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A REVIEW OF

FIRE SUPPRESSION OPERATIONS

RESULTING FROM

CYCLONE "ALBY" APRIL 1978

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OCTOBER 1978

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A review of Fire Suppression Operations resulting from  
Cyclone Alby - April 1978.

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## INTRODUCTION:

One of the worst bush fire threats in recent times developed in the south-west of Western Australia on the evening of 4 April 1978, when strong winds from Cyclone "Alby" lashed the Western Australian coast from Geraldton to Albany.

A large number of fires escaped from normal burning operations. Many small fires were brought under control within the first few days; however, some of the larger fires were not brought under control until 11 April 1978.

Over this period 92 fires were recorded, burning a total of 48 700 ha. The area of State Forest burnt was relatively low - less than 7000 ha of hardwood and 280 ha of pine plantation. The area burnt could have been considerably greater had not many fires burnt into fuel-reduced areas where suppression or mop-up actions could take place, thus demonstrating the effectiveness of prescribed burning.

The strong winds and dust clouds generated by the cyclone grounded the fleet of 8 spotter aircraft, while reduced visibility also made the towers ineffective.

Suppression measures were further hampered by numerous country roads being blocked by trees and preventing rapid access. Further complications were brought about by breakdowns in communications and power supply equipment, lasting up to 48 hours.

The weather conditions, particularly high winds and dust cloud, combined with the number of fire outbreaks, were

# 1. WEATHER CONDITIONS

## 1.1 During the Season

Table 1. gives details of weather conditions leading up to the outbreak of fires on 4th April, for the period September 1977 to March 1978. Perth experienced its hottest summer on record, with an average maximum temperature of 31.9° C. (Normal average maximum summer temperature is 28.9° C. The previous record, 31.4° C, occurred in 1931/32). There were twelve days when the temperature registered above 37.8° C.

TABLE 1.

Weather Conditions September 1977 - March 1978  
(Average Figures in Brackets)

Perth		Rainfall	
		Perth	Pemberton
Sept.	Exceptionally dry.	29 (81)	72 (119)
Oct.	Above-average rain. Mean max. temperature 22.6 (21.2)	90 (55)	142 (94)
Nov.	Below-average rain. Mean max. temperature 25.5 (24.5)	12 (21)	39 (58)
Dec.	Hottest on record for Perth and very dry. Av. Max. 30.6. (30.3 previous record)	1.6 (14)	31.3 (38)
Jan.	Hottest on record for Perth and dry. Av. max. 33.3 (previous record 33.2). On 12 Jan. temp. reached 44.7, highest on record.	3 (8)	3 (20)
Feb.	Above average temperatures and above average rain - Perth mean max. temperature was 31.9 (Av. 29.9).	30.4 (11)	20 (18)
Mar.	Hottest on record and far below average rain - Perth mean max. temperature 31.8 (Previous record 31.1 in 1948).	5.6 (20)	14 (42)

## 1.2 Lightning Fires

During the period 7 January 1978 to 12 January 1978 a total of 32 fires occurred; of these 24 had been caused by lightning. During the 1977-78 fire season 98 lightning-caused fires were recorded; this is the greatest number on record since 1939-40. Previous peaks occurred in:

1960-61 - 85 lightning-caused fires

1961-62 - 62 lightning-caused fires

## 1.3 Cyclone Development

A large section of the south-west of Western Australia was affected on 4 April 1978, when the remnants of a tropical cyclone, "Alby", moved rapidly to the SSE across the Indian Ocean towards the coast. The centre of the storm was always over the ocean and it was nearest to land on the evening of 4 April, when it is estimated to have been 70 km SW of Cape Leeuwin.

Winds to storm force were reported and recorded in coastal areas; the highest gust was 150 km/h at Albany. Gales extended over a wide area up to 230 km inland.

## 1.4 Bureau of Meteorology's Tracking Problems

The Bureau of Meteorology had problems with forecasting in that only satellite data were available for tracking. The cyclone never came within the radar range. Observations from ships and land stations were the means used to study the intensity and future intensity of the storm.

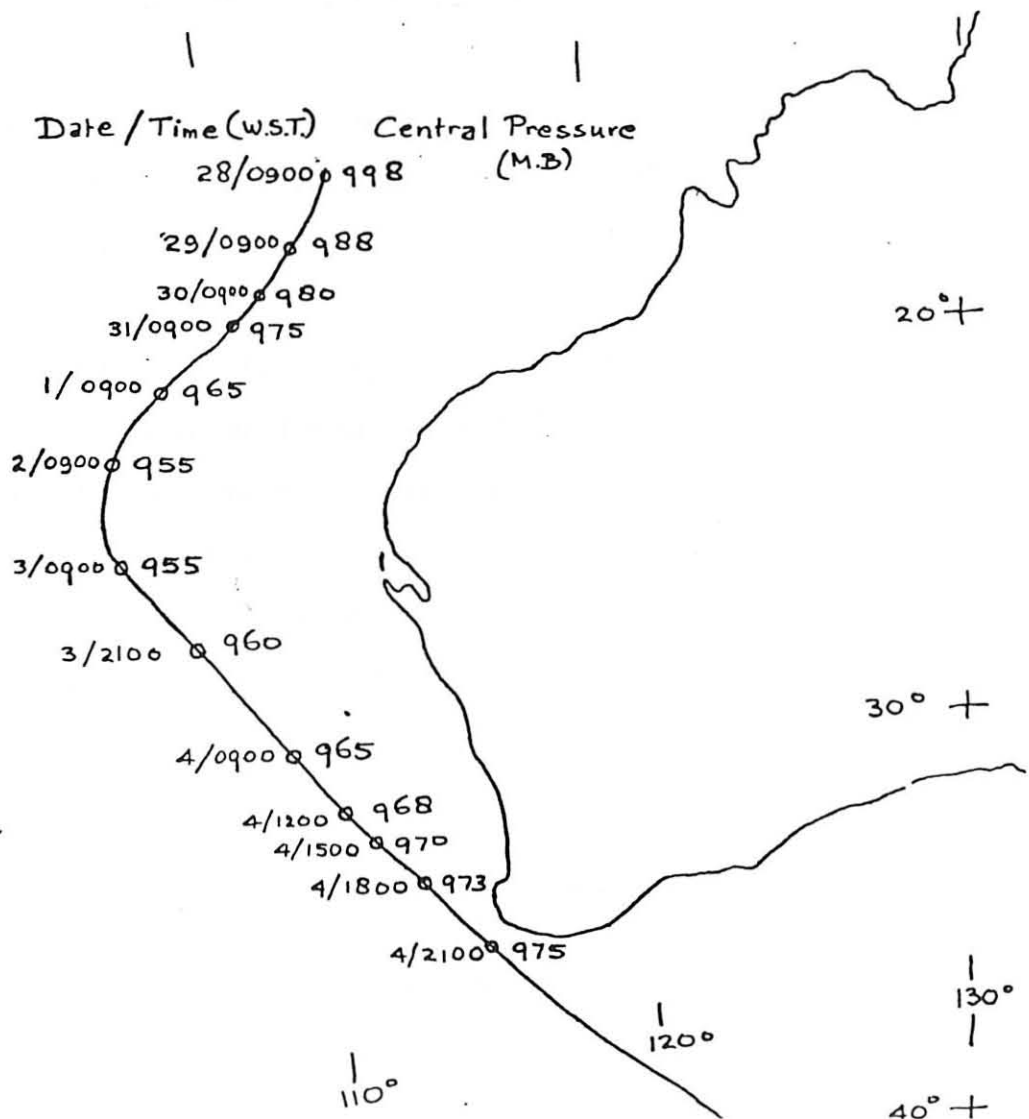
## 1.5 Origin and Movement

Tropical Cyclone "Alby" was a severe storm that had a lifetime of approximately eight days from 28 March to 5 April and travelled a distance of about 4,000 km during that period.

It was first identified as a tropical depression by satellite imagery on the morning of 28 March and was located some 800 km NW of Port Hedland. It moved slowly SSW and SW during the next few days and slowly intensified. The storm reached maturity on the morning of 2 April, with an estimated central pressure of 955 mb. The maximum winds near the centre were estimated to be 180 km/h.

After the cyclone reached maturity, the centre recurved to the SSE and weakened and on the morning of 4 April it was located 650 km NW of Perth. Satellite imagery indicated that there was no core of maximum winds near the centre and the system was changing into an extratropical depression.

The path of Cyclone "Alby" is shown in Figure 1. below:



During the morning, afternoon and evening of 4 April the storm continued moving SSE towards the Cape Leeuwin area and the gale-to storm-force winds were experienced over the south-west part of the State.

During the night of 4 April and early morning of 5 April the centre moved rapidly SE and finally lost its identity south of latitude  $40^{\circ}$  S.

The track of Cyclone "Alby" as given in Figure 1. showed no unusual characteristics and its path was climatologically normal for March and April storms. The speed of the movement was normal; however, a significant feature was the rapid acceleration of the centre on 4 April.

