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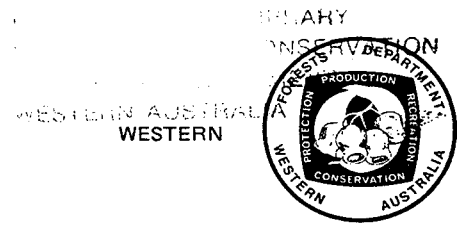
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Forest fire danger
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AUSTRALIA

FORESTS DEPARTMENT

FOREST FIRE DANGER TABLES

B. J. BEGGS

Conservator of Forests

PERTH
1973

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FIRE DANGER CALCULATION PROCEDURE

1. Obtain basic fire hazard from Table A.
2. Multiply basic fire hazard by rainfall correction factor from Table B.
3. Obtain rate of spread index for 7.6 to 8.5 tonnes/ha fuel from Table C, using adjustment for wind velocity, depending on forest type and topography. (Table C1)
- FOR SPECIES OTHER THAN KARRI
4. Multiply rate of spread index by fuel correction factor from Table D for relative forest type.
- FOR KARRI:
- 4A. Select drought index from Table D1.
- 4B. Multiply rate of spread index by fuel correction factor from Table D2.

The calculation will give a head-fire rate of spread for level ground in metres per hour.

Table A
Apply temperature and relative humidity
Read basic fire hazard

Temp. °C	Relative Humidity %															
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15
10.0	0.6	0.9	1.1	1.3	1.7	1.9	2.1	2.3	2.6	2.8	3.0					
11.0	0.8	1.1	1.3	1.6	1.9	2.2	2.3	2.5	2.9	3.0	3.2					
12.0	1.1	1.4	1.5	1.9	2.1	2.4	2.5	2.7	3.1	3.2	3.5					
13.5	1.3	1.6	1.7	2.1	2.4	2.6	2.8	3.0	3.3	3.5	3.8					
14.5	1.6	1.8	2.0	2.3	2.6	2.8	3.0	3.2	3.5	3.7	4.0					
15.5	1.8	2.0	2.2	2.5	2.8	3.0	3.2	3.5	3.7	3.9	4.2	4.4				
16.5	2.0	2.2	2.4	2.7	3.0	3.3	3.5	3.7	3.9	4.2	4.4	4.6	4.8			
18.0	2.2	2.4	2.7	2.9	3.2	3.5	3.7	3.9	4.1	4.4	4.6	4.8	5.0	5.3		
19.0	2.4	2.6	2.9	3.1	3.5	3.7	3.9	4.1	4.4	4.6	4.8	5.0	5.3	5.5	5.7	
20.0	2.6	2.8	3.1	3.3	3.7	3.9	4.1	4.3	4.6	4.8	5.0	5.3	5.5	5.7	5.9	6.2
21.0	2.8	3.0	3.3	3.6	3.9	4.1	4.3	4.6	4.8	5.0	5.3	5.5	5.7	5.9	6.2	6.4
22.0		3.3	3.6	3.9	4.1	4.4	4.6	4.8	5.0	5.2	5.5	5.7	5.9	6.2	6.4	6.6
23.5			3.9	4.1	4.4	4.6	4.8	5.0	5.2	5.5	5.7	5.9	6.2	6.4	6.6	6.9
24.5				4.4	4.6	4.8	5.0	5.2	5.4	5.7	5.9	6.1	6.4	6.6	6.8	7.0
25.5					4.8	5.0	5.2	5.4	5.7	5.9	6.1	6.4	6.6	6.8	7.0	7.3
26.5						5.2	5.4	5.7	5.9	6.1	6.3	6.6	6.8	7.0	7.3	7.5
28.0							5.4	5.6	5.9	6.1	6.3	6.6	6.8	7.0	7.3	7.5
29.0								5.7	5.9	6.1	6.3	6.6	6.8	7.0	7.2	7.5
30.0									5.9	6.1	6.3	6.5	6.8	7.0	7.2	7.5
31.0										6.1	6.3	6.5	6.8	7.0	7.2	7.4
32.0											6.3	6.5	6.7	7.0	7.2	7.4
33.5												6.5	6.7	7.0	7.2	7.5
34.5													6.8	7.0	7.2	7.4
35.5														7.0	7.2	7.4
36.5															7.2	7.4
38.0																7.4

TABLE A1

- An alternative to Table A for calculating Basic Fire Hazard.
1. Calculate hazard from temperature and relative humidity. (Table i)
 2. Calculate hazard deduction from Table ii using overnight count of relative humidity and Table i hazard.
 3. Hazard (Table i) - Hazard deduction (Table ii)
= Basic fire hazard.

TABLE (i) Fire Hazard From Temp. and R.H.

Air Temperature °Celsius	Relative Humidity															
	70	65	60	55	50	45	40	35	30	25	20	15	10	5		
16	5.4	5.6	5.9	6.1	6.3	6.5	6.7	6.9	7.1							
17	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6					
18	5.7	5.9	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8					
19	5.9	6.1	6.3	6.5	6.7	7.0	7.2	7.4	7.6	7.8	8.0					
20	6.0	6.3	6.5	6.7	6.9	7.1	7.3	7.5	7.8	8.0						
21	6.2	6.4	6.6	6.8	7.1	7.3	7.5	7.7	7.9	8.1	8.3					
22	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.9	8.1	8.3	8.5					
23	6.5	6.7	6.9	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6					
24	6.7	6.9	7.1	7.3	7.5	7.7	7.9	8.2	8.4	8.6	8.8	9.0				
25		7.0	7.3	7.5	7.7	7.9	8.1	8.3	8.5	8.7	8.9	9.2				
26		7.2	7.4	7.6	7.8	8.0	8.3	8.5	8.7	8.9	9.1	9.3				
28		7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	9.3	9.5	9.7			
29			7.7	7.9	8.1	8.4	8.6	8.8	9.0	9.2	9.4	9.6	9.8			
30			7.9	8.1	8.3	8.5	8.7	8.9	9.1	9.4	9.6	9.8	10.0			
31			8.0	8.2	8.5	8.7	8.9	9.1	9.3	9.5	9.7	9.9	10.2	10.4		
32				8.4	8.6	8.8	9.0	9.3	9.5	9.7	9.9	10.1	10.3	10.5		
33				8.6	8.8	9.0	9.2	9.4	9.6	9.8	10.0	10.2	10.5	10.7		
34				8.7	8.9	9.1	9.3	9.6	9.8	10.0	10.2	10.4	10.6	10.8		
35					9.1	9.3	9.5	9.7	9.9	10.1	10.3	10.6	10.8	11.0		
36					9.2	9.4	9.7	9.9	10.1	10.3	10.5	10.7	10.9	11.1		
38					9.4	9.6	9.8	10.0	10.2	10.4	10.7	10.9	11.1	11.3		
39					9.8	10.0	10.2	10.4	10.6	10.8	11.0	11.2	11.5			
40					9.8	10.1	10.3	10.5	10.8	11.0	11.2	11.4	11.6			

TABLE (ii) Deductions from Table i Value for Overnight R.H. Count.

