

# BUILDING RESILIENCE FOR OREGON'S COMMUNITIES AND THE ENVIRONMENT

Oregon Governor Kate Brown

# Overview



- 2015 Conditions and Impacts
- Outlook - 2016 and Beyond
- Building Resilient Communities

# Water Resources for the Future



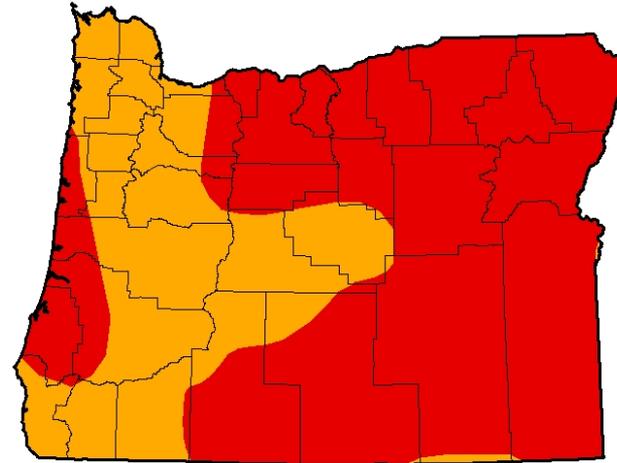
***Water is the foundation of our communities, economies, ecosystems, and general welfare.***

# Recap Drought 2015

- Higher than normal temperatures
- Record-low snowpack
- Below normal precipitation
- Low streamflows
- 67% of state in extreme drought
- 26 Counties Declared
- Similar to projections for future climate

U.S. Drought Monitor  
Oregon

August 25, 2015  
(Released Thursday, Aug. 27, 2015)  
Valid 8 a.m. EDT



Intensity

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

Author:  
Anthony Artusa  
NOAA/NWS/NCEP/CPC



<http://droughtmonitor.unl.edu/>

# 2015 - Broad Impacts

- **Agriculture**
- **Irrigation**
- **Community Water Supplies**
- **Wildfires**
- **Fish**
- **Wildlife**
- **Recreation**
- **Groundwater**



Malheur Reservoir in 2014

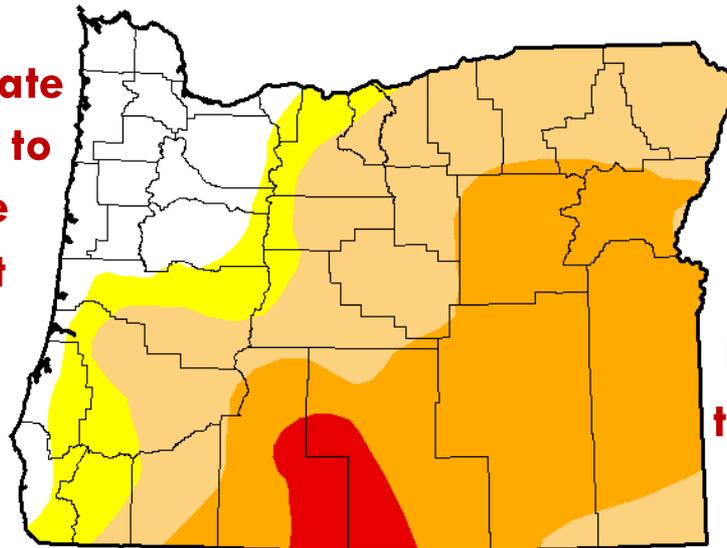
*Water is the foundation of our communities, economies, ecosystems, and general welfare.*

