Central Region Drought Outlook
18 April 2013

Dr. Dennis Todey
State Climatologist
South Dakota State Univ.
dennis.todey@sdstate.edu
605-688-5141

Last 24 hr precipitation from NOAA-AHPS
Providing climate services to the Central Region

- Collaboration Activity Between:
  - State Climatologists
  - Doug Kluck & John Eise (NOAA)
  - American Association of State Climatologists
  - Midwest and High Plains Regional Climate Centers
  - National Drought Mitigation Center/USDA

- Next Climate/Drought Outlook Webinar
  - May 16, 2013 (1 PM CDT) – will be ongoing

- Access to Future Climate Webinars and Information
  - [http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars](http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars)

- Operator Assistance for questions at the end
Agenda

* Winter (extension) and current conditions
* Current impacts
  * Ag, Water, Fire, etc.
* Outlooks
* Questions/Comments

Icing Sioux Falls, SD Last week – Al May

Water near Numa, IA Yesterday- Perry Daugherty

Current image Brookings, SD – Author photo
March Temperature Recap

The pattern shows a clear ridge–trough pattern across the country.
March Precipitation Recap

Despite seeming so wet in many places, March was not so wet.

[Map showing precipitation ranks across the United States]

http://www.ncdc.noaa.gov/sotc/service/national/Statewideprank/201212-201302.gif
Departure from Normal Temperature (F)
3/18/2013 – 4/16/2013

Most recent 30-day departures

Percent of Normal Precipitation (%)
3/19/2013 – 4/17/2013

http://www.hprcc.unl.edu/maps/current/
Temperature issues

- Delaying planting – colder soils
- Shortening growing season
- Landscaping – flowers out for purchase
Does not include all of yesterday’s data.
Modeled Snow Depth (in.)
17 April 2013

4 – 8 inches SWE

http://www.nohrsc.noaa.gov/nsa/
Snow records

- Rapid City, SD (airport) – snowiest April 34.1”
- Bismarck, ND – snowiest April 21.5”
- Bismarck, ND – snowiest single day ever 17.3” 14 Apr.
  - Numerous daily records
- Aberdeen, SD 3\textsuperscript{rd} snowiest April (still accumulating)

- Issues – calving/lambing and moisture
- Fire – will help green-up
ND Flood Likelihood

Greater than: 50% chance of exceeding river flood levels during Apr-May-Jun

> 50% chance of major flood

Souris

Red

Sheyenne

Last map update: 04/18/2013 at 08:37:55 am CDT
04/18/2013 13:37:55 UTC

Product Description
Feedback
Disclaimer
Missouri River Conditions

Missouri River Basin – Mountain Snowpack Water Content
2012-2013 with comparison plots from 1997* and 2001*
April 17, 2013

Total above Fort Peck

Total Fort Peck to Garrison

The Missouri River basin mountain snowpack normally peaks near April 15. By April 15, normally 100% of the peak has accumulated. On April 17, 2013 the mountain snowpack SWE in the “Total above Fort Peck” reach is currently 14.7”, 91% of average, and 0.4” more than the April 15 total. The mountain snowpack SWE in the “Total Fort Peck to Garrison” reach is currently 12.5”, 89% of average, and 0.3” more than the April 15 total.

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

Provisional data. Subject to revision.
The North and South Platte River Basin mountain snowpacks normally peak near April 15. On April 17, 2013, the mountain snowpack SWE in the "Total North Platte" reach is currently 16.6", 86% of average. The mountain snowpack SWE in the "Total South Platte" reach is currently 10.3", 74% of average.

Provisional Data. Subject to Revision
7-Day Average Streamflow

Wednesday, 20 March 2013

Wednesday, 17 April 2013

http://waterwatch.usgs.gov/?id=ww_current
River Projections

MBRFC Forecast River Conditions
- Forecast Not Issued
- Near Flood Stage
- Moderate Flooding
- Minor Flooding
- Major Flooding

Click on map to view other RFCs

Updated: 04/18/2013 at 08:15 AM

Latest Forecast River Status as of 9 AM EDT, Thu, Apr 18, 2013

Click here for More RFC
The North Central River Forecast Center
U.S. Hay Areas Experiencing Drought

Reflects April 16, 2013
U.S. Drought Monitor data

Approximately 46% of the domestic hay acreage 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 acreage.
- Major and minor areas combined account for 99% of the total national acreage.
Approximately 58% of the domestic cattle inventory is within an area experiencing drought, based on NASS 2007 Census of Agriculture data.

