational activity takes on added importance, for it suggests that without adequate planning, a growing number of conflicts are likely to arise out of the future provision and use of recreational areas in State Forest. Consequently, there is a need to formulate comprehensive plans for the phased development and future management of the recreation resource based on detailed assessments of both the resource itself and the public that will use it.

2.0 THE SCOPE FOR RESEARCH

Recreation planning requires the recognition of a wide range of environmental, social, economic and political factors. Like other types of land use planning, a knowledge of these factors is needed to identify and evaluate planning options and management strategies.

As was indicated, both the physical resource and the public demand for and use of that resource need to be assessed. Such assessments will involve research into the following two areas:

1. Studies aimed at determining the capacity and tolerance of various natural systems to support different types, patterns and levels of recreational development and use. There has been a natural tendency in the past to locate recreational facilities on the most scenic landscapes, often on or immediately adjacent to some prominent resource feature. While such sites are successful in attracting large numbers of visitors, some of these areas are quite sensitive to repeated and

heavy use. Those facilities which are sited on fragile landscapes and which are not designed to handle the use loads they are receiving will eventually require extensive site maintenance and rehabilitation measures. To minimise future site deterioration problems, there is a need to assess prior to any development the type and level of recreational use an area can support before irreversible damage or decline will occur.

2. Investigations directed towards identifying how and to what extent the location, type, amount and design of facilities and the level of use of those facilities may influence visitor attitudes, preferences and habits. For instance, the overcrowding that has been observed on some sites within the region may have contributed to an overall decline in visitor satisfaction on those areas (lower levels of visitor satisfaction on developed sites could conceivably lead to increased land use conflicts and recreation site maintenance problems if dissatisfied users were forced to seek out undeveloped areas for their activities). Consequently, studies are required to establish the maximum level of use, both in terms of visitor numbers and activities, that can be accommodated on various sites before a measurable decline in user satisfaction occurs. There is also a need to develop a much clearer understanding of how and why forest visitors select particular environments to meet their recreational needs.

The objective of the following paper is to briefly outline an inventory and assessment programme that will provide each regional group or division with the visitor demand and resource data needed to draw up their own comprehensive recreation framework and working plans.

3.0 PHASE A: THE INVENTORY AND ASSESSMENT OF EXISTING RECREATIONAL AREAS AND FACILITIES

An inventory and assessment of the location, quantity, standard and maintenance of existing recreational areas in State Forest is an important first step in planning for the future development and management of the recreation resource. Such a survey will help to identify the nature and extent of existing site development, use and maintenance problems and will also provide an information base for evaluating future development needs and priorities.

3.1 Site Inventory Proposal

Objective: To compile a comprehensive record of the location, quantity, standard and required maintenance of all existing Department recreation areas and facilities. In addition, a record of the location and extent of recreational facilities managed by other organisations throughout ~~the~~ State Forest should also be made in order to more clearly define what the Department's role should be in providing future areas and facilities.

Procedure: An inventory is currently being carried out by Extension Branch officers and as the results of this survey become available, they will be passed on to regional leaders and divisional O.I.C.'s. This record will need to be updated as additional development occurs (this could possibly be done in conjunction with periodic assessments of site maintenance requirements).

Application of Results: The initial survey will provide an overall picture of the level and pattern of recreational development that exists at the divisional, regional and Departmental level. Such information will help in determining future site development needs and maintenance programmes.

4.0 PHASE B: THE MEASUREMENT AND EVALUATION OF FOREST RECREATION USE LEVELS, PATTERNS AND PREFERENCES.

Planning for the development and management of the recreational resource requires some idea of the numbers and preferences of persons who are likely to make use of that resource. Such information is not only important in planning for the short term use and management of individual recreation sites, but is also necessary to help define long term regional recreation needs.

