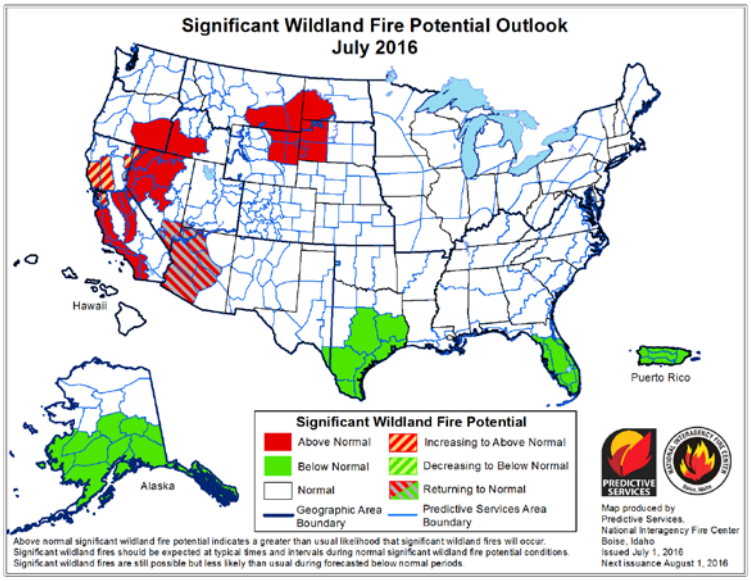
TETON INTERAGENCY FIRE

# JULY 2016 WILDLAND FIRE OUTLOOK

*July 7, 2016*




*Significant Wildland Fire Potential for July 2016 (issued July 1, 2016).*
*http://www.predictiveservices.nifc.gov/outlooks/outlooks.htm*

## SUMMARY

The winter, spring, and early summer of this water year were dominated by early season moisture followed by a dry spring, which may be a reflection in part of the rapid transition from strong El Niño/Southern Oscillation (ENSO) conditions into neutral and likely La Niña conditions by fall. This pattern featured:

- Four of the last six months with below normal precipitation, and five of the last eight below normal (at Moose WY weather station).
- While moisture tracking is near normal year-to-date from October 2015 through July 1 2016, the last three months of precipitation at Moose are at 66% of normal.
- In sagebrush flats and drier sites, a drier than normal spring may allow fuels in grasses and sagebrush to become available sooner than normal. In conifer, normal greenup continues while 1000 hour dead fuels are drier than normal.

## KEY POINTS for July

- LIVE FUELS > Live fuels continue to green up with seasonal growth and moisture trends. Live fuel moistures sampled on-site and projected moistures will remain below critical levels for early July in conifer, though sagebrush fuels may reach critical status during July.
- DEAD FUELS > In conifer fuels, fine dead fuels and 1000-hour fuels (heavy downed logs) are drier than normal, with 1000-hour fuels at the driest 10%. These fuels may reach critical status during July.
- WEATHER > At Moose weather station, April-May-June received 65% of normal precipitation, a pattern reflected throughout the dispatch area, with wetter trends toward the south and east. June temperatures were above normal and are expected to be above normal for July through September. Normal precipitation is also predicted for July through September.
- LOCAL SUMMARY > Fire danger has increased to High and is likely to remain at this level or higher until monsoon moisture flow moves north from the Southwest. Monsoon flow this season may remain south of the Teton Dispatch area and produce a greater ratio of dry vs. wet thunderstorms than typical.
- REGIONAL OUTLOOK > Regional outlooks indicate normal fire activity for mid-summer, with normal fire activity in mid- to late-season. The transition from El Niño to neutral to La Niña conditions may continue to affect monsoonal flow from the Southwest and low-pressure flows from the northwest.
- FIRE SEASON > Local and regional outlooks call for a normal fire season. During a normal season, Bridger-Teton National Forest will have 67 fires for 3290 acres and Grand Teton National Park will have 12 fires for 789 acres.

