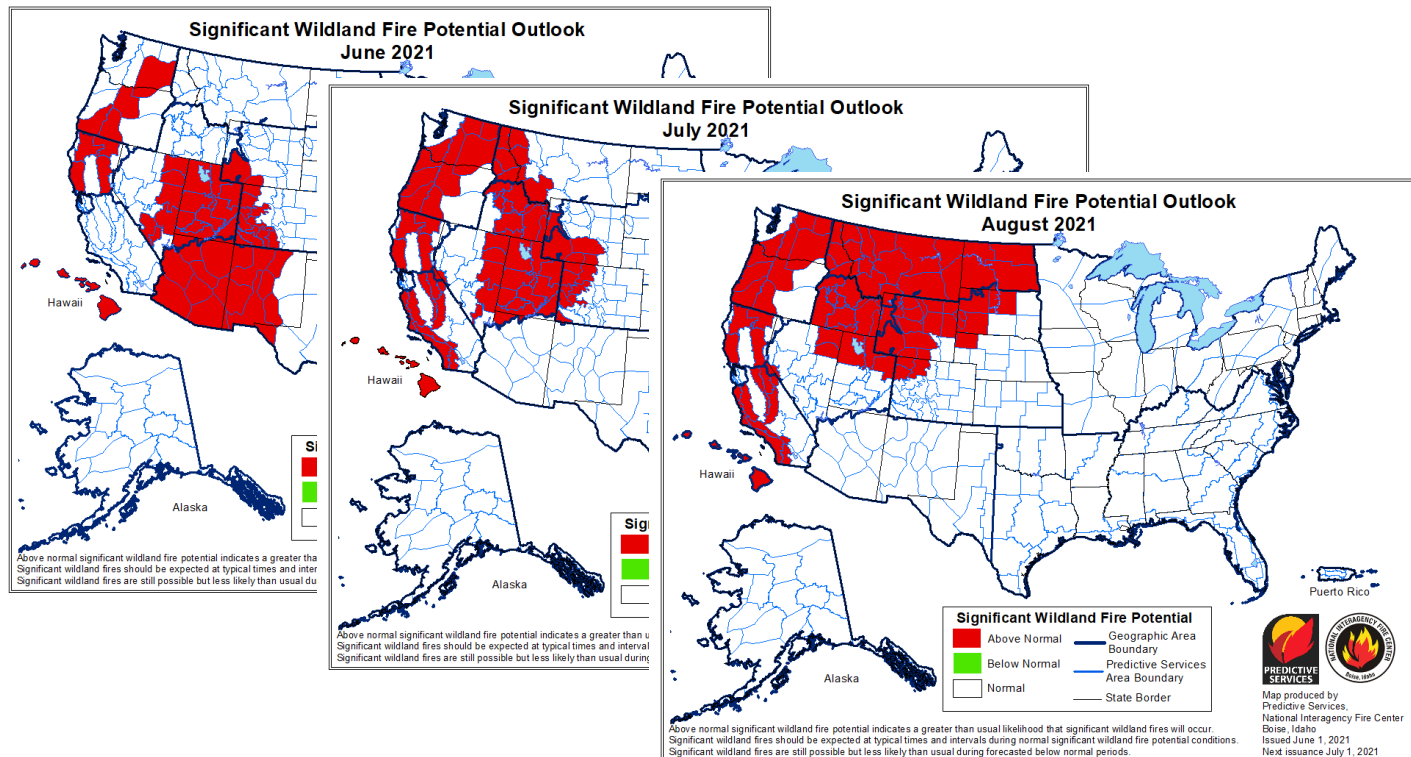


TETON INTERAGENCY FIRE 2021 WILDLAND FIRE OUTLOOK

June 1, 2021



Significant Wildland Fire Potential -- June, July, August 2021 (June 1 2021, National Interagency Fire Center).

<https://www.predictiveservices.nifc.gov/outlooks/outlooks.htm>.

