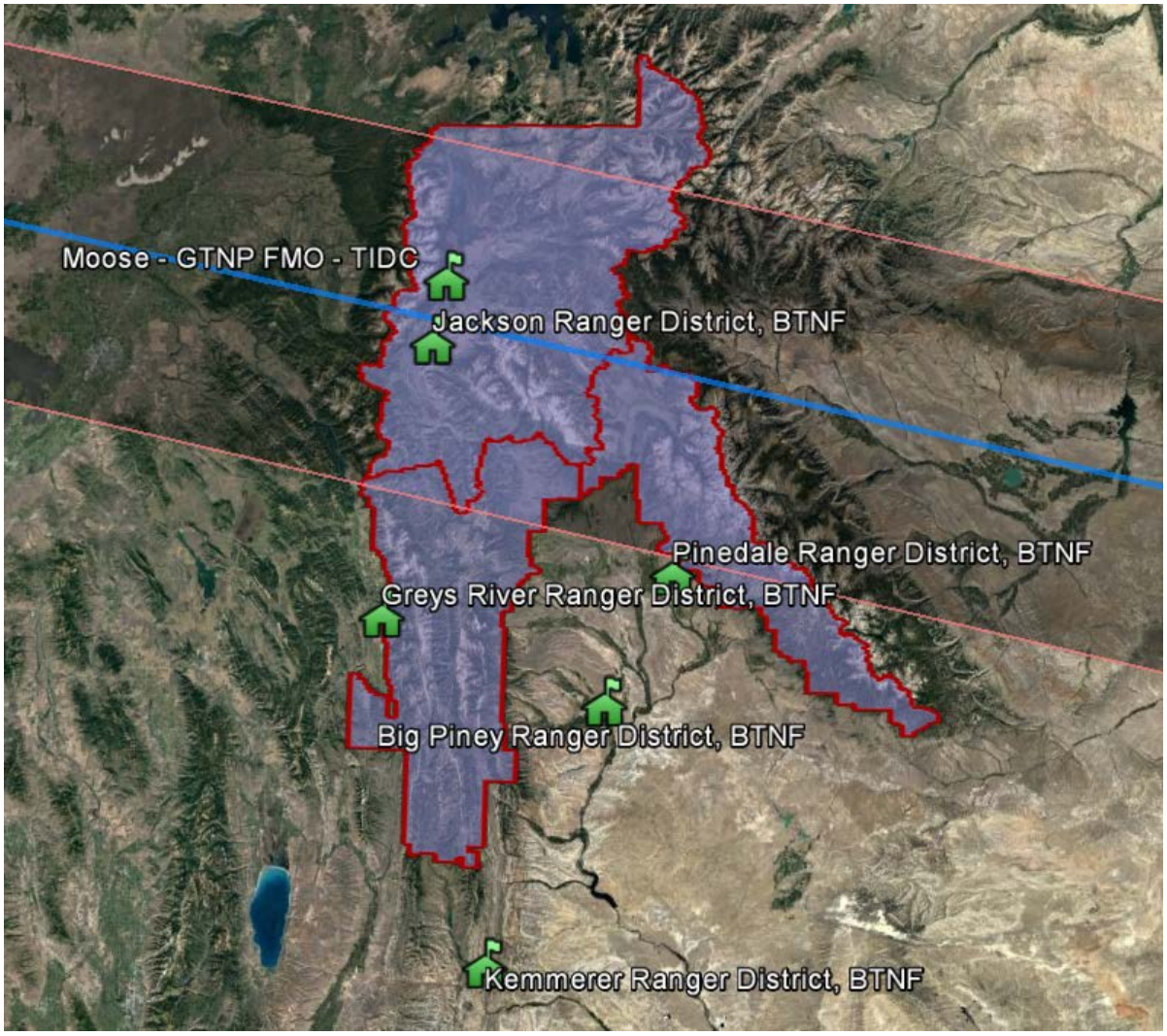
TETON INTERAGENCY FIRE

AUGUST 2017 WILDLAND FIRE OUTLOOK

July 31, 2017



Google Earth image of solar eclipse totality zone and Fire Danger Rating Areas for Teton Interagency Dispatch.

SUMMARY

As we transition into typically the most active period of the fire season, fuels in sagebrush and drier timber sites are nearing availability for active fire spread. A drier than normal July may transition into an above-normal period of precipitation in early August, but the month will generally be warmer and drier than normal.

The TIDC fire and all-risk resources are also preparing for an influx of visitors for the August 21st Solar Eclipse. During this period, fire risk is likely to enter the High and potentially Very High adjective rating, though this may moderate if monsoon moisture re-activates, as the 8-14 day outlook indicates is possible – with a 33-40% probability for above normal precipitation in much of the Teton Dispatch area (see Section 6 for more info). This precipitation may temporarily reduce fire spread potential in the eclipse totality zone which will see the highest increase in visitation and an increased potential for human-caused wildfire ignitions. Near-normal precipitation should take hold by mid- to late August, with increasing potential for active fire spread.

Regional and national outlooks are distributed on August 1 (see “Selected Sources” for hypertext links on last page of TIDC Outlook) and are expected to indicate normal or possibly below-normal fire activity for August in

the Teton Interagency response area. The GACC's definition of normal is based on the need for out-of-area resources.

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).