# Drought Persists – January 2016

U.S. Drought Monitor  
Oregon

January 26, 2016  
(Released Thursday, Jan. 28, 2016)  
Valid 7 a.m. EST

**74% of state  
moderate to  
extreme  
drought**



**Lasting  
Effects:  
Recovery  
takes time**

Intensity

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

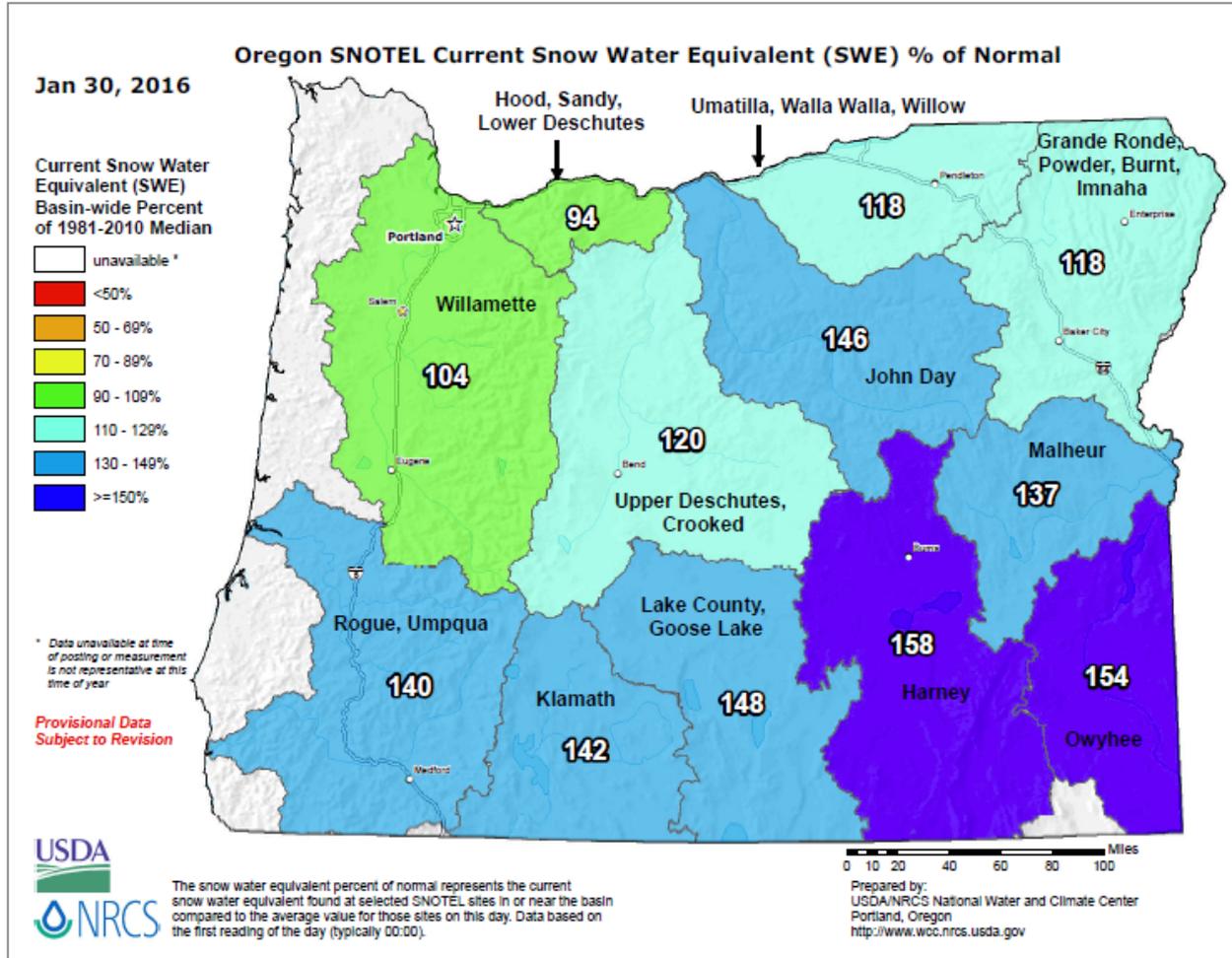
*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