SUMMARY

An earlier green-up and mainly dry spring weather indicate the potential for above-normal fire activity in the Teton Interagency Dispatch area and the Great Basin Geographic Area. While the TIDC area received 4-5 days of above-normal precipitation in late May, the area is considered in drought conditions and the temperature and precipitation outlooks for the summer are for drier and warmer than normal conditions.

The Great Basin Coordination Center "Seasonal Outlook for June-September 2021" shows the TIDC area with Above Normal fire potential for July-September.

- GBCC monthly outlook: <https://gacc.nifc.gov/gbcc/predictive/docs/monthly.pdf>
- Daily GBCC Fire Potential Briefing and related outlooks: <https://gacc.nifc.gov/gbcc/outlooks.php>

Potential fire activity is projected to be above normal for the first half of this period in southern and western areas of the Great Basin Region and July-September for the northern and eastern portions of the region.

During an average fire season, based on a 20-year fire history from 2001-2020, Bridger-Teton National Forest will average 52 unplanned fires (32 natural starts per year, and 20 human-caused fires) for an average of 16,522 acres per year. Grand Teton National Park will average 10 unplanned fires (six natural starts per year, and four human-caused fires) for an average of 1332 acres per year.

The Teton Interagency Wildland Fire Outlook is updated monthly. Current information on fire conditions, fire indices and fire activity can be found at www.tetonfires.com, with local and related regional and national outlooks at <https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/predictive-services/outlooks>.

CLIMATE AND FUELS

(1) Area Snowpack and Streamflow

Snowpack, accumulated precipitation, and streamflow in western Wyoming are below normal and less than last year at this time for snow water equivalency content (SWE) and for total precipitation for Water Year-to-Date (YTD). SNOTEL sites by river basin in the TIDC area range from 40-80% of normal for late May/early June. Snowmelt is proceeding slightly earlier than normal rate, with a majority of sites clear of snow.

Table 1: Percent of 30-Year Average Snow Water Content and Precipitation by Basin. 06/01/21.
[Wyoming Snow Precipitation Update \(uwyo.edu\)](http://uwyo.edu) * = Analysis may not be valid measure of conditions.

	Snow Water Content	Total Precipitation (Water YTD)
Snake River	62 %	85 %
Upper Green River	80 % *	84 %
Yellowstone	73 %	96 %
Wind River	80 % *	94 %
Upper Bear River	43 % *	74 %

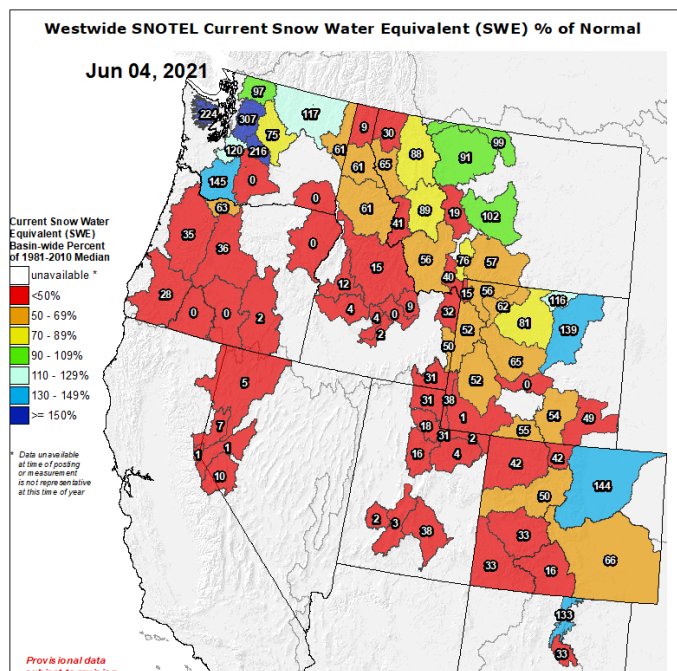


Figure 1a: [Westwide SNOTEL - Snow Water Equivalent, Percent of Normal](#)

