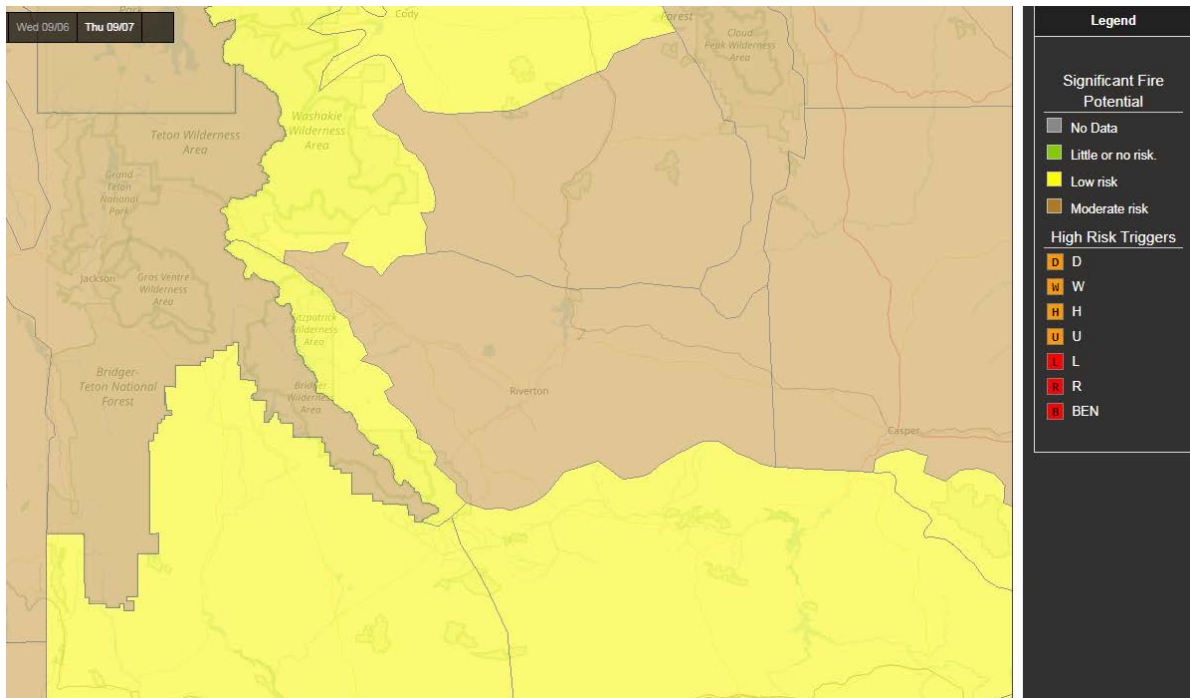


# TETON INTERAGENCY FIRE

## SEPTEMBER 2017 WILDLAND FIRE OUTLOOK

September 1, 2017



Looking one-week ahead: the Significant Wildland Fire Potential portal (updated daily) indicates potential for moderate fire potential in the TIDC area on September 7. Source: National 7 Day Significant Fire Potential: <http://psgeodata.fs.fed.us/forecast/#/outlooks?state=map&qaccId=12>

National Outlook (updated 1<sup>st</sup> of each month): <http://www.predictiveservices.nifc.gov/outlooks/outlooks.htm>

### SUMMARY

We are transitioning from a dry warm summer into what may be a dry warm fall. With this transition into a period when fuels are seasonally curing and more likely to receive frost, we see sagebrush sites and drier timber sites with moderate and at times critical fire conditions.

The TIDC fire and all-risk resources witnessed an influx of visitors for the August 21<sup>st</sup> Solar Eclipse but the potential for wildfires was mitigated by pre-planning and prevention activities. As we enter a dry fall, we may expect a low chance of late-season thunderstorms that decreases as the days cool. Additionally, an abnormally strong and resilient high pressure dome over the Great Basin will likely steer away the typical early fall low pressure systems that might otherwise bring moisture and wind.

During this period, fire risk is likely to remain at the High and potentially Very High adjective rating, particularly with high Haines Index conditions in early September.

Regional and national outlooks are distributed on the first of each month -- see "Selected Sources" for hypertext links on last page of TIDC Outlook. The outlook) and are expected to indicate normal or below-normal fire activity for September 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).

