LOCA Viewer Archive

This page provides an archived view of information that was originally posted on the scenarios.globalchange.gov website's LOCA Viewer page, part of the 4th National Climate Assessment. The full text has been copied and the data offerings are also made available to download.

The Localized Constructed Analogs (LOCA) data set (http://loca.ucsd.edu/) uses statistical techniques to correct global climate model data for biases and downscale those data to a 1/16th degree spatial resolution. The scenarios products are described below.

Maps are presented for one historical and three future scenario products:

- “Historical Climate” product — Averages from 32 model simulations of the 1976–2005 climate.
- “Lower Emissions” product — Averages from 32 model simulations under the Representative Concentration Pathway (RCP) 4.5 scenario.
- “Higher Emissions” product — Averages from 32 model simulations under the RCP8.5 scenario.
- “Upper Bound” product, temperature-derived variables — Averages from the warmest three models (for the continental United States and adjacent portions of Canada and Mexico) at the end of the 21st century under the RCP8.5 scenario. The three models are consistent across all variables and were determined as those producing the largest daily average temperature increase for 2070–2099 compared to 1976–2005.
- “Upper Bound” product, precipitation-derived variables — Averages from the wettest three models (for the continental United States and adjacent portions of Canada and Mexico) at the end of the 21st century under the RCP8.5 scenario. The three models are consistent across all variables and were determined as those producing the highest single day precipitation increase for 2070–2099 compared to 1976–2005

Translate

- **Climatology** (wclm) — Simulation of the Historical Climate (1976–2005 average)
- **Lo, Early 21st** (wrcp45-1) — Lower Emissions simulated change for 2016–2045, compared to 1976–2005
- **Lo, Mid 21st** (wrcp45-2) — Lower Emissions simulated change for 2036–2065, compared to 1976–2005
- **Lo, Late 21st** (wrcp45-3) — Lower Emissions simulated change for 2070–2099, compared to 1976–2005
- **Hi, Early 21st** (wrcp85-1) — Higher Emissions simulated change for 2016–2045, compared to 1976–2005
- **Hi, Mid 21st** (wrcp85-2) — Higher Emissions simulated change for 2036–2065, compared to 1976–2005
- **Hi, Late 21st** (wrcp85-3) — Higher Emissions simulated change for 2070–2099, compared to 1976–2005
- **Top, Early 21st** (top3-1) — Upper Bound simulated change for 2016–2045, compared to 1976–2005
- **Top, Mid 21st** (top3-2) — Upper Bound simulated change for 2036–2065, compared to 1976–2005
- **Top, Late 21st** (top3-3) — Upper Bound simulated change for 2070–2099, compared to 1976–2005

The map values for the simulated changes for the future are simply the difference between the future period and the reference period in the specified units, except for the indices derived from precipitation, which are in percent change.

The LOCA Derived Variables

Each variable listed below has downloads for the full set of netCDF data grids. The climatology is shown as the preview.

Download all LOCA derived data

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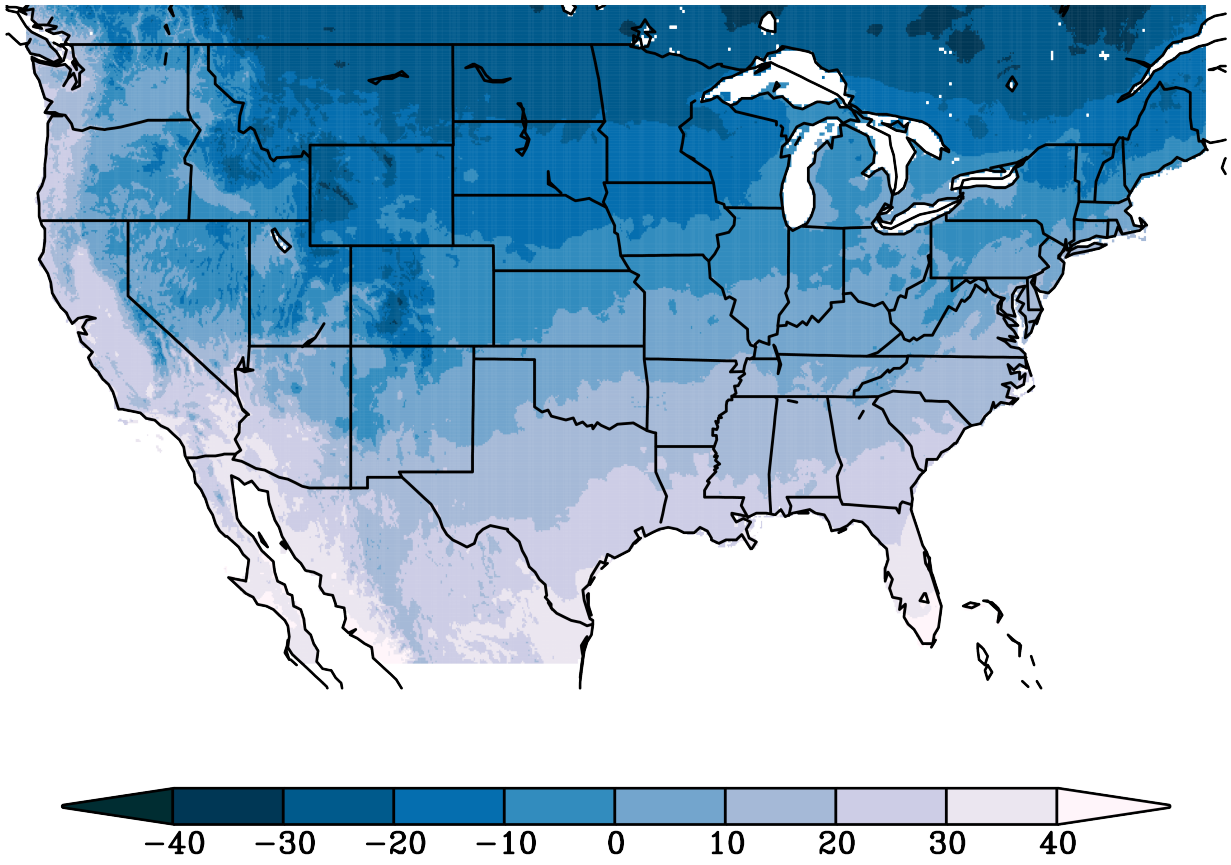

Annual lowest 5-day temperature

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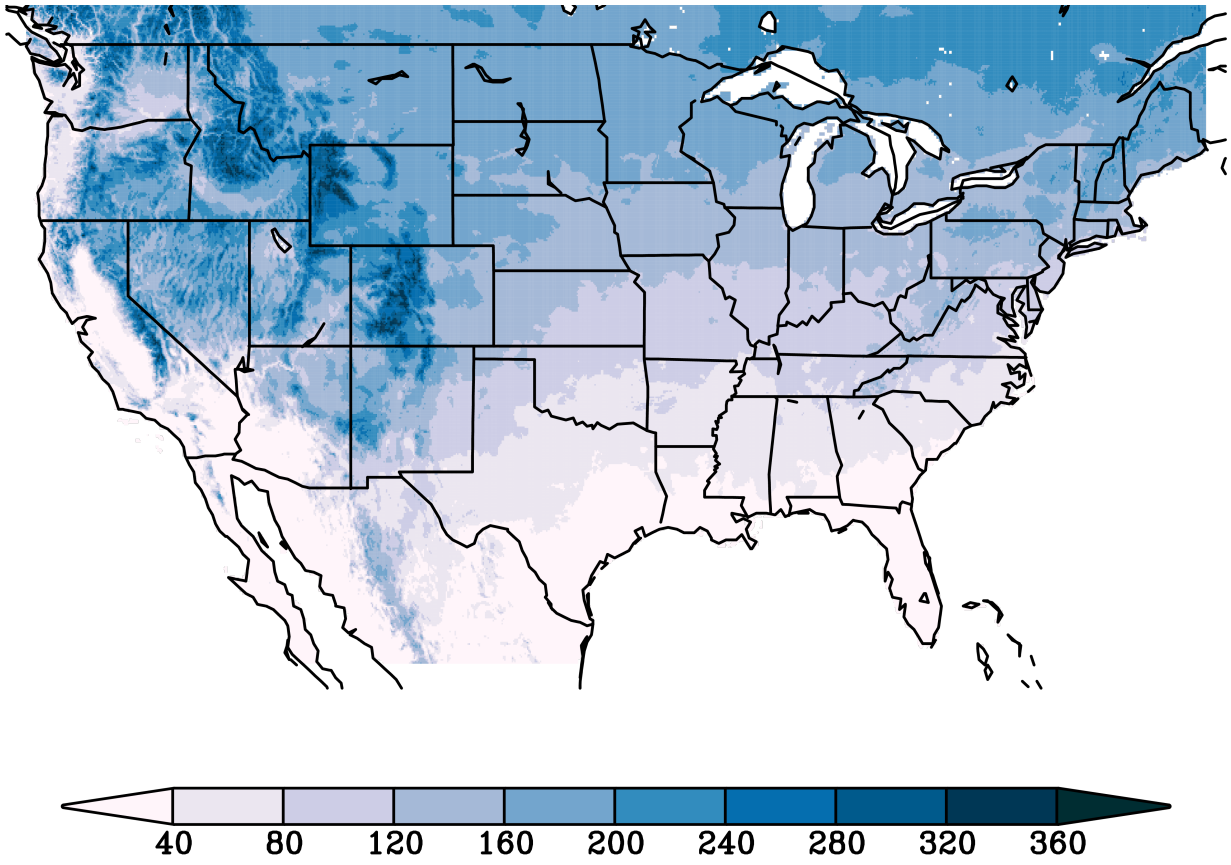

Annual number of frost days

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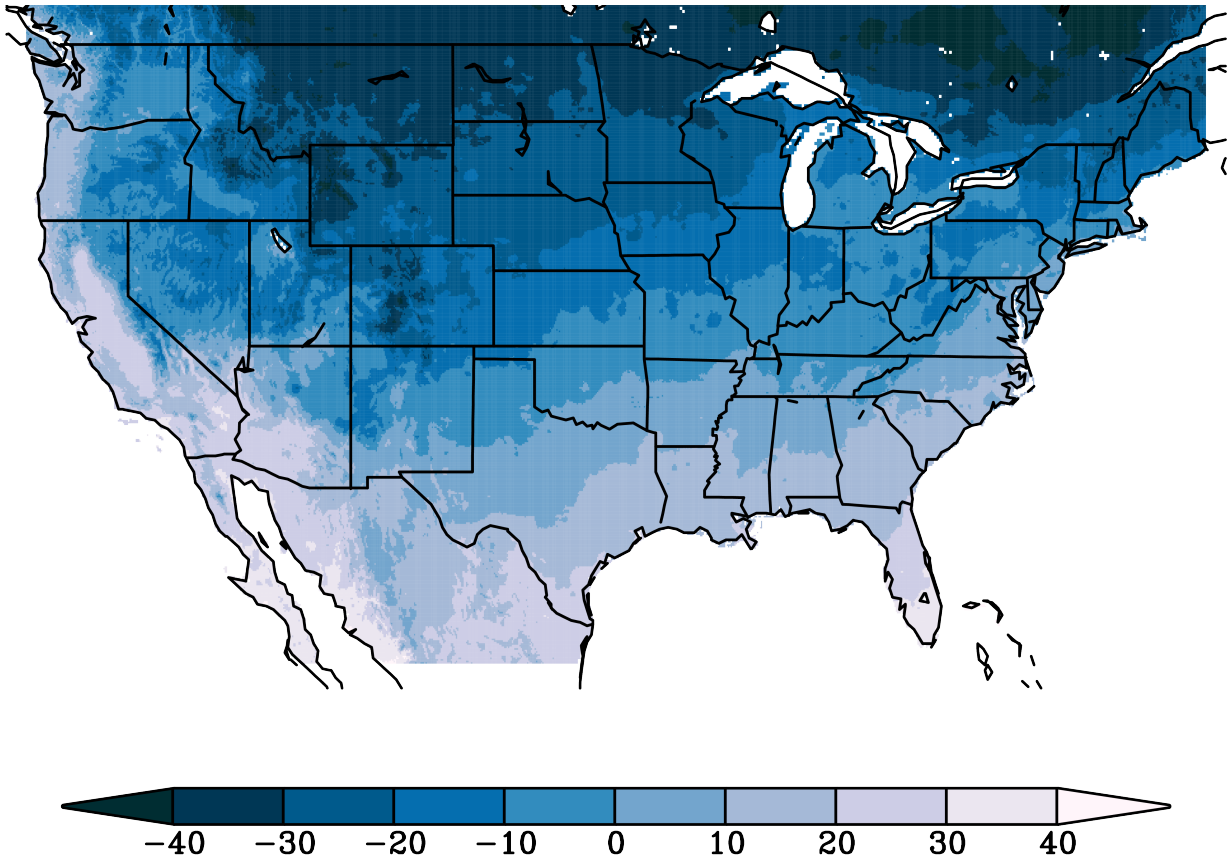

Annual single lowest minimum temperature

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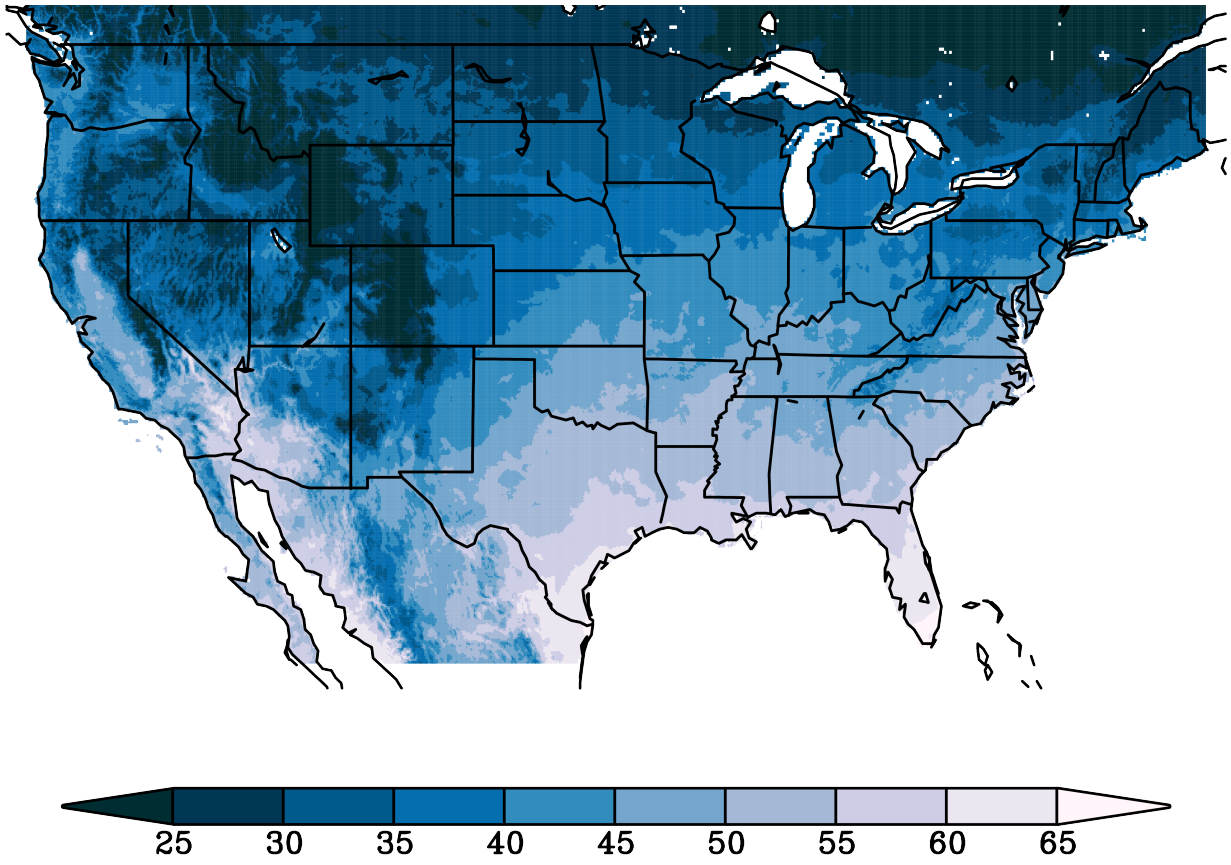

Daily minimum temperature

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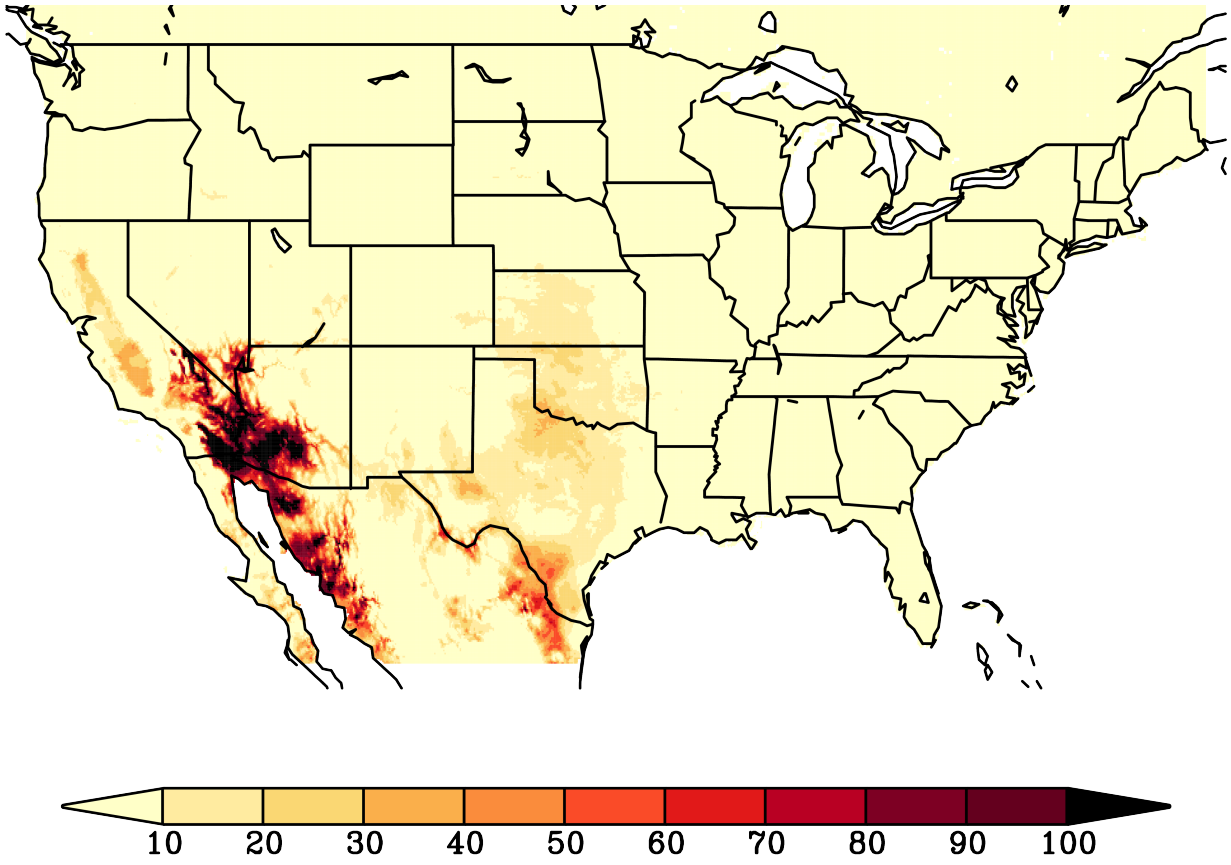