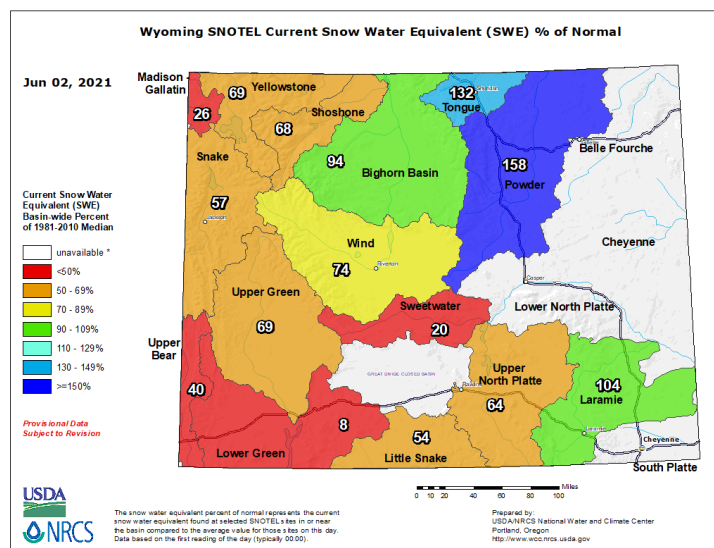
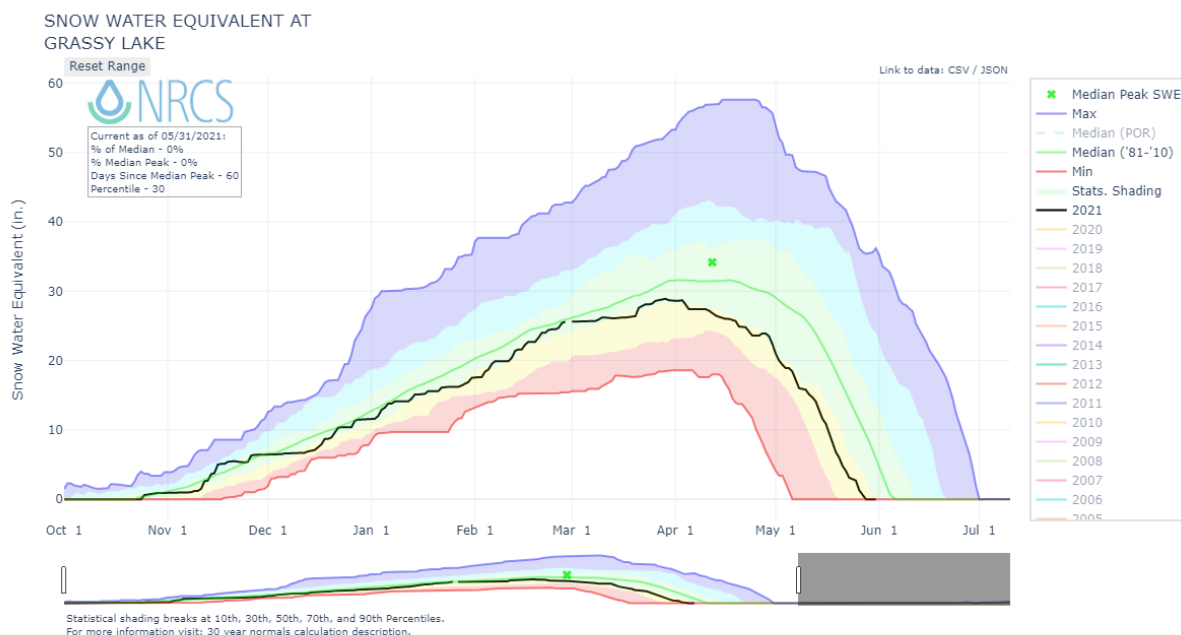


Figure 1b: [Wyoming SNOTEL - Snow Water Equivalent, Percent of Normal](#)

Figures 1 c-e (below). SNOTEL Water Year to Date, Snow Water Equivalent for Grassy Lake (North Zone), Elkhart Park Guard Station (East Zone), and Snider Basin (West Zone). Generally, these representative sites exhibited below-normal moisture (in total precipitation and snow water equivalent), with a slightly faster rate for snowmelt. Precipitation in late May has partly offset prior deficits.



