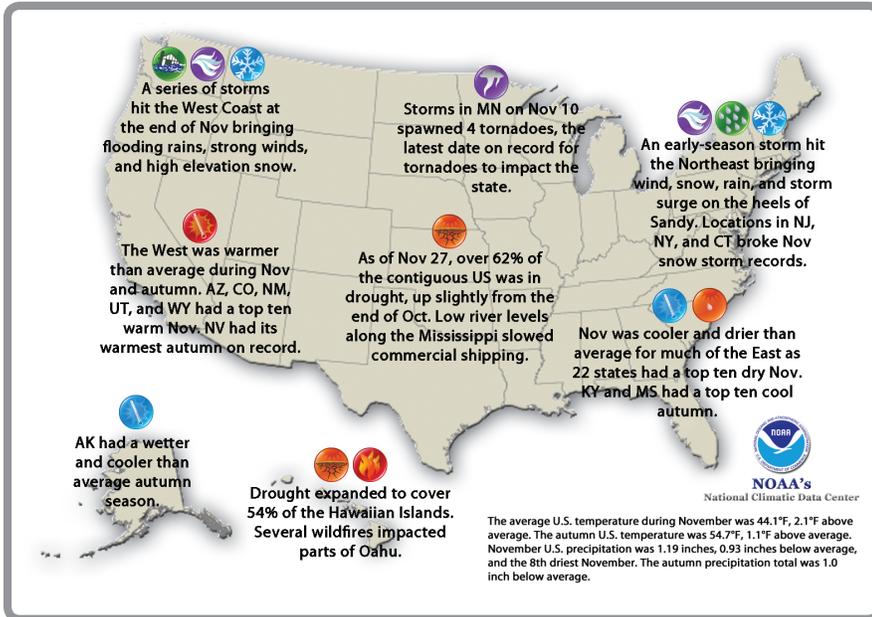


National - Significant Events for September - November 2012



Highlights for the Central Region

The remnants of Hurricane Isaac moved across the central Midwest on Labor Day weekend bringing heavy rain to areas from Missouri eastward. This resulted in a significant improvement to the drought in those areas.

The ongoing drought contributed to a large dust storm on October 17-18 in portions of Wyoming, Colorado, Nebraska, Kansas, and Oklahoma. Winds were sustained at 35-45 mph with gusts to 70 mph. Reduced visibilities from the dust forced the closure of parts of three Interstate highways in the affected states. Effects were also felt in South Dakota and western Missouri.

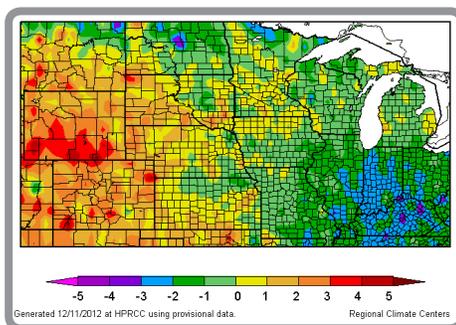
The levels of Lakes Michigan and Huron are trending toward record lows due to a combination of low precipitation in the basin and warm lake surface temperatures leading to high evaporation from the lake surface.

Sixty-five percent of the U.S. winter wheat crop is currently in drought-affected areas.

Regional - Climate Overview for September - November 2012

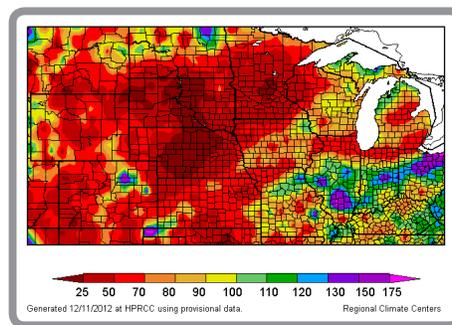
Temperature and Precipitation Anomalies

Departure from Normal Temperature (F)
9/1/2012 - 11/30/2012



Average daily temperatures during the fall ranged from 1°F to 4°F below normal over the eastern two-thirds of the region, and near to slightly above normal in the western one-third. Southern Wyoming experienced temperatures that were 3°F to 4°F above normal. October temperatures were 1°F to 4°F below normal across the entire region, while September and November patterns were similar to the seasonal temperature pattern.