#### 1.6 Forecast Weather Conditions

The weather forecast supplied by the Bureau of Meteorology at 0745 h on 4 April 1978 shows that the situation had not been accurately assessed. However, this was rectified at 1000 when a revised forecast was issued. The seriousness of the Forests Department's situation was generally not appreciated until mid afternoon.

Forecast weather for the three stations Dwellingup, Kirup and Pemberton was:

##### For Dwellingup

Few showers, risk of thunderstorms, outlook becoming fine.

Time 0745 h - Time 1000 h

EMT  $29^{\circ}$  C EMRH 40% - EMT  $34^{\circ}$  C - EMRH 42%

1000 - 1200 h	Winds NE 15	-	Winds NE 30
1200 - 1400 h	" NE 20	-	" NE 60
1400 - 1600 h	" NE 25	-	" N 60
1600 - 1800 h	" NE 30	-	" NW 70



For Kirup (Bridgetown Forecast)

Patch rain, risk of thunderstorms, outlook a shower or two.

Time 0745 h		- Time 1000 h	
EMT 25° C	EMRH 40%	EMT 34° C	EMRH 42%
1000 - 1200 h	Winds E 10	Winds	NE 30
1200 - 1400 h	" E 15	"	NE 50
1400 - 1600 h	" NE 20	"	NE 60
1600 - 1800 h	" NE/E 30	"	NE 70

For Pemberton

Patchy rain, risk of thunderstorms, outlook a few showers.

Time 0745 h		- Time 1000 h	
EMT 24°	EMT 34° C		
EMRH 54%	EMRH 42%		
1000 - 1200 h	Winds E 10	Winds	NE 30
1200 - 1400 h	" E 15	"	NE 50
1400 - 1600 h	" NE 20	"	NE 60
1600 - 1800 h	" NE/E 25	"	NE 70

1.7 Actual Weather Conditions

The actual weather conditions over the south-west forecast areas are given below in condensed form. More details of actual weather readings, daily weather maps and details of daily moisture content record sheets are give in Appendix 1.

Weather Conditions

Tuesday 4 April

	<u>Dwellingup</u>	<u>Kirup</u>	<u>Pemberton</u>
T. Max.	32.9° C	na	30.2° C
RH Min. at 1500 h	57%	51%	53%
Winds 0900 h	N-10 km/h	S	E -2 km/h
1500 h	NW-40/60 km/h	Var W 40/50 km/h	NE - 2 km/h
Rate of Spread Index	53- 1000 m/h	na	36 m/h

Wednesday 5 April

T. Max.	21.6° C	20° C	18.4° C
RH Min. at 1500 h	50%	45%	60%
Winds 0900 h	S-12 km/h	S - 15 km/h	SE-10km/h
" 1500 h	SW-16 km/h	SSW 2 km/h	SE-14 km/h
Rate of Spread Index	25 m/h	na	Nil

Thursday 6 April

	<u>Dwellingup</u>	<u>Kirup</u>	<u>Pemberton</u>
T. Max.	21.3° C	20° C	17.9° C
RH Min. at 1500 h	35%	29%	60%
Winds 0900 h	Winds SE-12 km/h	SSE 10 km/h	SE 4 km/h
" 1500 h	S -12 km/h	SSE15/20 "	SSE10 "
Rate of Spread Index	14 m/h	na	nil

Friday 7 April

T. Max	22.9° C	23° C	21.5° C
RH Min at 1500 h	30%	42%	11%
Winds 0900 h	Winds SE-10 km/h	E 10 km/h	Calm
" 1500 h	" SE-10 km/h	SSW 5/10 km/h	S-10 km/h
Rate of Spread Index	23 m/h	na	23 m/h

Saturday 8 April

T. Max	24° C	23° C	21.4° C
RH Min at 1500 h	42%	34%	45%
Winds 0900 h	Winds ESE-20 km/h	ESE 20 km/h	E-10 km/h
" 1500 h	" SSE-10 km/h	ESE 5 km/h	E-12 km/h
Rate of Spread Index	42 m/h	na	8.7 m/h

Sunday 9 April

T. Max.	24.2 C	21° C	21° C
RH Min at 1500 h	33%	27%	48%
Winds 0900 h	Winds SSE- 8 km/h	SE 15 km/h	ENE 16 km,
" 1500 h	" SE - 6 km/h	SE 20 km/h	E 20 km/h
Rate of Spread Index	69 m/h	na	13.8 m/h

2. FORESTS DEPARTMENT ORGANISATION

2.1 Protection Policy.

The Western Australian fire protection system is designed to protect State Forest, but in doing so also protects community assets. As a part of that policy it provides a well trained and equipped suppression organisation capable of suppressing a number of wildfires under adverse conditions.

2.2 Manpower Resources

The suppression forces available total 662 persons as follows :

15 professional officers, 106 field staff, 40 clerical staff.

Total 161 persons

46 overseers, 350 wages employees, 41 mechanics

Total 437 persons

Also available - 16 professional research officers

48 research field staff

Total 64 persons

There are approximately 300 more people involved in administration at Head Office and at the regional centres.

2.3 Equipment Resources

Available immediately for suppression of forest fires:

- 36 light-duty gang trucks
- 52 heavy-duty trucks
- 36 tractors
- 9 graders
- 12 dozers
- 114 chainsaws (approx).
- 8 single-engine light aircraft for fire detection.

### 3. FIRE BEHAVIOUR

#### 3.1 Causes of Fires

At about noon on 4 April the first fires were reported to the Forests Department and by that evening a total of 57 had been reported in or near State Forest. Many of the smaller fires were contained within the first few days. However, a few larger fires were not brought under complete control until 11 April 1978, 7 days later. Over this period the number of fires recorded reached a total of 92. Of these it was believed that 66 could be classed as having escaped from various types of burning operations. Local authorities had issued approximately 680 permits for burning in the autumn period. Such fires were safe for normal weather conditions. However, what should have been a normal agricultural operation turned into a nightmare when strong winds blew debris from one area to another, spreading fire very quickly.

The Forests Department had carried out 25 burns during this autumn period; of these, 7 escaped, burning only 131.5 ha of State Forest.

Five fires occurred when State Energy Commission power lines touched each other, dropping sparks. This problem is believed to be aggravated when the lines sway in the wind and strike obstructions such as tree branches, which prevent the lines from swinging in unison.

Table 2 shows for each of the various causes of fires the direct divisional expenditure (including wages, plant and equipment) and the area burned.

TABLE 2.

	Number of Fires	Direct Expendit. Wages & Plant (\$ to Nearest 100)	Areas Burned (ha to Nearest 10)
Escapes from burning on private property	58	57 100	30 320
Tractors and machinery	1	14 800	3 030
State Energy Commission lines	5	12 000	2 690
Escapes from Forests Dept. burning operations	8	6 800	130
Sawmills and surrounds	4	1 200	250
Rubbish tips	2	900	10
Spotting from wildfires	4	500	20
Unknown	8	500	3 310
Deliberate and travellers	2	500	Less than 10
TOTAL:	92	94 300	48 760

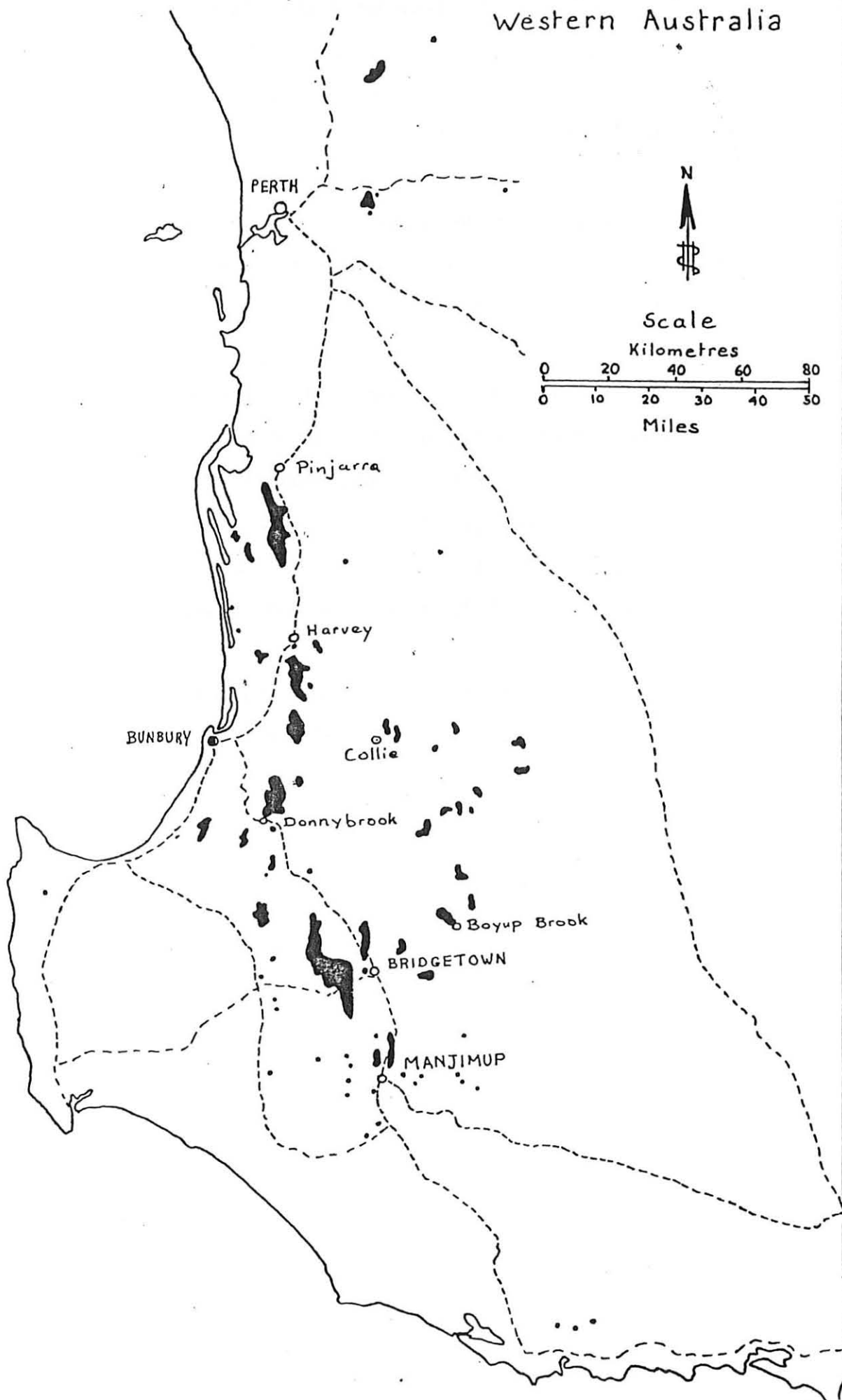
3.2 Number of Fires and Forces Committed

