

OREGON



WATER RESOURCES  
DEPARTMENT

# Drought Conditions and Management Tools

House Agriculture, Land Use, and  
Water Committee

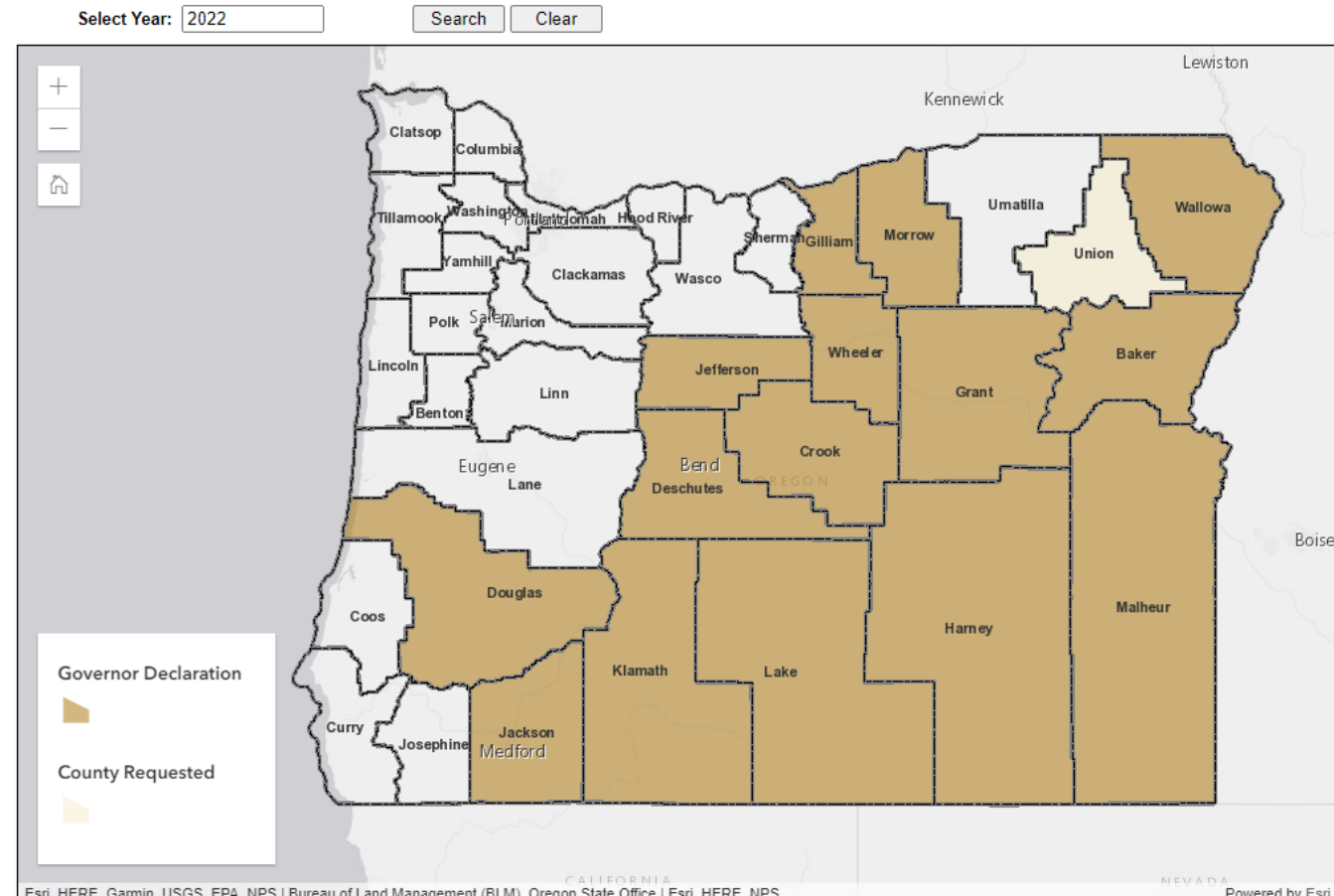
**Ryan Andrews and Bryn Hudson**

**June 1, 2022**

# Current Drought Declarations

- 15 counties with Executive Orders
  - One requesting
- 29 counties with federal designation by USDA