There are a variety of techniques which can be used to measure the public's use of and/or preference for outdoor recreation environments. These techniques can be classified as follows:

1. Interview or questionnaire surveys - investigations which attempt to obtain information on people's recreational habits, needs and preferences based on their stated expressions of the use of or choice for various recreational areas and facilities. Such surveys include on and offsite interviews and onsite and mail questionnaires.

2. Access route measurements - surveys designed to measure either continuous or periodic levels and patterns of visitor use. Vehicle counters and trail registration books are two commonly used measuring devices.

3. Observational surveys - investigations in which an observer records information on visitor levels, locations, activities and behaviour. Observational surveys can be used to verify use and preference data obtained from interview and questionnaire surveys.

4. Photo/slide studies - investigations which attempt to measure people's preferences for particular resource features or landscapes based on their reaction to photographs and/or slides.

4.1 Forest Visitor Survey Proposal

It is proposed that the Department conduct a series of 1-day visitor surveys throughout State Forest using on-site questionnaires in combination with observational recordings of visitor activity and periodic vehicle counts at selected sites.

Objective: To assemble information on the level, type, timing and distribution of recreational use which is presently occurring on both developed and undeveloped sites throughout State Forest. In addition, those surveys would enable the Department to sample the public's preferences for various recreational activities, facilities and environments.

Procedure: The proposed surveys would involve the distribution of questionnaire forms (refer to Appendix A) to all parties of forest visitors encountered on selected sampling dates along pre-planned routes in each division. The questionnaire form could include a forest guide map showing major access roads, recreational attractions and quarantine and catchment boundaries. The group leader or a spokesman for each party would be informed of the purpose of the survey and then asked to complete the questionnaire form and deposit it in one of several boxes provided at key locations on each survey route. Survey personnel would also be requested to record specific information on the location, numbers and activities of all groups encountered in order to obtain an overall record of the level and distribution of visitor use in each division. Road counters would be used to measure the level of visitor use at certain sites and to monitor recreational activity over longer periods. In addition, A.D.F.O. Pentony's idea of using spotter aircraft to obtain photographic records of visitor activity has considerable merits, particularly as it would provide a relatively inexpensive means of measuring recreational use.

Ideally, sampling would be conducted over an entire year with survey dates selected so as to measure peak rates of use (i.e. weekends and holidays) that occur during the different seasons of the year.

These surveys would require a commitment of 2 or more men per division for 3-4 hours on any given sampling date, depending on the length of the route and the overall level of visitor activity encountered. Approximately ~~a~~ $\frac{1}{2}$ man day per division would also be required to set up and remove deposit boxes and collect completed forms following the survey.

Application of Results: Survey information would provide the regional groups and divisions with the data base for evaluating current use patterns and predicting the type, level and distribution of future recreational activity. Aside from providing information for planning, these surveys would have an important educational and public relations value resulting from the increased contact that staff would have with a large cross-section of the recreating public.

4.2 Forecasting Future Forest Recreation Demand Levels

Objective: To forecast future levels and patterns (activity, geographic and seasonal) of recreation use throughout State Forest.

Procedure: Projections can be made on both a regional (i.e. northern, central and southern regions) and divisional basis using Department survey results in combination with information from other recreational studies in the south-west, visitor attendance figures at non-department areas (i.e. National Parks) and available demographic data. The limited results of past visitor surveys will provide a benchmark for assessing rates of growth and trends in the future use of forest areas for recreation.

Application of Results: These use projections, when analysed in conjunction with existing development patterns, will help to identify regional and divisional recreation needs.

5.0 STAGE C: THE IDENTIFICATION OF THE RECREATION RESOURCE AND THE EVALUATION OF ITS SUITABILITY FOR FUTURE DEVELOPMENT AND USE

The detailed inventory and assessment of the physical resource is an integral part of the recreation planning process. Information on a range of environmental and cultural factors (e.g. geology, soils, topography, hydrology, vegetation, land use, accessibility, etc.) is required to identify and evaluate the suitability of land and water resources for recreational development and use. Ideally, planning is based on an evaluation of these factors as they relate to the capacity of the landscape to attract and support different types and intensities of use.