Annual number of days with a maximum temperature greater than 100°F

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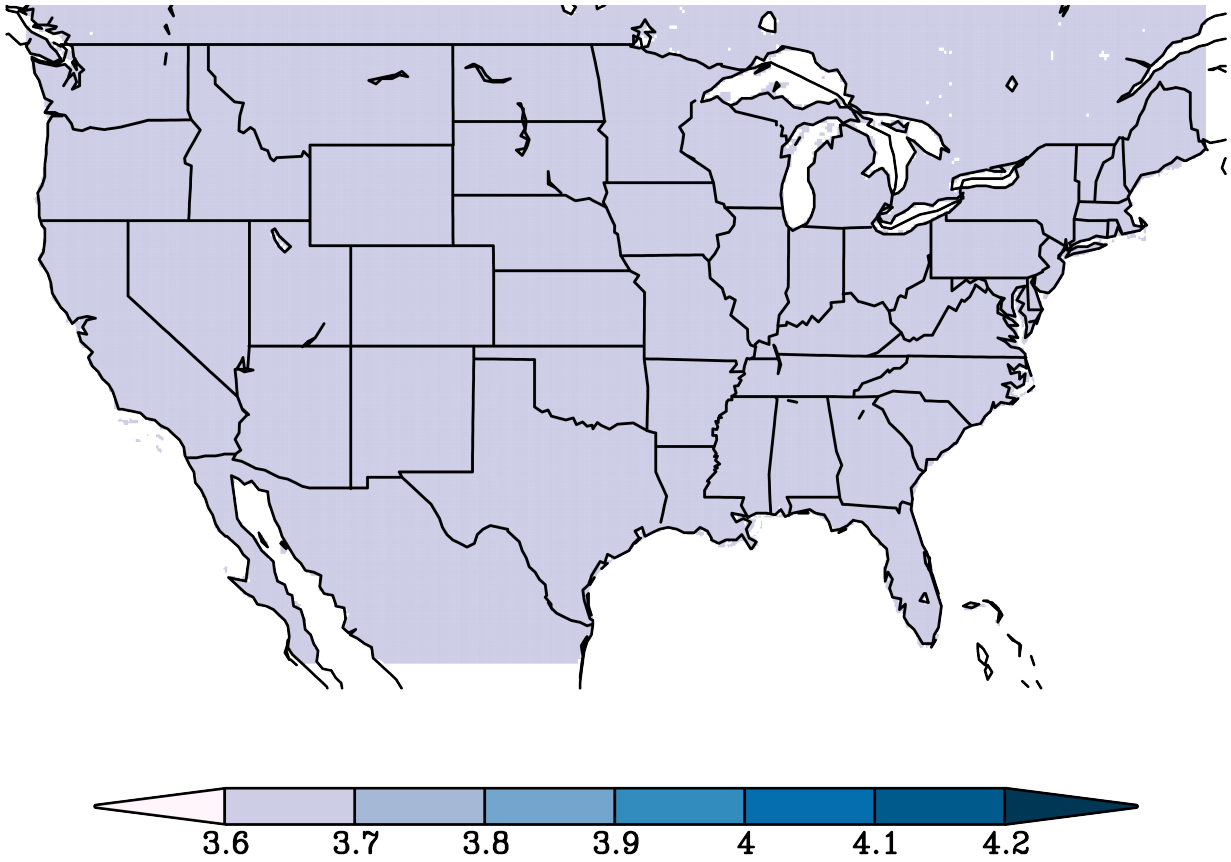

Annual number of days with minimum temperature lower than the 1st percentile

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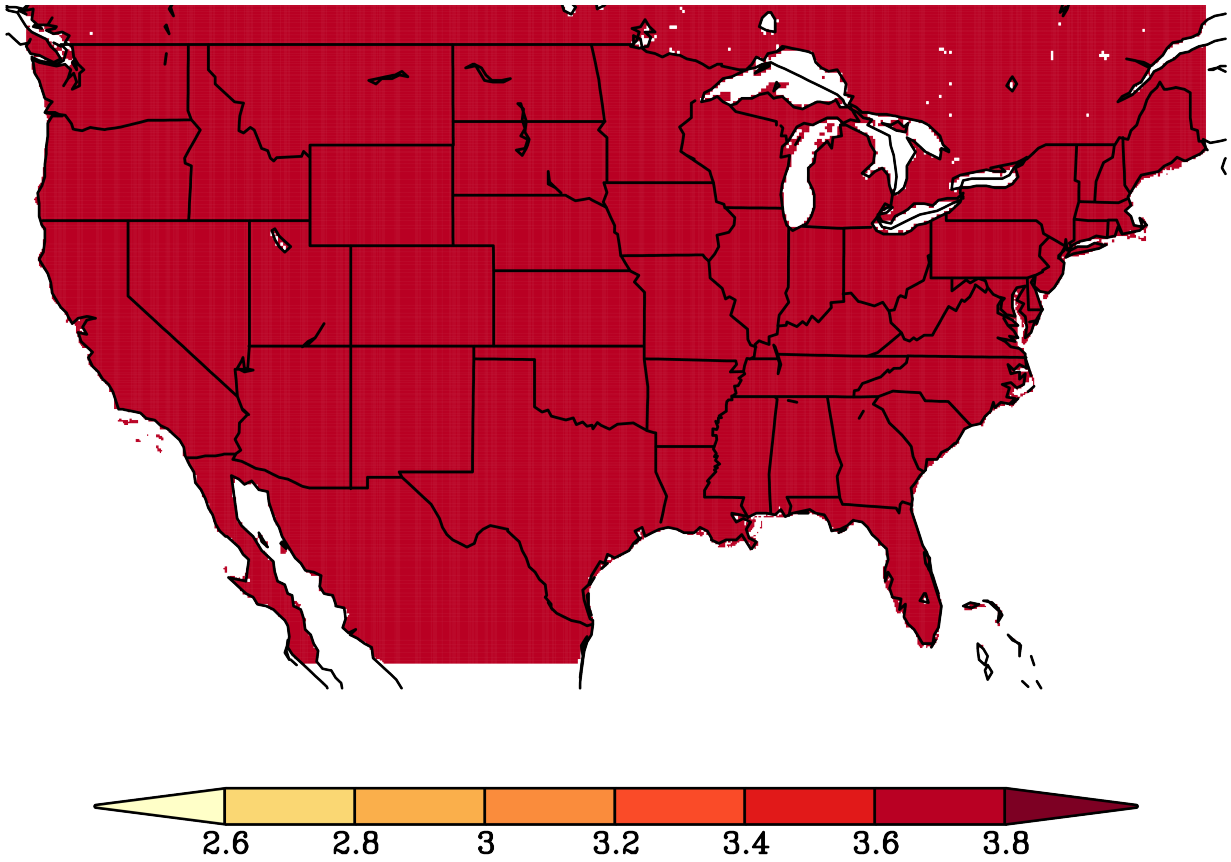

Annual number of days with minimum temperature greater than the 99th percentile

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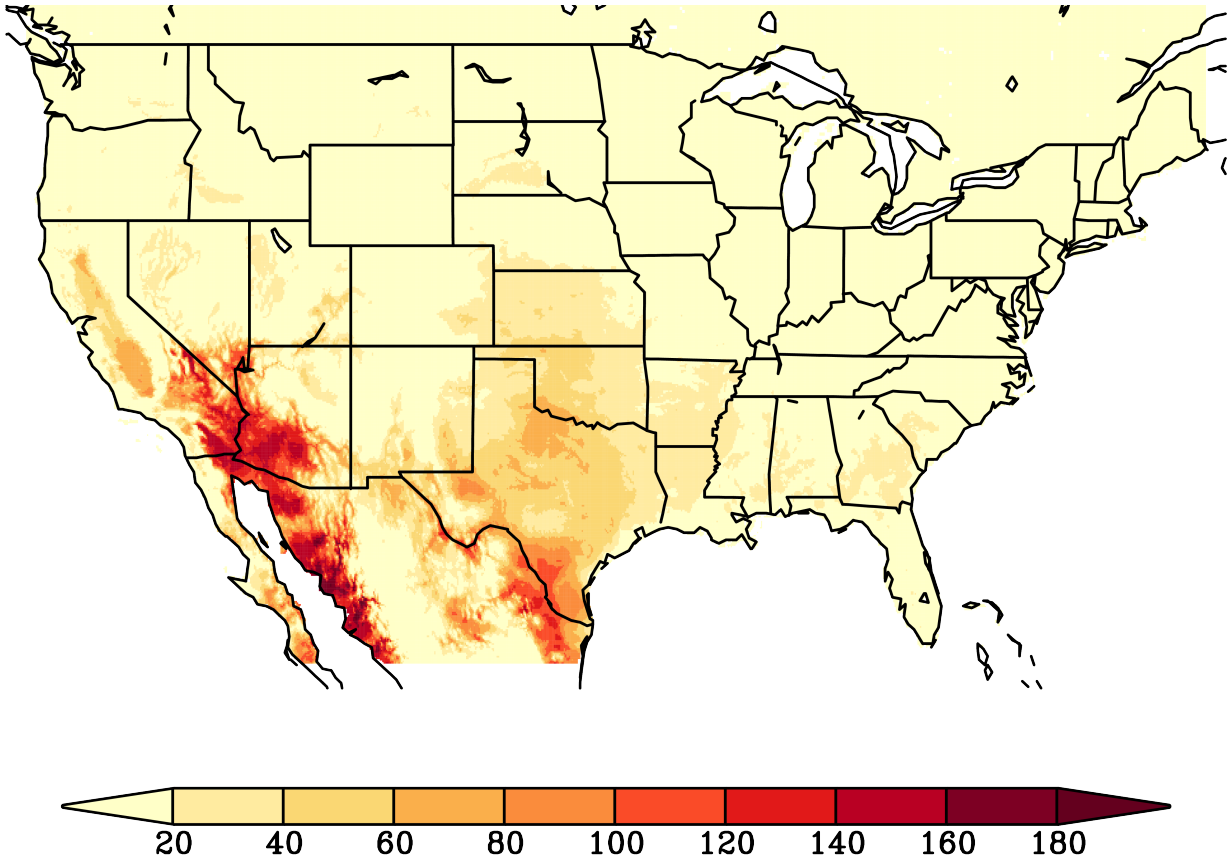

Annual number of days with a maximum temperature greater than 95°F

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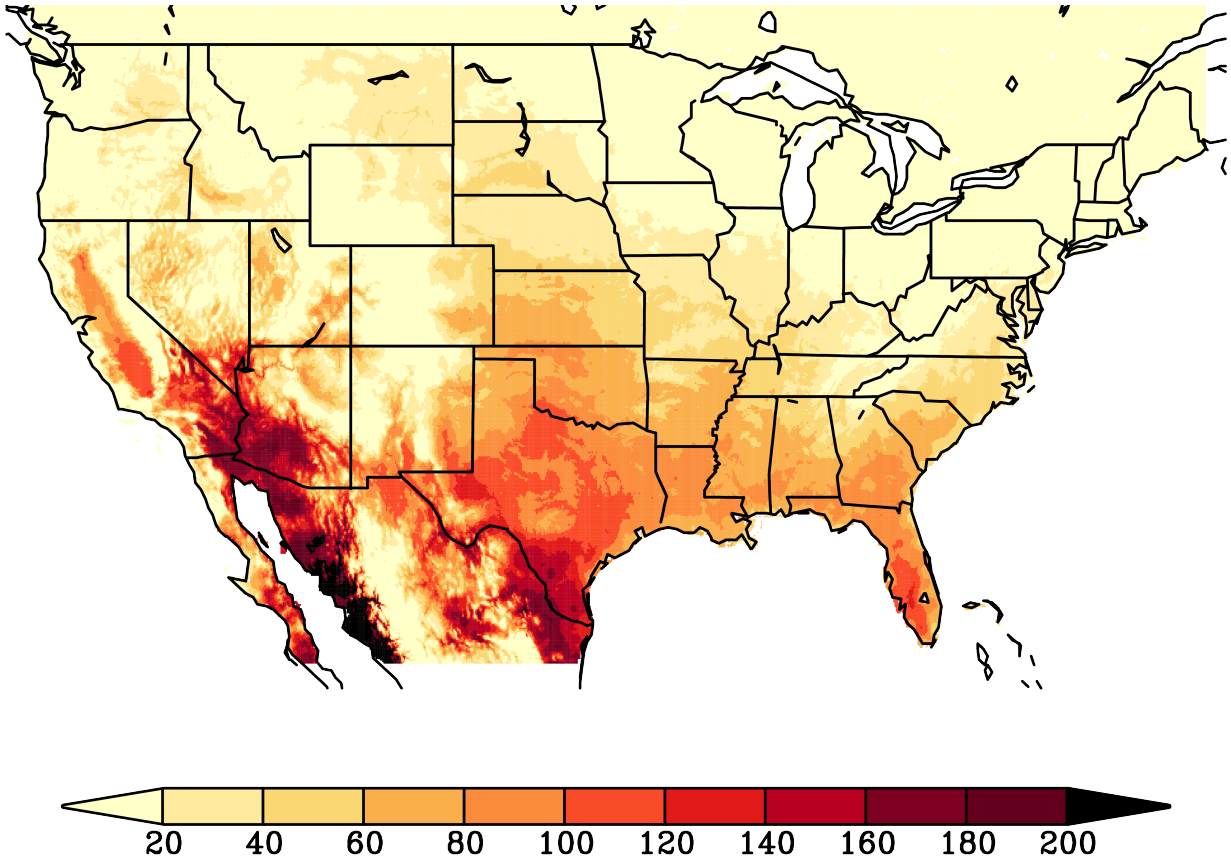

Annual number of days with a maximum temperature greater than 90°F

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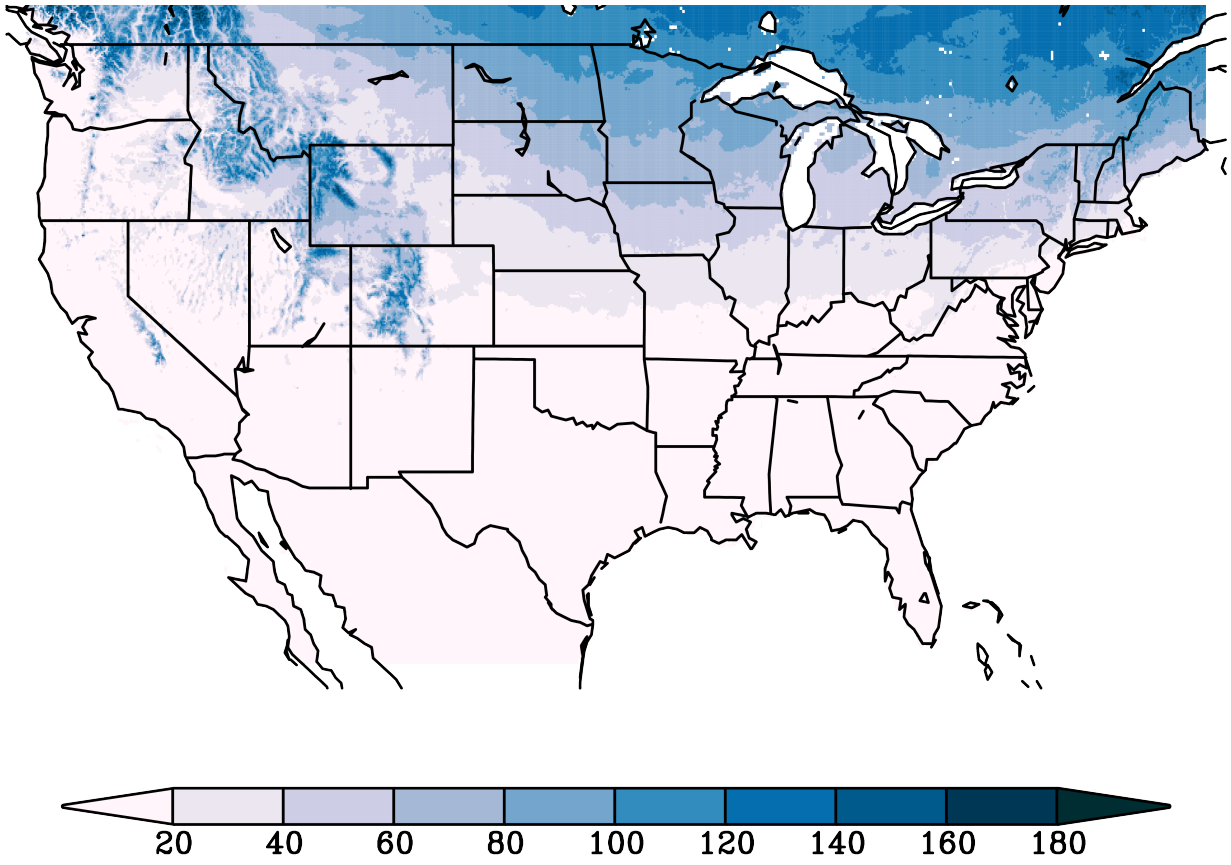

Annual number of icing days

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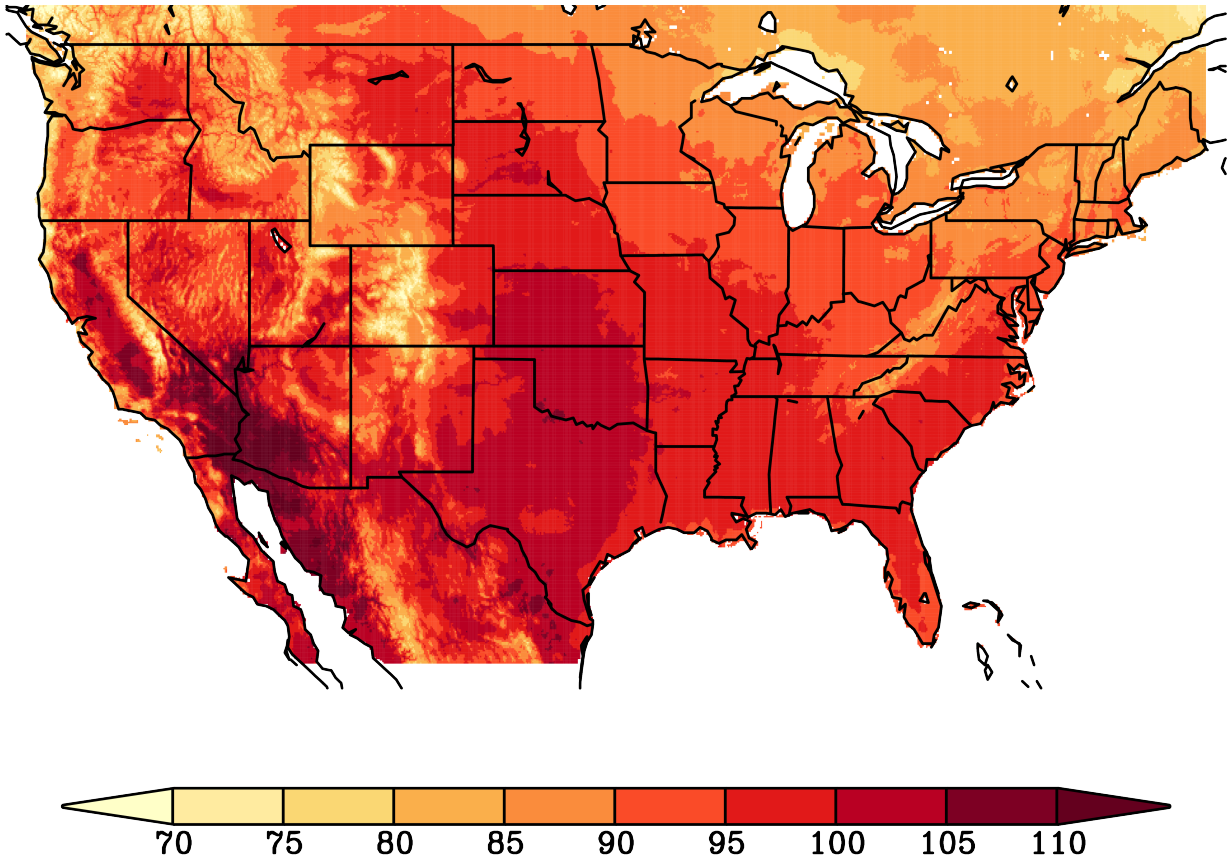

