Public Abstract
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Title:THE CLIMATOLOGY OF DEW POINTS AND FIRE WEATHER RELATED PARAMETERS IN THE MISSOURI-ARKANSAS REGION

Forecasting fire weather in the Springfield, Missouri and Little Rock, Arkansas Weather Forecast Offices (SGF and LZK WFO, respectively) across the greater Missouri and Arkansas regions (MoArk) county warning areas has been described as a challenge for wildfire managers. It is known that wildfire managers rely on their local WFO to provide fire weather forecast that are vital in the decision making process for wildfire suppression and prescribe fire management. Many climatic factors that affect fire hazards, including soil moisture, synoptic conditions, dewpoint, temperature and wind are indirectly impacted by ENSO. The climatology of dewpoint, temperature, Palmer Index, and synoptic conditions of fire weather flow regimes are presented here using the synoptic station observation network covering the MoArk region. A statistical analysis was performed in order to find useful interannual variability in the climatology of dew points and fire weather related parameters and their relationship to El NiÃ±o and La NiÃ±a. The data set used here contains monthly average dewpoint temperatures dating back to 1948 for three sites within Missouri: St. Louis, Columbia, and Springfield and one site in Arkansas: Little Rock. Dewpoint rather than relative humidity was chosen for this research because it is a measure of the actual amount of moisture in the air and is useful for seasonal fire weather
outlooks as the seasonal forecast would allow the forecaster to provide sufficient lead time for the relevant local, state, and federal agencies to plan and prepare for wildfire potential months in advance. In a study by Heilman (1998), dewpoint had the ability to discriminate between normal conditions and large wildfire conditions. An F-Test analyses was performed on the Columbia, MO, St. Louis, MO, Kansas City, MO, Littlerock, AR and Springfield, MO dewpoint linear regression chart. According to the F-Test analyses, all areas showed a significant increase in dewpoint temperatures. For example, in Columbia, MO, there is a significant increase in dewpoint temperatures (at the 95% confidence level). These rises in dew point are consistent with a moisture climate, and may also be part of the reason for increased precipitation in our region (e.g. Karl et al 1997). After examination dewpoint temperatures, syntopic conditions, and soil moisture of La NiÃ±a case 1988, it is shown that 3, 617 acres burned in the Missouri area and in the El NiÃ±o case 1991, no burned acres were reported.