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FORESTS DEPARTMENT

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MANJIMUP RESEARCH Office,

To S.D.F.O. Kelers

13th April, 1981

Forests Department

Western Australia

Reference-H.O.

BUNBURY

Local

SUBJECT: CLEARING BURNS

Dear Charlie,

Following your comments at the recent Protection Branch meeting in Bunbury (8/4/81) re fire fuel accumulation, the following is a summary of the results obtained from our studies.

	TOTAL FUEL WT. (T/HA)	FINE FUEL WT. (T/HA)	MOIST. LOGS (%)	MOIST. BRANCH-WOOD (%)	MOIST. FINE FUEL (%)	(%) FUEL REMOVAL
TREATMENT 1	313	10	54	10	4	59
TREATMENT 2	307	20*	67	32	4	48

*Not 30 as may have appeared in an earlier report.

Both burns were carried out under similar, dry, warm conditions. Results may have been poorer if treatment 2 was burnt under milder conditions.

The important factor (given that the fuels have had at least 1 summers drying) is the weather conditions on the day of the burn (see report). The above table shows a difference of 11% of fuel removal between the treatments. I don't know whether this is significant in terms of clearing costs/delay time. It would appear not. It can also be seen from the above that the longer the downed fuel is unburnt the fire fuel component (in the flashy tops) steadily decreases by weight and flammability. The % removal figures suggest that this is partially offset by the increased dryness of the remaining, heavier fuels. In essence, the drier your heavy fuel, the less need there is for fire fuels. However, our studies were unable to determine the minimum acceptable level of fire fuel necessary for an acceptable level of heavy fuel removal. I would suggest that there is adequate fire fuel as a result of the chaining operation to provide kindling to recently chained (1 summer) bush. What is more

important is lighting technique and weather conditions during burning.

In essence, my earlier report concluded that the reason (or contributing factor) for the good fuel removal (in an area which had been chained only 3 months prior to burning, was the quantity of flashy fuels (red tops, scrub etc.). This study did not examine the effect of the quantity of littered fuels on burn quality, but if you could give me the location of the burns you spoke of I would be keen to assess them.

Regards,

Neil Burrows