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

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/.
Approximately 55% of the winter wheat grown in the U.S. is within an area experiencing drought, based on historical NASS crop production data.

- 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.

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.

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.
U.S. Winter Wheat Conditions
Percent Good to Excellent
April 14, 2013

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

National Condition
Good to Excellent 36
Change from Last Year -28

U.S. Winter Wheat Progress
Percent Headed
April 14, 2013

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

National Progress
Headed 4
Change from Last Year -24
Other crops - progress

* Corn – US -2%
  * TX – 56%, NC – 28%, TN- 11%
* Spring Wheat US -13%
  * MT – 6%, SD – 6%

* Oats
  * IA – 51%
  * MN – 26%
  * NE – 51%
  * ND – 5%
  * OH – 31%
  * SD – 24%
  * WI – 23%
Soil Temperature (°F) at 4” under bare soil

Average Soil Temperature (° F, 4” Bare)

April 7 - 13, 2013

Based on preliminary data

NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Supplemental data provided by Alabama A&M University, Bureau of Reclamation - Pacific Northwest Region AgroMet Program, High Plains Regional Climate Center, Illinois State Water Survey, Iowa State University, Louisiana Ag climatic Information System, Mississippi State University, Oklahoma Mesonet, Purdue University, University of Missouri and USDA ARS Soil Climate Analysis Network.

Soil Moisture and Recovery

Soil Moisture Anomaly in millimeters

18 March 2013

13 April 2013

Snow helping soil moisture northern plains

http://www.emc.ncep.noaa.gov/mmb/nldas/drought/
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, March 3, 2013
Matthew Rosencrans, NOAA/NWS/NCEP/Climate Prediction Center
Climate Outlooks

- 7-day precipitation forecast
- 8-14 day outlook
- May
- 3 Months (May - July)
- Seasonal Drought and Seasonal Flood Outlooks
7-day Quantitative Precipitation Forecast
Valid: 12z Thu 18 Apr – 12z Thu 25 Apr

http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml
Temperature and Precipitation Probabilities for 25 Apr. – 1 May 2013

http://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php
May Temperature and Precipitation Probabilities

Temperature

Precipitation

http://www.cpc.ncep.noaa.gov/products/predictions/30day/
3 Month Temperature and Precipitation Probabilities
(May - July)

http://www.cpc.ncep.noaa.gov/products/predictions/predictions/long_range/seasonal.php?lead=1
Dynamic model outlook for JJA Temperatures

Consistent message across models
Drought Outlook through 31 July

U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid for April 18 - July 31, 2013
Released April 18, 2013

KEY:
- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

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 green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

**Summary**

**Recent Conditions**

- Recent heavy precipitation reversing drought conditions in mid-corn belt
- Heavy late season snows have had multiple impacts
  - Slowed ag, helped fire – will lead to more flooding (Red, Souris, James).
- Fire issues are damped temporarily – green-up – wait for seasonal changes
- Flipped the Mississippi River conditions, small improvements in the upper Missouri River Basin.
- Ag is slowed by wet conditions east and cold conditions overall – moisture welcome in the plains areas. Field work will continue to be delayed except for central plains possibly
- Hort issues – sellers – some carry-over drought issues
Outlooks

- ENSO neutral conditions are forecast through Fall 2013
- Drought conditions will continue in western areas – ease in central - north.
- Spring flood potential exist along the Red River Basin, Lower Missouri River Basin, Mississippi River Basin and Ohio River Basin.
- Outlooks sticking with likely warmer than average conditions into late spring/summer – have to watch closely
- Dryness May – east. Will continue to watch for summer.
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
- NOAA’s Climate Prediction Center: www.cpc.ncep.noaa.gov
- Climate Portal: www.climate.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, 605-688-5141
    * 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