



FEWG – A WORKING GROUP FOR NCDFR MTM



NC Fire Danger Technote 02 – May 6<sup>th</sup>, 2009

NFDRS General Guidance:
Index, Components, and Moisture Levels – acceptable values for Prescribed Fire

Ignition Component (IC) – the probability a firebrand will cause an “actionable” fire & requires suppression. IC is more than just a probability of a fire start. It has to have the potential to spread. IC can be an aid in assessing spotting potential. An IC value of ≥ 20 is a critical threshold value.

Burning Index (BI) – relates to the contribution of the fire’s behavior in containing the fire. The difficulty of containment is directly proportional to the fire line intensity. BI is derived from the SC + ERC. BI is a cross reference of the fire line intensity & flame length. It assesses spotting & crown fire potential as well as suppression resource needs & tactical considerations. The doubling of the BI can double flame length, yet this is a 5 fold increase in fire line intensity.

Spread Component (SC) – the rate of spread (ROS) expressed in feet per minute. It is a guide to the fastest spread of a fire which is at the head of the fire. Wind speed, slope & fuels are key inputs. SC aids in assessing readiness plans, air tanker use, ground tactics, & pre-positioning suppression forces. The SC value “usually exceeds” the fire’s true ROS. A SC value that is greater than fire lines can be built needs to be considered a critical Threshold value.

Energy Release Component - a number relating to the available energy released from forest fuels (BTU / ft²) at the head of a fire’s flaming front. ERC is a composite of all live & dead fuel moistures. It is a very good reflection of drought conditions. It is a “build up” type index. Given a fire start in a fuel with a high ERC, fire containment can be expected to be difficult. ERC is very valuable in assessing the depth of a burn, consumption of the various fuel sizes, residual burning, and mop-up requirements.

Table with 5 columns: Index, Region 1, Region 2 (E / 9, C / 2), Region 3 (E / 9). Rows include Fuel Model, ERC, SC, IC, BI, KBDI, BUI, and moisture levels for 1 hr, 10 hr, 100 hr, 1000 hr, and Live Herb.

Note: These values are general and will place one in an acceptable area of operation for Prescribed Fire. It is best to inquire and learn about meaningful local values. These can be determined by performing a business analysis using Fire Family Plus and applying empirical experience. Successful prescribed burns can be accomplished under higher or lower than the indicated values. This is where knowledge and experience assist in assessing how the values interact and offset each whereby a “Go decision” is supported.