		Count of Relative Humidity					
		0-20	21-40	41-60	61-80	81-100	101+
Fire Hazard from Table 1	0	2.4	2.8	3.4	4.2	5.0	5.9
	1	2.3	2.6	3.1	3.8	4.7	5.6
	2	2.1	2.4	2.9	3.4	4.3	5.3
	3	2.0	2.3	2.6	3.2	4.0	4.8
	4	1.8	2.1	2.4	3.1	3.8	4.5
	5	1.8	2.1	2.4	3.1	3.6	4.2
	6	1.8	2.0	2.3	2.9	3.4	3.9
	7	1.7	2.0	2.3	2.9	3.2	3.6
	8	1.7	1.8	2.1	2.8	3.1	3.4
	9	1.5	1.7	2.0	2.6	3.0	3.5
10	1.4	1.5	1.8	2.4	2.8	3.2	

Table B

FOR FOREST TYPES OTHER THAN KARRI

Select average daily temperature class within pertinent rainfall range. Read off correction factor under number of drying days since rain.

Amount of Last Rain (mm.)	Average Temp. °C	Number of drying days since rain												
		1	2	3	4	5	6	7	8	9	10	11	12	13
50 +	16.0-21.0	0.23	0.39	0.50	0.59	0.66	0.73	0.78	0.83	0.87	0.91	0.95	0.97	1.0
	21.1-26.5	0.27	0.46	0.53	0.70	0.78	0.84	0.91	0.96	1.0				
	26.6-32.0	0.32	0.54	0.70	0.82	0.92	1.0							
	32.1-40.0	0.35	0.59	0.76	0.90	1.0								
35.1 to 50.0	16.0-21.0	0.24	0.41	0.53	0.62	0.70	0.77	0.83	0.88	0.94	0.96	1.0		
	21.1-26.5	0.28	0.48	0.62	0.73	0.81	0.89	0.95	1.0					
	26.6-32.0	0.35	0.58	0.76	0.89	1.0								
	32.1-40.0	0.39	0.66	0.85	1.0									
25.1 to 35.0	16.0-21.0	0.28	0.46	0.60	0.71	0.80	0.87	0.94	1.0					
	21.1-26.5	0.33	0.56	0.70	0.82	0.92	1.0							
	26.6-32.0	0.39	0.66	0.85	1.0									
	32.1-40.0	0.46	0.77	1.0										
12.1 to 25.0	16.0-21.0	0.32	0.53	0.69	0.81	0.91	1.0							
	21.1-26.5	0.35	0.59	0.76	0.90	1.0								
	26.6-32.0	0.39	0.66	0.85	1.0									
	32.1-40.0	0.46	0.78	1.0										
5.1 to 12.0	16.0-21.0	0.39	0.65	0.85	1.0									
	21.1-26.5	0.46	0.73	1.0										
	26.6-32.0	0.59	1.0											
	32.1-40.0	0.65	1.0											
2.1 to 5.0	16.0-21.0	0.45	0.78	1.0										
	21.1-26.5	0.59	1.0											
	26.6-32.0	0.65	1.0											
	32.1-40.0	0.75	1.0											
1.1 to 2.0	16.0-21.0	0.60	1.0											
	21.1-26.5	0.70	1.0											
	26.6-32.0	0.80	1.0											
	32.1-40.0	0.90	1.0											

Basic Fire Hazard x Correction Factor = Adjusted Fire Hazard

Table B1
FOR KARRI FOREST

Select pertinent rainfall range. Read off correction

factor opposite number of drying days since rain

Amount of last rain (Millimetres)	Number						of drying days since rain																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15																					
50 +	0.07	0.14	0.16	0.23	0.29	0.34	0.39	0.43	0.47	0.50	0.53	0.55	0.58	0.61	0.64																					
35.1 – 50.0	0.10	0.19	0.27	0.33	0.39	0.44	0.50	0.54	0.58	0.61	0.64	0.67	0.70	0.73	0.75																					
25.1 – 35.0	0.11	0.20	0.29	0.36	0.42	0.49	0.54	0.59	0.62	0.65	0.68	0.71	0.73	0.75	0.78																					
12.1 – 25.0	0.13	0.25	0.30	0.37	0.43	0.50	0.56	0.61	0.65	0.68	0.71	0.74	0.77	0.80	0.83																					
5.1 – 12.0	0.16	0.28	0.41	0.50	0.60	0.66	0.72	0.77	0.82	0.86	0.90	0.94	0.95	0.96	0.97																					
2.1 – 5.0	0.24	0.43	0.59	0.68	0.77	0.85	0.90	0.94	0.98	1.0																										
1.1 – 2.0	0.40	0.70	0.90	1.0																																
0 – 1.0	0.70	1.0																																		
	Number						of drying days since rain																													
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30																					
50 +	0.66	0.68	0.71	0.74	0.77	0.80	0.83	0.86	0.88	0.90	0.92	0.94	0.96	0.98	1.0																					
35.1 – 50.0	0.77	0.79	0.81	0.83	0.85	0.87	0.89	0.91	0.93	0.95	0.97	0.98	1.0																							
25.1 – 35.0	0.81	0.84	0.86	0.88	0.90	0.92	0.94	0.96	0.98	1.0																										
12.1 – 25.0	0.86	0.89	0.92	0.94	0.96	0.98	1.0																													
5.1 – 12.0	0.98	1.0																																		

Basic Fire Hazard x Correction

Factor = Adjusted Fire Hazard

Table C1

Wind Velocity Ratios For Table C

Forest Type	Height of Tower Above Canopy (metres)		
	0	15	30
(a) Jarrah			
(i) 60% Canopy Ridge	3:1	4:1	5:1
Lower Slope	4:1	5:1	6:1
(ii) 30% Canopy Ridge	2:1	3:1	4:1
Lower Slope	3:1	4:1	5:1
(iii) Flats	1:1	2:1	2:1

Select appropriate wind ratio for Table C from topography and forest canopy over the area and height of tower above the general forest canopy.