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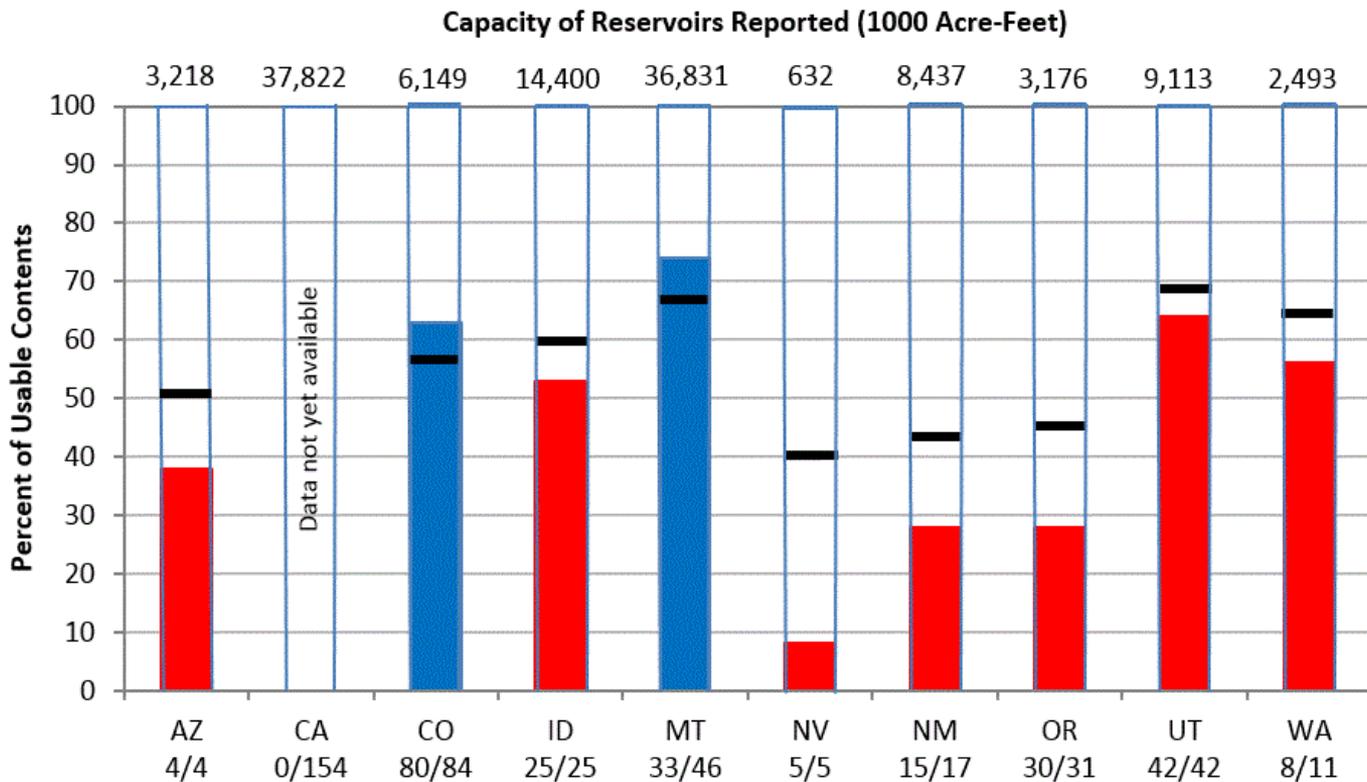
<http://droughtmonitor.unl.edu/>

# Lasting Effects Despite Strong Snowpack



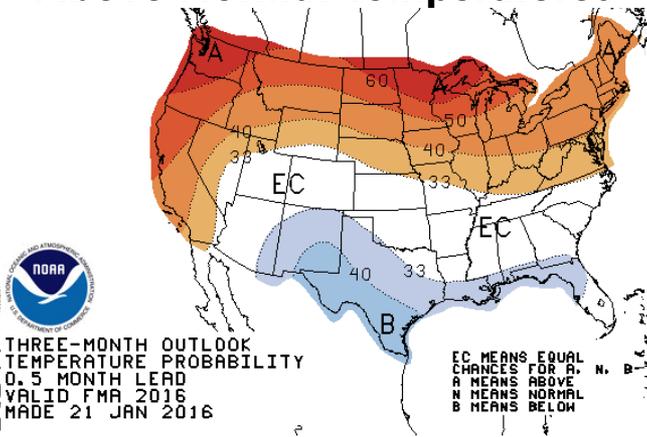
# Reservoir Storage as of January 1, 2016

