CLACKAMAS COUNTY BOARD OF COUNTY COMMISSIONERS

Policy Session Worksheet

Presentation Date: April 20, 2022

Approx. Start Time: 11:00 am **Approx. Length:** 20 minutes

Presentation Title: July 4 Fireworks Ban Considerations

Department: Disaster Management

Presenters: Daniel Nibouar

Other Invitees: Clackamas County Fire Defense Board and Clackamas County Fire District 1

WHAT ACTION ARE YOU REQUESTING FROM THE BOARD?

Staff will provide recommendations for a possible ban on the use of fireworks for the upcoming July 4th holiday, the Board requested recommendations at the April 5, 2022 policy session. Staff are seeking direction from the Board on the implementation criteria and decision deadline for a Clackamas County Fireworks Ban policy.

EXECUTIVE SUMMARY:

In 2021, record-breaking heat and drought conditions meant a high risk for wildfires within Clackamas County. This prompted the Board to issue a fireworks ban for unincorporated Clackamas County during the July 4th holiday. The current seasonal temperature, rainfall, and snowpack align with conditions similar to those experienced in 2021. While it is hard to anticipate and predict the weather and wind conditions beyond a seven to ten day forecast, the National Weather Service (NWS) summer outlook indicates an average to slightly warmer and drier than normal summer weather for the three month period of June to August.

At the April 5, 2022 Policy Session, the Board asked staff to develop and present recommendations to determine metrics for implementing a fireworks use ban in the unincorporated areas of Clackamas County. The Board recommended that staff present proactive timeframes for decision-making within their proposed guidance, allowing for more time to coordinate, prepare and share information with the public.

Multiple agencies and data sources monitor weather and climate conditions to evaluate the risk of wildfire in the Clackamas County region. In the development of these recommendations staff focused their attention to the Oregon Department of Forestry (ODF) and the NWS.

At the statewide start of regulated fire season, typically mid-June, the ODF uses weather stations positioned within the county to analyze data daily, monitoring current weather, fuel types (grasses, brush, timber, snags, etc.), fuel moisture, and how easily these conditions would cause a fire to start and spread. The fire risk tool uses a four-tier assessment ranging from Low to Extreme, based on the analysis of the data the fire agencies monitor and change regulated fire season levels. Extreme fire conditions can typically occur from early July through the middle of September. Once within the previous six years, have extreme fire conditions been recorded during the July 4th holiday.

The NWS data reflects the observed background conditions that support wildfire, such as the severity of drought, the level of soil moisture, and related stress on vegetation (fuels). Especially important in mid-June will be the short-term (two week) NWS forecasts for possible Red Flag

conditions of severe heat, reduced humidity, and excessive winds for the July 4th holiday. The NWS Red Flag Warning is a term used by fire-weather forecasters to call attention to weather conditions that may result in extreme burning conditions. It is issued when there is an on-going event or the fire weather forecaster has a high degree of confidence that Red Flag criteria will occur within 24 hours of issuance. Red Flag criteria occurs whenever a geographical area has been in a dry spell, the National Fire Danger Rating System (NFDRS) is high to extreme and the following forecast weather parameters are forecasted:

1) A sustained wind average of 15 mph or greater
2) Relative humidity less than or equal to 25 percent and
3) A temperature of 75 degrees F or greater.

Staff recognize that while the historical analysis of extreme fire conditions tend to occur after the July 4th holiday, recent experience has shown that acute climate and weather conditions also need to be included in the consideration of a fireworks use ban due to local impacts. The NWS Red Flag Warnings are utilized as a notification tool for acute weather conditions that could lead to wildfires. The Clackamas County Fire Defense Board (CCFDB) recommends use of the ODF danger levels as a tool to assess acute climate conditions to determine potential restrictions on activities that could lead to wildfires. Red Flag Warning are typically issued for 24-72 hour periods, while ODF fire danger levels generally last longer.

Staff recognize that decisions to ban fireworks that are implemented with more advance timing allow community members to proactively modify their plans and enable the fireworks selling partners to adjust their sales to avoid and limit selling in communities that have banned the use of fireworks. The Board of County Commissioners could choose to ban fireworks as early as May 1st. However, staff could not identify a data source or metric that would offer any significant information on wildfire danger levels any earlier than approximately two weeks before a potential incident.

Staff recommend using the NWS Red Flag Warning and the ODF Fire Danger Level Extreme level as metrics to determine a fireworks ban starting on June 15, based on the availability of accurate weather forecasts and fire condition data. ODF will begin measuring fire risk data at the beginning of regulated fire season which begins in mid-June. Weather forecasts during this timeframe also become more accurate, to anticipate conditions over the July 4th holiday period.

Any ban on the use or discharge of fireworks should be evaluated by the Board and take effect on a date determined by the Board. This ban will be removed once the ODF has lowered fire condition levels to High and the Red Flag Warning conditions no longer exist.

After receiving direction from the Board related to the July 4 Fireworks Ban Considerations, staff will prepare additional messaging in alignment with a fireworks ban decision to be distributed only when and if the Board determines a ban is necessary.

FINANCIAL IMPLICATIONS (current year and ongoing):

Is this item in your current budget? ☒ YES ☐ NO

What is the cost? $ 0 What is the funding source? N/A

STRATEGIC PLAN ALIGNMENT:

- How does this item align with your Department's Strategic Business Plan goals?
    - Disaster Management: Provides planning and preparedness as well as response, recovery, and mitigation services to the Clackamas County community. This includes coordination and public engagement services to residents; businesses; local, regional and state partners, and County decision-makers so they can plan and invest based on a coordinated set of goals and policies.

- How does this item align with the County's Performance Clackamas goals?
    - County: Ensure safe, healthy and secure communities.

LEGAL/POLICY REQUIREMENTS:

Development of an ordinance for banning the use of fireworks, if the board approves a ban.

PUBLIC/GOVERNMENTAL PARTICIPATION:

Staff discussed options and received advice from the Clackamas County Fire Defense Board.

OPTIONS:

1. Determine that the Board will not implement a fireworks use ban.
2. Ban the use of fireworks in unincorporated Clackamas County starting May 1st.
3. Approve the use of ODF Fire Danger Level Extreme for consideration to determine when to implement a fireworks use ban in the unincorporated areas of Clackamas County.
4. Approve the use of ODF Fire Danger Level Extreme and NWS Red Flag Warning for consideration to determine when to implement a fireworks use ban in the unincorporated areas of Clackamas County.
5. Direct staff to continue developing thresholds to implement a fireworks use ban.

RECOMMENDATION:

Staff recommends Option 4.

ATTACHMENTS:

- Attachment A: Oregon Water Resources Department, Water Conditions Report published April 4, 2022
- Attachment B: United States Department of Commerce, Seasonal Precipitation Outlook
- Attachment C: United States Department of Commerce, Seasonal Temperature Outlook
- Attachment D: Disaster Management, July 4 Fireworks Use Ban Considerations presentation

SUBMITTED BY:

Division Director/Head Approval: Daniel Nibouar
Department Director/Head Approval: Daniel Nibouar
County Administrator Approval_____

For information on this issue or copies of attachments, please contact Disaster Management @ 503-655-8378

HIGHLIGHTS

Thus far in 2022, four counties have received Executive Orders issuing state drought declarations. Three additional counties have requested drought declarations.

According to the US Drought Monitor, over 88% of Oregon is classified as experiencing moderate (D1) to exceptional (D4) drought conditions. There has been minor change in drought conditions over recent weeks. See below for more details.

Statewide snow water equivalent continues to trend downward over recent weeks due to elevated temperatures and early, rapid snowmelt. Statewide SWE is currently measuring 57% of the long-term median at NRCS SNOTEL sites. Snowpack in nearly all basins has begun melting (see below).

Precipitation in the month of March was below to well below average throughout much of the state. Portions of south and southeast Oregon received less than 25% of the average precipitation, including some areas in Lake and Harney Counties measuring the driest March on record. Some portions of northwest Oregon and along the Columbia River corridor measured near normal precipitation.

March temperatures were warmer than usual across the state, with temperatures ranging from 1 – 3 °F above the long-term average. Warmer temperatures and below average precipitation led to increased evaporative demand and severe drying.

Soil moisture profiles continue to show extremely dry conditions throughout much of Oregon.

The three-month seasonal outlook for April through June indicates probabilities favoring below average precipitation statewide. Temperatures are favored to be cooler than average in the northwest and northcentral portions of the state, and equal chances of above and below average elsewhere.