Figure 2. shows the location of the main fires in the south-west that threatened State Forest. The fires that caused most widespread damage to private property were the Donnybrook fire, the Maranup fire west of Bridgetown and the Palgarup fire north of Manjimup.

At Manjimup rates of forward spread of fires during the peak period were variously reported as travelling at more than 100 km/h. Elsewhere people reported fireballs racing across paddocks at 80 km/h and jumping from hill to hill. The winds were so strong that there were even reports of fires being blown out where they were burning in grass paddocks.

Fires reported to the Forests Dept.  
period 4 to 11<sup>th</sup> April 1978.

Western Australia



The threat of fire to the town of Manjimup was so severe that the northern part was evacuated. Other places where evacuation took place were the edges of the town of Boyup Brook, the area between Brunswick and Mornington, and to a limited extent at Parkerville and Glen Forrest in the Mundaring District.

Table 3 gives the number of fires recorded at each of the Department's headquarters and the number of fires attended by Forests Department suppression forces.

The Department also received assistance from other organisations such as the Army's 22nd Construction Squadron and Main Roads Department and council workmen who used heavy earth-moving equipment and chainsaws to clear roads littered with fallen trees. Fifty army men on exercises were sent to help at Collié and Harvey.

The Volunteer Bush Fire Brigades, other forest workers and local residents also played their part in putting out fires.

TABLE 3.

Number of fires reported and attended.

Region Division	Total Number of Fires Reported to Forests Dept.	Fires Attended by Forests Dept. Suppress. Forces	Fires Attended by Vol. Brig. and Local Residents
<u>Northern Region</u>			
Wanneroo	2	1	1
Mundaring	7	6	2
Dwellingup	3	3	-
Narrogin	<u>3</u>	<u>3</u>	<u>-</u>
Sub Total	15	13	3
<u>Central Region</u>			
Harvey	10	4	6
Collie	12	7	5
Kirup	20	10	10
Nannup	<u>3</u>	<u>2</u>	<u>1</u>
Sub Total	45	23	22
<u>Southern Region</u>			
Manjimup	25	18	7
Pemberton	4	4	-
Walpole	<u>3</u>	<u>2</u>	<u>1</u>
Sub Total	32	24	8
TOTAL	92	60	33

Table 4 gives details of the forces committed on the fire face. There were<sup>a</sup> considerable number of additional men not accounted for in this Table, who arranged supply, carried out intelligence on fire behaviour etc.



TABLE 4.

Forces committed on fire face.

(Figures for 4, 5 and 6 April are approximate only).

Date	Overseers	Wages Employees	Officers	Total
4/4/78	32	216	56	301
5/4/78	34	170	50	254
6/4/78	30	170	32	232
7/4/78	27	223	68	318
8/4/78	34	169	47	250
9/4/78	7	63	25	95

Appendix 2. lists the movement of suppression forces, the delay between the action call and their departure time, and the time when the fire was considered safe.

Table 5 provides a summary of all the fire reports received at Como Headquarters, the total number of fires active at the time of each report, and the number of fires the Department was involved in suppressing. Full details of the reports are given in Appendix 3.

TABLE 5.

Summary of fire reports.

Date	Time	Total No. of Fires	Active Fires*	No. of Fires with F.D. Involvement
4/4/78	1400 h	9	9	7
	1700 h	17	est. 17	n.a.
	1830 h	38	est. 38	n.a.
	2000 h	57	est. 57	± 24
5/4/78	0900 h	42	n.a.	15
	1600 h	52	31	21
6/4/78	0900 h	55	32	32
	1600 h	47	22	24
7/4/78	1000 h	28	4	22
	1500 h	17	3	14
9/4/78	1000 h	19	3	12
10/4/78	1000 h	11	4	9
11/4/78	1000 h	All fires safe and patrol only.		

\* Active fires threatening S.F. Mop-up and patrol not completed.

### 3.3 Area Burnt

The total area of all fires dealt with in this report reached 48 700 ha, with a perimeter of nearly 600 km. Losses suffered by the Forests Department can be considered light in view of the total area burnt.

Less than 7000 ha of native State Forest and only about 280 ha of pine plantations were burnt.

The success of the Department's prescribed burning

programme and of its suppression policy, together with the accompanying rain during the evening of 4 April and the morning of 5 April helped keep the area burnt to a minimum in those areas where the Forests Department had direct control.

However, damage to private property as a result of the fires was severe; 46 800 ha were burnt, and in addition some 830 ha of private plantation.

Table 6 shows the areas burnt (in hectares) broken down into figures for different types of property, for each of the Divisions where the fires occurred.

TABLE 6

Areas burnt (ha).

	Number of fires reported	Forests Dept. plantat.	State Forest	Private property plantat.	Outside forest estate	Total area
Wanneroo	2	-	-	-	811	811
Mundaring	7	-	494	-	836	1 330
Dwellingup	3	-	.0001	-	25	25
Narrogin	3	-	85.4	-	32	117
Harvey	10	-	-	50	14 568	14 618
Collie	12	5	2 507	400	9 150	12 062
Kirup	20	278	2 382	320	18 981	16 191
Nannup	3	1	1	-	53	55
Manjimup	25		1 000	60	2 279	3 339
Pemberton	4	-	85	-	40	125
Walpole	3	-	44	-	50	94
<b>TOTAL</b>	<b>92</b>	<b>284</b>	<b>6 598</b>	<b>830</b>	<b>46 824</b>	<b>48 767</b>

### 3.4 Fire Size Classes

To provide some indication of the seriousness of the situation fires were grouped into 8 fire size classes ranging from less than 1 ha to fires of more than 400 ha. It is notable that there were 39 fires covering 51 ha and over (Table 7), whereas for the preceding season from June 1977 to the end of March 1978 there were only 4 fires more than 50 ha in area.

TABLE 7.

Fire size classes.  
Final fires size (ha).

Division	Less than 1	1 to 5	6 to 20	21 to 50	51 to 100	101 to 200	201 to 400	More than 400
Wanneroo	-	-	-	-	1	-	-	1
Mundaring	-	3	1	1	2	-	-	1
Dwellingup	2	-	-	1	-	-	-	-
Narrogin	1	-	1	-	-	1	1	4
Harvey	-	-	1	-	-	1	1	4
Collie	-	1	2	1	-	-	3	5
Kirup	-	-	-	1	-	1	2	8
Nannup	-	2	-	1	-	-	-	-
Manjimup	-	8	3	3	1	3	1	2
Pemberton	1	-	2	1	1	-	-	-
Walpole	-	-	-	2	-	-	-	-
Number of fires in each class	4	13	10	11	5	6	7	21

### 3.5 Fire Damage

Two people lost their lives as a direct result of fighting the fires. One mill was completely gutted, and another was partly damaged. About 5 houses were burnt, as well as numerous sheds and outbuildings. Farmers suffered heavy losses of livestock which had to be destroyed because of

fire injuries, as well as considerable quantities of fodder, damages of fence line and crop losses due to wind damage.

Payments totalling \$2 447 300 were made by the State Government to people who suffered losses when Cyclone "Alby" struck. This is in addition to payments from the Lord Mayor's Distress Relief Fund, which granted \$540 000; about half of this amount took the form of subsidies for fence repairs.

4. EFFECTIVENESS OF PRESCRIBED BURNING

Suppression forces demonstrated a high level of competence and dedication during the cyclone in conditions made extremely difficult by gale-force winds and very rapid spread of fire.

