# TETON INTERAGENCY FIRE September 2020 Wildland Fire Outlook

September 9, 2020



NIFC - Significant Wildland Fire Potential - September 2020 & NIFC - Significant Wildland Fire Potential - October 2020 (issued September 1).

## SUMMARY

The wildland fire outlook for the Teton Interagency Dispatch area is of a fire season in transition – from a significant drying trend in August, moderated by thunderstorm moisture in some areas -- to a wet/cool period typical of early fall. In this season's case, we saw a significant drop in temperatures, high winds toppling trees, and snow and variable rain. Half Moon RAWs only receive .01" while Burro Hill received .61" and Jackson Hole Airport 1.1". For the remainder of fall, into early October, we are likely to see drier and warmer than normal conditions. Much of Wyoming is in drought, though the impacts in the Dispatch area are varied. The Moose climate reference weather station received 13% of normal moisture for August, one of the three driest Augusts in a 61- year record.

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 September 1, outlooks in the Teton Interagency response area indicate **potential for normal fire activity for September and October.** While lightning ignitions are far less likely, we continue to see increased visitation and a correlation with abandoned campfires. As hunting seasons open, the potential will increase for wildfires ignited by hunter campfires and warming fires.

Nationally, wildfire activity is significant, with Great Basin Area at Preparedness Level 3, with National Preparedness Level 5. The Teton Interagency Fire Dispatch Area is at Preparedness Level 4.

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

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## CLIMATE AND FUELS STATISTICS

# 1. Prior 14-day and 60-day Temperatures

**LATE AUGUST HEAT WAVE.** The prior two weeks were hotter than normal with high pressure centered over the Southwest US. This brought the 60-day temperature departure map up from cooler than normal at the beginning of August to normal for most of the TIDC Area for mid-summer.

Departure from Normal Temperature (F) 8/17/2020 - 8/30/2020



Generated 8/31/2020 at HPRCC using provisional data.

NOAA Regional Climate Centers

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



Departure from Normal Temperature (F)

Generated 8/31/2020 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

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

Area precipitation tracking for the water year to date (October through August) reflects a wetter than normal conditions in the early growing season and much drier than normal in mid- and late-summer.



Generated 8/31/2020 at HPRCC using provisional data.

NOAA Regional Climate Centers

*Figure 2a*. This map of Departure from Normal Precipitation for the past 30 days shows the Teton Interagency Fire area is .5 to 1.5 inches below normal. Minimal rain fell during the month of August, associated with a few patchy thunderstorms. <u>HPRCC - 30 Day Departure from Normal - Wyoming-Permalink</u>.



Departure from Normal Precipitation (in)

Generated 8/31/2020 at HPRCC using provisional data.

NOAA Regional Climate Centers

*Figure 2b.* With early summer's rainfall included, the 90-day Departure from Normal Precipitation is below average for much of Western Wyoming and below average statewide. <u>HPRCC - 90 Day Departure from</u> Normal - Wyoming- Permalink

Monthly precipitation tracking for 2020 at the <u>Moose 1 NNE climate reference station</u>, an automated station in the <u>US Climate Reference Network</u>, provides long-term trends representative of lower elevation sites in Grand Teton National Park and the North Zone. This site recorded above average precipitation for three of the past six months. In the prior three months the station received 75% of average precipitation. This July and August were among the driest over the 61-year period of record and only two Augusts were as dry or drier as August 2020.

|                      |         | Mar  | Apr  | Мау  | June | July | August | YTD total |
|----------------------|---------|------|------|------|------|------|--------|-----------|
| Precipitation        | 1987-88 | 0.99 | 1.12 | 1.61 | 0.75 | 0.43 | 0.5    | 12.47     |
| (inches)             | 1999-00 | 1.03 | 0.4  | 1.38 | 0.59 | 0.36 | 0.53   | 14.38     |
|                      | 2015-16 | 2.28 | 1    | 1.57 | 0.72 | 0.53 | 0.16   | 18.09     |
|                      | 2018-19 | 0.78 | 3.04 | 1.5  | 1.06 | 2.14 | 0.41   | 23.29     |
|                      | Normal  | 2.58 | 1.82 | 1.62 | 1.61 | 1.29 | 1.29   | 20.36     |
|                      | 2019-20 | 2.43 | 2.78 | 1.52 | 2.9  | 0.43 | 0.17   | 20.99     |
| Percent of<br>NORMAL | 1987-88 | 63%  | 75%  | 84%  | 47%  | 33%  | 39%    | 61%       |
|                      | 1999-00 | 66%  | 27%  | 72%  | 37%  | 28%  | 41%    | 71%       |
|                      | 2015-16 | 141% | 67%  | 84%  | 45%  | 41%  | 12%    | 89%       |
|                      | 2018-19 | 48%  | 204% | 80%  | 66%  | 166% | 32%    | 114%      |
|                      | 2019-20 | 150% | 187% | 81%  | 180% | 33%  | 13%    | 103%      |







