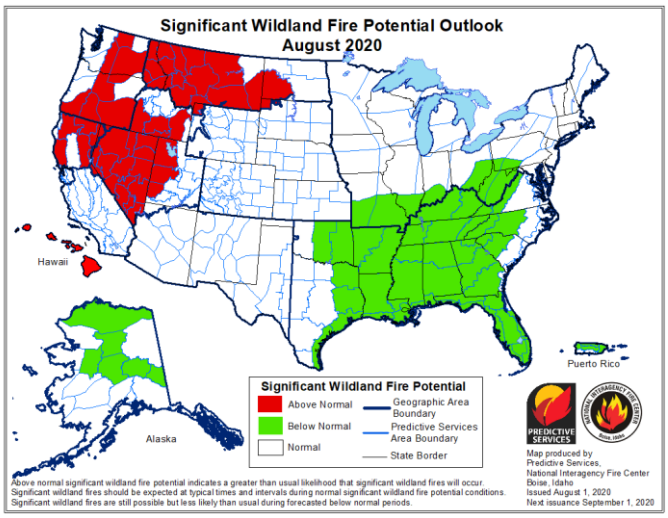
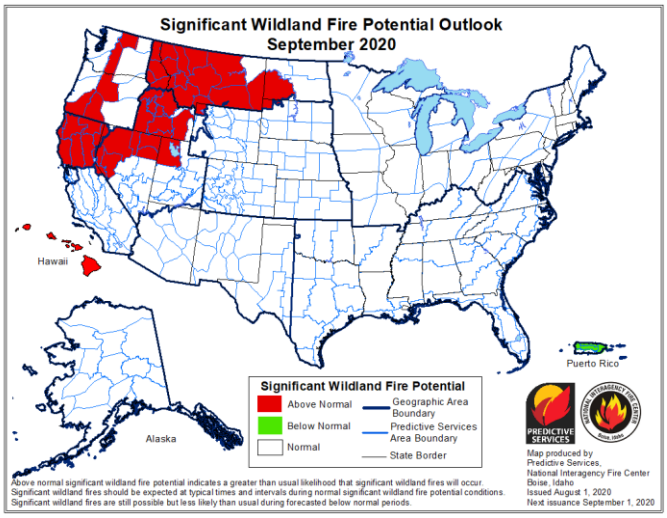
TETON INTERAGENCY FIRE

August 2020 Wildland Fire Outlook

August 4, 2020





NIFC - Significant Wildland Fire Potential - August 2020 and NIFC - Significant Wildland Fire Potential - September 2020 (issued August 1).

SUMMARY

The wildland fire outlook for the Teton Interagency Dispatch area reflects the continuing effects of a wetter than normal winter and spring, a fluctuation of drier and wetter months during green up and early summer, and cooler than normal early season conditions.

A significant green fuel load has delayed onset of fire activity during the season in areas that received high June moisture. While July was drier than normal, the strong green-up was maintained by a cooler than normal July.

Drier sites on south-facing slopes and with open fuels are becoming available for fire activity, while more shaded sites may continue to experience below normal fire conditions until seasonal curing continues into mid-August. Southwest monsoon activity is delayed and intermittent, which may result in reduced moisture flow and an increased potential for dry lightning in Wyoming.

The outlook for the Great Basin Geographic Area indicates a mix of normal and above normal fire activity to our west and north. As of August 1, outlooks in the Teton Interagency response area indicate **potential for normal fire activity for August and September.**

During a normal season, Bridger-Teton National Forest will have 67 fires for 3290 acres (40-year average from 2016) and Grand Teton National Park will average 11 unplanned fires for 1858 acres (based on a 20-year fire history, 1997-2016). In the areas within our geographic dispatch area

1. 14-day and 60-day Temperatures

COOLER SPRING continues into SUMMER. The prior two weeks were cooler than normal in much of the Teton Interagency Dispatch area. The prior two months were mostly cooler than normal.

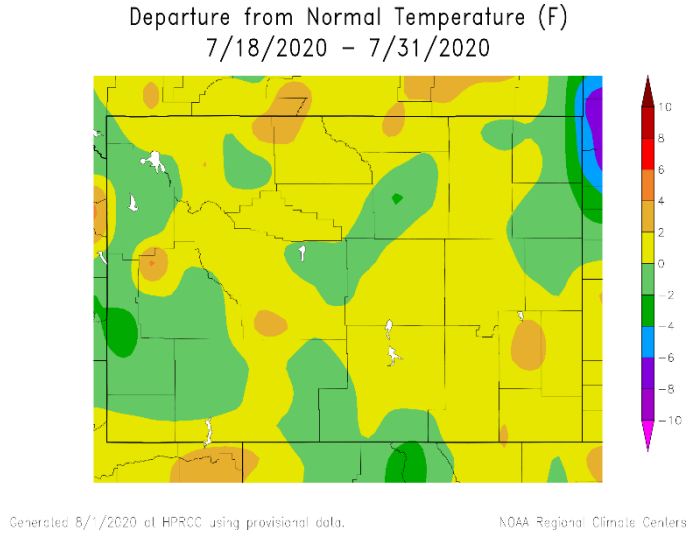


Figure 1a. 14-Day Departure from Normal Temperature, Wyoming, ending July 31, 2020. https://hprcc.unl.edu/products/maps/acis/hprcc/wy/14dTDeptHPRCC-WY.png

