General Information

- **Providing climate services to the Central Region**
  - Collaboration Activity Between:
    - State Climatologists
    - Doug Kluck & John Eise (NOAA/NWS)
    - American Association of State Climatologists
    - Midwest and High Plains Regional Climate Centers
    - National Drought Mitigation Center/USDA
    - USACE/BOR/NWS MRBRC

- **Next Regular Climate/Drought Outlook Webinar**
  - May 15, 2014 (1 PM CDT)
  - May 29, 2014 (1 PM CDT) – Special Missouri River (tentative)

- **Access to Future Climate Webinars and Information**
  - http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars
  - http://mrcc.isws.illinois.edu/webinars.htm
  - http://www.hprcc.unl.edu/webinars.php
  - Questions at the end
Agenda

- Current Conditions - comparisons
- Review River status
- Predictions
  - Drought
  - El Niño
Precipitation (in)
10/1/2013 - 4/30/2014

Percent of Normal Precipitation (%) 
10/1/2013 - 4/30/2014

http://www.hprcc.unl.edu/maps/current/
Precipitation (in)  
4/1/2014 - 4/30/2014

Percent of Normal Precipitation (%)  
4/1/2014 - 4/30/2014

http://www.hprcc.unl.edu/maps/current/
Soil Moisture and Recovery

Wet area in the northern Plains continues

Drier further south/east

Recent rains some recovery and frost removal

Soil Moisture Anomaly in millimeters

http://www.emc.ncep.noaa.gov/mmb/nldas/drought/
7-Day Average Streamflow

Wednesday, April 30, 2014

Explanation - Percentile classes

<table>
<thead>
<tr>
<th>Label</th>
<th>Low</th>
<th>10-24</th>
<th>25-75</th>
<th>76-90</th>
<th>&gt;90</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Red</td>
<td>Orange</td>
<td>Green</td>
<td>Blue</td>
<td>Black</td>
<td>Black</td>
</tr>
<tr>
<td>Description</td>
<td>Much below normal</td>
<td>Below normal</td>
<td>Normal</td>
<td>Above normal</td>
<td>Much above normal</td>
<td>High</td>
</tr>
</tbody>
</table>
http://www.crh.noaa.gov/mbrfc/?n=frost
Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

May 01, 2014


- unavailable *
- <50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- >= 150%

* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional data subject to revision

The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 08:30).

Prepared by:
USDA NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov
Missouri River Mainstem Reservoir System
Missouri River Mainstem System
Storage Zones and Allocations

Exclusive Flood Control  7%

Annual Flood Control &
Multiple Use 16%

Carryover
Multiple Use 53%

Permanent Pool 24%

May 1, 2014 – 54.3 MAF
May 1, 2013 – 49.6 MAF

Historic max - 2011
Historic min - 2007
Missouri River Basin – Mountain Snowpack Water Content
April 30, 2014

The Missouri River basin mountain snowpack normally peaks near April 15. By May 1, normally 93% of the “Total above Fort Peck” peak remains. On April 30, 2014, the mountain snowpack in the “Total above Fort Peck” reach was 21.2”, 129% of the normal April 15 peak. By May 1, normally 97% of the “Total Fort Peck to Garrison” peak remains. On April 30, 2014, the mountain snowpack in the “Total Fort Peck to Garrison” reach was 19.1”, 135% of the normal April 15 peak.

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

Provisional data. Subject to revision.
Missouri River Runoff above Sioux City, IA
2014 Actual and Forecasted

May 1, 2013 Runoff Forecast = 31.7 MAF
Average Annual Runoff = 25.2 MAF

http://www.nwd-mr.usace.army.mil/rcc/
Rivers likely to experience minor (and maybe moderate) flooding

- Big Hole River, MT
- Gallatin River, MT
- Clarks Fk Yellowstone, MT
- Tongue, MT
- N Fk Shoshone, WY
- North Platte, WY
- Laramie, WY
- Big Blue, KS
- Marais des Cygnes—Osage River basin, KS & MO
- Grand River, MO
- Chariton River, MO
- Missouri River below Gavins, some reaches
- Smaller streams in MO & extreme eastern KS

Areas to watch:

- Smaller streams in Dakotas
- Colorado foothills
• Above average mountain snowpack. Typical accumulation season has ended.
• Northern Plains soils very wet, at least top layer.
• Some minor-to-moderate flooding is expected due to the mountain snow runoff. **Widespread significant flooding is not expected.** It would most likely take rainfall events to set this in motion.
• Have to keep watch on western portions of the Dakotas, as rain events could still lead to localized minor flooding.
• Minor-to-moderate flooding due to thunderstorms will continue in eastern Kansas and Missouri for next few months. Not atypical!!!
Climate Outlooks

- 7-day precipitation forecast
- 8-14 day outlook
- May
- 3 Months (May-July)
- Seasonal Drought Outlooks
- El Nino
7-day Quantitative Precipitation Forecast
Valid: 7 AM Thu 1 May – 7 AM Thu 8 May

http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml
Temperature and Precipitation Probabilities for 8 May–14 May 2014

Temperature

Precipitation

May Temperature and Precipitation Probabilities

Temperature

Precipitation

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

Temperature

Precipitation

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1
Warm water progression in Pacific

ENSO-neutral is favored for the Northern Hemisphere spring 2014, with chances of El Niño increasing during the rest of the year, exceeding 50% by summer.
Recent dry conditions reduced some runoff
Snow pack fallen off 2011 track, but still substantial
Still moist plains soils and some frost at depth - north

More active precipitation pattern likely in May
Will increase likelihood of sub-basin flooding
Overall Missouri River still no major issue – ample flood control space
El Nino likely coming, but unlikely to impact this run-off year
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.hprccc.unl.edu
Questions:

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