Final Report

University: University of Missouri - Columbia

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NWS Office: Springfield, MO WFO and Little Rock, AR WFO

Name of NWS Researcher Preparing Report: Drew Albert / Chris Buonanno

Type of Project (Partners or Cooperative): Partners

Project Title: The Climatology of Dew Points and Fire Weather Related Parameters in the Missouri – Arkansas Region

UCAR Award No.: S06-58398

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Section 1: Summary of Project Objectives

The Objectives of this project were to develop a dew point climatology of the Missouri and Arkansas region and then to relate these and other variables to the occurrence of wild fires in Missouri. The goal was to develop a more detailed examination of the conditions that are favorable to enhanced fire danger in our region.

We met with both weather service offices in August 2006. At that time, we decided on a suite of stations for use with the input of the SGF and LIT stations. We will be used data from the USDA/Forest Service. We are able to get fire data from 1970-2002 for the Mark Twain National Forest in Missouri, with the help of the SGF personnel.

The SGF office is using a program called Fire Family Plus and it allows us to display fires by various parameters, time periods, etc and associates fires with weather at RAWS sites.

We've also met with the Forestry department here on campus for input into the data set being used. They helped us with data interpretation.

Section 2: Project Accomplishments and Findings

In examining the dew point climatology, we found that there was a statistically significant increase in the annual dew points across the region. An examination of the seasonal results revealed interannual variability likely tied to El Nino and Southern Oscillation as has been found for other variables in this region.

In particular, we have found that during.....

When examining fire occurrence without regard to cause, we've actually found that there has been a slight, but statistically insignificant decrease in fire occurrence. This would be consistent with increases in atmospheric moisture content and rainfall found by several authors. However, there has been significant interannual variability found in the fire occurrence in this region, especially the larger fires. We have found that during El Nino years, there were a larger number of acres burned during La Nina years.

These are the findings to-date.

Section 3: Benefits and Lessons Learned: Operational Partner Perspective

Section 4: Benefits and Lessons Learned: University Partner Perspective

The benefits to the University partner were collaboration with our National Weather Service Colleagues and learning about the fire weather responsibilities of our partners.

For this project there were significant problems. The biggest problem has been that the student working on this project was called to serve in Iraq. Her training began in August 2007 and took significant chunks of her time. She is currently in Iraq and has been since January 2008. She should return in the summer 2008. While her service to the nation is admirable and very important, this has presented a problem in taking the project where we wanted it to go.

Section 5: Publications and Presentations

Only one publication is available at this point, but more are forthcoming:

Chesser, M. D., A.R. Lupo, D. Albert, and C. Buonanno, 2008: The interannual variability of wildfires and related weather in the Missouri – Arkansas region. *88th Annual Meeting of the American Meteorological Society. 13 – 18 January, 2008, New Orleans, LA*