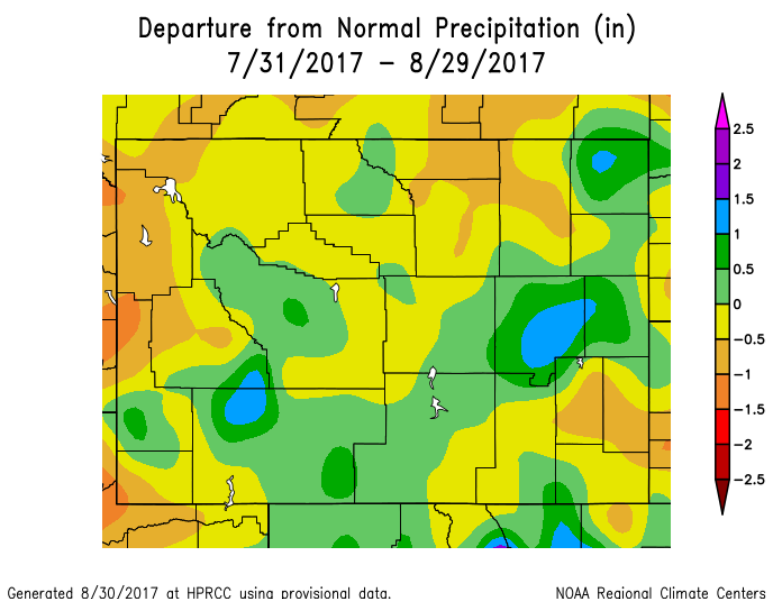
## CLIMATE AND FUELS OUTLOOK

### (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. This shift to warmer/drier is likely to continue into September. 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, August precipitation is 25% of normal. The prior three months (the typical “summer” growing season) is 79% of normal. Both the August and 3-month precipitation is approximately twice the moisture received during last summer’s fire season.

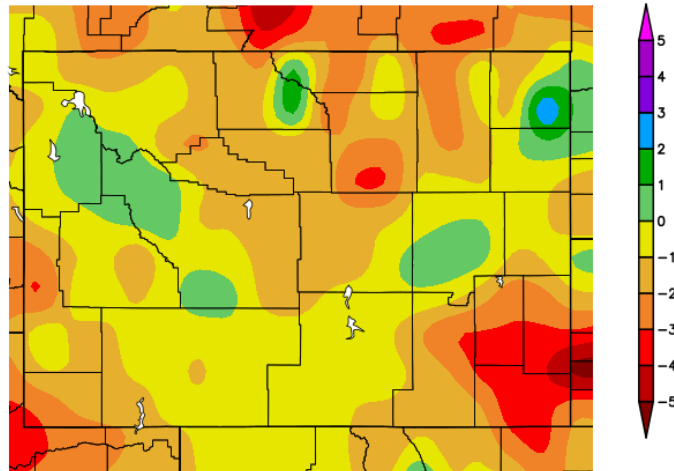
Area-wide moisture for August (Figure 1a) indicate wetter than normal trends in the central portion of the Dispatch area, and the past 90 days (Figure 1b) are drier than normal.

Rainfall for the past 30 days at area RAWS weather stations ranged from a low of 0.12” at Grand Teton to a high of 0.85” at Kelly. The average for all seven RAWS for the past 30 days is 0.51”.



*Figure 1a.* Wyoming, Current Precipitation – Departure from Normal -- for August (the past 30 days ending August 29, 2017). Generally, western Wyoming is drier than normal for the past 30 days. Areas of south-central and southwestern Wyoming exhibit above-normal precipitation compared to normal for the prior 30 days. [NRCS - Departure from Normal - Wyoming - Permalink](#).

Departure from Normal Precipitation (in)  
6/1/2017 – 8/29/2017



Generated 8/30/2017 at HPRCC using provisional data.

NOAA Regional Climate Centers

Figure 1b. The moisture pattern is drier when reviewing the past 90 days of Precipitation – Departure from Normal, with below normal precipitation throughout much of the Dispatch area with the exception of the portions of eastern Teton Wilderness, Gros Ventre and Wind River ranges.

