



Kentucky Mesonet Update: Progress on TIM & DEWS

Stuart A. Foster
State Climatologist for Kentucky
Kentucky Climate Center
Western Kentucky University

Kentucky Farm Bureau
Water Management Working Group

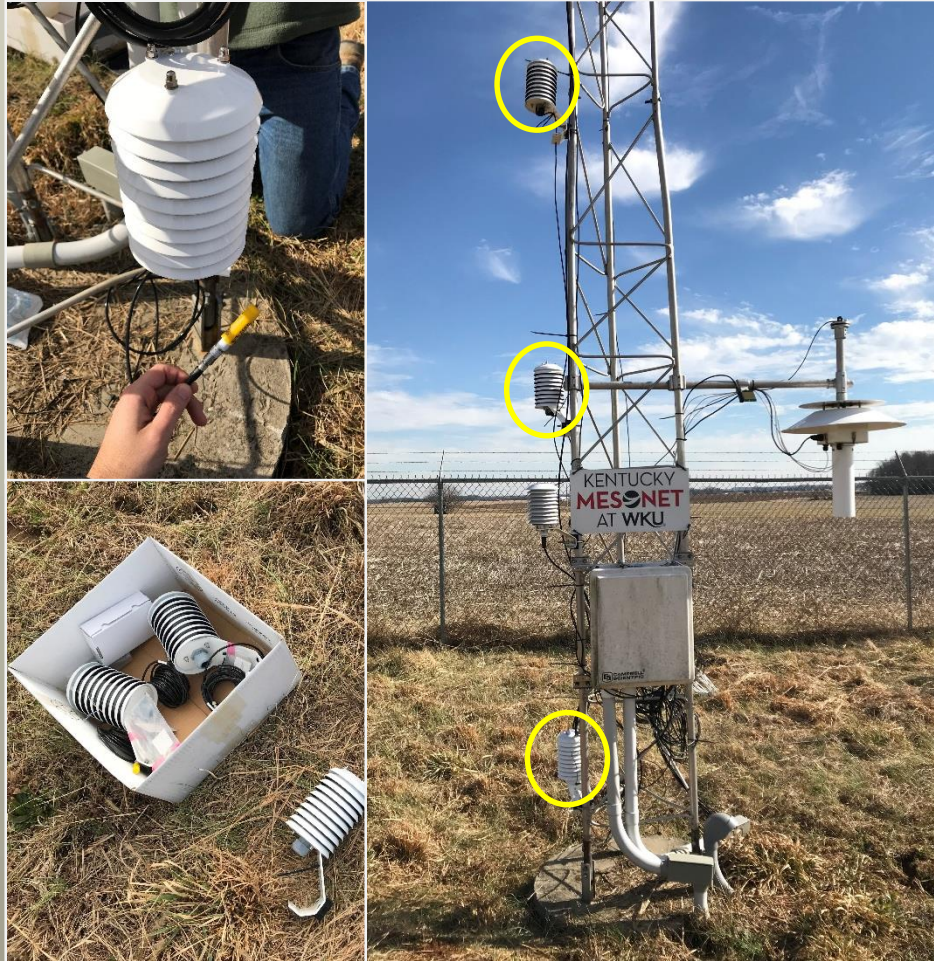
Louisville, Kentucky

August 29, 2018



Temperature Inversion Monitoring System

Experimental Project Supported by USDA Midwest Climate Hub



- Multi-level temperature measurements (1.5', 6', and 10') help to determine when the potential for a temperature inversion is high.
- Farmers can determine when conditions are right for applying chemical treatments to crops.
- The monitoring system is being installed at 6 sites.
- Results will be evaluated to determine whether to invest in monitoring at additional sites.



