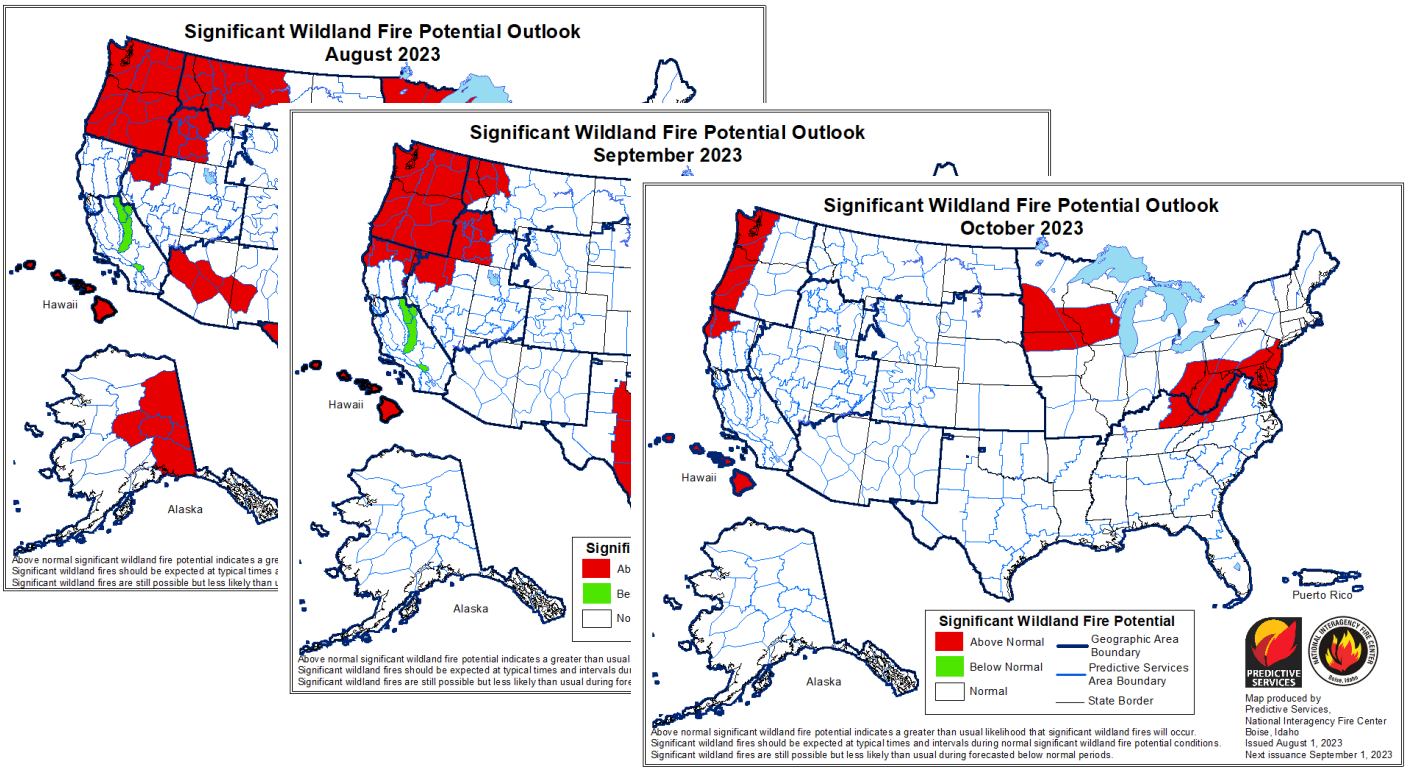
August 2023 - Wildland Fire Outlook

August *8, 2023*



Significant Wildland Fire Potential -- August, September, October 2023 (August 1, 2023, National Interagency Fire Center).
https://www.predictiveservices.nifc.gov/outlooks/outlooks.htm.

SUMMARY

After a drier and warmer than normal period through late July, a cooler and wetter period of monsoon flow has moderated wildland fire conditions for the Teton Interagency Dispatch area. Over the past 30 days, area weather stations received from 1-3” inches of rain. Soil moisture is forecast to remain wetter than normal through November. Outlooks for late summer and early fall call for a return to normal temperatures and normal to drier moisture patterns, with a warmer/drier outlook for late fall.

- Fire danger is at Moderate as of August 8 for Bridger-Teton National Forest / Grand Teton National Park and no fire restrictions are in place. Last year at this time we were at High Fire Danger, and in 2021 we were in Stage 1 Fire Restrictions.
- **Normal fire potential** for August-October, per the Great Basin Coordination Center’s monthly outlook: https://gacc.nifc.gov/gbcc/predictive/docs/monthly.pdf
- Daily updates for GBCC Fire Potential Briefing and outlooks: https://gacc.nifc.gov/gbcc/outlooks.php

During an average fire season, based on a 20-year fire history from 2001-2020, Bridger-Teton National Forest will average 52 unplanned fires (32 natural starts per year, and 20 human-caused fires) for an average of 16,522 acres per year. Grand Teton National Park will average 10 unplanned fires (six natural starts per year, and four human-caused fires) for an average of 1332 acres per year. Current information on fire conditions, indices and fire activity is at www.tetonfires.com, with regional and national outlooks at https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/predictive-services/outlooks.

1. 30-day and 60-day Temperatures

WARMER EARLY SUMMER. The past 30-day period was warmer than normal while the past 60-day period was cooler than normal to the north and warmer in sections of the West/East zones).