Annual highest maximum temperature averaged over a 5-day period

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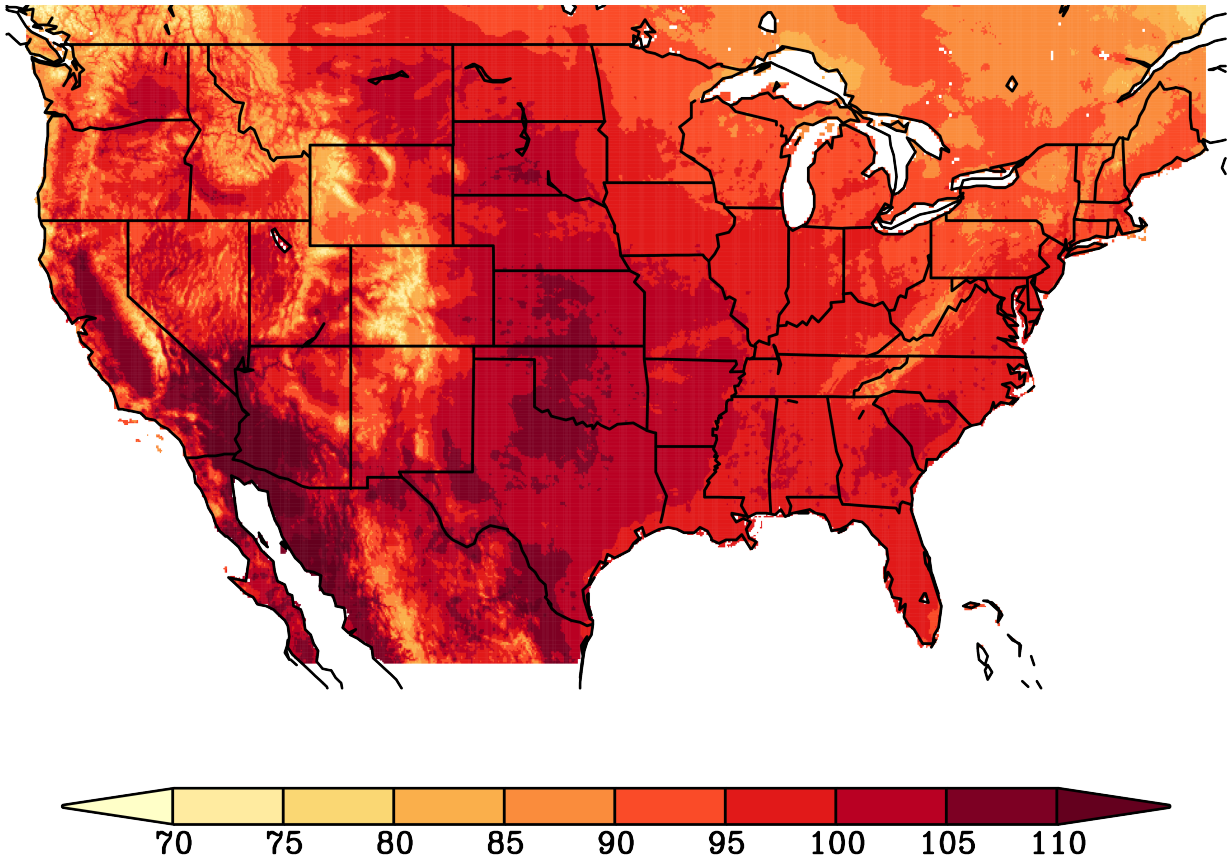

Annual single highest maximum temperature

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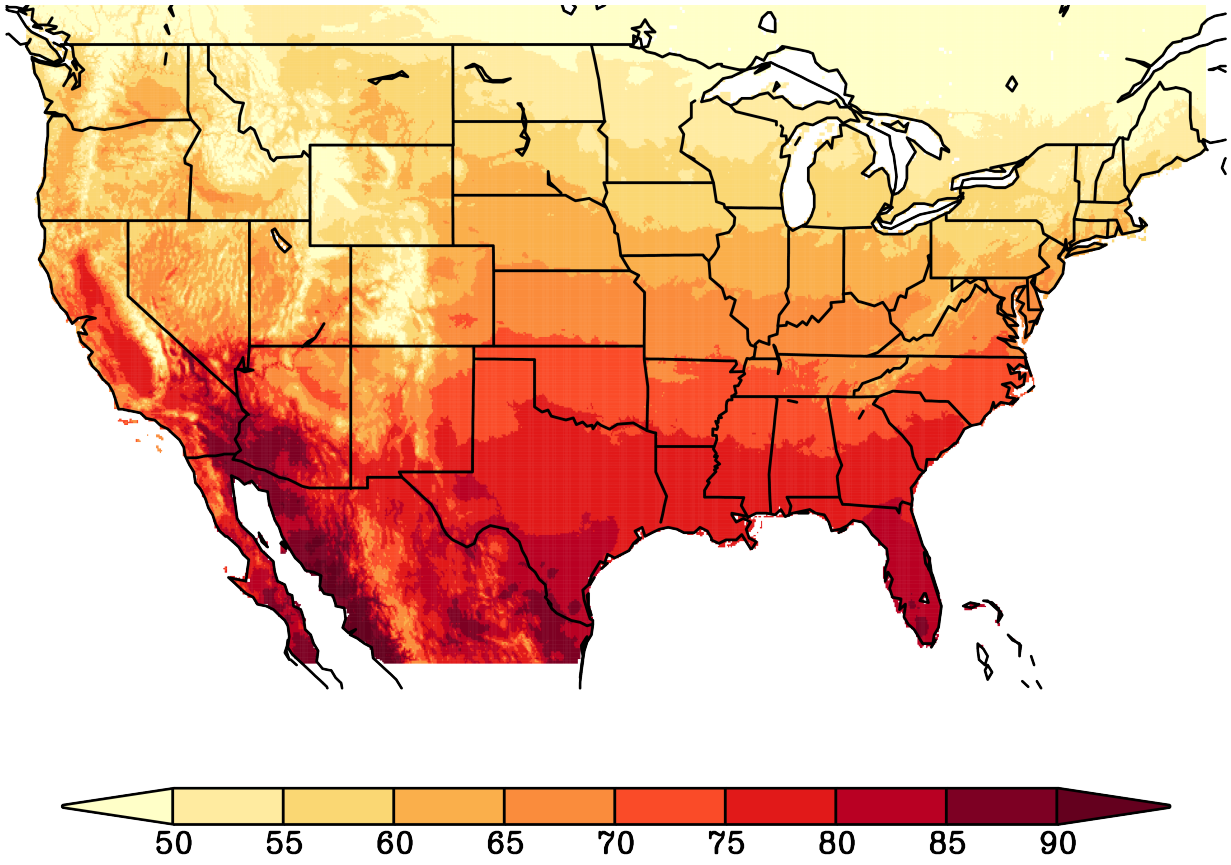

Daily maximum temperature

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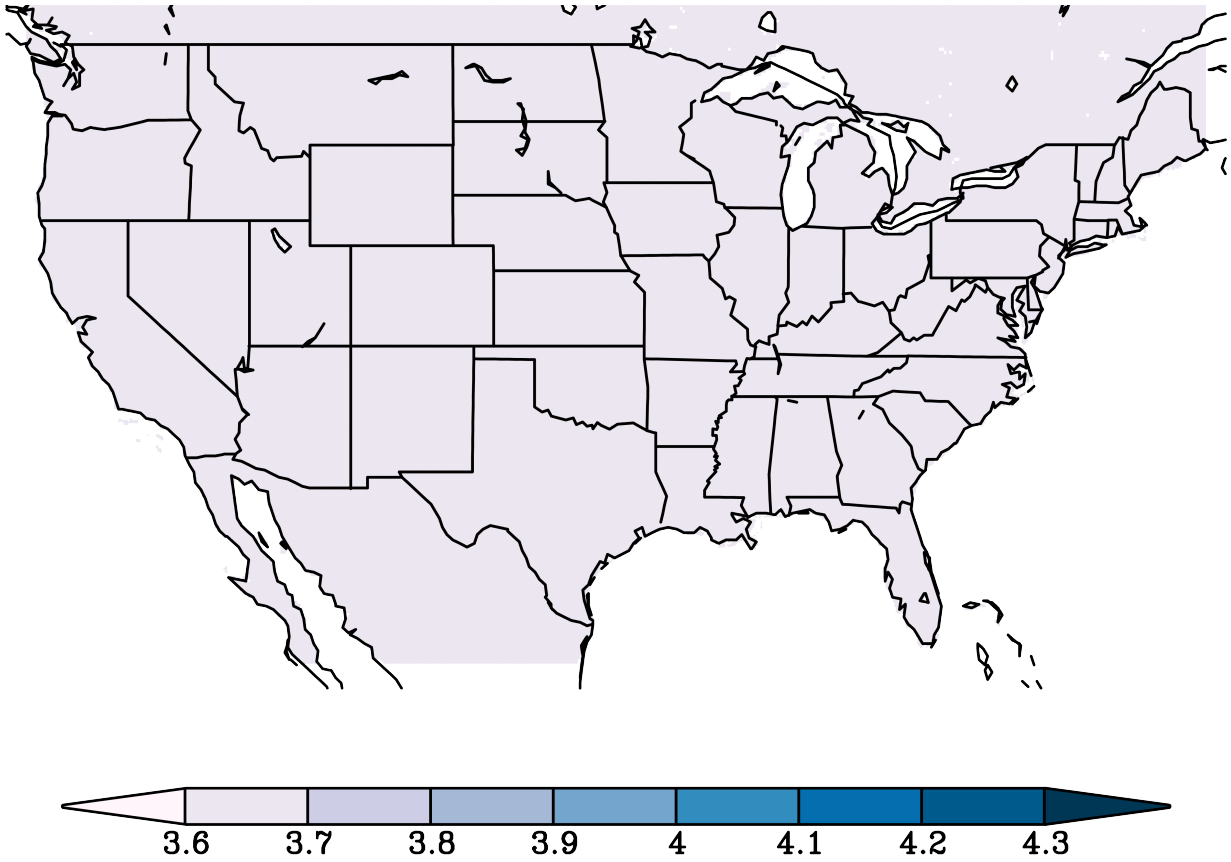

Annual number of days with maximum temperature lower than the 1st percentile

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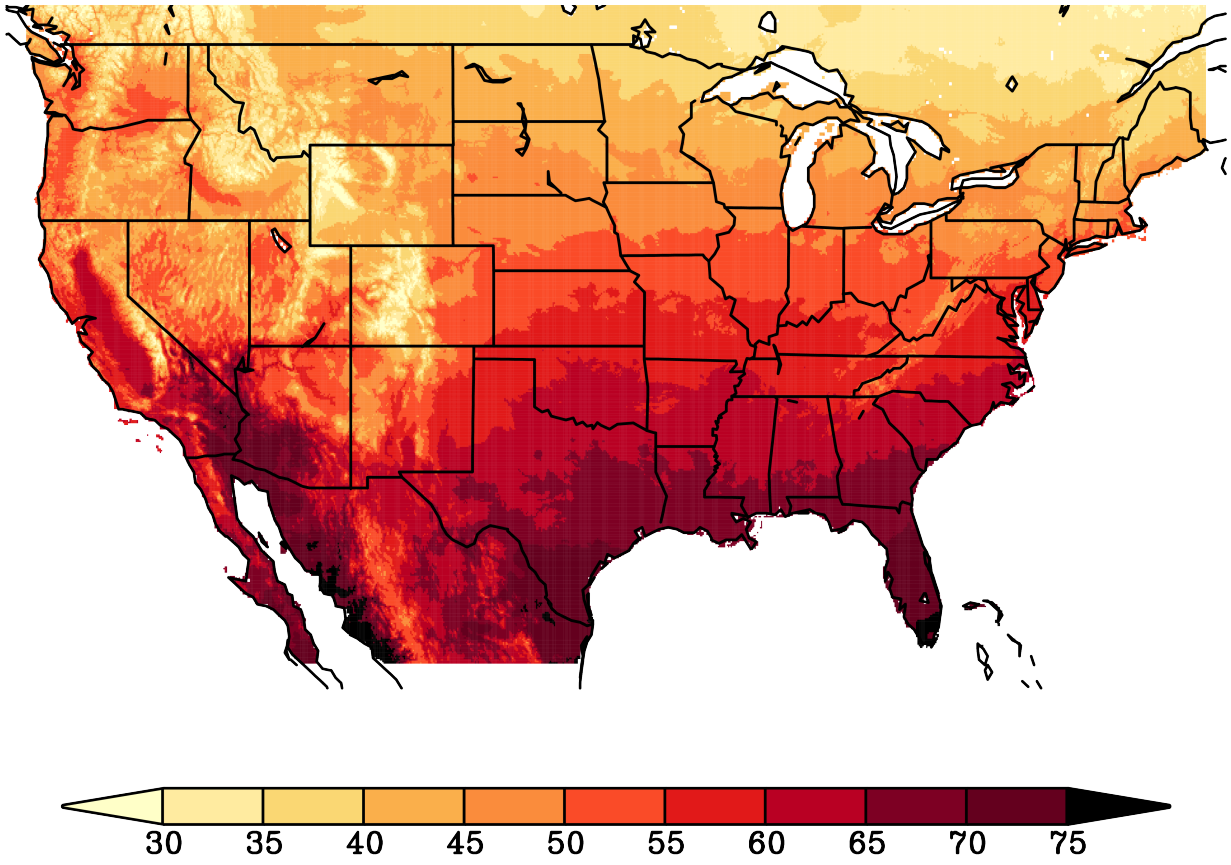

Daily average temperature

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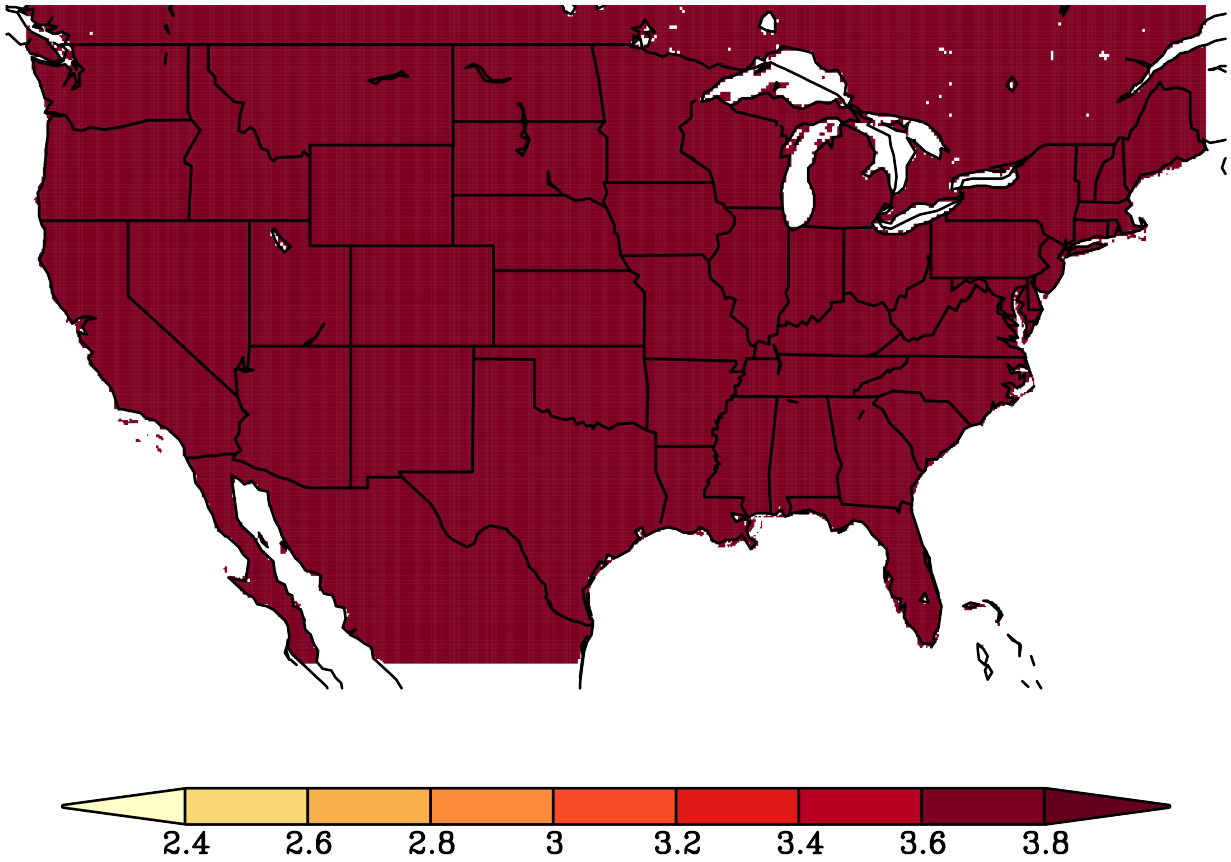

Annual number of days with maximum temperature greater than the 99th percentile

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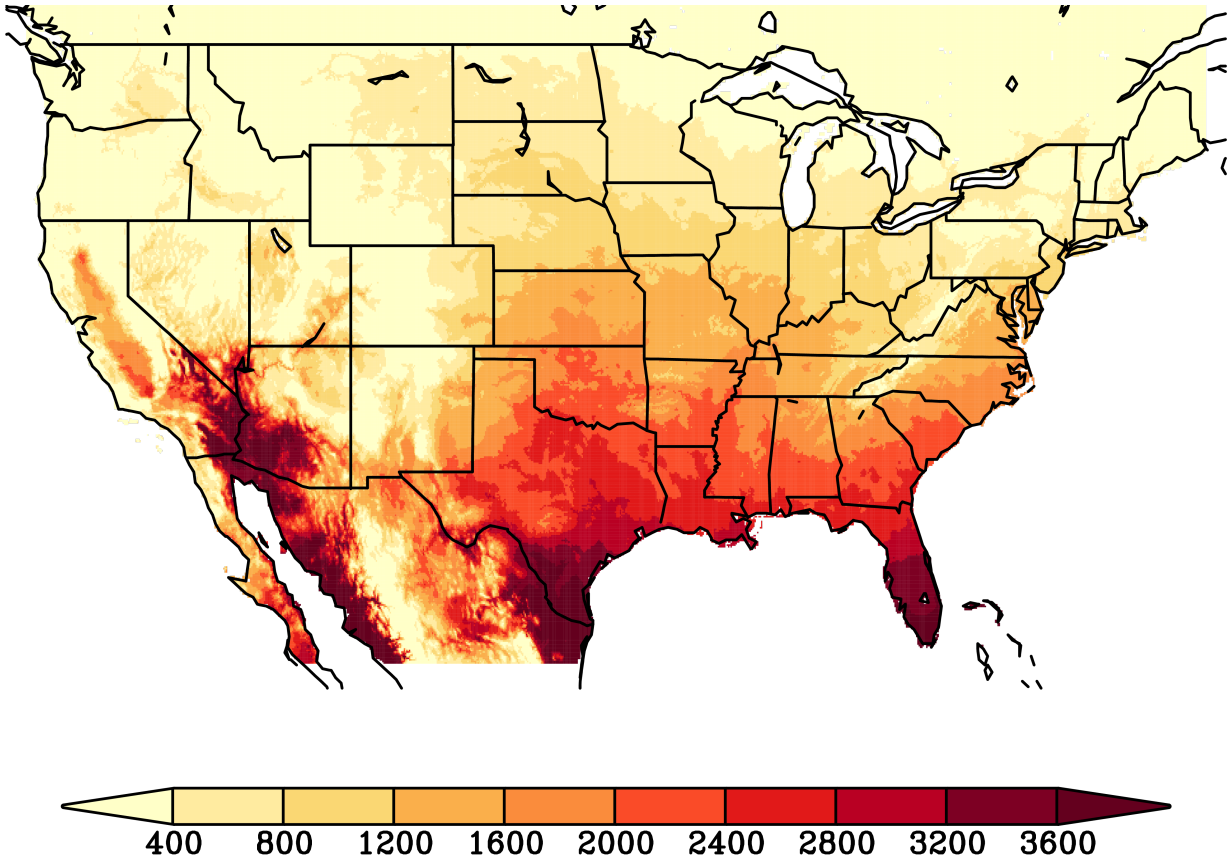