CLIMATE AND FUELS OUTLOOK

(1) Year-to-Date Precipitation for Area Weather Stations

DISPATCH AREA SUMMARY: A shift to neutral El Niño/La Niña conditions and an anomalous high pressure ridge over the western US may have combined to shift summer conditions toward warmer and drier than normal. These shifting regional/global patterns are reflected in a significant alternation between wet-dry months at precipitation tracking stations in the area, with some areas (notably the Wyoming Fire Danger Rating Area) showing a significant summer drying trend. At Moose, July precipitation is 50% of normal and the prior three months (the May-July green up and primary growing season) is 78% of normal.

Area-wide moisture for July (Figure 1a) indicate wetter than normal trends in the central portion of the Dispatch area, and the past 90 days (Figure 1b) are drier than normal. Rainfall for the past 30 days at area RAWS weather stations ranged from a low of 0.14" at Kelly to a high of 1.04" at Half Moon.

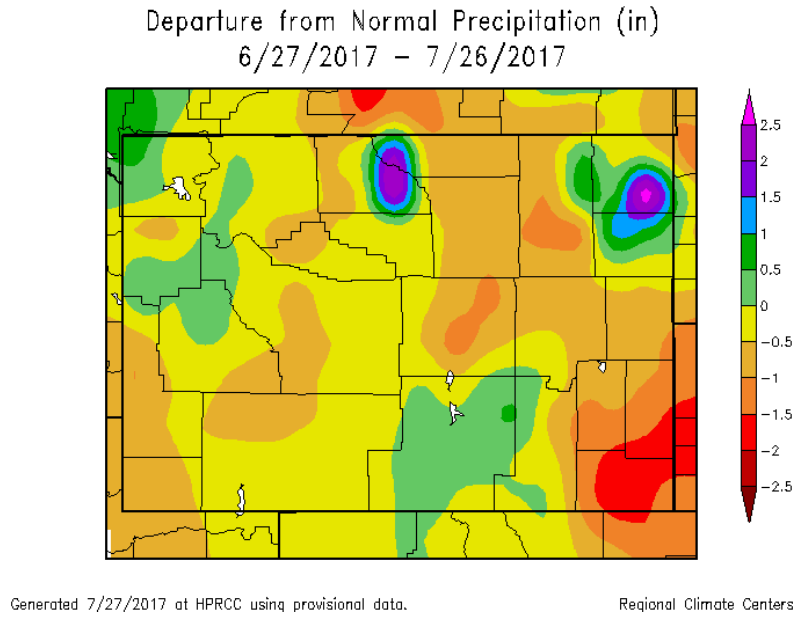


Figure 1a. Wyoming, Current Precipitation – Departure from Normal -- for July (the past 30 days ending July 26, 2017), Western Wyoming exhibits a central area with above-normal precipitation compared to normal for the prior 30 days but is mostly drier than normal.
NRCS - Departure from Normal - Wyoming - Permalink.

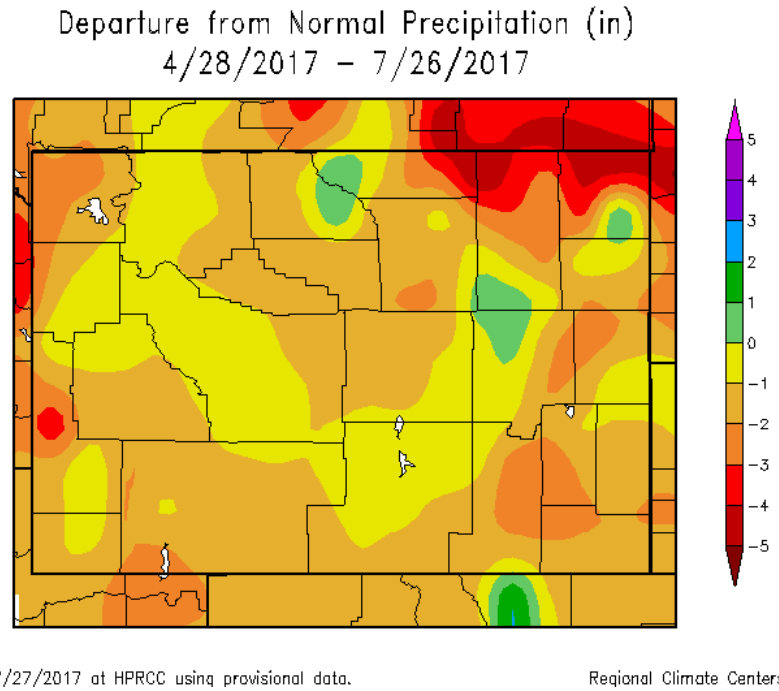
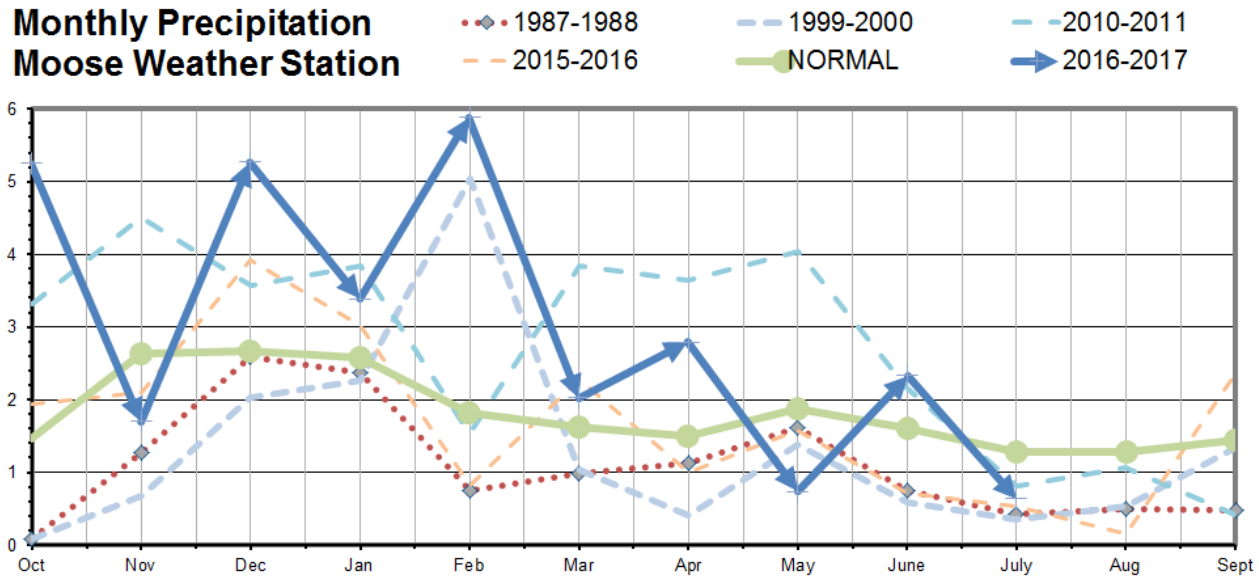