The area burnt could have been considerably greater had not many fires burnt into fuel-reduced areas where suppression or mop-up actions could take place.

The following fires are those where a reduction of fuel through controlled burning helped to limit the final size of the fire.

Effectiveness of Prescribed Burning:

Harvey

Brunswick Fire P.P. 16. Ran 12 km before running out into 1977 aerial burn in Worsleys forest south of Brunswick River. Burnt 3760 ha, of which 320 ha were State Forest, 60 ha of Dept. pine plantation and 50 ha of private pine plantation.

Collie

Gervasse Fire C 60. Ran approx. 10 km before running out in 3 year old country. Burnt 2730 ha, of which 1320 ha were in State Forest, and 400 ha of private pine plantation.

Kirup

Marranup Fire K 27. Burnt 21 km through private property before stopping in 2 year old fuel in State Forest. Total area 5280 ha, of which 1000 ha burnt in State Forest and 270 ha in Forests Dept. pine plantation. Suppression measures on SW corner delayed until Saturday due to low priority.

## Kirup

Argyle Fire K 29. Ran 5 km before running out in 1 and 3 year old fuel. Total area burnt 400 ha, of which 370 ha were in State Forest. Suppression was delayed until Friday 7 April because of light fuel. Section on private property was put out earlier.

Bedford Fire K 33. Ran 4 km before running out in 3 months old fuel. Involved inspection only. Suppression and mop-up by brigades. Total area burnt 400 ha, of which 40 ha were in State Forest.

Donnybrook Fire K 36. Ran 10 km before running out in private property (orchards) near townsite. Burnt about 3500 ha of private property out of a total of 4000 ha. Contained on west side by 1 year old fuel in Donnybrook Block and on east side by 6 year old fuel in Lowdon Block. Suppression mainly brigades, mopping up by Forests Department and Army. Was a severe threat to Donnybrook.

Fire K 37. Ran 5 km before being stopped by local bush fire brigades. Total area burnt 800 ha, of which 770 ha were in private property. Suppression action by Forests Department delayed until Thursday 6 April due to light fuels.

Hester Fire K 41. Ran 3.3 km before being contained in 1 & 2 year old fuel. Joined up with Fire K 44, total area burnt about 800 ha of which 400 ha burnt on private property. Suppression by Forests Department delayed until Saturday 8 April 1978, initial suppression and holding by local farmers and brigades.

Manjimup

Yornup West Fire M 35. Ran 3.7 km before running out in 1 year old fuel. Burnt a total of 290 ha including 160 ha of State Forest and 70 ha of private property pine plantations.

Nannup

Scotts Fire. Ran 1.6 km before running into 1 year old fuel on the east side, which enabled effective attack in the private property to prevent fire entering pines.

Seven of a total of 27 small fires escaped from Forests Department burning. The total area burnt was 131 ha.

Fuel age plans of the following major fires are given in

## Appendix 4:

Mundaring	160.	Plan - Fire M 31, M 32.
Brunswick	160.	Plan - Fire H 16, and Co. 60.
Kirup and Collie	160.	Plans - Fires K 36, K 29, K 33, K39, K32 and Fire Co. 58.
Manjimup & Kirup	160.	Plan - Fire K 30 and K 27.



REFERENCES:

Forests Department - Form F.D. 434 (1976).

Summary of Fires Attended

Period 4/4/78 to 11/4/78.

Forests Department - Form F.D. 304/1976.

Fire reports all fires covered during period.

Forests Department - Situation Reports received at Como.

Forests Department - Fuel Age Plans.

Bureau of Meteorology - Monthly Weather Review, Western  
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Extracts from newspaper articles "West Australian",  
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J.C. Foley, Study of meteorological conditions associated  
with bush and grass fires and fire protection strategy in  
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Bulletin No. 38 - 1947

Commonwealth of Australia Bureau of Meteorology.

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## ACTUAL WEATHER READINGS

## DWELLINGUP

Date 1978	Time	Dry Bulb	R.H	Dew Point	Wind Direct & Strength	Cloud	Rain	Bar	To-days Max Temp
2/4	0900	17.7	50	7	ESE 4	Clr Sky	-	1013.0	
	1500	29.7	32	11	W 14	Clr Sky	-	1010.8	31.3
3/4	0900	18.7	44	6	SE 10	Clr Sky	-	1019.7	
	1500	28.6	32	5	E 14	1/8 Ci	-	1015.8	29.2
4/4	0900	23.4	51	14	N 10	2/8 S Cu	-	1005.4	
	1500	28.1	57	18	NW 40/60	8/8 F St	-	997.8	32.9
5/4	0900	17.3	81	14	S 12	7/8 S Cu	8.4	1015.5	
	1500	20.8	50	10	SW 16	6/8 S Cu	-	1017.7	21.6
6/4	0900	13.8	58	6	SE 12	Clr Sky	-	1026.7	
	1500	20.1	35	4	S 12	1/8 W	-	1023.6	21.3
7/4	0900	12.8	63	6	SE 10	Clr Sky	-	1025.3	
	1500	22	30	4	SE 10	" "	-	1021.3	22.9
8/4	0900	14.1	80	11	ESE 20	3/8 Cu	-	1018.5	
	1500	22.8	42	10	SSE 10	5/8 Cu	-	1014.9	24.0
9/4	0900	15.4	61	8	SSE 8	3/8 A Cu	-	1016.5	
	1500	23.5	33	7	SE 6	2/8 Cu	-	1013.8	24.2
10/4	0900	14.7	70	9	SE 14	Clr Sky	-	1018.0	
	1500	26.4	28	7	SES 20	Clr Sky	-	1014.1	27.3
11/4	0900	19.6	48	8	NE 14	3/8 Al W	-	1016.5	
	1500	30.2	25	8	Se 20	2/8 Al S	-	1012.7	

## ACTUAL WEATHER READINGS

PELBERTON

Date 1978	Time	Dry Bulb	R.H	Dew Point	Wind Direct & Strength	Cloud	Rain	Bar	To-days Max Temp
2/4	0900	17.5	90	16	NE Calm	Clr Sky	-	1016.1	
	1500	23.7	83	21	SW 10	3/8 Cu	-	1014.1	24
3/4	0900	18.9	72	13	NNE 6	Clr Sky	-	1021.5	
	1500	29	55	19	NE 4	Clr Sky	-	1016.6	29.2
4/4	0900	16.4	89	15	E 2	4/8 A Cu	1.4	1006.8	
	1500	28.2	53	18	NE 2	4/8 A Cu	-	999.9	30.2
5/4	0900	16.5	93	14	SE 10	6/8 S Cu	-	1015.9	
	1500	16.2	60	8	SE 14	8/8 S Cu	-	1022.4	18.4
6/4	0900	11.7	92	10	SE 4	8/8 S Cu	0.4	1028.1	
	1500	16.5	60	6	SSE 10	8/8 S Cu	-	1027.8	17.9
7/4	0900	14.9	70	9	Calm	7/8 S Cu	-	1026.4	
	1500	20	11	11	S 10	6/8 S Cu	-	1024	21.5
8/4	0900	13.3	84	11	E 10	6/8 Cu	-	1020.8	
	1500	20.5	45	8	E 12	5/8 Cu	-	1018.0	21.4
9/4	0900	15	78	11	ENE 16	5/8 Cu	-	1020.0	
	1500	20.6	48	9	E 20	6/8 Sc	-	1017.3	21
10/4	0900	14.8	83	12	ENE 10	5/8 Cu	-	1020.5	
	1500	22.5	48	11	E 24	Clr Sky	-	1016.2	23.3
11/4	0900	16.9	70	11	NE 12	3/8 Cu	-	1017.6	
	1500	29.5	28	8	NE 14	3/8 Cu	-	1015.1	

## KIRUP

Date 1978	Time	Dry Bulb	R.H	Dew Point	Wind Direct & Strength	Cloud	Rain	Bar	To-day: Max Tem
2/4	0900	21	53	11	NE 5	Clr Sky	-		
	1500	30	26	8	E 10	Clr Sky	-		30
3/4	0900	19	59	11	ENE 5	Clr Sky	-		
	1500	28	28	8	ESE 15	Clr Sky	-		25
4/4	0900	19	76	15	S 5	8/8 Ci St	-		
	1500	28	51	17	Var W 40/50	All dust			
5.4	0900	16	69	10	S 15	7/8 Cu	-		
	1500	18	45	6	SSW 2	2/8 St	-		20
6/4	0900	12.5	59	5	SSE 10	Clr Sky	-		
	1500	18	29	-1	SSE 15/20	Clr Sky	-		20
7/4	0900	14.5	52	5	E 10	Clr Sky	-		
	1500	21	42	7	SSW 5/10	2/8 A Cu	-		23
8/4	0900	14.5	62	7	ESE 20	2/8 Cu	-		
	1500	21	34	5	ESE 5	2/8 Cu			23
9/4	0900	14.5	57	6	SE 15	Clr Sky	-		
	1500	21	27	1	SE 20	Clr Sky	-		21
10/4	0900	16	55	7	ENE 15/20	Clr Sky	-		
	1500	24	28	4	SSE 20	Clr Sky	-		25
11/4	0900	19	38	4	Var E 10	2/8 A Cu	-		
	1500	30	21	5	NNE 15	4/8 Cu	-		