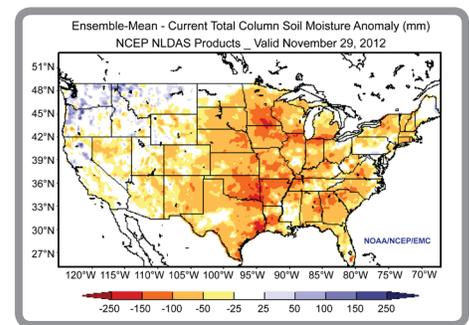
Percent of Normal Precipitation (%)
9/1/2012 - 11/30/2012



Precipitation during the fall period was below normal across most of the region. An area of pronounced dryness was evident from Kansas northward through South Dakota, Minnesota, Wyoming, and Colorado, with most areas receiving less than 50 percent of normal precipitation. Precipitation from central Nebraska through central South Dakota was less than 25 percent of normal for the three-month period. The northern half of North Dakota and an area from northern Missouri through central Indiana received normal to above normal precipitation.

Soil Moisture

Soil Moisture Anomaly
11/29/2012



Soil moisture across much of the central U.S. was well below normal at the end of the month. This map depicts the total column soil moisture anomaly in millimeters (25.4 mm = 1 inch), according to a NOAA soil moisture model (NLDAS). At the end of November the U. S. Drought Monitor (next page) depicted "Extreme" to "Exceptional" (i.e., D3 and D4) Drought across most of Kansas, Nebraska, the southern two-thirds of South Dakota, eastern Colorado, eastern Wyoming, and portions of Iowa and Minnesota.

Regional Impacts for September - November 2012

Agriculture

The dry weather in the fall promoted early maturity of crops and resulted in a rapid harvest season. However, the drought continues to have serious negative impacts. Winter wheat emergence has been quite slow across the region. The USDA said that at the end of November wheat in 18 states rated 26 percent very poor or poor, 41 percent fair and 33 percent good or excellent. These are the worst ratings since 1985.

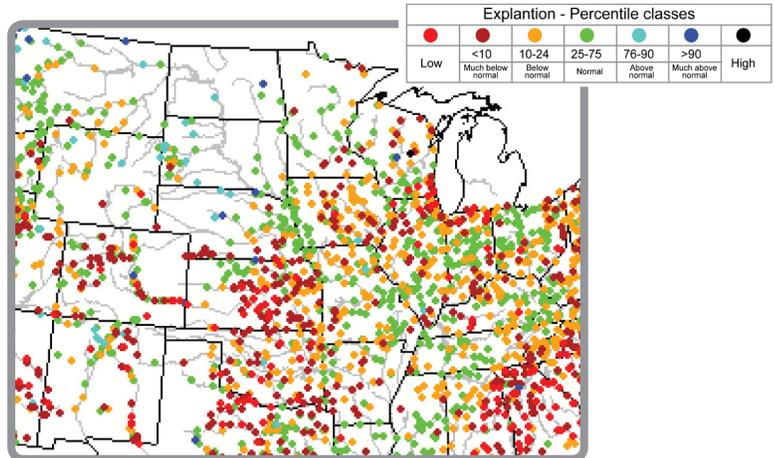
Water Resources

The U.S. Army Corps of Engineers has begun its winter release schedule on the Missouri River to try to maintain water in the upper system for next year. This, along with current drought impacts, will have further effects on river levels and on flow in the Mississippi River

Transportation

Mississippi River levels are expected to reach record lows in late December. This will severely curtail barge traffic south of St. Louis as the 9-foot deep navigation channel will not be able to be maintained. The American Waterways Operators estimates that \$2.3 billion of agricultural products, \$1.8 billion in chemicals, and \$1.3 billion of petroleum products normally travels down the Mississippi in December and January. A number of states have asked the government to divert more water from the Missouri River to the Mississippi River to prevent barge traffic from shutting down due to low water levels.

