Central Region Drought Outlook
21 February 2013

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View of High Park fire from Horsetooth Reservoir near Fort Collins, CO Flickr photo

General Information

- **Providing climate services to the Central Region**
  - Collaboration with Wendy Ryan (Colorado Climate Center), Dennis Todey (South Dakota State Climatologist), Doug Kluck (NOAA - RCSD) and John Eise (Climate Service Program Manager), State Climatologists and the Midwest Regional Climate Center, High Plains Regional Climate Center, NOAAs Climate Prediction Center, National Drought Mitigation Center, Iowa State University

- **Next Climate/Drought Outlook Webinar**
  - March 21st, 2012 (1 PM CST)
  - Hosted by (Pat Guinan, Missouri State Climatologist)

- **Access to Climate/Drought Webinars and information**
- http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars

- **Operator Assistance for questions at the end**

Agenda

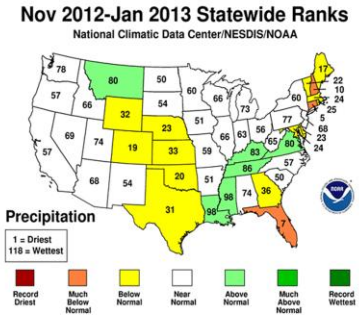
* Current conditions & historical context
* Current impacts
* Predictions
* Questions/Comments

NRCS photo, Dust Bowl 1938

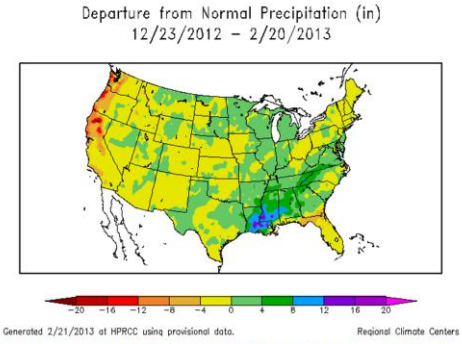
Key Points

- **Current Conditions**
  - Some improvement to the eastern part of the Central Region over the winter.
  - Frozen soils remain in the northern portion of the region, while southern portion is seeing above freezing soil temperatures.
  - Lakes Michigan-Huron and Superior are recording levels lower than their low water datum.
  - Soil moisture is very low for much of Central Region.
- **Predictions**
  - ENSO neutral conditions are forecast through Fall 2013, La Nina not expected to return.
  - Drought conditions are expected to persist in the western part of the Central Region, some improvement for the northern and eastern portions.

November – Current Precipitation

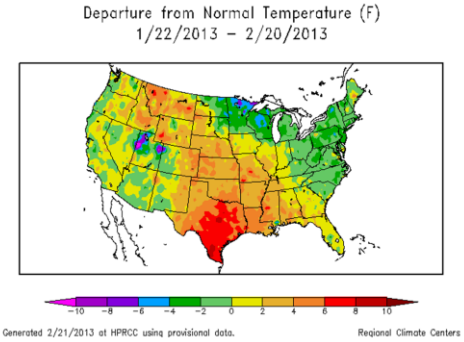


http://www.ncdc.noaa.gov/temp-and-precip/maps.php?

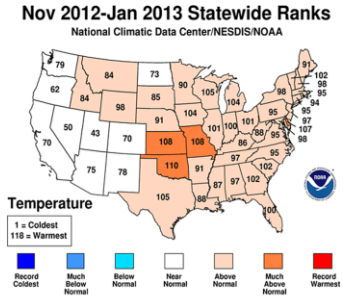


http://www.hprcc.unl.edu/maps/current/index.php?action=update_daterange&daterange=60d

Temperatures

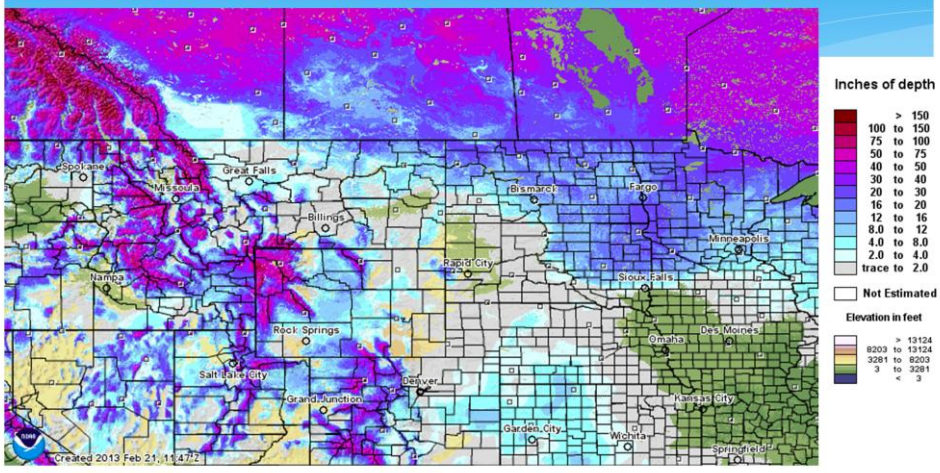


http://www.hprcc.unl.edu/maps/current/index.php?action=update_daterange&daterange=30d