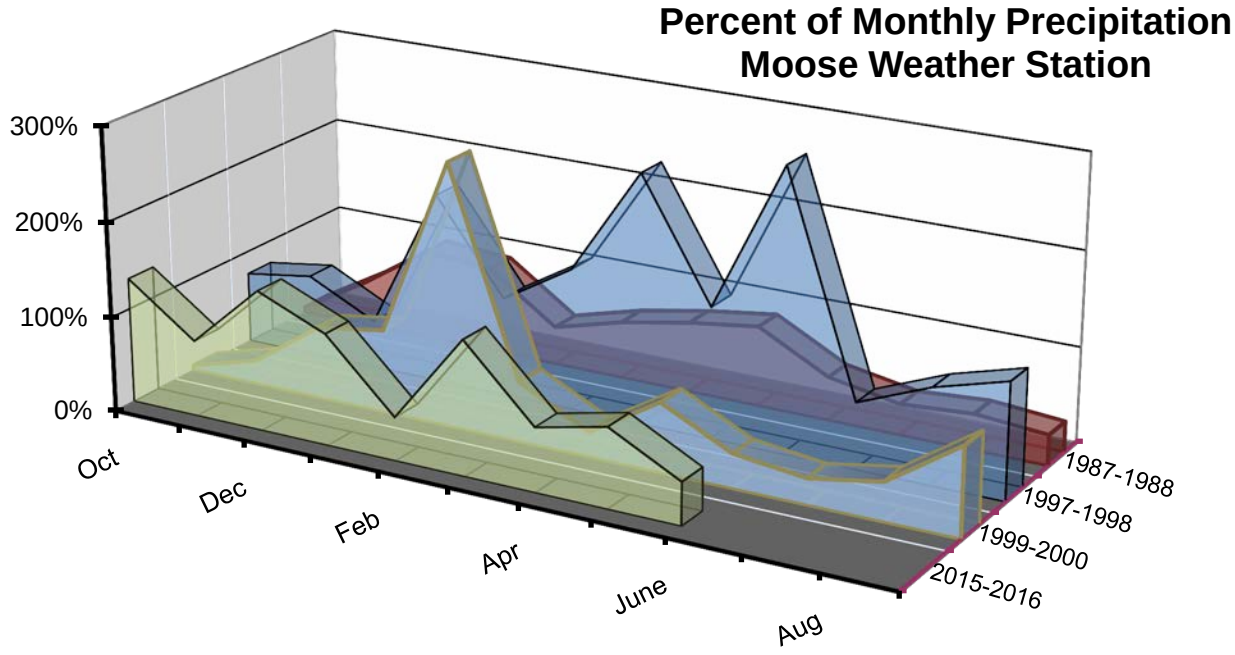
## CLIMATE AND FUELS OUTLOOK

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

Area precipitation for the water year to date (October through June) demonstrates a variability that is moving toward a drying trend – with four months above normal and five below normal, and the last three months (April through June) averaging 65% of normal. June received 45 % of normal precipitation at the Moose weather station (June 2016, automated), which is representative for lower elevation sites in Grand Teton National Park and some North Zone sites. Area-wide moisture tracking (Figure 1) captures the variety of moisture impacts for the entire Teton Interagency zone, with cumulative moisture ranging from 10-90 percent of normal.

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

| | | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | June | YTD total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Monthly Precipitation** | 1987-88 | 0.09 | 1.27 | 2.59 | 2.37 | 0.75 | 0.99 | 1.12 | 1.61 | .75 | 11.54 |
| (inches) | 1997-98 | 1.11 | 2.28 | 1.36 | 5.2 | 1.9 | 2.42 | 3.92 | 2.6 | 4.77 | 25.56 |
| | 1999-00 | 0.08 | 0.67 | 2.03 | 2.27 | 5.04 | 1.03 | 0.4 | 1.38 | .59 | 13.49 |
| | 2014-15 | 0.54 | 3.55 | 3.26 | 2.31 | 1.57 | 0.67 | 0.8 | 3.83 | 1.03 | 17.56 |
| | *Normal* | 2.58 | 1.82 | 1.62 | 1.49 | 1.88 | 2.58 | 1.82 | 1.62 | *1.61* | *17.78* |
| | **2015-16** | **1.94** | **2.11** | **3.93** | **3.02** | **0.83** | **2.28** | **1** | **1.57** | **.72** | **17.4** |
| Percent of NORMAL | 1987-88 | 6% | 60% | 102% | 92% | 40% | 63% | 75% | 84% | 47% | 65% |
| | 1997-98 | 76% | 86% | 51% | 202% | 104% | 149% | 263% | 138% | 296% | 144% |
| | 1999-00 | 6% | 32% | 80% | 88% | 267% | 66% | 27% | 72% | 37% | 76% |
| | 2014-15 | 37% | 134% | 122% | 90% | 86% | 41% | 54% | 204% | 64% | 99% |
| | **2015-16** | **132%** | **80%** | **147%** | **117%** | **46%** | **141%** | **67%** | **84%** | **45%** | **98%** |