March streamflows were variable throughout the state, with a majority of counties measuring below to well below average flow. More recently, 7-day average streamflows are well below average statewide, including several gages measuring record lows. Some streams along the Cascades and in northeast Oregon are measuring average to above average flow.

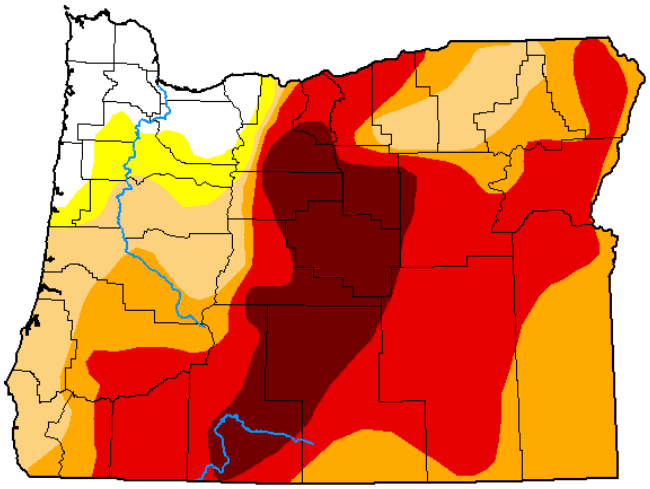
Reservoir storage contents in USBR (including Klamath) and USACE systems continue to measure below to well below average. Several reservoirs are measuring historically low contents for this time of year.

DROUGHT CONDITIONS

The US Drought Monitor indicates over 88% of Oregon is experiencing drought conditions. Extreme (D3) drought conditions have expanded slightly in parts of eastern Oregon including Baker, Malheur, and Wallowa Counties. There was reduction in drought severity in parts of Morrow and Umatilla Counties. There were also some slight modifications to drought coverage and severity in western Oregon over recent weeks.

U.S. Drought Monitor

Oregon



March 29, 2022

(Released Thursday, Mar. 31, 2022)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	7.16	92.84	88.44	74.25	50.28	15.01
Last Week 03-22-2022	6.11	93.89	89.04	74.25	49.92	15.01
3 Months Ago 12-28-2021	2.95	97.05	93.89	75.89	57.92	18.52
Start of Calendar Year 01-04-2022	4.16	95.84	89.75	75.37	50.84	17.27
Start of Water Year 09-28-2021	0.00	100.00	100.00	96.47	72.10	26.59
One Year Ago 03-30-2021	21.14	78.86	66.00	41.25	12.55	0.00

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

Author:

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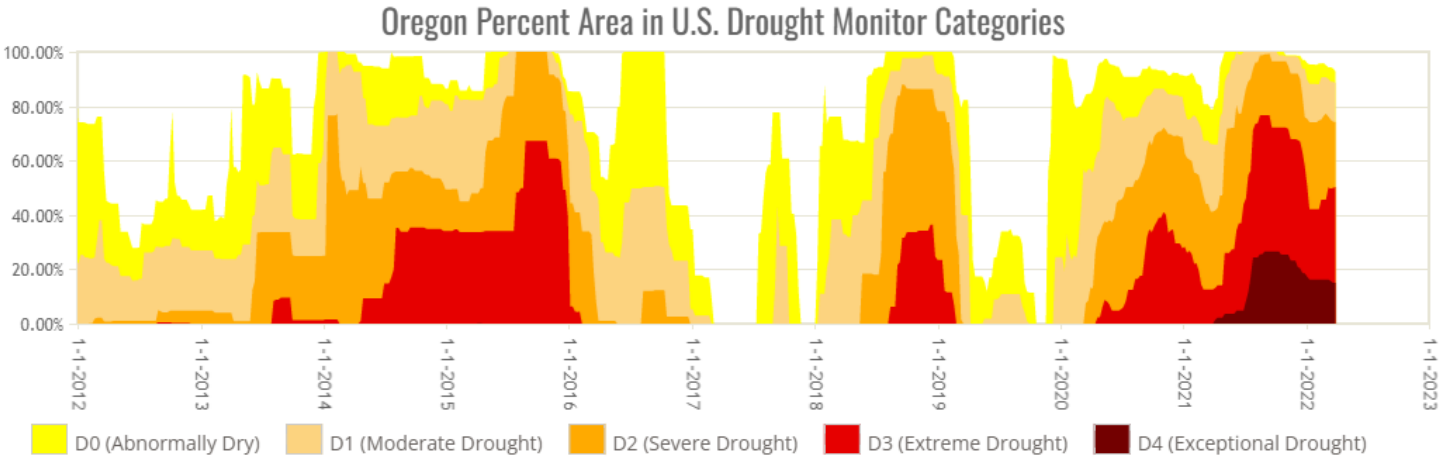
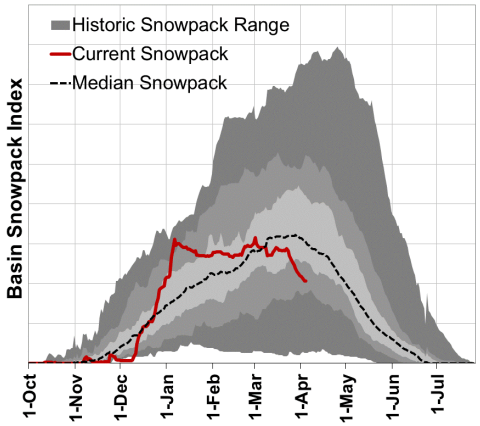
National Drought Mitigation Center

