

## Fire Behavior and Crop-tree Damage Survey

Poor burning conditions early spring of 83. Did not get complete burn coverage on some low intensity plots.

Backfires used on all plots.

Plot	Date Burned	Ignition time	Reached end of plot	Rate of Spread ft/min		Flame Length ft	
				Range	Average	Range	Average
2L2	3/9/1983	1520	1648	0.8-3.5	1.9	0.5-3.5	1.4
4L1	3/11/1983	1420	1533	1.4-3.6	2.6	0.5-4.0	1.8
9L4	3/9/1983	1022	1146	0.6-2.3	1.7	0.5-3	0.9
11L3	3/11/1983	1205	1340	0.5-3.0	1.7	0.5-2.0	0.9
3M3	3/4/1983	1223	1343	1.3-3.8	2.5	0.25-3.0	1.7
7M4	3/4/1983	1323	1437	0.9-2.9	2.0	1.0-4.5	2.2
8M1	3/9/1983	1320	1438	1.7-4.0	2.7	0.5-4.0	2.0
10M2	3/4/1983	1432	1532	1.7-3.9	2.6	0.5-5.0	2.2

### Low Intensity Plots

Plot	Backfire Rate of Spread (ft/min)				Backfire Flame Length (ft)		
	Line 1	Line 2	Line 3	Line 4	Line 1	Line 2	Line 3
2L2	1.7	1.9	2.2		2.2	1.1	1.0
	Average 1.9				Average 1.4		

4L1	2.4	2.6	2.9		0.9	2.1	2.3
	Average 2.6				Average 1.8		

9L4	1.7	1.8	1.5		1.5	0.7	0.6
	Average 1.7				Average 0.9		

11L3	1.5	2.1	1.4		0.9	0.7	1.2
	Average 1.7				Average 0.9		

### Moderate Intensity Plots

Plot 3M3	2.3	2.5	2.6	2.1	1.2	1.6	2.1
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	Average	2.5		Average	1.7
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7M4	1.5	2.4	2.2	1.9	2.5	2.2
	Average			2.0	Average	

8M1	2.4	2.7	3.1	1.2	2.8	
	Average			2.7	Average	

10M2	3.1	2.1	2.7	1.7	2.4	2.5
	Average			2.6	Average	

Low Intensity Plot Totals

Backfire Rate of Spread (ft/min)			Backfire Flame Length (ft)			
Average			2.0	Average		1.3

Moderate Intensity Plot Totals

Average			2.2	Average		1.7
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Switched plot 4M1 to 4L1 and plot 8Mi to 8L1 based on fire behavior.

Fireline Intensity		Pine Ht	Scorch Ht	Crown S	Crown C
I = FL	I = HWR				
12	9	8.9	6.7	65	8
19	14	6.6	4.8	60	10
7	10	7.5	5.2	55	11
5		9.8	5.6	40	4
18	54	7.1	5.8	67	8
29	19	7.5	6.3	75	15
24	15	9.1	7.6	69	9
31	30	8.6	8.3	90	24

ft)	Tree Height (ft)			Scorch Height (ft)			% Crown Scor	
Line 4	Row 1	Row 2	Row 3	Row 1	Row 2	Row 3	Row 1	Row 2
	9.4	8.3	8.9	7.6	6.1	6.6	71	63
	Average 8.9			Average 6.8			Average 65	
	6.8	6.6	6.4	4.8	4.9	5.1	53	62
	Average 6.6			Average 4.9			Average 60	
	7.5	8.1	7	5.6	5	5	62	47
	Average 7.5			Average 5.2			Average 55	
	8.5	11.6	9	4.8	5.5	7	33	36
	Average 9.8			Average 5.6			Average 40	
1.5	7.0	6.6	8	5.8	5.5	6	76	68

Average	7.1	Average	5.8	Average	67
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7.2	7.3	8	6.4	6.0	6	80	70
Average	7.5	Average	6.3	Average	75		

9.2	9.4	9	7.7	7.9	7	73	64
Average	9.1	Average	7.6	Average	69		

8.8	9.0	8	8.6	8.7	8	92	91
Average	8.6	Average	8.3	Average	90		

Tree Height (ft)	Scorch Height (ft)	% Crown Scorch
Average 8.2	Average 5.6	Average 55

Average 7.1	Average 5.8	Average 67
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Arch	% Crown Consumption		
Row 3	Row 1	Row 2	Row 3
60	4	10	10
	Average 8		
66	6	11	12
	Average 10		
56	12	11	11
	Average 11		
52	6	2	4
	Average 4		
57	11	8	5

Average 8			
75	8	17	20
Average 15			
70	13	6	9
Average 9			
88	23	30	19
Average 24			
% Consumption			
Average 8			
Average 8			