Cooling degree days

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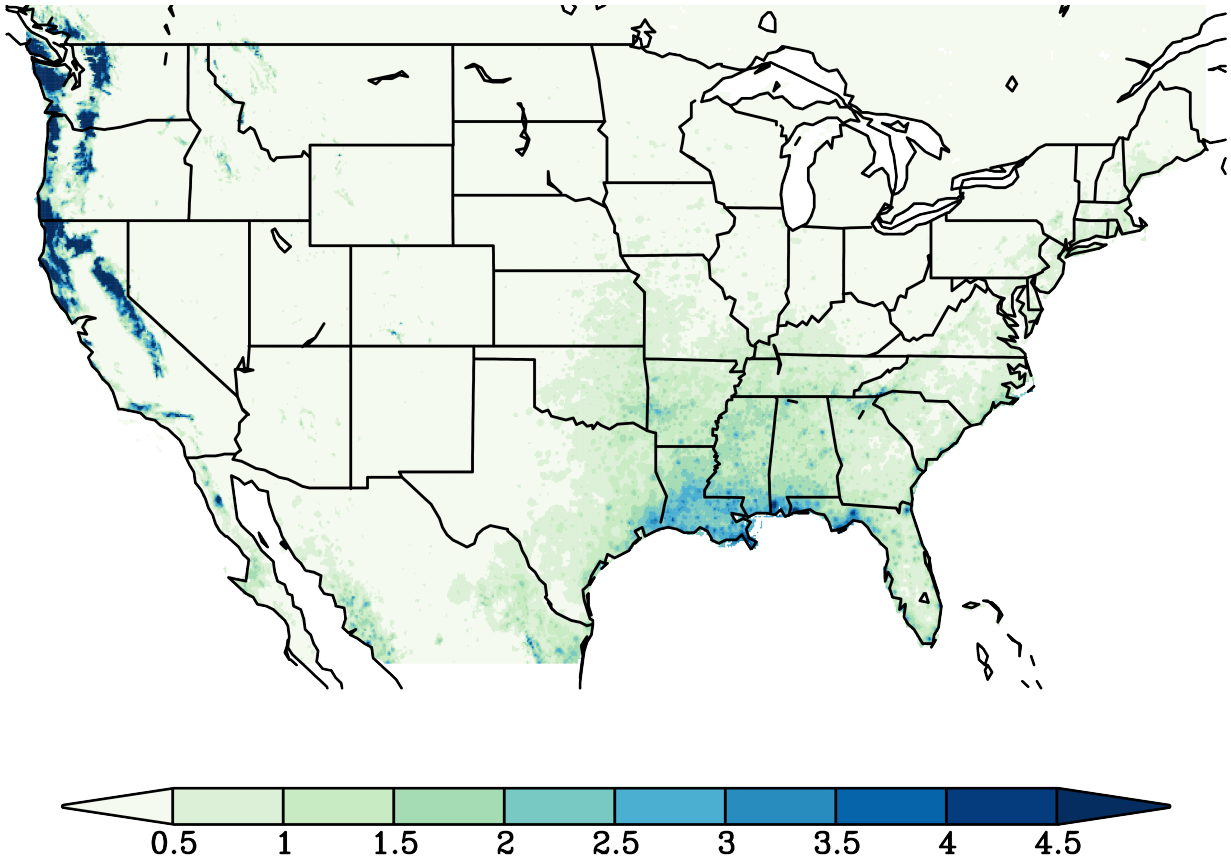

Annual number of days with total precipitation greater than 2 inches

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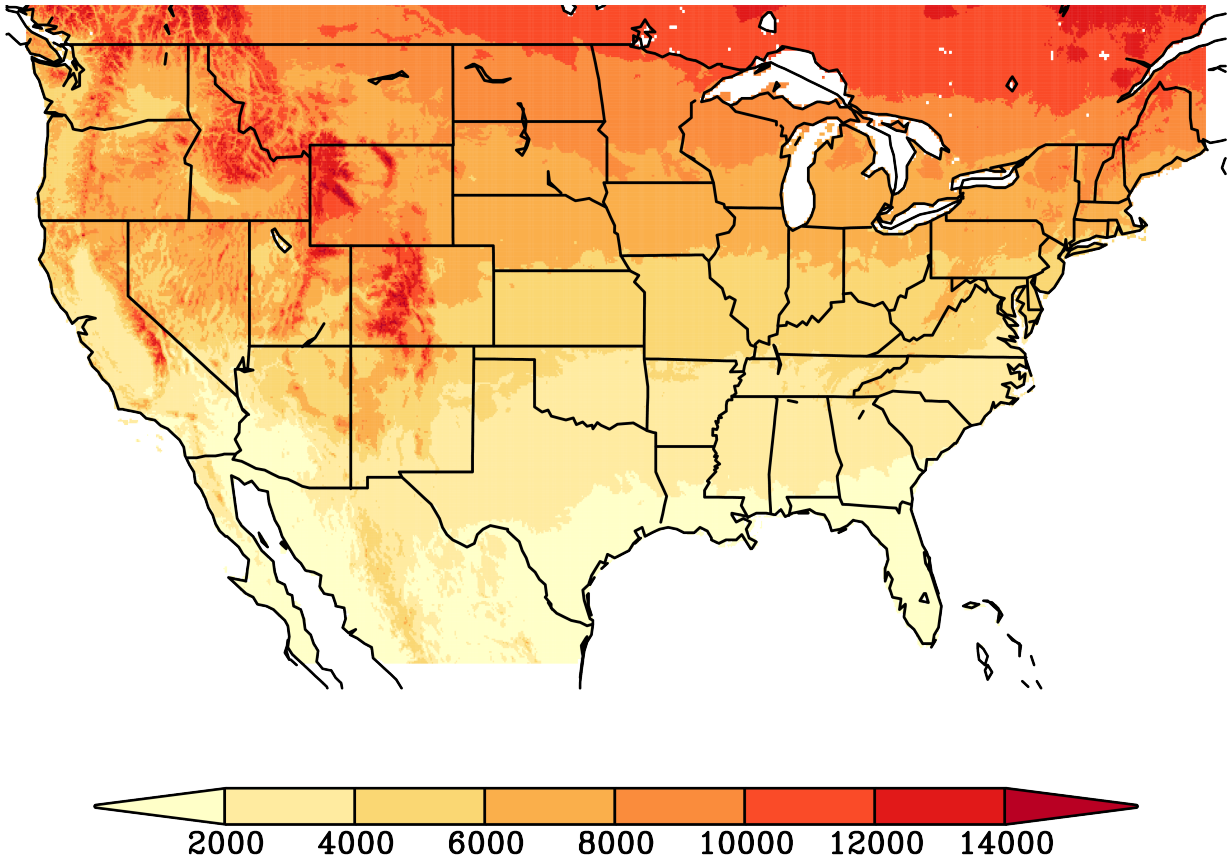

Heating degree days

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Growing degree days

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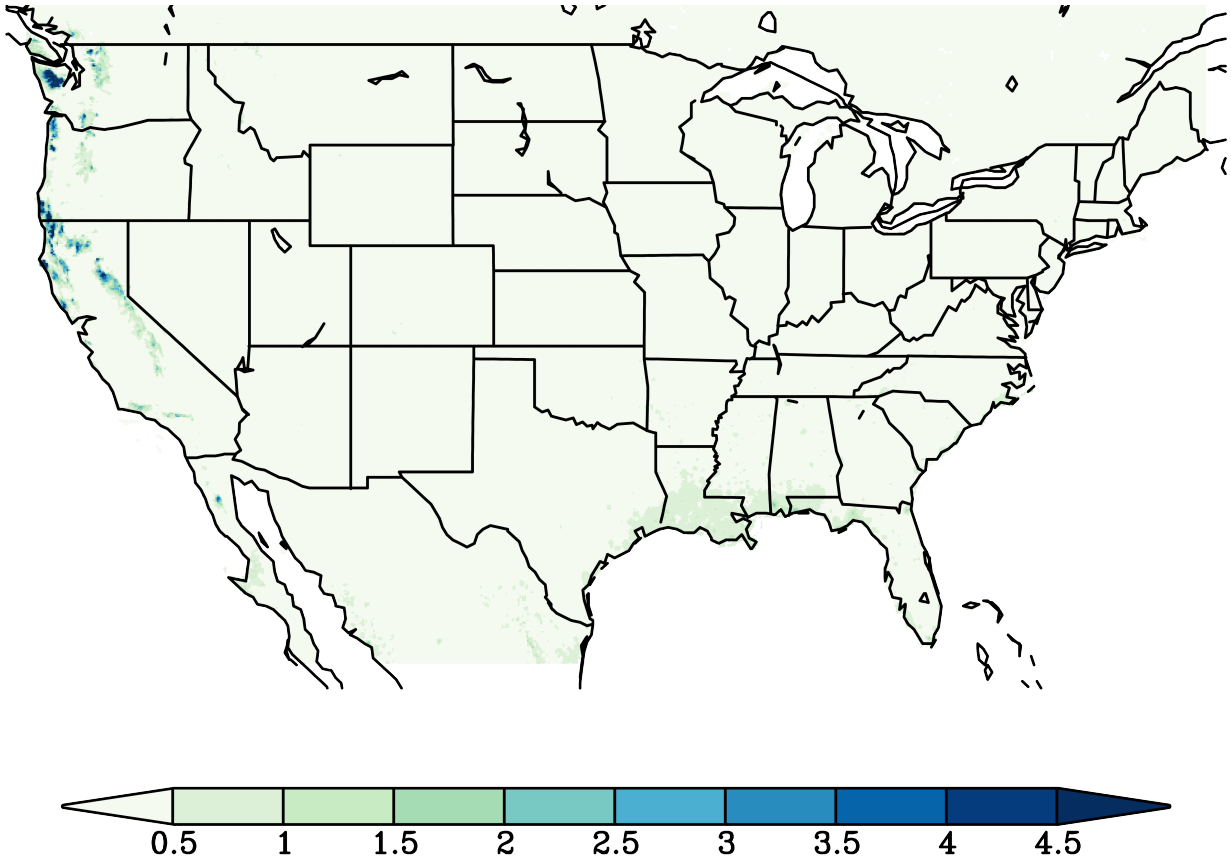

Annual number of days with total precipitation greater than 3 inches

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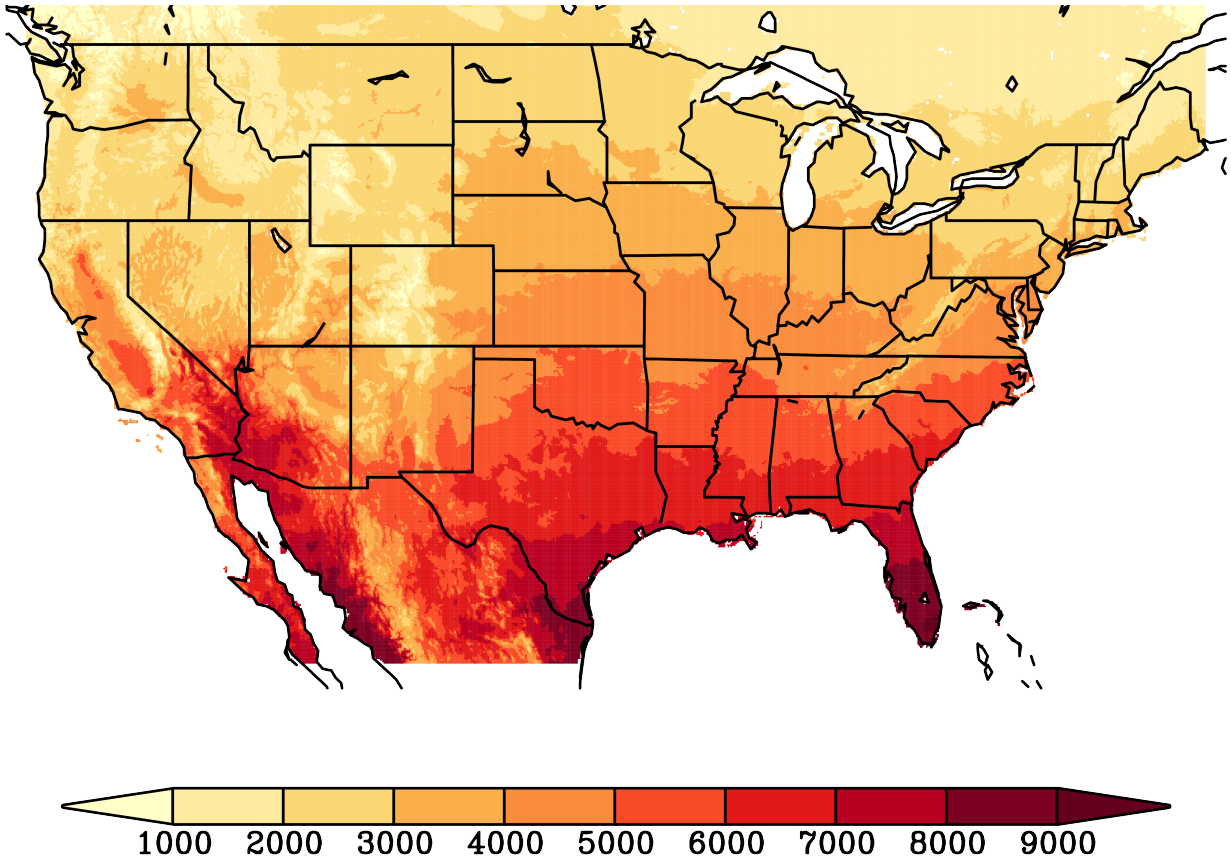

Modified growing degree days

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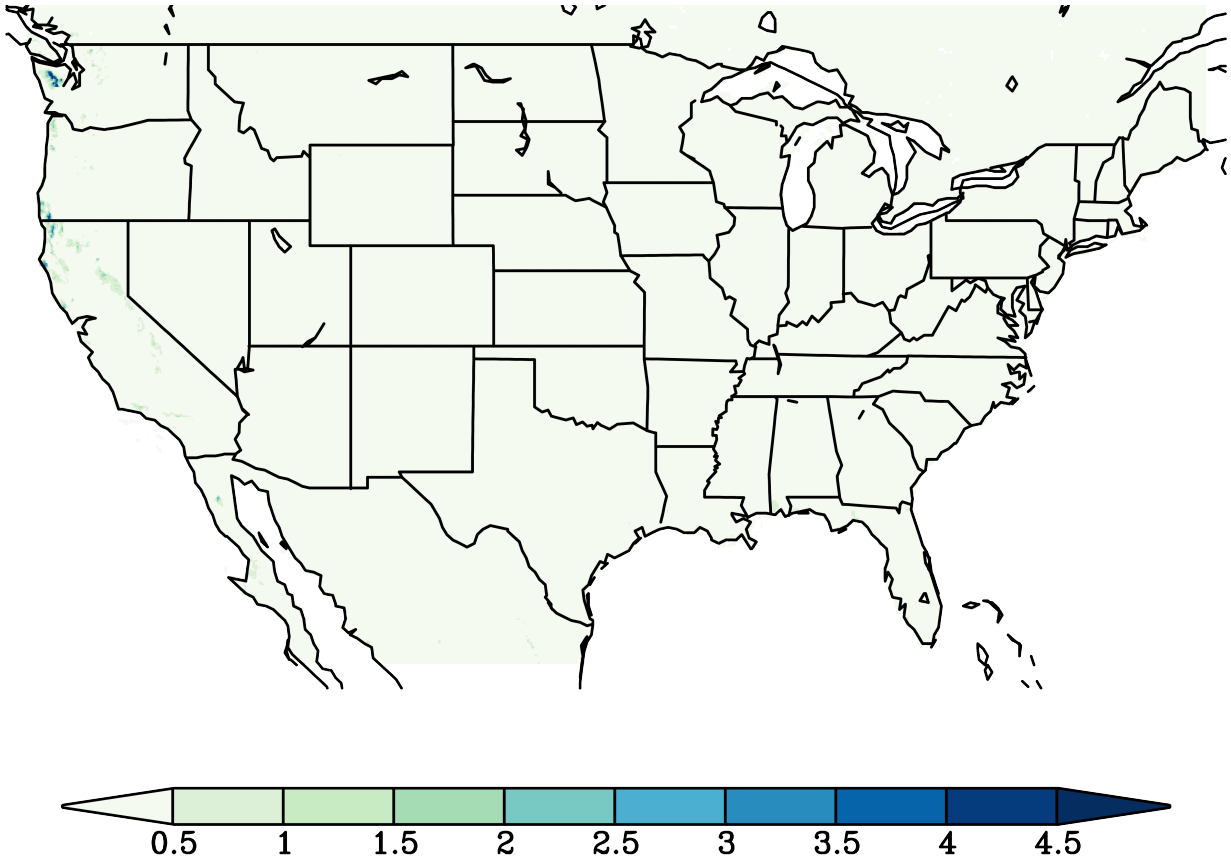

Annual number of days with total precipitation greater than 4 inches

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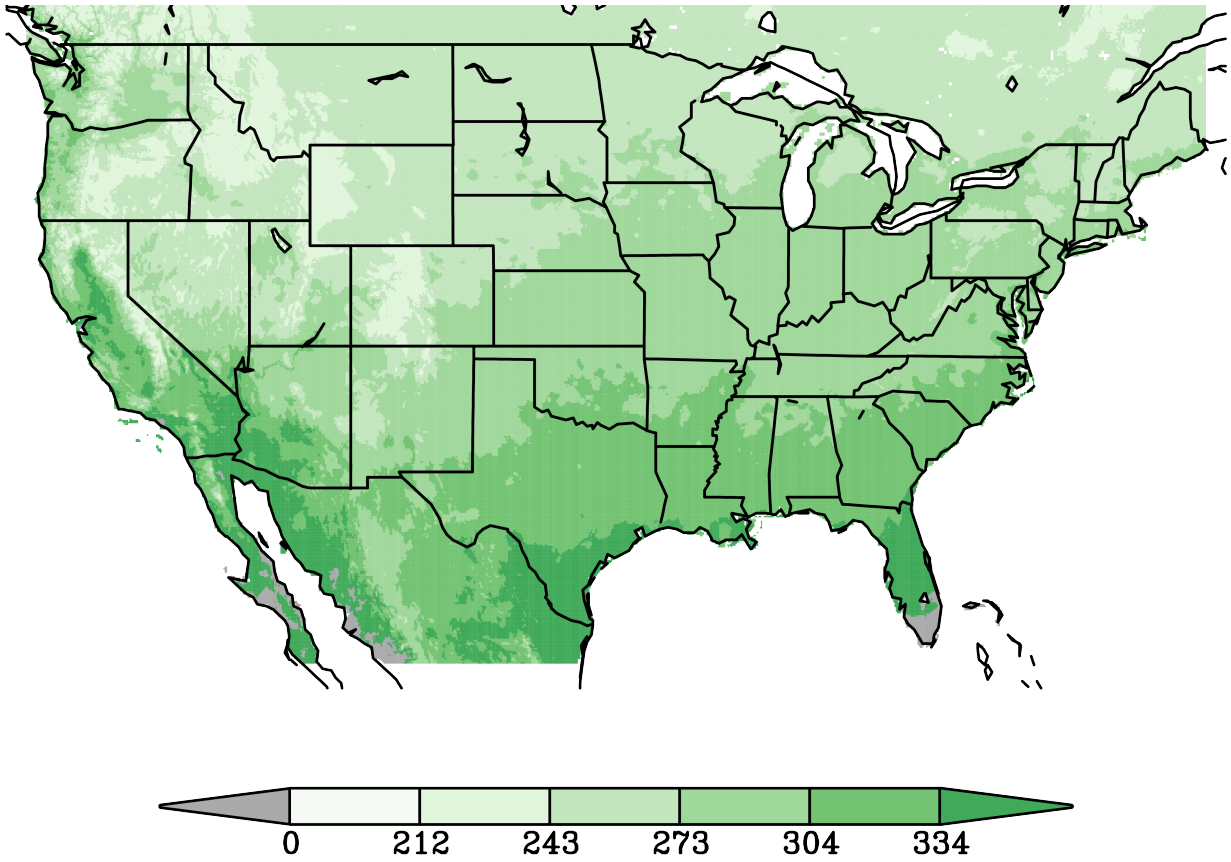