Station (499) WATERYEAR=2021 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision
Fri Jun 04 06:26:40 GMT-08:00 2021

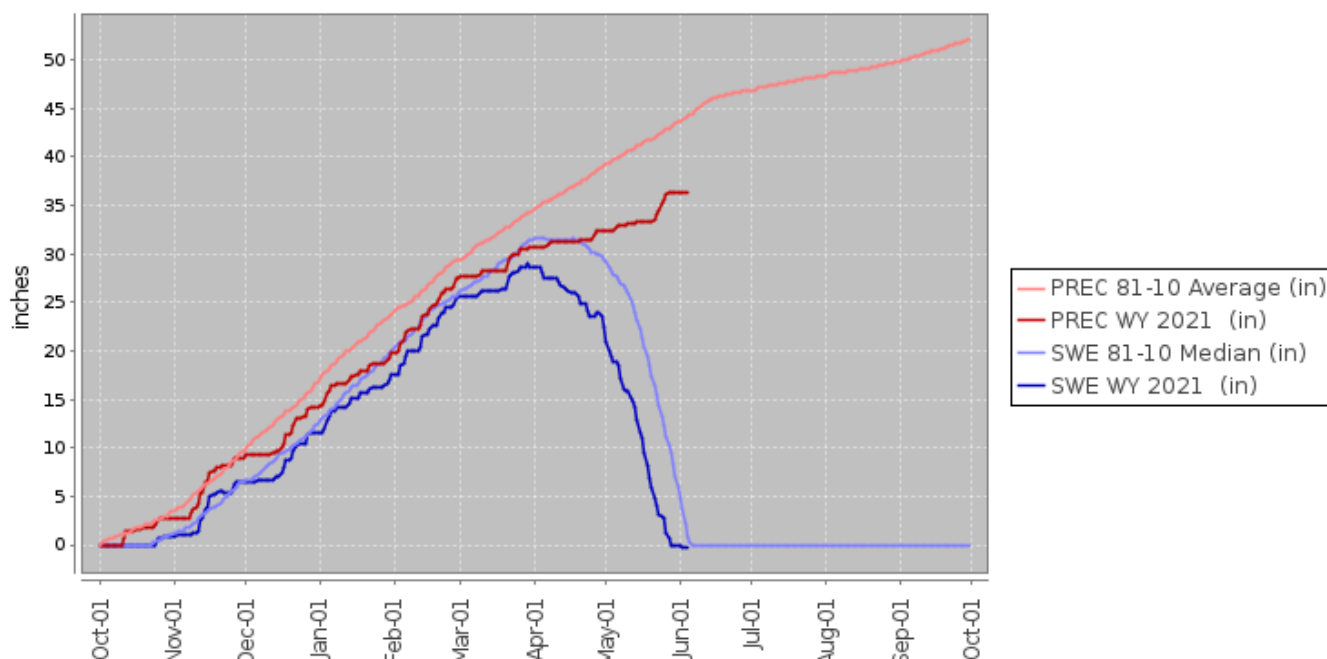
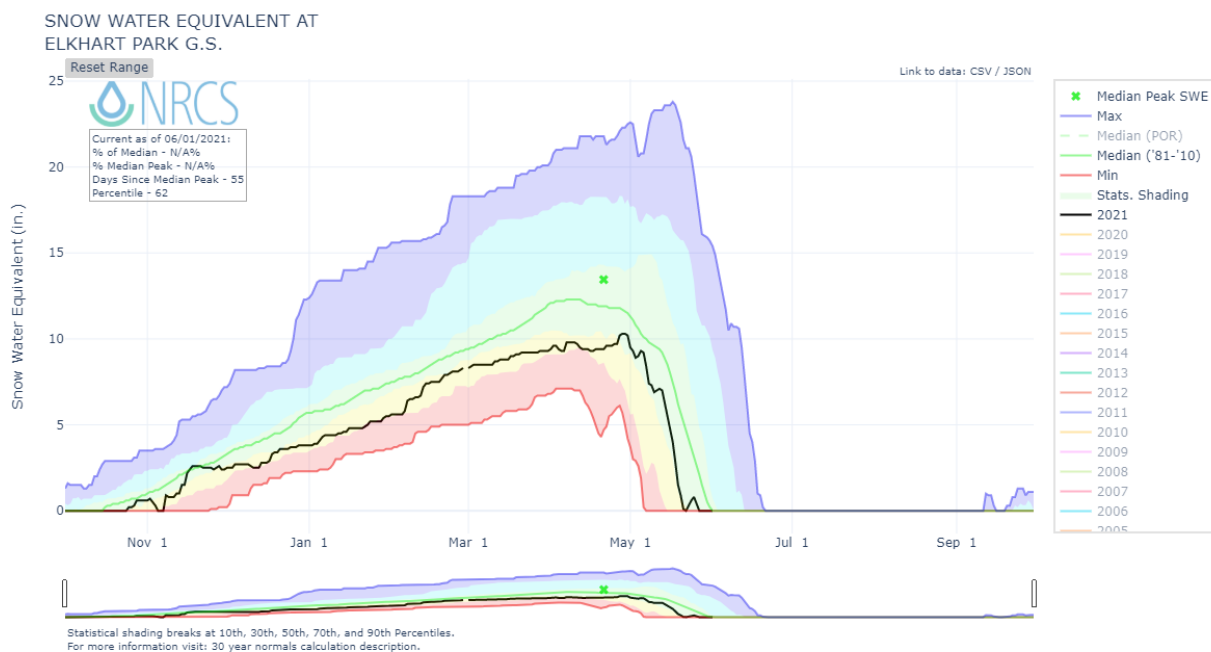