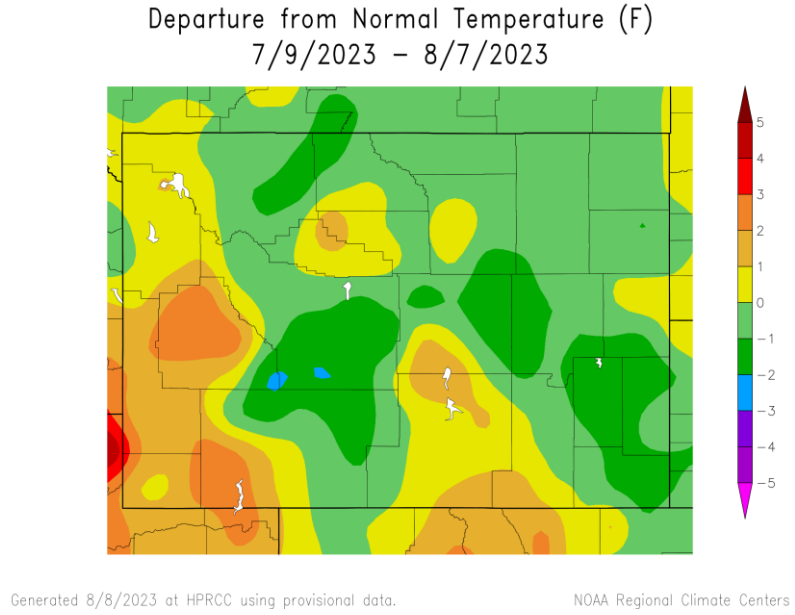


Figure 1a. Departure from Normal Temperature, Wyoming, prior 30 days through 08/07/2023. *https://hprcc.unl.edu/products/maps/acis/hprcc/wy/30dTDeptHPRCC-WY.png.*

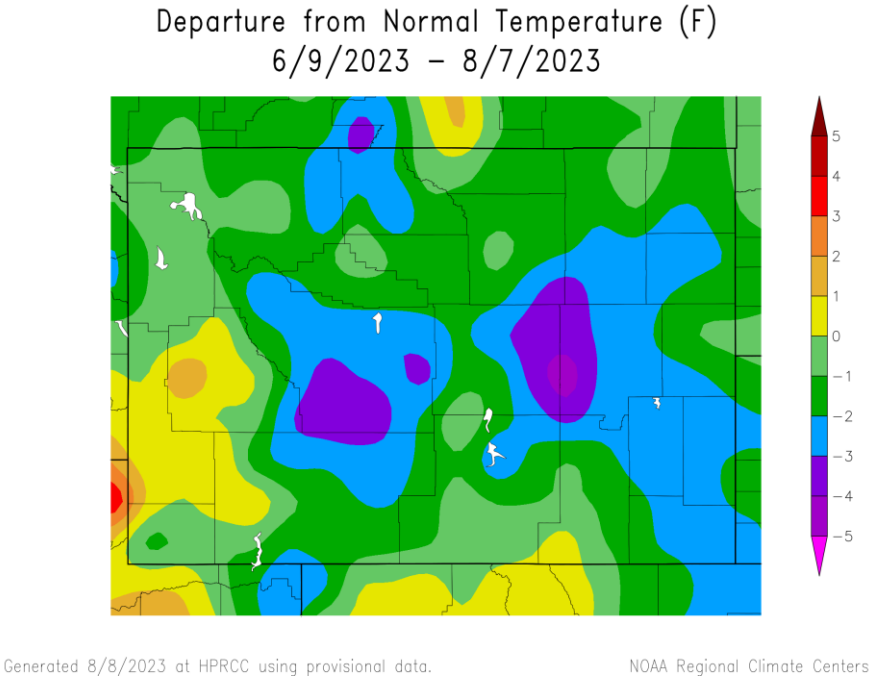


Figure 1b. 60-Day Departure from Normal Temperature, Wyoming, ending 08/07/2023. *https://hprcc.unl.edu/products/maps/acis/hprcc/wy/60dTDeptHPRCC-WY.png*

2. Precipitation

Area precipitation analyses for the past 30 and 90 days both reflect wetter than normal conditions.