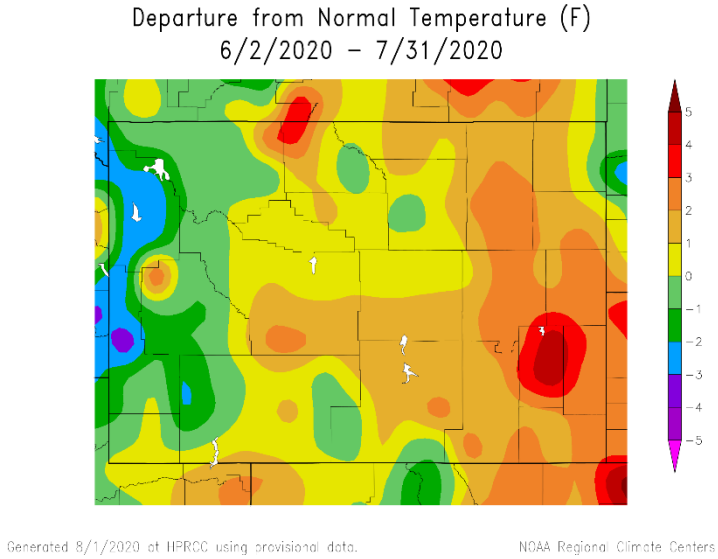


Figure 1b. 60-Day Departure from Normal Temperature, Wyoming. https://hprcc.unl.edu/products/maps/acis/hprcc/wy/60dTDeptHPRCC-WY.png

2. 30-day, 90-day, and Year-to-Date Precipitation

Area precipitation tracking for the water year to date (October through July) reflects a wetter than normal pre-season and spring followed by a drier than normal July.

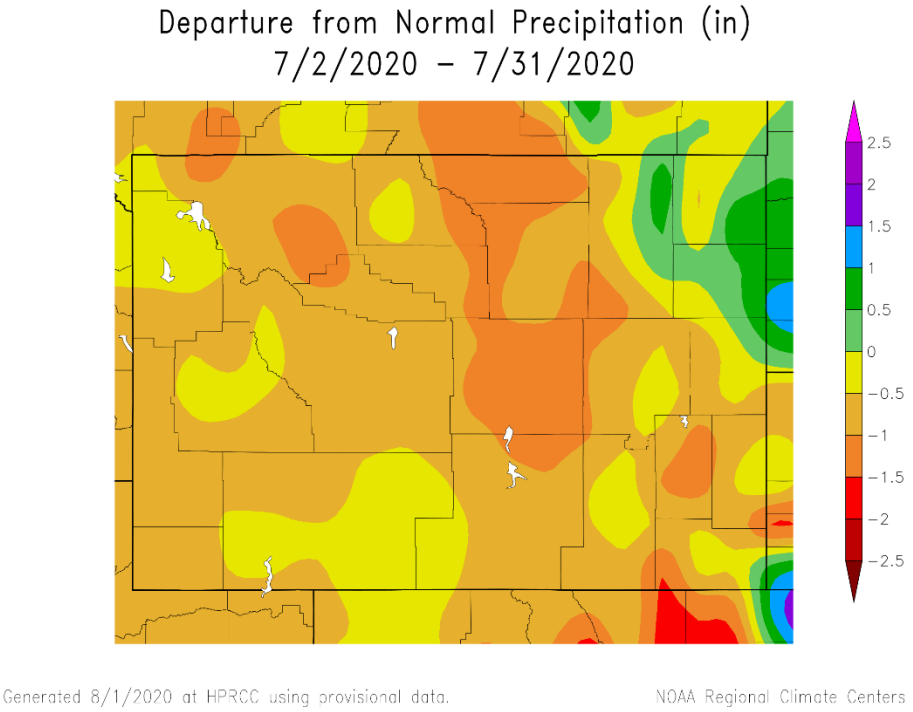


Figure 2a. Current Precipitation – Departure from Normal for the past 30 days shows Western Wyoming receiving below-normal precipitation. Wyoming is drier than normal with above normal precipitation in the far northeast and southeast. [HPRCC - 30 Day Departure from Normal - Wyoming- Permalink].