LITTER ACCUMULATION TABLES - 1970
KARRI (tonnes/ha)

No. of Annual Leaf Falls	CANOPY COVER PER CENT									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1	2.5	3.2	4.0	5.0	6.0	7.0	8.2	9.5	11.0	12.5
2	4.2	5.2	6.2	7.2	8.5	9.7	11.2	12.7	14.2	16.0
3	6.0	7.0	8.2	9.5	10.7	12.2	13.7	15.5	17.2	19.0
4	7.5	8.7	10.0	11.5	13.0	14.5	16.2	18.0	19.7	21.7
5	9.0	10.5	11.7	13.2	15.0	16.7	18.5	20.2	22.2	24.2
6	10.5	12.0	13.5	15.2	16.7	18.7	20.5	22.5	24.7	26.7
7	12.0	13.5	15.2	17.0	18.7	20.7	22.7	24.7	27.0	29.2
8	13.5	15.2	17.0	18.7	20.3	22.5	24.7	26.7	29.0	31.5
9	15.0	16.7	18.5	20.5	22.5	24.5	26.7	29.0	31.2	33.7
10	16.5	18.2	20.2	22.2	24.2	26.2	28.5	31.0	33.2	36.0

JARRAH

No. of Annual Leaf Falls	CANOPY COVER PER CENT									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1	0.2	1.0	1.5	1.7	2.2	2.5	2.7	3.0	2.2	3.5
2	0.7	1.7	2.2	2.7	3.2	3.5	4.0	4.2	4.5	4.7
3	1.5	2.5	3.2	4.0	4.5	4.7	5.2	5.5	5.7	6.2
4	2.2	3.5	4.5	5.2	5.7	6.2	6.7	7.0	7.5	7.7
5	3.2	4.7	6.0	6.7	7.2	8.0	8.2	8.7	9.2	9.5
6	4.5	6.2	7.5	8.2	9.0	9.7	10.2	10.7	11.2	11.5
10				10.0			15.0			

Table C

Apply adjusted fire hazard and open wind velocity (lower wind). Read off RATE OF SPREAD INDEX for 7.6 to 8.5 tonnes/ha of litter fuel in metres per hour.

Table C - continued

Apply adjusted fire hazard and open wind velocity (lower wind). Read off RATE OF SPREAD INDEX for 7.6 to 8.5 tonnes/ha of litter fuel in metres per hour.

SURFACE MOISTURE CONTENT.	Wind Ratio	Wind Velocity - Kilometres/Hour								Wind Velocity - Kilometres/Hour							
		0.0	1.0	1.7	2.5	3.3	4.1	5.0		5.7	6.3	7.3	8.3	8.9	9.7	10.3	
1:1		0.9	1.6	2.4	3.2	4.0	4.9	5.6		6.2	7.2	8.0	8.8	9.6	10.2	11.2	
		0.0	1.7	3.3	4.9	6.5	8.1	9.7		11.3	12.9	14.5	16.1	17.7	19.3	21.0	
2:1		1.6	3.2	4.8	6.4	8.0	9.6	11.2		12.8	14.4	16.0	17.6	19.2	20.8	22.2	
		0.0	2.5	4.9	7.3	9.8	12.1	14.5		16.9	19.3	21.7	24.1	26.3	28.9	31.3	
3:1		2.4	4.8	7.2	9.7	12.0	14.4	16.8		19.2	21.6	24.0	26.2	28.8	31.2	33.6	
		0.0	3.3	6.5	9.7	12.9	16.1	19.3		22.3	25.7	28.9	32.1	35.3	38.3	41.7	
4:1		3.2	6.4	9.6	12.8	16.0	19.2	22.2		25.6	28.8	32.0	35.2	38.2	41.6	44.4	
		0.0	4.1	8.1	12.1	16.1	20.1	24.1		28.1	32.1	36.1	41.1	44.1	49.3	52.3	
5:1		4.0	8.0	12.0	16.0	20.0	24.0	28.0		32.0	36.0	40.0	44.0	48.0	52.2	56.0	
		0.0	4.9	9.7	14.5	19.3	24.1	29.0		33.7	38.3	43.3	48.1	52.9	57.7	62.3	
6:1		4.8	9.6	14.4	19.2	24.0	28.9	33.6		38.2	43.2	48.0	52.8	57.6	62.2	67.2	
		0.4	0.4	0.4	0.4	0.4	0.4	0.4		0.6	0.8	1.0	1.4	1.8	2.4	3.2	
60+	Adjusted Fire Hazard	0.6	1.1	1.4	1.6	1.8	2.2	2.5		4.0	5.0	6.4	8.4	11.3	15.3	20.7	
	Nil	2.0	2.4	2.8	3.2	3.7	4.5	5.6		6.7	8.5	11.1	14.5	19.5	26.4	35.6	
50		1.2	2.4	2.7	3.2	3.8	4.4	5.2		7.7	9.7	12.3	16.1	21.5	29.2	39.4	
		1.4	2.7	3.2	3.8	4.4	5.2	6.2		9.3	11.7	14.9	19.5	26.1	35.4	47.9	
40-		1.6	3.1	3.6	4.2	5.0	6.0	7.2		10.6	13.3	17.1	22.3	28.8	40.4	54.5	
		1.8	3.5	4.2	4.8	5.6	6.5	7.8		11.7	14.7	18.7	24.5	33.0	44.5	60.0	
35-		2.0	4.0	4.5	5.4	6.4	7.6	9.0		13.3	16.7	21.3	28.0	37.4	50.5	68.2	
		2.2	4.4	5.0	5.8	6.8	8.0	9.7		14.5	17.9	22.9	30.0	40.2	54.3	73.4	
30-		2.4	4.7	5.5	6.5	7.9	9.3	11.1		16.3	20.2	25.9	32.9	42.9	61.8	83.5	
		2.6	5.2	6.0	6.8	8.1	9.5	11.3		16.5	20.6	26.6	34.6	46.5	62.8	84.7	
28-		2.8	5.6	6.3	7.2	8.6	10.1	12.3		17.1	21.2	27.3	35.6	47.7	64.4	87.1	
		3.0	6.0	6.7	7.7	9.2	10.4	12.9		17.7	21.8	28.2	36.6	48.9	66.0	89.5	
26-		3.2	6.4	7.2	8.3	9.7	11.1	13.5		18.3	22.4	28.9	37.4	50.3	67.6	92.0	
		3.4	6.8	7.7	8.5	10.3	11.5	14.1		18.9	23.1	29.8	38.4	51.5	69.2	94.4	
24-		3.6	7.2	8.1	9.0	10.7	12.1	14.5		19.8	23.8	30.6	39.4	52.7	70.8	96.8	
		3.8	7.6	8.5	9.5	11.1	12.7	15.1		20.6	24.6	31.4	40.8	53.9	72.4	99.0	
22-		4.0	8.1	9.0	10.3	11.7	13.5	15.7		21.4	25.6	32.2	41.8	55.3	74.6	100.8	
		4.2	8.7	9.9	11.1	12.7	14.7	17.1		23.6	28.6	35.8	46.5	61.4	82.9	111.9	
20-		4.4	9.7	10.7	12.3	14.1	16.3	18.9		26.2	31.4	39.2	51.1	67.4	90.9	122.7	
		4.6	10.5	11.7	13.3	15.1	17.3	20.1		27.8	33.4	41.8	54.3	71.6	96.8	130.6	
18-		4.8	11.3	12.7	14.3	16.3	18.6	21.7		30.0	36.0	45.1	58.5	77.3	104.2	140.6	
		5.0	12.1	13.5	15.3	17.5	20.1	23.2		32.4	38.8	48.5	63.0	83.1	112.3	151.5	
17-		5.2	13.3	15.1	16.9	19.3	22.1	25.5		35.0	42.2	52.7	68.0	85.3	120.1	162.6	
		5.4	15.1	16.7	18.5	21.1	24.1	27.8		37.7	45.9	57.1	73.6	88.1	128.6	174.2	
16-		5.6	16.7	18.3	20.1	23.1	26.2	30.2		40.6	49.5	61.6	79.3	91.1	137.2	185.9	
		5.8	18.1	19.9	21.9	25.1	28.2	32.6		43.7	52.7	66.0	84.9	94.4	146.5	197.6	
15-		6.0	20.1	21.9	24.1	26.9	30.4	34.6		46.7	55.9	70.0	89.5	116.5	153.7	207.2	
		6.2	22.1	24.1	26.6	29.8	33.6	38.1		51.6	61.8	77.3	99.0	128.8	170.2	222.2	