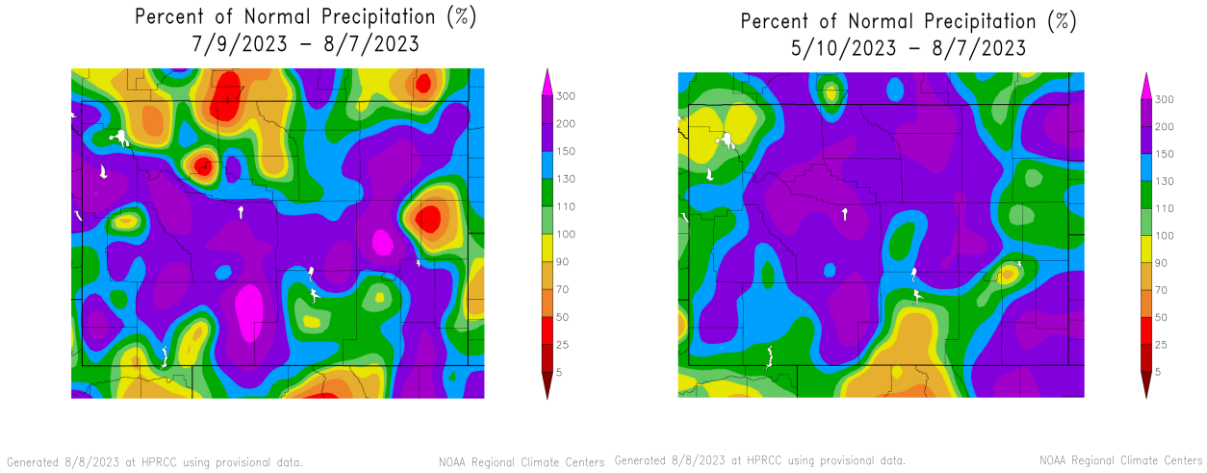
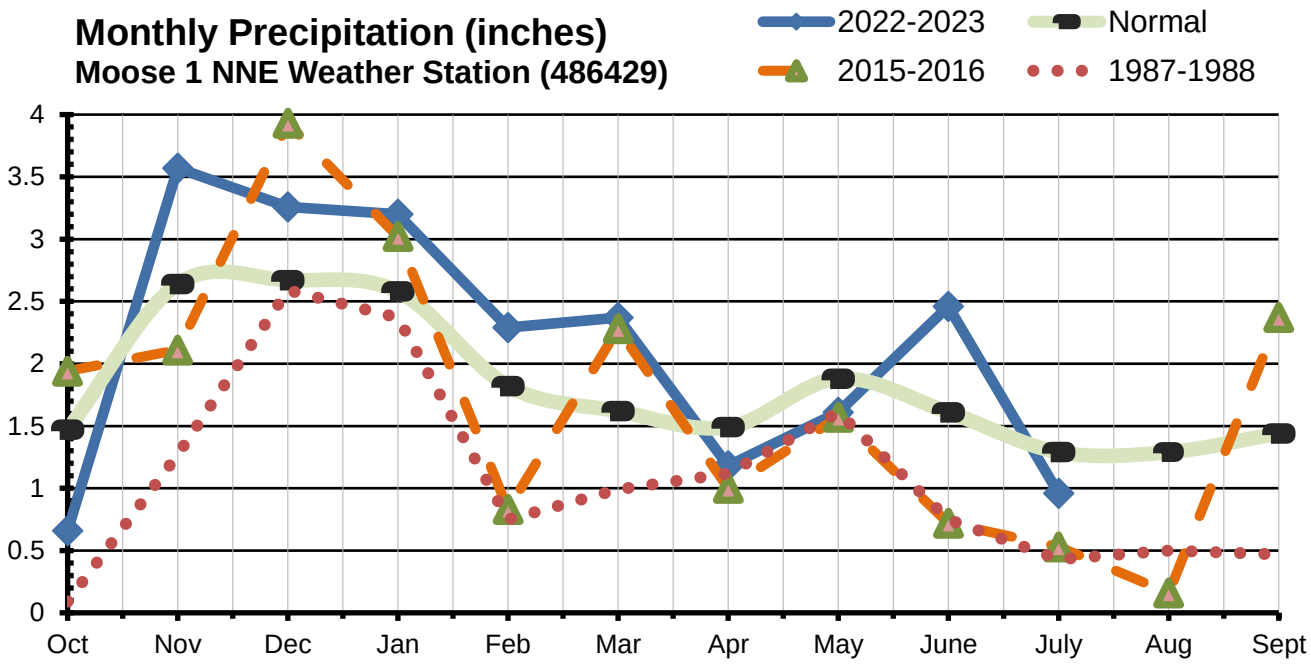


Figure 2a (left) and 2b (right). *Wyoming, Percent of Normal Precipitation, past 30 and 90 days.*

Precipitation tracking through July 2023 at Moose 1 NNE WY Climate Weather Station -- an automated Climate Reference Station in the dispatch area -- is representative for lower elevation sites in Grand Teton National Park and some North Zone sites. The station recorded 112% of normal for water year-to-date, compared to 101% for last year at this time and 94% for 2016, a prior active fire year. Three of the past four months recorded below-normal precipitation. Compared to the 30-year precipitation record, the past three months received 101% of normal, with May and July below normal and June at 153% of normal.



		Jan	Feb	Mar	April	May	June	July	YTD total
Precipitation	1987-88	2.37	0.75	0.99	1.12	1.61	0.75	0.43	11.97
(inches)	1999-00	2.27	5.04	1.03	0.4	1.38	0.59	0.36	13.85
	2015-16	*3.02*	*0.83*	*2.28*	*1*	*1.57*	*0.72*	0.53	17.93
	2021-22	3.09	0.45	1.17	3.1	2.49	1.72	0.4	19.18
	Normal	*1.49*	*1.88*	*2.58*	*1.82*	*1.62*	*1.61*	*1.29*	*19.07*
	2022-23	**3.2**	**2.29**	**2.37**	**1.18**	**1.61**	**2.46**	**0.96**	**21.56**
Percent of NORMAL	*1987-88*	92%	40%	63%	75%	84%	47%	33%	63%
	1999-00	88%	267%	66%	27%	72%	37%	28%	73%
	2015-16	117%	46%	141%	67%	84%	45%	41%	94%
	2021-22	120%	25%	72%	208%	132%	107%	31%	101%
	2022-23	**124%**	**126%**	**146%**	**79%**	**86%**	**153%**	**74%**	**113%**

Table 2 - Graph and Table: Precipitation, Moose Weather Station (Grand Teton National Park).

