FOREST FIRE CONTROL POLICY IN W.A.

by

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Western Australian Fire Control Policy is based on prevention by hazard reduction and classical techniques of pre-suppression and suppression.

Many of these policies have stood the test of time but there have been modification and developments from increased knowledge, new technology and sociological changes.

In this paper, comments are made on some of the more recent policy changes and on future changes which can be anticipated.

PREVENTION – by risk reduction.

Public education has largely developed as the province of the Bush Fires Board and Fire Brigade Board. However, there is a need for local education of school children and neighbouring private owners, by divisional staff. Consideration of fire causes and locations each season indicates where education is needed.

Bush Fire Brigade organisation in the South-west has shown marked improvement during the last decade but can benefit from guidance and encouragement from local foresters.

Law enforcement has become a stronger deterrent as Shires have accepted their responsibilities under the Bush Fires Act. Regular reporting to the Shires of fires adjacent to State Forest, has played an important part in obtaining Shire involvement.

PREVENTION – by hazard reduction.

Control burning has undoubtedly proved in W.A. to be one of the major tools of fire prevention. Rotational burning in hardwood areas has probably been the key to reduced fire losses evidenced over the past several years (see Table I).

The justification for and selection of burning frequency, intensity and season must still be based on the following criteria in order to balance cost against potential loss:

(i) isolation of high risk and high value areas;
(ii) reduction of forest crop damage by wildfire with broadcast rotational burning;
(iii) minimising fire risk in trade operation areas by advanced burning;
(iv) removal of dangerous fuel concentrations by top disposal burning, regeneration of cut over forest, and minimising possible plantation fire losses by subdividing large blocks with control burned buffers.

The balancing of cost against potential loss has been a subjective process which is in need of economic study but on the whole there have been few problems in selecting management objectives aligned primarily at protection of the tree crop and community assets. There is and will

be increasing demands for management to be directed specifically at flora and fauna protection, water production and recreational values. Eventually this will lead to precise area definition of management aims and hazard reduction techniques can then be directed accordingly. Until further knowledge indicates the need for reconsideration, present control burning practice will continue.

The major extension of areas control burned in recent years has been a direct result of greater understanding of fire behaviour, the factors influencing it and their use in predicting suitable weather. This understanding, which has come from research done by G.B. Peet and his co-workers, has placed Western Australia as world leaders in the use of controlled fire for forest fuel reduction as a fire prevention measure.

The application of this technique must always be preceded by careful planning and weighing of management aims, side effects, economic and aesthetic costs against fire preventions benefits to the multiple uses and users of State Forests.

The development of aerial ignition of control burns has reduced the cost and manpower component of control burning thus resulting in its extension to almost all State Forest – a most important aspect with the decline in available funds and men. The application of control burning under pine canopy is still in its infancy but holds considerable promise in reducing potential wild-fire losses and minimising expensive mechanical and chemical fire break establishment.

In both of these recent developments, policy has been declared, which of necessity must be conservative till research produces techniques which are proven reliable in practice. Unquestionably present practice and policy will be modified with the completion of Karri and Pine fire behaviour tables in the near future.

Fire weather forecasting which provides the data for fire behaviour prediction has this season been handed over to the Bureau of Meteorology.

In the past forecasts were prepared by a Departmental officer in a scheme initially developed and carried out by our present Conservator, Mr. Wallace, and followed for the last 20 years by Mr. Allan Hatch. The standard of internal forecasts was very high and certain changes in forecasting procedure have been made in an attempt to replace the local knowledge and experience of Mr. Hatch.

Forecasting Regions have been modified, local forecasts provided and 10.00 hours forecast confirmation introduced. The success or need for change in this scheme will be appraised at the end of this season.

It is intended that both Hazard and Fire Danger should be assessed from the forecast as the former is a better indicator of ignition potential and the latter a better indicator of fire behaviour after ignition.

PRE-SUPPRESSION

Man power-Training;
Equipment and Transport;
Detection;
Communications;
Water Supplies;
Road tracks and breaks.

Generally policies and procedures laid down in this section have seen little change recently and with the following exceptions are unlikely to change, as they result from many years of tried and proven experience.