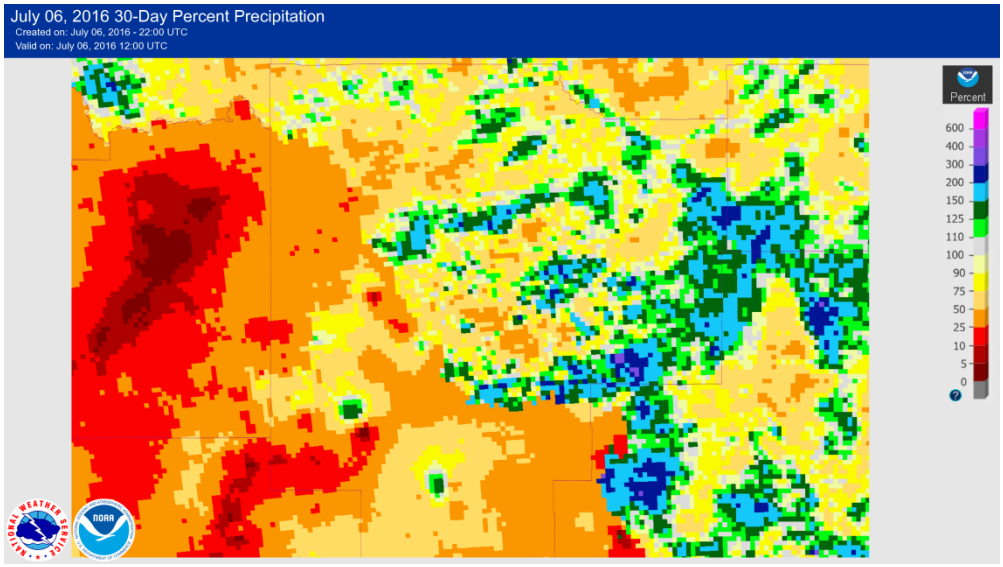



*Figure 1*. Wyoming, Current Precipitation – Percent of Normal Precipitation. For the past 30 days (ending July 6, 2016), western and southwest Wyoming exhibits a range of below-normal rainfall, from 10-90 percent of normal, and central and eastern Wyoming receiving from below- to above-normal precipitation. http://water.weather.gov/precip/.

## *(2) Drought Monitor*

The current drought map for the U.S. West shows 64% of the West in some stage of abnormally dry to drought conditions. In Wyoming, 31% of the state is abnormally dry, compared to 28% at this date last year. Dry conditions in Wyoming track across the northern tier of the state, with some "Abnormally Dry" impacts in the northern portion of the Teton Dispatch area.

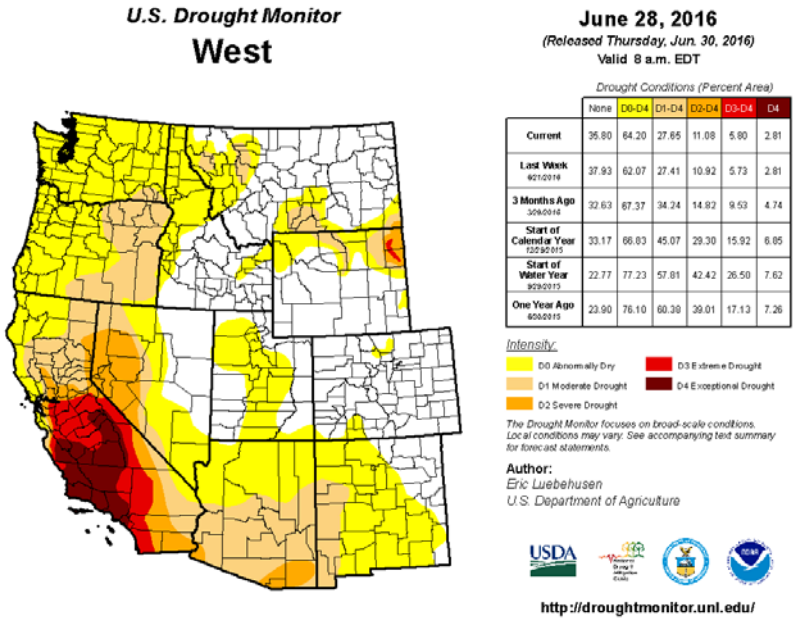



*Figure 2a.* U.S. Drought Monitor – West.
http://droughtmonitor.unl.edu/Home/RegionalDroughtMonitor.aspx?west