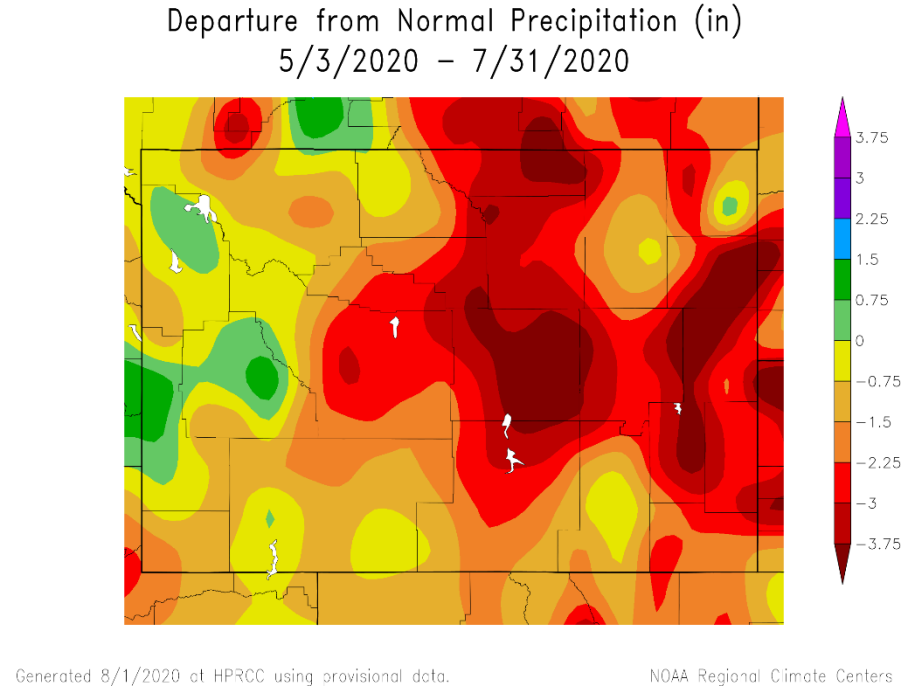


Figure 2b. For the past 90 days of *Departure from Normal Precipitation,* the Teton Dispatch area was balanced between drier and wetter than normal. Wyoming is generally drier than normal. [HPRCC - 90 Day Departure from Normal - Wyoming- Permalink]

Precipitation tracking at the Moose 1 NNE climate reference station, an automated station in the US Climate Reference Network, is representative of long-term trends in lower elevation sites in Grand Teton National Park and some North Zone sites. This site recorded above average precipitation for five of the past seven months. In the prior three months the station received 98% of average precipitation. This July was among the driest 11 percent over the 61-year period of record.

		Jan	Feb	Mar	Apr	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
	2018-19	1.56	7.83	0.78	3.04	1.5	1.06	2.14	22.94
	Normal	*1.49*	*1.88*	*2.58*	*1.82*	*1.62*	*1.61*	*1.29*	*19.07*
	2019-20	4.09	2.36	2.43	2.78	1.52	2.9	**0.43**	**20.82**
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%
	2018-19	60%	430%	48%	204%	80%	66%	166%	120%
	2019-20	159%	130%	150%	187%	81%	180%	**33%**	**109%**

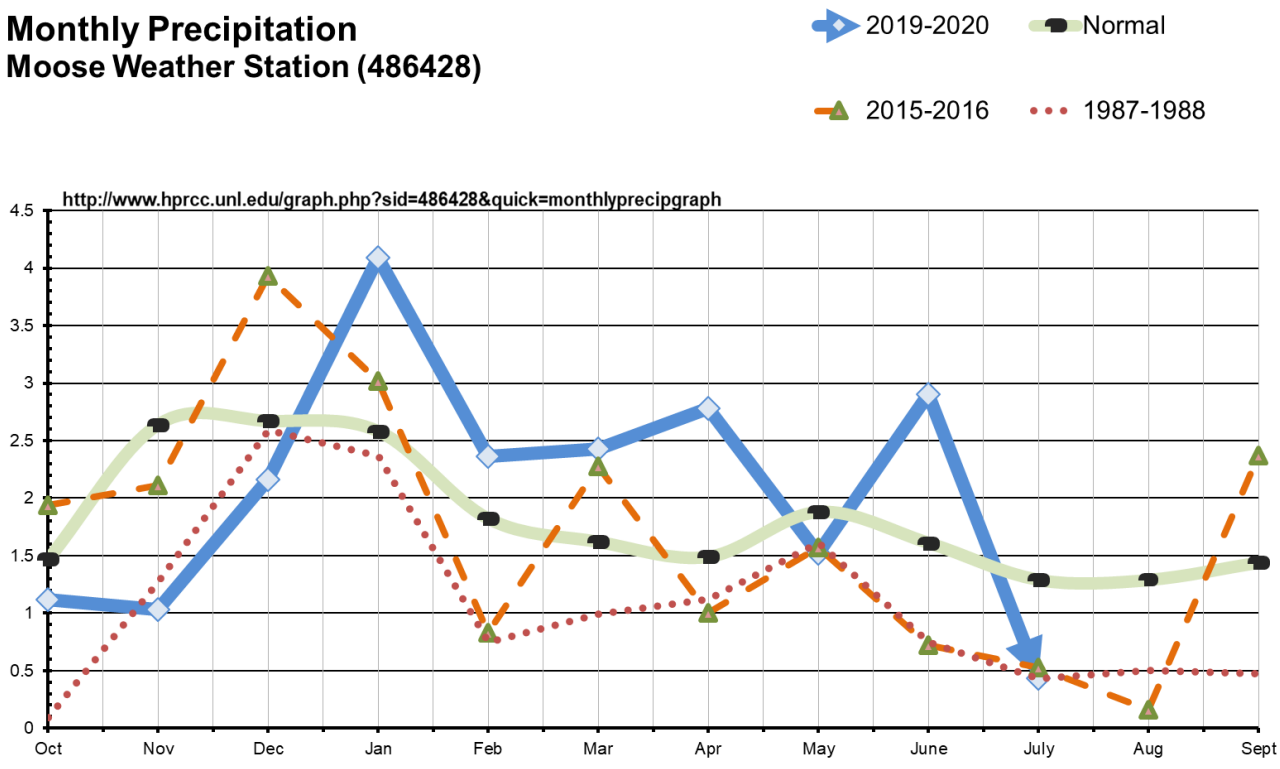


Table 2c and Graph: Precipitation at Moose Weather Station (Grand Teton National Park).