Date of the first fall freeze

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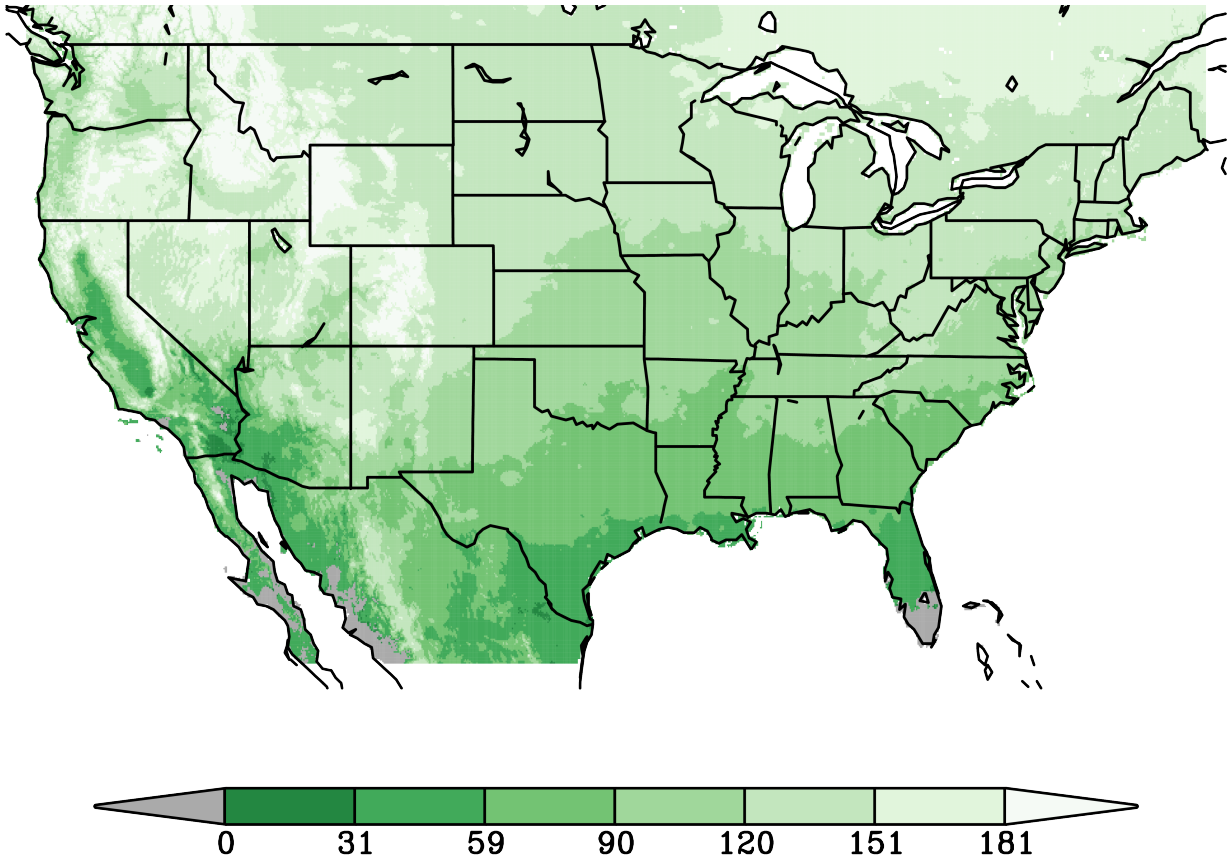

Date of the last spring freeze

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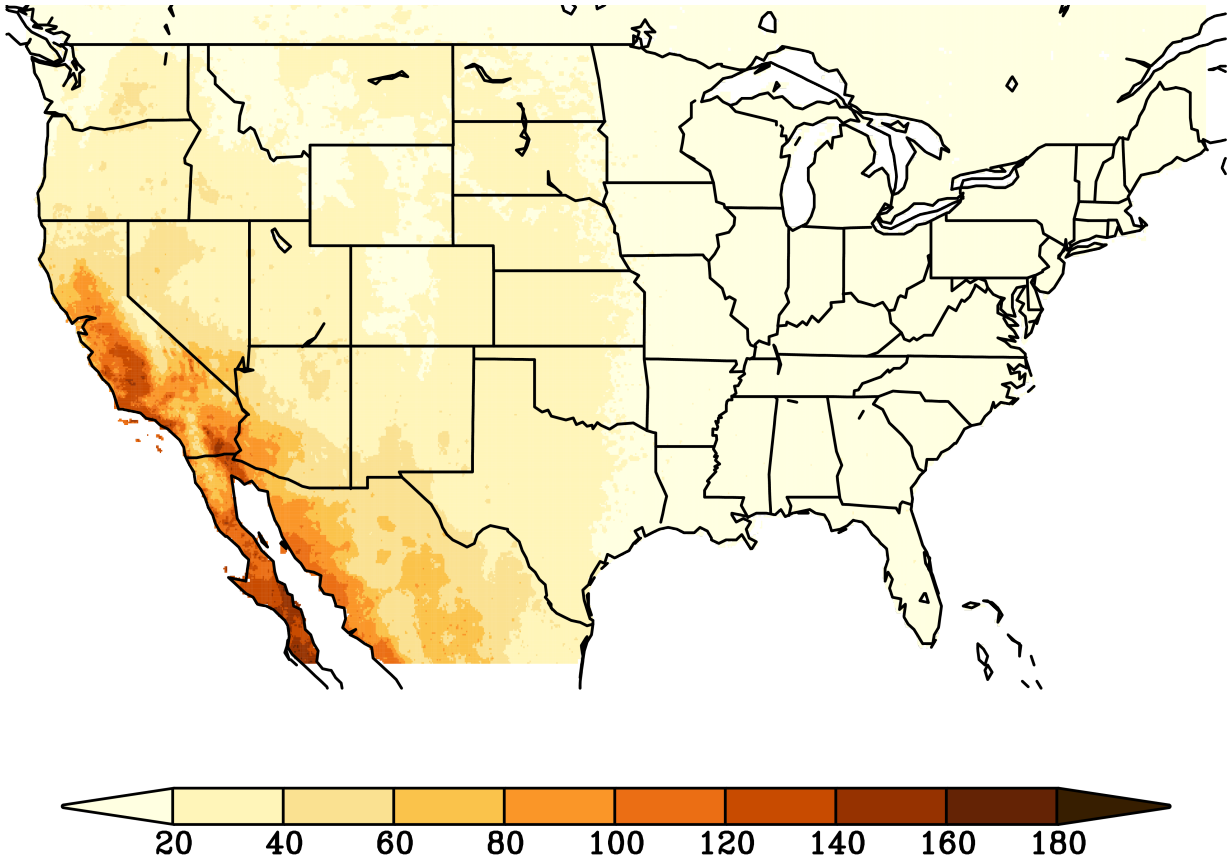

Annual maximum number of consecutive dry days

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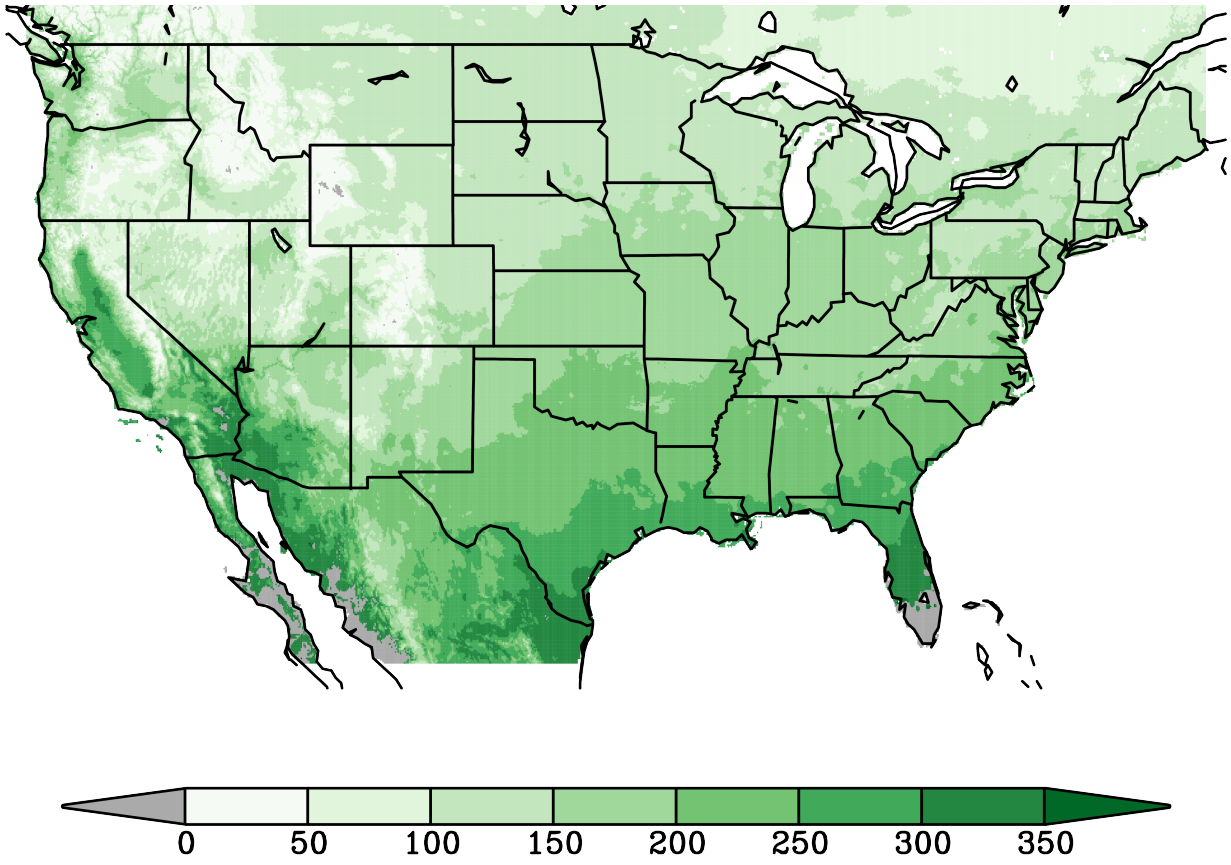

Length of the growing season

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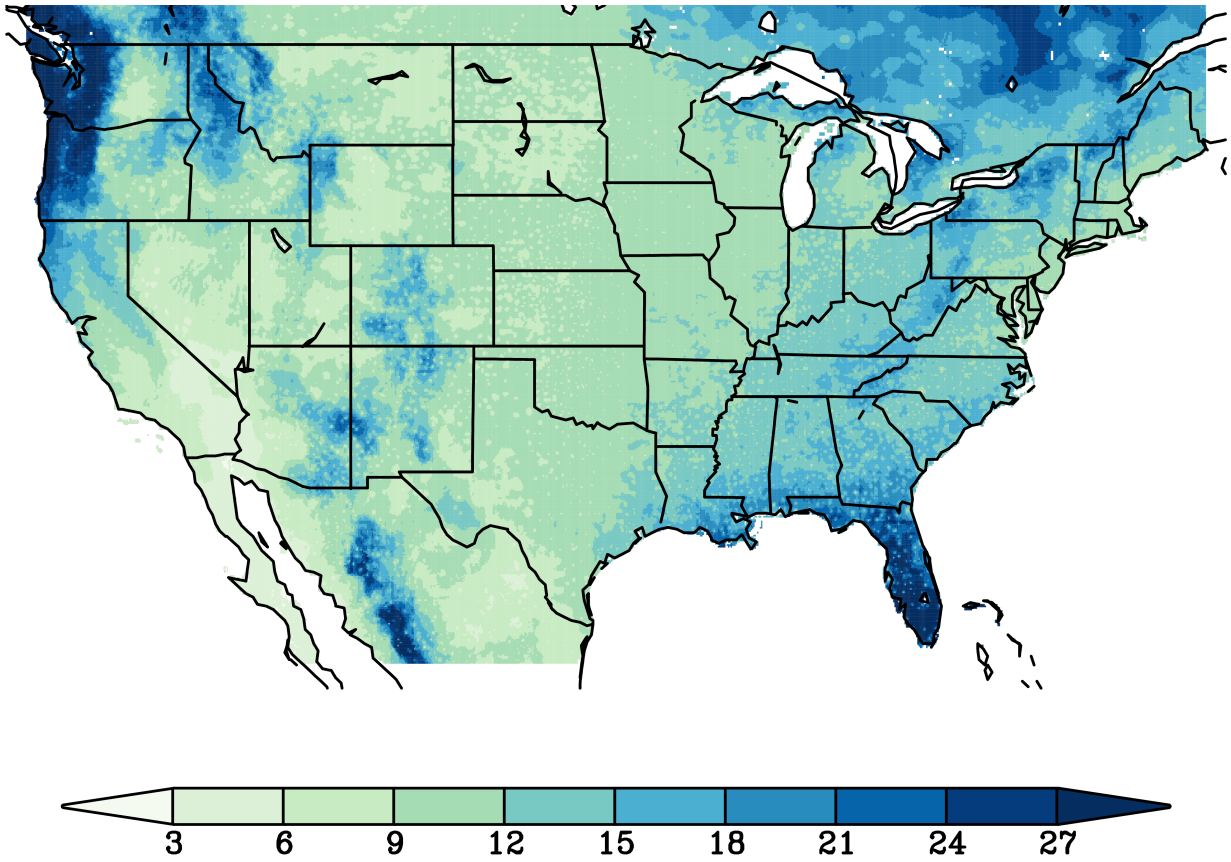

Annual maximum number of consecutive wet days

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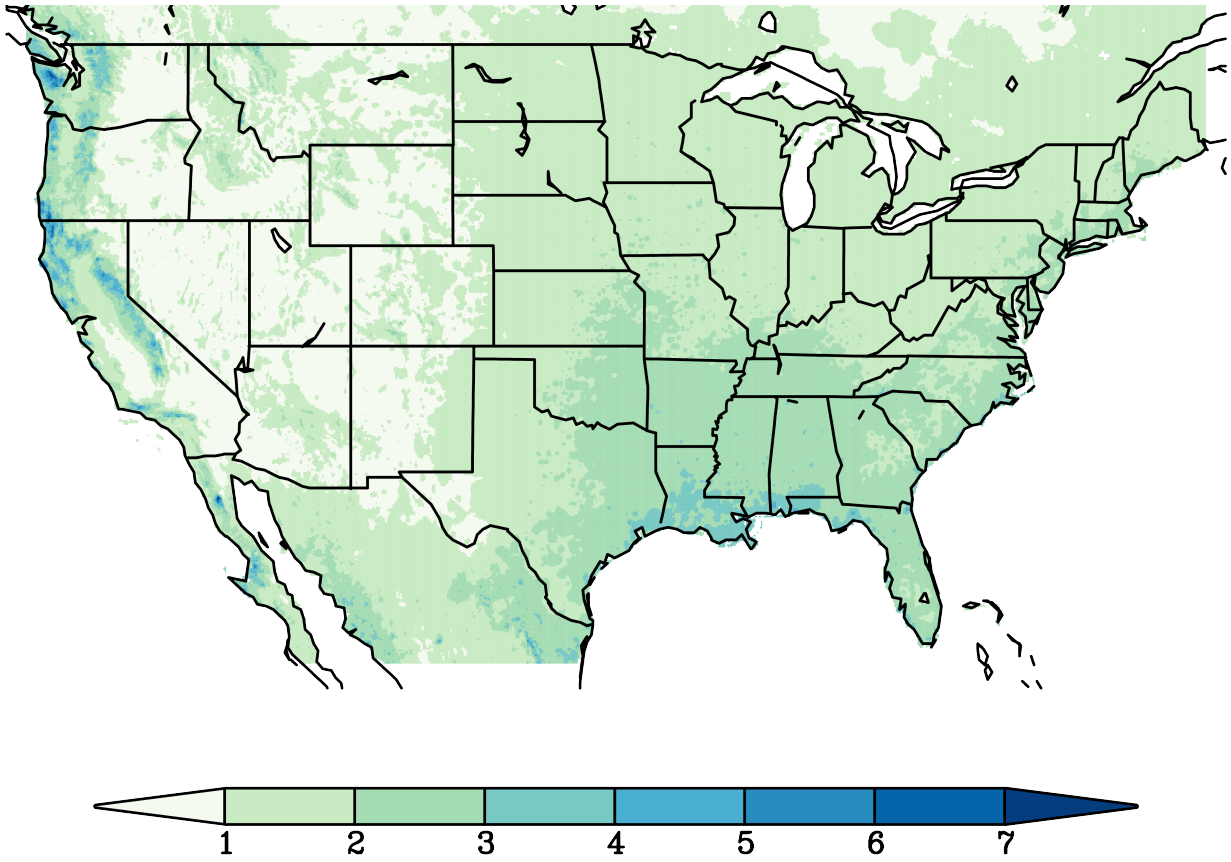