droughtmonitor.unl.edu

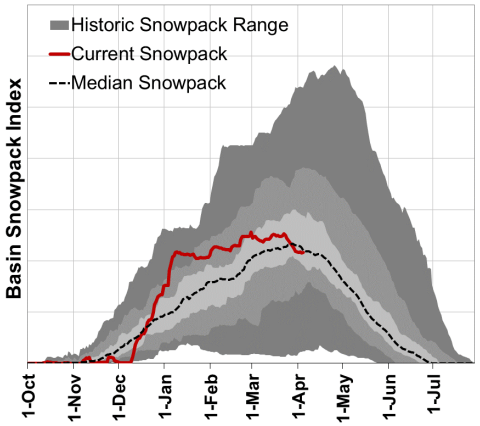


SNOWPACK

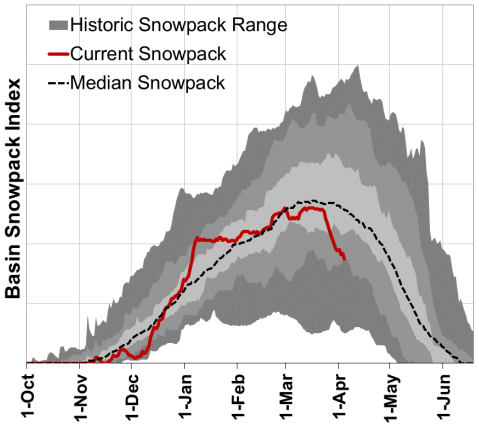
Willamette



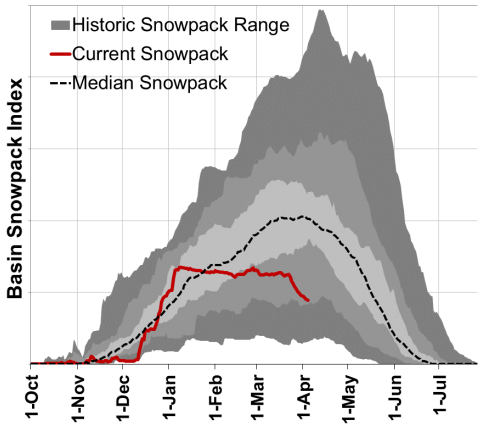
Hood-Sandy-Lower Deschutes



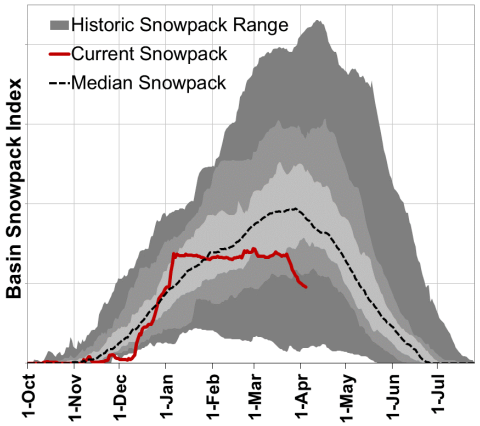
Umatilla-Walla Walla-Willow



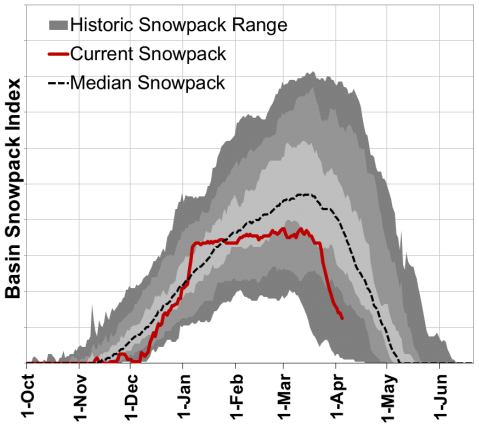
Rogue-Umpqua



Upper Deschutes-Crooked

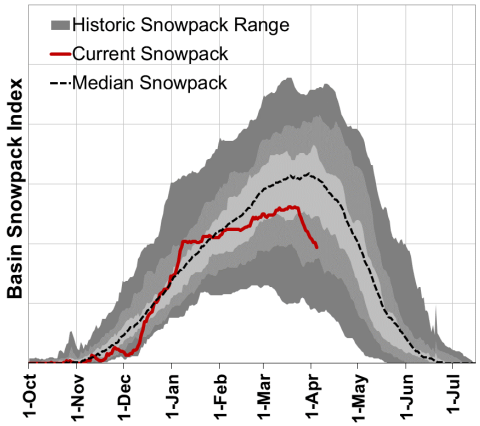


John Day

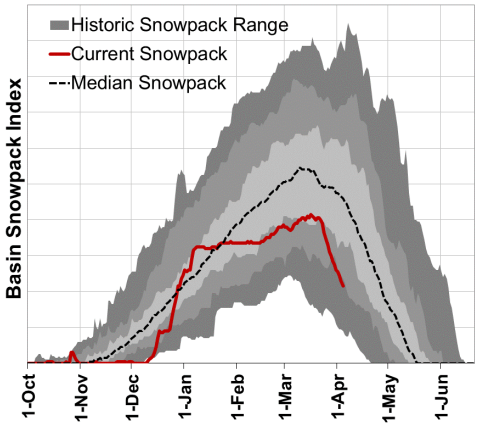


SNOWPACK

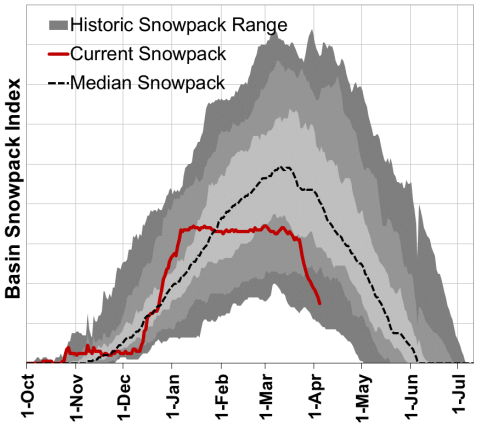
Grande Ronde-Burnt-Powder-Imnaha



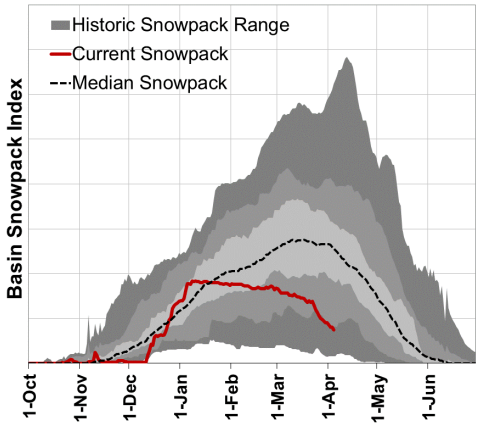
Owyhee



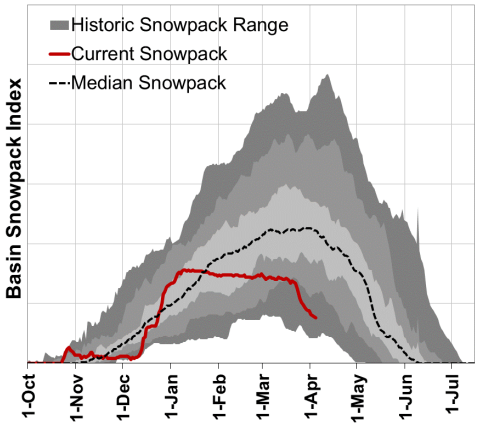
Harney



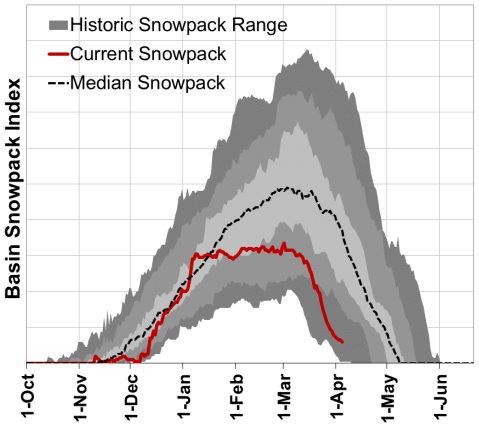
Klamath



Lake County-Goose Lake

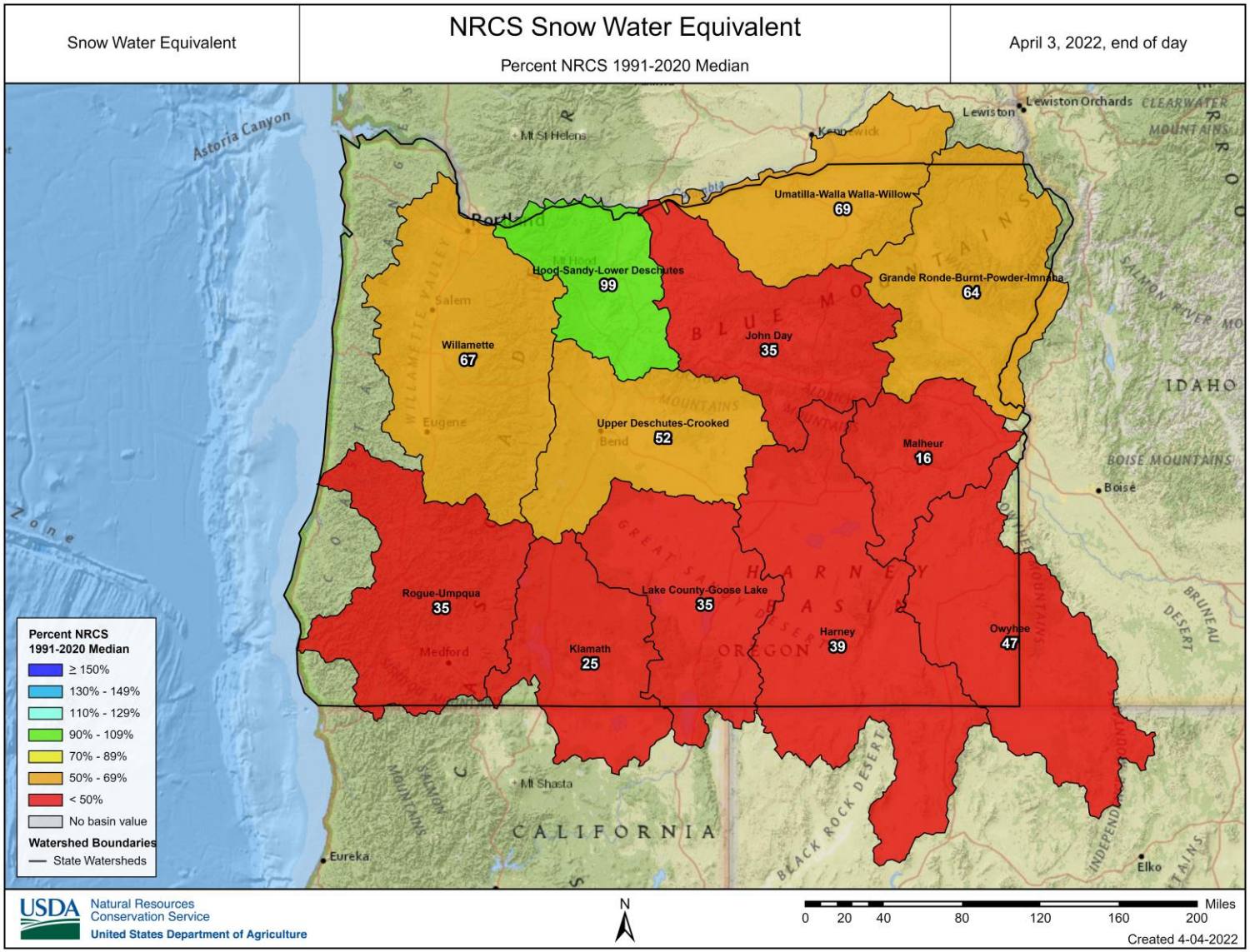


Malheur

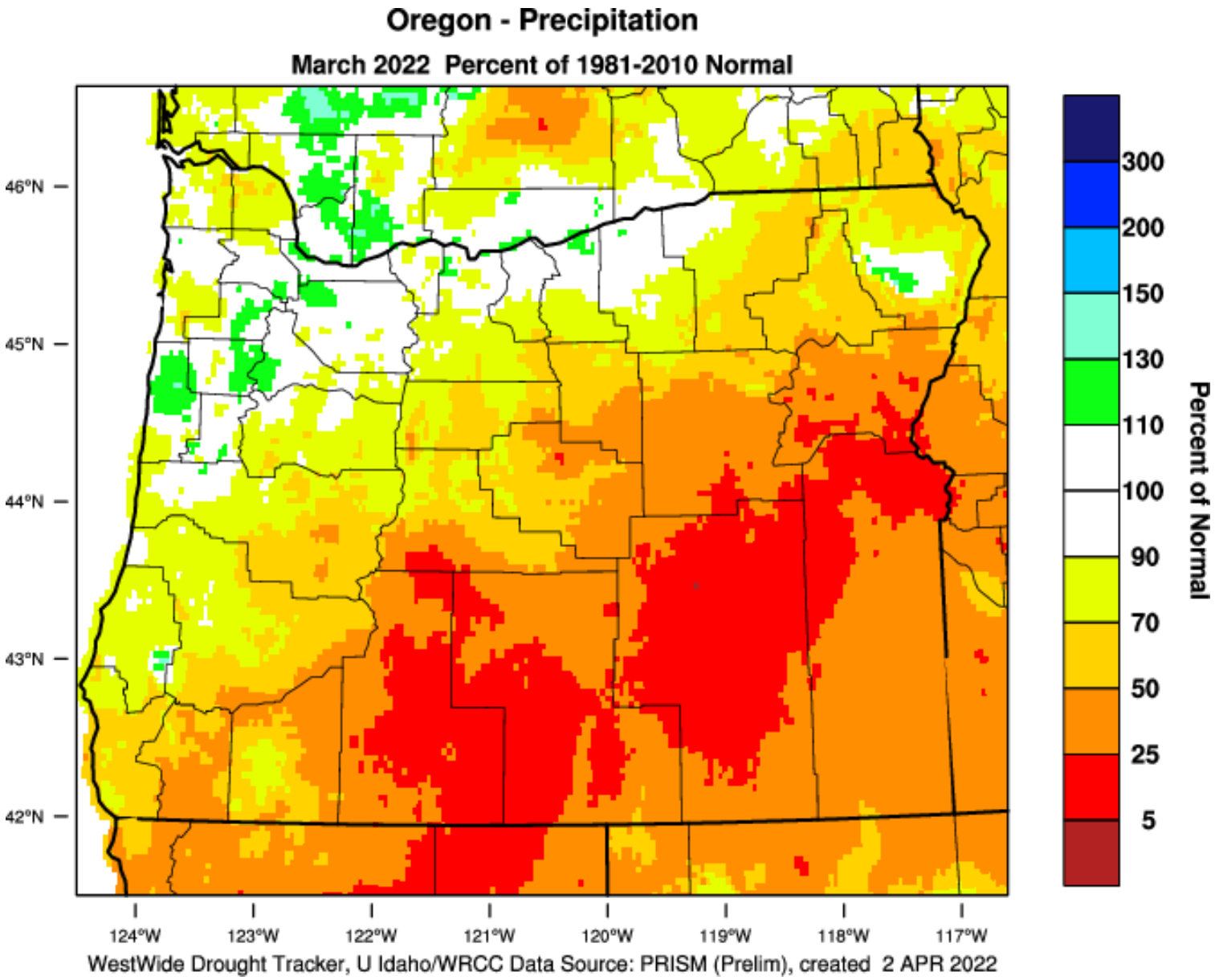


CLIMATE CONDITIONS

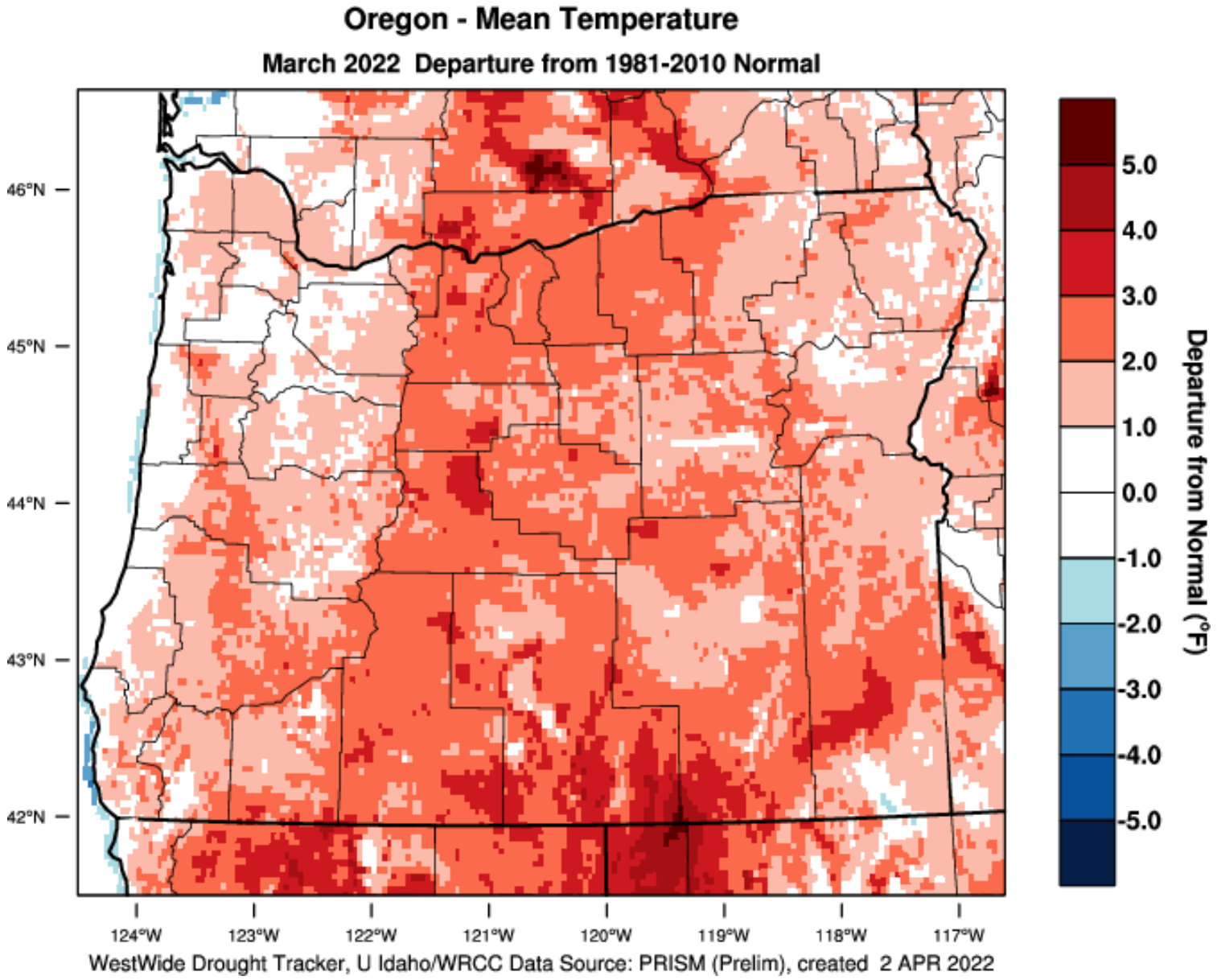
SNOW WATER EQUIVALENT



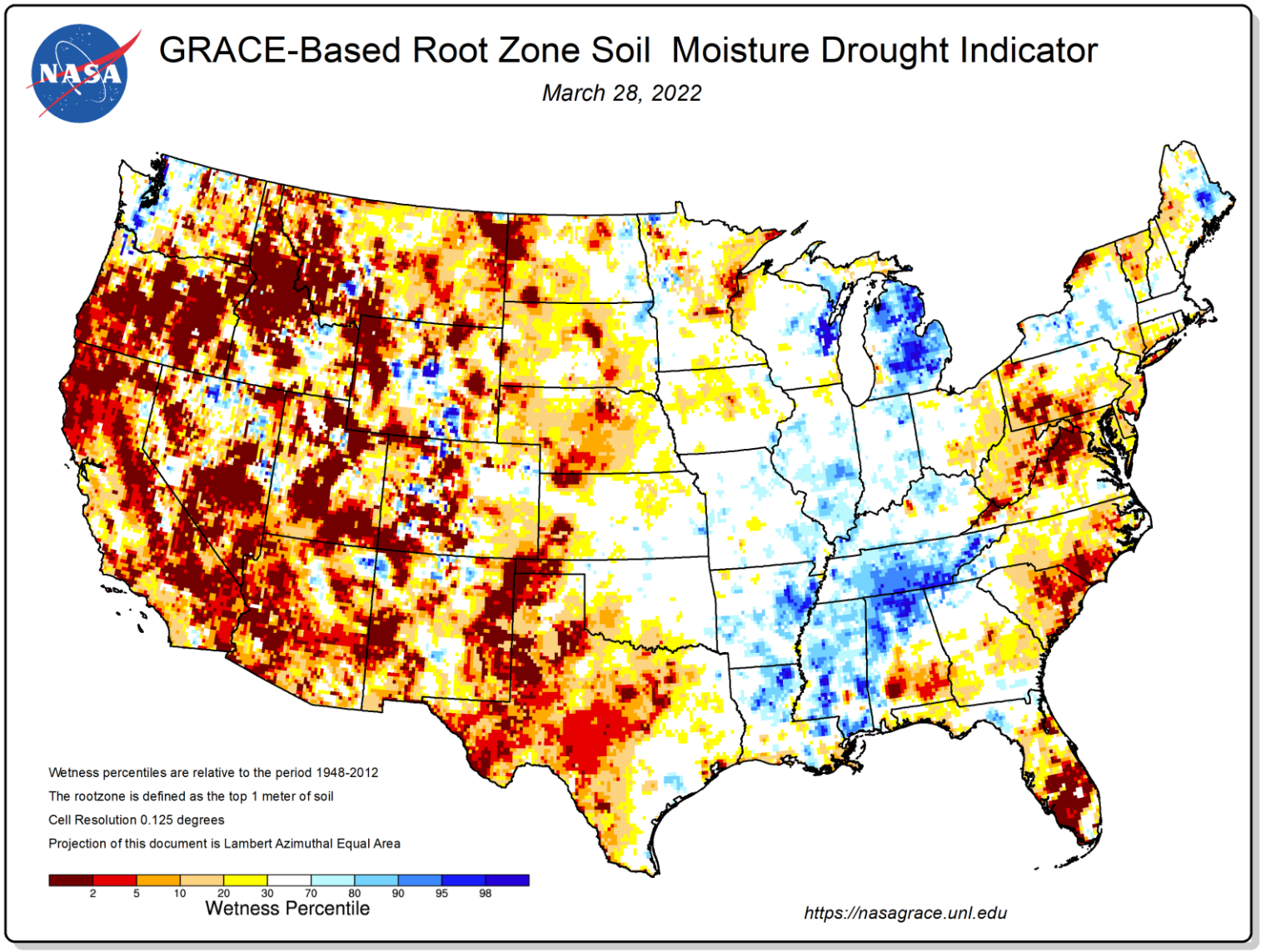
