WESTERN AUSTRALIAN WILD LIFE AUTHORITY

POLICY

FIRE IN NATURE RESERVES

1975

DEPARTMENT OF FISHERIES AND WILDLIFE,
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POLICY ON FIRE IN NATURE RESERVES

AIMS

In the absence of a specific management plan for a particular reserve:

1. To manage the plant formations on reserves so as to provide diversity of floral composition and age both to regenerate the various species of plants and to provide the necessary habitats for animals.

2. To render wildfires more easily suppressible and thus prevent them from burning out the whole of a reserve or damaging adjoining property.

BACKGROUND

Natural bush in the south-west of Western Australia and on the mainland can withstand fires at certain intervals. Many species of plants require a fire before their seeds will germinate. Island reserves should not be burned without special reasons and research.

The desirable interval between fires depends on the climate and vegetation of the area as well as the habitat requirements of the animals in the reserve. In general the interval should not be less than about 5 years in high rainfall regions and probably not less than 12 to 15 years in medium rainfall (15 to 20 inches, 375 to 500 mm) regions. Under certain circumstances, e.g. the presence of animals requiring old, dense stands of shrubs, the interval should be even greater. Somewhat longer intervals than those mentioned above usually do no harm to the vegetation but usually lead to an increase in the fire hazard because of fuel build up.

Extended periods (i.e. many decades) without fire can lead to a dramatic change in the species composition and structure of the vegetation which may eventually be irreversible. This may lead to the area becoming unsuitable as habitat for some species of animals, especially those requiring dense stands of shrubs with a limited life span and needing a fire for regeneration.

Frequent fires lead to a general degradation of bushland because many plants are destroyed before they have set seed and are eliminated. Areas that are burned too often, especially ones that adjoin farmland, are invaded by weeds, especially introduced grasses, which in fact lead to an increased rather than a reduced fire hazard.

Prescribed burning for a reserve should be laid down in a management plan which is based on a knowledge of the species of plants and animals in the reserve, the rate and method of regeneration of the plants, the time before animals reinvade a burned area and the behaviour of fire in the various vegetation types and under different weather conditions. This information is only available for a few areas and in its absence the following generalisations are made.

PRESCRIBED BURNING

It is a basic rule that the total area of a reserve, isolated by farmland from other pieces of bush, should never all be burned at once. The reserve should be cut up into a number of sections by fire breaks and after boundary breaks are cut to protect adjoining property the sections should be burned in rotation. Thus, if a reserve is cut up into four sections and the aim is to burn the bush every twelve years, one section should be burned every three years. Such a plan should be modified if wildfires occur.

This simple case is not the ideal situation. It should always be the aim of a management plan to maximise diversity and the burning pattern should be as random as possible, in terms of burning frequency, season and intensity and in the pattern of blocks burned. Thus it may happen that some areas in a reserve are left unburned for comparatively long periods while others might be burned more often. Especially in larger reserves some areas away from boundaries should be left unburned indefinitely.

Where the most desirable burning rotation for wildlife management would result in an unacceptably high fire hazard, buffer strips can be established on the perimeter and if necessary through the reserve. These strips are burned at lesser time intervals, e.g. four to five years in the above case.

Burning can be carried out during Spring or Autumn. From the point of view of safety and suitable weather conditions Forests Department experience indicates Spring burning more appropriate in high rainfall areas while Autumn or Winter burns are more preferable in medium and low rainfall areas. From the biological point of view there is still much to learn concerning the effects of fires in

different seasons.

Where most of the plants regenerate from the old root system (lignotuber) observations suggest that Spring burning allows very quick regeneration and has little effect on the fruits lying on the ground from previous flowerings. Where many plants regenerate only from hard coated seeds (especially legumes, e.g. wattles and pea flowering species), a hotter late Summer or Autumn fire may be necessary for good regeneration.

METHOD

Prescribed burns should be carried out in mild or cool weather and under light wind conditions. After carrying out any protective edge burning that is necessary, fires should be lit on a grid pattern starting from the downwind area of the plot. In this way a number of small fires are started and they burn into each other before producing a great amount of heat or a wall of flame. The provisions of the Bush Fires Act must be complied with.

FIREBREAKING

The Western Australian Wildlife Authority has a policy of constructing and maintaining firebreaks on reserves vested in it. The Department of Fisheries and Wildlife is carrying out this work as funds permit.

PERMITS

Fires may not be started on flora and fauna reserves without permission of the Department of Fisheries and Wildlife.