# DAILY WEATHER MAPS




1000 K (00 GMT)

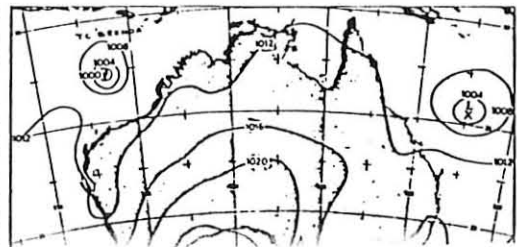
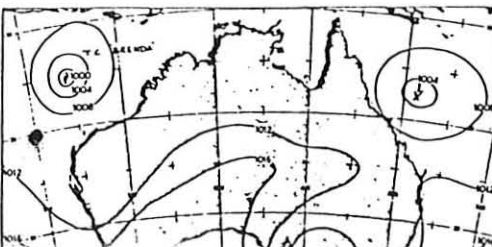
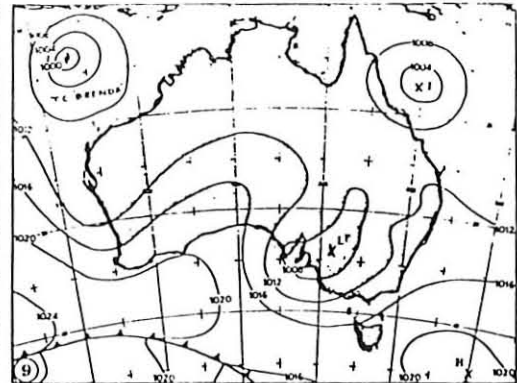
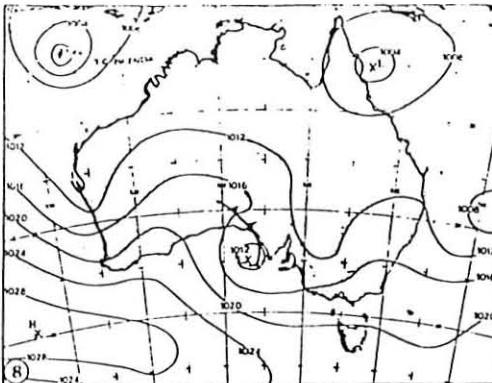
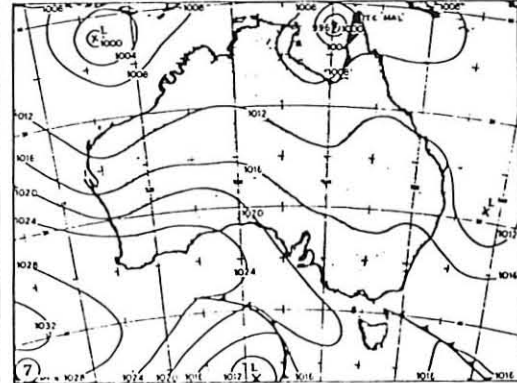
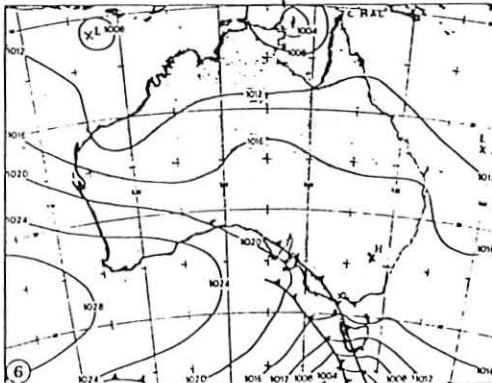
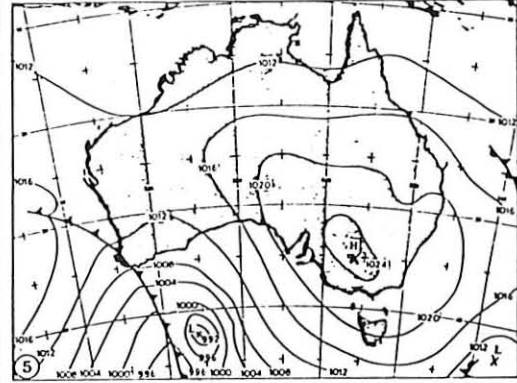
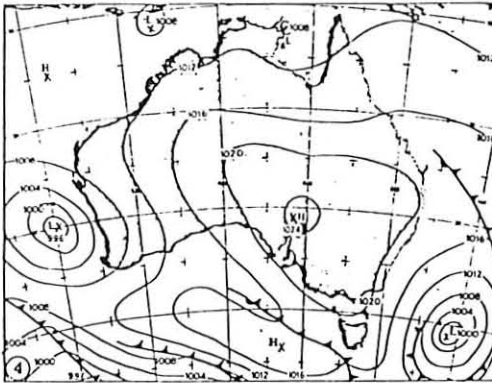
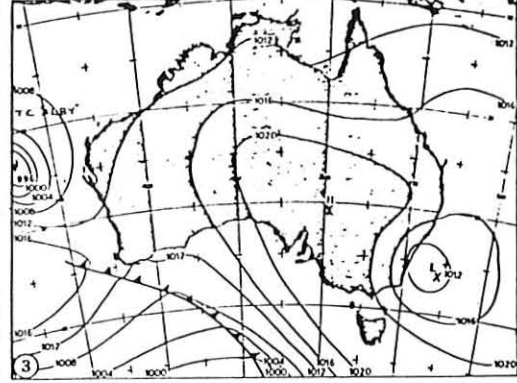
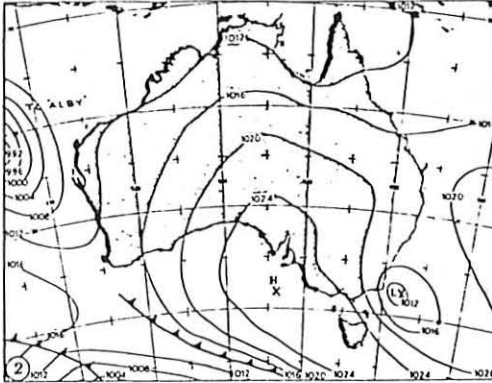
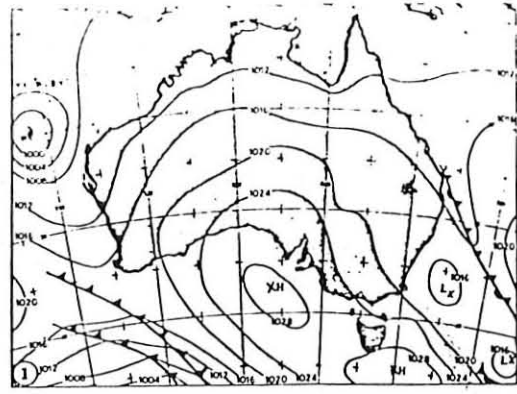
1-30 April 1978

Dates are ringed left-hand corner of each map.

## LEGEND

Isobars are drawn at 4 mb intervals

-  Cold Front
-  Warm Front
-  Occlusion



## STATION DWELLINGUP - (NORTHERN JARRAH)

DATE	MAX SMC at 8 am	MIN SMC at 3 pm	ACTUAL WINDS km/hr	MAXIMUM ROS INDEX METRES/HOUR
2/4/78	9%	6% A	20-28	71
3/4/78	15%	8% A	15	32
4/4/78	10%	18% A	25-120	53-1000 >
5/4/78	21%	14% A	20-25	25
6/4/78	32%	21% A	15-20	14
7/4/78	18%	10% A	10-15	23
8/4/78	16%	12% A	20-25	42
9/4/78	14%	10% A	30	69
10/4/78	14%	9% A	25	53
11/4/78	11%	7% A	25	72

Taken at Dwellingup headquarters at height of 20 metres above ground level.

