INTERNAL PROGRESS REPORT
RPP : 21/91
SUPERVISING SCIENTIST : Neil Burrows
TECHNICAL OFFICER : Karan Maisey
INTERNAL REPORT N^{O} : 1 / Final
DATE : 31/12/91

****

Final Report (Summary)

Fire Responses of Plants from Banksia Woodlands Vegetation Associations

---

This project was established in January 1991 following a hot summer fire in Yanchep National Park. Its main aim was to collect information related to the regeneration responses of species from the vegetation associations burnt in the fire. Fenced plots to exclude selective grazing either of a particular species as a preferred food or on the seedling or fresh regrowth stage. This information will be valuable for future management planning.

The project was also set up so that it could be used as a long term monitoring programme of current fire management practices. The sites incorporate the imposed fire regime as well as the vegetation association. The fenced plots should be maintained as part of the long term monitoring programme to provide information on the effects of grazing and fire regime on biomass.

The project was set up with co-operation from the Northern Forest Region and the Wanneroo District with the intention that their involvement would increase until it was being run as a long term monitoring programme by them, and Research involvement would end with a report on species' fire response at approximately five years post fire. Due to my impending transfer my involvement will now cease at the end of December 1991 and the project handed over to the Perth Region. Jeni Alford, Regional Ecologist and Lyndon Mutter, a Technical Officer with the Wanneroo District will co-ordinate, and the National Park Rangers from Yanchep National Park will continue to do the field work. I have made a few suggestions as to how the project could be run.

An information day was held at Yanchep National Park on December 18 for the National Park Rangers and other interested personnel. Discussions following this session identified areas of difficulty and outlined a proposal for continuing the project. The high turn over of staff at the park presents a problem with isation and continuity of the assessments. Anne Greig has sponsibility for co-ordinating the project and carrying out rk with assistance from another Ranger. Lyndon Mutter would available for field work and would provide some continuity ssment procedures and training of new staff. It was also d that a pool of volunteers be created to assist, especially periods when there is added pressure on the Park staff such as school holidays, fire season, and periods of high numbers of park visitors. Lyndon, Anne and the Regional Ecologist will need to keep

in close contact during the initial stages to make decisions regarding rationalizing time, either by dropping one or two vegetation associations or missing some months.

The initial plan is to carry out monthly visits to record the reproductive condition of all species in each vegetation association/burn regime and to do a presence/absence and abundance assessment during the peak flowering periods of spring and autumn. It would also be valuable to continue the photographic record. The data would be stored in files until Yanchep Park receives a computer. An interactive program will be developed for data input and report production.

EXPERIMENTAL DESIGN

Due to budget and time restrictions the final design varies from that proposed in the Research Project Plan.
There are eight sites. At each site there are three 10m X 10m plots marked. One of these plots has been fenced to exclude grazing by large herbivores. (There are five plots, including two exclusion plots at the Banksia woodland-no planned burn site.) The exclusion plots have star pickets at the corners. The open plots are marked at each corner by a fence dropper. Each plot has an aluminium tag with the plot name and number engraved on it. A photo point five metres from one corner point is also marked with a fence dropper.

Assessment

Presence/absence and reproductive stage were recorded at one or two monthly intervals for the first year.
Seedlings and resprouted stems were also marked for identification.
Samples were taken for a field herbarium.
Photographic record begun.

RESULT

Results to date are not comprehensive as there has been only one growing season. Although some 180 specimens have been collected, many of these, especially seedlings have not been identified. Often these were annuals which have matured, flowered and dried off between assessments. It is possible that many of these can be identified in subsequent years, although it will be important to make frequent visits during the main flowering season of late August to early October. The initial regeneration responses of plant taxa to the hot fire have been recorded. Information on survival will be gathered in subsequent years.

A field herbarium of plant specimens has been started with samples of seedlings, resprouting growth and flowering specimens of the mature plant. I feel this will be an important area to add to as identification of seedlings and early growth would make post fire monitoring considerably easier.

The photo points are to be done annually, usually during the peak flowering season which is also the end of the growing season. The photo points have been taken three times during the first year.

The data collected so far has been entered onto a DBase data file which produces a simple matrix of plant taxa by several attributes such as vegetation association, fire response and flowering period. I have suggested the data from each assessment be entered onto a computer database as it is collected. This will prevent a backlog of data to be entered, and associated problems, as well as providing the Rangers and others involved with some feedback.

FINANCE AND EQUIPMENT

All of the equipment purchased for the establishment of the plots was paid for by the Region. Some wire and posts which were not used are stored in the shed at Yanchep.
I would like to hand over the Herbarium materials to Yanchep so that the Rangers can continue to add to it. I have included an estimate of costs for various materials in the suggested project plan.

ARCHIVING

I have included maps, methodology and the first year's data in the project plan for Lyndon. I do not see a need to keep the RPP files open unless you feel this is necessary. There is no archive at Woodvale so I can destroy the files or send to Manjimup for archiving with other Fire Effects files.