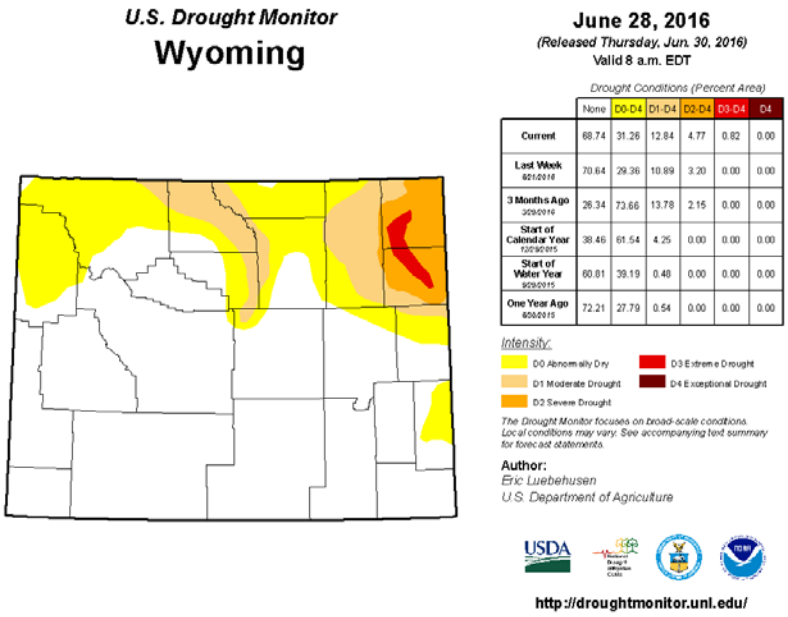
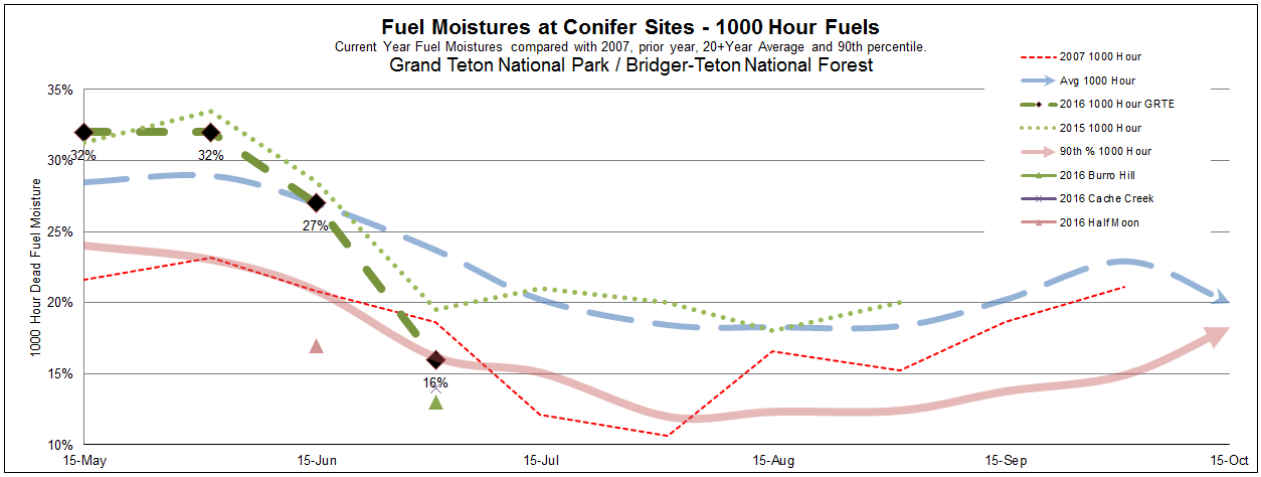