Drought Declaration Status Map

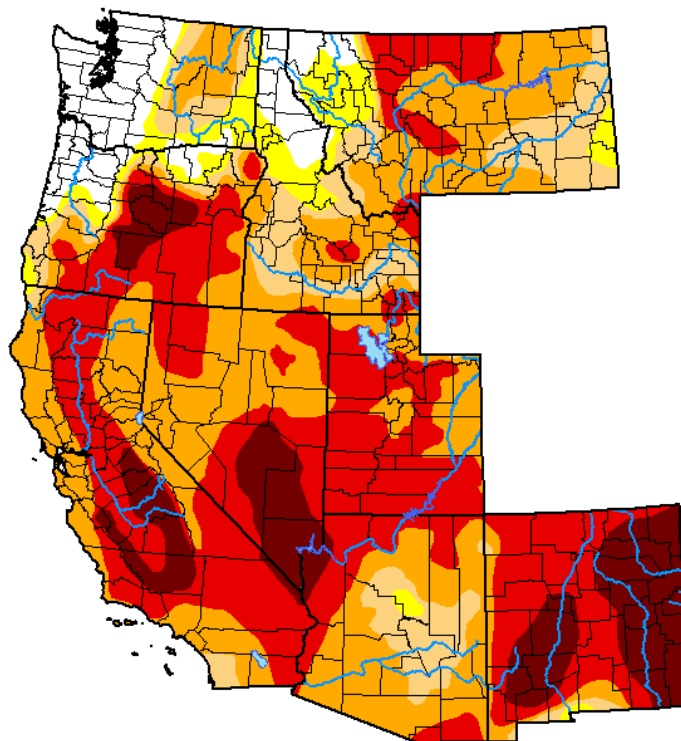


# Drought in Western US

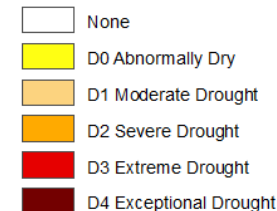
- Worst megadrought in 1,200 years
- Driest 22-year period on record
- Significant soil moisture deficit

## U.S. Drought Monitor West

**May 24, 2022**  
(Released Thursday, May. 26, 2022)  
Valid 8 a.m. EDT



### Intensity:



*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>*

### Author:

Richard Heim  
NCEI/NOAA

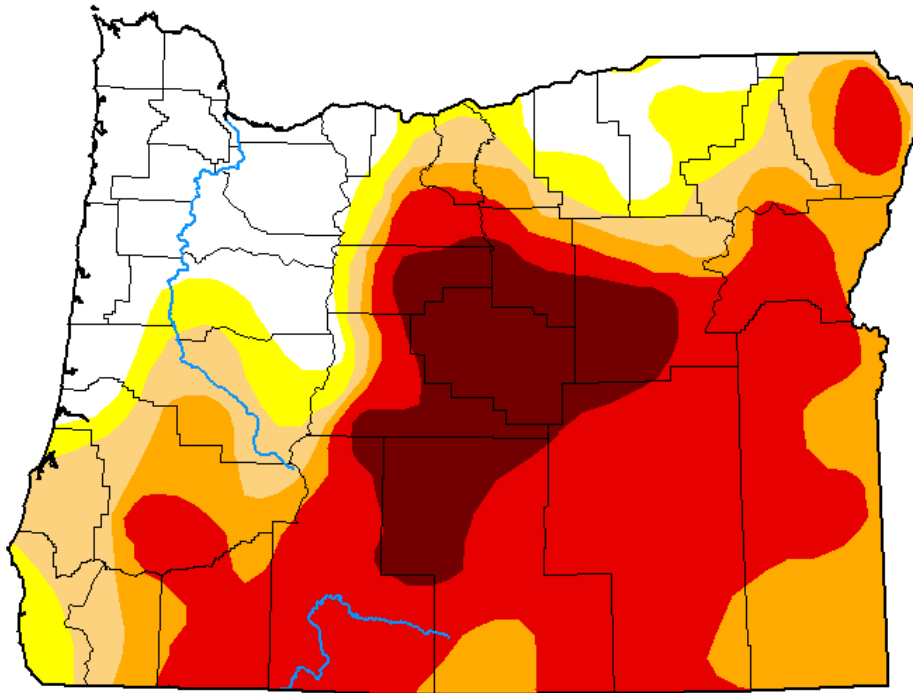


[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)







# Oregon Drought

## U.S. Drought Monitor Oregon

**May 24, 2022**  
(Released Thursday, May. 26, 2022)  
Valid 8 a.m. EDT



**Intensity:**

-  None
-  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. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>*