3. Drought Monitor

As of August 1 (prior to much of the monsoon moisture), Northwest Wyoming is in Abnormally Dry conditions with limited areas of Moderate Drought. The rest of the state is not exhibiting drought conditions. With the cooler/wetter period in late July into mid-August, drought is likely to mitigate and fuels may experience delayed seasonal curing. The potential for freezing temperatures in late August/early September may make fuels available in some elevations and drier sites.

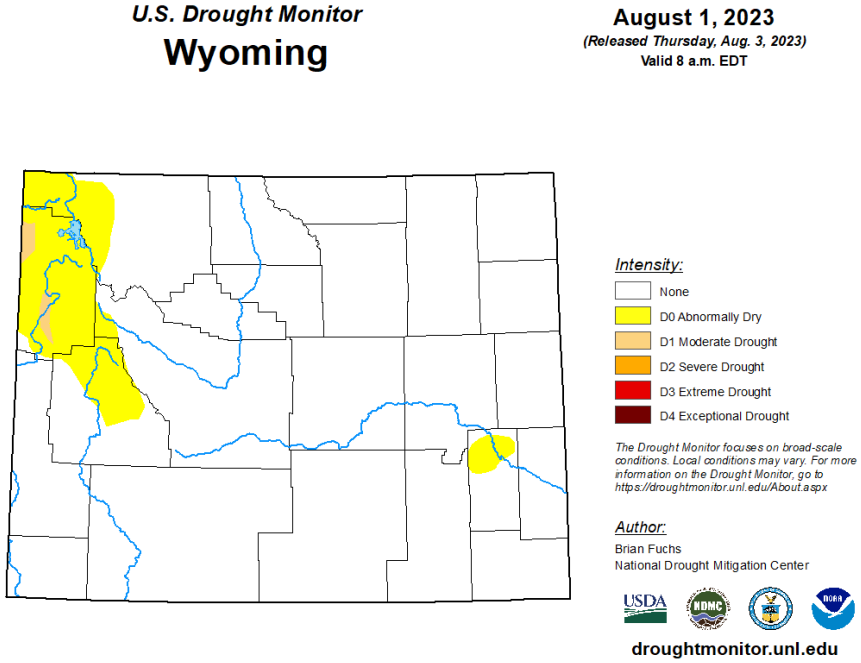


Figure 3a. U.S. Drought Monitor – Wyoming – August 1, 2023. Wyoming | U.S. Drought Monitor (unl.edu)

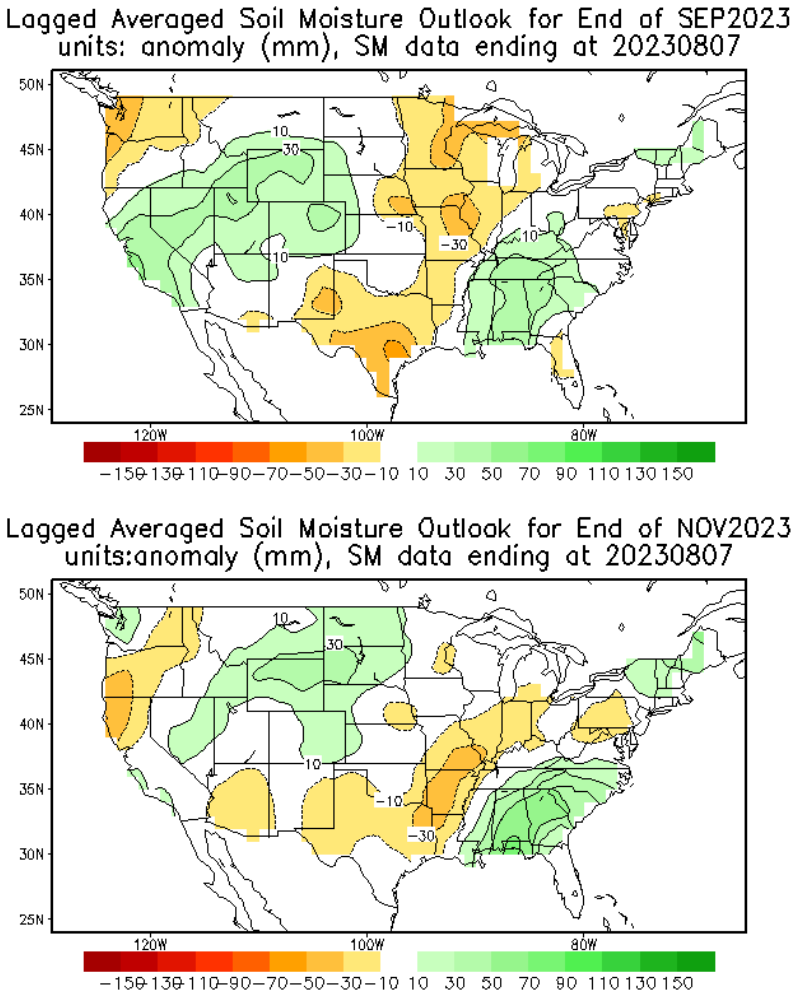


Figure 3b. Soil Moisture Outlooks for end of August and October 2023.
https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Outlook/CAS/SM.shtml

4. Fuel Moisture

Sampling in Bridger-Teton National Forest and Grand Teton National Park for late July (prior to monsoon moisture) show normal fuel moisture, with some (such as 1000 hours) drier than normal. Not all sites are on the NFMD, due to database/network issues.