Figure 1c: NRCS Grassy Lake Snotel with season statistics (above) at https://www.nrcs.usda.gov/Internet/WCIS/AWS_PLOTS/siteCharts/POR/WTEQ/WY/Grassy%20Lake.html, and [Grassy Lake Snotel \(Teton Zone\). 499](#) with YTD precip and SWE (below).



Station (468) WATERYEAR=2021 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision
Fri Jun 04 06:26:41 GMT-08:00 2021

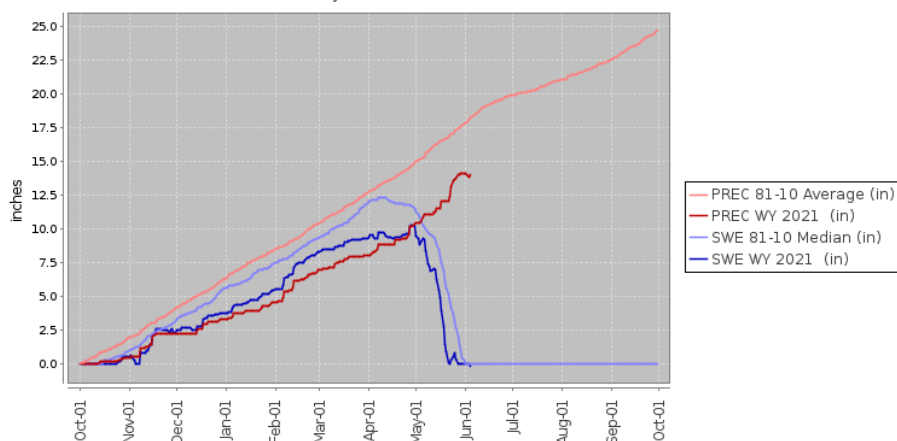


Figure 1d: NRCS Elkhart Snotel with season statistics (above) at [https://www.nrcs.usda.gov/Internet/WCIS/AWS_PLOTS/siteCharts/POR/WTEO/WY/Elkhart Park G.S..html](https://www.nrcs.usda.gov/Internet/WCIS/AWS_PLOTS/siteCharts/POR/WTEO/WY/Elkhart_Park_G.S..html) , and [Elkhart Snotel \(Wind River Zone\), 468](#) with YTD precip and SWE (below).