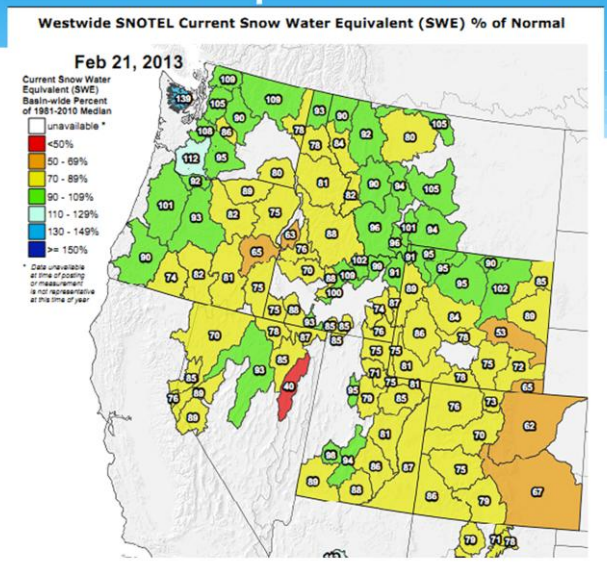
http://www.ncdc.noaa.gov/temp-and-precip/maps.php?ts=3&year=2013&month=1&imgs[]=Statewidetrank&submitted=Submit

Current snow cover- Feb 21, 2013

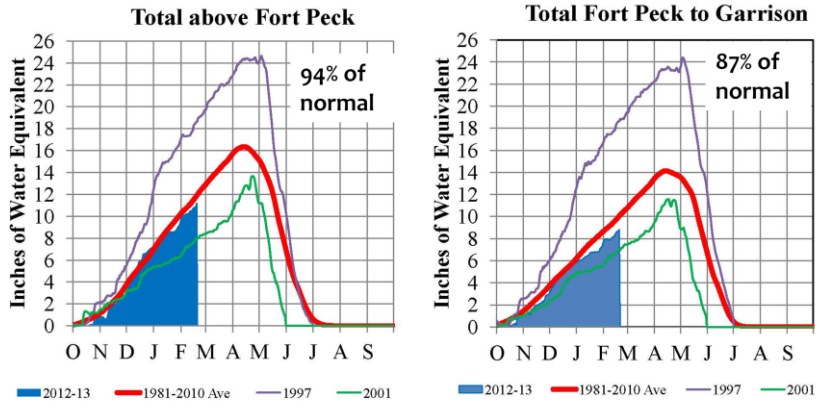


NOHRSC

Current Snowpack % of Normal



Missouri River Basin – Mountain Snowpack Water Content
2012-2013 with comparison plots from 1997* and 2001*
February 20, 2013

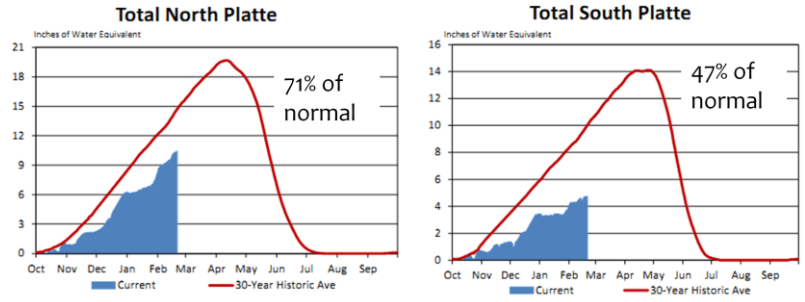


The Missouri River basin mountain snowpack normally peaks near April 15. By February 15, normally 70% of the peak has accumulated. On February 20, 2013 the mountain snowpack SWE in the "Total above Fort Peck" reach is currently 11.2", 94% of average. The mountain snowpack SWE in the "Total Fort Peck to Garrison" reach is currently 8.8", 87% of average.

*Generally considered the high and low year of the last 20-year period.

Provisional data. Subject to revision.