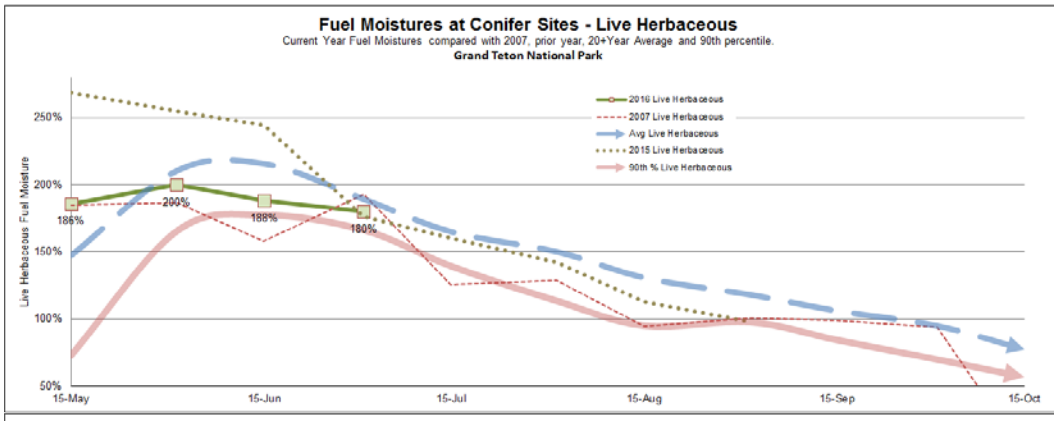

*Figure 2b.* U.S. Drought Monitor – Wyoming.
http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?WY

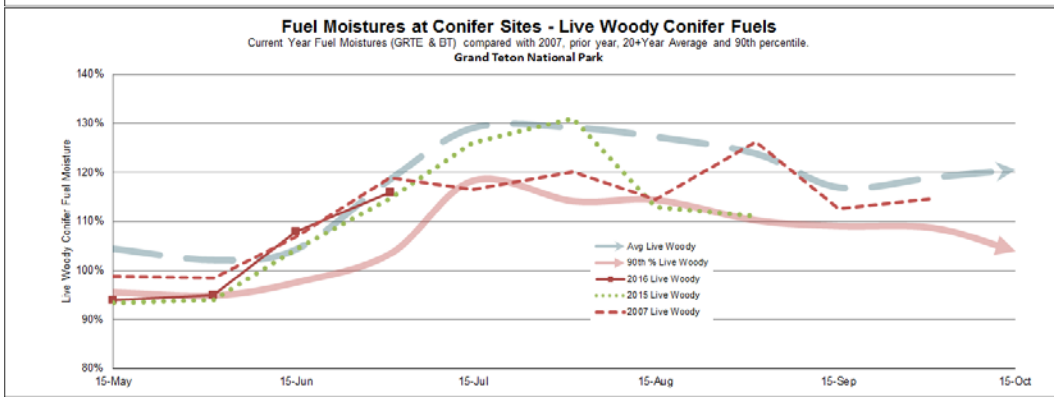
### *(3) Fuel Moisture*

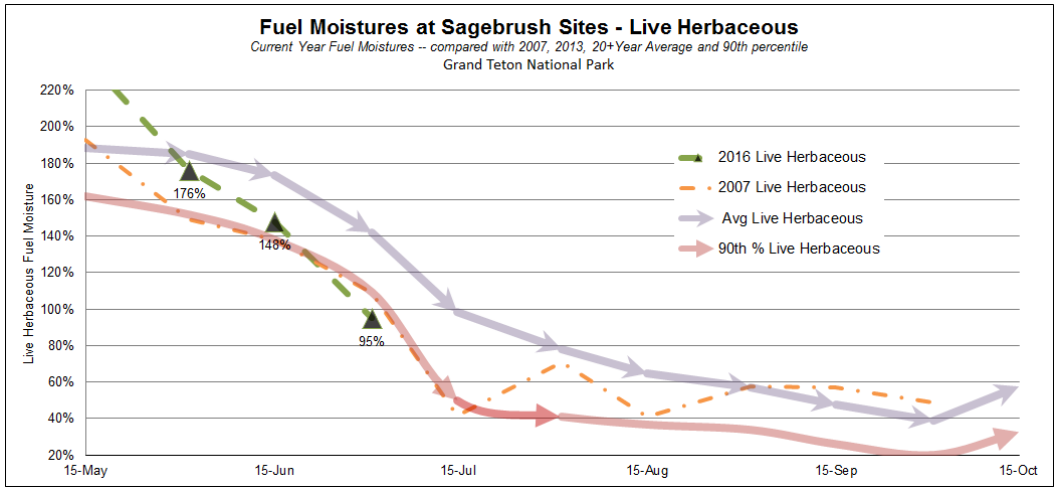
Fuel moisture sampling of live and dead fuels at long-term sampling sites in Grand Teton National Park indicate a normal greenup in sagebrush fuel types that dropped to drier than normal by July 1, a response to a drier-than-than spring. Live fuel moistures in conifer fuel types are trending normal, with 1000 hour dead fuels (downed logs) nearing the driest 10 % (the 90th percentile of moisture) when compared to the average for July 1. Additional fuel moisture sampling sites will be added for upcoming outlooks. For additional tracking, see the National Fuel Moisture Database for Wyoming: http://www.wfas.net/index.php/national-fuel-moisture-database-moisture-drought-103.