DETAILS FROM DAILY FODTURE CONTENT RECORD SHEETS

STATION P. MBERTON -

DATE	Northern Jarrah		Winds used	Southern Jarrah		
	Max SMC at 8 am	Min SMC at 3 pm	3pm Forecast Max ROS Index Mt/hr	Min SMC	Available Fuel	Max ROS
2/4/78	16%	9% A	53	10	0.8	88
3/4/78	18% A	12% A	26	13	1.0	55
4/4/78	39% Est	28% Est	110 Extpl	31	-	36 <sup>Extpl</sup>
5/4/78	113% A	104% A	< 11 Extpl	110	-	Nil
6/4/78	89% A	64% A	3	70	-	Nil
7/4/78	50% F	16% F	14	18	-	23
8/4/78	29% A	12% A	26	20	0.3	8.7
9/4/78	16% A	14% A	22	15	0.3	13.8
10/4/78	9% A	13% A	19	16	0.3	12.6
11/4/78	15% A	8% A	47	13	0.5	52



Movement of Forces						From FD 304/1976	Manpower				
Division	Fire Serial No	Action call		Departure		Fire under Control	Fire Safe	O/S	Men Adm. Total		
		Date	Time	Date	Time						
Harvey	16	4/4	1440	4/4	1455	7/4	9/4	2	14	6	22+
	17	4/4	1600	4/4	1610	1900	1745	1	6	2	9
	18	4/4	1745	4/4	1745	-	5/4	1	2	2	5
Dollie	56	4/4	1219	4/4	1240	1253	1325		2	1	3
	57	4/4	night	5/4	0600	-	-	1	7	1	9
	58	4/4	"	5/4	0600	-	1745	1	7	1	9
	59	4/4	"	5/4	0600	-	-		6	1	7
	60	5/4	0635	5/4	0830				1	2	3
	61	5/4	not attended								
	62	4/4	2000	4/4	2015	2135	2215		3	1	4
	63	6/4	0630	6/4	0635		1300	1	4	1	6
	64	4/4	not attended								
	65		not attended								
	66		not attended								
Group	27	4/4	1100	4/4	1100	-	-	9	100	15	
	28								Farmers	30-50	209
									1	6	1
										20-30 Brigade	38
	29	5/4									
45	11/4	1255	1255		Red Action						
46	11/4			1715	1905	2000		1	4	5	
Annup	16	4/4	1340	4/4	1345	2000					
	17		See K27					na	na	1	na
	18	4/4	1900		1905			1	na	-	na
	19	4/4	1948					na	na	na	na



Movement of Forces

Manpower

Division	Fire serial No.	Action call		Departure		Fire under Control	Fire Safe	Supp	Adm			
		Date	Time	Date	Time				O/S	Men	Off	Total
Benjimup	18	4/4	1900	4/4	2100			2	8	4	14	
		7/4										
	19	4/4	2000	5/4	0700	1400		1	6	3	10	
	20	4/4	1945	4/4	2100							
					5/4	1000	1400	1400	1	3	1	4+
												B.F.B. farmer
	21	5/4	0900	5/4	0900			-	-	1	1	
					6/4	1100	1400	1400	1	3	-	4
	22	5/4	....	5/4	2200			-	-	1	1	
					6/4	0800		1350	-	3	-	3
	23	4/4	....	4/4	2100						1	1
					5/4	0530	0840	1200	2	8	-	10
	24	5/4	0830	6/4	0800						1	1
					7/4	1300			1	2		3
	25	5/4	0822	7/4	0800	1700			1	4	1	6
					8/4		Patrol only				1	1
					9/4		Patrol only				1	1
	26	...	....	5/4	0530		(Officers as advisors only)				2	2
	27	5/4	Evng	5/4	1000		Check & patrol				1	1
	28	5/4	....	...	1200			....	1	5	1	7
	29	4/4	2000	5/4	1500	1800				5	2	7
					8/4	1400			2	11	1	14
	30	5/4	0741	5/4					1	4	1	6
					6/4				1	4		5
	31	5/4	0800	...	1100				1	11	1	13
	32	...	0830	...			Inspection only				1	1
	33	5/4	0830	5/4	1235				1	3	1	3
	34	5/4	1036	5/4			Investigate only				1	1
	35	5/4	1117	5/4			" "		1	4	2	7
					6/4				2	8	1	11
					8/4				1	4	1	6
					9/4				1	4	1	6

SOUTHERN REGION

Division	Fire serial No.	Movement of Forces					Manpower					
		Action call		Departure		Fire under Control	Fire Safe	Supp	Adm		Total	
		Date	Time	Date	Time	Time	Time	O/S	Men	Off		
Tanjimup	M36	5/4	1210	6/4	0600			1	8	2	11	
				7/4	0600				2	2	4	
				9/4	0800			1	6	1	8	
	M37	4/4	See Fire Reports Kirup K27									
	M38	5/4		6/4		1250				1	1	
	M39	5/4		6/4		1630				2	2	
	M40	5/4		5/4				1	3	1	5	
M41	5/4	1215	5/4						1	1		
Pemberton	28	5/4	0735	5/4	1445	6/4 1400	6/4 1630	1	4		5	
	27	4/4	1815	4/4	1900	5/4 0100	1800	1	4	4	9	
	30	5/4	0730	6/4	1130	1230	-	3			3	
	31	5/4	0800	5/4	1030	1800	1700			4	4	
Walpole	6	4/4	1300	9/4	1300	1600	-	1	9	1	11	

FIRE REPORT 1400 hrs. - 4/4/78

Wanneroo - 1 fire - 2½ km from SF - FD + Shire  
Mundaring - L.F.O. - Shire rubbish tip - FD + Shire, threatening P.P. - no details.  
Dwellingup - 1 fire - P.P. adjacent George Block - O.K.  
Narrogin - 3 fires - Penny Block S.F. - 12 yr. old Fuel - no details.  
Kirup - Red Action Fire - Hewitson Road - East and West.  
Collie - 1st Fire in P.P. at Macalinden - no assistance.  
- 2nd Fire  
Harvey - committed at clearing burn.  
Nannup - 1 Fire - F.D.  

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9 Fires - F.D. committed at 7.

FIRE REPORT 1700 hrs - 4.4.78.

Wanneroo - 1 - Yanchep Road - 23-26 m Peg. Shire + F.D.  
Mundaring - 1 - Zamia - M 31 Shire + F.D.  
- 2 - Talbot - P.P. Chesters Brigades in attendance  
- 3 - Moondyne - Avon Valley  
- 4 - Julimar - No data M34  
Dwellingup - 1 - George - East of Dwellingup -  
- 2 - Coolup - townsite - Shire do not need help 1655  
Harvey - 1 - Brunswick- All H. duties committed.  
Collie - 1 - N.E. of Collie - EM 72 (PP) Reece  
- 2 - Boolading - EP 96 (PP)  
- 3 - MacAlinden E.E. 79 (PP)  
Kirup - 1 - Southampton - G.B.61  
- 2 - Cundinup - FT 50 (PP)  
Nannup - 1  
Narrogin - 1 - Penny - near S F  
- 2 - Dryandra camp  
- 3 - South - S.E. of Dryandra

---

17 Fires

FIRE REPORT - 1830 hrs - 4/4/78

Wanneroo	1	Yanchep Road	- Running fire stopped 1615 hrs.
Mundaring	M31		- under control and mopping up.
	M32		- out of control - FD att. Shire fully committed
	M33		- May cross the Helena River.
	M34	Julimar	- FD reconnais. - Brigades attacking.
Narrogin	1	Penny	- Serious - grader & D8 hired all committ.
	2	Dryandra Camp	- U/control - mop up.
	3	South Block	- mop up - brigades.
	4	DA 117 P.P.	- Farm property advised help not avail. Brigad.
Dwellingup	1	George Block	- under control - brigades mopping up 2 gangs committed at Research Burn.
Harvey	2	Fires in S.F.	- no data.
	1	Brunswick	- all troops committed.
Collie	1	P.P.	- No F.D. commitment.
	2	P.P.	- No F.D. commitment.
	3	P.P.	- No F.D. commitment.
	4	Hoddle	- No F.D. commitment.
	5	P.P.	- Lowden Block EW 52
	6		- Wellington Settlement EP 55
	7	Lowden	- H.W.51 burning into 1 yr. old Fuel no one att.
Kirup	5 or 6	Southampton Road Marinup Fire - Gundiup Road.	
Nannup		No communications	
		<u>Reports received 2025 hrs.</u>	
Busselton		Nil fires	
	1	P.P. fire at Capel	- serious, evacuation - not F.D.
Manjimup	10	Fires out of Control	- 1 fire threstening Manjimup.
Pemberton	1	Fire N.E. of Town	- burning into 2 yr. old A/c.
	38	fires	

Wanneroo 1 Fire in P.P. & Nat. Park - Stopped and mopping up prog. F.D.

Mundaring 7 Fires total  
 3 fires attended by Forests Dept. 31, 32, 34  
 2 fires no action taken Avon Valley & Pieces Brook.

Dwellingup 1 Fire - safe and left.

Narrogin 1 Fire - stopped and being mopped up.  
 several other spots reported no details of size or severity.  
 =====  
 10 Fires - F.D. committed at 5 Fires.

Harvey 5 Fires - F.D. attending 3, Brunswick Pltn.  
 Fallamulla Pltn. & Nt. of Myalup Pltn.

Collie 9 Fires - All started on P.P. - F.D. can assist with  
 5 - Shire to handle 2 - require addit. ass. for 2

Kirup 9 Fires - F.D. attending 4, K27, K30, K32, K35.

Busselton 1 Fire - Capel now F.D. Problem.

Nanmup 5 Fires - F.D. committed at 3.,  
 =====  
 29 Fires - F.D. committed at 16 Fires.  
 Report from Manjimup 0400 - 5.4.78.

Manjimup )  
 Pemberton ) ± 18 Fires - 3 Fires still running after 5 mm rain  
 approx. 15 other fires.

---

Total: 57 Fires - F.D. committed at ± 24.

FIRE SITUATION REPORT - 0900 hrs - 5.4.78

Wanneroo 2 Fires - Attended by Shire - contained & Patrol.

Mundaring 5 Fires - F.D. involvement with 2 fires M32 and M34.  
- M31 completely blackout.