#### 3. Drought Monitor

The U.S. Drought Monitor places 85% of the West in some level of drought conditions, up from 74% last month and compared to 37% at this time last year. For Wyoming, 41% is in severe to extreme drought, and 93% of the state is in drought or abnormally dry conditions, compared to 23% 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. <u>https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?West</u>





## 4. Fuel Moisture

Fuels were generally normal or drier than normal by mid-August. By early September fuels were trending toward normal or drier than normal, with fuels becoming available for fire activity due to seasonal curing and a drier than normal August in many locations (though thunderstorm precipitation was localized). Recent fuel moisture samples show some variations regarding fuel availability. A fire in the Old Faithful area of Yellowstone National Park grew to 3500 acres and illustrates the potential for large fire growth in the Greater Yellowstone Area, and the Swinging Bridge fire burned 100 acres in light fuels. Widespread snow on September 7 will increase fuel moistures but also increase freeze-cured fuel availability.

#### Live Woody Fuel Moisture - Sagebrush

- On Bridger-Teton NF sites, fuel moisture dropped to 101% average by September 1 (for Wyoming Big, Threetip and Silver Sagebrush combined). Wyoming Big Sagebrush at Half Moon, with 90% fuel moisture, is comparable with GTNP sites.
- Teton NP averaged **79%** (Mountain Big Sagebrush), which is trending at 90<sup>th</sup> percentile moisture levels for September 1.

#### • 1000 Hour Dead Fuel Moisture

- At Bridger-Teton NF sampling sites, the 1000 hour fuels (heavy dead and downed logs) averaged **13%** (ranging from 7-17%) for September 1.
- At Grand Teton the 1000 hour fuels for September 1 averaged **14%**, which is drier than normal for park sites for early September and nearing the 90<sup>th</sup> percentile of dryness.
- Live Woody Fuel Moisture Conifers
  - Average of **111%** (ranging from 100-137%) for lodgepole pine at Bridger Teton NF.
  - Average of 120% for August 15 at Grand Teton sampling sites for lodgepole and Douglas fir, midway between normal and 90<sup>th</sup> percentile for this date. The average rose to 133% for September 1, above normal for the date, which may reflect late season flush or differences in sampling techniques.

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

At **sampling stations in Grand Teton National Park**, sagebrush fuels (live herbaceous and live woody) were below normal prior to the recent storm, reflecting the drier than normal July-August moisture patterns. Conifer fuels sites are normal to above normal.









## 5. Temperature and Precipitation Outlooks

## 6-10 Day Outlook

For September 14-19, the Outlook indicates conditions that are warmer (left) and drier (right) than normal. https://www.cpc.ncep.noaa.gov/products/predictions/610day/.



#### 8-14 Day Outlook

For September 18-22, the Outlook also indicates conditions that warmer (left) and drier (right) than normal). https://www.cpc.ncep.noaa.gov/products/predictions/814day/



#### 3-4 Week Experimental Outlook

For September 19 to October 2, the 3-4 Week Experimental Outlook indicates warmer and drier than normal conditions for temperature (left) and precipitation (right).

https://www.cpc.ncep.noaa.gov/products/predictions/WK34/.



#### 30- and 90-Day Temperature & Precipitation Outlooks

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



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) (<u>http://ggweather.com/enso/oni.htm</u>) offers a streamlined tool for tracking El Niño (warm) and La Niña (cool) events in the tropical Pacific.

CURRENT STATUS ENSO-neutral continued through the summer, with a -0.4 for JJA that indicates a trend toward the -0.5 ONI criteria that signifies a La Niña. A 50-55% chance of La Niña development during Northern Hemisphere fall 2020 will continue 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: <u>http://www.cpc.ncep.noaa.gov/products/analysis\_monitoring/enso\_advisory/.</u>
- ENSO Climate Risk Maps (by month): <u>https://wrcc.dri.edu/Climate/enso\_risk\_maps.php</u>.

## 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 to above normal fire activity in September 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," September 1, 2020, NIFC Predictive Services. <u>http://www.nifc.gov/nicc/predictive/outlooks/monthly\_seasonal\_outlook.pdf</u>.

