

Updated and Improved Atmospheric Radiation Measurement Program Climate Research Facility Geographic Information System Data and Maps

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Overview

A geographic information system (GIS) allows for multiple datasets with spatial information to be overlaid and layers combined and analyzed. Although the Atmospheric Radiation Measurement (ARM) Program surface characterization data have been incorporated into a GIS since the early 1990s, the data were maintained in an older version that was cumbersome and map production made difficult. Spatial data for the ARM Climate Research Facility (ACRF) sites have now been compiled in the latest version of a GIS¹. The newer object-oriented design improves on the process of importing data and its desktop environment is user friendly and portable.

New and Updated Data

Recently, the Southern Great Plains (SGP) site database was updated with new and/or finer spatial resolution data. These acquisitions include land cover, soil data, hydrology, digital elevation data, transportation data, and aerial photography. (See Figure 1 as an example.) The datasets can provide base layers for plotting data such as instrument networks or reflectance data. Ultimately, the data will be incorporated into the ARM Website pages and provide common maps across ACRF sites.

¹ ArcGIS 9.1, ESRI, 380 New York St., Redlands, CA 92373-8100 USA

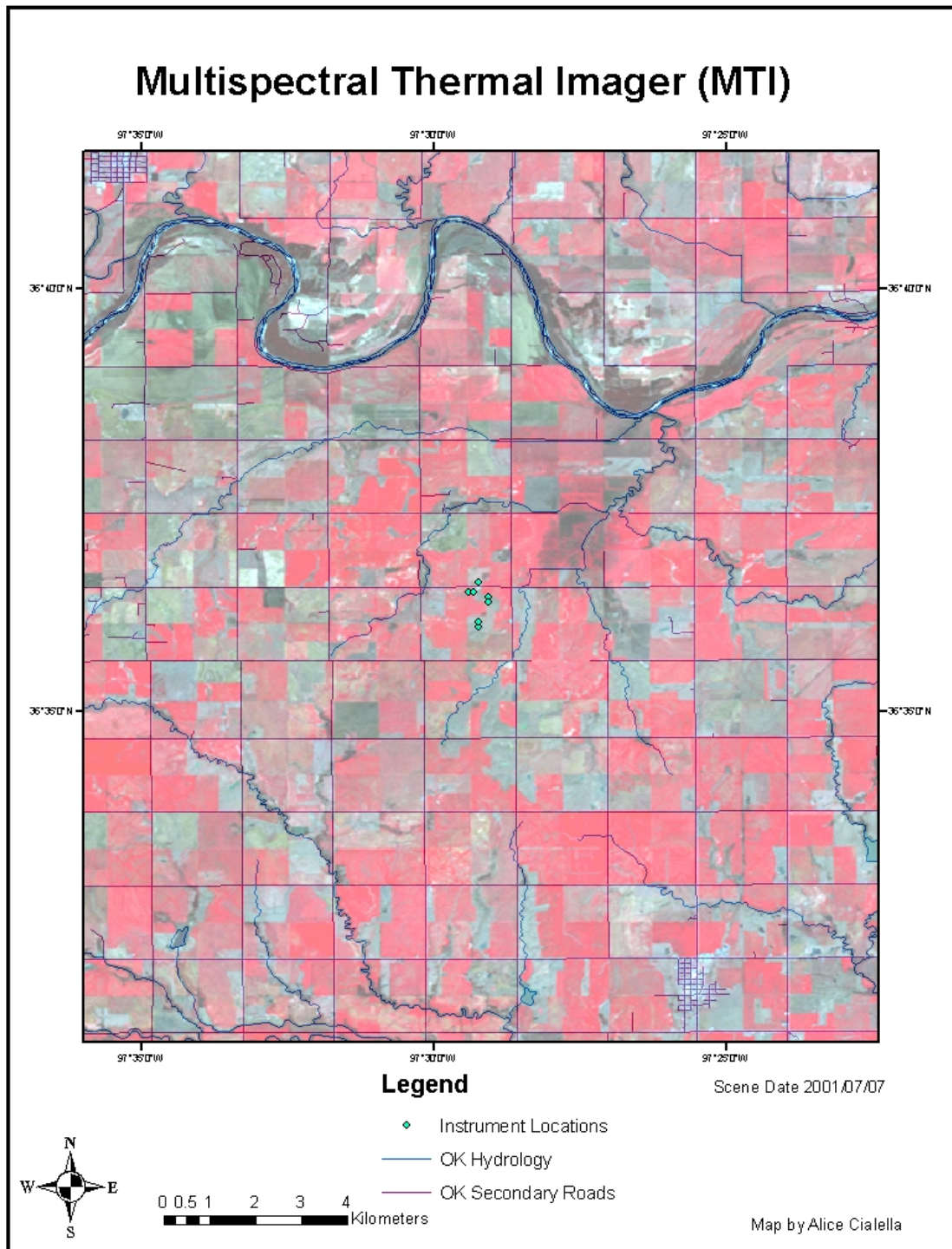


Figure 1. An example of the updated SGP database showing new and/or finer spatial resolution data.

Future Directions

During the process to update the GIS database, a need for better horizontal resolution for the latitude and longitude of the instrument locations was identified, to locate all instruments at the facilities on high-resolution base maps. When all data gathering for the Southern Great Plains, North Slope of Alaska, Tropical Western Pacific, and ARM Mobile Facility sites is complete, the ACRF GIS database will be merged into the ARM Website. Google Earth will be incorporated, customized to include ACRF data, for ARM Web Browsing.