

# High Plains Regional Climate Center

By Keah Schuenemann and Jessica Lowrey, using adapted text from the HPRCC website.

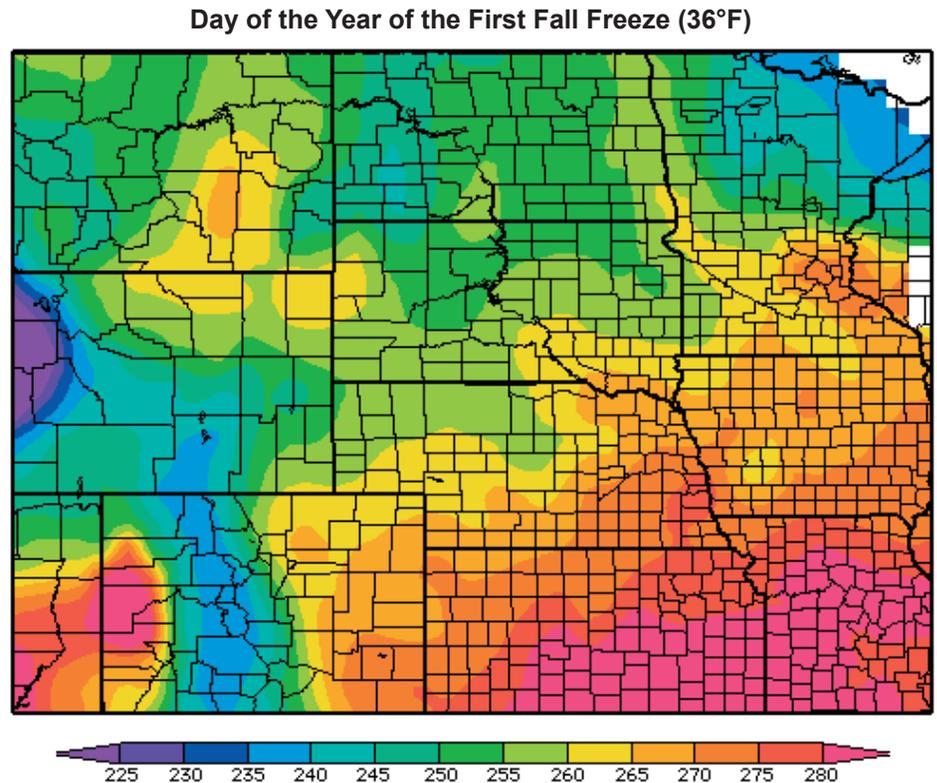
Climate problems tend to be regional in scale. That is, climate anomalies such as droughts, heat waves, and blizzards typically affect an area larger than one state but not the entire country at one time. The NOAA National Climatic Data Center's Regional Climate Centers Program was developed to meet local and regional needs for climate data, research-based information, and expertise.

A nationwide network of six regional centers provides convenient and timely access to accurate and reliable climate information. These centers also monitor and report current climate conditions in the regions they serve. The expertise and data resources of the Regional Climate Centers are available to assist in interpreting present conditions, quantifying climate variability, and assessing the likelihood of extreme weather events that often produce major social, economic and environmental impacts in a region.



The High Plains Regional Climate Center (HPRCC) is located at the University of Nebraska in Lincoln, and it is responsible for coordinating all applied climate activities for

North and South Dakota, Nebraska, Kansas, Wyoming, and Colorado. The HPRCC is known for its expertise in the use of automated weather stations to ingest near real-time climate data. The Automated Weather Data Network (AWDN) takes hourly air temperature, humidity, soil temperature, wind speed, wind direction, solar radiation, and precipitation measurements. The data is available (for a fee) online or through



**Figure 14a.** An example of a map from the Climate Atlas found on the HPRCC website under "Climate Products." This map shows the average day of the year (1-365) for the first fall freeze in the High Plains region. Freeze dates shown range from around day 225 (August 13) to after day 280 (October 7).

contacting the climate office itself and includes other relevant data from the NWS surface weather networks. One can access free maps of current and historical climate information based on data from the AWDN and other weather networks at the HPRCC site. The HPRCC trains scientists from around the world to set up automated weather stations and manage the near real-time data.

Research projects at the HPRCC involve expanding their climate service activities. They developed soil water monitoring capabilities that help to quantitatively monitor the weather and

climate impacts in the region. They study drought, developing better ways to monitor drought, and forecasting the impact of weather and climate change on the agriculture in the region. Users whose work touches soil and water conservation, sustainable agriculture systems, agricultural competitiveness and profitability, and natural resources and environmental management often request this type of information from the HPRCC.