There are a variety of methods which have been used to classify and/or assess the recreational potential of any area. In general, such methods fit into one or more of the following categories -

1. Descriptive Assessments - methods which deal with the supply side of resource analysis. The principle goal of such assessments is to objectively measure the availability of particular resources.

2. Subjective Evaluations - techniques for determining recreation resource suitability based on largely subjective interpretations or evaluations of resource data. The specificity of such techniques varies considerably and includes map overlays, ordinal scales (i.e. excellent, good, fair etc.) and numerical point rating systems.

3. Demand Studies - methods which recognise demand as the major component in the analysis of recreational resource suitability. Suitability ratings are typically assigned on the basis of observed demand and the characteristics of the transportation network linking the population to the resource.

4. Predictive Analysis - methods which either attempt to evaluate the suitability of an area for development on the basis of how various land use policies are likely to affect particular resources or which attempt to predict in quantitative terms the impact(s) that development will have on the resource and the demand for that resource. Such analysis methods are usually dynamic (i.e. changes in land use and demand occurring over time are considered) and often take the form of computer-based simulation models.

5.1 Resource Inventory and Assessment Proposal

Objective: To assess the capacity of different forest environments to attract and sustain various types and levels of recreational use.

Procedure: It is proposed that Superintendent Havel's site vegetation classification be used as the basis for inventoring and evaluating the recreational potential of State Forest in the northern and central divisions.* The physical suitability of each site vegetation category for a range of recreational activities can be assessed by....(1) identifying which physical site characteristics and factors (e.g. topography, views, resistance of soils to compaction and erosion, etc.) are important in terms of attracting and supporting specific types and intensities of use (refer to Appendix B) and (2) then matching the physical site requirements of specific activities with the resource characteristics and capabilities of the various site vegetation types.

The assessment which can be carried out at either a divisional and/or regional level, would require a limited amount of field work to supplement and interpret existing Department air photos, maps and records.

Application of Results: This assessment will permit the identification of those areas of State Forest which have the capacity to attract and support various types and intensities of recreational development and use.

5.2 Resolving Land Use Conflicts

The resource assessment procedure outlined in the preceding section provides a method for matching recreational use requirements with physical site capabilities. While the assessment will indicate which recreational activities are physically suited to a particularly area or zone, it does not necessarily indicate whether those activities are compatible with existing land uses. This can only be determined

* An inventory and assessment of the recreation resource in two of the southern divisions (Manjimup and Pemberton) has been carried out by former A.D.F.O. Gobby, who used the Canadian system of classifying land use capability.

by evaluating how, where and to what extent other forest land uses are likely to conflict with or constrain future recreational development and use.

Objective: To identify those areas of State Forest that are unsuitable for specific types of recreational development and use due to other land use activities, constraints, demands and policies.

Procedure: The resource constraints, demands and policies specific to each of the land uses that occur in or adjacent to State Forest need to be examined in order to identify existing or potential areas of conflict between these land uses and the various recreational activities. Those zones or areas where recreational development and use should be excluded or restricted (e.g. quarantine and metropolitan water supply catchment areas, active mining and timber harvesting areas, fauna and flora reserves, etc.) can then be designated by each division.

Application of Results: The general procedures described in this and the preceding section provide a basis for identifying those areas of State Forest which are suited both in terms of physical site characteristics and land use compatibility for recreation.

6.0 PHASE D: PLAN PREPARATION AND IMPLEMENTATION

The site inventory, visitor survey and resource assessment proposals outlined in the preceding sections will provide the information base needed to develop comprehensive recreation land use plans. Ideally, the development of such plans will result in the establishment of a forest-wide network of recreation management priority areas or zones that will be specifically managed for a range of recreational activities. As was pointed out previously, the selection of these areas should reflect recreational demand and travel patterns, resource capabilities (i.e. resource attractiveness and carrying capacity) and land use demands and constraints.