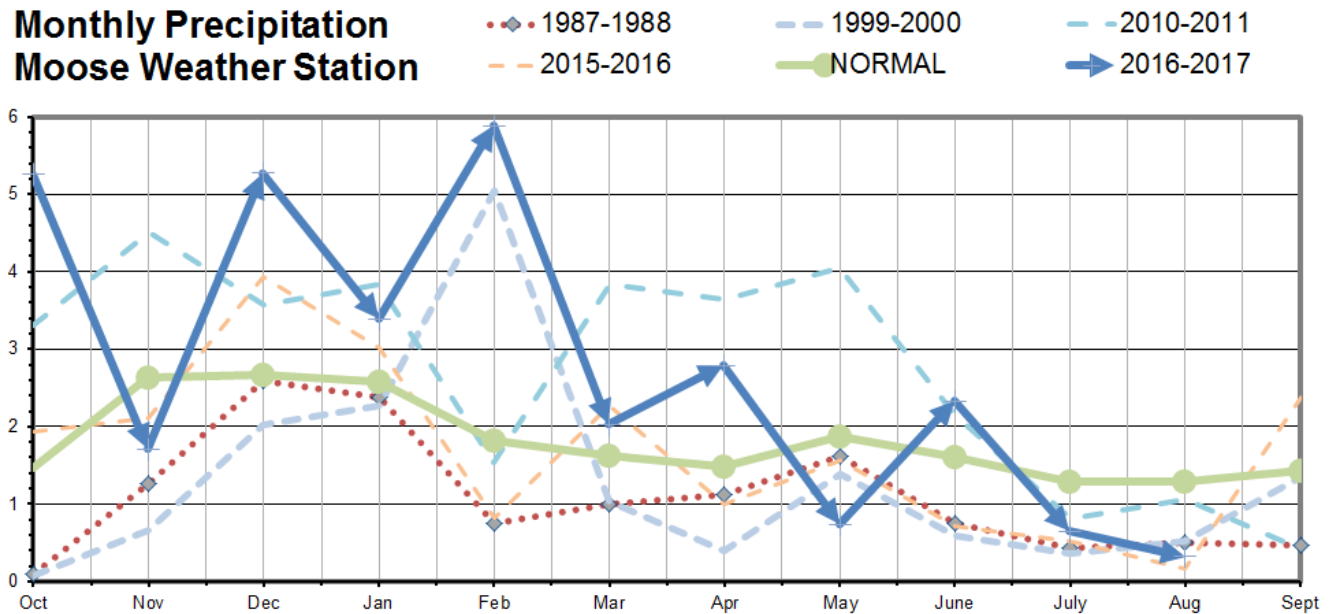
<https://hprcc.unl.edu/products/maps/acis/hprcc/wy/90dPDeptHPRCC-WY.png>

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 11 months above average for the water year to date. Both Moose and area precipitation for the water year to date (October through August) likely reflects the earlier impact of weak La Niña conditions. Outlooks that reflect La Niña conditions note wetter than normal winters for Wyoming – and we received above-normal moisture overall for the Fall-Winter period (with 192% of normal precipitation at Moose for October through February). A transition into neutral ENSO (El Niño/Southern Oscillation) conditions and abnormally strong high pressure ridge may have led to the transition this summer to dry conditions, with three of the last four months receiving below average precipitation and Moose receiving 79% of normal summer precipitation.

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

		June	July	August	Prior 3 months	YTD total
<b>Monthly Precipitation</b> (inches)	1987-88	0.75	0.43	0.5	1.68	12.47
	1999-00	0.59	0.36	0.53	1.48	14.38
	2010-11	2.16	0.81	1.06	4.03	32.31
	2015-16	0.72	0.53	0.16	1.41	18.09
	<i>Normal</i>	1.61	1.29	1.29	4.19	20.36
	<b>2016-17</b>	<b>2.33</b>	<b>0.64</b>	0.32	<b>3.29</b>	<b>30.34</b>
Percent of NORMAL	1987-88	47%	33%	39%	40%	61%
	1999-00	37%	28%	41%	35%	71%
	2010-11	134%	63%	82%	96%	159%
	2015-16	45%	41%	12%	34%	89%
	<b>2016-17</b>	<b>145%</b>	<b>50%</b>	<b>25%</b>	<b>79%</b>	<b>149%</b>

## Monthly Precipitation Moose Weather Station



### (2) Drought Monitor

The current drought map for the U.S. West shows 60% of the West with no drought conditions, compared to 45% exhibiting some drought conditions at this time last year. In Wyoming, 75% of the state has no drought conditions (with 1% lower drought from last month), compared to 44% exhibiting no drought conditions at this time last year.

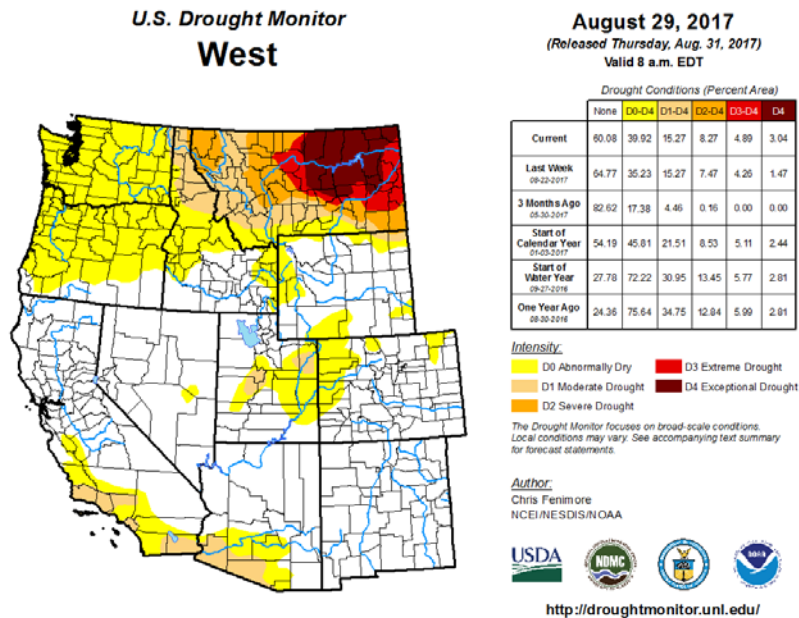
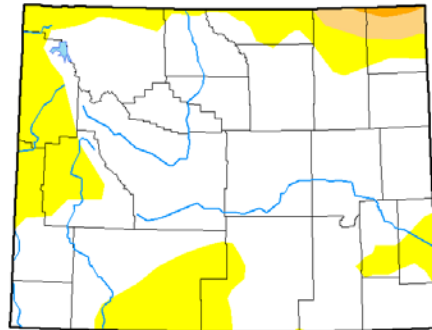