Sample Temperature Inversion Graph

KENTUCKY MESONET | WKU

The Commonwealth's Official Source for Weather and Climate Data

Home

About

Data

Climate

Applications

SITE

Shelby County (FCHV)

TEMPERATURE GRAPHS

✓ TEMPERATURE

RELATIVE HUMIDITY

TIME INTERVAL

6 HOURS

12 HOURS

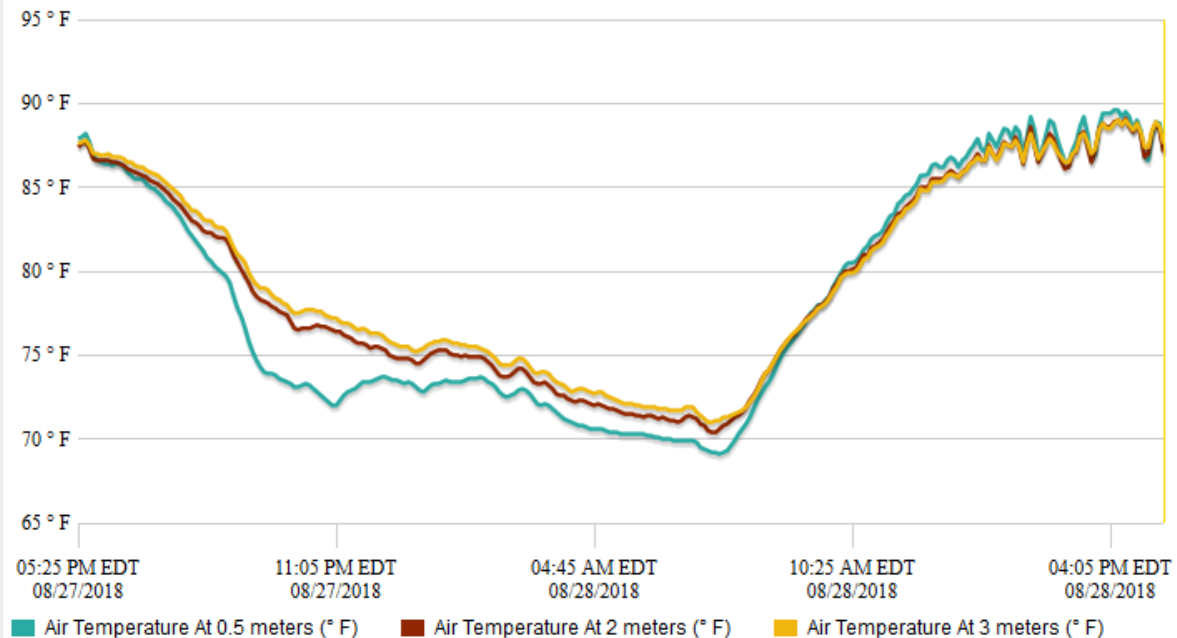
✓ 24 HOURS

SYSTEM OF MEASUREMENT

✓ ENGLISH

METRIC

FCHV Temperature Inversion



Drought Early Warning System Kickoff Meeting

Purpose

- Introduce project
- Build relationships
- Develop functional requirements

Data Collection

Information Extraction

Messaging

Communication

Building the Kentucky Drought Early Warning System

Data Collection

Information Extraction

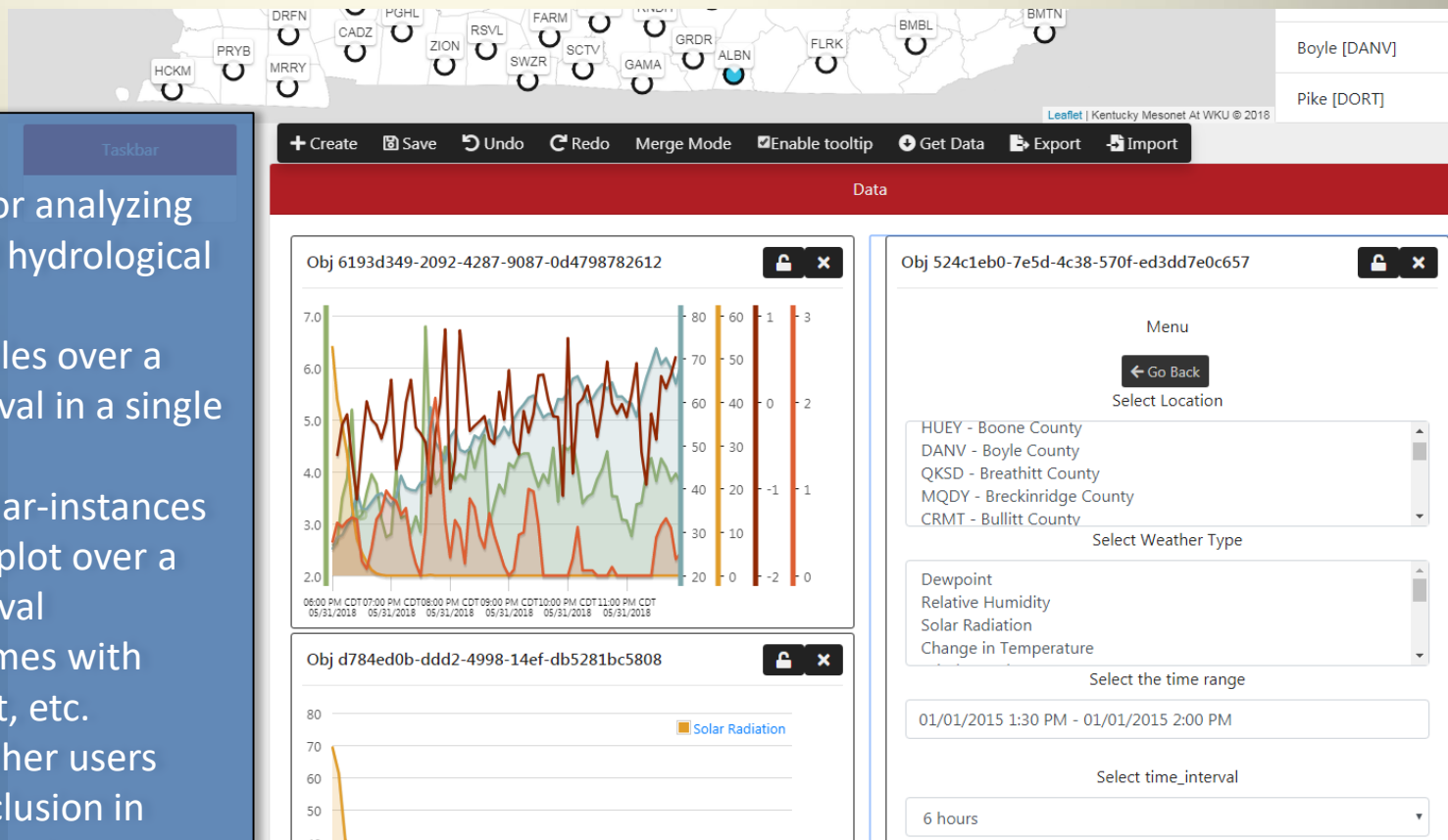
- Develop data visualization and analysis dashboard
 - Integrate precipitation, soil moisture, potential evapotranspiration, landscape imagery, NDVI imagery
 - Integrate streamflow and reservoir level data

Messaging

Communication



Scoping Functionality of the Visualization and Analysis Toolbox



- ❑ Create a platform for analyzing meteorological and hydrological data
- ❑ Plot multiple variables over a common time interval in a single graph
- ❑ Overlay multiple-year-instances of a single variable plot over a common time interval
- ❑ Create multiple frames with graphs, images, text, etc.
- ❑ Share views with other users
- ❑ Export views for inclusion in reports and presentations
- ❑ Drag n' drop / merge graphs



Building the Kentucky Drought Early Warning System

Data Collection

Information Extraction

Messaging

Communication

- Develop webinar series targeting user communities, including agriculture, water management, public health, etc.
- Partner with KY DOW, KYFB WMWG, UK Cooperative Extension, Kentucky Rural Water Association, USGS, KGS, KY DPH, KY DEM, and other organizations