Station (765) WATERYEAR=2021 (Daily) NRCS National Water and Climate Center - Provisional Data - subject to revision
Fri Jun 04 06:26:40 GMT-08:00 2021

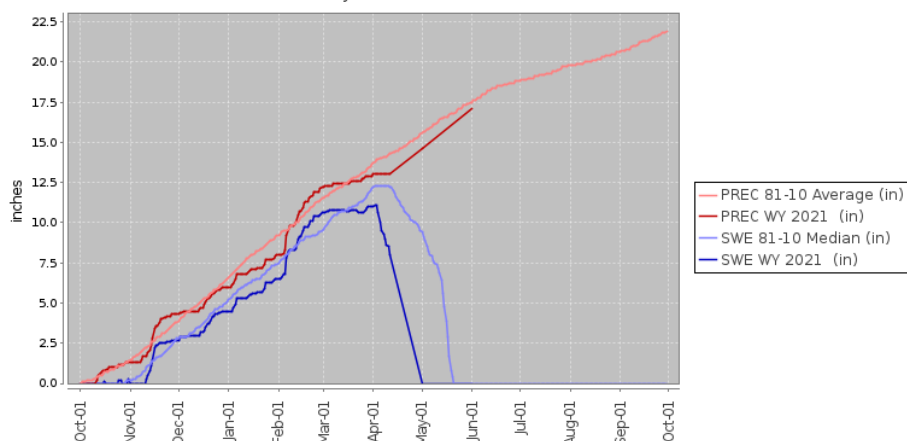
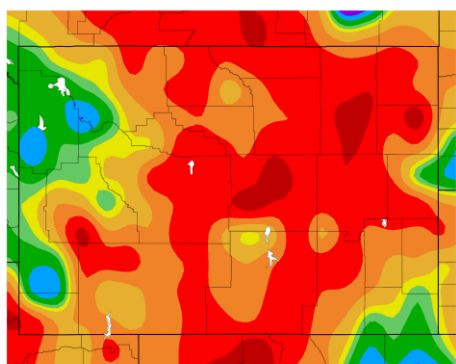


Figure 1e: [Snider Basin Snotel \(Wyoming Range Zone\), 765](#). (above). Data appears unreported after mid-April.

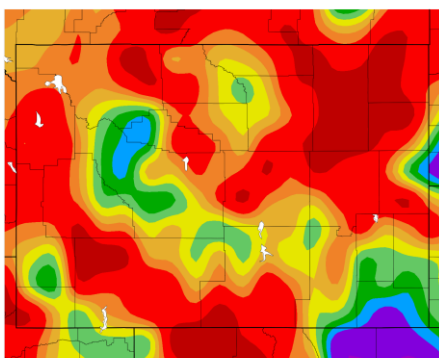
(2) Precipitation Monitoring

Area precipitation for the past 30 and 90 days demonstrates the effect of the mid-late May precipitation (30-day, Figure 2a) compared to the drier than normal 90-day total (Figure 2b).

Percent of Normal Precipitation (%)
5/4/2021 – 6/2/2021



Percent of Normal Precipitation (%)
3/5/2021 – 6/2/2021



Generated 6/3/2021 at HPRCC using provisional data.

NOAA Regional Climate Centers Generated 6/3/2021 at HPRCC using provisional data.

NOAA Regional Climate Centers

Figure 2a (left). Wyoming, Percent of Normal Precipitation for the past 30 days.

<https://hprcc.unl.edu/products/maps/acis/subrgn/WY/30dPNormWY.png>. Moisture patterns transitioned in May, with an early dry period followed by nearly a week of wet storms in the latter half of the month.

Figure 2b (right). Percent of Normal Precipitation for the past 90 days was below-normal for late-winter precipitation in most of the TIDC area, with above-normal moisture patterns in southwest and southeast Wyoming and on the lee slopes of the Wind River Range/Bighorn Basin.