PRECIPITATION



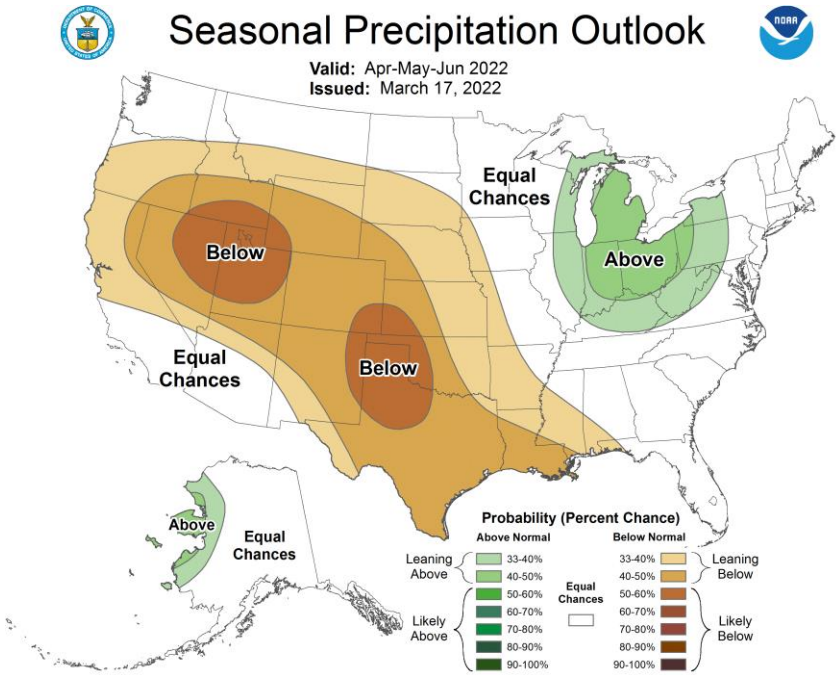
TEMPERATURE

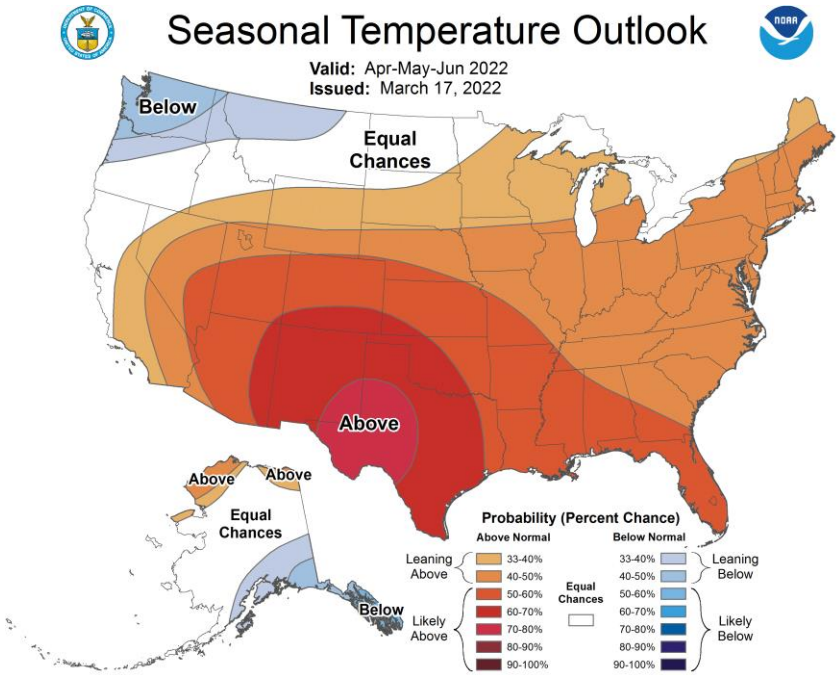


SOIL MOISTURE



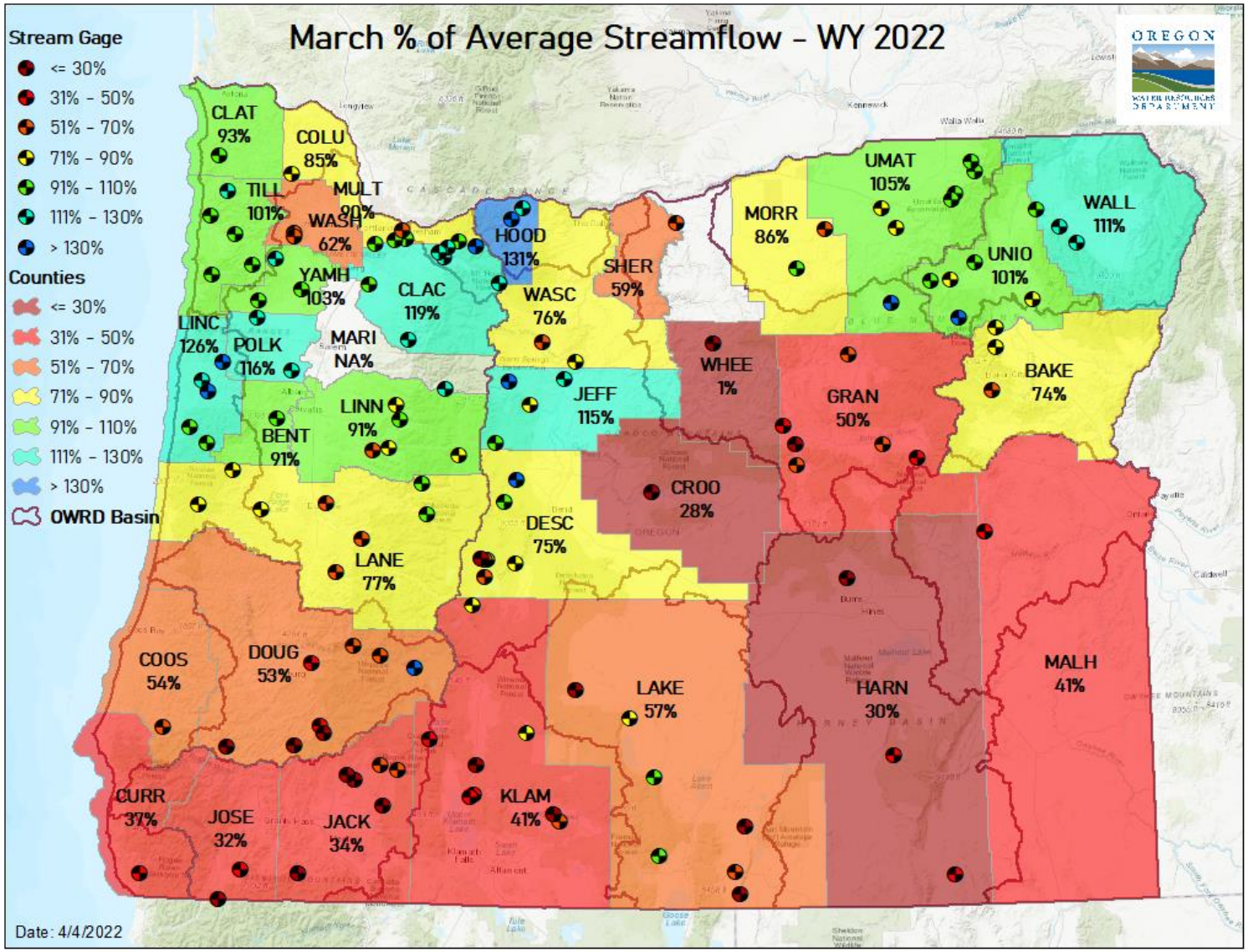
CLIMATE OUTLOOK



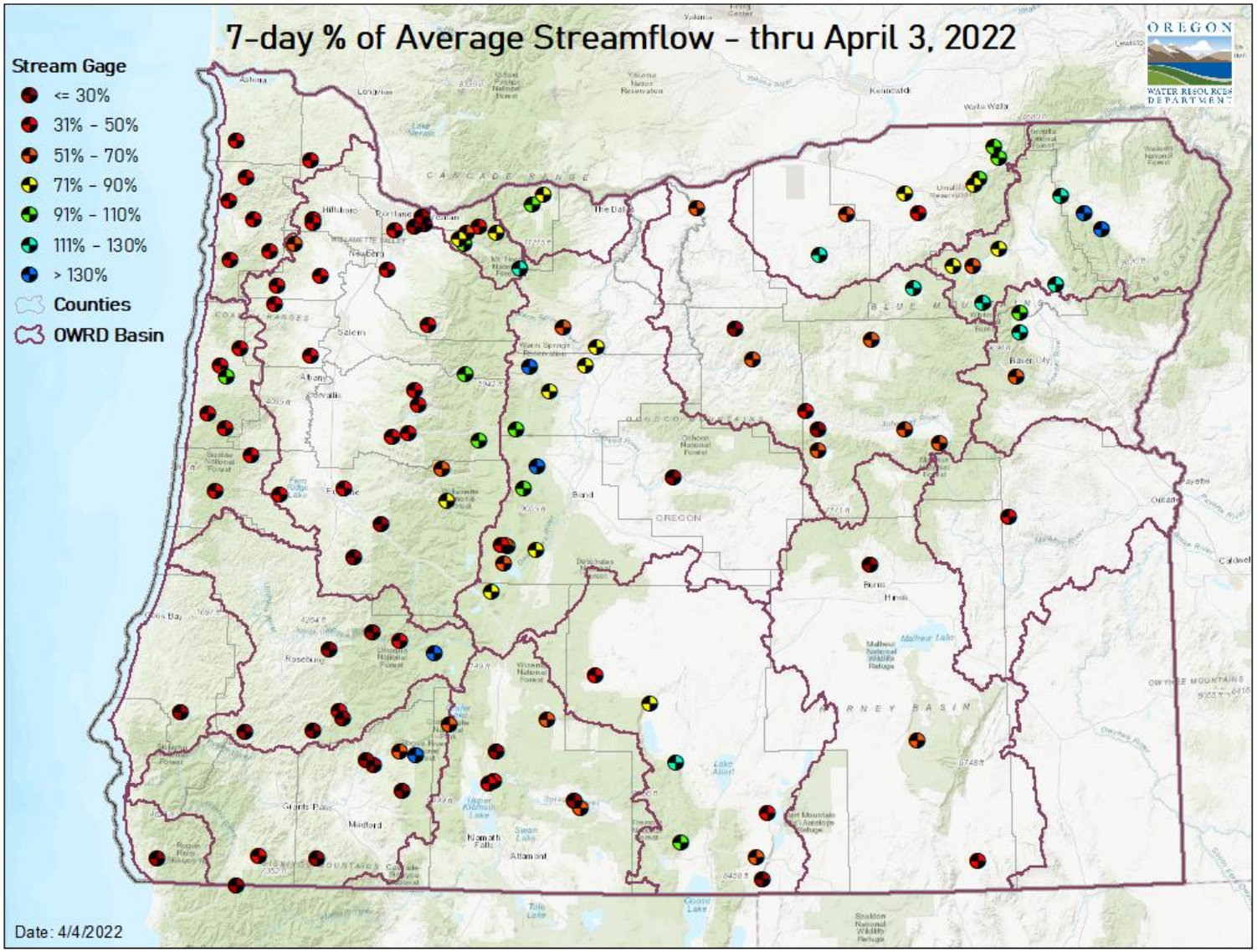


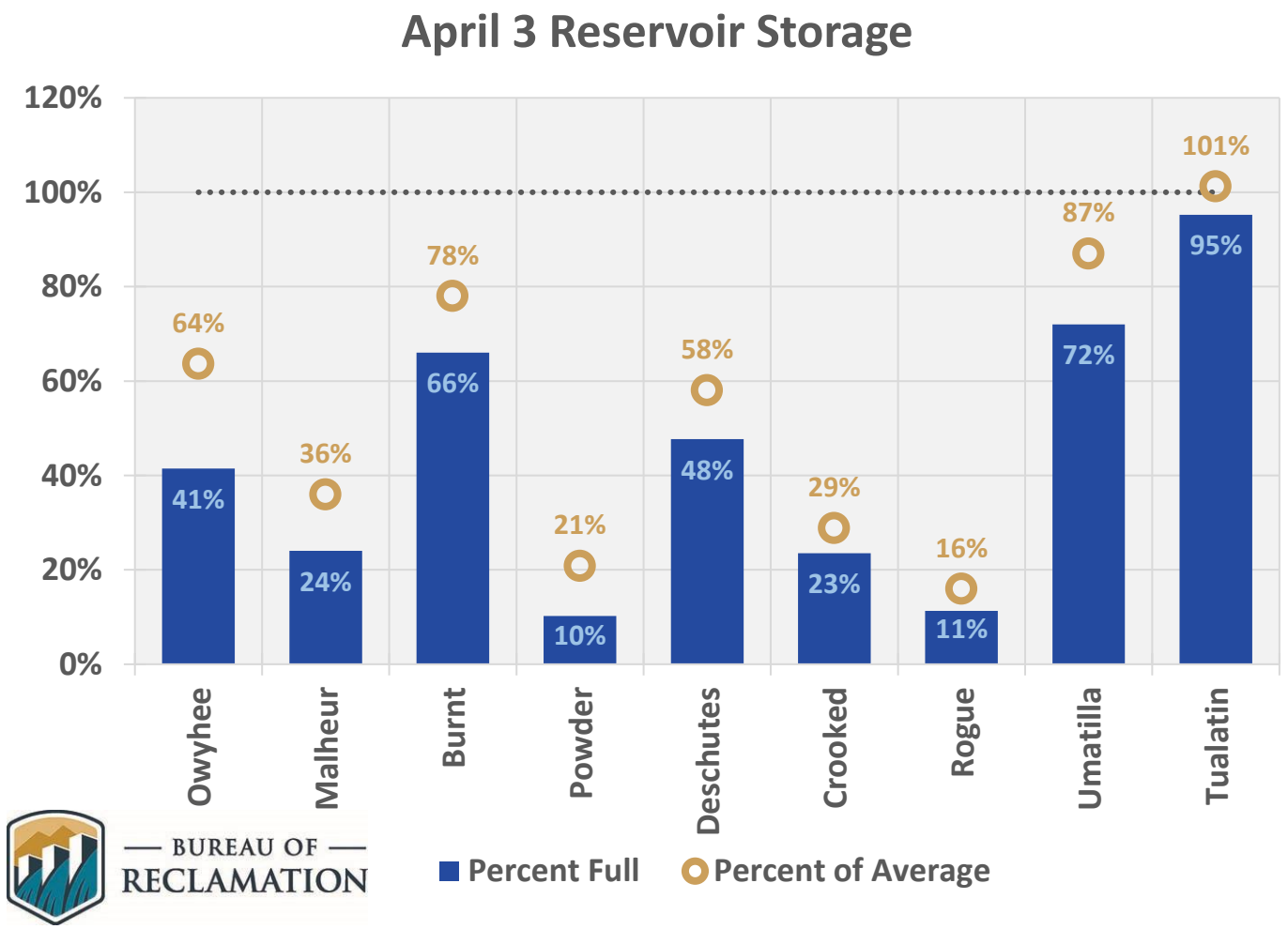
STREAMFLOW

MARCH



7-DAY


7-day % of Average Streamflow - thru April 3, 2022
OREGON
WATER RESOURCES DEPARTMENT
Stream Gage
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
111% - 130%
> 130%
Counties
OWRD Basin
Date: 4/4/2022


April 3 Reservoir Storage
120%
100%
80%
60%
40%
20%
0%
64%
41%
36%
24%
78%
66%
21%
10%
58%
48%
29%
23%
16%
11%
87%
72%
101%
95%
Owyhee
Malheur
Burnt
Powder
Deschutes
Crooked
Rogue
Umatilla
Tualatin
BUREAU OF RECLAMATION
Percent Full
Percent of Average

RESOURCES/REFERENCES

Please visit Oregon Water Resources Department's drought information page to learn about current drought conditions, assistance programs, and potential drought tools.