Narrogin 2 Fires - F.D. involved completely in both.  
=====

Total 7 Fires - F.D. committed at 4 fires.

Harvey 4 Fires - F.D. committed at 3 fires.  
Tallanalla - mop up - Brunswick part running.  
North of McLarty - O.K.

Collie 6 Fires - Main attack by F.D. on Gervasse  
- Mopping up escaped initial attack Lowden.

Kirup 9 Fires - F.D. involved and fully committed at 3.  
4 fires have been stopped and  
3 fires have joined to Form 1 fire.

Nannup 4 Fires - All P.P. fires - controlled by bushfire brigades.  
=====

Total 23 Fires - F.D. committed at 8 Fires

Manjimup 11 Fires - F.D. committed at 2 Fires, M18, M19.

Pemberton 1 Fire - F.D. committed  
=====

12 Fires - F.D. committed at 3 Fires.

Overall Total 42 Fires - F.D. committed at 15 fires.  
=====



Wanneroo 2 Fires - 1 Fire attended by F.D. to assist Shire.  
Mundaring 5 Fires - 3 F.D. involvements. 1 Fire attended by F.D.  
safe and left, 1 P.P. fire safe attended by brig.

=====  
Total 7 Fires - 6 still active of which 4 attended by F.D.

Harvey 4 Fires - F.D. involvement with 2 - very Heavy F.D. commitment  
on P.P. 16 - other Fire P.P. 17 - No spare crews

Collie 10 Fires - F.D. involvement with 4 Fires.  
5 P.P. fires suppressed by brigades and patrol  
and mop up - 1 Fire active handled by Brigades.

Kirup & Nannup 16 Fires - 8 Fires safe  
3 Fires with F.D. commitment 1 of which is major.  
5 Fires handled by brigades.

=====  
Total 30 Fires - 17 still active of which 9 attended by F.D.

Manjimup 6 Fires - 5 Fires with F.D. involvement.  
3 of which are in the mopping up stage considered safe  
1 Fire brigade control and safe.

Pemberton 6 Fires - 3 active Fires - 4 Fires with F.D. involvement.  
2 Fires safe (1 P.P. + 1 F.D.)

Walpole 3 Fires - F.D. involved in all fires.

=====  
Total 15 Fires - 8 active fires - F.D. involved in all.

Overall Total 52 Fires - 31 active fires - 21 attended by F.D.  
=====

FIRE SITUATION REPORT - 0900 hrs. - 6.4.68

Mundaring 4 Fires - M31 Patrolled by B.F.B., M34 being checked.  
by F.D. - M32, M33 - active involvement.

Dwellingup 1 Fire - F.D. Mop up and patrol. - D53.

Narrogin 3 Fires - All Fires out - mop up and patrol

=====  
Total 8 Fires - 6 still active - 6 with F.D. involvement.

Harvey 3 Fires - 2 active - 1 being investigated.  
All F.D. involvement.

Collie 10 Fires - 6 fires attended by F.D. -  
5 are in the mop up stage.

Kirup 16 Fires - 6 still active - K35, 36 - Larve P.P. fire handled by  
brigades, K38, 32, 34 investig. by F.D. no commitments  
K27 Major fire attacked by F.D.

Nannup 4 Fires - Attended by F.D. - being mopped up.

=====  
Total 33 Fires - 24 active - 14 with F.D. involvement.

Manjimup 6 Fires - 2 active and being attended by brigades.  
4 attended and being mopped up by F.D.

Pemberton 5 Fires - Being attended by F.D. at mopping up stage.

Walpole 3 Fires - Being attended by F.D. at mopping up stage.

=====  
Total 14 Fires - 2 active - 12 with F.D. involvement.

Grand  
Total 55 Fires - 32 active - 32 attended by F.D.

=====

Mundaring 2 Fires - Avon Valley Hop overs - M32/33 Mop and patrol.

F.D. involvement.

=====

2 Fires - 2 still active - 2 with F.D. involvement.

Harvey 2 Fires - Mornington and new fire SE of Myalup plnt.

Collie 6 Fires - 3 fires active - 4 with F.D. involvement.

Kirup 10 Fires - 6 active fires - 5 with F.D. involvement.

3 of these new - with no involvement by F.D.

=====

18 Fires - 11 active fires - F.D. involved on 11 fires.

Manjimup 22 Fires - 9 active fires - 6 fires with F.D. Forces

2 fires with B.F.B. in attendance.

Pemberton 5 Fires - all mop up and nearly patrol stage - all F.D.

involvement.

=====

27 Fires - 9 active fires - 11 fires with F.D. attend.

Grand  
Total 47 Fires - 22 active - 24 fires attended by F.D.

=====

FIRE SITUATION REPORT 1000 HRS 7/4/78

Mundaring 2 Fires with F.D. involvement - M32 Firebreak construct  
and mop up to be completed by 1200 hrs - M36 by 1400 hrs.

Narrogin 2 Fires with F.D. involvement, mop up and patrol only.  
4 Fires - nil active - 4 Fires with F.D. involvement.

Harvey 3 Fires with F.D. involvement - 1 with running fire P.P 16

Collie 7 Fires - 3 with running fire\* - 3 remaining to be mopped up  
\*includes 1 new fire - 3 mopped up and patrol only

Kirup 5 Fires - 2 active - include 1 new fire - 2 in V.C.L.  
- 2 Fires with F.D. involvement  
15 Fires - 8 active - 12 Fires with F.D. involvement

Manjimup 12 Fires - 3 with running fire - 10 Fires remaining to  
be mopped up  
2 with F.D. involvement

Pemberton 5 Fires - 3 mop up and patrol only  
2 remaining to be mopped up

Walpole 3 Fires Mop up and patrol only  
18 Fires - 3 active fires - 18 Fires with F.D. involvement.

Grand total 37 Fires - 11 active fires - 34 Fires attended by F.D.

FIRE SITUATION REPORT 1600 HRS 7/4/78

Mundaring 1 Fire - M32. Mop up and Patrol - 2 Hopovers investigating.

Narrogin ~~2 Fires - Mop up and Patrol only~~

3 Fires - 1 active - 3 F.D. involvement.

Harvey 1 Fire - P.P 16 still remaining to be mopped up

Collie 5 Fires - 1 safe and mopped up and patrol only

4 fires remaining to be mopped up

includes 1 running fire.

Kirup 5 fires, and remaining to be mopped up

~~2 with running fire~~

11 Fires. 4 still active - 11 F.D. involvement.

Manjimup 8 Fires - 6 fires mopping up and edges safe

2 fires Firebreaks constructed 2 mopping up

Pemberton 2 Fires - P29 and P30 Mopping up and patrol in progress

10 Fires - Nil active - 10 fires with F.D. involvement

Grand total 24 Fires - 5 still active - 24 with F.D. involvement.

FIRE SITUATION REPORT 1000 8/4/78

Mundaring 1 Fire M32 - 1Km remaining to be mopped up  
1 Fire - 1 active - 1 F.D. involvement

Harvey 1 Fire PP16 - 8Km remaining to be mopped up 85% safe

Collie 5 Fires - mopping up and patrol. 2 with F.D. involvement

Kirup 5 Fires - 3 being mopped up and patrolled by F.D.  
2 being patrolled by brigades.

Busselton 1 Fire - previously Kirup K.29 mopping up and patrol 1500 hr

Nannup 2 Fire - 1 previously Kirup K27 remaining to be mopped  
up and patrolled. F.D.  
1 Local B.F.B. in attendance  
15 Fires - 2 active - 8 Fires with F.D. involvement

Manjimup 7 Fires - all mopping up in progress and safe. F.D.

Pemberton 5 Fires - 4 mopping up and patrol only  
1 with 2.7 Km edge remaining to be mopped up  
12 Fires - Nil active - 12 fires with F.D. involvement

Grand Total 28 Fires - 4 active - 22 fires with F.D. involvement.

FIRE SITUATION REPORT 1500 HRS 8/4/78

Mundaring 1 Fire - Mopping up completed patrol by brigades  
1 Fire - Nil active - No F.D. involvement.

Harvey 1 Fire - Mopping 99% completed and safe.

Collie 2 Fires - Co 60 and Co 58 - 27 and 3Km of mopping up to  
be completed.

Kirup 2 Fires - mopping up will be completed by 1900 hrs.

Nannup 1 Fire - mopping up completed by 1500 hrs.

Busselton 1 Fire - K29 - 400m of mop up remaining. Safe by 1700 hrs.  
7 Fires - 2 Fires still active - 7 with F.D. involvement.

Manjimup 8 Fires - 1 new fire - remainder of Fires  
mopping up in progress - 6 Fires with  
F.D. involvement.

Pemberton 1 Fire -  $\frac{1}{2}$ Km edge remaining to be mopped up, safe by 1700 hrs.  
9 Fires - 1 active - 7 with F.D. involvement.

Grand Total 17 Fires - 3 active - 14 with F.D. involvement.

FIRE SITUATION REPORT 1000 HRS - 9/4/78

Harvey                    1 Fire, mopping up and patrol only.

