Great Plains and Midwest Climate Outlook
18 December 2014

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30 Nov 2014 – Looking down at the Yampa Valley near Steamboat Springs, CO
General Information

• Providing climate services to the Central Region
  – Collaboration with Dennis Todey (South Dakota State Climatologist), Jim Angel (Illinois State Climatologist), Doug Kluck and John Eise (NOAA), State Climatologists and the Midwest Regional Climate Center, High Plains Regional Climate Center, NOAAs Climate Prediction Center, Iowa State University, National Drought Mitigation Center

• Next Climate/Drought Outlook Webinar
  – Jim Angel – IL State Climatologist
  – January 15, 2015

• Access to Future Climate Webinars and Information
  – http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars
  – For 2015, single URL sign up will be used. If you sign up in January, you will be registered for all 12 months!

• Past recorded presentations and slides can be found here:
  – http://mrcc.isws.illinois.edu/webinars.htm
  – http://www.hprcc.unl.edu/webinars.php

• There will be time for questions at the end
Agenda

• Current Conditions around the Region
  – Temperature
  – Precipitation
  – Snowpack
  – Soil Moisture

• Impacts in the Region

• Outlook
Month to Date Temperature Departure

Departure from Normal Temperature (F)
12/1/2014 – 12/15/2014

http://www.hprcc.unl.edu/
30 Day Temperature Departure

Departure from Normal Temperature (F)
11/16/2014 - 12/15/2014

http://www.hprcc.unl.edu/
30-Day Precipitation

Water Year Precipitation

Percent of Normal Precipitation (%)
11/16/2014 – 12/15/2014

Percent of Normal Precipitation (%)
10/1/2014 – 12/15/2014

http://www.hprcc.unl.edu/
Modeled Snow Depth
Modeled Snow Depth Anomaly

http://www.nohrsc.noaa.gov/interactive/html/map.html?
• Current western U.S. snowpack conditions


December 16, 2014

The Missouri River basin mountain snowpack normally peaks near April 15. By December 15, normally 34% of the peak has accumulated. On December 16, 2014 the mountain snowpack SWE in the “Total above Fort Peck” reach is currently 4.7”, 85% of average. The mountain snowpack SWE in the “Total Fort Peck to Garrison” reach is currently 4.5”, 90% of average.

*Generally considered the high and low year of the last 20-year period.  Provisional data. Subject to revision.
Soil Moisture

Ensemble-Mean - Current Total Column Soil Moisture Percentile
NCEP NLDAS Products  Valid: DEC 13, 2014

http://www.emc.ncep.noaa.gov/mmb/nldas/drought/
Issues

• After a cold November, ice jam issues have subsided with warm and dry conditions to start December.
  – Allowed for harvest to almost finish up.

• Lack of snow
  – Lack of snow and dry soil moisture tends to lead to warmer than normal winters.
  – Potential winter wheat damage/loss is a major concern without snow cover to protect it from wind/extreme temperatures.
  – Winter recreation impacts - snowmobiling, cross country skiing in Black Hills area.

• Rare December tornado for Kansas this week
  – 1 of 6 since 1950 for KS.
Agricultural Impacts

- Corn harvest – 94%
  - Some corn left un-harvested in the north due to:
    - Late planting (cold)
    - Cooler/wetter growing season delaying growth
    - November snow
  - WI was only 91% harvested by Dec 14, MI 80% as of Dec 1.

- Soybean harvest – 97%
- Sorghum harvest – 91%
- Sunflowers harvest – 86%

- Winter Wheat – 92% emerged
  - 37% of winter wheat growing areas are experiencing drought – mainly in KS and CO.
  - Late planting and cold November impacts to be assessed in Spring.

U.S. Corn Progress

Percent Harvested
November 23, 2014

Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

National Progress

Harvested  94
Change from 5-year Average  +2

TOP ## - Percent Harvested
[BOTTOM ##] - Change from 5-year Average
U.S. Winter Wheat Progress
Percent Emerged
November 23, 2014

Data obtained from preliminary National Agricultural Statistics Service (NASS) weekly crop progress and condition tables

National Progress

Emerged 92
Change from 5-year Average +3
U.S. Drought Monitor

December 16, 2014
Valid 7 a.m. EST

Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:
- S = Short-Term, typically <6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically >6 months (e.g. hydrology, ecology)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu/

Released Thursday, December 18, 2014
Author: David Miskus, NOAA/NWS/NCEP/CPC
U.S. Drought Monitor Class Change
1 Month

December 16, 2014 compared to November 18, 2014

http://droughtmonitor.unl.edu
Climate Outlooks

- 7-day precipitation forecast
- 8-14 day outlook
- December
- Winter (and Spring)
- Seasonal Drought Outlooks
8-14 Day Outlook: 25-31 December 2014

Temperature

Precipitation

http://www.cpc.ncep.noaa.gov/
El Nino Update

• ENSO-neutral conditions continue.

• Positive equatorial sea surface temperature (SST) anomalies continue across the Pacific Ocean.

• Current Nino 3.4 Anomaly is 0.9C

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensó_update/ssta_c.gif
El Niño Update

- There is an approximately 65% chance that El Niño conditions will be present during the Northern Hemisphere winter and last into the Northern Hemisphere spring 2015.

http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/
1 Month Outlook: January 2015

Temperature

Precipitation

http://www.cpc.ncep.noaa.gov/
Apr-Jun 2015 Outlook

Temperature

Precipitation

http://www.cpc.ncep.noaa.gov/
KEY:

- **Drought persists or intensifies**
- **Drought remains but improves**
- **Drought removal likely**
- **Drought development likely**

U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid for December 18, 2014 - March 31, 2015
Released December 18, 2014

Author: Brad Pugh, Climate Prediction Center, NOAA

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor.

NOTE: The tan area areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain. The Green areas imply drought removal by the end of the period (D0 or none)

http://www.cpc.ncep.noaa.gov/
Summary of Recent Conditions

• After a cold November, warmer conditions have returned in December. Conditions have remained dry.
• Warm and dry weather has allowed harvest to finish up, except some of the corn crop.
• Winter wheat conditions are looking OK, but the lack of protective snow cover and damage from cold in November is a concern.
• Impacts to winter recreation in the northern tier of the region.
Summary - Outlooks

• 65% chance of El Nino conditions for the winter and persist into the Spring.
• Cooler weather forecast for the end of the month into January based on forecast models.
• El Nino signature supported in 3 month outlooks – cool in the south, wet southwest U.S., dry Great Lakes region
Further Information - Partners

• Today’s and Past Recorded Presentations and:
  • http://mrcc.isws.illinois.edu/webinars.htm
  • http://www.hprcc.unl.edu
• NOAA’s National Climatic Data Center: www.ncdc.noaa.gov
  ➢ Monthly climate reports (U.S. & Global): www.ncdc.noaa.gov/sotc/
• NOAA’s Climate Prediction Center: www.cpc.ncep.noaa.gov
• Climate Portal: www.climate.gov
• U.S. Drought Portal: www.drought.gov
• National Drought Mitigation Center: http://drought.unl.edu/
• State climatologists
  – http://www.stateclimate.org
• Regional climate centers
  – http://mrcc.isws.illinois.edu
  – http://www.hprcc.unl.edu
Thank You and Questions?

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  - **Climate:**
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