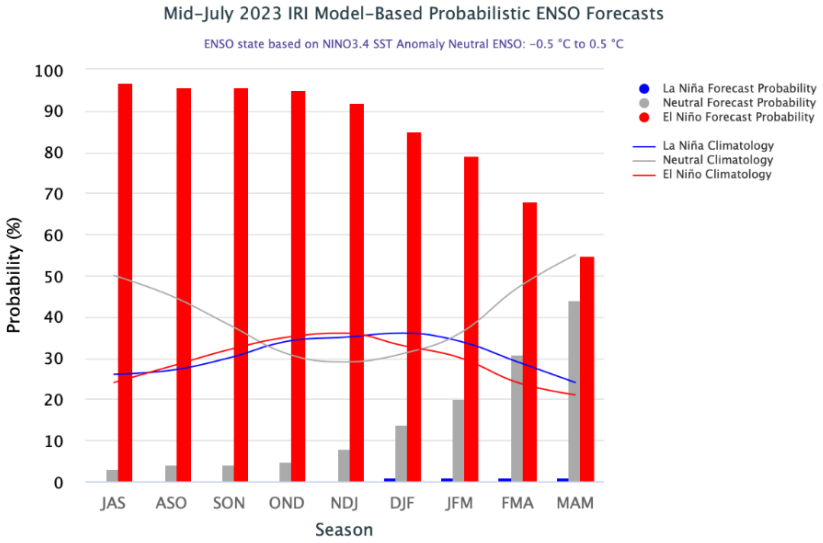
SITE TYPE	FUEL TYPE	East Zone BTNF	West Zone BTNF	North Zone BTNF	Grand Teton NP
Sagebrush	LH Grass				106%
	LW Sagebrush		180%	176%	113%
Conifer	LH Grass			170%	142%
	LW Lodgepole		102%		113%
	LW Fir (Douglas/Subalpine)		SF: 110%	DF: 136%	DF: 109%
	1000 Hour Dead		11%	16%	15%

National Fuel Moisture Database: Current Fuel moistures in Bridger-Teton NF and Grand Teton NP.

5. El Niño / La Niña / ENSO-Southern Oscillation)

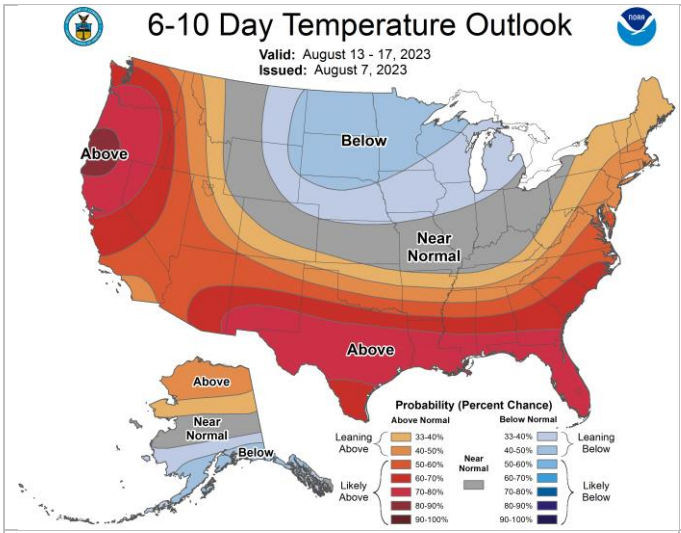
The mid-month ENSO Forecasts (Figure 5 below - [IRI – International Research Institute for Climate and Society | Quick Look (columbia.edu)]) tracks *El Niño* (warm) and *La Niña* (cool) events in the tropical Pacific. *El Niño* conditions are forecast to continue through early winter of 2024. In the US West, [El Nino impacts in summer may be weak or inconsistent] with greater impacts typically occurring in winter.

Current *El Niño* conditions will likely continue, with high probabilities for *El Niño* conditions through August-December and continuing near or above 80% through March 2024.