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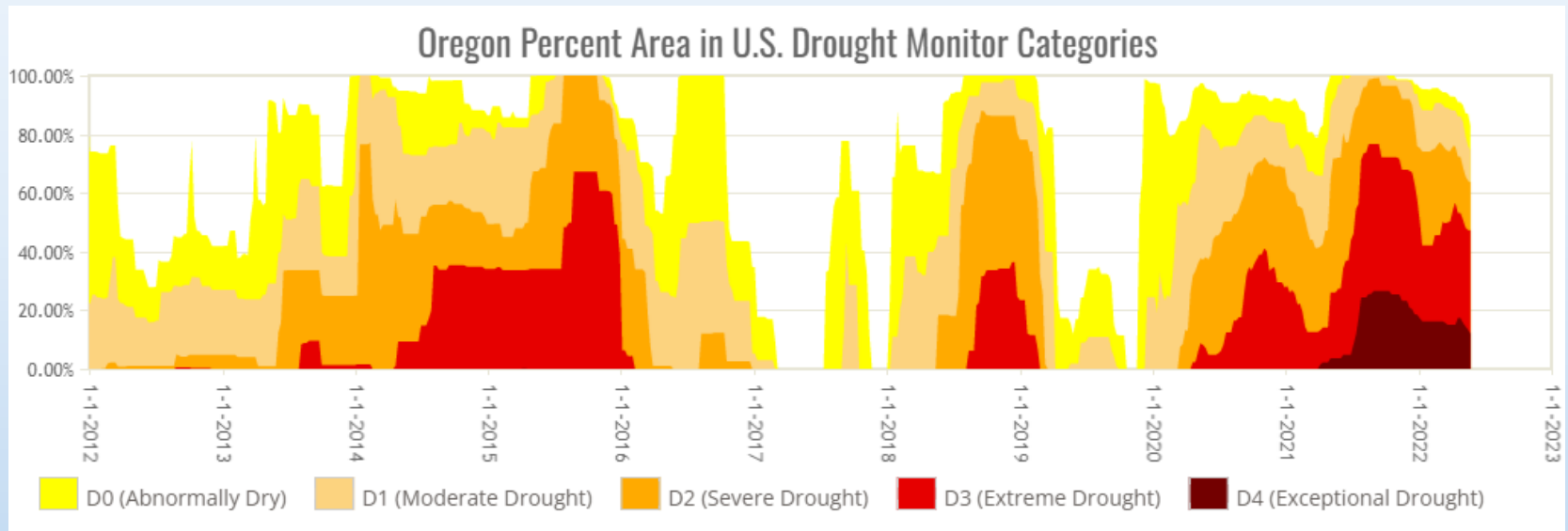


[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

Category	D0-D4	D1-D4	D2-D4	D3-D4	D4
Percent Cover	82.59%	74.31%	63.57%	47.22%	11.81%

# Drought Persistence

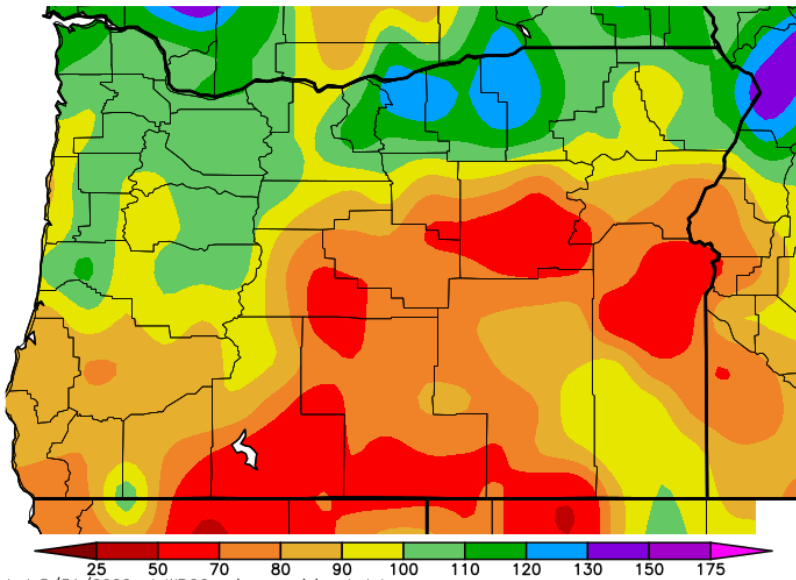
- This recent drought cycle began early 2020
- Drought persisted statewide throughout previous wet seasons
- Some localized recovery in 2022, but conditions expected to persist to fall