Throughout this paper, reference has been made to the need to develop both recreation framework and working plans. Briefly, the basic format for each of these plans is as follows:

1. Framework Plan - a general plan which sets out recreational development guidelines, priorities and management policies at a regional level. Such a plan would designate broad zones or areas for future development and use based on the assessment of regional recreation needs, resource capabilities and land use requirements. The basic objective of the framework plan would be to coordinate divisional recreation plans at a regional scale so as to ensure that development programmes will provide the maximum

benefit to the public.

2. Working Plan - a detailed divisional plan for the phased development and management of the recreation resource. Like the framework plan, the working plan would also be concerned with visitor use patterns, resource capabilities and alternative land use needs, but at a local level. One of the major features of the working plan should be the inclusion of a yearly programme for site development and maintenance work.

In summary, it appears that planning efforts of the scope described here will require the assistance and cooperation of officers in all branches of the Department if such efforts are to prove successful. However, the major responsibility for planning must ultimately lie with the regional groups and divisions who are responsible for implementing development plans and managing and maintaining the resource.

INVENTORY OF FOREST RECREATION AREAS & FACILITIES IN THE NORTHERN JARRAH REGION (DECEMBER, 1976)

Division	Managing Organisation	Number of Areas	Facilities		No. areas with toilet facilities
			Tables	Barbecues	
Wanneroo	Forests Dept.	4	17	12	-
	National Parks	1	70	51	1
	Other	4	13	13	1
	Totals	9	100	76	2
Mundaring	Forests Dept.	11	76	51	2
	National Parks	6	124	121	4
	M.W.S.	3	12	18	2
	Other	3	8	21	2
	Totals	23	220	211	10
Kelmscott	Forests Dept.	10	114	60	2
	National Parks	1	23	24	1
	M.W.S.	8	85	83	6
	Other	6	14	24	3
	Totals	25	236	191	12
Dwellingup	Forests Dept.	10	29	30	2
	M.W.S.	2	20	15	2
	Other	1	1	-	-
	Totals	13	50	45	4
Harvey	Forests Dept.	7	6	6	-
	Other	11	20	26	6
	Totals	18	26	32	6
Collie	Forests Dept.	24	45	52	-
	Other	4	3	15	1
	Totals	28	48	67	1
Totals (Northern 6 Divisions)	Forests Dept.	66	287	211	6
	National Parks	8	217	196	6
	M.W.S.	13	117	116	10
	Other	29	59	99	13
	Totals	116	680	622	35

MURRAY RIVER MARRON FISHING SURVEY - SUMMARY OF RESULTS

Available Information	DATE OF SURVEY				
	16/12/72 (Sat.)	27/12/72 (Wed.)	1973 (3 dates)	18/12/76 (Sat.)	15/1/77 (Sat.)
Length of river surveyed (km)	53	32	53	53	53
Number of groups:					
Observed	37	9	50	44	39
Interviewed	37	9	50	37	26
Number of persons:					
In groups interviewed	186	41	245	196	116
Average group size	5.0	4.6	4.9	5.3	4.5
Estimated total for all groups	186	41	245	233	174
Number of vehicles:					
Interviewed groups	N.A.	N.A.	N.A.	66	37
Estimated total for all groups				78	54
Average no. persons/vehicle				3.0	3.1
Place of residence:					
Metropolitan	83%		75%	94%	83%
Country	17%		25%	6%	17%
Intended length of stay:					
Day or evening only	20%			27%	38%
Camping (1 night)	74%		N.A.	46%	58%
Camping (2 or more nights)	6%			27%	4%
Method of capture:					
Drop nets	N.A.	N.A.	90%	97%	100%
Scoop nets			2%	7%	9%
Snares			8%	-	-
Time spent marroning prior to interview (ave. no. hours per group)	N.A.	N.A.	N.A.	3.8 hrs	2.0 hrs
Average no. legal marron per group	N.A.	N.A.	3.5	8.1	1.1