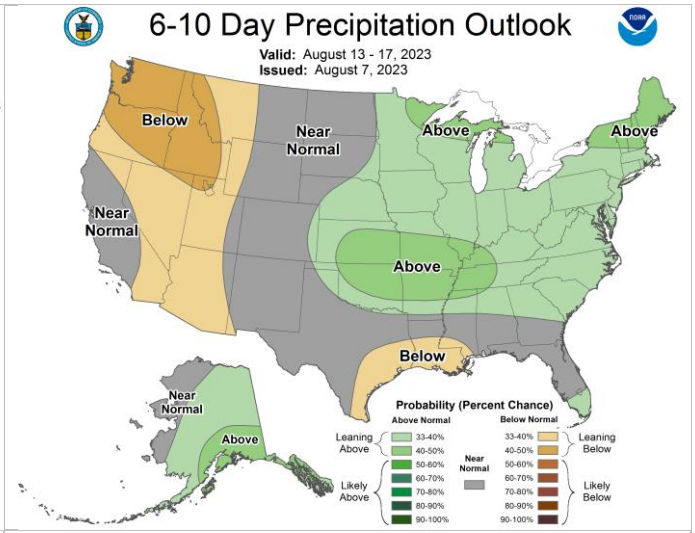


6. Temperature and Precipitation Outlooks

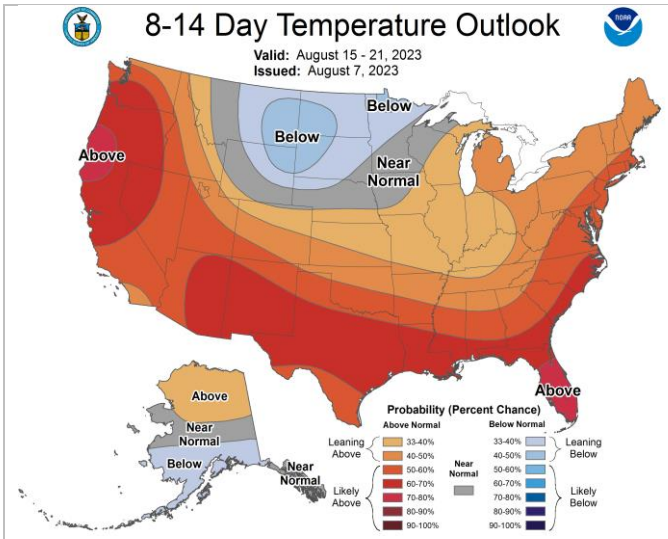
Most outlooks call for warmer or near-normal temperatures and slightly drier or normal precipitation for July into September.



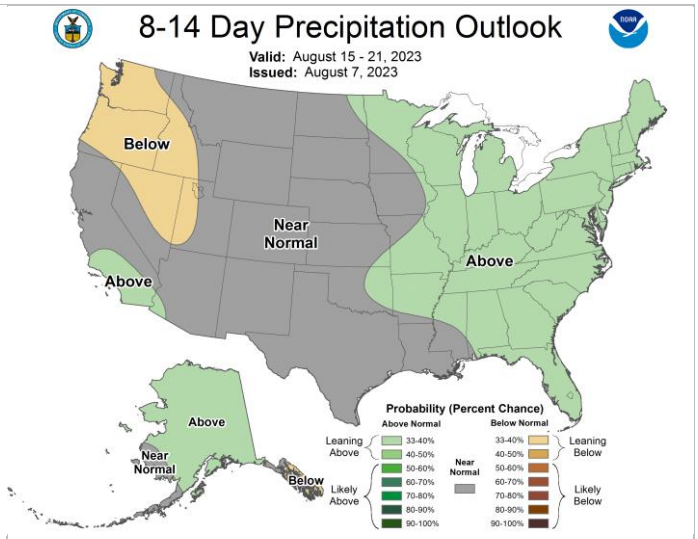
[6-10 Day Temperature Outlook]



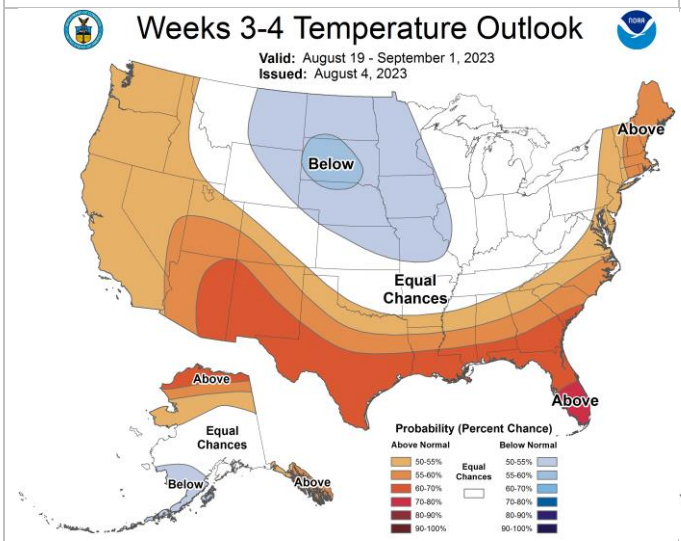
[6-10 Day Precipitation Outlook]



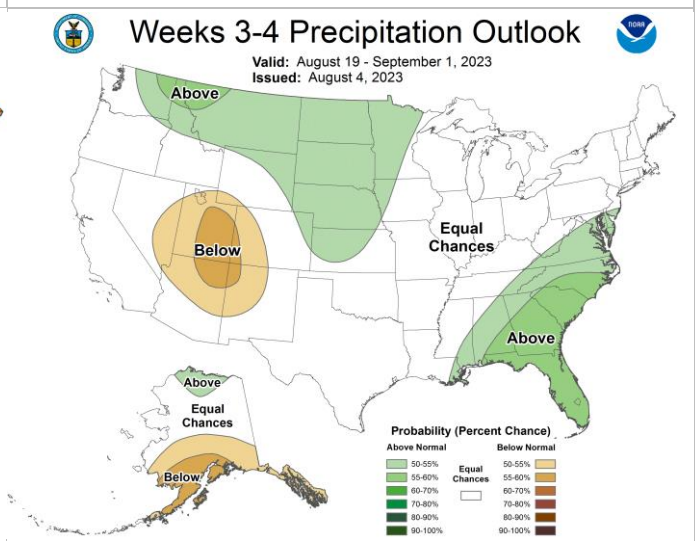
[8-14 Day Temperature Outlook]