Fire Suppression training has received greater emphasis under mock conditions. This has been necessary due to high employee turnover and reduced involvement of all staff and employees in suppression and hazard reduction. Principles have to be imparted rapidly often under class room conditions. Such teaching has its place but must be supported with "on the job" tests under capable supervision. Manpower and fund limitations are likely to demand the involvement of all personnel in fire control at some time and each person's value increases as his field of skills is widened.

Detection needs vary rapidly with time and Man's activities. Towers remain our key means of detection but whether coverage should be increased or decreased is best known locally and deserves local attention. It is likely with rising wages and capital costs that aircraft will displace at least in part, the fixed detection system. Daily awareness of tower detection effectiveness is essential with annual manning expenses in the vicinity of $60,000.

Communications have improved immensely with the introduction of V.H.F. equipment. The general aim towards a "complete" system envisages separate communication means for the four links of

(i) Lookout to Lookout or Headquarters:– telephone or radio telephone;
(ii) Headquarters or Lookout to gang:– V.H.F. channel 1, 2 or 3;
(iii) Fire to Headquarters:– V.H.F. channel 4, telephone or H.F.
(iv) Point to point round the fire:– V.H.F. channel 1, 2 or 3.

To this can be added the use of a fourth V.H.F. channel, for aerial burning. Two mobile V.H.F. repeaters should be in service by the 1971/72 season. H.F. radio and P.M.G. telephone will continue as the means of interdivisional communications.

Water supplies, roads, tracks and breaks have each received recent policy consideration and the current directives are unlikely to change for some time.

SUPPRESSION

Major changes have occurred in organisation procedures for large wildfires. The need for an adequate support organisation to fire fighters has been recognised for some time but only recently has its structure been defined and the duties of participants spelt out. The value of this has already been demonstrated and the defined limits of fire behaviour and size of suppression force at which it is introduced ensures that staff will be practiced in its application from year to year. A major test of fire organisation simulation was recently undertaken in conjunction with Civil Defence authorities and its success has highlighted a field in which further development can be expected. It can be applied to most aspects of fire control training. As control burning has been extended, so large fire frequency has dropped but this should in no way lead to complacency. Multiple fires under extreme weather conditions will continue as a threat which could at least briefly prove beyond the capacity of our suppression organisation.

Fire fighting equipment is becoming more sophisticated and use of fire retardant chemicals is increasing but successful fire suppression still depends on the skill and fire behaviour understanding of crews and officers.

It can be expected that cost plus loss calculations will be used to determine policy modifications in such areas as plantation expenditure on fire protection and hardwood control burning distribution and frequency.

In W.A. where successful forest management depends on fire protection all foresters must involve themselves in the application of defined policies.

TABLE 1

Year	Area of State Forest	Area of State Forest under Protection	Area Burnt by Wildfire on Protected State Forest	No. of Wildfires	Area Control Burnt
1951–52	3,441,951	1,954,550	52,468	324	228,000
1952–53	3,460,092	2,111,310	8,692	289	164,000
1953–54	3,462,239	2,312,000	12,500	324	416,921
1954–55	3,834,207	2,318,550	11,618	278	317,243
1955–56	3,891,687	2,411,870	18,685	313	344,596
1956–57	3,990,295	3,348,045	11,522	359	456,000
1957–58	4,169,090	3,402,352	33,617	530	316,800
1958–59	4,323,902	3,518,325	22,503	434	398,186
1959–60	4,329,514	4,102,616	2,640	232	503,472
1960–61	4,343,153	4,105,296	475,979	398	573,203
1961–62	4,347,956	4,107,710	66,689	463	1,199,820
1962–63	4,459,309	4,109,932	9,960	231	582,336
1963–64	4,459,038	4,112,279	21,455	281	890,552
1964–65	4,461,266	4,261,187	3,588	214	885,492
1965–66	4,448,827	4,448,827	6,158	251	735,179
1966–67	4,448,682	4,448,682	5,901	365	894,154
1967–68	4,451,351	4,451,351	4,774	248	1,096,142
1968–69	4,456,326	4,534,953	*32,432	252	1,013,448
1969–70	4,460,584	4,460,584	13,838	294	1,118,223

*17,500 acres occurred in one fire in an area not at the time subject to rotational Control Burning.