

Seamless Daily Precipitation and Temperature Spatial Data

Background

Spatial time series of daily precipitation and temperature data sets were developed for the entire 48 conterminous states in the U.S. at the 2.5 min (around 4 km) resolution over the period 1960-2001.

These data sets were developed to meet spatial and temporal requirements:

1. Seamless spatial coverage of the entire 48 conterminous states,
2. Representation of sequential daily values,
3. Complete time series over an extended historical period,
4. Topographically sensitive, and
5. Possess a spatial resolution adequate to support hydrologic assessments.

The data sets were generated by combining two quality controlled data sets:

- A compilation of daily observations by the National Climatic Data Center (NCDC) and
- The PRISM (Parameter-elevation Regressions on Independent Slopes Model) monthly grid estimates.

The data sets are supporting a national-scale modeling effort, which is part of the Conservation Effects Assessment Project (CEAP), a program initiated by the U.S. Department of Agriculture (USDA) to quantify the environmental benefits of agricultural conservation practices. Two models are being concurrently applied for the national assessment: 1) the EPIC (Environmental Policy Integrated Climate) model; and 2) the SWAT (Soil and Water Assessment Tool) model. Both models operate on a daily time step and require daily historical weather for simulations. These spatial data sets provide a source of weather data that is mandatory for these models to perform accurately.

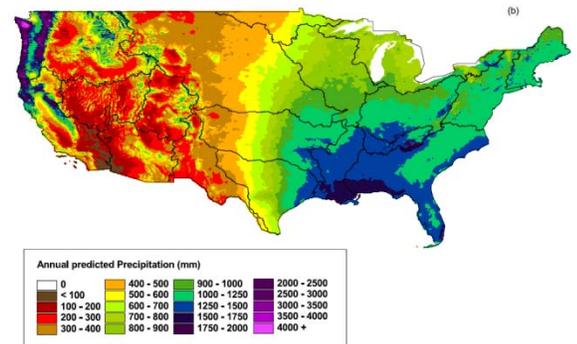


FIG. 7. (b) Annual average predicted precipitation in the period 1960-2001.

Other Potential Studies

The data sets have the potential to support other environmental and hydrological studies, in particular over extended time and with the support of observed data (stream flow, sediment load, etc.) for modeling calibration.

Partners

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