3. Drought Monitor

The U.S. Drought Monitor places 74% of the West in some level of drought conditions, compared to 17% at this time last year. For Wyoming, 35% is in severe to extreme drought, and 86% of the state is in drought or abnormally dry conditions compared to 8% at this time last year. The Dispatch area is primarily experiencing normal conditions with abnormally dry or moderate drought to the east and south.

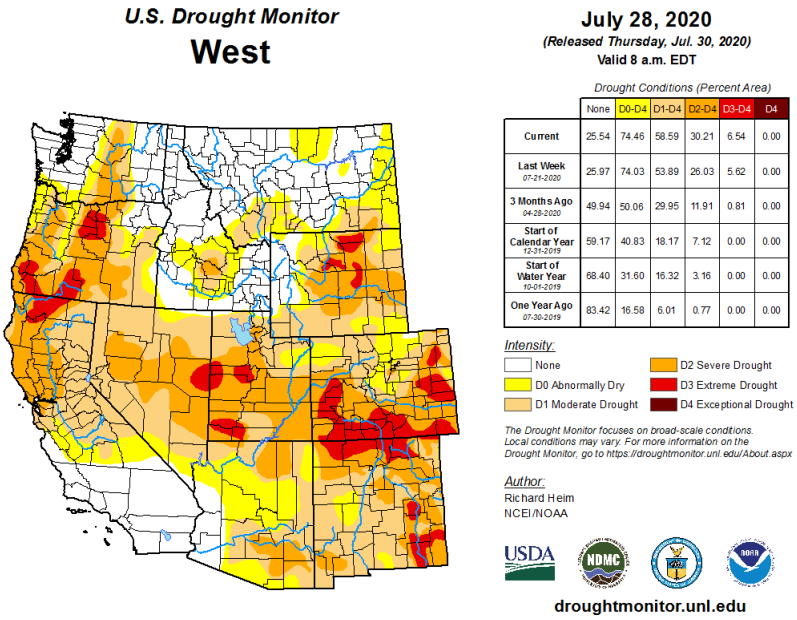


Figure 3a. U.S. Drought Monitor – West.
https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?West

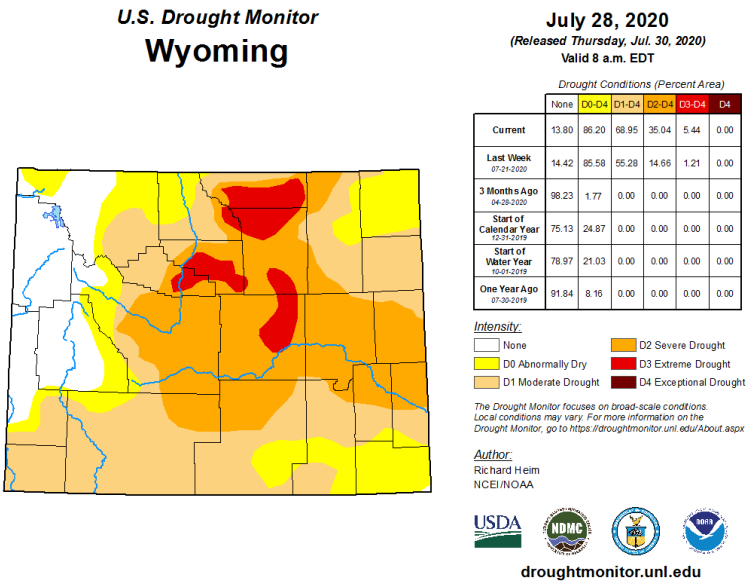


Figure 3b. U.S. Drought Monitor – Wyoming.
http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?WY

