OBJECTIVES, PRIORITIES AND METHODS FOR BIOLOGICAL SURVEY IN FORESTS OF THE SOUTH-WEST

Discussion Paper Prepared by

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INTRODUCTION

Biological survey work based from Manjimup has until recently concentrated on brief surveys of vertebrate fauna and vascular plants to provide a general pattern of distribution in the southern forest areas.

We have recently begun to direct our survey work to providing answers to specific management problems. These may be problems perceived by;

1. research (eg. are we burning certain areas too often?),
2. by planning (eg. management plan must be based on sound data or
3. by district (eg. how can we marry the requirements of protection with the requirements for conservation?).

The form of the final question posed for the biological survey however has and will continue to be from Research Branch following considerable liaison with District and possibly Planning Branch.

In what of our future direction and how can the two main bodies for survey work in the state be better integrated for future biological survey? This brief discussion paper lists the aims and priorities for survey work in the forested south west as perceived by Manjimup Research Branch.

AIMS

The detailed aims of a particular survey will vary depending on the particular area to be surveyed and by definition on the particular questions that the survey wishes to answer. However, some general comments can be made about the aims of biological survey work planned for the southern forest areas.

Fire is an important component of the forested environment in the south west. It is also readily available and widely used as a management tool. While fire is important in the maintenance of natural systems in the south west, it can at times, be a threat to life and property. Hence a major thrust of our survey work needs to be directed towards questions concerned with fire, and we consider that the following are primary aims of our biological survey work.

1. To determine the likely range of pre-european and current fire regimes for particular areas or reserves
2. To determine the fire climate in terms of the threat of unwanted fires to both human and conservation values

i. To determine the relationship between certain vertebrate species, habitat parameters and flora in major vegetation associations and/or landform soil units.

ii. As for i., but for vascular plant species.

iii. To provide a list of species by vegetation association, landform soil unit or by burning age.

iv. To provide baseline biological information to assist with the preparation of management plans and prescriptions.

v. All to do this in a cost/effective and safe manner.

In addition to these biological aims of survey, we also aim to

i. promote awareness of conservation among operation staff,

ii. involve interested individuals from the wider community in the preparation of management plans for reserves.

This helps to expand our available resources as well as being a public value in public relations.

Only in one survey (Walpole) have we aimed for a year round pattern of animal activity or abundance. This is a minimum requirement in a thorough biological survey. We have only been able to do this through the direct involvement of volunteers and the assistants in the survey. This will be an ongoing aim of our individual survey work.

[illegible] of relevance to our ongoing research programme.
[illegible]

a. The initiation of research into areas where we will be [illegible] more involved eg. fuel characteristics of contain- [illegible] ejection type.

b. Providing additional information to supplement an ongoing research programme eg. bird censusing at Walpole [illegible] implements a long term study in karri forest in the north of the karri belt.

[illegible]THOD

1. Choice of Area

[illegible] for survey in the forest belt as determined by [illegible] management, research or planning problems. Following [illegible] surveys in Dryandra and Walpole the main problem areas for [illegible] and flora/fauna are perceived to be the eastern forest [illegible] the extensive areas of severe dieback of western karri [illegible], and coastal areas. Actual survey sites within these areas will depend on specific issues (eg. land exchange or [illegible] pressure and management plan preparation).

Field Technique

Surveys are based on stratification and grid sampling by plots. This technique is used because of the availability of landform maps and site types and because of the relatively small scale-level of activities in forest areas eg. burning, logging, roads. Sampling has been based from roads where there is a high ratio of access time to survey time eg. Walpole. All measures are carried out at each of the plots within each stratified area. Each of the points are permanently located

Emphasis includes;

i. Animal trapping (pitfalls, elliots, cages).
ii. Bird censusing (5 min. point counts).
iii. Vegetation indicator species assessment (on a 0-5 rating. In some situations complete species lists are derived).
iv. Structural measures (eg. litter, cover by height category, basal area, heights, phytomass).
v. Site measures (eg. soil and landform).
vi. Fire history.

Animal trapping and bird censusing are done seasonally at each point. In addition searching is carried out to provide a general list of species from each of the main stratified sites.

3. Analysis

Analytical procedures for vegetation site typing and for fuel loadings are shown in the survey report for Dryandra.

TWINSPAN, ANOVAR and cluster analysis will be used for the first of the detailed animal surveys (Walpole) and for subsequent surveys it is intended to along the same lines.

4. Involvement and Number of Surveys

A large number of the staff at the research station are involved in each survey (3 professionals and up to 10 technical staff). Hence only one main survey can be planned for each year with follow up work throughout the year. This follow up work, as already discussed, will be largely carried out by local volunteers and by districts, although the continued involvement by our staff in field work throughout the year is acknowledged.

We are also requested to carry out brief surveys (eg. Bolbelup Block) concerning alienation and land exchange. If the area is large then they would be given a high priority for detailed survey work.

CONCLUSION

We judge the success of survey on the degree to which information is incorporated into management plans and operational prescriptions.

We have had good positive feedback from the Dryandra survey. Management has already digested the recommendations stemming from this survey and is currently putting the recommendations into practice.

Our aim is to ensure that survey data from the recent survey at Walpole should be central to the preparation of a management plan for the Walpole-Nornalup National Park.

Many techniques and methods are required to ensure that survey findings are incorporated into management plans.

i. written reports which may include scientific papers but which must include internal documents of wider appeal. In order to be useful to management these must include a list of final recommendations and summary.

ii. operational prescriptions derived from these recommendations.

iii. personal contact through meetings with District, Region and Protection.

iv. direct involvement in management plan preparation.

[illegible]ward branch must play a big role in;

1. pushing the need for detailed biological surveys prior to the production of management plans.
2. pushing the need to implement the findings and recommendations of biological surveys.

The achievement of real changes towards better management of the [illegible] areas is the goal to which all must continue to aspire i[illegible] biological survey work.