Annual highest precipitation total for a single day

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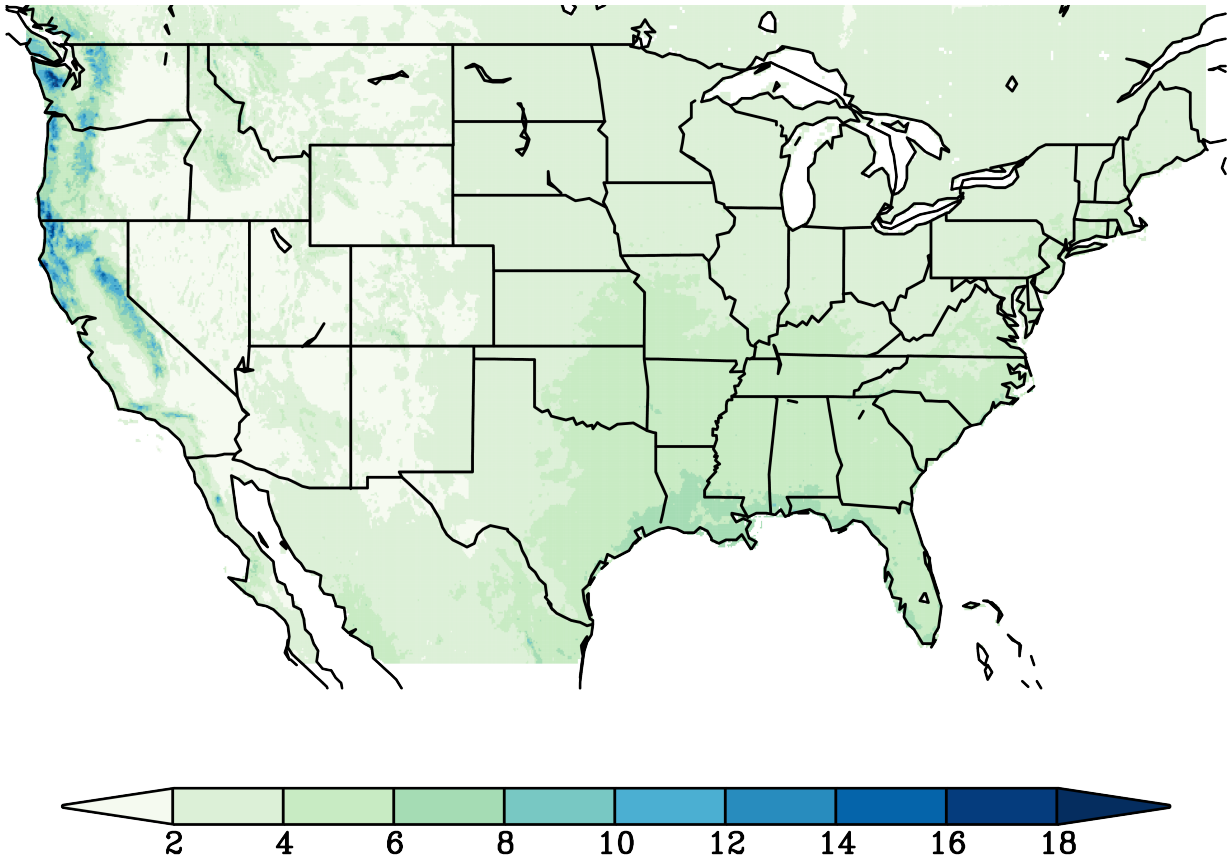

Annual highest precipitation total over a 5-day period

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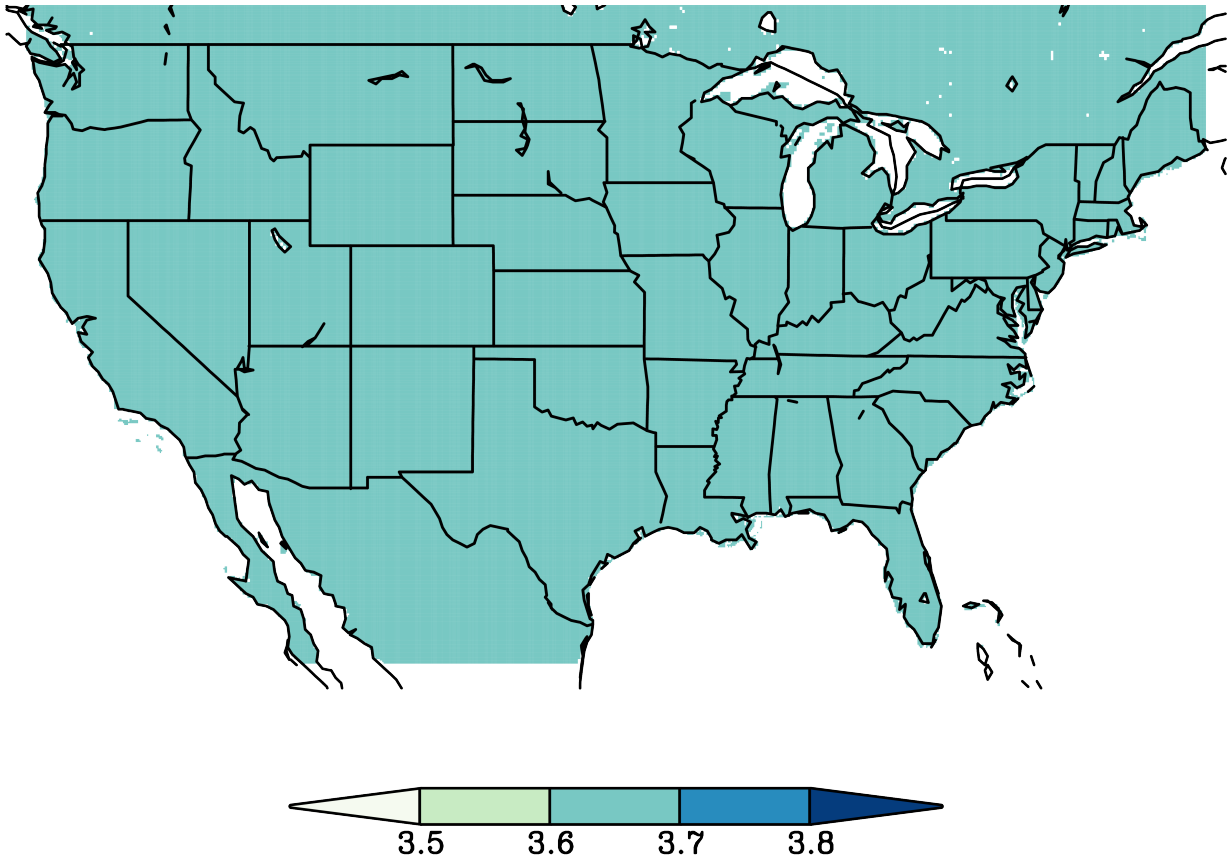

Annual number of days with precipitation exceeding the 99th percentile

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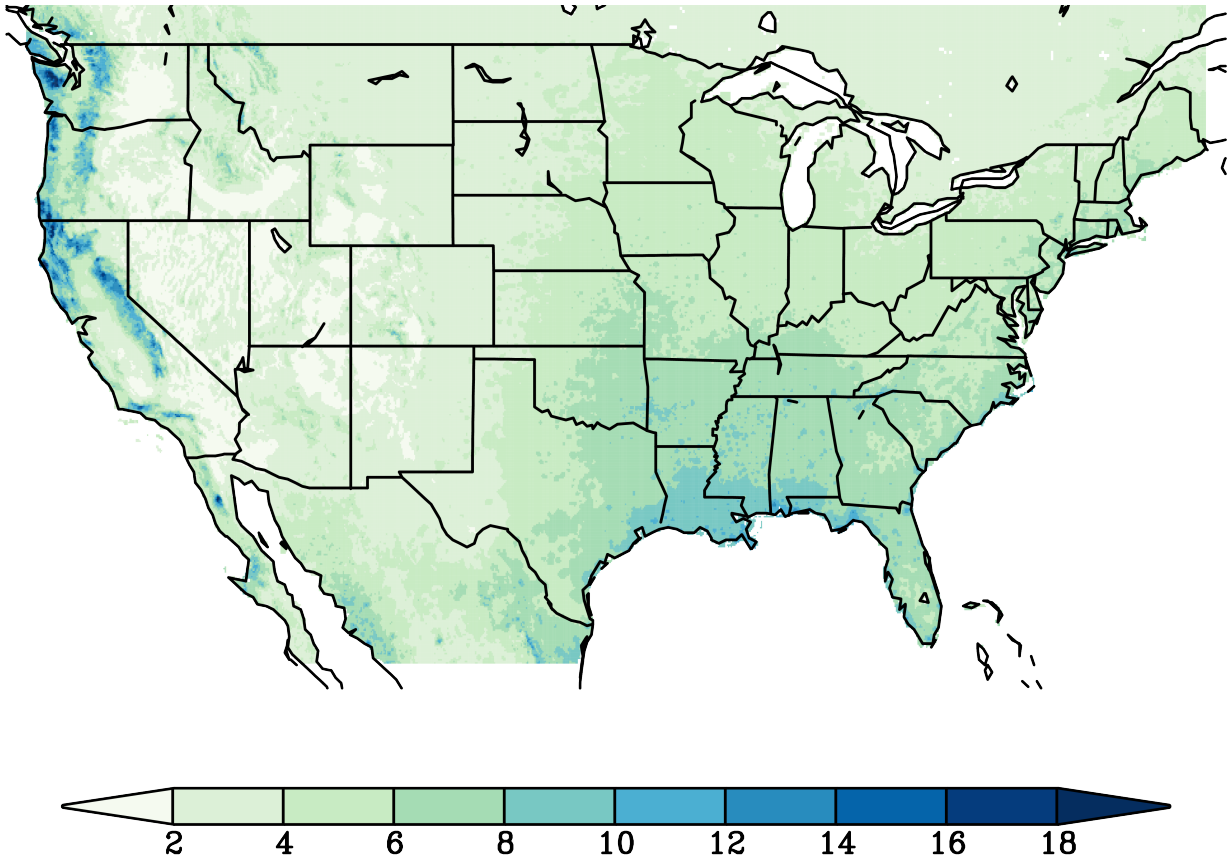

Annual total precipitation for all days exceeding the 99th percentile

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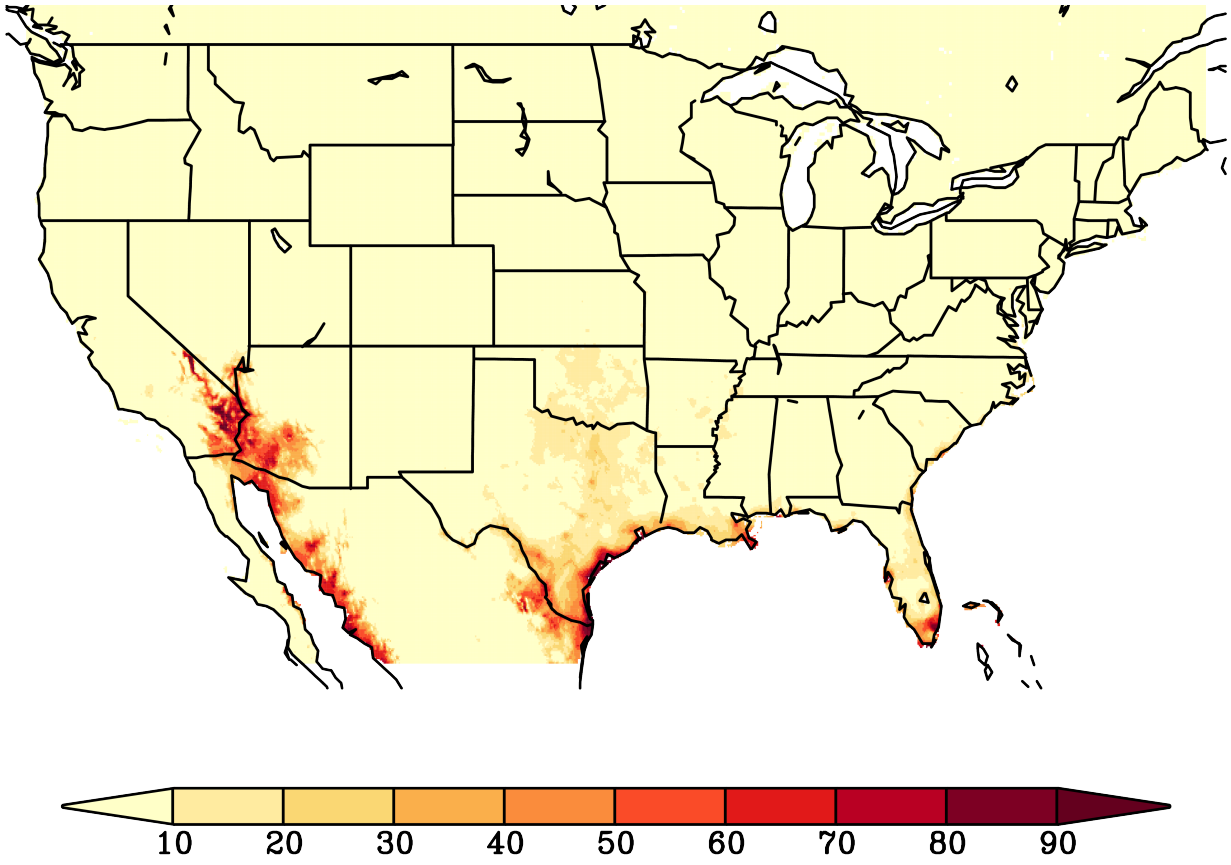

Annual number of days with a minimum temperature greater than 75°F

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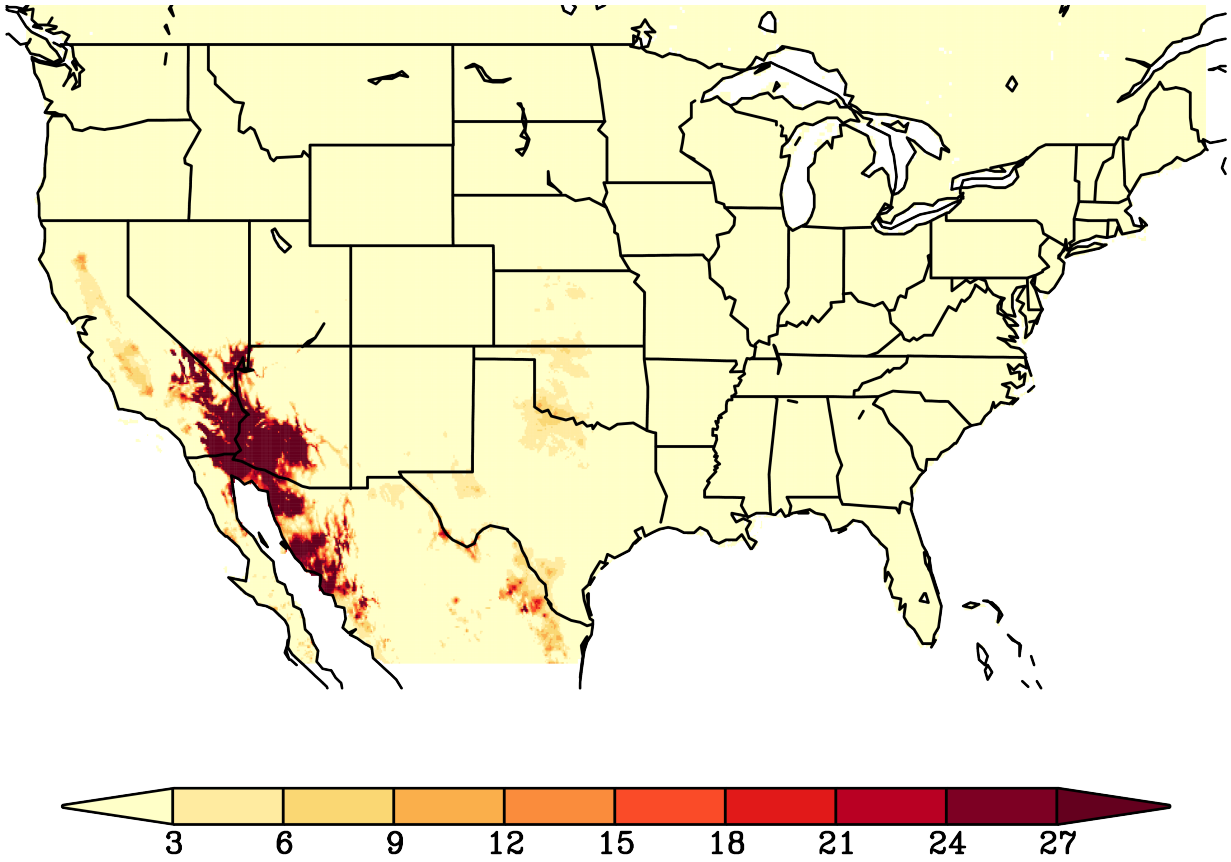

Annual number of days with a maximum temperature greater than 105°F

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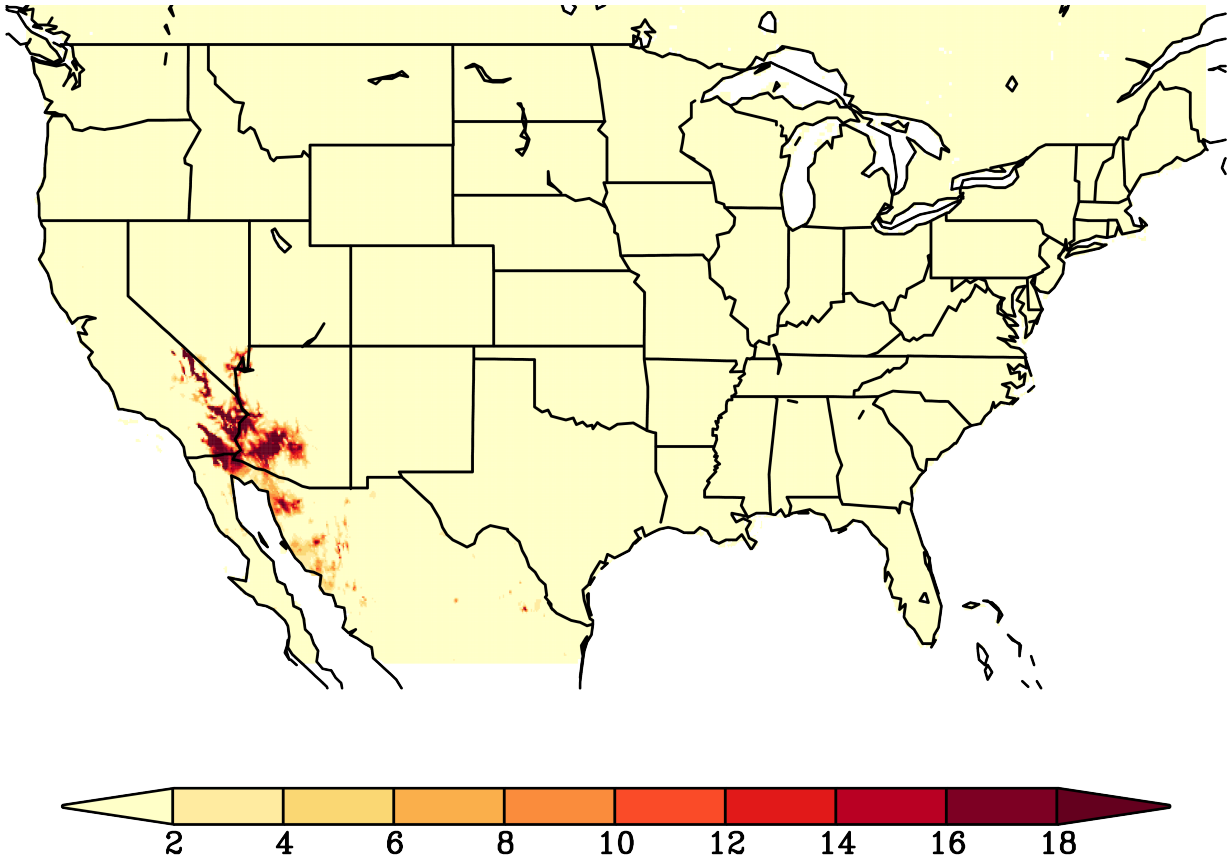