HPRCC also serves the public by offering telephone consultation, web-based services, and a monthly climate impacts newsletter. The level of service has now

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## On the Web

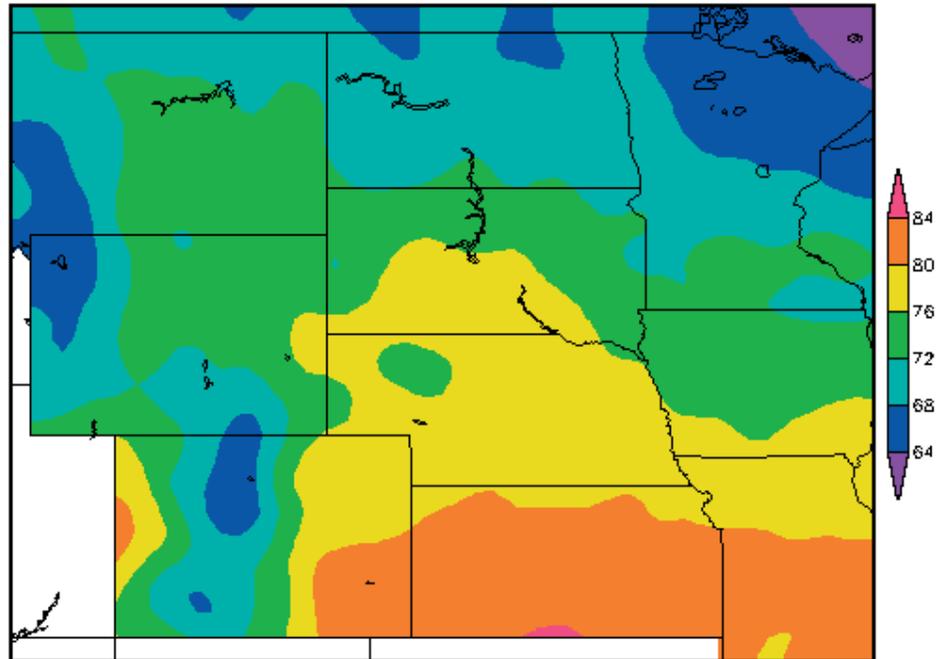
- High Plains Regional Climate Center: <http://www.hprcc.unl.edu/>,
- NOAA's Regional Climate Center page: <http://www.ncdc.noaa.gov/oa/climate/regionalclimatecenters.html>



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reached 16 million hits annually on the web. In addition to the weather observations the products available through the webpage include current climate summary maps, Automatic Weather Data Network maps, 30-year normals, climate atlas, historical data summaries, and links to other federal agencies' data. Within this information is not only weather data, but crop water use and crop performance for major crops, pest development, livestock conditions, soil water, and heat indices. One example of climate summary maps available from the HPRCC, is the recent temperature maps found in every edition of the Intermountain West Climate Summary (See page 4). Figures 14a-b show some other examples of climate summary maps users can create on the HPRCC website.

September Maximum Temperature (°F)



**Figure 14b.** An example of a map '30-year Normals' found on the HPRCC website under "Climate Products." This map shows the average maximum daily temperature in September.

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the impacts occurred. On the map display, the user can move the mouse over any state to see the number and types of drought impacts that were reported in each state (see Figure 1a, on page 2). The user can then click on a state to zoom in and see the location of the impacts by county. To find more information on the impacts for each county, the user clicks on that county to see a list at the bottom of the page with details surrounding the impact, including a link to the source (see Figure 1b, on page 3). Figure 1c is an example of a detailed description of a drought impact. The user can also see an animation of drought impacts through time. While looking at any view of the map, the user can select "show drought monitor layers," which will plot contours showing the severity and locations of drought as determined by the current U.S. Drought Monitor over the drought impacts.

The website also has a section ("Add a Drought Impact") for the public to provide information on drought impacts, which the NDMC team enters into the database. You can assist the NDMC by passing on the Drought Impact Reporter URL to other users and by submitting drought impact reports and suggestions through the website to help improve this work-in-progress.

**Drought Impact Event**

The state of Wyoming is dealing with an outbreak of pine beetles killing thousands of acres of pine trees statewide. Officials are quite concerned that the mounting dead timber will increase fire potential. According to officials, portions of the Shoshone National Forest east of Yellowstone National Park have experienced a 70-percent mortality rate due to the infestation. According to the Medicine Bow forest spokeswoman, beetle epidemics are a natural occurrence, however the current outbreak has exacerbated by the drought. Most of the state of Wyoming has been in drought for the last five years. The pine beetles target weak or stressed trees. When in drought, pine trees become stressed and do not have the energy to produce resin to fend off the beetles.

**Categories:** Environment  
**Source:** Media  
**Dates of Impact:** 2005-10-04 to 2005-10-04  
**External URL:**  
<http://www.casperstartribune.net/articles/2005/10...>

( [See Affected Areas](#) )

**Wyoming:** Entire State

**Figure 1c.** A detailed description of a drought impact affecting the entire state of Wyoming since the beginning of October 2005. A user could get to this kind of description at the Drought Impact Reporter website by clicking in one of the drought impacts listed by county for each state map, like in Figure 1b.

