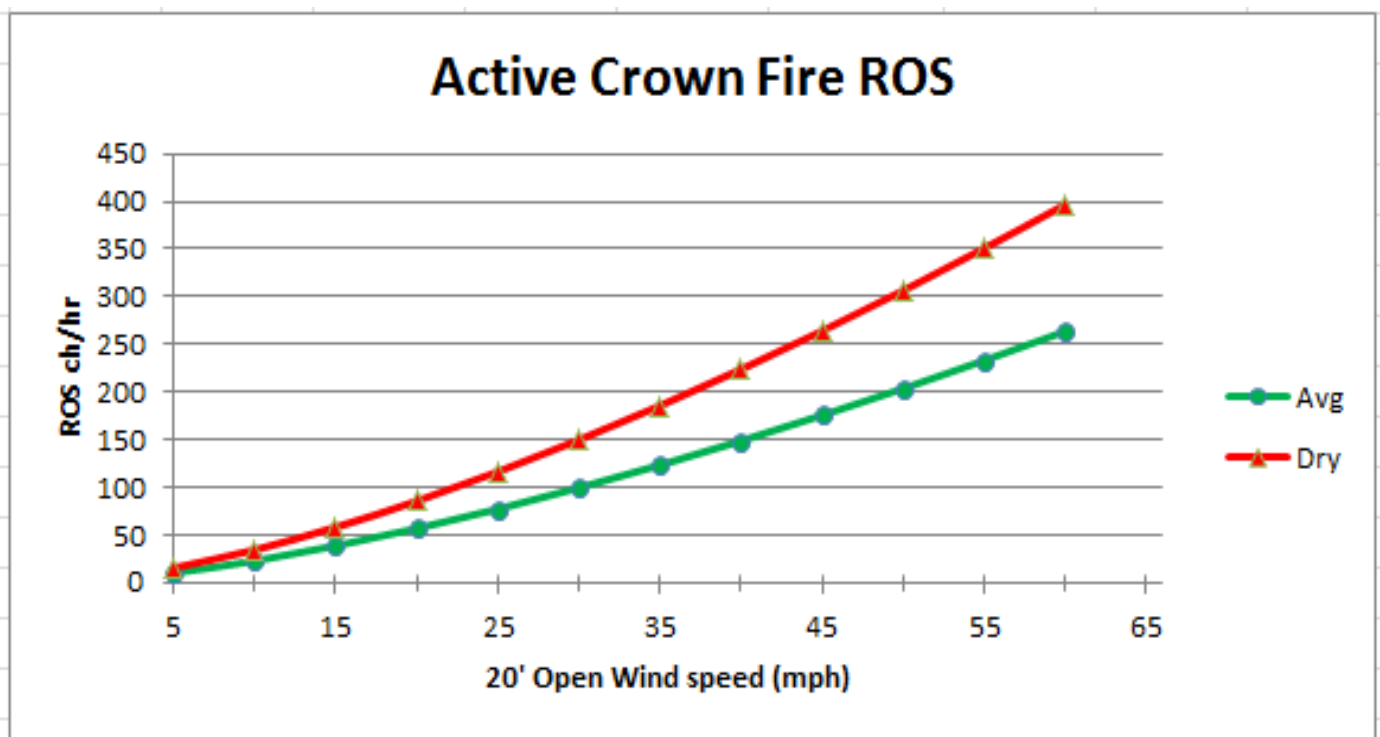


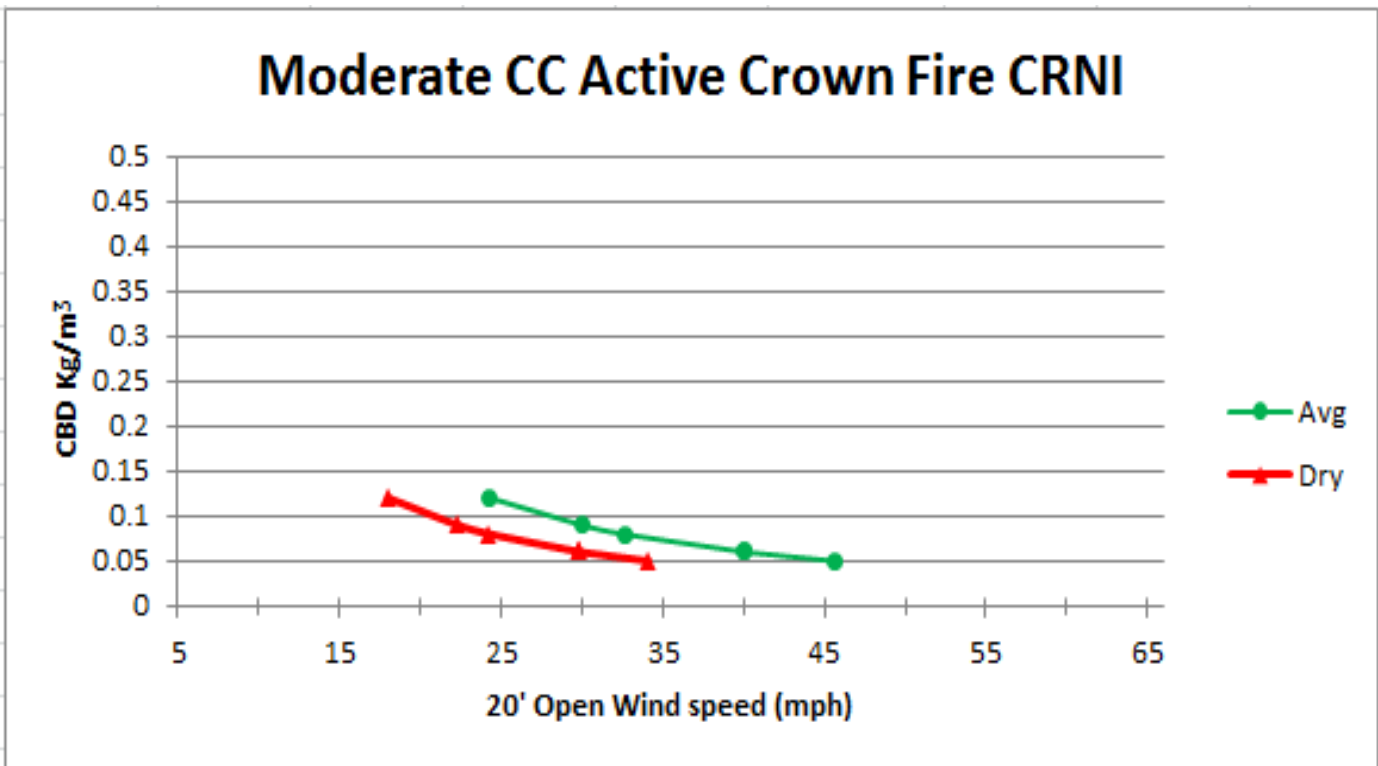
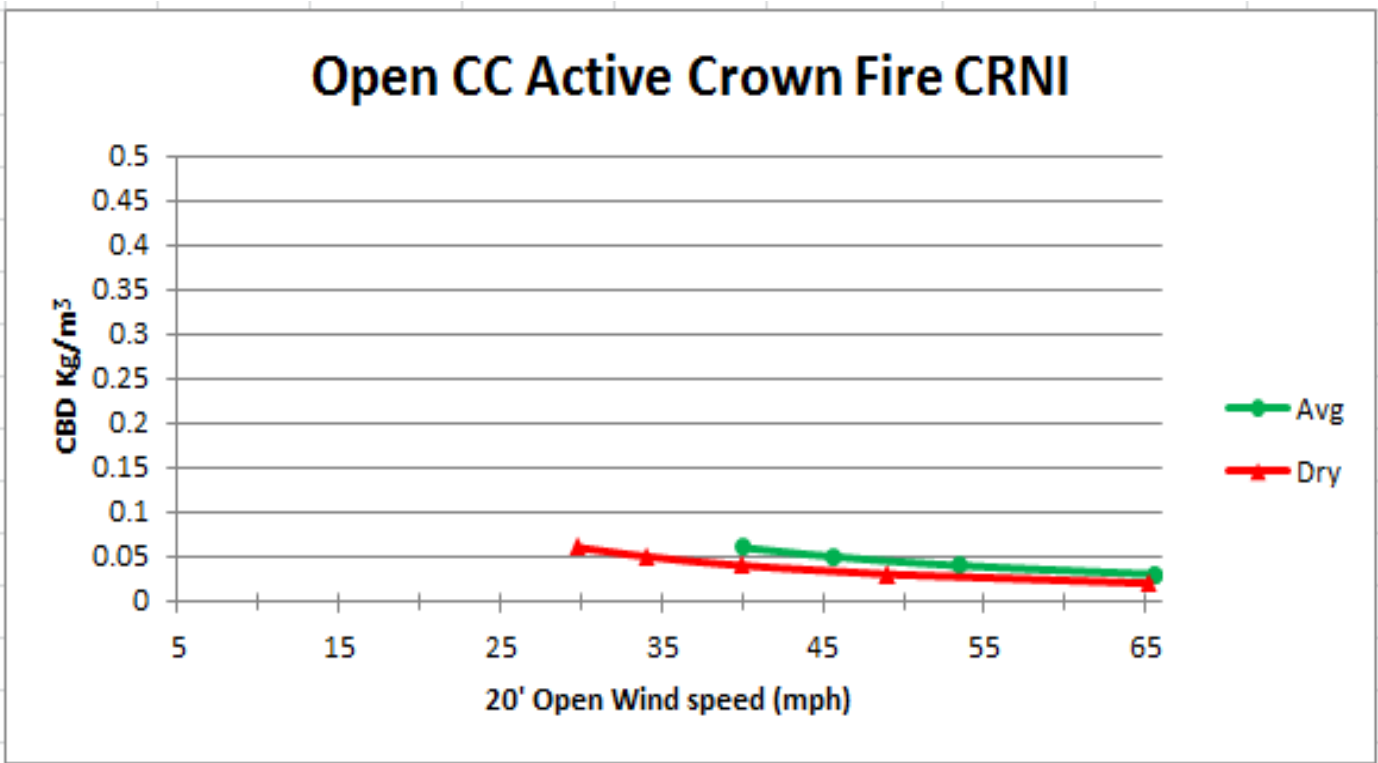
The active crowning rate of spread (ROS) is the same for all fuel models based on Rothermel (1991). Once crown fire initiation occurs (passive crowning) canopy bulk density (CBD), fuel moisture, and windspeed are the factors that determine if the fire will transition to active crowning. The canopy attributes of canopy cover (CC) and canopy height (CH) are used in LF to compute CBD. The charts below display the classes of CC and CH that exist in the LF data along with their associated CBD. The green section depicts the open stand condition (10 -29% cover), the blue is the moderately closed condition (30 – 50% cover), and the red section represents the closed stand condition (>50% cover). The crowning Index (CRNI) is the open windspeed that the model will predict active crowning for the calculated CBD (non-Juniper). The CRNI is calculated for the average and dry fuel moisture scenarios. Average fuel moisture scenario = 1hr-6%; 10hr-7%; 100hr-8%; herbaceous -- 60%; woody – 90%. Dry fuel moisture scenario = 1hr-3%; 10hr-4%; 100hr-5%; herbaceous -- 30%; woody – 60%. The graph then displays the active crowning ROS based on the variables in the chart.