# Water Year Precipitation

## Water Year

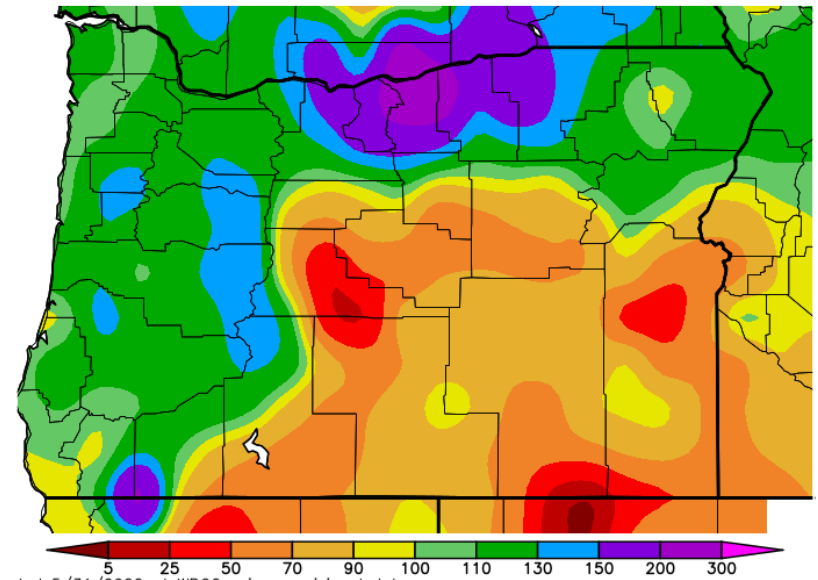
Percent of Average Precipitation (%)  
10/1/2021 – 5/30/2022



Generated 5/31/2022 at WRCC using provisional data.  
NOAA Regional Climate Centers

## Past 90 Days

Percent of Average Precipitation (%)  
3/2/2022 – 5/30/2022



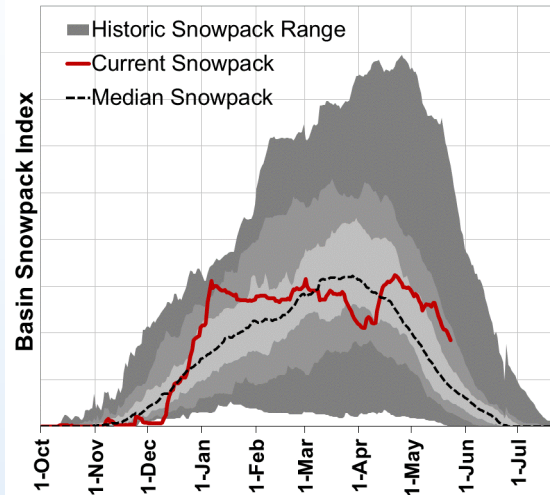
Generated 5/31/2022 at WRCC using provisional data.  
NOAA Regional Climate Centers

- Below average precipitation over water year outside of northern Oregon
- Bulk of precipitation received over past 90 days
- Provided short-term relief in combination with cool temperatures

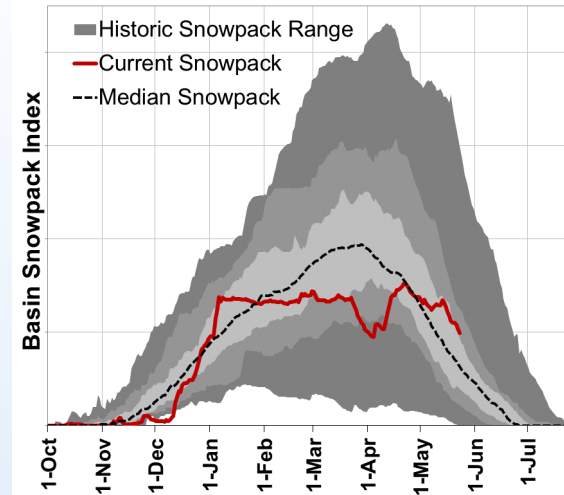
# Snowpack and Meltout

- Most basins fell well short of reaching typical peak snowpack
- Late season storm halted early meltout and led to bump in snowpack
  - Not enough to significantly benefit water supplies