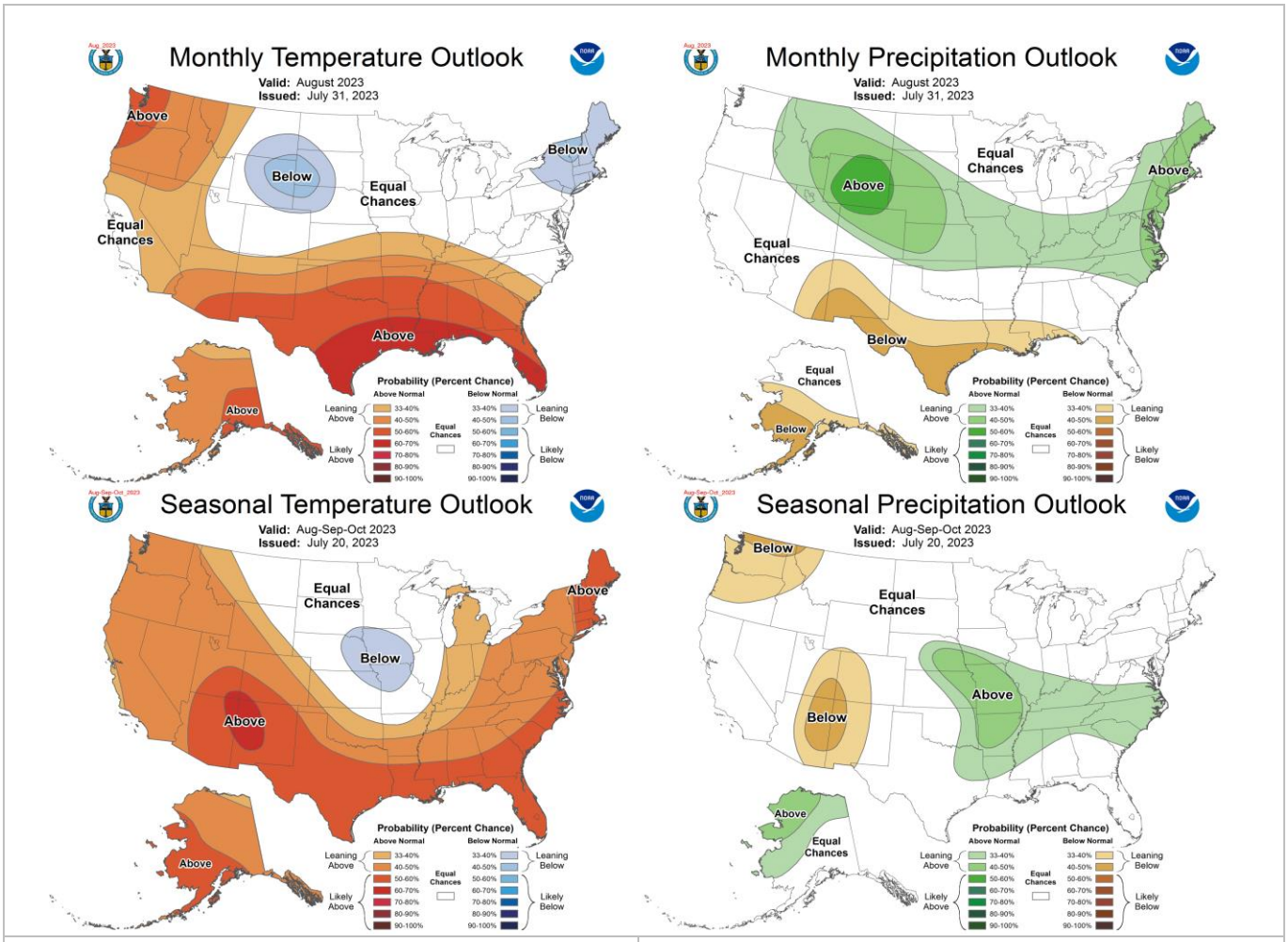
[8-14 Day Precipitation Outlook]



[3-4 Week Temperature Outlook]



[3-4 Week Precipitation Outlook]



Temperature | Precipitation

GEOGRAPHIC AREA OUTLOOKS

The Teton Area fire zone is within the Great Basin Geographic Area. Fire seasons in our zone also track with similar conditions in adjacent areas within the Rocky Mountain and Northern Rockies geographic areas, which converge within the Greater Yellowstone Area (GYA) and share common trends of fire activity.

The season outlooks excerpted below support an outlook for normal fire activity in the Teton Interagency Dispatch area, with potential for above-normal fire activity in July in the eastern Great Basin, transitioning in August to above normal fire activity in the northern and western areas of the Great Basin Geographic Area.

Excerpts of current national and regional outlooks from "National Wildland Significant Fire Potential Outlook" (NIFC Predictive Services).

National – Executive Summary (excerpts)

Significant fire activity increased in July, especially during the latter half as the national preparedness levels increased from two to three (scale one to five) on July 21. Much of the significant fire activity was in the Southwest Geographic Area, but the Northern Rockies and Northwest Geographic Areas have multiple long-duration incident management team wildfires on the landscape. Initial attack increased across the West throughout July, including in Southern Area late in the month, with new large wildfires emerging. Alaska had its slowest season on record until the last week of July when dozens of new wildfires, including several large

wildfires, ignited due to prolific lightning and moderately receptive fuels. Year-to-date acres burned for US is well below the 10-year average at 31%, with a below average number of fires at about 89% of average.