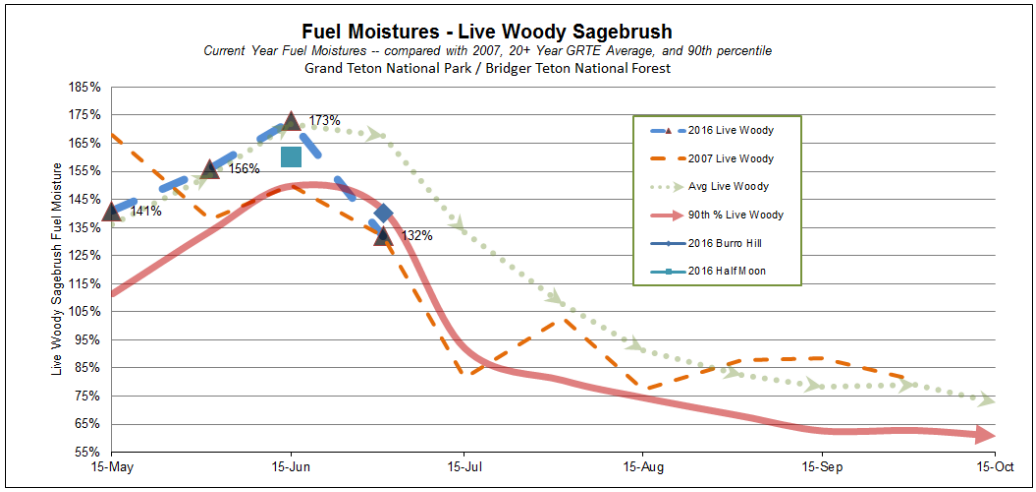
- NOTE 1: 1000 Hour Fuels (first graph below) demonstrate a trend throughout the Dispatch area of long-term drying in these fuels, with samples from Burro Hill and Grand Teton averaged sites (north), Cache Creek (east of Jackson, central), and Half Moon (east/south) ranging from 13-16% for July 1.
- NOTE 2: Live Woody-Conifer averages moistures from Grand Teton NP and 3 sites in Bridger Teton NF.
- NOTE 3: A similar trend for Live Woody-Sagebrush shows a range of moistures, from 132%-140% in the north (Burro Hill and Grand Teton averages) and 160% east/south at Half Moon.




Fuel Moistures at Conifer Sites - Live Herbaceous
Current Year Fuel Moistures compared with 2007, prior year, 20+Year Average and 90th percentile.
Grand Teton National Park
Live Herbaceous Fuel Moisture
2016 Live Herbaceous
2007 Live Herbaceous
Avg Live Herbaceous
2015 Live Herbaceous
90th % Live Herbaceous
186%
200%
188%
180%
250%
200%
150%
100%
50%
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 (GRTE & BT) compared with 2007, prior year, 20+Year Average and 90th percentile.
Grand Teton National Park
Live Woody Conifer Fuel Moisture
Avg Live Woody
90th % Live Woody
2016 Live Woody
2015 Live Woody
2007 Live Woody
140%
130%
120%
110%
100%
90%
80%
15-May
15-Jun
15-Jul
15-Aug
15-Sep
15-Oct


Fuel Moistures at Sagebrush Sites - Live Herbaceous
Current Year Fuel Moistures -- compared with 2007, 2013, 20+Year Average and 90th percentile
Grand Teton National Park
Live Herbaceous Fuel Moisture
2016 Live Herbaceous
2007 Live Herbaceous
Avg Live Herbaceous
90th % Live Herbaceous
176%
148%
95%
220%
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
15-May
15-Jun
15-Jul
15-Aug
15-Sep
15-Oct


