

Fire Weather Tools

Name	Inputs	Outputs	Description	Application	Map Link
Low Visibility Occurrence Risk Index (LVORI)	Relative humidity, smoke dispersion index	1 (low chance of low visibility) - 10 (high chance of low visibility)	Index for probabilities of low visibility occurring. Extreme caution is required when the forecast LVORI is 8, 9, or 10 for the nighttime period, as fog will mix with smoke.	Used in planning prescribed burns and nighttime burning.	
Dispersion Index (ADI)	Stability, mixing height, transport winds	>100 Very Good (but may indirectly indicate hazardous conditions) 61-100 Good (typical-case burning weather values are in this range) 41-60 Generally Good (afternoon values in most inland forested areas of the US fall in this range) 21-40 Fair (stagnation may be indicated if accompanied by persistent low windspeeds) 13-20 Generally Poor; stagnation if persistent (although better than average for a night value) 7-12 Poor; stagnant at day (but near or above average at night) 1-6 Very Poor (very frequent at night)	Dispersion is the process by which the atmosphere mixes and transports particles such as smoke away from their source. Typical burning values are in the range 40-60. Hazardous conditions may exist for ADI > 100. <i>Should not be used alone in making burning decisions.</i>	Assess the impact of prescribed burning activity and wildfires on atmospheric smoke concentrations and air quality. Maximum 75, minimum 30 for daytime prescribed burning. Nighttime minimum 6. (Florida Values / NC ?)	
Haines Index	Atmospheric sounding data	2 - 3 very low growth potential 4 low potential 5 moderate potential 6 high potential for large fire growth	Judges the growth potential of a fire by measuring the dryness and stability of the air over a fire. Correlated with large fire growth on initiating and existing fires where surface winds do not dominate fire behavior.	Indicates where wildfires or prescribed fires may get out of control.	
Lightning Activity Level (LAL)	Surface Observations, Info from weatehr Balloons, Satelite and radar images, as well as forecasted models.	LAL 1 – No thunderstorms. LAL 2 – Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1-5 cloud to ground strikes in a 5 minute period. LAL 3 – Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6-10 cloud to ground strikes in a 5 minute period. LAL 4 – Scattered thunderstorms. Moderate rain is commonly produced. Lightning is frequent, 11-15 cloud to ground strikes in a 5 minute period. LAL 5 – Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud to ground strikes in a 5 minute period. LAL 6 – Same as LAL 3 except thunderstorms are dry (no rain reaches the ground). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with a Red Flag Warning.	LAL is a measure of the amount of lightning activity using values 1 to 6	Used to assist in assessing the potential for lightning caused fires	
Spot Weather Forecast	Indicates where wildfires or prescribed fires may get out of control. Should be considered along with a surface fire danger index for maximum effectiveness.	Hourly temperature, relative humidity, wind speed and direction.	Special weather forecast issued to fit the time, topography and weather for a specific fire.	Use for prescribed fires and wildfires.	