Annual number of days with a maximum temperature greater than 110°FF

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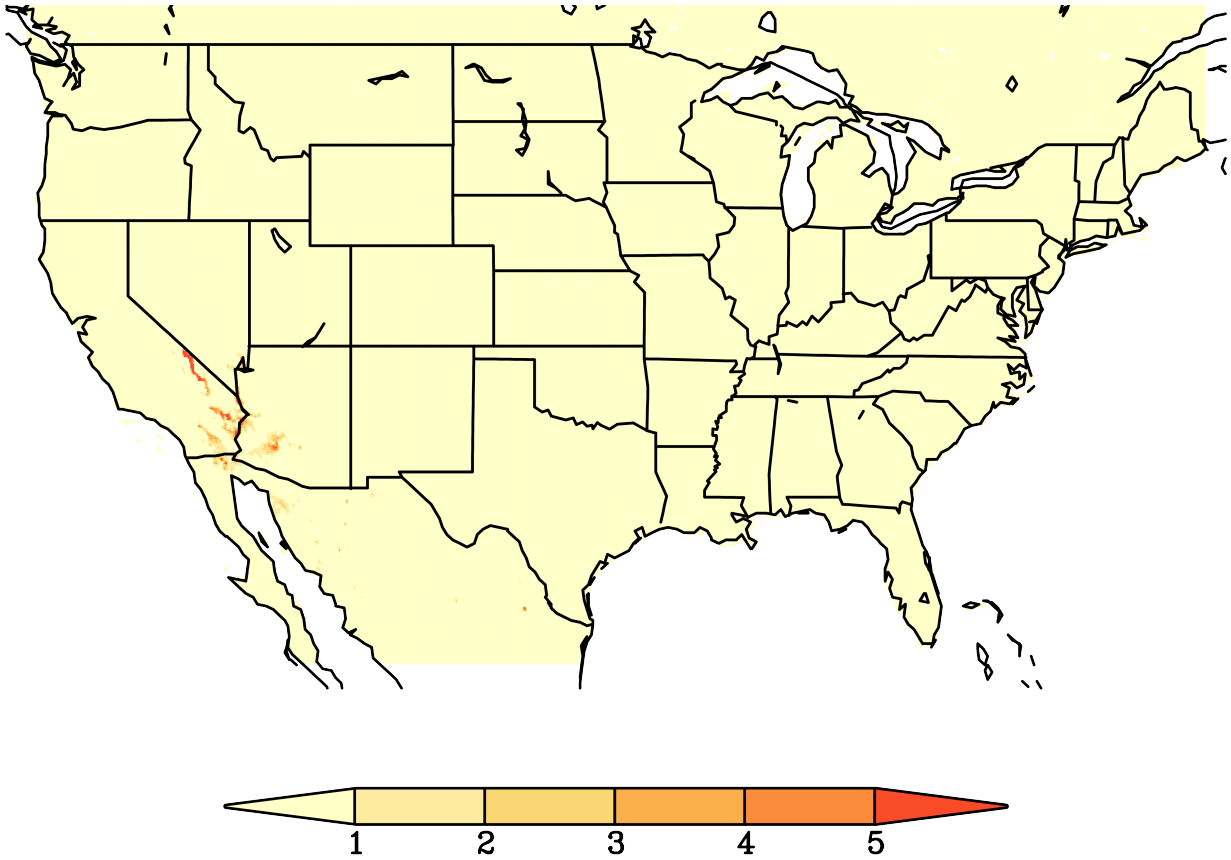

Annual number of days with a maximum temperature greater than 115°F

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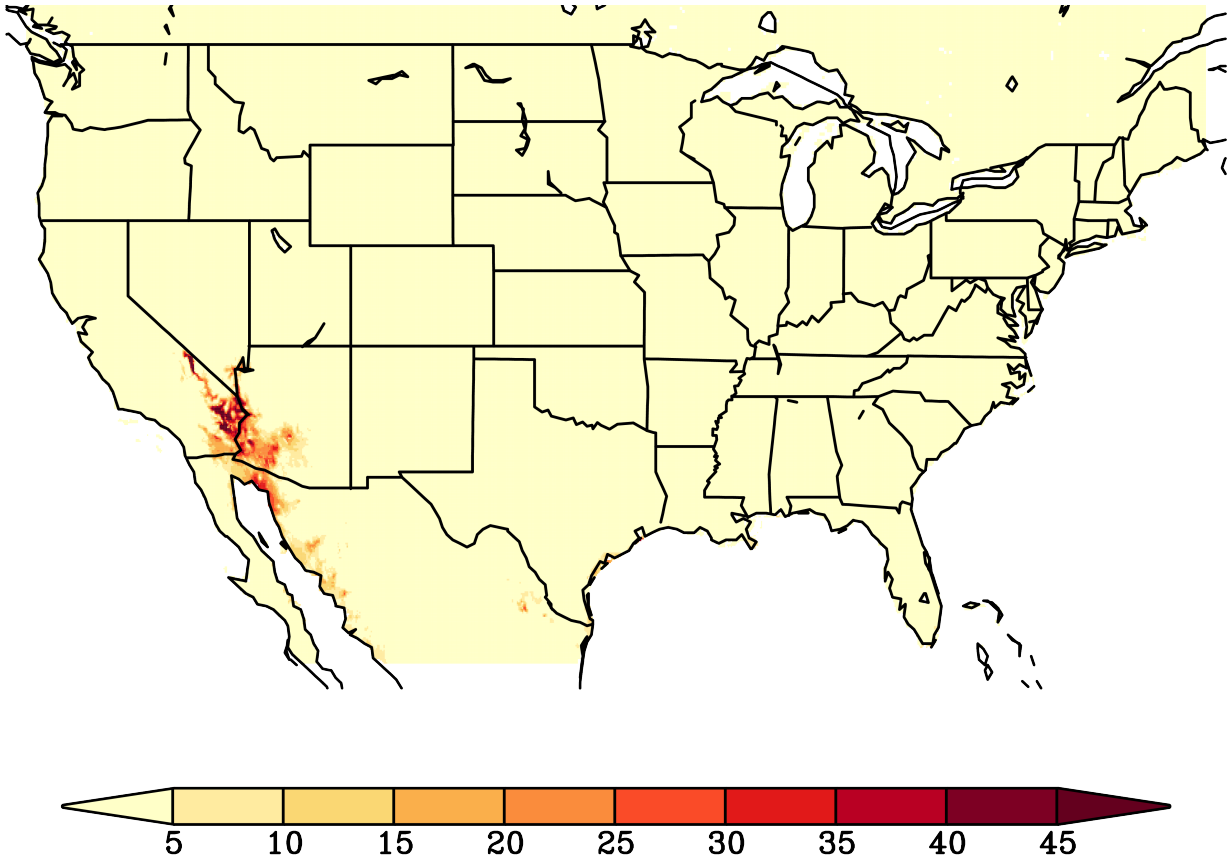

Annual number of days with a minimum temperature greater than 80°F

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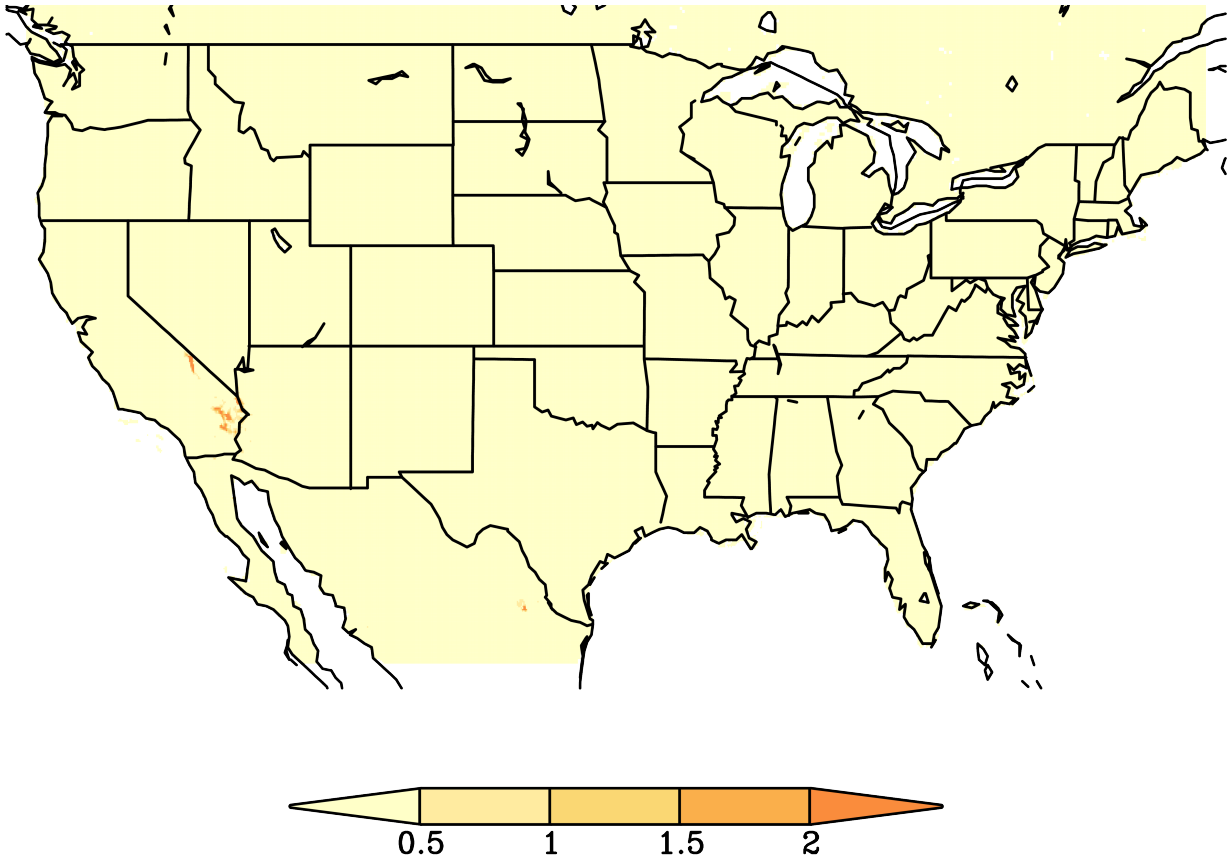

Annual number of days with a minimum temperature greater than 90°F

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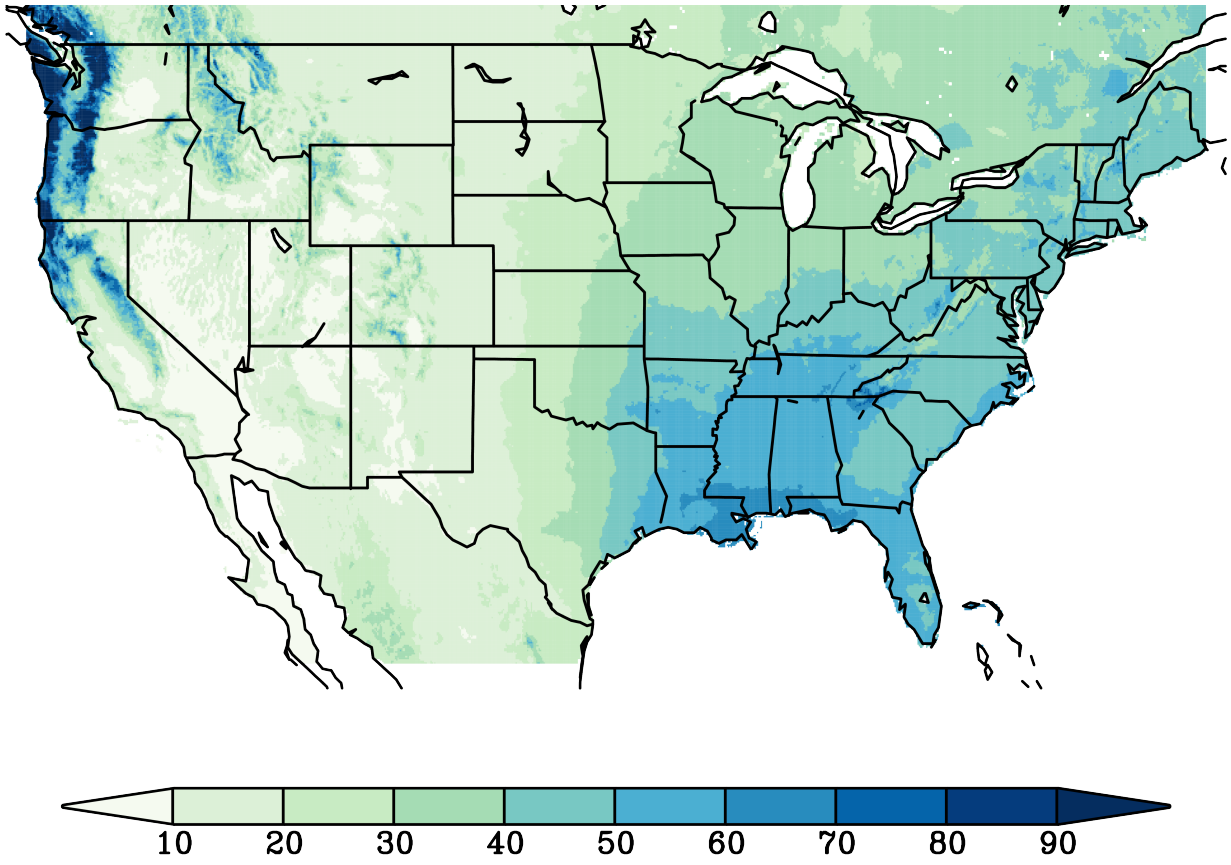

Annual total precipitation

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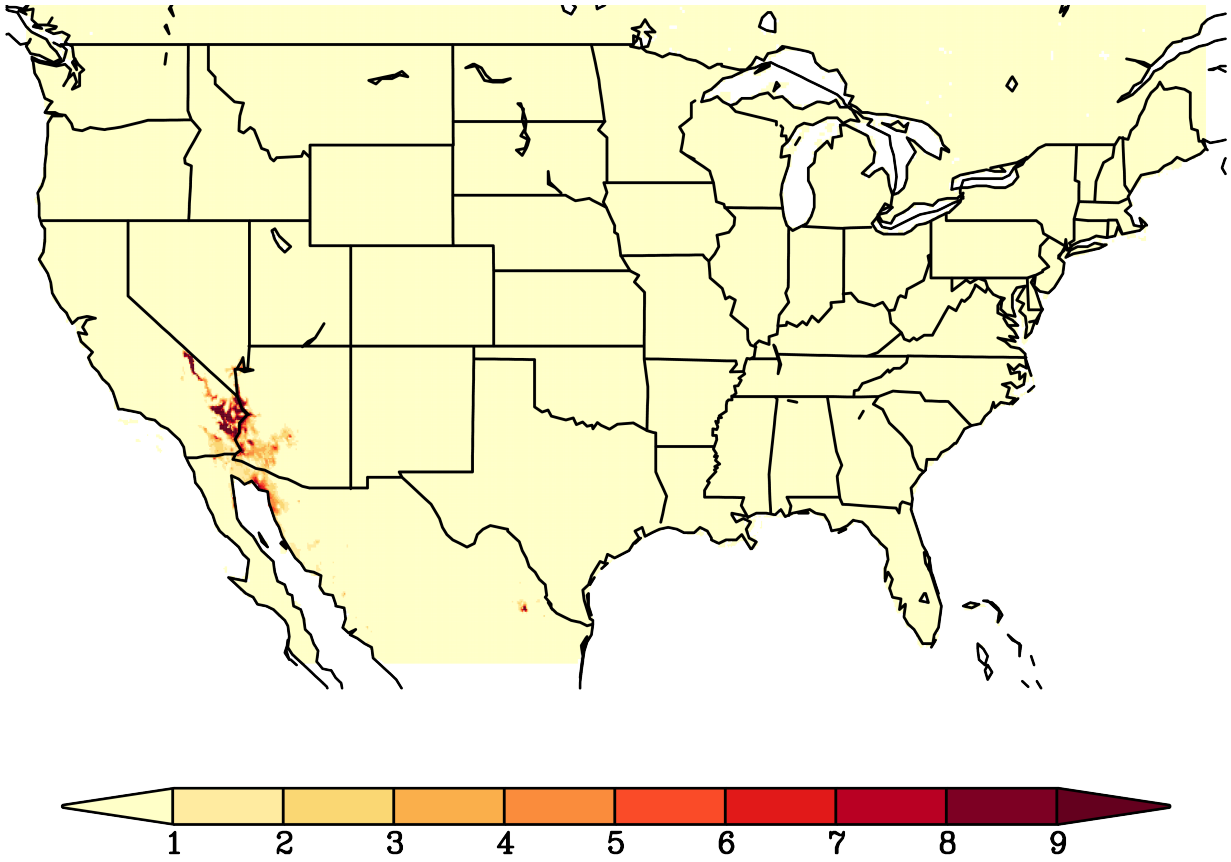

Annual number of days with a minimum temperature greater than 85°F

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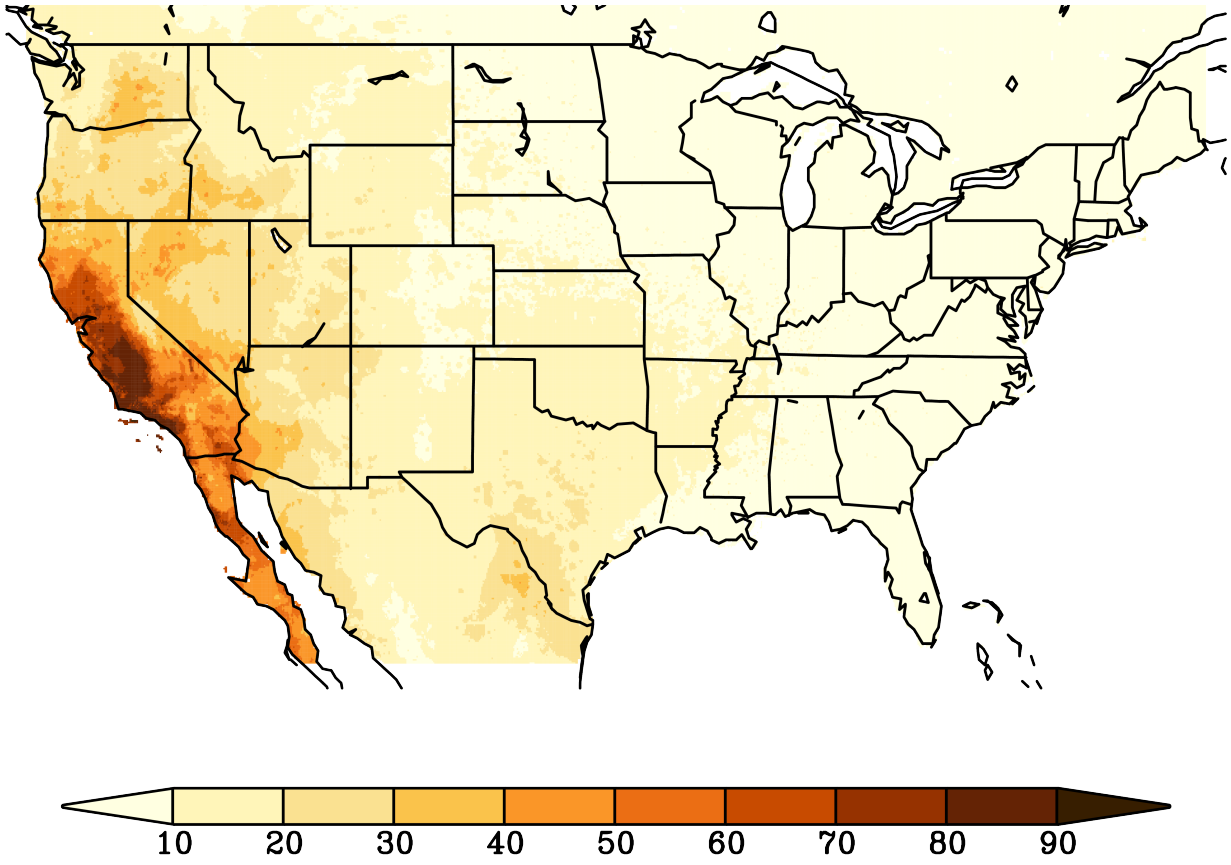