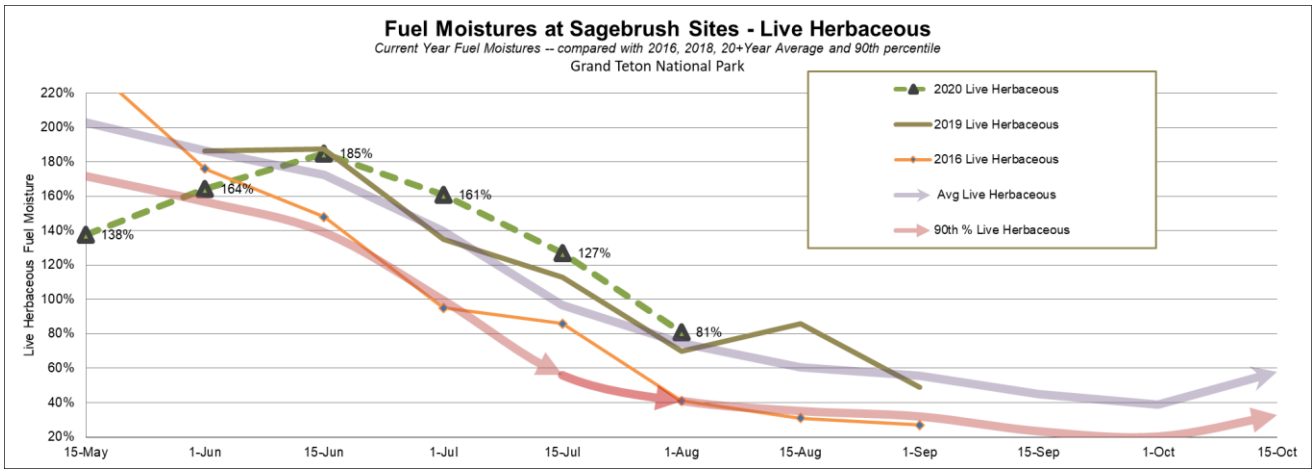
4. Fuel Moisture

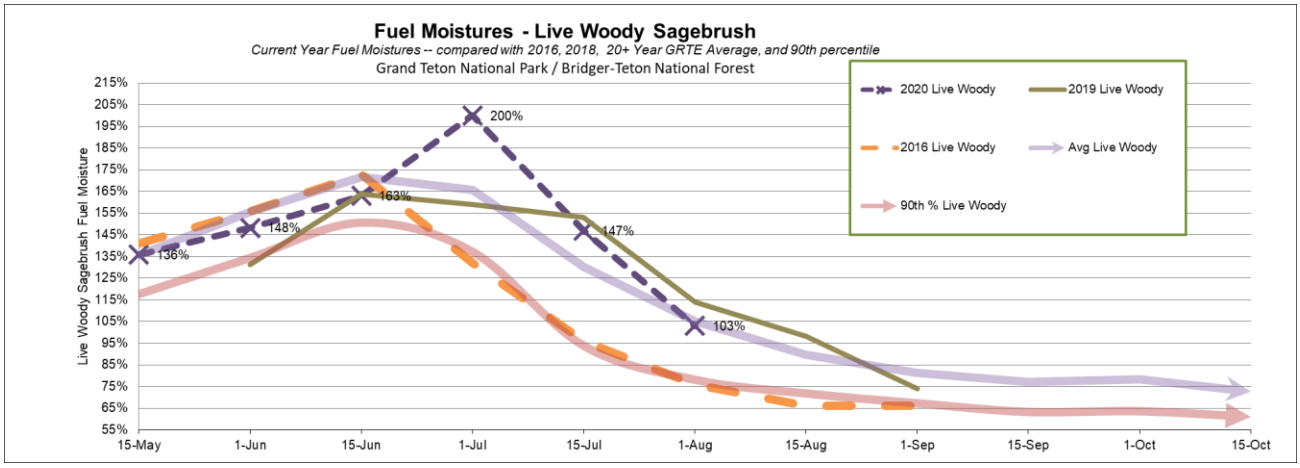
Fuels were generally wetter than normal for mid- to late July. By early August fuels are trending toward normal or drier than normal, with drier sites – on south-facing slopes, open well-drained flats and foothills, and to the south in the East/West zones of BTNF -- becoming available for fire activity due to seasonal curing and a drier than normal July. Though recent site-based fuel moisture samples don't yet indicate this, with expected warmer-drier than normal conditions we may expect some sagebrush/grass fuel types to be available for fire below 7000 ft and with moderate winds.

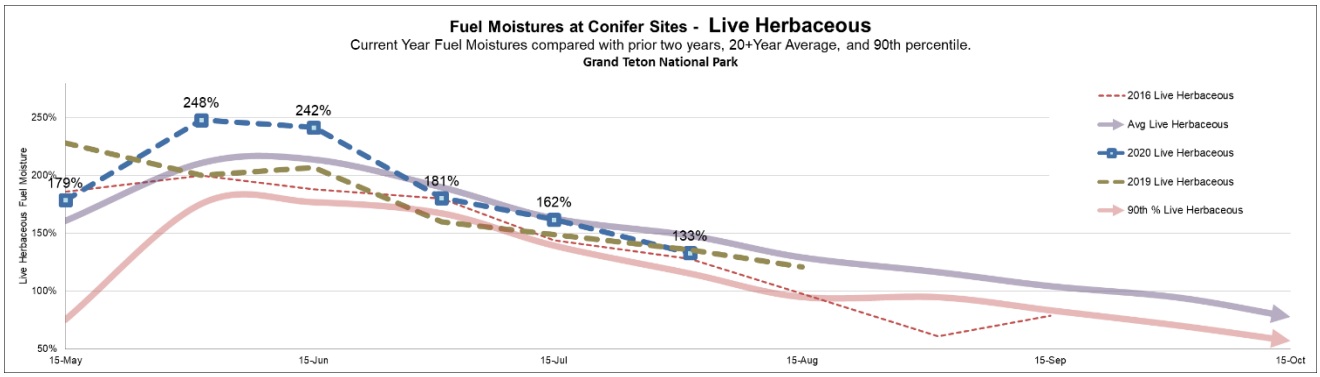
- **1000 Hour Dead Fuel Moisture:**
  - At Bridger-Teton NF sampling sites, the 1000 hour fuels (heavy dead and downed logs) averaged **14%** (ranging from 11-21%) for August 1.
  - At Grand Teton the 1000 hour fuels for August 1 averaged **15%**, which is drier than normal for park sites for early August.
- **Live Woody Fuel Moisture - Conifers**:
  - Average of **113%** (ranging from 97-140%) at lodgepole pine at Bridger Teton NF sampling sites for August 1.
  - Average of **121%** (ranging from 110-131%) at Grand Teton sampling sites for lodgepole and Douglas fir for August 1 -- midway between normal and 90th percentile for this date.
- **Live Woody Fuel Moisture - Sagebrush:**
  - On Bridger-Teton NF sites, fuel moisture averaged **149%** on July 15 and dropped to **126%** average by August 1 (for Wyoming Big, Threetip and Silver Sagebrush combined). Wyoming Big Sagebrush at Half Moon, with 114% fuel moisture, is trending similarly with the GTNP sites.
  - Teton NP averaged **103%** (Mountain Big Sagebrush), which is trending at normal moisture levels for August 1.