CC	CH	CBD	CRNI Avg	CRNI Dry
15%	37.5-50m	0.02	87.1	65.3
25%	37.5-50m	0.03	65.5	49
15%	17.5m	0.03	65.5	49
25%	17.5m	0.04	53.4	40
15%	2.5-7.5m	0.05	45.6	34.1
25%	2.5-7.5m	0.06	40.1	29.9
35%	37.5-50m	0.05	45.6	34.1
45%	37.5-50m	0.06	40.1	29.9
35%	17.5m	0.06	40.1	29.9
45%	17.5m	0.08	32.6	24.3
35%	2.5-7.5m	0.09	30	22.3
45%	2.5-7.5m	0.12	24.3	18

CC	CH	CBD	CRNI Avg	CRNI Dry
55%	37.5-50m	0.09	30	22.3
55%	17.5m	0.11	25.9	19.2
65%	37.5-50m	0.12	24.3	18
75%	37.5-50m	0.16	19.7	14.6
65%	17.5m	0.16	19.7	14.6
55%	2.5-7.5m	0.17	18.9	13.9
85%	37.5-50m	0.22	15.6	11.4
75%	17.5m	0.22	15.6	11.4
65%	2.5-7.5m	0.25	14.1	10.3
85%	17.5m	0.3	12.3	8.9
95%	37.5-50m	0.31	12	8.7
75%	2.5-7.5m	0.34	11.2	8
95%	17.5m	0.42	9.4	6.7
85%	2.5-7.5m	0.45	8.9	6.3
95%	2.5-7.5m	0.45	8.9	6.3



In terms of forest stand density we standardize canopy cover in three classes: open (10 –29%); moderately closed (30 – 50%); and closed (>50%). In the following charts the windspeeds at which the average fuel moisture condition and dry fuel moisture condition will actively crown with respect to their CBD.



Closed CC Active Crown Fire CRNI