Summer maximum number of consecutive dry days

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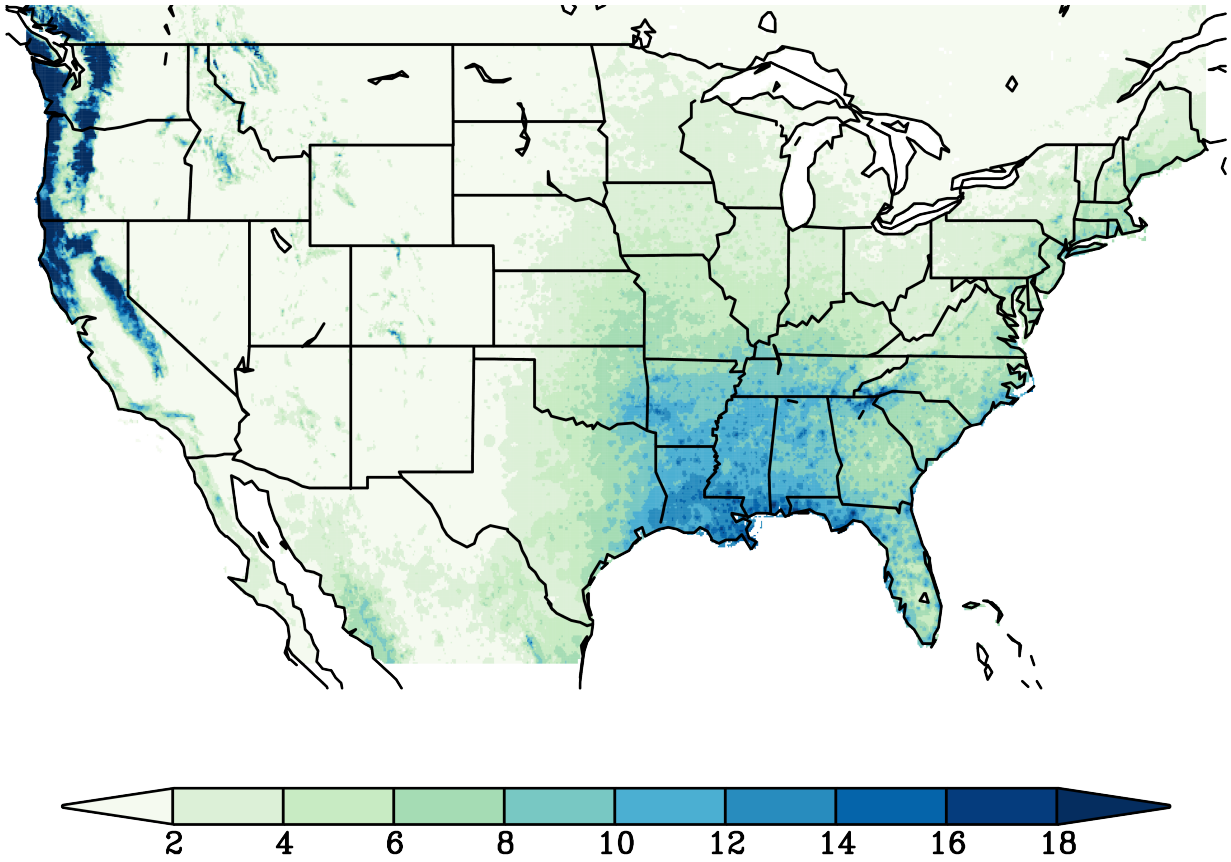

Annual number of days with total precipitation greater than 1 inch

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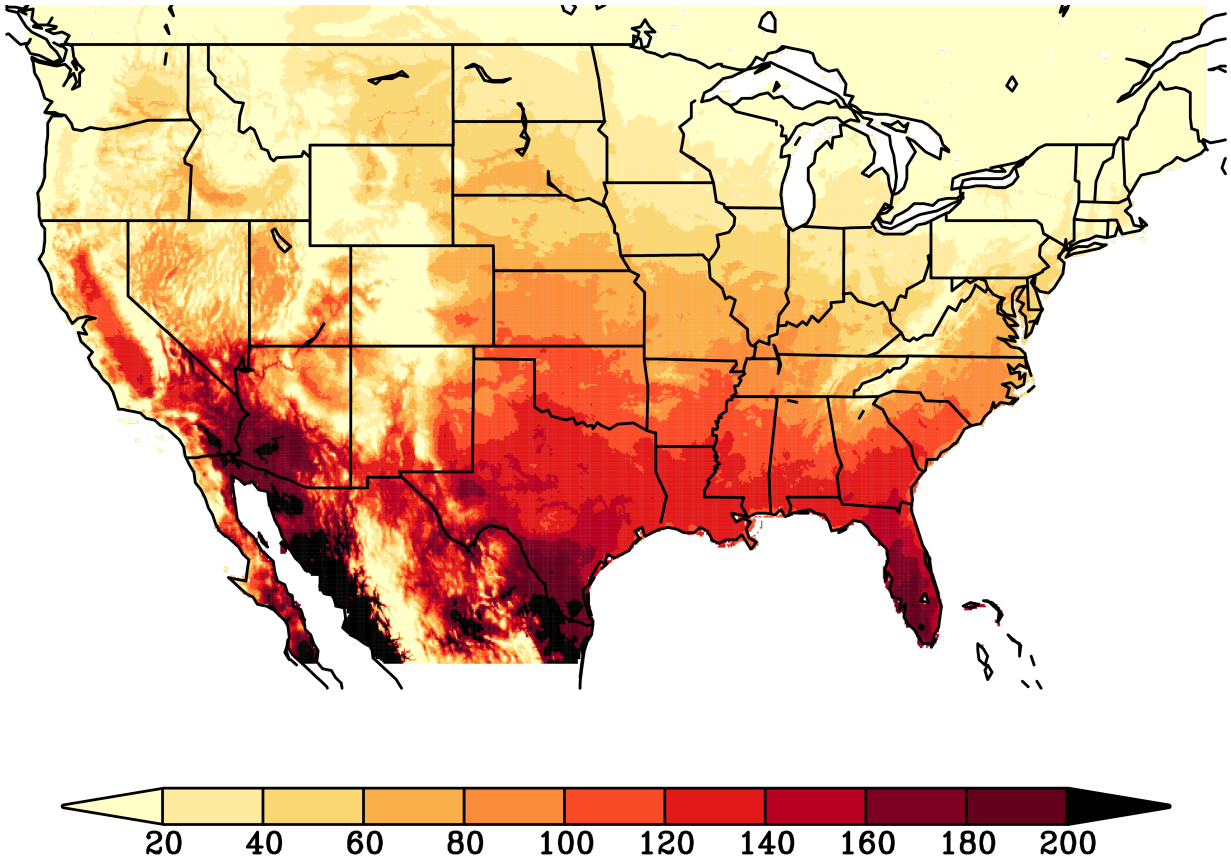

Annual number of days with a maximum temperature greater than 86°F

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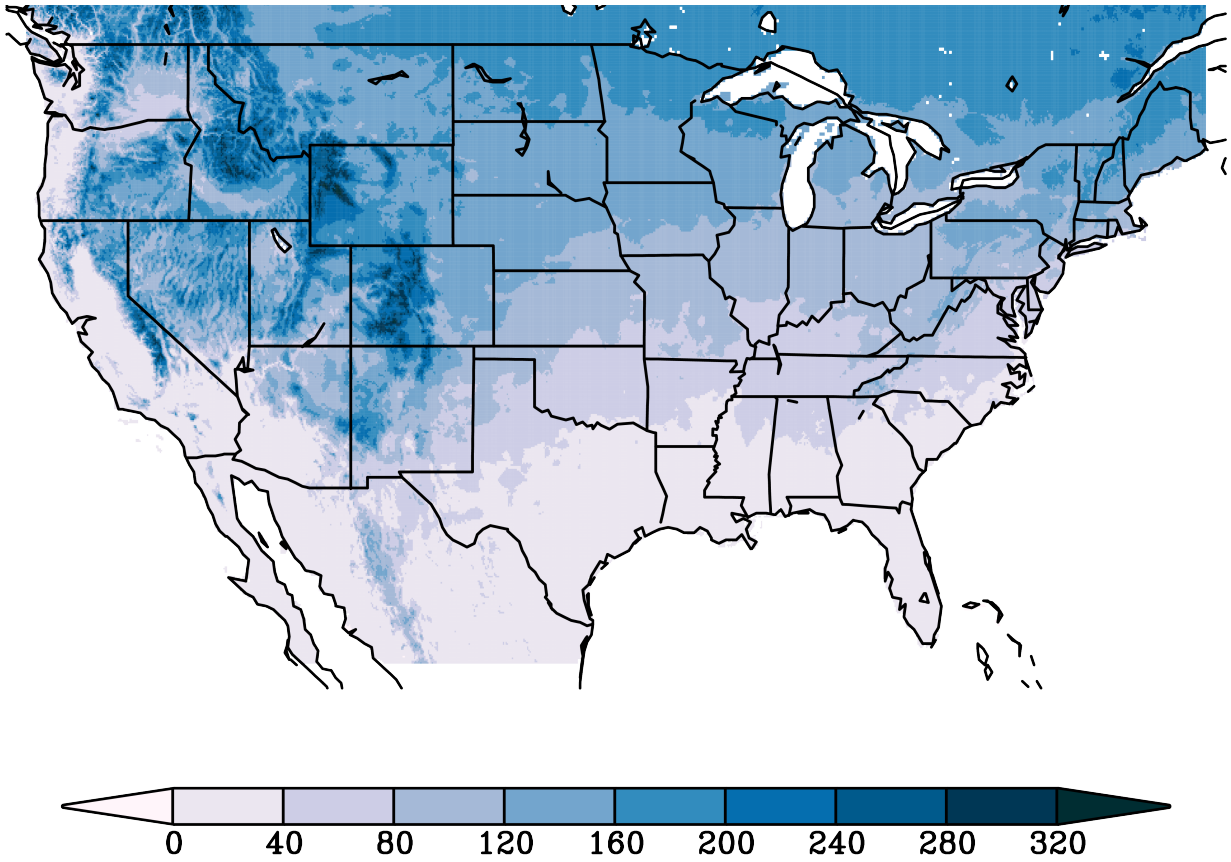

Annual number of days with a minimum temperature less than 28°F

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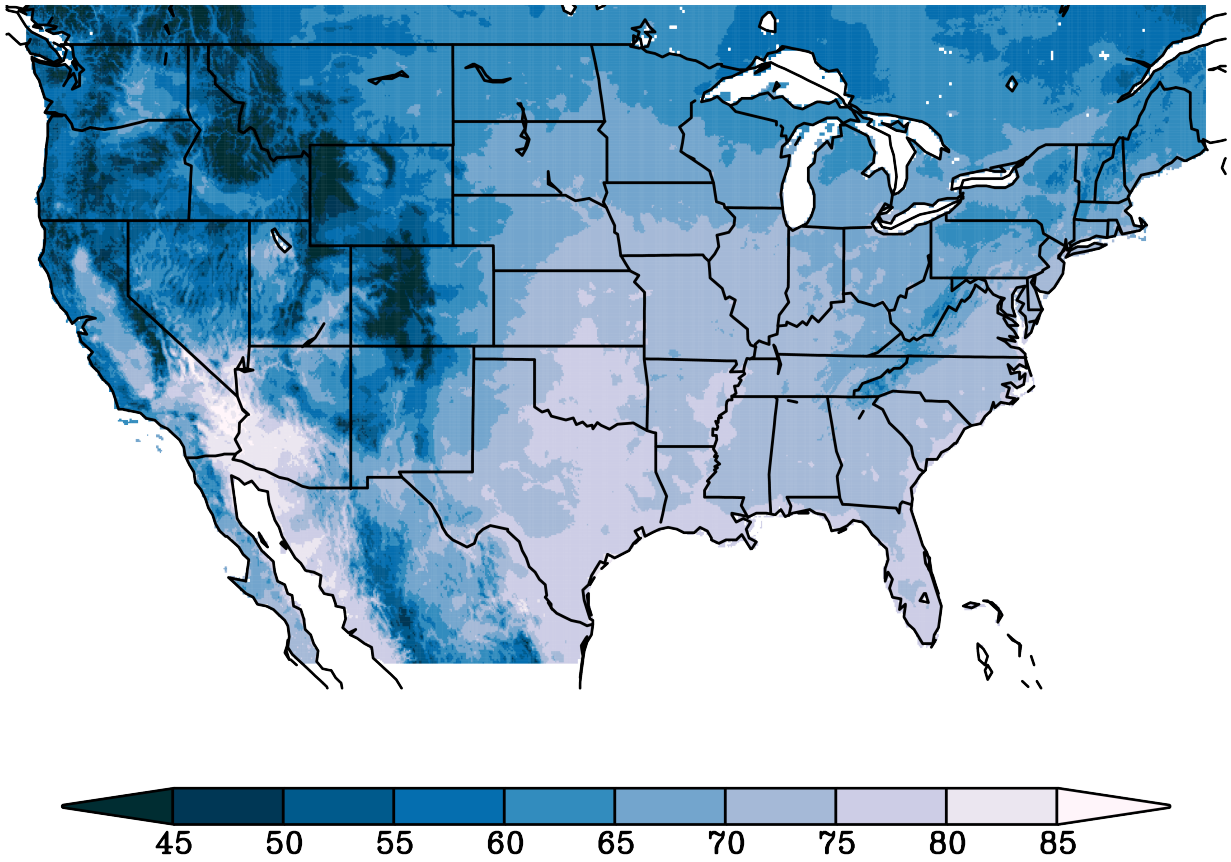

Annual highest minimum temperature averaged over a 5-day period

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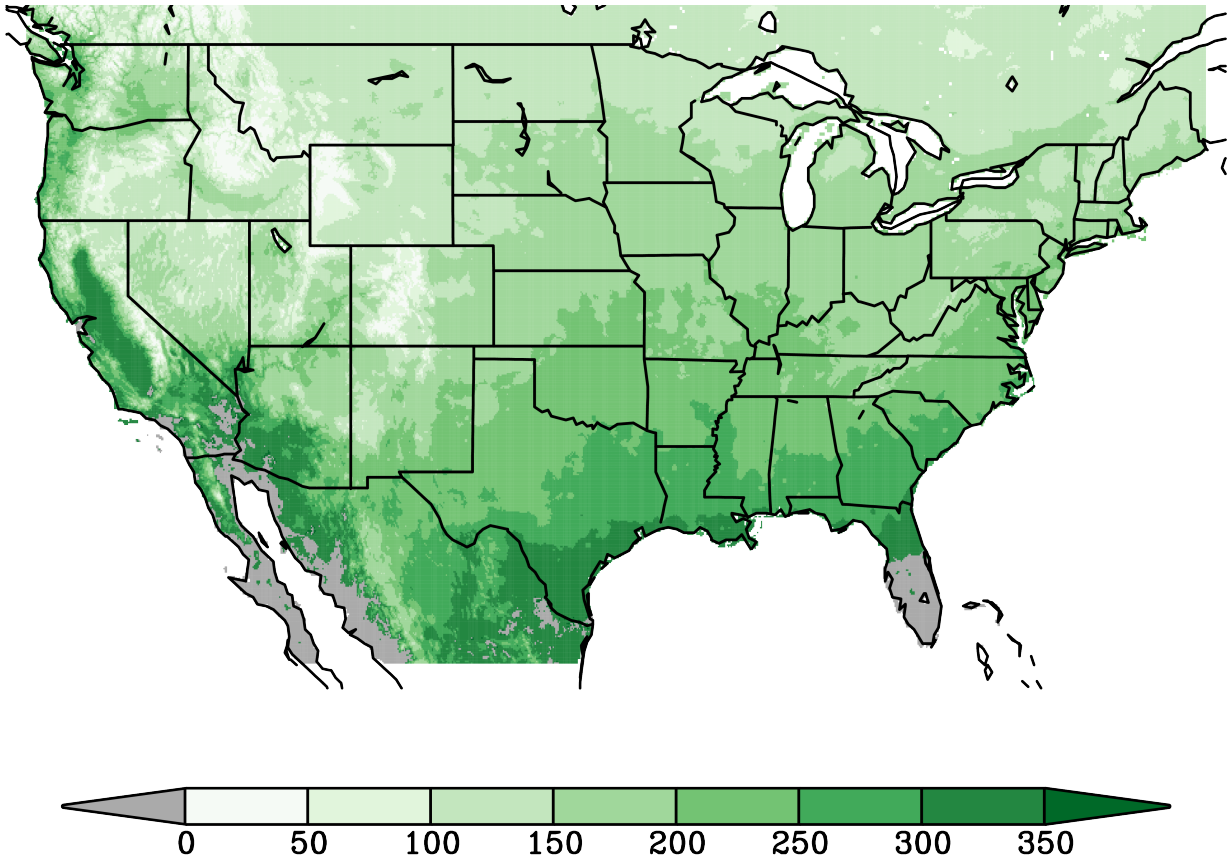

Length of the growing season, 28°F threshold

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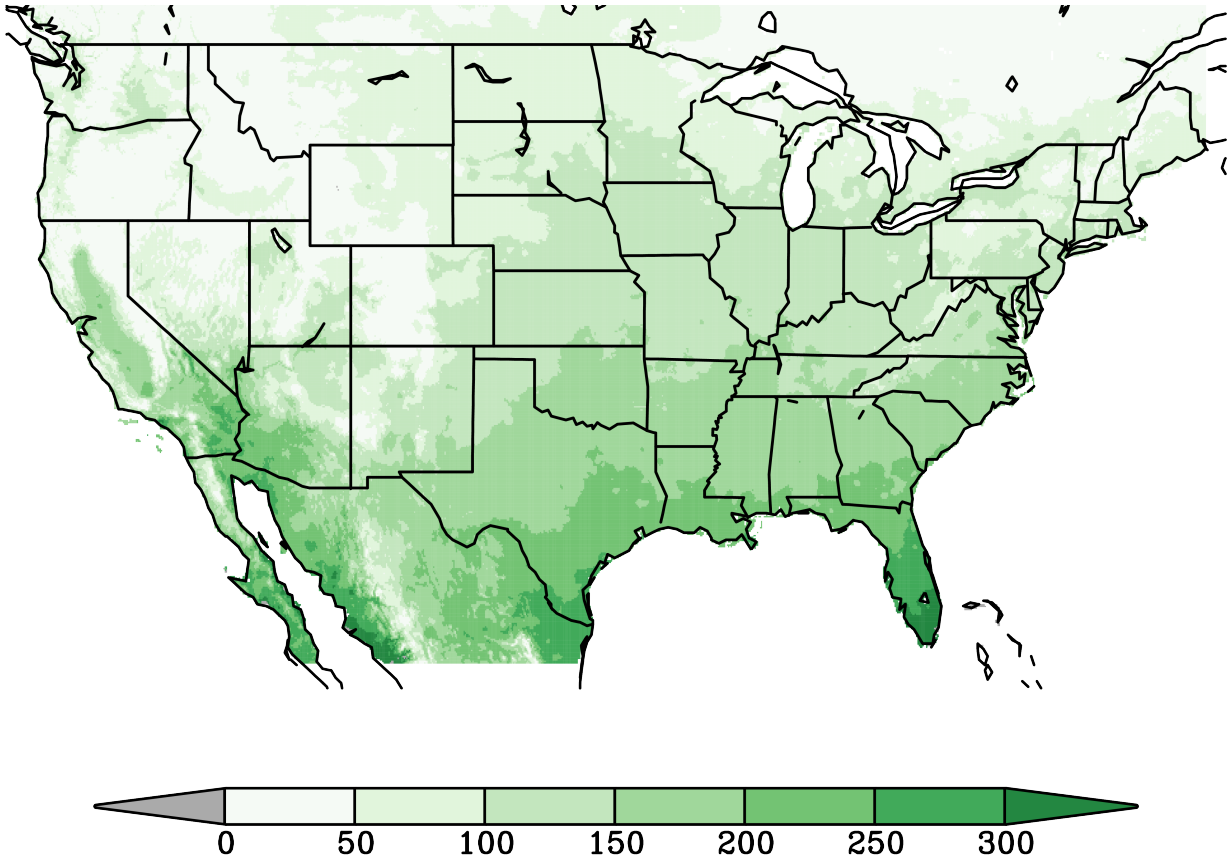

Length of the growing season, 41°F threshold

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