## National – Executive Summary (excerpts)

A dramatic increase in fire activity was observed across the West in August as several multi-day heat and lightning events primed and ignited fuels that had become critically dry. Wind events, while not frequent, were impactful. Among the hardest hit states was California where several hundred wildfires were ignited by a multi-day lightning event. Other states greatly impacted by the increase in activity were Oregon, Colorado, and Arizona-which experienced an untimely pause in the seasonal monsoon. The Great Basin remained active as did West Texas. By midmonth, the Northern Rockies had increased initial attack and large fire activity. Generally, most areas across the West received less than 25% of average precipitation in August. The precipitation received was mostly associated with thunderstorms and provided little benefit. Temperatures were generally 2-4°F above normal. North American Monsoonal activity diminished across the Southwest in early to mid-August but showed a slight resurgence late in the month. Areas that had largely exited the fire season by late July reentered it. Significant fire activity redeveloped across Arizona. Western Colorado also experienced an increase in activity as well. A continuation of peak season activity into September is expected across much of the West as drought conditions continue to take hold. Most western regions will experience areas of above normal significant large fire potential as shown on the maps to the left. By mid-month, however, the seasonal transition to fall will begin. Cold fronts brining winds but also precipitation will begin providing relief to the critically dry fuels. Fire activity will begin to diminish as fuel moistures begin to recover. As the days get shorter, overnight humidity recoveries will become greater. This will add further relief to fuels, especially the finer fuels.

#### Weather and Climate Outlooks

ENSO-neutral conditions continued in August with near-to-below average sea surface temperatures (SSTs) in the equatorial east-central and eastern Pacific Ocean. The Climate Predicter Center (CPC) forecasts ENSO-neutral

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conditions continuing through the summer, and a 50-55% chance of La Niña conditions developing in late September and October, continuing through the winter. Impacts of the developing weak event may have a significant impact on the fall fire season in California by producing a continuance of drier than average conditions along with a possible higher frequency of wind events.

#### **Great Basin**

Above normal large fire potential is expected to last through September over much of the Great Basin. Fire potential should gradually lower later in September into October across the region with normal conditions expected heading into the winter. There will be periods of increased fire potential through the fall/winter after dry periods in the areas of Nevada/Utah where fine fuel loading is above normal. Temperatures across the Great Basin have been above normal over the past 30 days, as stronger high pressure has been dominant. Precipitation over the last 30 days has been well below normal across most of the Great Basin. Otherwise, the Southwest Monsoon did not materialize, and this kept the Great Basin much hotter and drier than normal. Precipitation was just above normal across parts of Idaho into Wyoming, and below normal across the rest of the Great Basin. Severe to extreme drought continues over much of Nevada, Utah, and the Arizona Strip due to the abnormally dry July and August conditions. Shorter term moderate drought is occurring over a small portion of south-central Idaho due to recent dry conditions. These drought areas are expected to persist through the summer and into the fall.

Steady fire activity should continue across the northern and eastern half of the Great Basin throughout mid-September as lightning periodically impacts the southern and eastern half of the region and cold fronts dropping down from the north bring more wind to the Great Basin, especially the northern half to two-thirds of the region. Activity should then gradually decrease later in the month through October as cooler weather and shorter burn periods return. Live fuel moisture in piñon-juniper and higher-elevation timber are still very dry, and this is where fires will likely continue emerging along with grassy areas on windy days. The carryover fine fuels from 2019 will still be a concern for fire starts in Nevada and Utah as we head into the fall.

# **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 204 abandoned campfires to date are approximately 150 percent higher than the 133 campfires that TIDC staff had responded due at this time last year and nearly three times the 70 abandoned campfires by this time in 2018.* 

Year-to-Date Fire Activity for Dispatch Center response zones, September 1, 2020. *Three additional fire have occurred since September 1, including Swinging Bridge, 102 acres burned in Bridger-Teton NF, with cause undetermined.* <u>https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/sites/default/files/site-files/2020%20Fire%20Numbers%20and%20Stats.xlsx</u>.

| Teton Interagency<br>Fire Management<br>Area Totals | Human<br>Fires | Human<br>Acres | Natural<br>Fires | Natural<br>Acres | RX Fires | RX Acres | Abandoned<br>Non-<br>escape<br>Campfires |
|---|----------------|----------------|------------------|------------------|----------|----------|--|
|   | 10             | 29.93          | 11               | 14.72            | 3        | 1        | 204                                      |

#### Selected Sources

- Precipitation Tracking: <u>https://water.weather.gov/precip/</u>
- Precipitation Tracking focused on <u>Snotel sites, Wyoming</u> (beta site)
- Climate Prediction Center, One- and Three-Month Outlooks: <u>https://www.cpc.ncep.noaa.gov/products/predictions/90day/</u>
- Drought.gov Portal / Fire: <u>https://www.drought.gov/drought/data-maps-tools/fire</u>
- Intermountain West Climate Dashboard: <u>https://wwa.colorado.edu/climate/dashboard.html</u>
- Regional outlooks from "National Wildland Significant Fire Potential Outlook," NIFC Predictive Services (first of month in fire season): <u>https://www.nifc.gov/nicc/predictive/outlooks/monthly\_seasonal\_outlook.pdf</u>.
- Rocky Mountain Area Predictive Services/Outlooks: <u>https://gacc.nifc.gov/rmcc/outlooks1.php</u>.
- 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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