Fuel Moistures - Live Woody Sagebrush
Current Year Fuel Moistures -- compared with 2007, 20+ Year GRTE Average, and 90th percentile
Grand Teton National Park / Bridger Teton National Forest
Live Woody Sagebrush Fuel Moisture
2016 Live Woody
2007 Live Woody
Avg Live Woody
90th % Live Woody
2016 Burro Hill
2016 Half Moon
141%
156%
173%
132%
185%
175%
165%
155%
145%
135%
125%
115%
105%
95%
85%
75%
65%
55%
15-May
15-Jun
15-Jul
15-Aug
15-Sep
15-Oct

### *(4) Long-term Temperature and Precipitation Outlook*

Outlooks from the Climate Prediction Center reflect expectations for a transition from El Niño to La Niña conditions into the summer and fall, with potential impacts on the US West. The 90-day outlook for July-August-September calls increased probability for above normal temperatures and drier-than-normal precipitation along the west edge of the Teton Dispatch area. Of note – the August-September-October outlook indicates increased probability of warmer temperatures and an outlook for less than normal precipitation (*http://www.cpc.ncep.noaa.gov/products/predictions/90day/*). A

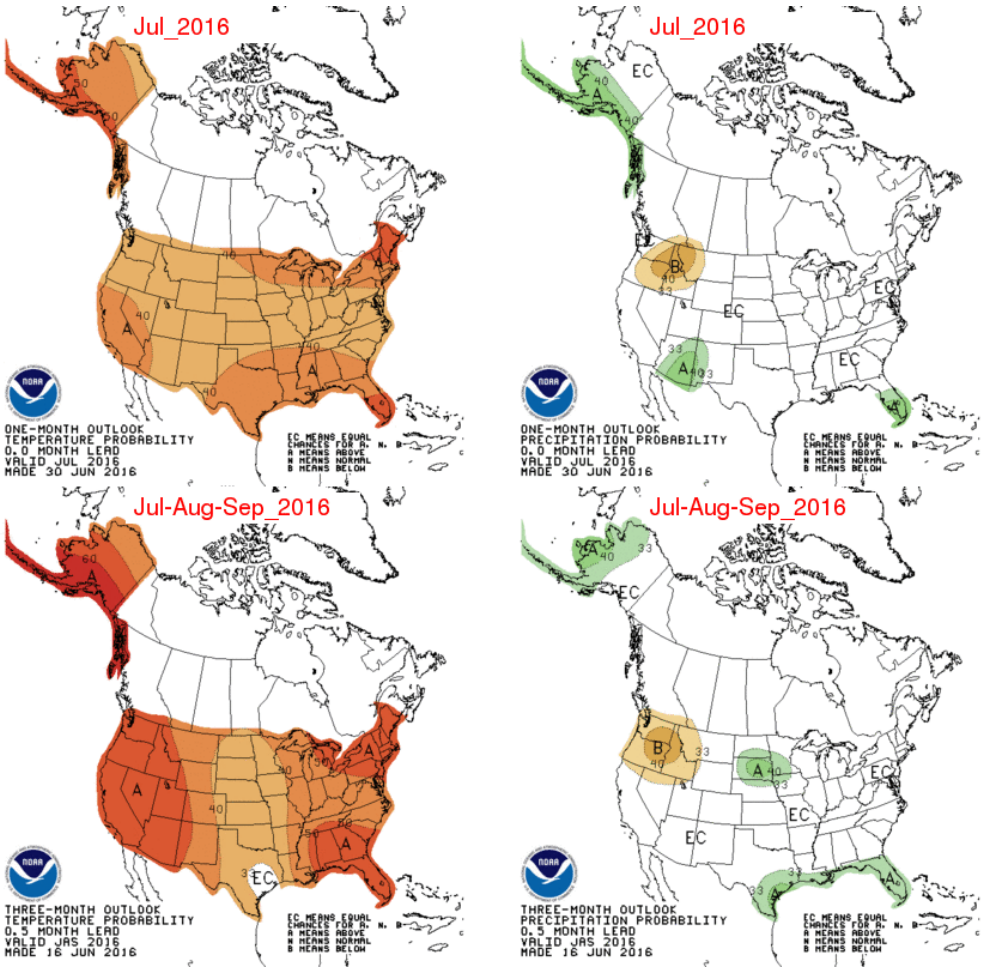



*Figure 4:* Temperature and Precipitation Outlook for July and July-August-September Outlook (http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.gif)

## 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 zone and neighboring units, with potential for above-normal fire activity in northern and western areas of the Great Basin geographic area. Neutral El Niño conditions will shift to weak La Niña conditions in the fall, which will likely support normal wildfire potential with a potential for the fire season extending later than normal.