Figure 2a. U.S. Drought Monitor – West.

<http://droughtmonitor.unl.edu/Home/RegionalDroughtMonitor.aspx?west>

**U.S. Drought Monitor  
Wyoming**

**August 29, 2017**  
(Released Thursday, Aug. 31, 2017)  
Valid 8 a.m. EDT



*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	75.42	24.58	2.20	0.34	0.00	0.00
<b>Last Week</b> 08-22-2017	85.93	14.07	2.20	0.34	0.00	0.00
<b>3 Months Ago</b> 05-30-2017	92.77	7.23	0.12	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-01-2017	60.98	39.02	15.58	0.72	0.00	0.00
<b>Start of Water Year</b> 09-01-2016	41.39	58.61	24.40	9.97	0.00	0.00
<b>One Year Ago</b> 08-30-2016	43.63	56.37	29.95	9.06	2.63	0.00

**Intensity:**  
■ D0 Abnormally Dry    ■ D3 Extreme Drought  
■ D1 Moderate Drought    ■ D4 Exceptional Drought  
■ D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

**Author:**  
Chris Fenimore  
NCEI/NESDIS/NOAA



<http://droughtmonitor.unl.edu/>

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 conditions. ENSO-Neutral is favored (~85% chance during Jul-Sep, decreasing to ~55% during Dec-Feb) through the Northern Hemisphere winter 2017-18. Monthly updates (2<sup>nd</sup> Thursday) 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 late-summer drying trend in sagebrush fuel types and on drier timber sites.

An overview of recent Teton Dispatch area fuel moisture (from August 15-29, with most samples mid-month) includes:

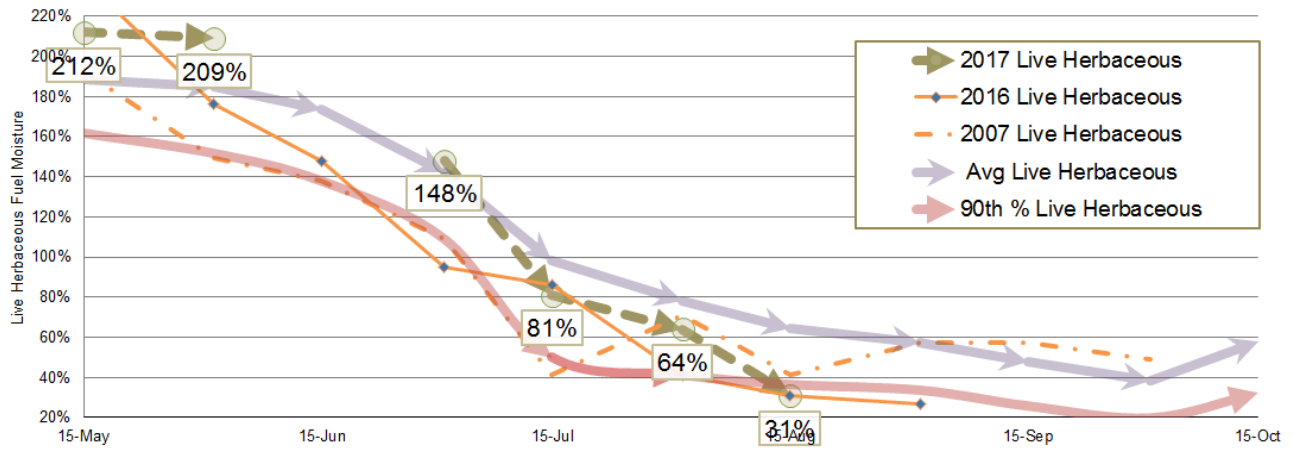
Fuel Type	Range	BTNF Average	GTNP Average	TIDC Average
1000 Hours	10-21%	14%	15%	16%
Live Woody – Lodgepole	89-133%	110%	121%	115%
Live Woody – Sagebrush (various species)	69-140%	124%	81%	105%

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](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 drying trend over the summer has resulted in moderate end-of-summer fuel conditions, with most sampling sites in Grand Teton at or below normal for August 15 (updated September 1 fuel moistures are in progress) Live herbaceous and live woody fuels in sagebrush sites are nearing critical conditions (see charts below). Woody fuels in conifer sites are dropping but remain between average and 90<sup>th</sup> percentile. 1000 hour fuels moderated with early August moisture but are continuing to dry during a hot, dry period in late August that is forecast to continue into early- and mid-September.