Figure 1b. The moisture pattern is drier when reviewing the past 90 days of Precipitation – Departure from Normal, with below normal precipitation throughout the Dispatch area.
https://hprcc.unl.edu/products/maps/acis/hprcc/wy/90dPDeptHPRCC-WY.png

MOOSE: Precipitation tracking at the Moose weather station, which is representative for lower elevation sites in Grand Teton National Park and some North Zone sites, recorded seven of 10 months above average for the water year to date. Area precipitation for the water year to date (October through July) likely reflects the earlier impact of weak La Niña conditions, with above-normal moisture overall for the Fall-Winter period (with 192% of normal precipitation at Moose for October through February).

Table 1 and Graph: Precipitation at Moose Weather Station (Grand Teton National Park).

		Fall-Winter (Oct-Feb)	Spring (March-May)	Summer (June to July)	June	July	Prior 3 months	YTD total
Monthly Precipitation	1987-88	7.07	3.72	1.18	0.75	0.43	2.79	11.54
(inches)	1999-00	10.09	2.81	0.95	0.59	0.36	2.33	13.49
	2010-11	16.76	11.52	2.97	2.16	0.81	7.01	30.44
	2015-16	11.83	4.85	1.25	0.72	0.53	2.82	17.4
	Normal	*11.18*	*4.99*	*2.9*	*1.61*	*1.29*	*4.78*	*17.78*
	2016-17	**21.49**	**5.56**	**2.97**	**2.33**	**0.64**	**3.71**	**29.38**
Percent of NORMAL	1987-88	63%	75%	41%	47%	33%	58%	65%
	1999-00	90%	56%	33%	37%	28%	49%	76%
	2010-11	150%	231%	102%	134%	63%	147%	171%
	2015-16	106%	97%	43%	45%	41%	59%	98%
	2016-17	**192%**	**111%**	**102%**	**145%**	**50%**	**78%**	**167%**



(2) Drought Monitor

The current drought map for the U.S. West shows 74% of the West with no drought conditions, compared to 45% exhibiting some drought conditions at this time last year. In Wyoming, 74% of the state has no drought conditions (down 4% from last month), compared to 45% exhibiting no drought conditions at this time last year.

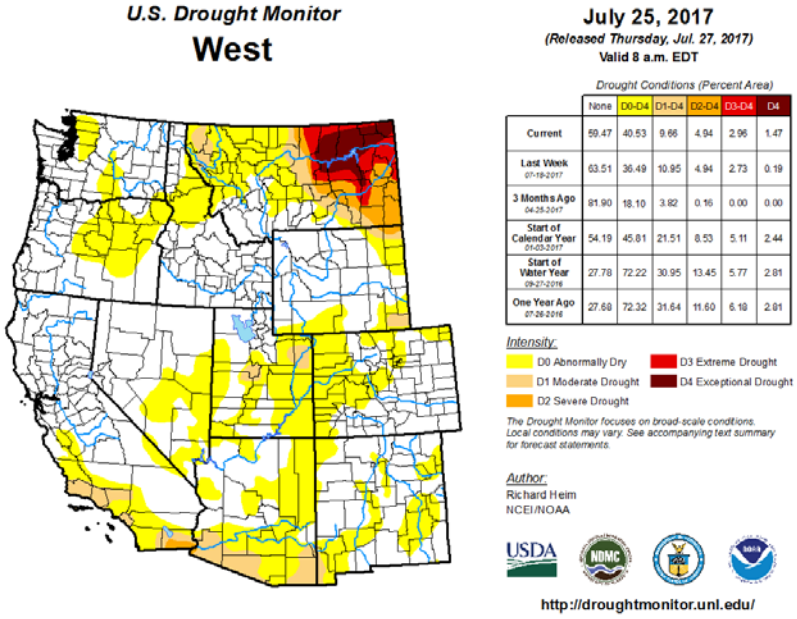


Figure 2a. U.S. Drought Monitor – West.
http://droughtmonitor.unl.edu/Home/RegionalDroughtMonitor.aspx?west