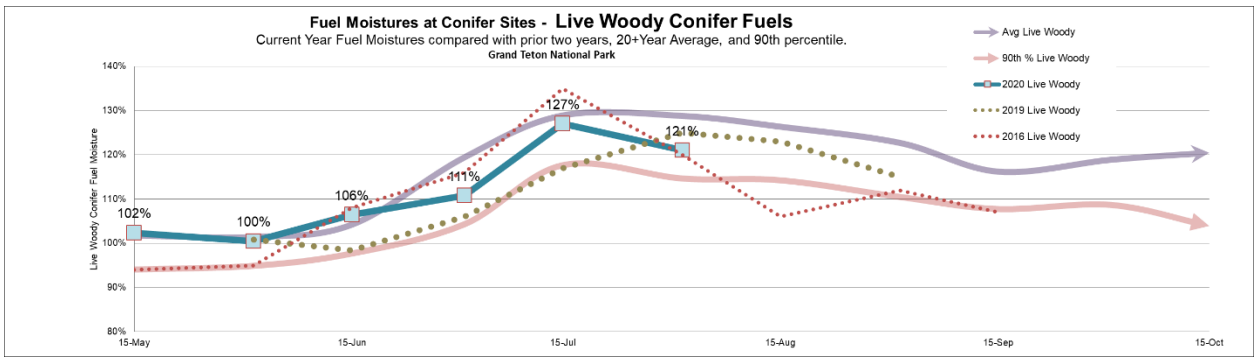
Additional fuel moisture data is available at the National Fuel Moisture Database: Current Fuel moistures in Bridger-Teton NF and Grand Teton NP.

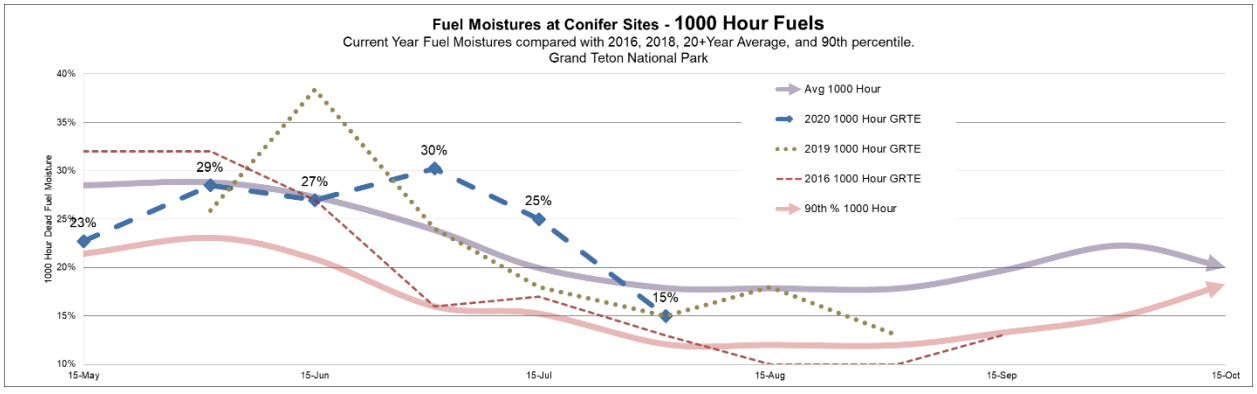
At long-term sampling stations in Grand Teton National Park, the growing season reflected a wetter than normal winter that opened with a dry May followed by a wet June and an even drier July. Mid-season fuel moistures are in normal ranges in sagebrush sample sites in the park (see charts below). In conifer sites, 1000 hour dead fuels and live herbaceous and live woody conifer fuel moistures are normal to slightly drier than normal for August 1, reflecting the drier than normal July moisture patterns.




Fuel Moistures - Live Woody Sagebrush
Current Year Fuel Moistures -- compared with 2016, 2018, 20+ Year GRTE Average, and 90th percentile
Grand Teton National Park / Bridger-Teton National Forest
Live Woody Sagebrush Fuel Moisture
2020 Live Woody
2019 Live Woody
2016 Live Woody
Avg Live Woody
90th % Live Woody
136%
148%
163%
200%
147%
103%
15-May
1-Jun
15-Jun
1-Jul
15-Jul
1-Aug
15-Aug
1-Sep
15-Sep
1-Oct
15-Oct


Fuel Moistures at Conifer Sites - Live Herbaceous
Current Year Fuel Moistures compared with prior two years, 20+Year Average, and 90th percentile.
Grand Teton National Park
Live Herbaceous Fuel Moisture
2016 Live Herbaceous
Avg Live Herbaceous
2020 Live Herbaceous
2019 Live Herbaceous
90th % Live Herbaceous
179%
248%
242%
181%
162%
133%
15-May
15-Jun
15-Jul
15-Aug
15-Sep
15-Oct


