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Wyoming's Climate: April 2011

April 2011 brought additional snowpack to Wyoming's high mountains, and prompted further concerns related to spring flooding. Precipitation was generally above average at locations over 8,000 ft, but a significant number of valley and basin stations reported below average rain and snowfall. Temperatures in northwestern Wyoming were well below average for the month, while the remainder of the state was generally slightly cooler-than-average to average. Drought impacts were almost completely absent from the state, though low-country dryness in central Wyoming merits continued monitoring.

Mountain snowpack was the major story in Wyoming this month. By the end of April, statewide average snow water equivalent (SWE) topped 150% of historical average (compared to 1971-2000). In contrast, statewide average SWE in late April 2010 was only 75% of average. These end-of-month numbers also represent a noticeable increase over mid-month observations of ~125%. In some cases these gains in SWE resulted—at least in part—from cooler temperatures having delayed the onset of spring melt-off. However, additional high-country precipitation over the month of April accounts for the majority of these increases.

As reported at NRCS-SNOTEL sites, high elevation precipitation since the start of the water year (i.e., since October 1) is above average (vs. 1971-2000) in all basins except the Wind River, which sat at 99% on April 30. Interestingly, percent of average SWE is markedly higher than total water year precipitation in every basin (<http://www.wrds.uwyo.edu/wrds/nrcs/snowprec/snowprec.html>). In turn, this suggests that a combination of factors contributed to the current snowpack situation. Overall, the Upper Bear River and Belle Fourche River basins reported the highest average SWE values in the state with > 195%. Even the Wind River watershed, the basin with the state's lowest end-of-April SWE, reported > 120% of average. Multiple NRCS-SNOTEL sites across the state also reported > 200% of average SWE, and snow depths of more than 8 ft were relatively common.

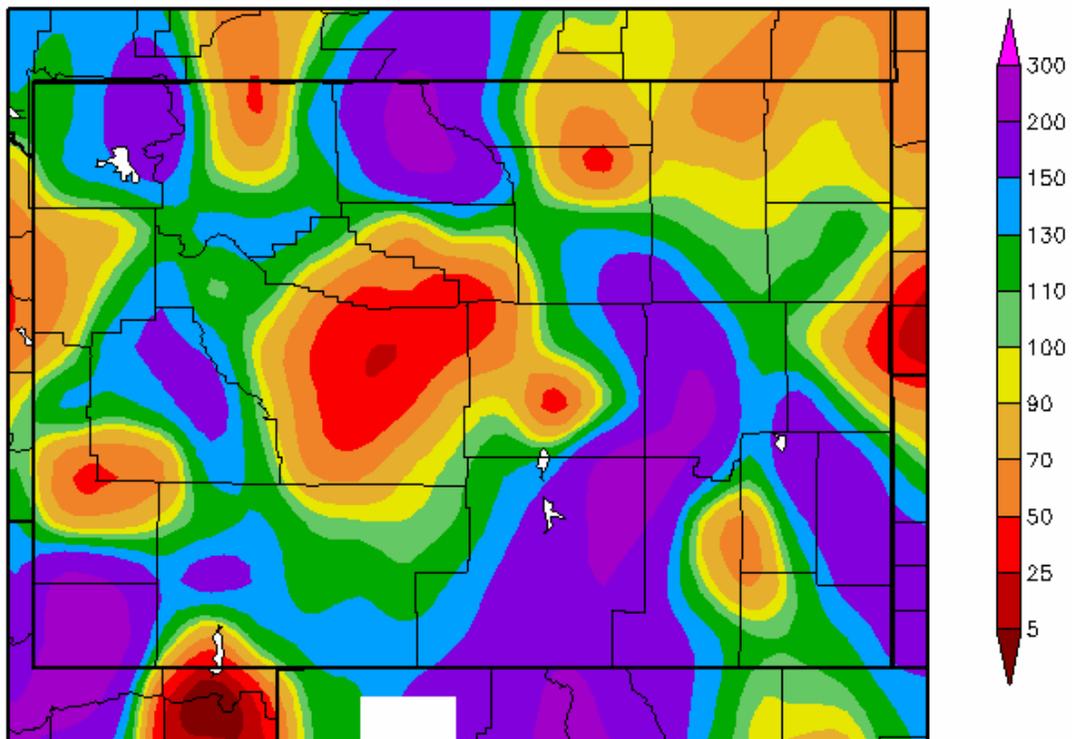
As measured at National Weather Service COOP sites, April low-country precipitation was more of a mixed bag. Parts of Carbon Co. in southeastern Wyoming received greater than 150% of historical average precipitation (vs. 1971-2000), but several locations in neighboring Fremont Co. received < 50%. On the whole, average temperatures across the state were on the cool side for the month, with the northwest reporting values in the 4-5° F below average range. Multiple high temperature records were broken on April 2.