Table C - continued

Apply adjusted fire hazard and open wind velocity (lower wind). Read off
RATE OF SPREAD INDEX for 7.5 to 8.5 tonnes/ha of litter
fuel in metres per hour.

SURFACE MOISTURE CONTENT	Wind Ratio	Wind Velocity - Kilometres/Hour									
		0.0	1.0	1.7	2.5	3.3	4.1	5.0	6.0	7.0	8.0
10-9-8-7-6-5-4-3	1:1	0.0	1.0	1.7	2.5	3.3	4.1	5.0	6.0	7.0	8.0
	2:1	0.0	1.6	2.4	3.2	4.0	4.9	5.6	6.4	7.2	8.0
	3:1	0.0	1.7	3.3	4.0	6.5	8.1	9.7	11.2	12.8	14.4
	4:1	0.0	2.5	5.9	7.3	9.8	12.1	14.5	16.8	19.2	21.6
	5:1	0.0	4.8	7.2	9.7	12.0	14.4	16.8	19.2	21.6	24.0
	6:1	0.0	3.3	6.5	9.7	12.9	16.1	19.3	22.5	25.6	28.8
	7:1	0.0	6.4	9.6	12.8	16.0	19.2	22.2	25.2	28.2	31.2
	8:1	0.0	4.1	8.1	12.1	16.1	20.1	24.2	28.0	31.7	35.4
	9:1	4.0	8.0	12.0	16.0	20.0	24.0	28.0	31.7	35.4	39.1
	10:1	0.0	4.9	9.6	14.5	19.2	24.1	29.0	33.6	38.2	42.8
ADJUSTED FIRE HAZARD	6.4	24.1	26.4	29.0	32.4	36.5	41.8	43.1	56.3	67.6	84.5
	6.6	26.2	28.4	31.2	34.8	39.2	44.5	51.3	59.8	71.6	89.3
	6.8	28.2	30.4	33.6	36.8	41.2	46.7	53.3	62.0	73.8	91.1
	7.0	30.2	32.8	35.6	39.2	43.7	48.9	55.7	64.6	76.2	92.9
	7.2	32.2	34.8	38.0	41.8	46.5	52.1	59.3	68.8	81.3	99.2
	7.4	36.2	39.0	42.7	46.9	52.1	58.3	66.6	77.3	91.1	111.3
	7.6	40.2	43.3	46.7	51.1	56.5	63.4	72.4	84.1	98.6	121.9
	7.8	44.3	44.9	49.9	54.3	59.8	67.0	76.5	89.3	106.4	131.6
	8.0	48.3	50.3	53.3	57.5	63.4	71.0	80.9	94.5	113.5	141.8
	8.1	50.3	50.3	55.5	60.0	66.0	73.8	84.1	98.4	118.1	147.7
SEVERE	8.2	52.3	54.3	57.5	62.2	68.4	76.7	87.3	102.2	122.7	153.5
	8.3	54.3	56.5	60.0	64.8	71.2	79.9	91.1	106.6	128.0	159.9
	8.4	58.3	60.8	64.4	69.6	76.7	85.9	98.0	114.7	137.6	172.0
	8.5	62.4	64.8	68.6	74.0	81.5	91.3	104.2	121.9	146.3	182.9
	8.6	66.4	69.2	73.8	80.1	87.3	97.6	111.3	130.18	156.3	196.0
	8.7	70.4	73.6	78.7	84.9	92.8	103.4	118.0	138.0	165.8	207.2
	8.8	74.4	78.1	83.5	90.1	98.2	109.4	124.5	145.9	175.2	221.3
	8.9	80.5	84.5	88.3	95.4	103.6	115.5	131.2	153.7	184.7	233.4
	9.0	86.5	89.1	93.6	100.2	108.7	121.3	138.2	161.8	194.2	245.5
	9.1	92.5	95.4	100.2	107.2	116.9	129.8	147.9	173.0	207.2	261.6
DANGEROUS	9.2	98.6	101.6	106.6	114.1	124.3	138.0	157.3	184.1	221.3	277.7
	9.3	104.6	107.8	113.3	121.1	132.0	146.5	167.0	195.4	233.4	295.8
	9.4	112.7	116.1	121.9	130.4	142.0	157.7	179.9	211.3	253.5	317.9
	9.5	120.7	124.3	130.6	138.6	152.3	169.0	192.7	225.3	269.6	342.0
	9.6	128.7	132.6	139.2	148.9	162.4	180.3	205.2	239.4	287.7	364.2
	9.7	136.8	140.8	147.9	158.7	173.0	192.1	219.3	255.5	307.8	388.3
	9.8	146.8	151.3	158.9	170.0	185.3	205.2	235.4	273.6	330.0	414.5
	9.9	156.9	161.6	169.6	181.5	197.8	219.3	249.5	293.7	352.1	442.6
	10.0	165.0	170.0	178.5	190.9	207.2	231.4	263.6	307.8	370.2	466.8

Table C - continued

Apply adjusted fire hazard and open wind velocity (lower wind). Read off
RATE OF SPREAD INDEX for 7.5 to 8.5 tonnes/ha of litter
fuel in metres per hour.