November 30, 2012



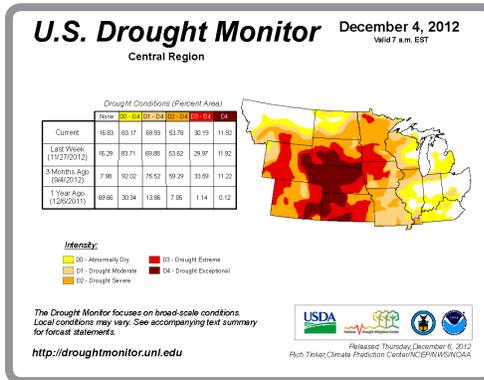
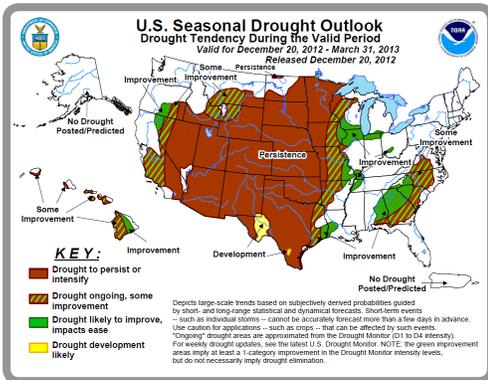
Top: Streamflow percentiles in the central U.S. at the end of November from the U.S. Geological Survey. Maps from the USDA/NRCS National Water and Climate Center (www.wcc.nrcs.usda.gov/snowcourse).



Right: The Mississippi River at Columbus, Kentucky, looking south. (Photo by Stuart Foster).

Regional Outlook - for Winter 2012 - 2013

Central Region Partners



- Midwestern Regional Climate Center mrcc.isws.illinois.edu
- High Plains Regional Climate Center www.hprcc.unl.edu
- National Drought Mitigation Center drought.unl.edu
- National Integrated Drought Information System (NIDIS) www.drought.gov
- State Climatologists www.stateclimate.org
- National Weather Service Central Region www.crh.noaa.gov/crh
- North Central River Forecast Center www.crh.noaa.gov/ncrfc
- Missouri Basin River Forecast Center www.crh.noaa.gov/mbRFC
- National Climatic Data Center www.ncdc.noaa.gov
- NWS Climate Prediction Center www.cpc.ncep.noaa.gov
- Climate Science Program, Iowa State University climate.engineering.iastate.edu
- WaterSMART Clearinghouse, U.S. Dept. of Interior www.doi.gov/watersmart/html/index.php
- Western Governors' Association westgov.org

Drought Expected to Persist through Winter Months

Little change in the status of drought across the central U.S. is expected through February 2013. The U.S. Drought Outlook released on December 20 for the period January 1 through March 31 indicates that little improvement is expected over the core of the most drought areas. Some improvement is expected on the eastern fringe of the current drought area, roughly along the Mississippi River. Some improvement is also expected on the northern periphery of the drought area.

U.S. Drought Monitor

The cold season is typically the driest portion of the year in the Midwest and Great Plains so even with average or slightly above normal winter precipitation there will not likely be much relief from the drought. This has implications for water supply, river navigation, and agriculture into the spring. In addition moisture is desperately needed for the already stressed winter wheat crop in the Central and Northern Plains. In summary, an already very dry region continued to see below normal precipitation this fall. Without adequate precipitation to recharge soil moisture over the next few months there will likely not be enough reserve moisture for crops through the 2013 growing season. In addition, above normal snowpack in the Rockies is needed this winter and spring in order to help alleviate system-wide water storage deficits.