Platte River Basin
Mountain Snowpack Water Content
2012-2013



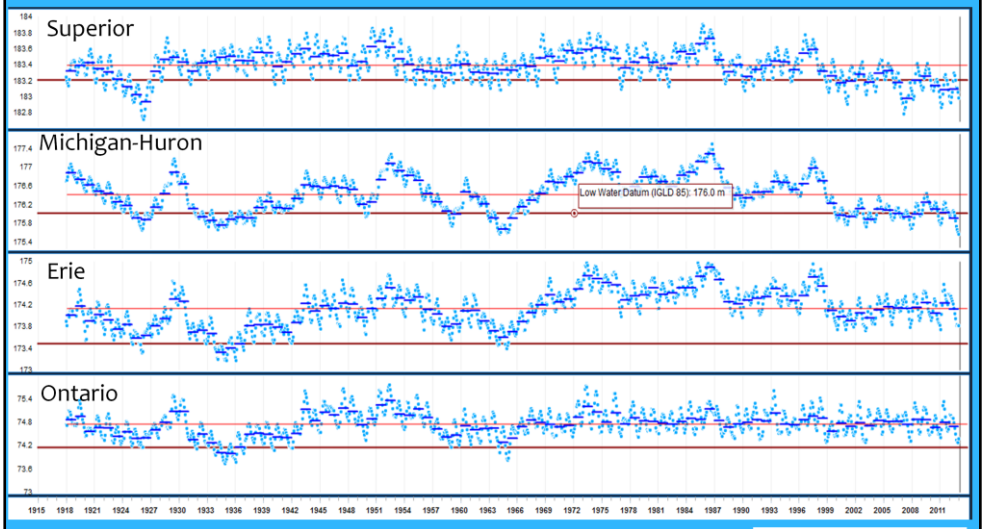
The North and South Platte River Basin mountain snowpacks normally peak near April 15. On February 21, 2013, the mountain snowpack SWE in the "Total North Platte" reach is currently 10.4", 71% of average. The mountain snowpack SWE in the "Total South Platte" reach is currently 4.8", 47% of average.

February 21, 2013

Provisional Data. Subject to revision.

Note: The USACE uses a different station list than NRCS for basin averages.

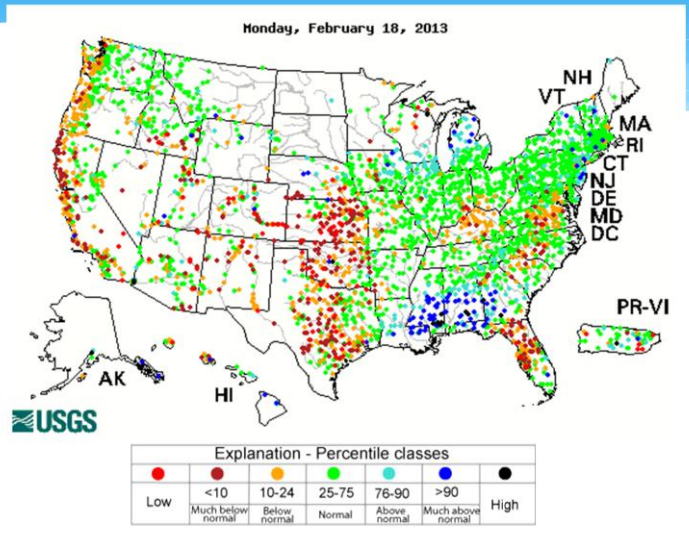
Great Lakes Water Levels



http://www.glerl.noaa.gov/data/now/wlevels/dbd/

GLERL
Great Lakes Environmental Research Laboratory

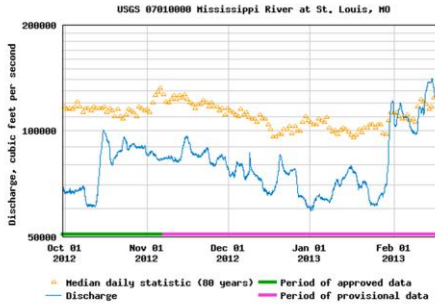
7 Day Average Streamflow



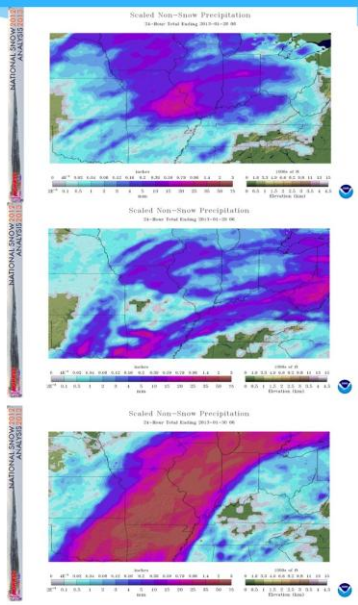
Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

