

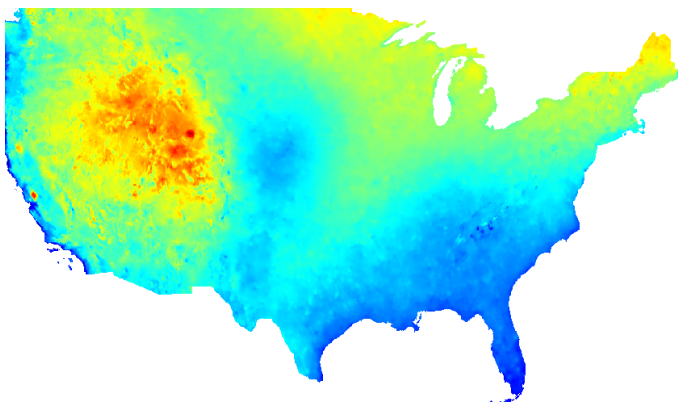
NCAR

Improving spatial accuracy and usability of weather and climate models

As a national center, the National Center for Atmospheric Research aims to provide atmospheric data and model output to the broader community. The NCAR GIS program develops methods and tools that facilitate the use of NCAR models in GIS. The GIS Program works to improve interoperability of common atmospheric data formats, as well as develop tools and applications to increase usability of models and their spatial accuracy, thereby communicating scientific outcomes to the community of GIS users and the stakeholders.

Climate Change GIS Portal

The GIS Climate Change Scenarios project and a data portal (<http://www.gisClimateChange.org>) serve a large community of GIS users interested in global climate change. This data portal provides access to global and downscaled data sets of climate change simulations generated for the IPCC AR4 by the Community Climate System Model (CCSM-3). Available data include shapefiles and textfiles of global and downscaled U.S. climate model simulations, as well as data products that show long-term averages, climate trends and anomalies.



Web Map Service (WMS) of air temperature anomaly for the end of the 21st century compared to present day climate

Weather Forecasts in ArcGIS

People have always been interested in and influenced by weather. Weather affects day-to-day activities, while extreme weather events can impact human lives, property and livelihoods. In a pilot project, the GIS program at NCAR is developing an interactive web mapping portal which integrates hurricane forecasts from Weather Research Forecast (WRF) model with socio-economic and infrastructure data. This application allows for integrative analysis and visualization of extreme weather and its potential negative impacts on society.

Open Geospatial Web Services

In an effort to make climate change data more useful and easily accessible, the GIS program distributes climate change anomalies and long-term climatologies, derived from Community Climate System Model, through the OGC standard web mapping services (WMS) and web coverage services (WCS). Data distribution through these open protocols provides flexibility for the data users to retrieve and visualize climate data.

Datum shifts and positional inaccuracy

Methods of conversion between sphere-based weather models and ellipsoid-based data for GIS analysis are being investigated to determine the full potential of the sphere-ellipsoidal shift. The GIS program is conducting experiments to analyze potential impact this shift may have on the positional accuracy of the outputs from the numerical weather models.

For More Information, Contact:

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