Fuel Moistures at Conifer Sites - Live Woody Conifer Fuels
Current Year Fuel Moistures compared with prior two years, 20+Year Average, and 90th percentile.
Grand Teton National Park
Live Woody Conifer Fuel Moisture
Avg Live Woody
90th % Live Woody
2020 Live Woody
2019 Live Woody
2016 Live Woody
102%
100%
106%
111%
127%
121%
15-May
15-Jun
15-Jul
15-Aug
15-Sep
15-Oct

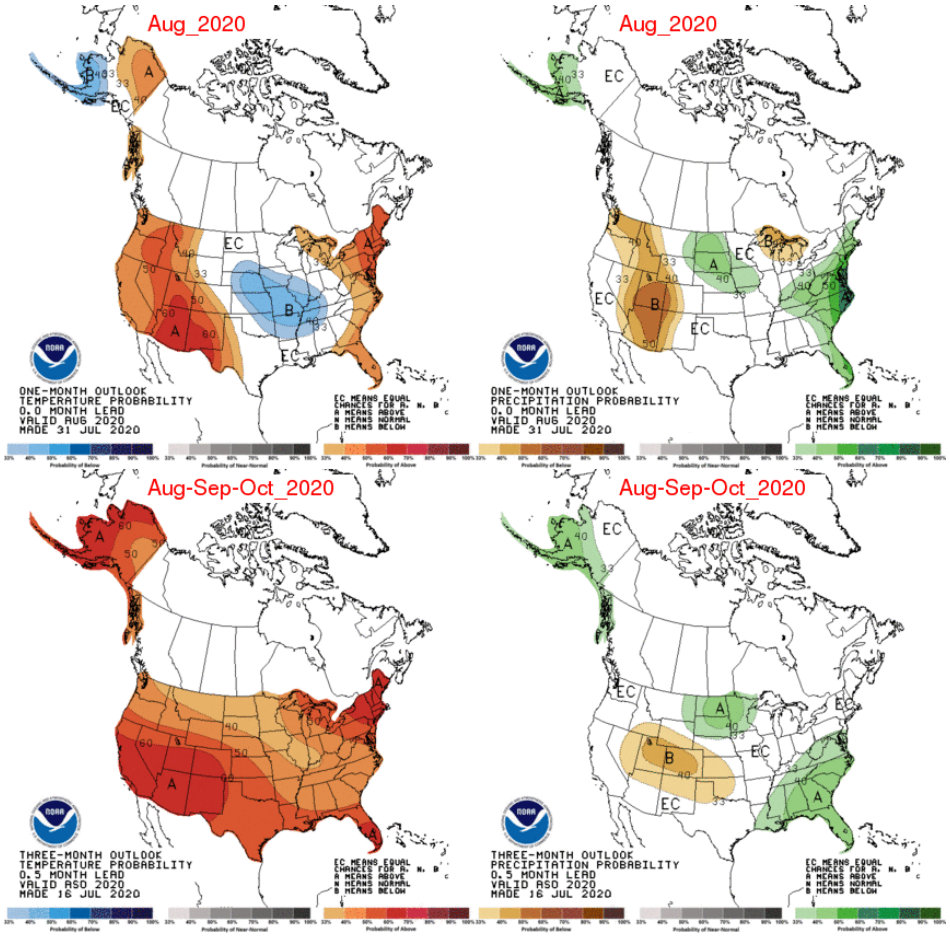

Fuel Moistures at Conifer Sites - 1000 Hour Fuels
Current Year Fuel Moistures compared with 2016, 2018, 20+Year Average, and 90th percentile.
Grand Teton National Park
1000 Hour Dead Fuel Moisture
Avg 1000 Hour
2020 1000 Hour GRTE
2019 1000 Hour GRTE
2016 1000 Hour GRTE
90th % 1000 Hour
23%
29%
27%
30%
25%
15%
15-May
15-Jun
15-Jul
15-Aug
15-Sep
15-Oct

5. Season Temperature and Precipitation Outlooks

For our region, the 30-day outlooks for temperature (left) and precipitation (right) for August indicate an outlook for normal to warmer-than-normal temperatures and equal chances for below-normal, normal to above-normal precipitation. The 90-day outlooks for August through September indicate a higher probability for warmer and drier conditions, a reflection in part of the delayed onset and intermittent Southwest monsoon season.

TEMPERATURE *PRECIPITATION*

Figure 6: 30- and 90-day Outlook. August and August through October.



http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.gif.

6. Oceanic Niño Index (El Niño / La Niña / ENSO-Southern Oscillation)

BACKGROUND: The Oceanic Niño Index (ONI) (http://ggweather.com/enso/oni.htm) offers a streamlined tool for tracking El Niño (warm) and La Niña (cool) events in the tropical Pacific.

CURRENT STATUS **ENSO-neutral is favored to continue through the summer, with a 50-55% chance of La Niña development during Northern Hemisphere fall 2020 and continuing through winter 2020-21 (~50% chance).** Potential impacts for the region include a higher probability of a warmer-wetter trend in late autumn if the **La Niña transition** occurs.

- Monthly updates: http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/.
- ENSO Climate Risk Maps (by month): https://wrcc.dri.edu/Climate/enso_risk_maps.php.