Collie                    2 Fires - 1 still active

Kirup                     2 Fires - active in pockets - mopping up in progress

Nannup                    1 Fire - safe - patrol only  
6 Fires - 3 active - all with F.D. involvement.

Manjimup                 12 Fires - includes all P.P. Fires - 5 Fires with  
F.D. involvement.

Pemberton                1 Fire - 3Km remaining to be mopped and patrolled  
13 Fires - Nil active - 6 with F.D. involvement.

Grand Total 19 Fires - 3 active - 12 with F.D. involvement.



FIRE SITUATION REPORT 1000 HRS 10/4/78

Harvey 1 Fire - All mopping up to be finished by tonight.

Collie 4 Fires - 2 new Fires. 3 active - 2 with F.D. Involvement.

Kirup 2 Fires - mop up and patrol - F.D.

Nannup 2 Fires - 1 new fire - F.D.  
9 Fires - 4 active - 7 with F.D. involvement.

Manjimup 2 Fires - mop up and patrol F.D. involvement.

Grand Total 11 Fires - 4 active - 9 with F.D. involvement.

FIRE REPORT 1000 HRS 11/4/78

Harvey Patrol only until 1400 hrs.

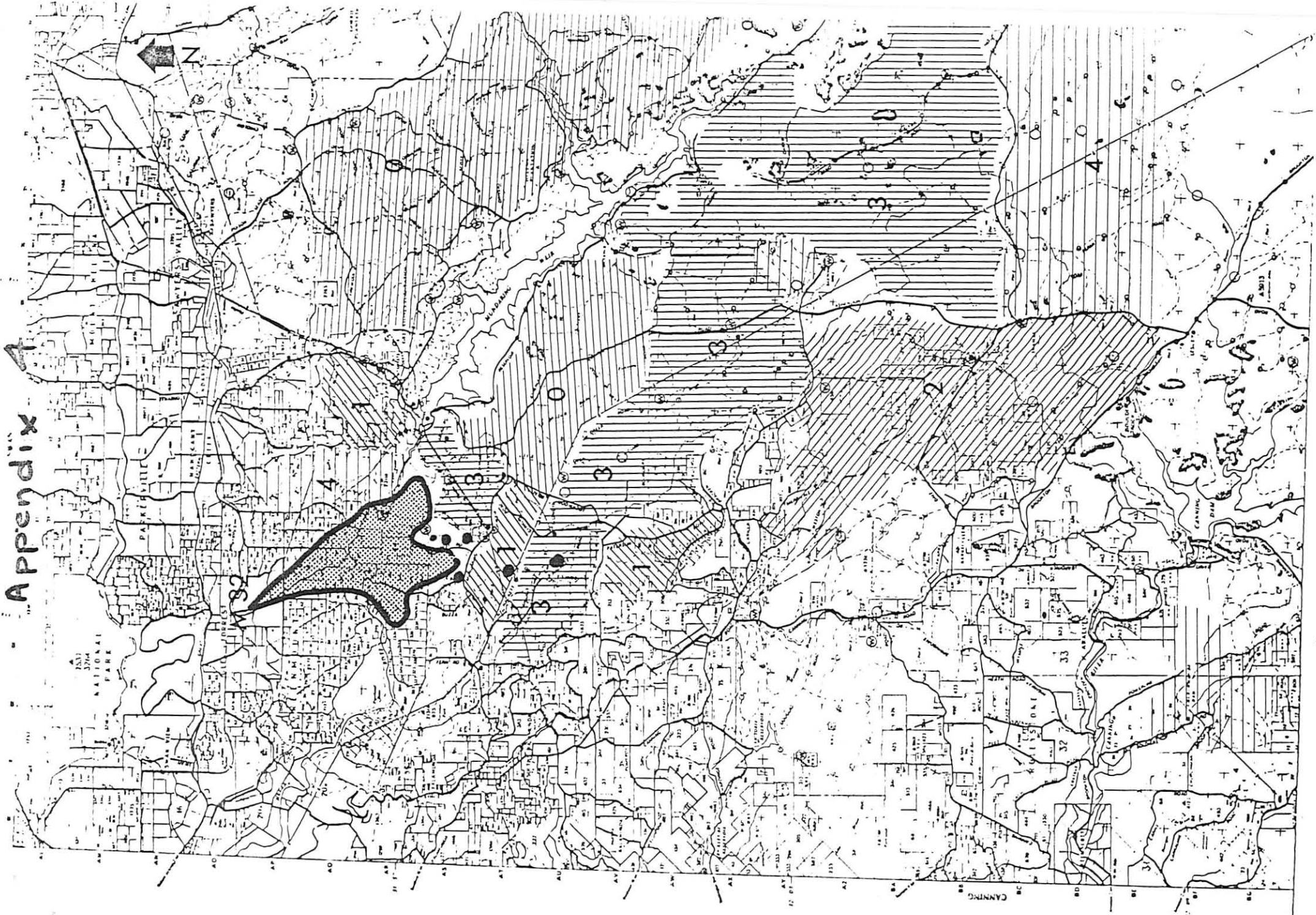
Collie Patrol only

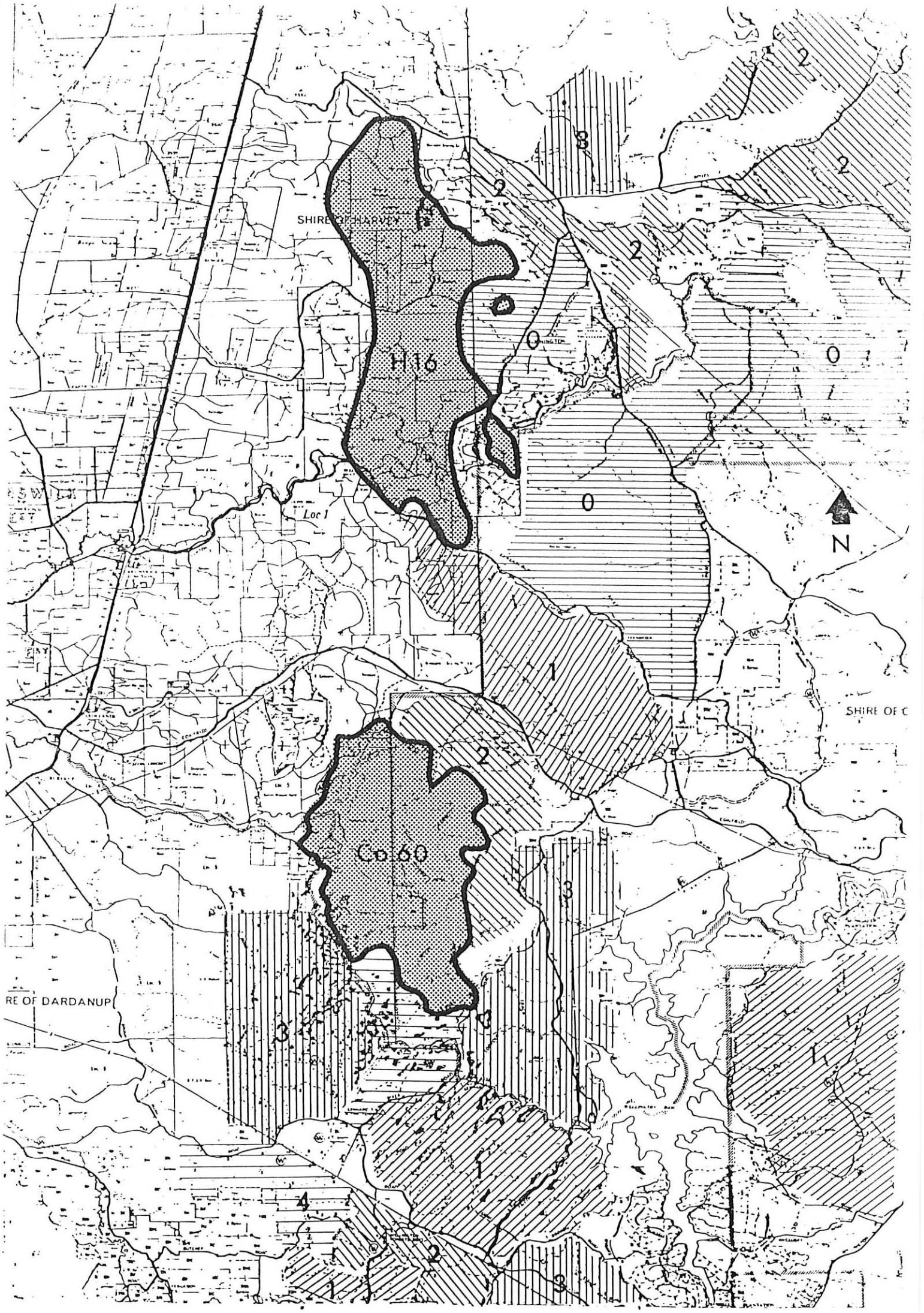
Kirup 3 Fires. Patrol only.

Manjimup 3 Fires. Patrol only - M35, M29, M20  
1 New Fire still to be mopped up.

All Fires safe.

Appendix





SHIRE OF HARVEY

H16

Loc 1



SHIRE OF C

Cb 60

RE OF DARDANUP