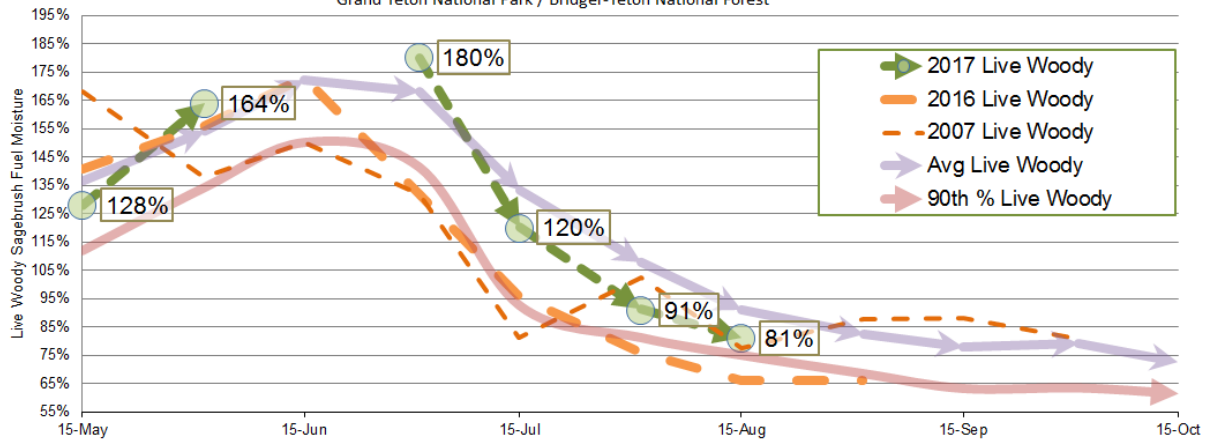
### Fuel Moistures at Sagebrush Sites - Live Herbaceous

Current Year Fuel Moistures -- compared with 2016, 2007, 20+Year Average and 90th percentile  
Grand Teton National Park

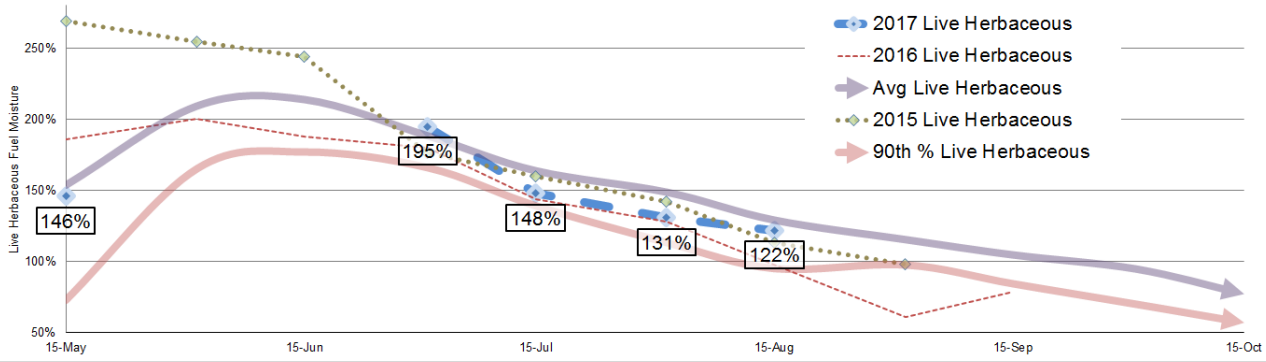


### Fuel Moistures - Live Woody Sagebrush

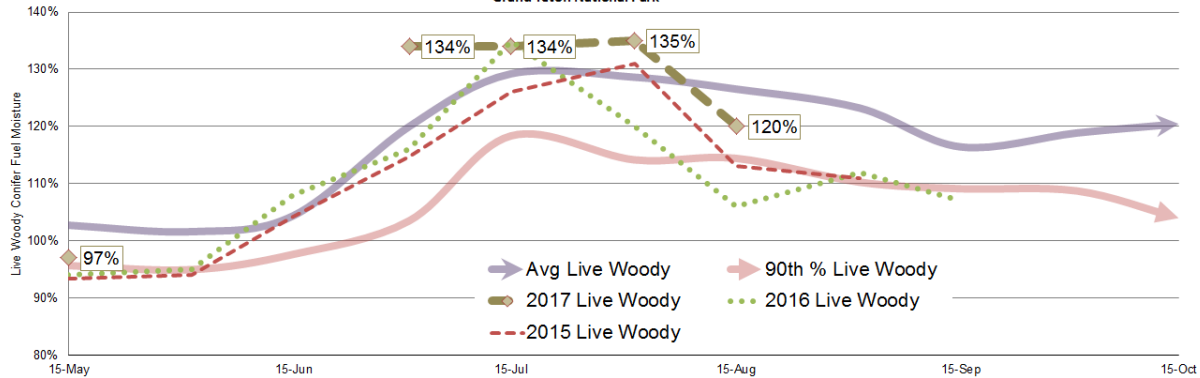
Current Year Fuel Moistures -- compared with 2016, 2007, 20+ Year GRTE Average, and 90th percentile  
Grand Teton National Park / Bridger-Teton National Forest



