NOAA Climate Science & Services

Monthly Climate Update

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April 2016
Global Temperature: March 2016

• March +1.22°C above 20th century average
  – Warmest March on record
  – 11th consecutive record warm month
  – Largest monthly departure from average
• Land: +2.33°C
  – Warmest March on record
  – Largest monthly departure from average
• Ocean: +0.81°C
  – Warmest March on record

The global temperature record dates to 1880 (137 years)
Global Temperature: Jan-Mar 2016

January-March 2016: +1.15°C above average, surpassing 2015 by 0.29°C.
Contiguous U.S. March 2016

Temperature: 47.5°F, +6.0°F, 4th warmest March on record
Precipitation: 2.89”, +0.38”, 26th wettest March on record

- Every state was warmer than average.
- Much-above-average temperatures across the Rockies, Great Plains, Midwest, and East Coast.
- There were 22x more warm daily temperature records than cold daily temperature records

- West Coast, Southern Plains, Lower Mississippi Valley, and Midwest were wetter than average.
  - Record floods in AR, LA, MS, and TN.
- Drier than average along East Coast.
- Southwest was dry, where New Mexico was record dry with only 8% of average precipitation.
Current U.S. Drought

15.4% of Contiguous U.S. in Drought

• Improvement: Pacific Northwest, Northern California, Southern Plains
• Degradation: Southwest, Central Plains, Northern Plains, Mid-Atlantic
• Outside CONUS: Worsening drought for all of Hawaii

[Map of U.S. Drought Monitor]

April 19, 2016
(Released Thursday, Apr. 21, 2016)
Valid 8 a.m. EDT

Drought Impact Types:
- Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g., agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g., hydrology, ecology)

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

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

http://droughtmonitor.unl.edu/
Western U.S. Snowpack

April 1 2015 Snowpack

- Images courtesy USDA NRCS

April 1 2016 Snowpack

- Images courtesy CA DWR

Apr 1 2015

- 5% normal SWE

Apr 1 2016

- 85% normal SWE
Western U.S. Snowpack

Snowpack peak in March (highlighted), earlier than median. Quick decline in first half of April.

Images courtesy USDA NRCS
A regional perspective

April 1 2016 - % normal SWE

April 15 2016 - % normal SWE

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 00:00).
Water Resources

- Large northern CA reservoirs above normal storage
- Many key reservoirs still below normal
- Impacts of multi-year drought still affecting the state

### Reservoir Storage as of April 1, 2016

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Capacity (1000 Acre-Feet)</th>
<th>Percent of Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trinity Lake</td>
<td>3188</td>
<td>60%</td>
</tr>
<tr>
<td>Shasta Reservoir</td>
<td>3188</td>
<td>60%</td>
</tr>
<tr>
<td>Lake Oroville</td>
<td>3188</td>
<td>60%</td>
</tr>
<tr>
<td>Folsom Lake</td>
<td>3188</td>
<td>60%</td>
</tr>
<tr>
<td>New Melones</td>
<td>3188</td>
<td>60%</td>
</tr>
<tr>
<td>Don Pedro Reservoir</td>
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</tr>
<tr>
<td>Exchequer Reservoir</td>
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<td>60%</td>
</tr>
<tr>
<td>San Luis Reservoir</td>
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<tr>
<td>Millerton Lake</td>
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<tr>
<td>Pine Flat Reservoir</td>
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<td>60%</td>
</tr>
<tr>
<td>Perris Lake</td>
<td>3188</td>
<td>60%</td>
</tr>
<tr>
<td>Castaic Lake</td>
<td>3188</td>
<td>60%</td>
</tr>
</tbody>
</table>

### Source:
CA DWR

- OR, WA near normal storage
- CA, NV, NM, AZ below normal—drought conditions introduced/expanded this winter in AZ/NM
Sea Surface Temperatures and ENSO

**Sea surface temperatures**
- Above normal SSTs across the equatorial Pacific
- Above normal SSTs along the west coast of North America
- El Nino Advisory remains in place

**ENSO forecast**
- El Niño is forecast to continue to weaken
- A transition to ENSO neutral is likely during spring or early summer 2016
- La Nina Watch issued
Monthly Forecast (May)

May Average Temperature Probability

May Total Precipitation Probability

ONE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID MAY 2016
MADE 21 APR 2016

ONE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID MAY 2016
MADE 21 APR 2016
Seasonal Forecast (May–Jun–Jul)

May-Jun-Jul Average Temperature Probability

May-Jun-Jul Total Precipitation Probability
U.S. Drought Outlook

U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period

Valid for April 21 - July 31, 2016
Released April 21, 2016

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Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short-lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan 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://go.usa.gov/3eZ73
TODAY’S PRESENTATION:

- [http://www.ncdc.noaa.gov/sotc/briefings](http://www.ncdc.noaa.gov/sotc/briefings)

NOAA’s National Centers for Environmental Information:
[www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)


NOAA’s Climate Prediction Center: [www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov)

Western Regional Climate Center: [http://www.wrcc.dri.edu/](http://www.wrcc.dri.edu/)


Climate Portal: [www.climate.gov](http://www.climate.gov)

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