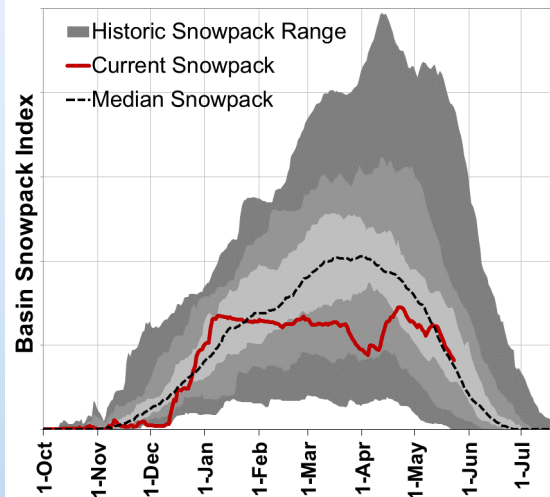
**Willamette**



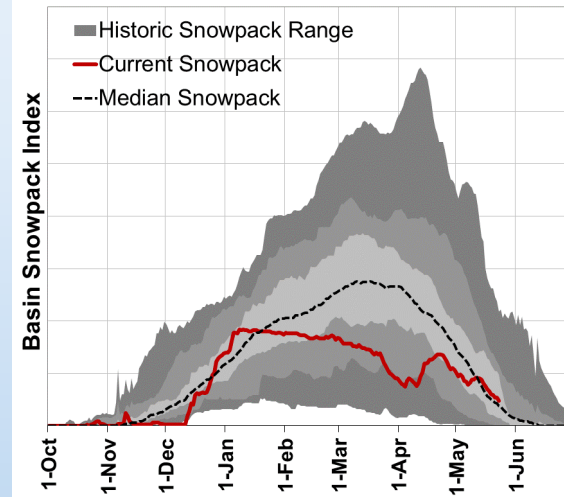
**Upper Deschutes-Crooked**



**Rogue-Umpqua**



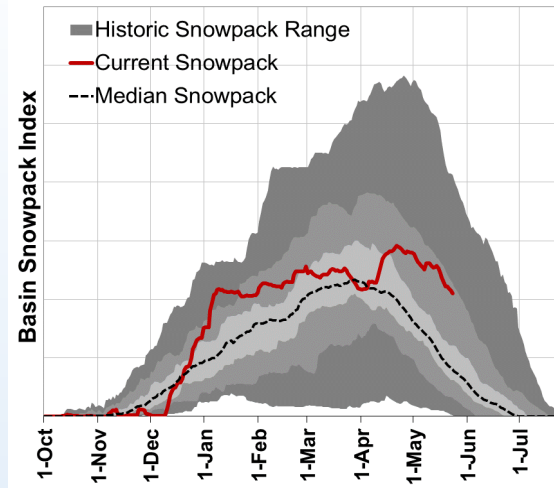
**Klamath**



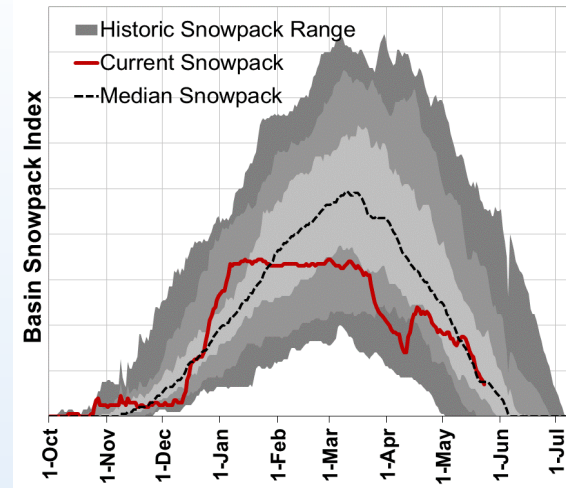
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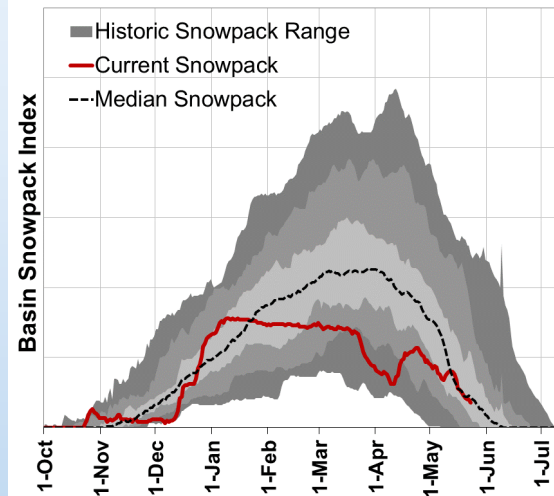
Hood-Sandy-Lower Deschutes