If you are interested in submitting local drought-related conditions and impacts, please visit the drought impacts toolkit to learn more. Click here to visit the map of condition monitoring observer reports.

Released every Thursday, the US Drought Monitor provides a weekly assessment of drought conditions. The USDM provides a network infographic which depicts the network of observers who gather and report information about conditions and drought impacts.

The WestWide Drought Tracker uses data from PRISM to provide easy access to fine-scale drought monitoring and climate products, such as the figures depicting climate conditions within this report.

The National Weather Service's Climate Prediction Center offers weekly, monthly, and seasonal climate outlooks illustrating the probabilities of temperatures and precipitation.

The Regional Climate Centers (RCC) working with NOAA partners, deliver climate services at national, regional, and state levels. Climate anomaly maps of Oregon are updated daily at around noon PST.

NASA's Gravity Recovery and Climate Experiment (GRACE) provide satellite-based observations of soil moisture conditions that are useful as drought indicators, helpful in describing current wet or dry soil conditions.

USGS Water Watch provides maps of real-time and average streamflow conditions at USGS sites throughout the state.

Reservoir storage "teacup" diagrams are offered by both the US Bureau of Reclamation and US Army Corps of Engineers. The diagrams represent the level of fill in the reservoirs as both percent full and as a ratio of volume of water currently in the reservoir to the volume of water in the reservoir when it is full.

Oregon wildfire information can be found through InciWeb and the Oregon Department of Forestry's Wildfire News, along with the National Interagency Fire Center which offers outlooks on the significant wildland fire potential.