http://waterwatch.usgs.gov/?id=ww_curren

Mississippi River Conditions



Discharge on the Mississippi River at St. Louis, MO Oct. 1, 2012-current

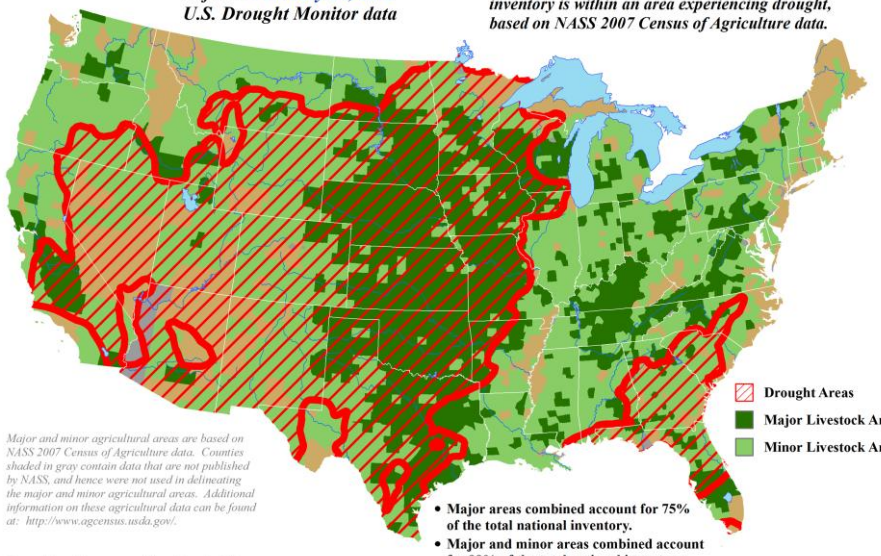


NOHRSC Non-snow precipitation 1/28/13(top right), 1/29/13(middle) and 1/30/13(bottom right)

U.S. Cattle Areas Experiencing Drought

Reflects February 19, 2013 U.S. Drought Monitor data

Approximately 67% of the domestic cattle inventory is within an area experiencing drought, based on NASS 2007 Census of Agriculture data.