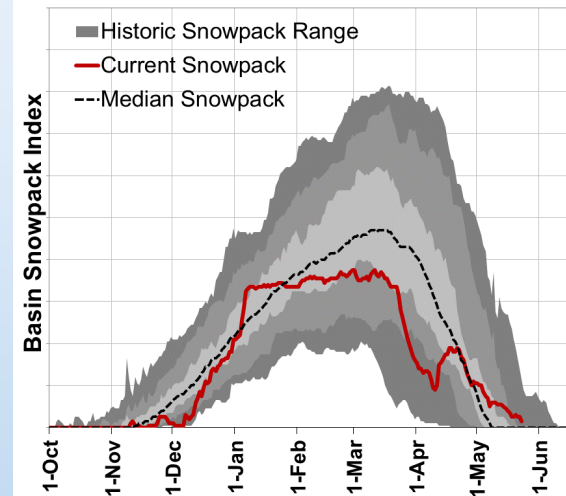
Harney



Lake County-Goose Lake



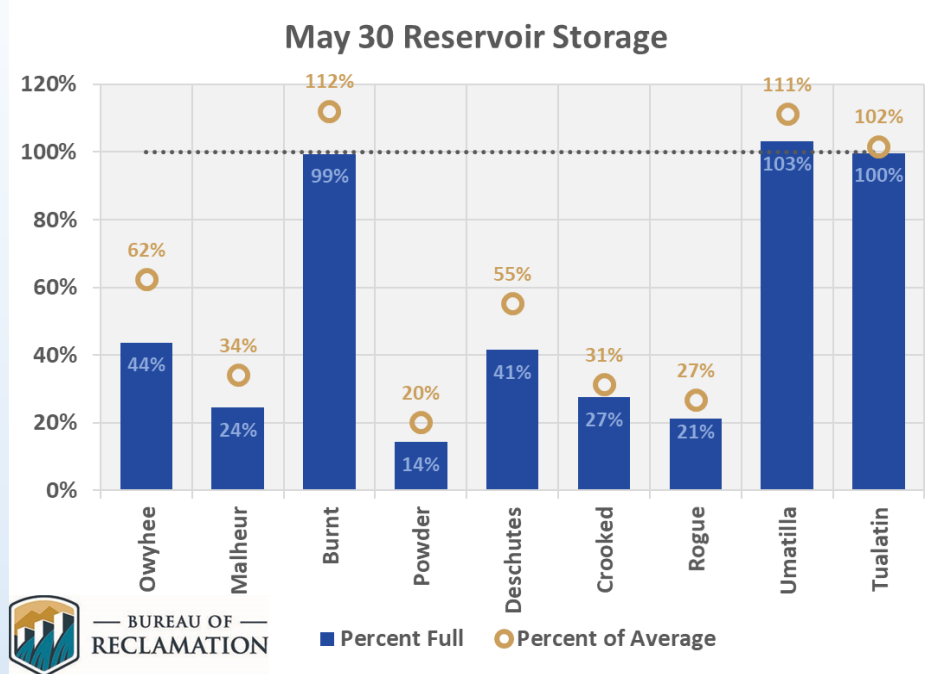
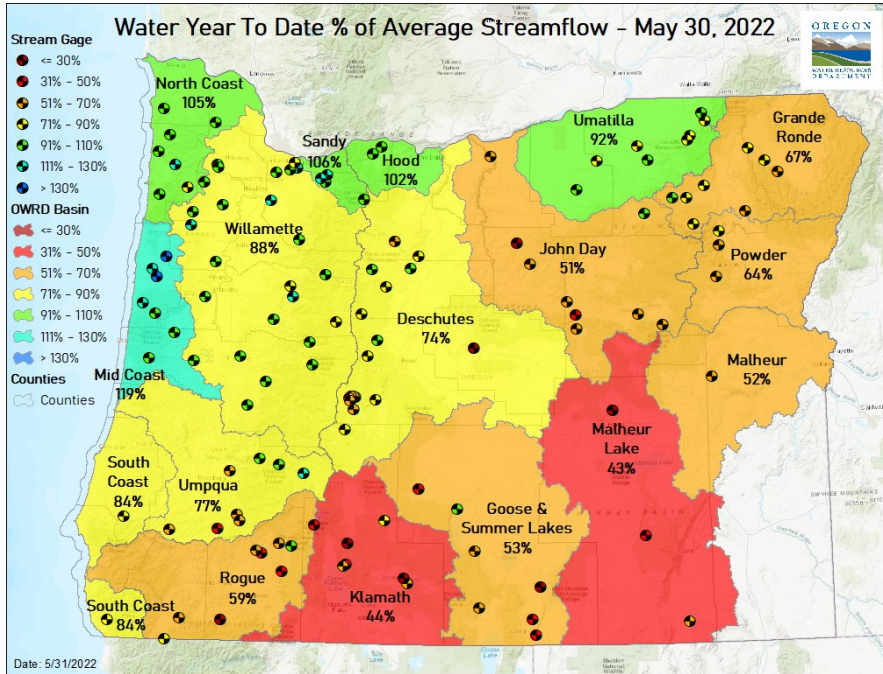
John Day