Wind Velocity - Kilometres/Hour											
5.7	6.3	7.3	8.3	8.9	9.7	10.3	11.3	12.9	14.5	16.1	17.7
6.2	7.2	8.0	8.8	9.6	10.2	11.2	12.8	14.4	16.0	17.6	19.2
16.9	19.3	21.7	24.1	26.3	28.9	31.3	19.2	21.6	24.0	26.2	28.8
22.3	25.7	28.9	32.1	35.3	38.3	41.7	25.6	28.8	32.0	35.2	38.2
28.1	32.1	36.1	41.1	44.1	49.3	52.3	32.0	36.0	40.0	44.0	48.0
33.7	38.3	43.3	48.1	52.9	57.7	62.3	38.2	43.2	48.0	52.8	57.6
56.3	67.6	84.5	108.25	140.6	185.7	251.5	59.8	71.6	89.3	113.88	148.5
62.0	73.8	91.1	116.0	151.7	198.4	273.6	64.6	76.2	92.9	118.9	155.7
68.8	81.3	99.2	127.0	166.4	223.3	305.8	77.3	91.1	111.3	142.4	186.7
84.1	98.6	121.9	156.7	205.2	249.5	342.0	89.3	106.4	131.6	170.4	223.3
94.5	113.5	141.8	184.5	243.4	332.0	462.8	98.4	118.1	147.7	191.9	253.5
102.2	122.7	153.5	199.6	263.6	358.1	501.0	106.6	128.0	159.9	207.2	273.6
114.7	137.6	172.0	223.3	295.8	402.4	563.4	121.9	146.3	182.9	237.4	313.9
130.18	156.3	196.0	255.5	336.0	458.7	641.8	138.0	165.8	207.2	269.6	358.0
145.9	175.2	221.3	285.7	378.2	515.1	720.3	153.7	184.7	233.4	301.8	400.4
161.8	194.2	245.5	317.9	420.5	571.4	798.8	173.0	207.2	261.6	340.0	448.7
184.1	221.3	277.7	362.2	478.9	649.9	909.4	195.4	233.4	295.8	384.3	507.0
211.3	253.5	317.9	414.5	545.2	742.4	1026.1	225.3	269.6	342.0	442.6	585.5
239.4	287.7	364.2	472.8	623.7	845.1	1187.1	255.5	307.8	388.3	505.0	666.0
273.6	330.0	414.5	539.2	712.2	967.8	1354.1	293.7	352.1	442.6	575.4	760.5
307.8	370.2	466.8	605.6	800.8	1088.5	1523.1					

OVERSEERS' BURNING TABLES

- From Table C, using HAZARD and WIND SPEED determine RATE OF FORWARD SPREAD for 5-year-old fuel (7.5-8.5 tonnes/ha)
- From Table 2, using RATE OF FORWARD SPREAD and FUEL AGE or FUEL QUANTITY determine COLOUR of burn being attempted.
- From Table 3, determine HOURS OF BURNING AVAILABLE.
- From Table 4, using C.F.S. from Table 2 and HOURS OF BURNING AVAILABLE determine WIDTH OF STRIPS.

E.G., Adjusted fire hazard 7.0
Wind at nearest Tower and 5:1 Ratio 12.9 Km/Hours
Rate of spread from Table C 39.2 metres/Hr
Burn being attempted Green
Weight of fuel 4.3 tonnes/ha
Rate of spread from Table 2 (C.F.S.) 27.0 metres/hr
Temperature from forecast 26.0°C
Hours of burning 10 hours
Strip width C.F.S. = 27: 10 hours 250 metres
Distance between spols 270 x 1/2 135 metres

Obtain WINDSPEED from tower and re-adjust STRIP and SPOT WIDTH every two hours.

Table 4

ESTIMATION OF STRIP WIDTH (In metres)

Forward Spread C.F.S. from C & 2	Hours of burning time available									
	1 Hr	2	3	4	5	6	7	8	9	10
12	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0
14	12.0	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0
16	14.0	28.0	42.0	56.0	70.0	84.0	98.0	112.0	126.0	140.0
18	16.0	32.0	48.0	64.0	80.0	96.0	112.0	128.0	144.0	160.0
20	18.0	36.0	54.0	72.0	90.0	108.0	126.0	144.0	162.0	180.0
22	20.0	40.0	60.0	80.0	100.0	120.0	140.0	160.0	180.0	200.0
24	22.0	44.0	66.0	88.0	110.0	132.0	154.0	176.0	198.0	220.0
26	24.0	48.0	72.0	96.0	120.0	144.0	168.0	192.0	216.0	240.0
28	26.0	52.0	78.0	104.0	130.0	156.0	182.0	208.0	234.0	260.0
30	28.0	56.0	84.0	112.0	140.0	168.0	196.0	224.0	252.0	280.0
32	28.0	56.0	84.0	112.0	140.0	168.0	196.0	224.0	252.0	280.0
34	30.0	60.0	90.0	120.0	150.0	180.0	210.0	240.0	270.0	300.0
36	32.0	64.0	96.0	128.0	160.0	192.0	224.0	256.0	288.0	320.0
38	34.0	68.0	102.0	136.0	170.0	204.0	238.0	272.0	306.0	340.0
40	36.0	72.0	108.0	144.0	180.0	216.0	252.0	288.0	324.0	360.0
42	38.0	76.0	114.0	156.0	190.0	228.0	266.0	304.0	342.0	380.0
44	40.0	80.0	120.0	160.0	200.0	240.0	280.0	320.0	360.0	400.0
46	42.0	84.0	126.0	168.0	210.0	252.0	294.0	336.0	378.0	420.0
48	44.0	88.0	132.0	172.0	220.0	264.0	308.0	352.0	396.0	440.0
50	46.0	92.0	138.0	184.0	230.0	276.0	322.0	368.0	414.0	460.0
52	46.0	92.0	138.0	184.0	230.0	276.0	322.0	368.0	414.0	460.0
54	48.0	96.0	144.0	192.0	240.0	288.0	336.0	384.0	432.0	480.0
56	50.0	100.0	150.0	200.0	250.0	300.0	350.0	400.0	450.0	500.0
58	52.0	104.0	156.0	208.0	260.0	312.0	364.0	416.0	468.0	520.0
60	54.0	108.0	162.0	216.0	270.0	324.0	378.0	432.0	486.0	540.0

5-1 JARRAH.
6-1 HEAVY KURRI

Correction of FORWARD SPREAD for fuel age or quantity for JARRAH CONTROL BURNING.