Past Weather and Drought

Warmer and drier than normal conditions developed across the West in July, mostly due to the late arriving and weak North American Monsoon. Record breaking temperatures were observed across the southwestern US into Texas as a prolonged heat wave lasted much of July. Abnormally dry and drought conditions developed and expanded from the Lower Mississippi Valley through the southwestern US, with intensifying and expanding drought across parts of the Northwest and northern Rockies. Localized drying was also observed on portions of the northern Plains into the Upper Midwest and western Great Lakes. However, above normal rainfall and mostly near to below normal temperatures ameliorated drought in portions of the southern and central Plains, Midwest, Ohio Valley, Mid-Atlantic, and Northeast.

Climate and Fire Potential Outlooks

Climate Prediction Center and Predictive Services monthly and seasonal outlooks depict likely above normal temperatures for the West, South, and East Coast into fall. Below normal precipitation is likely for the Southwest and likely into the broader Four Corners region as the North American Monsoon should continue to be below average this summer. Below normal precipitation is also forecast in portions of the Pacific Northwest, northern Rockies, and perhaps the western Great Lakes and Upper Midwest. Short-term below normal rainfall is likely for portions of the Southeast and Texas, but above normal rainfall is forecast from eastern portions of the Plains into the Southeast and Ohio Valley late summer into fall.

El Niño continues in the equatorial Pacific Ocean, with warmest sea surface temperature (SST) anomalies in the eastern equatorial Pacific Ocean. SSTs are consistent with a weak El Niño, and atmosphere responses to El Niño are being observed. The Climate Prediction Center forecasts a greater than 90% chance of El Niño conditions continuing through winter, with about a 50/50 chance of a strong El Niño developing this fall. Other teleconnection patterns, such as the Madden Julian Oscillation (MJO), Pacific Decadal Oscillation, and Pacific-North American Pattern may influence weather and climate during the outlook period, but El Niño will be the main driver through the outlook period.

Great Basin

Fire activity picked up across the Great Basin in July. Initial attack fires increased from near daily thunderstorms over central and eastern areas of the Great Basin. There have not been any issues with these fires yet due to the increase in relative humidity and some showers. However, fire activity has been increasing in central Idaho due to rapidly drying fuels and the lack of precipitation. Much warmer temperatures in July accelerated the curing process, and sagebrush live fuel moisture has been dropping across the Great Basin. The monsoon was significantly delayed this year, but there were pulses of moisture in July and more are expected heading into early August, especially across Utah, Arizona and at times, southern and eastern Nevada. Due to the moisture expected to push north, southern, and eastern areas of the Great Basin should see a return to normal fire potential. Parts of eastern or northeast Nevada, or even northern Utah may be on the fringes of this moisture and will still need to be monitored for above normal potential by mid-late August. Otherwise, above normal fire potential is expected in August and September across northwest Nevada into southern and central Idaho due to carryover fine fuels and new growth, along with rapidly drying fuels at all elevations heading into August. Fire activity may return to normal regionwide by October and November.

Excerpts from Great Basin Coordination Center – Seasonal Outlook for August-October 2023:

As for future forecast weather, temperatures will be warming through August and even remain warm in September and will likely be near to above normal. The wet weather in June delayed the onset of the four corners high pressure and hence, delayed the development of monsoon moisture. The pulses of monsoon moisture that have occurred so far have been short lived and weaker than normal. Precipitation is expected to

increase across Idaho and possibly western Nevada in August and possibly September, but confidence is lower in these areas. Drier than normal conditions are expected in Utah and Arizona in August, and they may see more precipitation in September.

A return to normal fire potential is expected by October-November. El Niño is expected to last into fall and should increase precipitation chances over the southern half of the Great Basin heading into winter months.

CURRENT FIRE ACTIVITY

Teton Interagency Dispatch Center

https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/predictive-services/intelligence

Fuel curing in a dry period in July was offset by monsoon moisture flow in late July/early August, with less fire activity to date as a result, compared to prior seasons.

A total of 55 abandoned non-escape campfires have been reported to date this year compared to 77 at this time last year and 132 in 2021.

Year-to-Date Fire Activity for Teton Dispatch Center, August 7, 2023. 2023 Fire Numbers and Stats.xlsx.

Teton Interagency Fire Management Area Totals	Human Fires	Human Acres	Natural Fires	Natural Acres	RX Fires	RX Acres	Abandoned Non-escape Campfires
	6	0.65	6	0.7	5	249.25	55

Selected Sources

- Precipitation Tracking: https://water.weather.gov/precip/
- Precipitation Tracking focused on Snotel sites, Wyoming (beta site)
- Climate Prediction Center, Three-Month Outlooks: https://www.cpc.ncep.noaa.gov/products/predictions/90day/
- Drought.gov Portal / Fire: https://www.drought.gov/drought/data-maps-tools/fire
- Drought.gov Portal / Wyoming: https://www.drought.gov/states/wyoming
- Intermountain West Climate Dashboard: https://wwa.colorado.edu/climate/dashboard.html
- "National Wildland Significant Fire Potential Outlook" (first of each month during fire season, NIFC Predictive Services): https://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.
- Great Basin Area – Predictive Services/Outlooks: https://gacc.nifc.gov/gbcc/outlooks.php.
- Rocky Mountain Area – Predictive Services/Outlooks: https://gacc.nifc.gov/rmcc/outlooks1.php.
- Teton Interagency Dispatch: www.tetonfires.com / https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/.

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For further information, contact Teton Interagency Fire:

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