## Water Year Streamflow

## Reservoir Storage



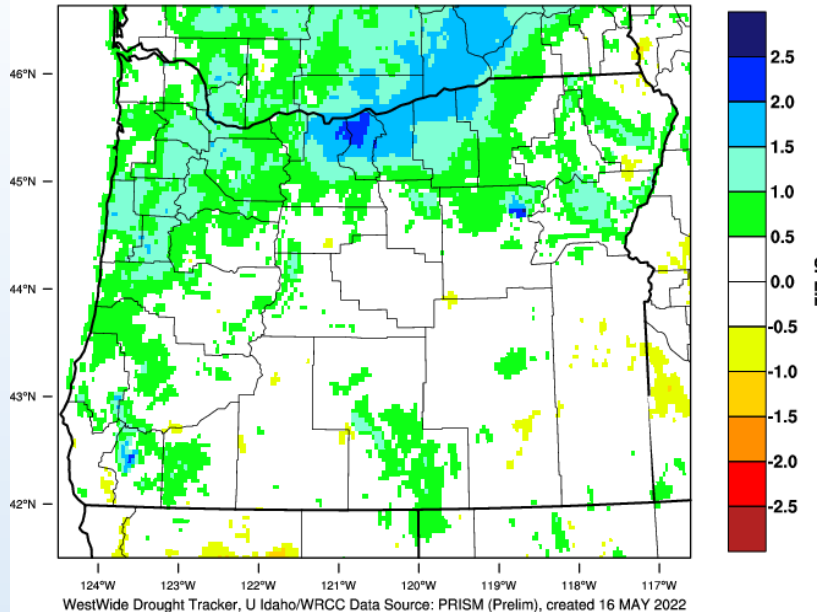
- Below average throughout most of Oregon
- Reservoir storage significantly impacted by record low carryover
- Impacts to irrigation allotments already occurred (Klamath, Rogue, Deschutes) or is expected (Owyhee)