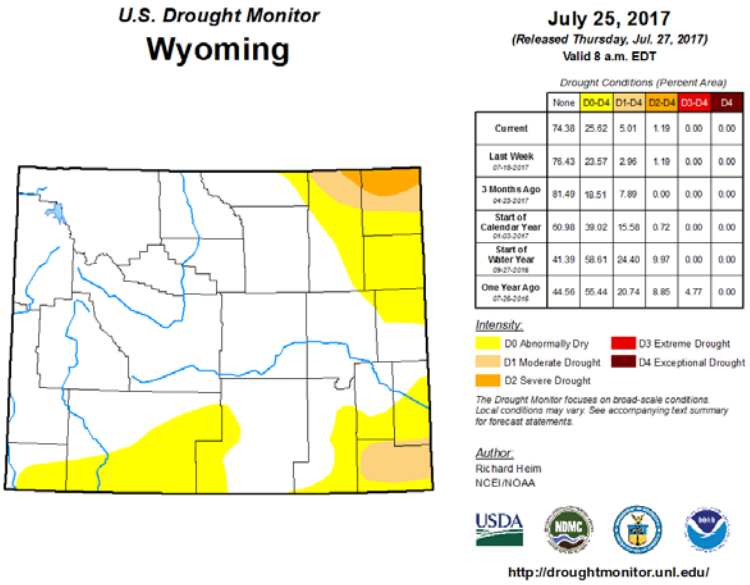


Figure 2b. U.S. Drought Monitor – Wyoming.
http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?WY

(3) Oceanic Niño Index (for tracking 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. During 2015-16, strong El Niño conditions persisted for 15 months, comparable if not stronger than the prior El Niño conditions in 1997-1998, which lasted 13 months. In summer 2016 we transitioned to ENSO-neutral followed by an eight-month (June 2016 through January 2017) period of weak La Niña conditions. Analogue years for these conditions correlate these weak La Niña conditions with dry summer extremes and wet winter extremes, which we experienced during this past La Niña.

CURRENT STATUS: We are currently in ENSO-neutral condition and ENSO-Neutral is favored (50 to ~55% chance) through the Northern Hemisphere through winter 2017-18 (current outlook as of July 25). Monthly updates are issued at http://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/enso.shtml.

(4) Fuel Moisture

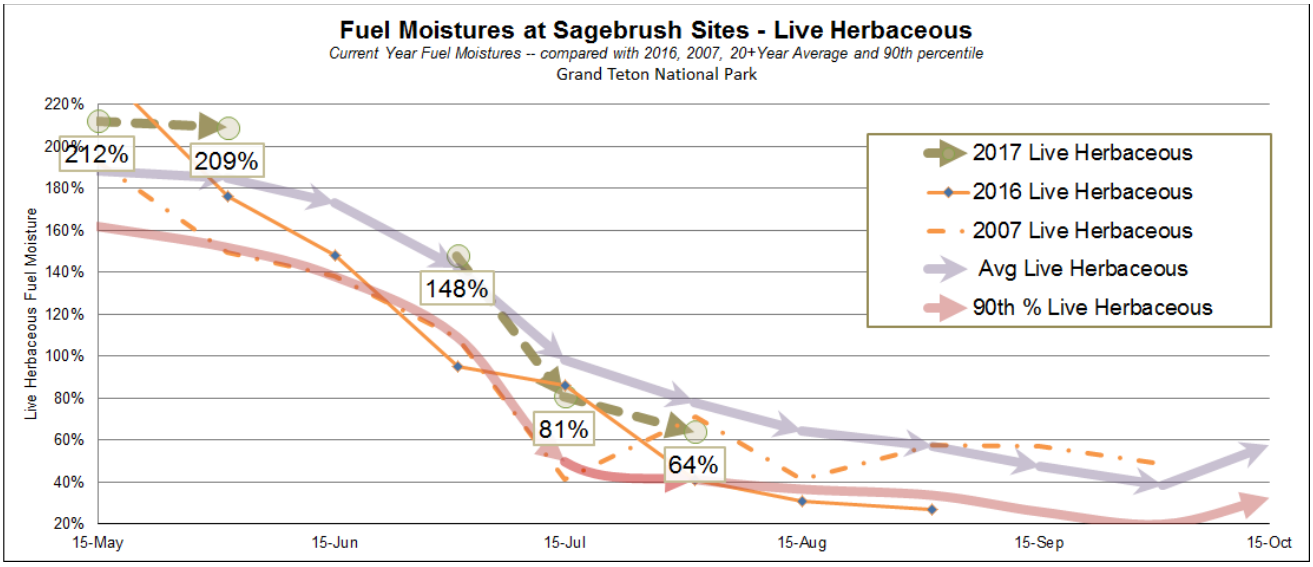
Fuel moisture sampling in Bridger-Teton National Forest and Grand Teton National Park reflect a drying trend in sagebrush fuel types and on drier timber sites. An overview of Teton Dispatch area fuel moisture includes:

