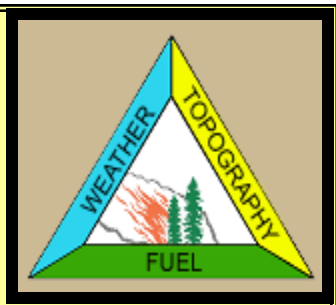


TOPIC 41 GRASS CARD



A POCKET CARD FOR PREDICTING FIRE BEHAVIOR IN GRASSLANDS UNDER SEVERE BURNING CONDITIONS

A SIMPLE FIELD GUIDE FOR ESTIMATING THE BEHAVIOUR AND SUPPRESSION REQUIREMENTS OF FIRES DRIVEN BY WIND COMING FROM A CONSTANT DIRECTION, IN OPEN, FULLY CURED GRASSLANDS AT LOW FUEL MOISTURE.

Caution: Flame heights at the fire's head will be greater than 2.5 metres. Under NO circumstances should direct attack be mounted on the head fire. Any containment action must begin from a secured anchor point and progress along the flanks toward the head as the fire edge or perimeter is "knocked down".

Beaufort Wind Force ^a	Forward spread distance <u>perimeter length</u> /maximum <u>breadth</u> versus elapsed time since ignition				Head fire intensity -kW/m--	Head fire flame length -metres-	Minimum firebreak width required to stop head fire ^b	
	Kilometres						metres	
	0.5 hour	1 hour	1.5 hour	2 hour			Trees absent	Trees present
0-1	0.7/2.4/0.4	1.3/4.9/0.7	2.0/7.3/1.1	2.6/9.8/1.4	2300	2.7	5	12
2	1.0/2.7/0.4	2.0/5.5/0.7	2.9/8.2/1.1	3.9/10.9/1.5	3450	3.3	6	13
3	1.6/3.7/0.4	3.2/7.4/0.8	4.8/11.1/1.2	6.3/14.8/1.6	5550	4.1	7	15
4	2.7/5.7/0.6	5.3/11.5/1.1	8.0/17.2/1.7	10.7/22.9/2.2	9350	5.2	8	30+
5	4.4/9.1/0.8	8.7/18.2/1.5	13.1/27.3/2.3	17.5/36.4/3.1	15300	6.5	10	30+
6	6.1/12.5/1.0	12.2/25.0/1.9	18.2/37.5/2.9	24.3/50.0/3.8	21300	7.6	12	30+
7	7.2/14.8/1.0	14.5/29.5/2.0	21.7/44.3/3.1	28.9/59.1/4.1	25300	8.2	13	30+
8 & higher	7.5/15.2/1.0	15.0/30.5/2.1	22.5/45.7/3.1	30.0/60.9/4.1	26200+	8.4+	14+	30+



The Pocket Card offers a practical field guide for quickly estimating the near worst case fire behaviour in grasslands (open, fully cured, at low fuel moisture). At the same time it reinforces an awareness of the need for adopting safe work practices when attempting to contain grass fires in an effort to avoid burn overs and entrapments thereby eliminating firefighter injuries and fatalities.

The emphasis of the Pocket Card is on providing basic fire behaviour information in very simplistic terms to ensure safe wildland firefighting operations.

An estimate of the probable fire behaviour characteristics in grasslands can be obtained from the Pocket Card based solely on an on-site estimate of the prevailing wind speed.

The Pocket Card also provides guidance on the minimum firebreak width necessary to halt a grass fire's forward progress.

Beaufort Wind Force	Descriptive Term	10 - m wind speed --km/h--	Observed wind effects
0	Calm	< 1	Smoke rises vertically.
1	Light air	1 to 5	Direction of wind shown by smoke drift but not by wind vanes.
2	Light breeze	6 to 11	Wind felt on face; leaves rustle; ordinary vanes moved by wind.
3	Gentle breeze	12 to 19	Leaves and small twigs in constant motion; wind extends light flags.
4	Moderate breeze	20 to 28	Wind raises dust and loose paper; small branches are moved.
5	Fresh breeze	29 to 38	Small trees in leaf begin to sway; crested wavelets form on inland waters.
6	Strong breeze	39 to 49	Large branches in motion; whistling heard in telephone wires; umbrellas used with difficulty.
7	Moderate gale	50 to 61	Whole trees in motion; inconvenience felt when walking against wind.
8	Fresh gale	62 to 74	Breaks twigs off trees; generally impedes progress.
9	Strong gale	75 to 88	Slight structural damage occurs (e.g., TV antennas and tiles blown off).
10	Whole gale	89 to 102	Seldom experienced inland; trees uprooted; considerable structural damage.

Note: Fire behaviour predictions in this guide are based on head fire rate of spread in fully cured standing grasslands (Fire Behavior Prediction System Fuel Type O-1b) on flat to undulating terrain, assuming a fuel load of 3.5 t/ha, a Fine Fuel Moisture Code of 93.2, and the midpoint of the wind speed range associated with each Beaufort Wind Force. Use of the Guide is at the reader's sole risk.