LOW and MODERATE						FIRE HAZARD		AVERAGE and HIGH					
10.5	9.0	8.0	6.0	5.5	4.0	{ Fuel Quantity tonnes/ha Fuel Age No. of Leaf Falls		10.5	9.0	8.0	6.0	5.5	4.0
7	6	5	4	3	2			7	6	5	4	3	2
Forward Spread Metres/Hour						COLOUR INDEX		Forward Spread Metres/Hour					
12	12	12				PURPLE Max. Scorch: Spring 4.5m Autumn 8.0m		12	12	10			
14	14	14						14	14	12			
16	14	14	12					16	14	14	12		
18	16	16	14	12				18	16	14	12		
20	18	18	16	14	12			20	18	16	14	12	
22	20	20	18	16	14			22	20	18	16	12	12
24	22	22	20	18	16	GREEN Max. Scorch: Spring 6.0m Autumn 10.5m		24	22	20	18	14	12
26	24	24	22	20	18			26	24	22	20	14	14
28	26	26	24	22	20			28	26	24	22	16	14
30	28	28	26	24	22			30	28	26	24	18	16
32	30	30	28	26	24			32	30	28	26	20	18
34	32	32	30	28	26			36	32	30	28	22	18
36	34	34	32	30	28	BLUE Max. Scorch: Spring 9.0m Autumn 13.5m		38	34	32	28	22	20
40	36	36	34	32	30			40	36	34	30	24	22
42	40	38	36	34	32			42	40	36	32	26	24
44	42	40	38	36	34			44	42	38	34	28	26
46	44	42	40	38	36			48	44	40	34	30	28
48	46	44	42	40	38			50	48	42	36	32	30
50	48	46	44	42	40	Fuel age is only applicable where forest canopy density approxi- mates 60% (see Table C1)		54	50	44	38	34	32
52	50	48	46	44	42			56	52	46	40	34	32
54	52	50	48	46	44			58	54	48	42	36	34
56	54	52	50	48	46			60	56	50	44	36	34
58	56	54	52	50	48			58	52	46	40	36	34
60	58	56	54	52	50			60	54	48	40	36	34
	60	58	56	54	52				58	52	46	40	
		60	58	56	54				60	54	46	42	
			60	58	56				62	56	48	42	
				60	58				64	58	48	44	
					60				66	60	50	44	
									68		52	46	
									70		54	48	
									72		56	48	
									74		58	50	
									76		60	52	
									78			54	
									80			56	
									82			58	

JARRAH

Table D

FUEL QUANTITY CORRECTION FACTORS IN A.F.H. CLASSES

Select appropriate hazard class. Read off FUEL CORRECTION FACTOR opposite relative fuel weight.

Fuel age - years No. of Leaf Falls	Fuel Quantity tonnes/ha	Low & Moderate	Aver. & High	Severe & Dangerous
2	3.5 - 5.0	0.88	0.71	0.61
3	5.1 - 6.5	0.92	0.77	0.74
4	6.6 - 7.5	0.96	0.88	0.87
5	7.6 - 8.5	1.00	1.00	1.00
6	8.6 - 10.0	1.04	1.12	1.17
7	10.1 - 11.5	1.08	1.21	1.30
8	11.6 - 12.5	1.1	1.3	1.6
8 +	12.6 - 12.5	1.2	1.5	1.8
8 +	15.1 - 17.5	1.3	1.7	2.1
8 +	17.6 - 20.0	1.4	1.9	2.4
8 +	20.1 - 22.5	1.5	2.1	2.7
8 +	22.6 - 25.0	1.6	2.3	3.0

Table 3

HOURS OF BURNING TIME AVAILABLE

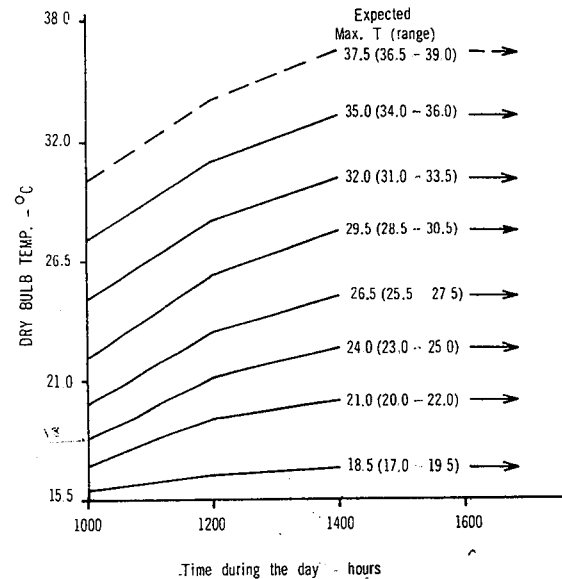
Daily Maximum Temp. °C	SPRING		AUTUMN	
	Start Time	Hours	Start Time	Hours
16.0 - 18.5	12.00	3	11.30	4
18.6 - 21.0	10.30	7	10.00	8
21.1 - 24.0	10.00	8	09.00	10
24.5 - 27.0	09.30	10	08.00	12
27.1 - 29.5	09.00	11	07.00	14
29.6 - 32.0	08.00	14	06.00	18

STRIP WIDTH = Rate of Spread in metres per hour x Hours Available.
Deduct difference between start time and time of lighting from total hours available to obtain remaining hours of burning time.

ADJUSTED RATE OF SPREAD = Rate of Spread Index x Fuel Correction Factor.

JARRAH

TIME AND TEMPERATURE GRAPH



Apply temperature and the time it was taken. Read off the expected maximum temperature from the arrowed line nearest which the data plots. This graph applies to clear skies.

KARRI

TABLE D1 DROUGHT INDEX

Select pertinent rainfall range. Read off drought index opposite number of drying days since rain		Number of drying days since rain	
Amount of rain in mm		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	
50.1 +			B
35.1 - 50.0			B
25.1 - 35.0			B
12.1 - 25.0			B
5.1 - 12.0			B
2.1 - 5.0			B
1.1 - 2.0			B
0 - 1.0			B

HOURS OF BURNING TIME

Daily Maximum Temperature °C	Start Time	Hours
15.0 - 18.5	12.00	2
18.6 - 21.0	11.00	5
21.1 - 24.0	10.30	7
24.5 - 27.0	10.00	9
27.2 - 29.5	09.30	11
29.6 - 32.0	09.00	14

Adjusted Rate of Spread Rate of
Spread Index x Fuel Correction Factor.