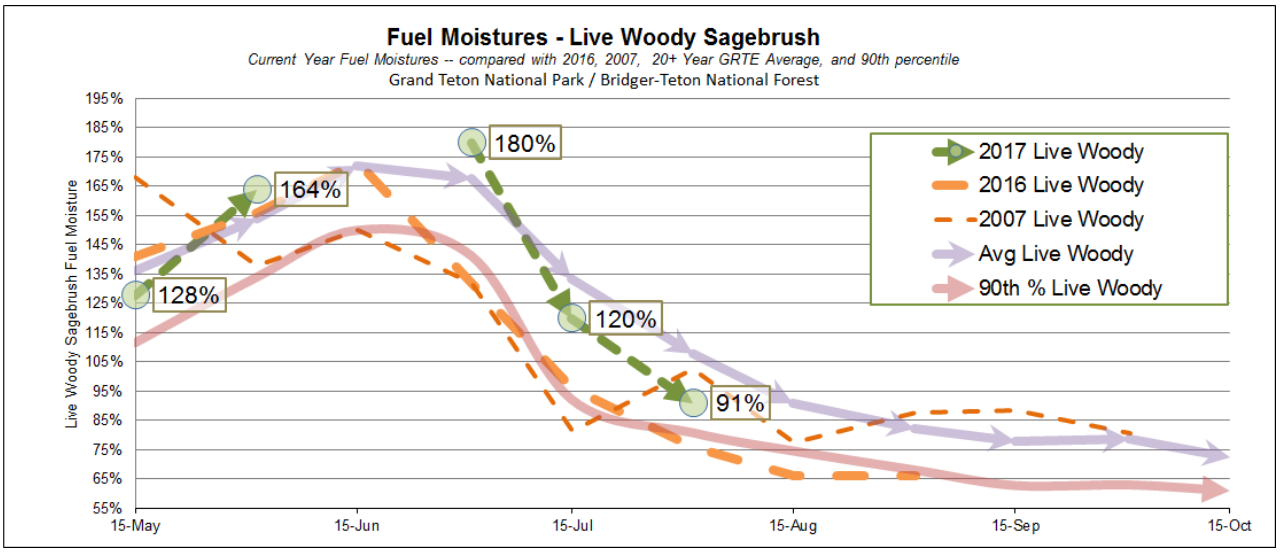
Fuel Type	Range	BTNF Average	GTNP Average
1000 Hours	8-25%	14%	15%
Live Woody – Lodgepole	90-161%	110%	139%
Live Woody – Sagebrush	83-147%	142%	91%

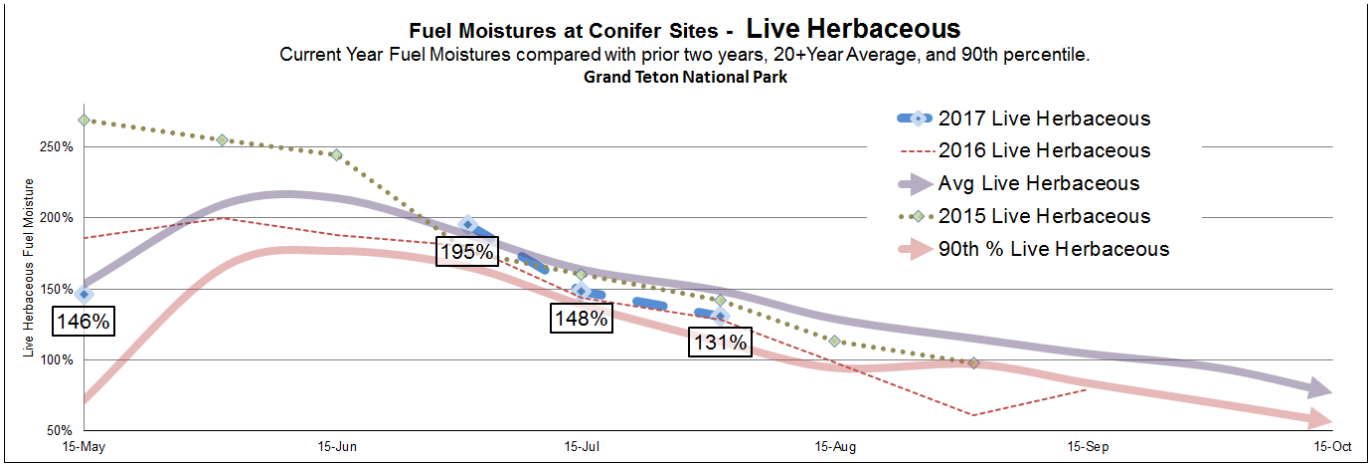
For additional fuel moistures, see the BTNF/GTNP entries in the National Fuel Moisture Database via this map interface: http://www.wfas.net/nfmd/public/states_map.php?state=WY. This link to fuel moisture data for Bridger-Teton NF and Grand Teton NP provides the actual 2017 data for all sample sites.