Oregon Office of Emergency Management maintains a hydrology/meteorology dashboard which shows state and local drought declarations, as well as hosts many of the data sources to generate this report. Use the selection arrows at the bottom of your browser to navigate through the various sources.

US Department of Agriculture provides the Weekly Weather and Crop Bulletin as a vital source of information on US and global weather, climate, and agricultural developments, along with seasonally appropriate agrometeorological charts and tables. USDA's Drought Programs and Assistance offers links to programs and resources to help those struggling with persistent drought.

Seasonal Precipitation Outlook

Valid: Jun-Jul-Aug 2022
Issued: March 17, 2022

Below

Above

Equal Chances

Equal Chances

Above

Above

Equal Chances

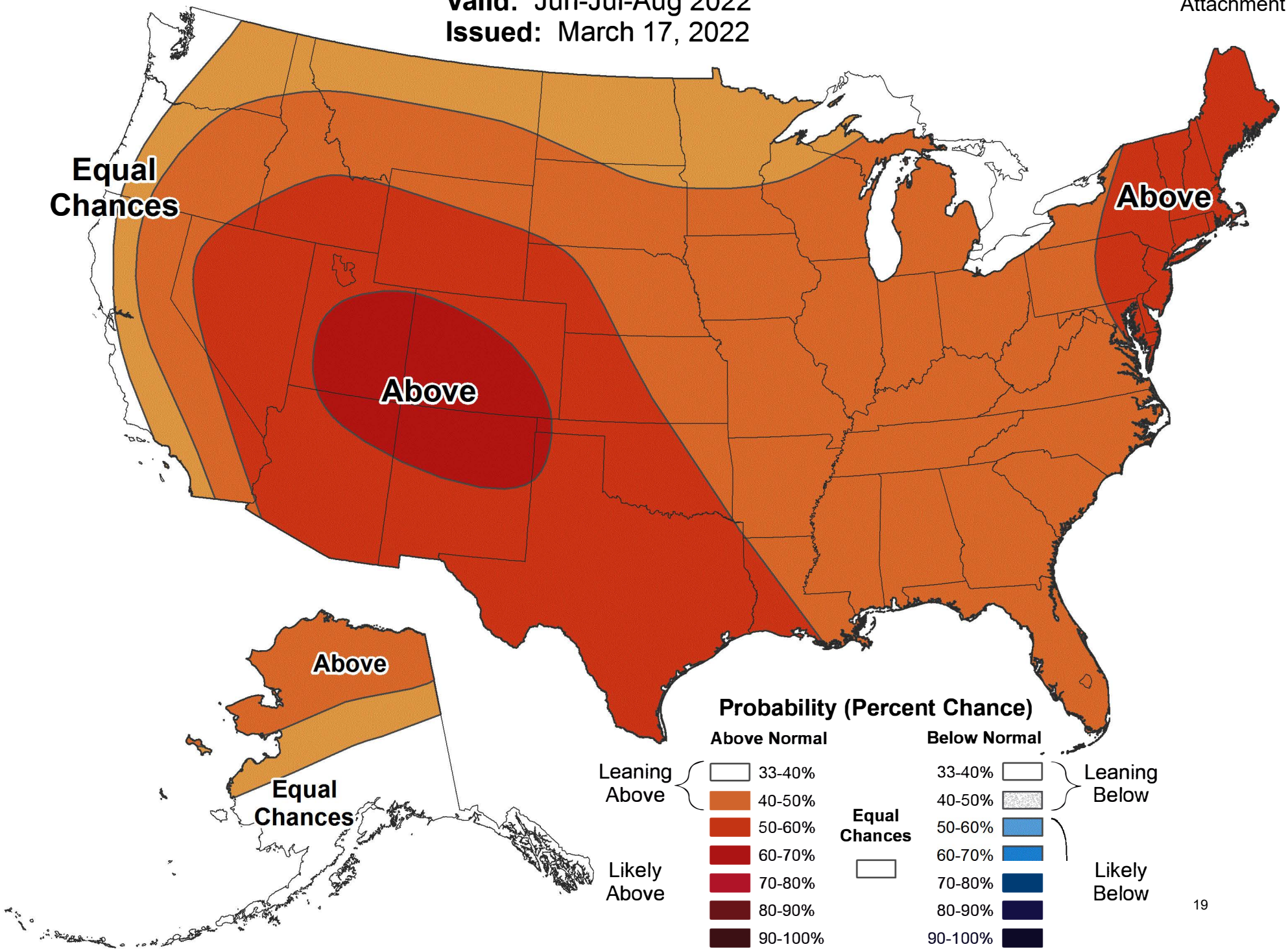
Probability (Percent Chance)