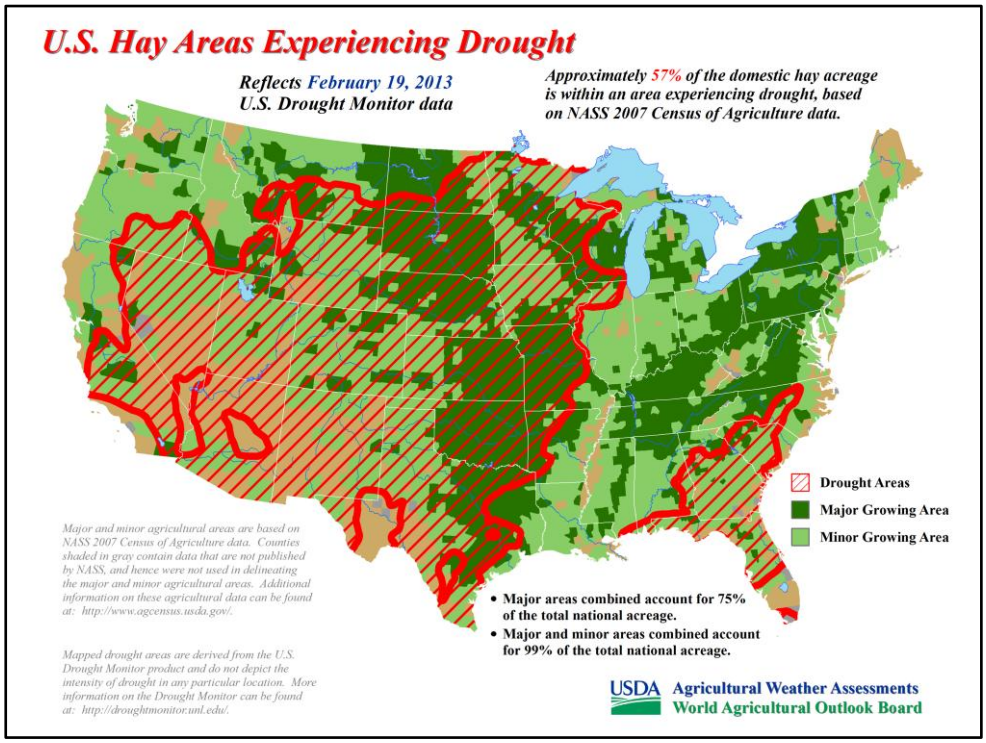


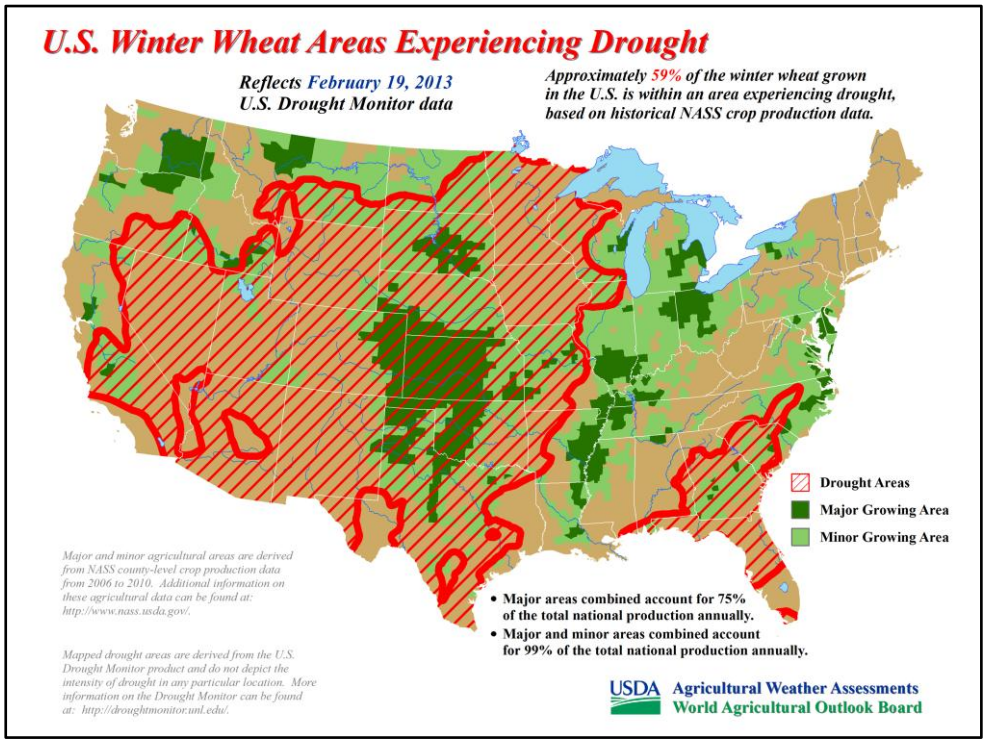
Major and minor agricultural areas are based on NASS 2007 Census of Agriculture data. Counties shaded in gray contain data that are not published by NASS, and hence were not used in delineating the major and minor agricultural areas. Additional information on these agricultural data can be found at: http://www.agcensus.usda.gov/.

Mapped drought areas are derived from the U.S. Drought Monitor product and do not depict the intensity of drought in any particular location. More information on the Drought Monitor can be found at: http://droughtmonitor.unl.edu/.

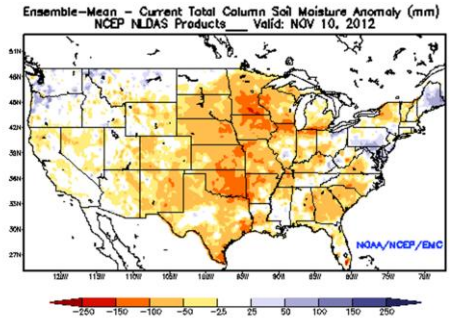
- **Major areas combined account for 75% of the total national inventory.**
- **Major and minor areas combined account for 99% of the total national inventory.**

USDA Agricultural Weather Assessments
World Agricultural Outlook Board

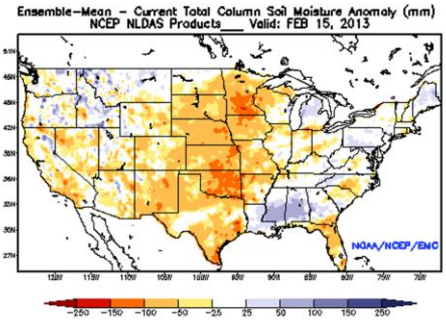

U.S. Hay Areas Experiencing Drought
Reflects February 19, 2013
U.S. Drought Monitor data
Approximately 57% of the domestic hay acreage is within an area experiencing drought, based on NASS 2007 Census of Agriculture data.
Drought Areas
Major Growing Area
Minor Growing Area
Major and minor agricultural areas are based on NASS 2007 Census of Agriculture data. Counties shaded in gray contain data that are not published by NASS, and hence were not used in delineating the major and minor agricultural areas. Additional information on these agricultural data can be found at: http://www.agcensus.usda.gov/.
• Major areas combined account for 75% of the total national acreage.
• Major and minor areas combined account for 99% of the total national acreage.
Mapped drought areas are derived from the U.S. Drought Monitor product and do not depict the intensity of drought in any particular location. More information on the Drought Monitor can be found at: http://droughtmonitor.unl.edu/.
USDA Agricultural Weather Assessments
World Agricultural Outlook Board


U.S. Winter Wheat Areas Experiencing Drought
Reflects February 19, 2013
U.S. Drought Monitor data
Approximately 59% of the winter wheat grown in the U.S. is within an area experiencing drought, based on historical NASS crop production data.
Drought Areas
Major Growing Area
Minor Growing Area
Major and minor agricultural areas are derived from NASS county-level crop production data from 2006 to 2010. Additional information on these agricultural data can be found at: http://www.nass.usda.gov/.
• Major areas combined account for 75% of the total national production annually.
• Major and minor areas combined account for 99% of the total national production annually.
Mapped drought areas are derived from the U.S. Drought Monitor product and do not depict the intensity of drought in any particular location. More information on the Drought Monitor can be found at: http://droughtmonitor.unl.edu/.
USDA Agricultural Weather Assessments
World Agricultural Outlook Board