# Long-term Drought Conditions

## Short-term (since March)

Oregon - 2 month SPEI

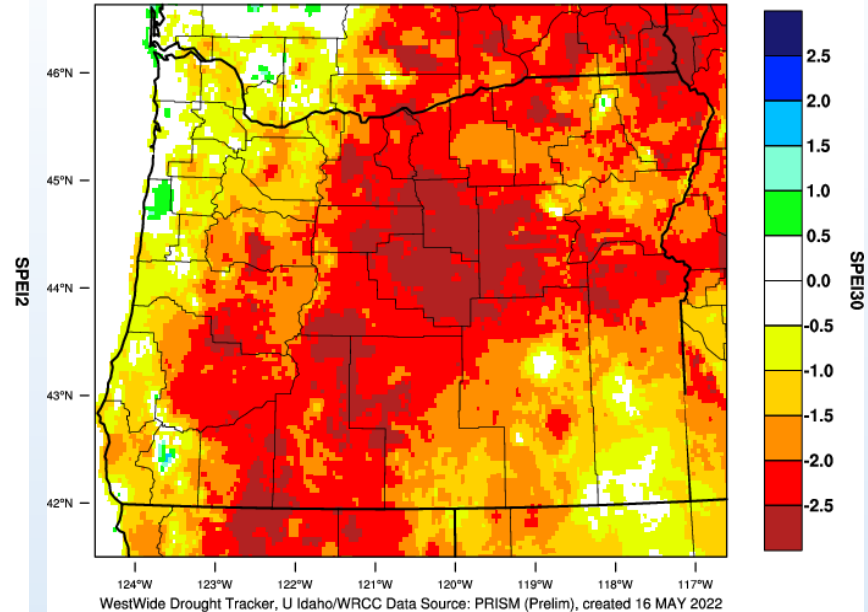
April 2022



## Long-term (since November 2019)

Oregon - 30 month SPEI

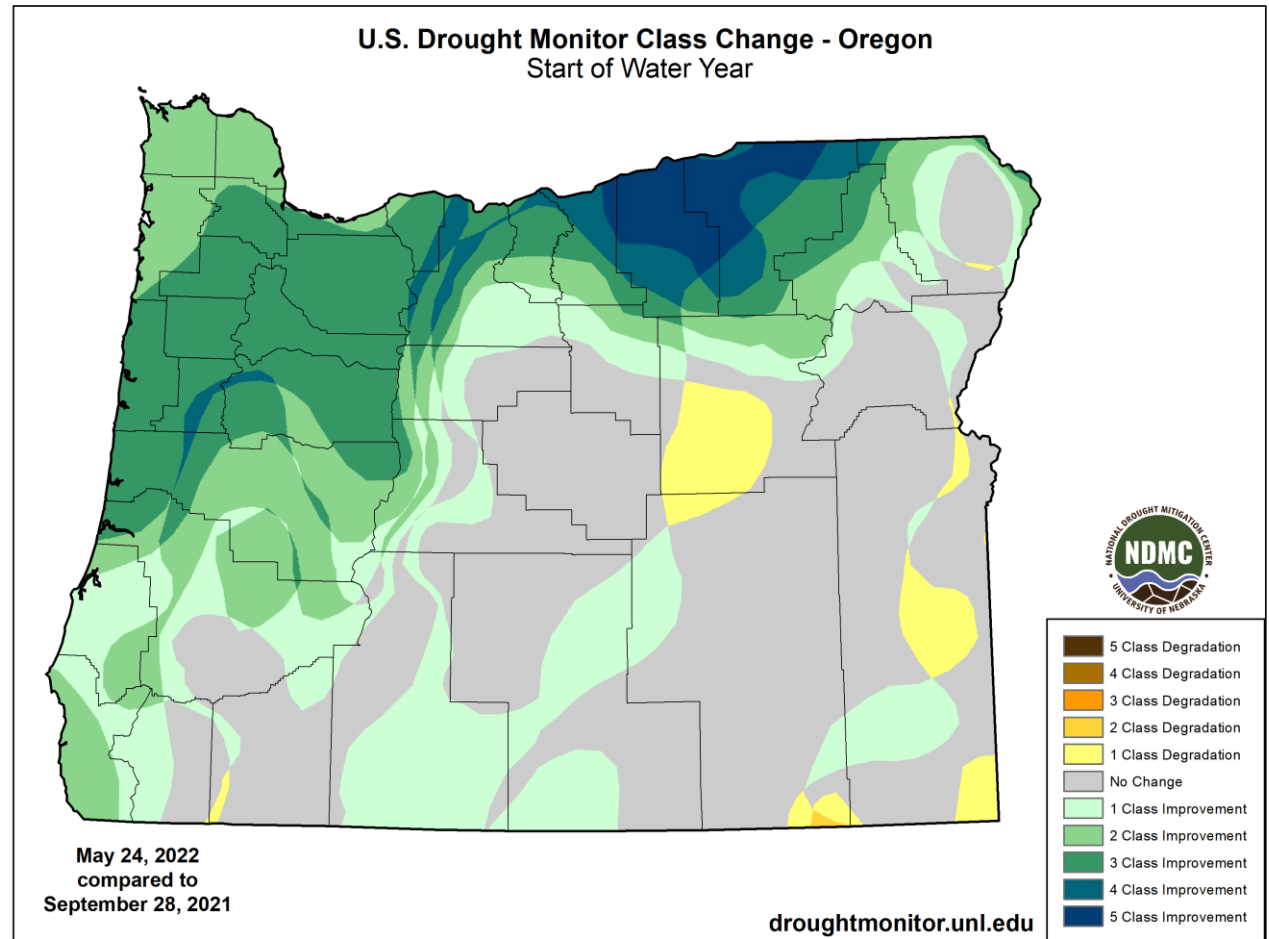
April 2022



- Standardized Precipitation-Evapotranspiration Index is drought metric that incorporates both precipitation and temperature to provide measure of wet/dry
- Long-term drought metric indicative of moisture deficit exacerbated by warm temperatures
- While recent precipitation brought short-term relief, not enough to overcome long-term deficit

# Drought Change since October 1

- Map shows categorical changes since October 1
- Extreme to exceptional drought persists
- Improvements in western and northern Oregon



# Available Management Tools

- Drought Declaration under ORS 536
  - Allows OWRD to offer certain tools for water rights holders in drought-declared counties
  - Intended as short-term solutions to water supply challenges
- Water Management and Conservation Plan
- Dry Well Reporting Form
  - Users submit reports of dry wells or significant reductions in well output
  - Allows tracking of groundwater issues

# Dry Domestic Wells

- 300+ dry well complaints statewide for 2022
  - (as of 5/26)
- About half complaints in Klamath area alone
- OWRD not issuing emergency groundwater permits in Klamath Basin this year
- OWRD Well Abandonment, Repair and Replacement Fund

# Select Funding for Irrigators

- OWEB Drought Relief Programs
- USDA Farm Service Agency
  - Separate Drought Process at Federal Level based on US Drought Monitor
- More information on federal funding opportunities can be found [here](#)

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