Above Normal		Below Normal
Leaning Above: 33-40%		33-40%: Leaning Below
Leaning Above: 40-50%		40-50%: Leaning Below
Likely Above: 50-60%	Equal Chances	50-60%: Likely Below
Likely Above: 60-70%		60-70%: Likely Below
Likely Above: 70-80%		70-80%: Likely Below
Likely Above: 80-90%		80-90%: Likely Below
Likely Above: 90-100%		90-100%: Likely Below

Seasonal Temperature Outlook

Attachment C

Valid: Jun-Jul-Aug 2022
Issued: March 17, 2022



July 4 Fireworks Use Ban Considerations

Disaster Management

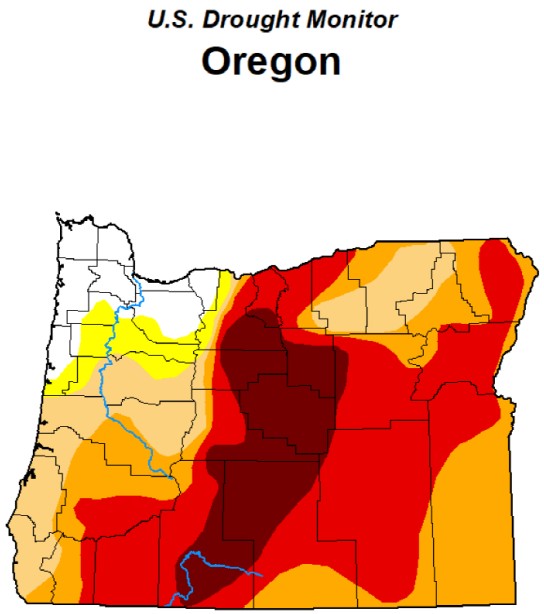
CLACKAMAS COUNTY
DISASTER MANAGEMENT

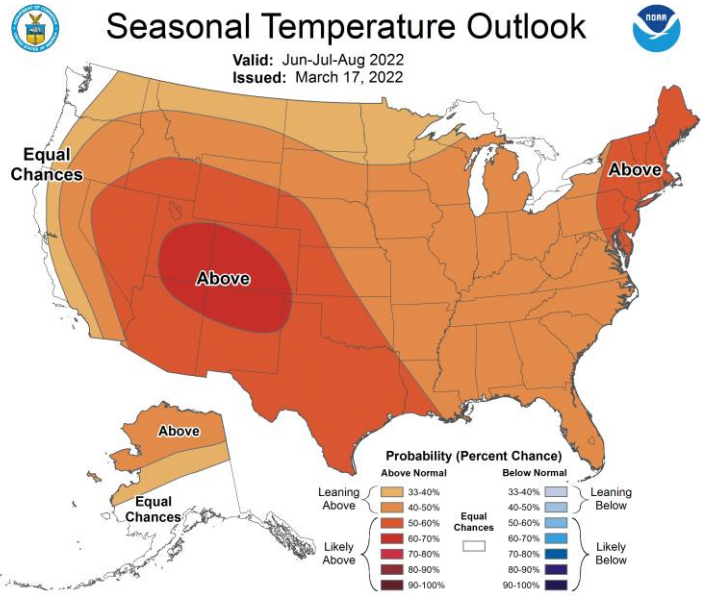
Background Information

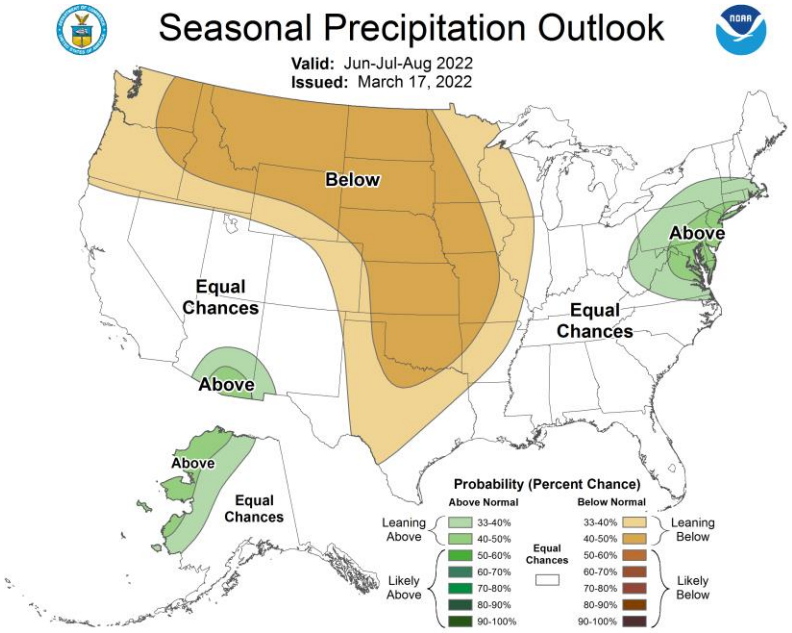
CLACKAMAS COUNTY
DISASTER MANAGEMENT

Current Climate and Weather Forecast Outlook

- Statewide significant increase of geographical area experiencing drought
- Increasing population centers within or near drought areas
- Given the fuel and drought conditions it is likely we have the potential for an earlier and longer fire season







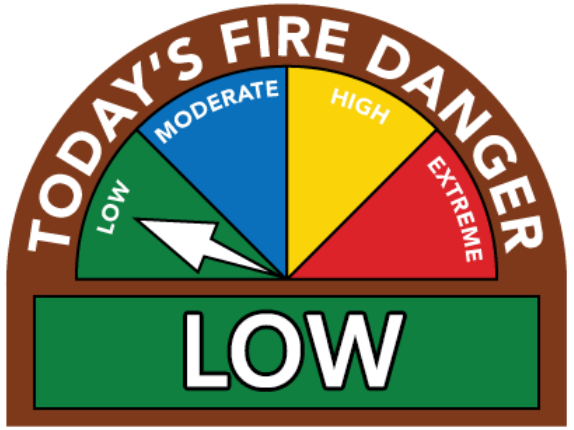
CLACKAMAS COUNTY
DISASTER MANAGEMENT

Fire Risk Monitoring

CLACKAMAS COUNTY
DISASTER MANAGEMENT

Fire Danger Assessments

NWS - Red Flag Warning		ODF - Fire Danger Index
• Existing dry spell in specified region • NFDRS = High, Very High or Extreme • With weather forecasting - sustained wind average of 15 mph or greater - relative humidity less than or equal to 25 percent - a temperature of 75 degrees F or greater		• Four-tier rating system to forecast fire conditions • Tiers: Low, Moderate, High, Extreme • Regulated fire season starts June 15, data monitoring and sharing with local agencies begins • Data capture and analysis from 2 weather stations: Eagle Creek, Horse Creek



CLACKAMAS COUNTY
DISASTER MANAGEMENT

Recommended Thresholds for Fireworks Use Ban Consideration

CLACKAMAS COUNTY
DISASTER MANAGEMENT

Fire Danger Assessments

NWS - Red Flag Warning		ODF - Fire Danger Index (SFDI)
• Threshold: NWS Red Flag Warning is Issued • Broadest risk level, evaluating current climate and weather conditions • Includes fire danger risk tiers High to Extreme • Includes current weather forecasts that could cause fire to start/spread • Red Flag Warning issued for limited duration, usually 24-72-hours		• Threshold: Extreme fire danger index declared for Clackamas County • Includes current weather, fuel type availability and ease of burn • Includes conditions that would cause fire to start/spread • Issued for state protected lands, local agencies align with risk tier to apply countywide • Typically conditions exist between early July to mid-September, have to consider local climate and weather forecasts

CLACKAMAS COUNTY
DISASTER MANAGEMENT

Options

1. Determine that the Board will not implement a fireworks use ban.

2. Ban the use of fireworks in unincorporated Clackamas County starting May 1st.

3. Approve the use of ODF Fire Danger Level Extreme for consideration to determine when to implement a fireworks use ban in the unincorporated areas of Clackamas County.

4. Approve the use of ODF Fire Danger Level Extreme and NWS Red Flag Warning for consideration to determine when to implement a fireworks use ban in the unincorporated areas of Clackamas County.

5. Direct staff to continue developing thresholds to implement a fireworks use ban.

Staff recommends option 4.

CLACKAMAS COUNTY
DISASTER MANAGEMENT

Questions?

CLACKAMAS COUNTY
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