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 outlooks excerpted below support an outlook for normal fire activity in the Teton Interagency Dispatch area, with potential for above normal fire activity in August in the much of the Great Basin except for southern Utah and Wyoming. By September, above normal fire activity will transition to the northern and western areas of the Great Basin Geographic Area (see maps, page 1).

Excerpts: "National Wildland Significant Fire Potential Outlook," August 1, 2020, NIFC Predictive Services. http://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.

National – Executive Summary (excerpts)

August represents the peak of fire season for the West and Above Normal significant fire potential is expected across much of the Great Basin, northern California, Pacific Northwest, and northern Rockies. The North American Monsoon is forecast to remain intermittent, which will provide chances of lightning without moisture surges extending into portions of the Great Basin, California, Pacific Northwest, and northern Rockies. Given the dry fuels, any lightning will likely result in increased fire activity and above normal significant large fire potential into September.

Weather and Climate Outlooks

The delayed onset of the North American Monsoon resulted in and eastward shift of the moisture across the Southwest, Four Corners, Colorado Rockies, and the Plains resulted drier than normal conditions in the southeast California and much of the Great Basin and Arizona. With a suppressed upper-high and consistent upper-level trough passages across the northern CONUS, temperatures were near normal across the West with below normal temperatures and above normal precipitation across much of the northern Rockies and northern Plains.

An active northerly storm track brought consistent upper-level trough passages across the northern tier of the CONUS with weak upper-level troughing over and near the West Coast. This also resulted in suppressing upper-level ridging over the West, which delayed onset and limited moisture intrusions into the Southwest and Intermountain West via the North American Monsoon. Multiple easterly waves moved over portions of the Southeast and Gulf Coast during the last half of the month culminating in Hurricane Hanna making landfall near Corpus Christi, Texas. This pattern resulted in above average precipitation and below average temperatures across much of the northern Rockies and northern High Plains. Cooler than average temperatures in most of the Pacific Northwest, but most of the precipitation stayed north in Canada resulting in generally below average precipitation across the Pacific Northwest.

The North American Monsoon onset was delayed across the Southwest and more focused on eastern Arizona and much of New Mexico. However, due to the late onset and lack of robust surges into western portions of the state, much of Arizona is at normal-to-below normal precipitation for July. Overall, drought continued and intensified in many areas across the West. While multiple lightning events occurred across the Great Basin, northern California, and portions of the Pacific Northwest, storms were relatively dry and scattered in coverage leading to mostly below average precipitation. However, wetter storms did develop in portions of the northern Great Basin into the northern Rockies during two of these moisture surges.

Great Basin

Above normal fire potential expected for most of Nevada, western Utah and southern Idaho in August, expanding northward in September. Otherwise normal conditions are expected. A drier than normal month

across the Great Basin in July, along with about a ten-day delay in the onset of the traditional Monsoon, resulted in drier than normal conditions across many southern areas of the region. After a brief shot of monsoonal moisture to the southern Great Basin, the monsoonal moisture has dissipated and retreated southeastward. This will result in rapid drying across parts of Utah, the Arizona Strip and southern Nevada into August, and above normal large fire potential has been expanded southward for some areas. Southeastern areas have been excluded at this time, as there is a possibility of some moisture returning there by mid-August. Elsewhere, northern areas will be warming and drying rapidly, but fuel moisture remains above normal across the higher elevations of Idaho and Wyoming with a gradual return to normal large fire potential there. In September, it is expected that the warming and drying will continue for northern and central areas, and above normal will be expanded northwards. At the same time, southern areas should get occasional thunderstorm activity from the waning monsoon with normal conditions there and elsewhere. Normal conditions are expected in October and November. **Above normal fuel moisture in Idaho and Wyoming in early August should quickly dry to normal late summer dryness by mid-month.** Elsewhere drier than normal fuels will continue thru August and much of September.

CURRENT FIRE ACTIVITY

Teton Interagency Dispatch Center

Wildland fire activity is below normal in comparison to other years, with fewer early season acres burned than in recent years. *This year's 136 abandoned campfires to date are approximately 44 percent higher than the 96 campfires that TIDC staff had responded due at this time last year.*

Year-to-Date Fire Activity for Dispatch Center response zones, August 1, 2020. https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/sites/default/files/site-files/2020%20Fire%20Numbers%20and%20Stats.xlsx.

Teton Interagency Fire Management Area Totals	Human Fires	Human Acres	Natural Fires	Natural Acres	RX Fires	RX Acres	Abandoned Non-escape Campfires
	7	4.5	1	0.1	3	1	136

Selected Sources

- Precipitation Tracking: https://water.weather.gov/precip/
- Precipitation Tracking focused on Snotel sites, Wyoming (beta site)
- Climate Prediction Center, One- and 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
- Intermountain West Climate Dashboard: https://wwa.colorado.edu/climate/dashboard.html
- Regional outlooks from "National Wildland Significant Fire Potential Outlook," NIFC Predictive Services (first of month in fire season): https://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.
- Rocky Mountain Area – Predictive Services/Outlooks: https://gacc.nifc.gov/rmcc/outlooks1.php.
- Great Basin Area – Predictive Services/Outlooks: https://gacc.nifc.gov/gbcc/outlooks.php.
- Critical Fuel Trigger, Great Basin Fuel Status: https://gacc.nifc.gov/gbcc/predictive/cfs/#/.
- Teton Interagency Dispatch: www.tetonfires.com / https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/.

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