Table D2

FUEL QUANTITY CORRECTION

Fuel Age No. of leaf falls	Fuel Quantity tonnes/ha	Low and Moderate Less than 6.0			Average and High 6.1 to 8.0			Severe and Dangerous Greater than 8.0		
		A	B	C	A	B	C	A	B	C
1	5.0 - 6.0	0.0	0.9	1.0	0.0	0.8	1.2	0.4	0.7	1.4
2	6.1 - 8.5	0.6	1.0	1.2	0.7	1.0	1.4	0.5	1.0	1.6
3	8.6 - 13.5	0.7	1.1	1.5	0.7	1.4	2.2	0.6	1.7	3.0
4	13.6 - 16.5	0.9	1.2	1.6	0.8	1.6	2.3	0.7	2.0	3.3
5	16.6 - 18.5	0.9	1.3	1.7	0.8	1.8	2.5	0.9	2.3	3.6
6	18.6 - 21.0	1.0	1.4	1.8	0.9	2.1	2.7	1.0	2.7	5.9
7	21.1 - 24.0	1.0	1.5	1.9	1.0	2.3	2.9	1.1	3.0	4.2
8	24.1 - 25.0	1.1	1.6	2.0	1.1	2.4	3.1	1.2	3.2	4.6
9	25.1 - 26.5	1.1	1.7	2.1	1.2	2.5	3.3	1.4	3.3	4.8
10	26.6 - 27.5	1.2	1.8	2.2	1.3	2.6	3.5	1.5	3.5	5.2
11	27.6 - 28.5	1.2	1.9	2.3	1.3	2.7	3.6	1.6	3.7	5.5
12	28.6 - 30.0	1.3	2.0	2.4	1.4	2.8	3.8	1.7	3.9	5.8
12 +	30.1 - 35.0	1.3	2.3	2.8	1.5	3.5	4.2	1.8	4.7	6.5

Select the appropriate hazard class. In the drought index column indicated from Table D1 read off the fuel correction factor opposite the relative fuel age or weight.

PINUS

Table D

FUEL QUANTITY CORRECTION

Age in years	Fuel Quantity tonnes/ha	Hazard Classes																																	
		0-1	1-4	2-5	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	30-31	31-32	32-33	
10	10.0 - 11.5	1.3	2.5	3.2	3.9	4.5	5.1	5.7	6.2	6.7	7.1	7.5	7.8	8.0	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0	9.2	9.4	9.5	9.6	9.7	9.8	9.9	10.0					
15	11.6 - 20.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	
20	20.1 - 29.0	1.0	1.3	1.4	1.4	1.5	1.6	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.7	2.7	2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
25	29.1 - 36.0	1.8	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
30	36.1 - 40.0	2.0	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1
35	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
40	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
45	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
50	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
55	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
60	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
65	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
70	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
75	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
80	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
85	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
90	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
95	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2
100	40.1 +	2.1	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2

For prescribed burning under pines use fire dangers uncorrected by fuel factors in the range 0 to 12 m/h.

PRELIMINARY DESPATCHER

JARRAH

Fire Danger	Time Between Detection and Attack															
	½ hour				1 hour				1½ hours				2 hours			
	G.	H.D.	L.T.	B.D.	G.	H.D.	L.T.	B.D.	G.	H.D.	L.T.	B.D.	G.	H.D.	L.T.	B.D.
White	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
Purple	1	1	0	0	1	1	0	0	1	1	1	0	1	1	1	0
Green	1	1	0	0	1	1	1	0	2	2	1	0	2	2	1	0
Blue	2	2	0	0	2	2	1	0	3	2	2	0	3	3	2	0
Brown	2	2	1	0	3	3	1	1	4	4	2	1	4	4	2	1
Yellow	3	3	1	0	3	3	2	1	4	4	3	1	5	5	3	2
Orange	3	3	1	1	4	4	2	2	5	5	3	2	6	6	4	3
Pink	4	3	2	1	5	5	3	3	6	6	3	3	7	7	5	5
Red	4	4	2	2	6	6	3	4	7	7	4	4	8	8	5	6

KARRI

Fire Danger	Time Between Detection and Attack															
	½ hour				1 hour				1½ hours				2 hours			
	G.	H.D.	L.T.	B.D.	G.	H.D.	L.T.	B.D.	G.	H.D.	L.T.	B.D.	G.	H.D.	L.T.	B.D.
White	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Purple	1	1	1	0	1	1	1	0	1	1	1	1	2	1	1	1
Green	1	1	1	0	2	1	1	1	2	2	1	1	3	2	2	2
Blue	2	1	1	1	2	2	2	1	3	2	1	2	4	3	3	3
Brown	2	2	2	1	3	3	2	1	4	4	3	3	5	5	4	4
Yellow	2	3	2	1	3	4	3	2	4	5	3	4	6	6	5	5
Orange	3	3	2	1	4	5	3	2	5	6	4	4	6	6	5	5
Pink	4	3	3	2	5	6	4	3	6	7	4	5	7	7	6	7
Red	4	4	3	2	6	6	4	4	7	7	5	5	8	8	7	7

G. Gang
H.D. Heavy Duty
L.T. Light Tractor (wheel blade or equivalent)
B.D. Bulldozer

TABLES

PINE

Fire Danger	Time Between Detection and Attack															
	10 minutes				½ hour				1 hour				1½ hours			
	G.	H.D.	B.D.	G.	H.D.	B.D.	G.	H.D.	B.D.	G.	H.D.	B.D.	G.	H.D.	B.D.	G.
White	1	0	0	1	0	0	1	0	0	1	1	0	1	1	0	1
Purple	1	1	0	1	1	0	1	1	0	2	2	0	3	3	1	3
Green	1	1	0	2	1	0	2	2	1	3	3	1	5	5	2	5
Blue	1	2	0	2	2	1	2	2	2	5	5	3	7	7	4	7
Brown	2	2	0	2	2	1	3	3	2	7	7	4	9	9	5	9
Yellow	2	2	0	4	3	1	5	4	2	9	8	4				
Orange	2	2	1	5	4	1	7	5	2							
Pink	3	3	1	6	5	2	8	7	3							
Red	3	3	1	7	6	2	11	8	3							