According to the U.S. Drought Monitor, Wyoming remained nearly drought free through the month of April 2011 (see <http://www.drought.unl.edu/dm/monitor.html>). In fact, concerns have now turned towards flooding, and the NWS has categorized much of southeastern Wyoming as being at "high risk" (<http://www.crh.noaa.gov/images/riw/hydro/floodoutlook.png>). Low-

elevation dryness in central Wyoming also raises the possibility of negative impacts on forage production, but no such cases are known at this time.

This report was prepared by the Wyoming State Climate Office, which is a division of the Wyoming Water Resources Data System at the University of Wyoming. More information can be found at: <http://www.wrds.uwyo.edu> and http://www.wrds.uwyo.edu/sco/climate_office.html. Special thanks to the National Weather Service's Cheyenne and Riverton Offices and the NRCS Casper Office for supplying much of the data used in this report.

Percent of Normal Precipitation (%) 4/1/2011 - 4/30/2011

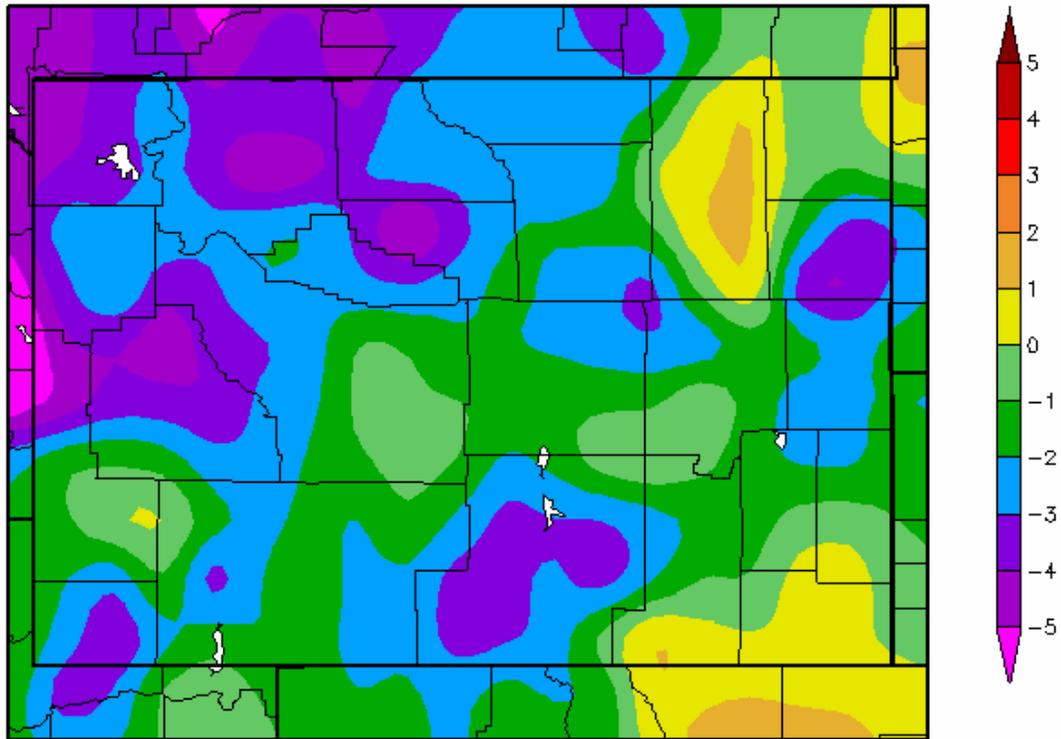


Generated 5/2/2011 at HPRCC using provisional data.

Regional Climate Centers

Map showing April 2011 precipitation as a percentage of historical averages (vs. 1971-2000 “normal period) for Wyoming. Courtesy of the High Plains Regional Climate Center.

Departure from Normal Temperature (F)
4/1/2011 - 4/30/2011



Generated 5/2/2011 at HPRCC using provisional data.

Regional Climate Centers

Map showing mean April 2011 temperatures as departures from historical averages (vs. 1971-2000 "normal period) for Wyoming. Courtesy of the High Plains Regional Climate Center.