Below Average Above Average Average



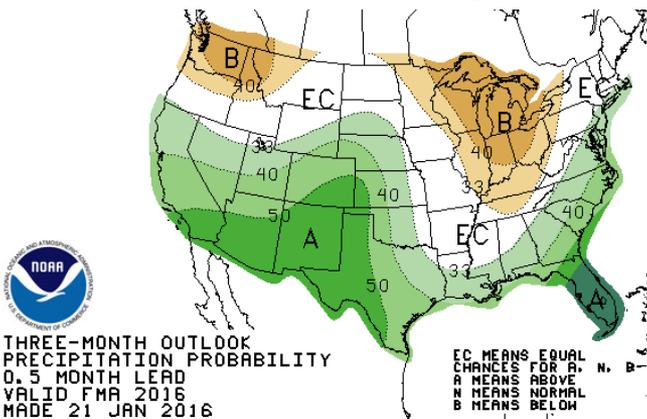
# Jan. 21 - Three-Month Outlook

## Above Normal Temperatures



THREE-MONTH OUTLOOK  
TEMPERATURE PROBABILITY  
0.5 MONTH LEAD  
VALID FMA 2016  
MADE 21 JAN 2016

## Normal to Below Precipitation

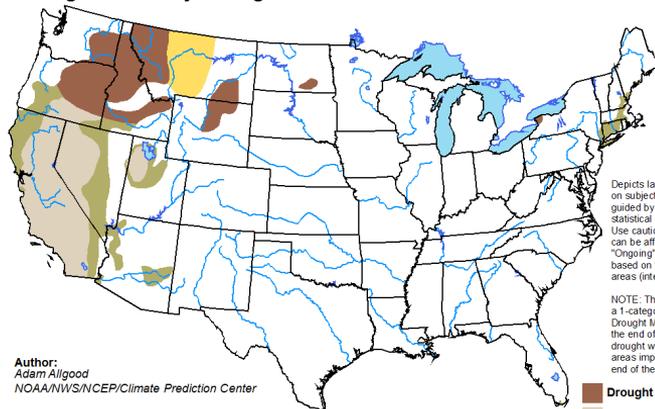


THREE-MONTH OUTLOOK  
PRECIPITATION PROBABILITY  
0.5 MONTH LEAD  
VALID FMA 2016  
MADE 21 JAN 2016

## Drought Persists/Intensifies

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

Valid for January 21 - April 30, 2016  
Released January 21, 2016



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).

- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



<http://go.usa.gov/3eZ73>

- Drought persists
- Drought remains but improves
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# 2014 National Climate Assessment – Pacific NW – **Observed** Changes in Hydrology

## Observed Changes in Hydrology Since around 1950:

- ◆ Average Cascade Mountains April 1 snowpack - decreased about 20%
- ◆ Spring snowmelt - 0 to 30 days earlier depending on location
- ◆ Late winter/early spring streamflow increases - 0% to greater than 20% as a fraction of annual flow
- ◆ Summer flow decreased 0% - 15% as a fraction of annual flow

# 2014 National Climate Assessment –

## Pacific NW – Predicted Changes in Hydrology

**Reservoir systems multiple objectives -** irrigation, municipal, industrial, hydropower, flood control, habitat for aquatic species.

**Summer flow reductions** by 2050 in all basins currently snowmelt dominated.

**Reduced flows will require more tradeoffs - especially with added challenges of summer increases in electric power demand for cooling and additional water consumption** by crops and forests.

# Western Governors' Drought Forum

## Seven Key Themes

- Need for better real-time data and analysis.
- Produced, reused, and brackish water.
- Forest health and soil stewardship.
- Water Conservation and Efficiency.
- Infrastructure investment, maintenance and operation.
- Inflexible legal and regulatory frameworks.
- Communications and collaboration.

# Oregon's Water Future

## Advantages

- ❑ Legislative Engagement & Collaboration
  - ▣ SB 839 (2013)
  - ▣ 2015 Governor's Budget
  - ▣ 2016 Drought Packages (HB 4113, Harney Basin GW, Emergency Fund)
- ❑ Stakeholder Collaboration
  - ▣ Integrated Water Resources Strategy

# Oregon's Water Future

## Advantages

- ❑ Innovation and Technology
  - ▣ Efficiency & conservation
- ❑ Management Tools and History
  - ▣ Groundwater Management
  - ▣ Water Leasing, Conserved Water, Instream Flows

# Oregon's Water Future

## Challenges

- ❑ Relatively Undeveloped Programs for Investing in Water Infrastructure
- ❑ Diversity in Hydrology and Water Use
- ❑ Public Perception of Abundant Water
- ❑ Scarcity will Test Collaboration

# Oregon's Water Future

Governor  
Brown's  
Commitment

- 2015 Drought Executive Order
  - ▣ State lead by example
  - ▣ Agencies reduced water use
  - ▣ Goal – Reduce 15% by 2020
  - ▣ Update state's short-term drought emergency plan

# Oregon's Water Future

Governor  
Brown's  
Commitment

- 2016 Focus
  - ▣ HB 4113 Drought Task Force/Budget
  - ▣ WGA/Federal drought efforts
  - ▣ Develop 2017 proposals to strengthen investment in resilience
    - Data for planning and management decisions
    - Communication, collaboration
    - Conservation and efficiency
    - Infrastructure investment

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