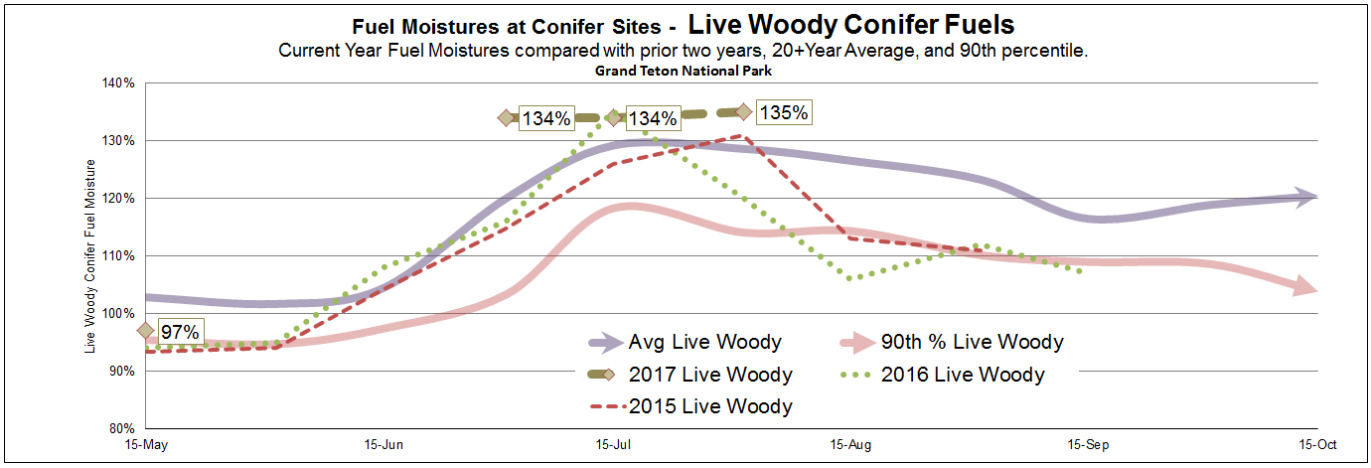
At long-term sampling stations in Grand Teton National Park, a wetter than average winter and June is reflected in above average early season fuel moistures, now beginning to moderate toward normal

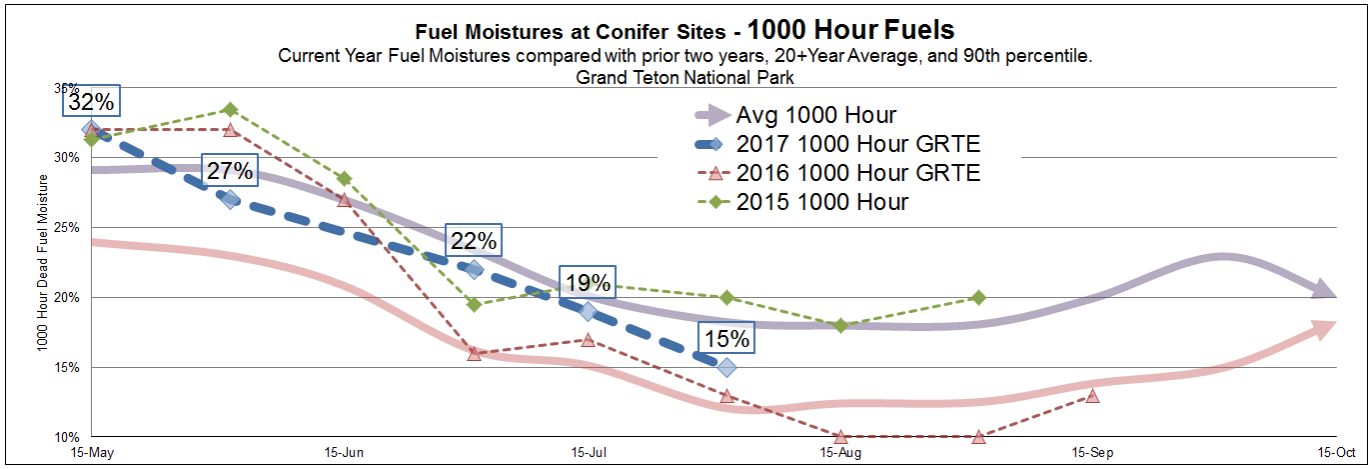
ranges in both sagebrush and forest sample sites in the park (see charts below) though remaining wetter than normal in live woody conifers.











(5) Long-term Temperature and Precipitation Trends and Outlook

The first two months of summer (June-July) were **warmer than normal** in the Teton Interagency area.

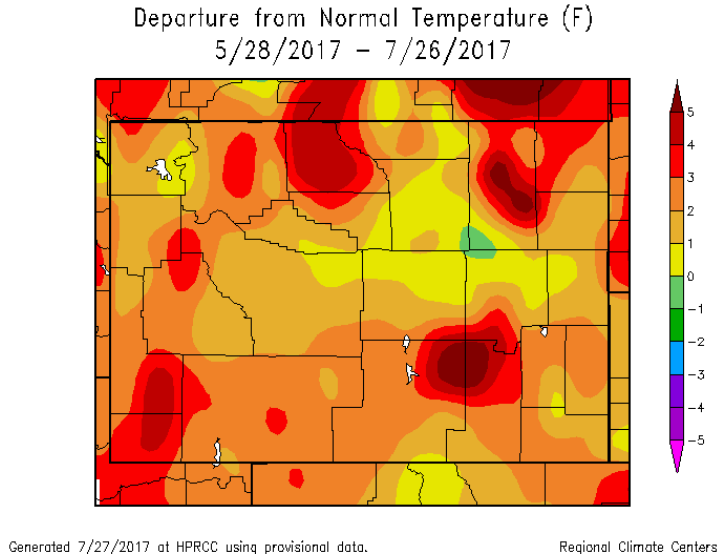


Figure 5a. Departure from Normal Temperature, Wyoming, past 60 days ending July 26, 2017. https://hprcc.unl.edu/products/maps/acis/hprcc/wy/60dTDeptHPRCC-WY.png.