*Excerpts of National and Regional Outlooks from "National Wildland Significant Fire Potential Outlook" (July 1, 2016, NIFC Predictive Services).* http://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.

**National > Season Trend (excerpts)**

- During late June and July significant wildland fire potential usually transitions from the Southwest and southern California northward into the remainder of the western United States. The timing of this transition should be near normal; however, some areas will experience an increased potential for significant fires due in large part to high fine fuel loading. These areas include the northern and western Great Basin, northern California and some of the finer fuel regime areas of Montana, Wyoming and the Dakotas.
- The same heavy fine fuel crops that are driving the above normal forecast for July will continue to present above normal potential into August. Forecasted normal conditions in the higher elevations for August, however, mean that a number of significant wildland fires are likely to develop in these areas throughout the West. Fire season in the western U.S. is typically at its peak in July and August and this year should be no different with the potential for significant fires across the spectrum of fuel regimes all indicating at least normal levels of fire activity.
- In September-October the northern tier of states should see a rapid return to normal wildfire potential.

**Weather and Climate Outlooks**

- El Niño-Southern Oscillation (ENSO) conditions are neutral. The latest trends of sea surface temperatures in the equatorial Pacific indicate continued cooling, approaching weak La Niña conditions by the fall.

**Fuel Conditions and Fire Season Timing**

- High elevation and timbered areas of the western U.S., especially the northwestern quarter of the country still have enough fuel moisture in place to limit potential in the early July. As seasonal hot and dry conditions return, fuels will dry and normal fire activity will begin in all of these areas. Fine fuel crops may be robust in these fuel types also and would present the potential for rapid rates of spread under the right circumstances.

**Great Basin >**

- July will likely see a constant shift between periods of hot weather with showers and thunderstorms and periods of windy and drier weather, especially over western and northern Great Basin. This will **keep fire potential above normal for the month**. Above normal fire potential will likely remain over southern Nevada into southwestern Utah through the first half of July until more regular monsoon moisture brings rainfall to the region.
- The Great Basin as well as southeast Oregon have issued a Fuels and Fire Behavior Advisory for some of their rangeland fuel areas. This advisory focuses on the abundant fine fuels and low fuel moistures. http://www.predictiveservices.nifc.gov/fuels_fire-danger/fuels_advisories.htm
- The wettest month of the monsoon may be July, and it may weaken somewhat in August, with a potential to see drier-than-normal weather across Nevada into Utah. Therefore **fire activity is expected remain above normal over the north and west throughout August**.
- **Above normal fire potential** will likely continue into **September** as fall systems bring stronger winds to the Area. Fire activity is expected to return to normal by October.

## CURRENT FIRE ACTIVITY

### *Fire Activity: Teton Interagency Dispatch Center*

Early season wildland fire activity is trending comparable to other years with wet springs, with slightly more acres than in recent years.

*Table 2:* Year-to-Date Fire Activity for Dispatch Center response zones, July 7, 2016. (http://gacc.nifc.gov/gbcc/dispatch/wy-tdc/documents/predictive-services/intelligence/BTF_GRTE_Fire_Numbers_2016.xlsx)

| Teton Interagency Fire Management Area Totals | Human Fires | Human Acres | Natural Fires | Natural Acres | RX Fires | RX Acres | Abandoned Non-escape Campfires |
|---|---|---|---|---|---|---|---|
| | 4 | .43 | 3 | 0.5 | 114 | 208 | 44 |

*For further information, contact:* **Ron Steffens**
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## Selected Sources

- Precipitation Tracking: http://water.weather.gov/precip/
- Snow / Snotel Tracking: http://www.wcc.nrcs.usda.gov/snotel/Wyoming/wyoming.html
- Climate Prediction Center, Three-Month Outlooks: *http://www.cpc.ncep.noaa.gov/products/predictions/90day/*
- *Regional outlooks from "National Wildland Significant Fire Potential Outlook" (June 1, 2016, NIFC Predictive Services):* http://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.
- Great Basin Predictive Services/Outlooks: http://gacc.nifc.gov/gbcc/outlooks.php.
- Teton Interagency Fire and Dispatch Center: http://www.tetonfires.com.