G. Gang
H.D. Heavy Duty
B.D. Fuel separating machine,
viz., bulldozer or tractor and plough

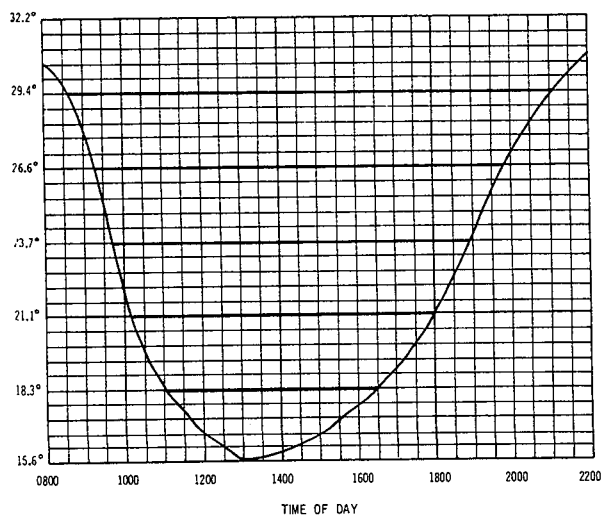
McARTHUR SLOPE CORRECTIONS

Slope in degrees	Spread Factor
~ 10 degrees	0.6
5	0.8
Level	1.0
+ 2	1.1
+ 4	1.3
+ 6	1.5
+ 8	1.7
+ 10	2.0
+ 15	2.8
+ 20	4.0

The factor is 1.0 for level ground and doubles for every 10 degree increase in slope.

GRAPHS FOR LIGHTING METHOD

GRAPH B



Graph A supplied separately.

DEFINITIONS

AVERAGE DAILY TEMPERATURE mean of temperature recorded at 10.00, 12.00, 14.00 and 16.00.

AVERAGE DAILY TEMPERATURE CLASS the appropriate range in which falls the mean of average daily temperatures of drying days in the period since rain.

A DRYING DAY one on which the average daily temperature exceeds 15.5 C and on which no rain fell after 09.00 hrs.

WHEN TO ACCUMULATE RAINFALL falls of rain over a period not broken by a drying day. If recent rain falls are separated by drying days giving more than one possible correction factor accept the numerically lowest factor.

NUMBER OF DAYS SINCE RAIN the total of drying days since rain, including the day for which the fire danger is being calculated.

FIRE DANGER INDEX the maximum rate of spread predicted from forecasted weather for level topography, 60% crown cover and standard fuel conditions for each forest type, namely

JARRAH		7.6 to 8.5 tonnes/ha
KARRI		30.1 to 35.0 tonnes/ha
PINE		36.1 to 40.0 tonnes/ha

FIRE DANGER CLASSES

Colour	Code	Rate of Spread	Type of Burn
WHITE	 0.0 to 11.9	Metres/Hour	Coppice & Pine
PURPLE	 12 to 20	"	Prescribed Burning Range
GREEN	 21 to 40	"	
BLUE	 41 to 60	"	
BROWN	 61 to 140	"	Warm Burns
YELLOW	 141 to 240	"	Large Fire Organization
ORANGE	 241 to 320	"	
PINK	 321 to 400	"	
RED	 401 +	"	

FLAME HEIGHT = Rate of Spread divided by 30.

SCORCH HEIGHT = Flame Height x 5 approximately or divide rate of spread by 6.

USEFUL CONVERSION FACTORS

- To convert R.O.S. in feet per minute to metres per hour multiply ft/min by 20.
e.g. 3 ft/min x 20 = 60 m/hr.
- To convert miles per hour of wind to Kilometres per hour multiply by 1.6.
e.g. 5.0 m.p.h. x 1.6 = 8 Km/hr.
- To convert miles to kilometres multiply miles by 1.6.
- One chain equals 20 metres.
- To convert acres to hectares multiply acres by 0.4.
e.g. 10 acres x 0.4 = 4 hectares
- To convert tons per acre to tonnes per hectares multiply by 2.5.
e.g. 5 tons per acre x 2.5 = 12.5 tonnes/ha.
N.B. One tonne equals 1000 Kilogrammes.
- To convert points of rain to millimetres divide by 4.
e.g. 100 points ÷ 4 = 25mm.
- To convert degrees Fahrenheit to Celsius
 $C = 5/9 (F - 32)$.

degrees Celsius														
-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	100
-35	-25	-15	-5	5	15	25	35	45	55	65	75	85	95	105
-31	-13	5	23	41	59	77	95	113	131	149	167	185	203	221
-40	-22	-4	14	32	50	68	86	104	122	140	158	176	194	212
degrees Fahrenheit														

RATE OF SPREAD (ROS) PERIMETER TABLE												
Forward ROS in Metres Per Hour	Metres of Perimeter											
	Elapsed Time in Hours											
	1			2			3			4		
	Min.	Usual	Max.	Min.	Usual	Max.	Min.	Usual	Max.	Min.	Usual	Max.
20	60	100	120	120	180	260	180	280	380	260	380	500
40	120	180	260	260	380	500	380	560	760	500	760	1000
60	180	280	380	380	560	760	560	840	1140	760	1140	1500
100	320	480	620	620	940	1260	940	1420	1880	1260	1880	2520
120	380	560	640	760	1140	1500	1140	1700	2260	1500	2260	3020
160	500	760	1000	1000	1500	2000	1500	2260	3020	2000	3020	4020
240	760	1140	1500	1500	2260	3020	2260	3400	4520	3020	4520	6040
340	1060	1600	2140	2140	3200	4280	3200	4800	6400	4280	6400	8540
400	1260	1880	2520	2520	3760	5020	3760	5660	7540	5020	7540	10060
660	2080	3120	4140	4140	6220	8300	6220	9340	12440	8300	12440	16580
800	2520	3760	5020	5020	7540	10060	7540	11300	15080	10060	15080	20100
1200	3760	5660	7540	7540	11300	15080	11300	16960	22620	15080	22620	30160
1600	5020	7560	10060	10060	15080	20100	15080	22620	30160	20100	30160	40220
2400	7540	1130	15080	15080	22620	30160	22620	33920	45240	30160	45240	60320

To use the Rate of Spread Perimeter table:

- Determine forward ROS for the fuel type and wind velocity.
- Determine elapsed time between the fire starting and attack.
- Determine shape - circular, ovoid or fan shaped.
- On the table locate forward ROS and elapsed time. Read perimeter from the intersecting column. Use minimum perimeter for circular fires, usual perimeter for ovoid fires and maximum perimeter for fan shaped fires.
- Use perimeter spread calculations to estimate suppression force requirements and to adjust level of despatch from the despatcher tables.