Current Soil Moisture and Recovery



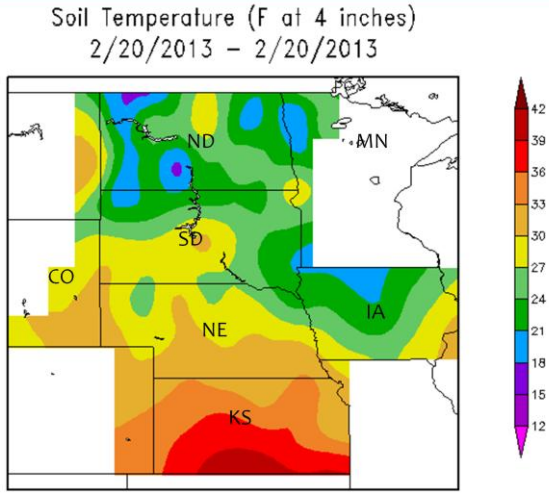
November 10, 2012

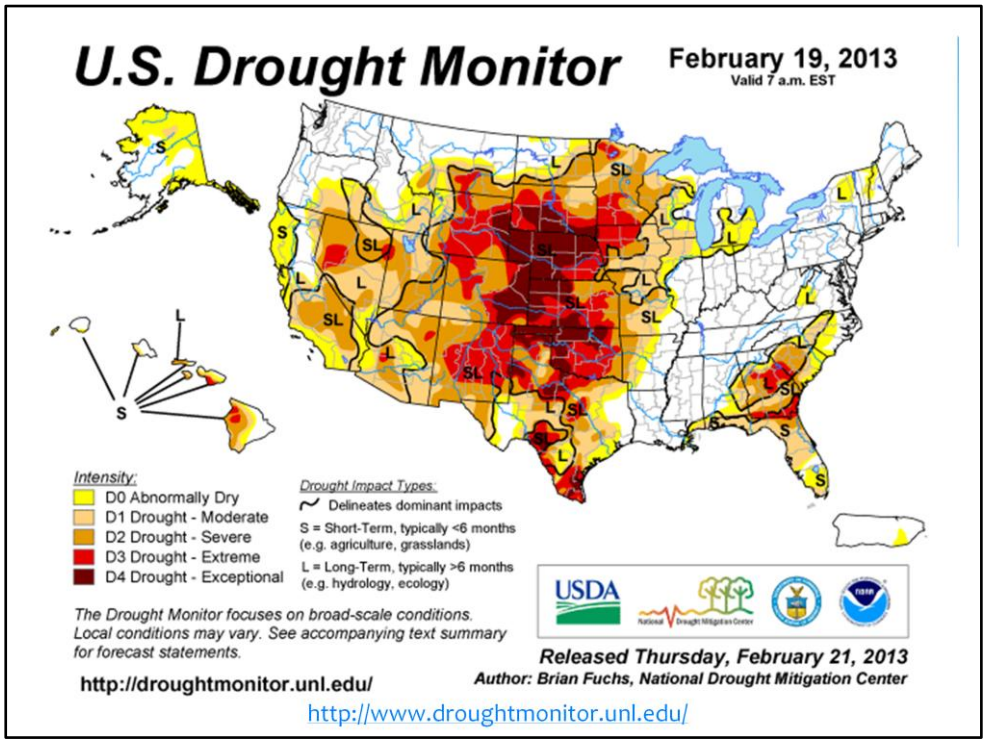


February 15, 2013

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

Soil Temperatures





http://www.droughtmonitor.unl.edu/

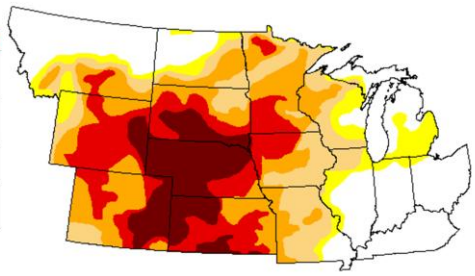
U.S. Drought Monitor

February 19, 2013
Valid 7 a.m. EST

Central Region

Drought Conditions (Percent Area)

	None	D0 - D4	D1 - D4	D2 - D4	D3 - D4	D4
Current	29.97	73.03	64.51	48.93	29.26	12.89
Last Week (2/12/2013)	27.16	72.84	64.48	48.98	29.27	12.93
3 Months Ago (11/20/2012)	17.39	82.61	68.66	49.24	29.11	11.65
1 Year Ago (2/21/2012)	61.83	38.17	18.72	5.64	0.69	0.02



Intensity:

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

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

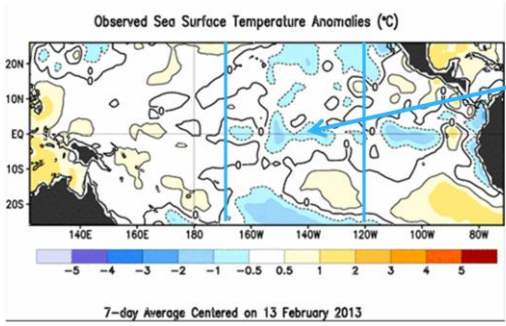
http://droughtmonitor.unl.edu

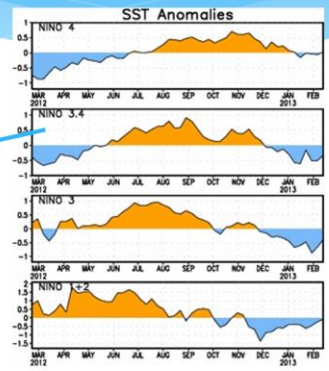
Released Thursday, February 21, 2013
Brian Fuchs, National Drought Mitigation Center