SEASONAL OUTLOOKS: The 30- and 90-day long-term outlooks (issued July 20) call for above-normal temperatures throughout the late summer and fall (below left). The precipitation outlooks (right) indicate an equal probability for below, normal or above normal moisture for the next three months, with the potential for above normal precipitation in the southern sections of the Teton Dispatch area. (http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.gif).

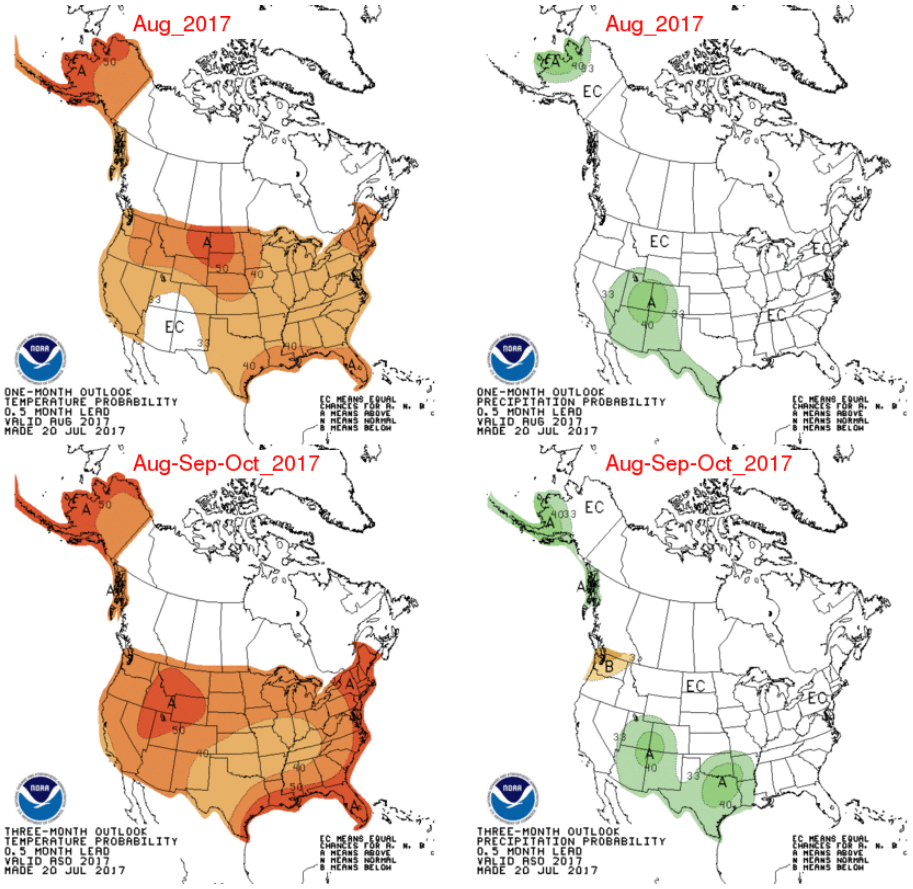


Figure 5b: August and August through October, 30- and 90-day Outlook.

PRECIPITATION OUTLOOKS: The first two weeks of August may receive above-normal precipitation, but July and August are typically the driest period of our moisture year so the amount of rainfall may not be as much effect on fire spread as humidity trends and wind events.

The 1-7 day Qualitative Precipitation Forecast and 8-14 day outlook offer a two-week and down-scaled version of the larger- and longer-term scale offered by regional and month-long precipitation outlooks. These down-scaled outlooks indicate short-range moisture (1-7 days) primarily impacting the Wind FDRA, and a 33% probability of above normal precipitation for all FDRAs in the 8-14 day outlook.

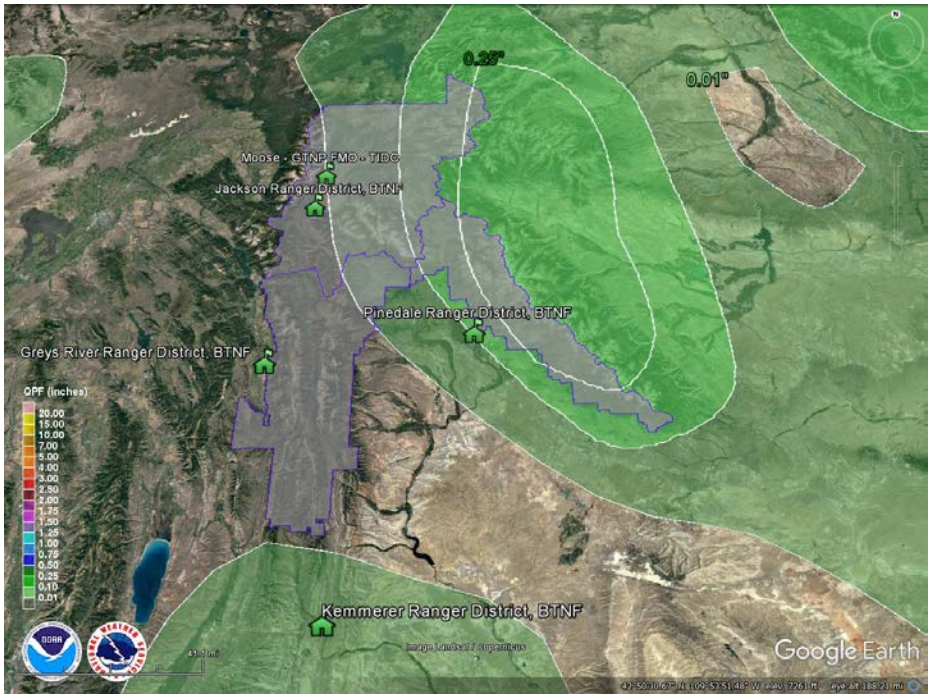


Figure 5c: Qualitative Precipitation Forecast (QPF) for July 31-August 7, 2017, indicates rain in ranges from .01" to .25" for portions of the TIDC area.