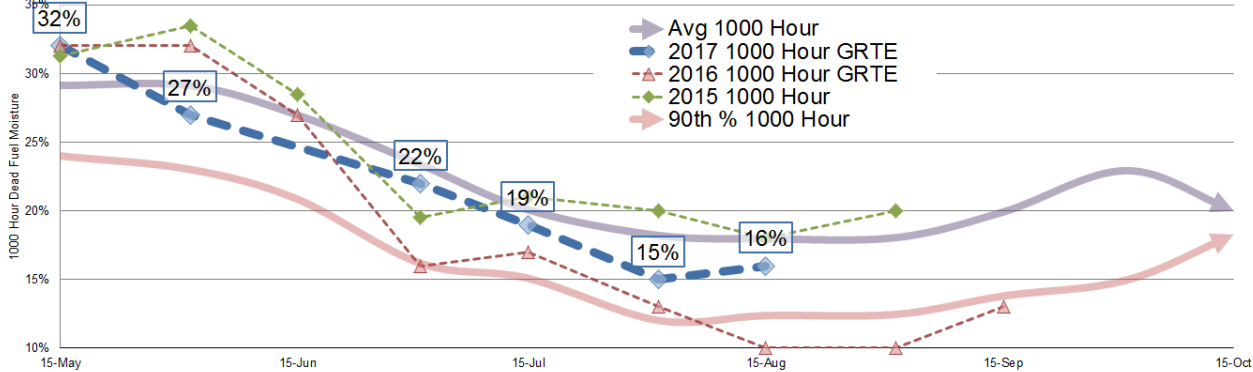
**Fuel Moistures at Conifer Sites - Live Herbaceous**  
 Current Year Fuel Moistures compared with prior two years, 20+Year Average, and 90th percentile.  
 Grand Teton National Park



**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



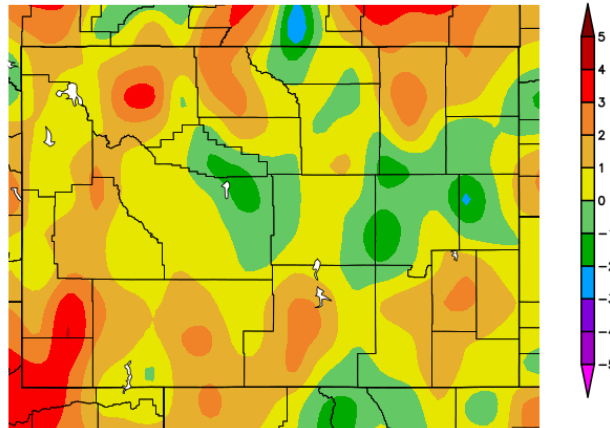
**Fuel Moistures at Conifer Sites - 1000 Hour Fuels**  
 Current Year Fuel Moistures compared with prior two years, 20+Year Average, and 90th percentile.  
 Grand Teton National Park



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

The last two months of summer (July-August) were **warmer than normal** in the Teton Interagency area, though less so than in the prior 2-month period, with a significant warmer trend in SW Wyoming.