Climate Outlooks

* **2 weeks out (8-14 days)**
* **March**
* **3 Months (March, April, May)**
* www.cpc.ncep.noaa.gov
* Drought Monitor Outlook
* Released Thursday 2/21/13

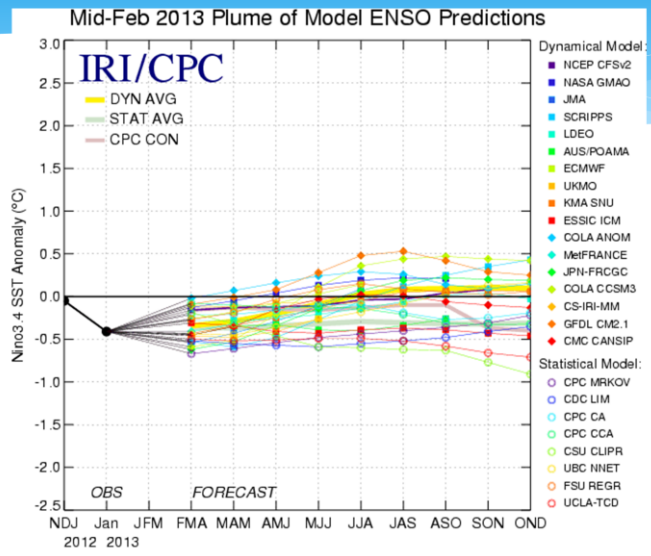
ENSO Conditions



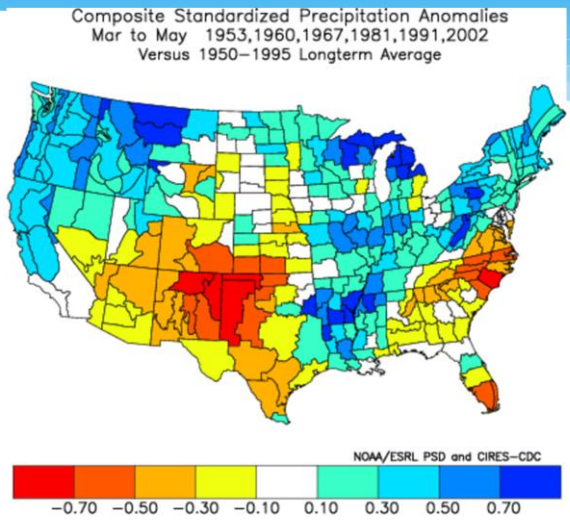


http://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/enso.shtml

ENSO Forecast

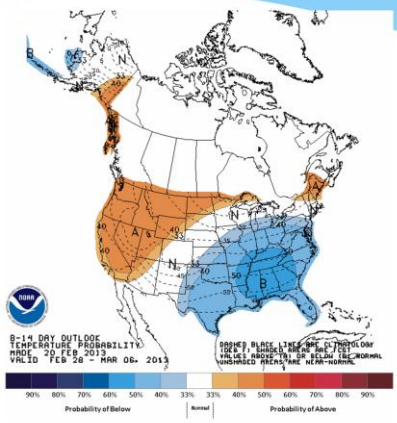


Composite Precipitation Anomalies (March-May) for ENSO Neutral Cases Similar to the Current Situation

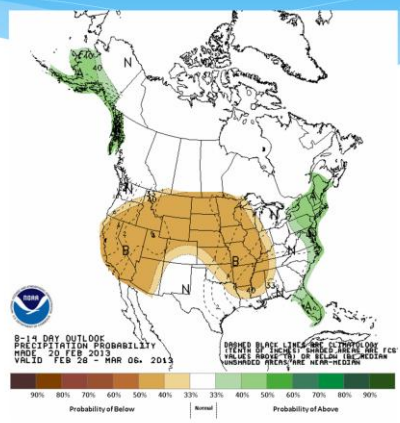


Thanks to Klaus Wolter of NOAA-ESRL for providing this graphic.