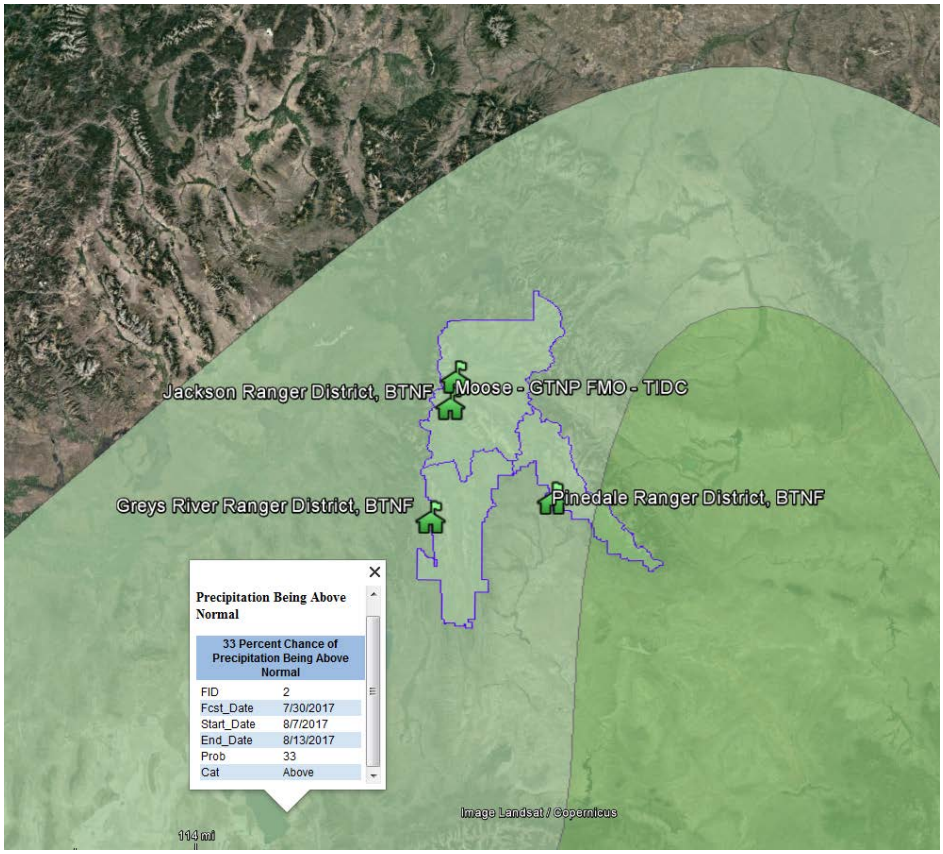


Figure 5d: The 8-14 day precipitation probability for August 7-13, 2017, indicates a 33% chance of above–normal precipitation during this period for the TIDC area.

NATIONAL and 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 below-normal fire activity in the Teton Interagency Dispatch area, with potential for above-normal fire activity in western areas of the Great Basin geographic area.

- *National and Regional Outlooks from "National Wildland Significant Fire Potential Outlook" will be updated on August 1, 2017, by NIFC Predictive Services.* http://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.
- Great Basin Predictive Services/Outlooks (daily updates): https://gacc.nifc.gov/gbcc/outlooks.php.

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CURRENT FIRE ACTIVITY: *Teton Interagency Dispatch Center*

Wildland fire activity is light and comparable to other years with wet springs, with fewer early season acres burned than in recent years. Last year at this time TIDC had recorded a total of 26832 acres in 17 wildfires and TIDC staff had responded 90 abandoned campfires..

Table 2: Year-to-Date Fire Activity for Dispatch Center response zones, July 31, 2017. (*https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/documents/predictive-services/intelligence/BTF_GRTE_Fire_Numbers_2017.xlsx*)

Teton Interagency Fire Management Area Totals	Human Fires	Human Acres	Natural Fires	Natural Acres	RX Fires	RX Acres	Abandoned Non-escape Campfires
	3	0.3	2	0.2	3	166	56

Selected Sources

- Precipitation Tracking: https://water.weather.gov/precip/
- Snow / Snotel Tracking (for early season outlooks): https://www.wcc.nrcs.usda.gov/snotel/Wyoming/wyoming.html
- Climate Prediction Center, Three-Month Outlooks: *https://www.cpc.ncep.noaa.gov/products/predictions/90day/*
- *National and Regional outlooks from "National Wildland Significant Fire Potential Outlook."* https://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.
- Great Basin Predictive Services/Outlooks (daily updates): https://gacc.nifc.gov/gbcc/outlooks.php.
- Teton Interagency Fire and Dispatch Center: https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/.

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For further information, contact Teton Interagency Fire:

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