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VEMAP 2: U.S. ANNUAL CLIMATE, 1895-1993

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Summary:

The Vegetation/Ecosystem Modeling and Analysis Project (VEMAP) Phase 2 has developed a data set of ~100-year gridded annual, monthly, and daily time series of climate for the conterminous United States that includes realistic interannual variability. This data set has been used to compare time-dependent ecological responses of biogeochemical and coupled biogeochemical-biogeographical models to historical time series and projected scenarios of climate, atmospheric CO₂, and N-deposition. Development of the data set is reported in Kittel et al. (1997).

As in the [VEMAP 1 database](#), the historical data set has (1) annual, daily, and monthly versions; (2) physical consistency among variables on a daily basis; (3) consistency between climate and topography; and (4) needed input variables for VEMAP2 models (minimum and maximum temperature, precipitation, vapor pressure, and solar radiation) (Kittel et al. 1995).

This historical annual climate data set was designed to be concatenated with the [VEMAP 2: U.S. Annual Climate Change Scenarios](#) data set to create a single climate series from 1895 to ~2100.

Users are requested to confer with the [NCAR VEMAP Data Group](#) to ensure that the intended application of the data set is consistent with the generation and limitations of the data.

Data Citation

Cite this data set as follows (data citation revised on September 20, 2002):

Kittel, T.G.F., N.A. Rosenbloom, C. Kaufman, J.A. Royle, C. Daly, H.H. Fisher, W.P. Gibson, S. Aulenbach, D.N. Yates, R. McKeown, D.S. Schimel, and VEMAP 2 Participants. 2001. VEMAP 2: U.S. Annual Climate, 1895-1993. ORNL DAAC, Oak Ridge, Tennessee, USA.
<http://dx.doi.org/10.3334/ORNLDAAC/571>.

References:

Kittel, T. G. F., N. A. Rosenbloom, T. H. Painter, D. S. Schimel, and VEMAP Modeling Participants. 1995. The VEMAP integrated database for modeling United States ecosystem/vegetation sensitivity to climate change. *Journal of Biogeography* 22:857-862.

Kittel, T. G. F., J. A. Royle, C. Daly, N. A. Rosenbloom, W. P. Gibson, H. H. Fisher, D. S. Schimel, L. M. Berliner, and VEMAP 2 Participants. 1997. A gridded historical (1895-1993) bioclimate dataset for the conterminous United States. Pages 219-222, in: *Proceedings of the 10th Conference on Applied Climatology*, 20-24 October 1997, Reno, NV. American Meteorological Society, Boston.

VEMAP Members. 1995. Vegetation/Ecosystem Modeling and Analysis Project (VEMAP): Comparing biogeography and biogeochemistry models in a continental-scale study of terrestrial ecosystem responses to climate change and CO₂ doubling. *Global Biogeochemical Cycles* 9:407-437.

Data Format:

This is a gridded data set of annual climate data for the conterminous U.S. Data files are in full-grid netCDF format; that is, the data are stored in time/lat/lon format representing a full snapshot of the gridded U.S. (including background values) for each time slice.

For information on companion files as well as Parameter/Variable Names, Variable Description/Definition, Units of Measurement, and Data File Formats see this companion file:

http://daac.ornl.gov/daacdata/vemap-2/TCLIMATE/annual/comp/README_CLIMATE.

Guides to the netCDF file format (including links to display software and editing tools, e.g., NCOs) can be found at <http://www.unidata.ucar.edu/packages/netcdf>.

Document Information:

Document Review Date:

March 15, 2001



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