Departure from Normal Temperature (F)  
7/2/2017 – 8/30/2017

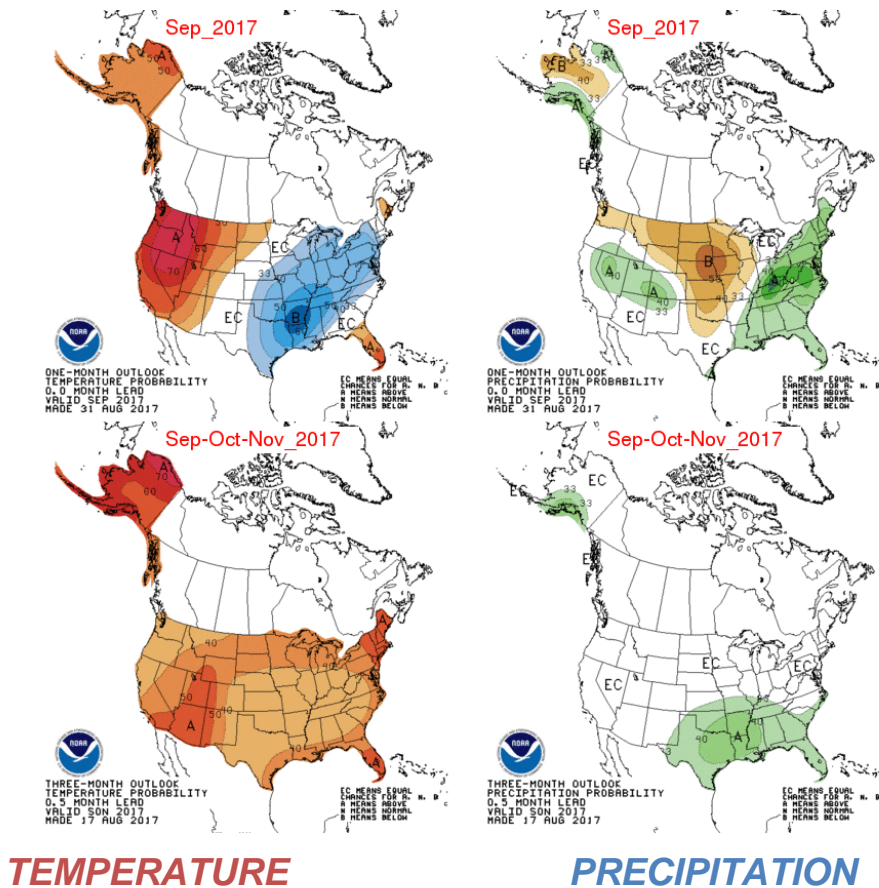


Generated 8/31/2017 at HPRCC using provisional data.

NOAA Regional Climate Centers

Figure 5a. Departure from Normal Temperature, Wyoming, past 60 days ending August 30, 2017. <https://hprcc.unl.edu/products/maps/acis/hprcc/wy/60dTDeptHPRCC-WY.png>.

**SEASONAL OUTLOOKS:** The 30- and 90-day long-term outlooks (issued 08/17) call for above-normal temperatures throughout the fall (below left). Precipitation outlooks (right) indicate an equal probability for below, normal or above normal moisture for the next three months, with the potential in September for above normal precipitation in the southern sections of TIDC and below normal precipitation in northern sections. ([http://www.cpc.ncep.noaa.gov/products/predictions/multi\\_season/13\\_seasonal\\_outlooks/color/page2.gif](http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.gif)).



**TEMPERATURE**

**PRECIPITATION**

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



**PRECIPITATION OUTLOOKS:** Analyses for the first two weeks of September indicates a probability for below normal precipitation to the north and an equal chance of normal, below- or above-normal precipitation to the south. By the third week of September, one outlook indicates probability for above normal precipitation. Overall, the fall has equal chances of normal, below- or above-normal precipitation.

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.

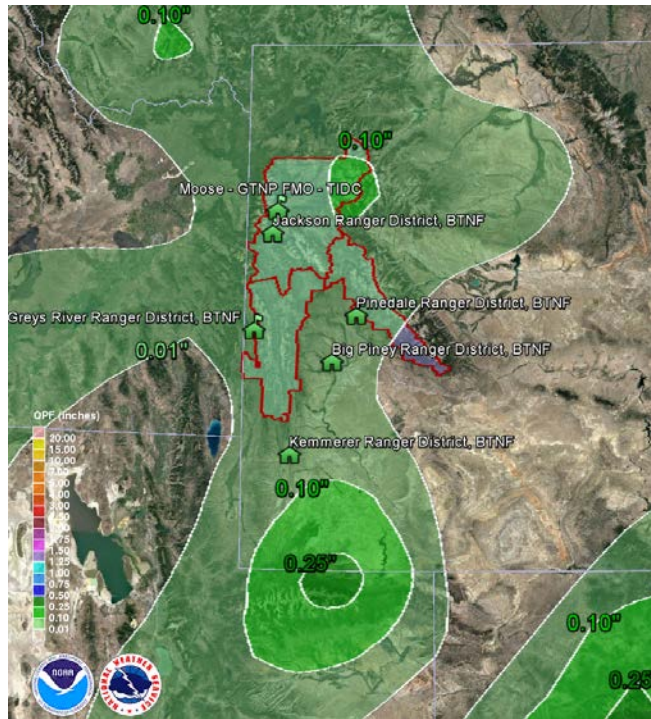


Figure 5c: Qualitative Precipitation Forecast (QPF) for September 3-10, 2017, indicates a probability for passing moisture and light rain brought into the area after a cold front passage late in the first week of the month. <http://www.wpc.ncep.noaa.gov/kml/kmlproducts.php>

