



<http://drought.mt.gov>

Map Key

- Continental Divide
- Drought Impact Type

Drought Status

November 2010

- No Drought - Moist
- No Drought
- Slightly Dry
- Moderately Dry **(Drought Alert)**
- Severely Dry **(Severe Drought)**
- Extremely Dry **(Severe Drought)**

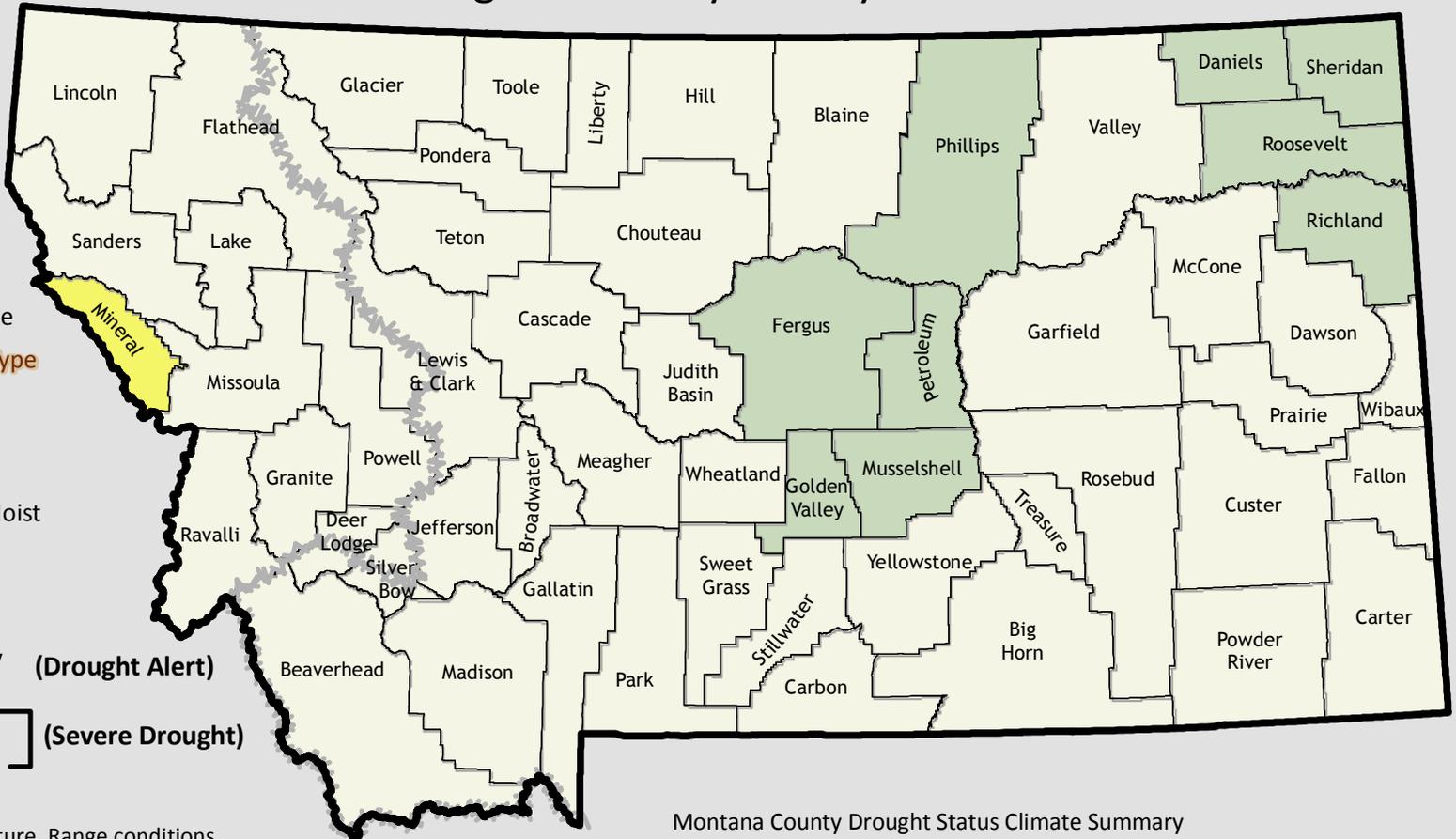
Drought Impact Types -

- A** = Agricultural - Soil Moisture, Range conditions
- H** = Hydrological - Water Supplies, Streamflow, Groundwater

Drought Alert - Governor's Drought Advisory Committee strongly encourages local officials to convene local drought committees.

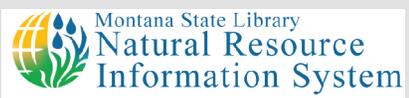
Severe Drought - Local officials should have local drought planning efforts underway or should reconvene the local drought committee at the earliest opportunity. For recommended responses, see the Montana Drought Plan

Montana Drought Status by County - November 2010



Montana County Drought Status Climate Summary

By October 2010, the Montana Drought Status map indicated that 22 of the state's 56 counties, all east of the Continental Divide, were rated in the No Drought - Moist category, with 33 other counties in the No Drought status, Mineral County being the exception rated as Slightly Dry. On November 23 the Committee updated the map dropping 13 of the No Drought - Moist counties east of the Divide back into the No Drought category. By November 4, NOAA's Climate Prediction Center (CPC) acknowledged that the La Nina that began to take shape in summer 2010 continued as equatorial sea surface low level easterly trade winds and upper-level westerly winds continued to prevail consistent with development of a La Nina event. According to the National Climate Data Center (NCDC), the period of March through October 2010 was the 104th driest and 13th wettest for that 7-month period in Montana since 1895. The El Nino of 2009-2010 weakened into the neutral phase of El Nino - Southern Oscillation (ENSO) around mid-June when the ENSO cycle entered its negative, or La Nina cool phase. Copious amounts of precipitation statewide through the summer prompted the Drought Advisory Committee to classify 22 counties as No Drought-Moist, an unprecedented measure in the tenure of the Drought Status Map's current format, which began in October 2004. One plausible explanation for the atypical strong water supply following the El Nino winter of 2009-2010 could be that the cool phase of the Pacific Decadal Oscillation (PDO) predominated dramatically as the El Nino faded. The influence of ENSO on Montana's climate is strongest between September and April when the annual mountain snowpack develops. The ongoing cool phase of the PDO could be with us for the next 30 years if past records are any indication. The cool PDO of 1947 to 1977 was followed by its warm phase from 1978 to 2007, with a short-lived cooling in 2001 before resuming in its warm phase into late summer 2007. Records seem to indicate that El Ninos (La Nina) are less (more) frequent, shorter (longer) in duration, and weaker (stronger) in intensity when the PDO is in its cool (warm) phase. Wildfire records for Montana indicate similarly that during a cool phase of PDO wildfires have been less in intensity, area, and duration. Wildfire season 2010 for the Northern Rockies Region will go down in the record books as one of the weakest with just over 4,000 ac. burned. The state's reservoirs are full, streamflow remains above average, soil moisture at depth is good, groundwater has recovered, and the mountain snowpack is off to a good start. If frigid temperatures persist we may see the pine bark beetle infestation tempered according to some experts. This winter both the ENSO (La Nina) and PDO will be in their wet and cool phases. The mountain snowpack and summer water supply should resemble the La Nina of 2008-2009 during which time the PDO, once again in its cool phase, likely played a big role in completing recovery from hydrologic drought dating to 2000. See: <http://cse.washington.edu/cig/pnwccompensopdo.shtml>



<http://nr.is.mt.gov/drought/>