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FORESTS DEPARTMENT

MANJIMUP FIRE RESEARCH Office,

To A.D.F.O. JONES

JUNE 20TH 19 73

Western Australia

MANJIMUP

Reference—H.O.

Local

SUBJECT: STIRLING RANGE PROJECT: PROGRESS REPORT

INTRODUCTION

The construction of experimental fire plots within the four sites chosen in Stirling National Park has been completed. Due to unforseen breakdowns of plant, the task took several days longer than was first contemplated.

The original plan called for the bulldozing of firebreaks around four sites, each 1200 x 800 metres in area. Each site was to be subdivided to contain twelve 200 x 200 metre fire-plots, the remaining area to be retained for future studies.

Selection of the sites was planned to include both north and south aspect, as well as steep and flat topography. They have been designated 1a and 1b for north aspect, and 2a and 2b for south aspect.

Forming of the plots was done by directing the bulldozer along a compass bearing taken from a measured base line. All tracks were taken down to mineral earth for one blade width, with the exception of those on the upper slopes of Site 2a. Here it proved impossible to do more than rip a narrow track through the rock of which these mountains are composed. Nevertheless all tracks should be capable of preventing the passage of fire across them.

Shortage of time as a result of the breakdowns permitted accurate measurement only of Sites 1b and 2b. Sites 1a and 2a were measured only along their base-lines, i.e. the south boundary of 1a and the north boundary of 2a. All other measurements on these two sites are estimates.

Appendixes 1, 2, 3 and 4 show sketches of the four sites which have been scaled to both measured and estimated distances.

DISCUSSION

Soon after work commenced, it became apparent that the areas encompassed by the proposed site dimensions were far larger than the chosen sites could accommodate. Each site was, in fact, half as large again as the entire Strickland Rd experimental fire site.

It was considered that by halving the size of each site the area would still be adequate for the project. Eventually it was found that of the four sites only 2a and 2b were large enough to accommodate the reduced dimensions. At Sites 1a and 1b topographical problems necessitated even greater reductions in size. Some description of these two sites is warranted.

Site 1a

This site is bounded by a deep watercourse to the south, and extends through a slope in excess of 25° to near vertical cliffs in the north. To the west the gradient is too great to allow the use of machinery, while eastwards the terrain is steep and rocky, and is further curtailed in area by the watercourse which here swings to the east.

The northern side of the site follows the edge of a one-year-old burn which appears to be the result of a hop-over from the burnt country south of the watercourse. The discovery of more burnt country in the northwest corner has further reduced the work area until there are now only ten fire-plots instead of the planned twelve. There is no possibility of extending this site for future studies.

Site 1b

This extends across a narrow neck of flat terrain between Ellen Track and the lower reaches of the watercourse that is the southern boundary of Site 1a.

By substantially reducing the proposed size, it was possible to fit the required twelve fire-plots into the site and leave a very small area at the north-west end for future study. There is no scope for further extensions to this site either, but a suitable alternative is located some three kilometres to the east along Ellen Track.

Water

Permanent supplies of water were not apparent within the areas traversed, and it may be found necessary to transport it for considerable distances. Fortunately due to the lack of a tree canopy, mopping up operations should be minimal where accessibility permits, but the location of any water points must be determined to ensure sufficient supplies are at hand should an emergency occur.

CONCLUSION

Sites 1b and 2b are both fully trafficable to vehicles in dry weather as are the lower slopes of 1a and 2a, but should the watercourse on the southern edge of Site 1a be in flow, this site will be inaccessible except by foot. The upper slopes of 1a and 2b are impossible for even four-wheel drive vehicles to climb.

Vegetation throughout the Park is thick, prickly, resilient and to judge by the great areas of denuded scrub, extremely flammable. There is no tree canopy to provide ground fuels and consequently apart from some grasses in the older areas, this portion of the fuel profile is almost negligible.

The primary available fuel consists of dead dry trash suspended among the vegetation itself, which the park rangers reiterate will not burn even on the steepest slopes without the presence of wind to drive it forward.

Assuming this to be the case, experimental burning will have to be carried out under similiar weather conditions. If assistance from mobile units is not possible on the steeper slopes, any escapes from the plots are potentially serious, and may prove difficult to control with hand tools.

The obvious solution is to try to burn the immediate surroundings of each site before the experimental work begins. Should the Park Board elect to have their rangers do the burning, every effort should be made to have the Fire Research officers concerned, either participate or observe. By doing so they would acquire some first-hand experience of fire behaviour in the Park which could be invaluable during the proposed experiment.

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