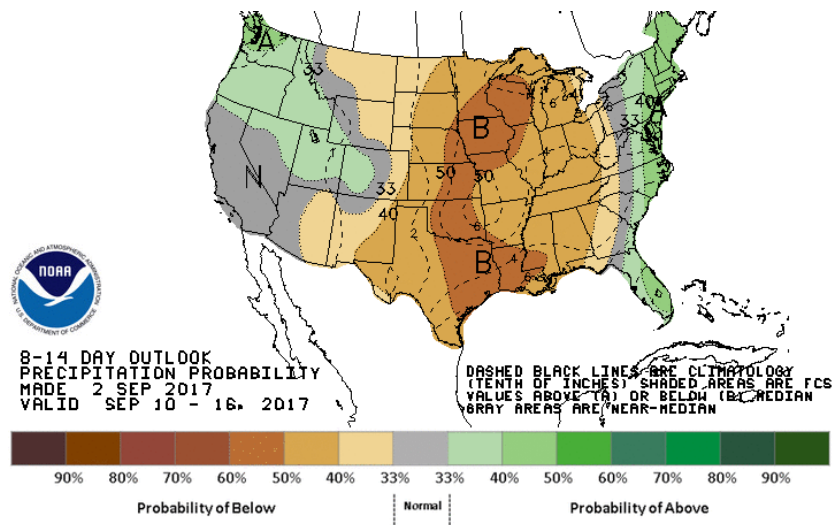


Figure 5d: The 8-14 day precipitation probability for September 10-16, 2017 indicates a probability for an equal chance of normal, below- or above-normal precipitation to the north and above normal precipitation to the south.

Graphic: <http://www.cpc.ncep.noaa.gov/products/predictions/814day/814prcp.new.gif>

KML: [http://www.cpc.ncep.noaa.gov/products/predictions/threats/Prcp\\_D8\\_14.kml](http://www.cpc.ncep.noaa.gov/products/predictions/threats/Prcp_D8_14.kml)

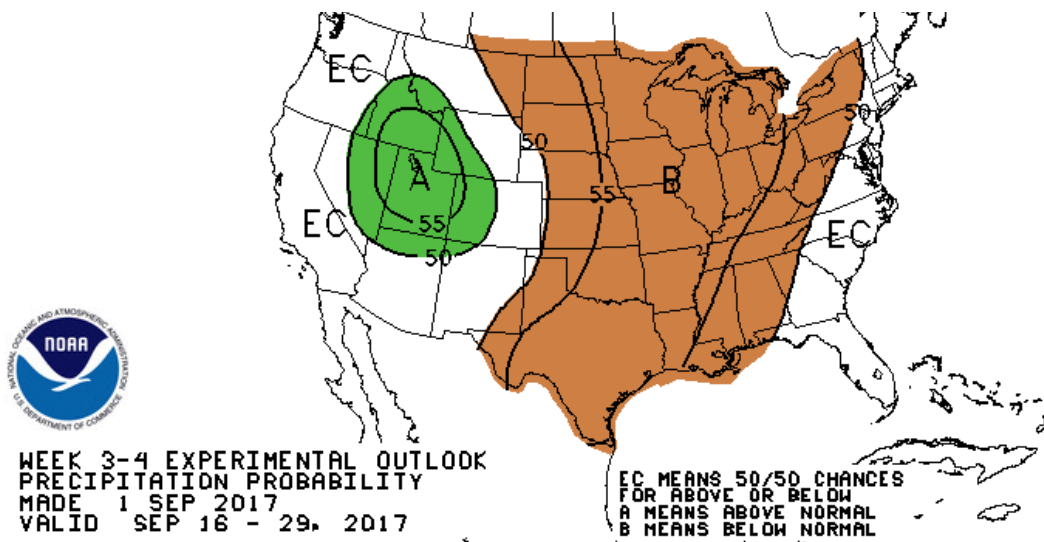


Figure 5e: The experimental 3-4 week precipitation probability for September 16-29, 2017 indicates a probability for above normal precipitation in the TIDC area.

Graphic: <http://www.cpc.ncep.noaa.gov/products/predictions/WK34/gifs/WK34prcp.gif>

**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” are updated the first of each month by NIFC Predictive Services. [http://www.nifc.gov/nicc/predictive/outlooks/monthly\\_seasonal\\_outlook.pdf](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>.

**CURRENT FIRE ACTIVITY: Teton Interagency Dispatch Center**

Wildland fire activity is light and remains below normal for year to date averages. Last year at this time TIDC had recorded a total of 44729 acres on 50 wildfires and TIDC staff had responded to 134 abandoned campfires.

Table 2: Year-to-Date Fire Activity for Dispatch Center response zones, September 1, 2017.

[https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/documents/predictive-services/intelligence/BTF GRTE Fire Numbers 2017.xlsx](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
	11	3125	6	0.6	3	244	100

## 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>
- National 7 Day Significant Fire Potential – Great Basin (portal updated daily):  
<http://psgeodata.fs.fed.us/forecast/#/outlooks?state=map&gaccld=12>
- 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](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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