Yanchep National Park Fire Response Project

Revised plan

prepared by Lyndon Mutter, Perth District

FIRE RESPONSES OF PLANTS FROM YANCHEP NATIONAL PARK VEGETATION ASSOCIATIONS PROJECT.

This project was established by CALM Wildlife Research in January 1991 after a hot summer fire in Yanchep National Park. The project has been run by Wildlife Research in 1991 and by Perth Districtsince the beginning of 1992. Advice is provided to the district by Wildlife Research as required.

The project is undertaken by Yanchep National Park rangers with assistance by district staff.
One ranger is primarily responsible for the project and aims to spend four days a month on the project.
Assistance is provided by other Park Rangers and the district officer responsible for coordinating the project when time permits.However to date it has been found difficult to devote sufficient staff time to achieve all of the original aims of the project and undertake the assessments necessary. As such the project is being rationalised so that it can be accomodated in the districts works programme.In addition the use of a voluteer or volunteers to assist in the assessments is currently being investigated.

ASSESSMENT

Regeneration Response

The list of species present in each plot will continue to be recorded along with their regeneration response i.e seedling and /or resprout. The identification of plants and cross referencing to the tag number will progressively be undertaken as the plants mature and flower.It is intended that plots be assessed for this purpose once every three months when the presence /absence of species is thoroughly assessed. At the same time approximately two to three days will be spent on upgrading the projects herbarium, identifying species not yet identified and inputing the data from the assessments into the data base.

Presence/Absence and Flowering Calender

Each plot will continue to be visited once a month and twice a month during the flowering period. However only flowering species will be recorded. A full presence/ absence assessment will be undertaken once every three months. Herbarium collections will be taken during the assessments to update the herbarium. The time of month assessments are undertaken will be varied from year to year so that over several years those species that have a very short flowering period will be recorded.The data collected will be recorded on assessment forms and entered into the data base at the same time the regeneration response data is inputed.The quarterly assessments will take ten days staff time (two staff for five days).This may be reduced to five days if

the use of volunteers is successfull.The monthly flowering assessments will take one days staff time.The time taken for assessments will be reduced as the staff become more familiar with the species.

Species/Abundance

An annual assessment of the abundance of each species will continue to be undertaken using the Domin method when one of the quartely presence/absence assessments is undertaken.This will involve an additional two to three days staff time depending on the success of volunteers.

Annual Review Of Results

A report reviewing the results and progress of the project will be prepared by the Perth District in January of each year.This review will involve two days staff time.

Lyndon Mutter - T/O Perth District
11-5-92

Photographic Points

Photographs from permanently marked point to be taken once per year during flowering season.

YANCHEP NATIONAL PARK FIRE RESPONSE OF VEGETATION ASSOCIATIONS PROJECT - WORKS PROGRAMME MAY 1992 -JUNE 1993.

May 1992 - Flowering Assessment - 1 day.

June 1992 - 3 monthly Presence/Absence and Regeneration Response Assessment - 5 - 10 days.
- Herbarium and Database - 2 - 3 days.

July 1992 - Flowering Assessment - 1 day.

August 1992 - Flowering Assessment - 1 day.

September 1992 - 3 monthly Presence/Absence and Regeneration Response Assessment - 5 - 10 days.
- Flowering Assessment - 1 day.
- Herbarium and Database 2 - 3 days
- Species Abundance Annual Assessment - additional 2 - 3 days. - Photographic Points

October 1992 - Flowering Assessment (twice) - 2 days.

November 1992 - Flowering Assessment - 1 day.

December 1992 - 3 monthly Presence/Absence and Regeneration Response Assessment - 5 - 10 days.
- Herbarium and Database - 2 - 3 days.

January 1993 - Flowering Assessment - 1 day.
- Annual Review - 2 days.

Febuary 1993 - Flowering Assessment - 1 day.

March 1993 - 3 monthly Presence/Absence and Regeneration Response Assessment - 5 - 10 days.
- Herbarium and Database - 2 - 3 days.

April 1993 - Flowering Assessment - 1 day.

May 1993 - Flowering Assessment - 1 day.

June 1993 - 3 monthly Presence/Absence and Regeneration Response Assessment - 5 - 10 days.
- Herbarium and Database - 2 - 3 days.

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Form CLM 80A

To: Neil Burrows
Woodvale

From: Karan Maisey
Woodvale

Your Ref:
Our Ref:
Enquiries:
Phone:

Subject RPP 21/91 Fire Responses of Plants from Banksia Woodlands Vegetation Associations.

Neil,

Christine Farrel asked me to prepare a report required for the RPP (initial report March 1992). I have given her a copy of the summary which I prepared after I had handed over the project to the Rangers at Yanchep National Park. Also attached is an outline prepared by Lyndon Mutter of how the project will be continued.

I have sent my data and a program to Yanchep which they can use to store the data and generate basic reports.

I have told Christine that the RPP can be closed.

Karan

Karan Maisey
T/O Fire Research