Temperature and Precipitation Probabilities for 2/28/13-3/6/13



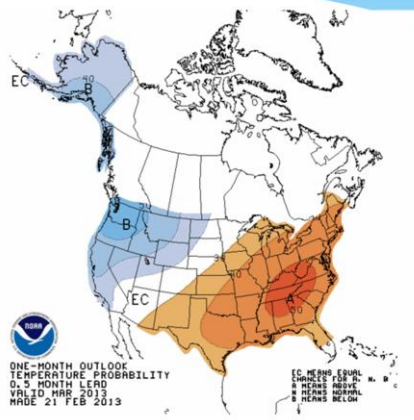
Temperature



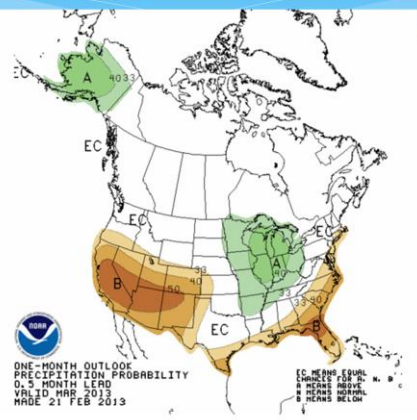
Precipitation

http://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php

March Temperature and Precipitation Probabilities



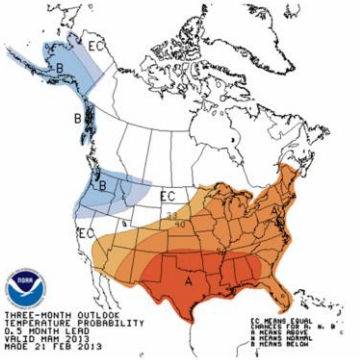
Temperature



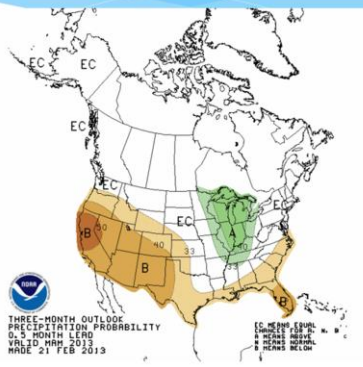
Precipitation

http://www.cpc.ncep.noaa.gov/products/predictions/30day/

3 Month Temperature and Precipitation Probabilities
(March-May)



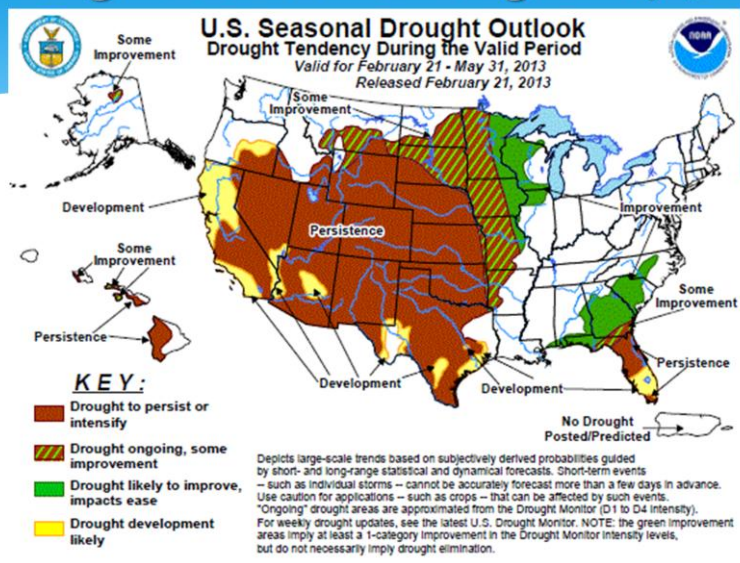
Temperature



Precipitation

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

Drought Outlook through May 31st



http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.gif/

Summary

* **Current Conditions**
  * Winter has brought wetter and cooler conditions to the eastern part of the Central Region, while drier and warmer than normal conditions have persisted in the western portion.
  * Frozen soils remain in the Dakotas, N. Iowa and Minnesota while soil temperatures are above freezing in Nebraska/Kansas.
  * Lakes Michigan-Huron and Superior are recording levels lower than their low water datum.
  * Soil moisture is very low for much of Central Region.

Summary

* **Predictions**
  * ENSO neutral conditions are forecast through Fall 2013, La Nina not expected to return.
  * Drought conditions are expected to persist in the western part of the Central Region, while some improvement is forecast for the northern and NE portion of the region over the next few months.

Drought response
USDA Drought Assistance

http://www.drought.gov

Further Information - Partners

Today's Recorded Presentation:

- http://mrcc.isws.illinois.edu/webinars.htm
  http://www.hprcc.unl.edu
  http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars
- 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?

* Questions:
  * **Climate:**
  * Dennis Todey: dennis.todey@sdstate.edu, 605-688-5678
  * Doug Kluck: doug.kluck@noaa.gov, 816-994-3008
  * John Eise: john.eise@noaa.gov, 816-268-3144
  * Mike Timlin: mtimlin@illinois.edu; 217-333-8506
  * Natalie Umphlett: numphlett2@unl.edu ; 402 472-6764
  * Brian Fuchs: bfuchs2@unl.edu 402 472-6775

  * **Weather:**
  * crhroc@noaa.gov