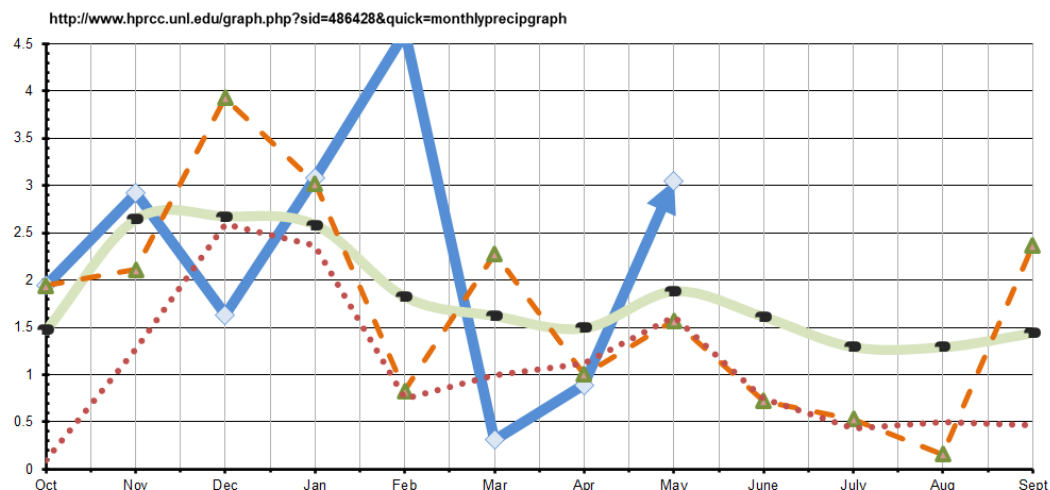
<https://hprcc.unl.edu/products/maps/acis/subrgn/WY/90dPNormWY.png>.

Precipitation tracking at the [Moose 1 NNE WY Climate Weather Station](#) -- the automated Climate Reference Station in the Applied Climate Information System in the dispatch area -- is representative for lower elevation sites in Grand Teton National Park and some North Zone sites. The station recorded 114% of normal for water year-to-date, with five months receiving above-normal precipitation and three below normal. The drier months occurred in December, March and April – with spring moisture (March-May) at 85% of the 30-year normal, though a wetter than normal May recorded 162% of the 30-year normal (Table 2 and Graph).

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

Monthly Precipitation Moose Weather Station (486428)

→ 2020-2021 — Normal
▲ 2015-2016 ... 1987-1988



		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	YTD total
Monthly Precipitation	1987-88	0.09	1.27	2.59	2.37	0.75	0.99	1.12	1.61	10.79
(inches)	1999-00	0.08	0.67	2.03	2.27	5.04	1.03	0.4	1.38	12.9
	2015-16	1.94	2.11	3.93	3.02	0.83	2.28	1	1.57	16.68
	2019-20	1.12	1.03	2.16	4.09	2.36	2.43	2.78	1.52	17.23
	<i>Normal</i>	2.58	1.82	1.62	1.49	1.88	2.58	1.82	1.62	16.17
	2020-21	1.94	2.92	1.63	3.08	4.62	0.31	0.89	3.05	18.44
Percent of NORMAL	1987-88	6%	60%	102%	92%	40%	63%	75%	84%	70%
	1999-00	6%	32%	80%	88%	267%	66%	27%	72%	83%
	2015-16	132%	80%	147%	117%	46%	141%	67%	84%	103%
	2019-20	76%	39%	81%	159%	130%	150%	187%	81%	108%
	2020-21	132%	111%	61%	119%	254%	19%	60%	162%	114%

(3) Drought Monitor

The current drought map for the U.S. West shows 96% of the West with drought conditions, compared to 58% drought at this time in 2020. In Wyoming, 89% of the state exhibits some level of drought conditions, compared to 26% exhibiting drought conditions at this time in 2020. The southern and southeast dispatch area is showing initial drought stages. If the warmer and drier conditions forecast for mid-summer occur, this drought may expand and support earlier fuel availability in 1000-hour fuels (downed logs) and curing of live fuels.

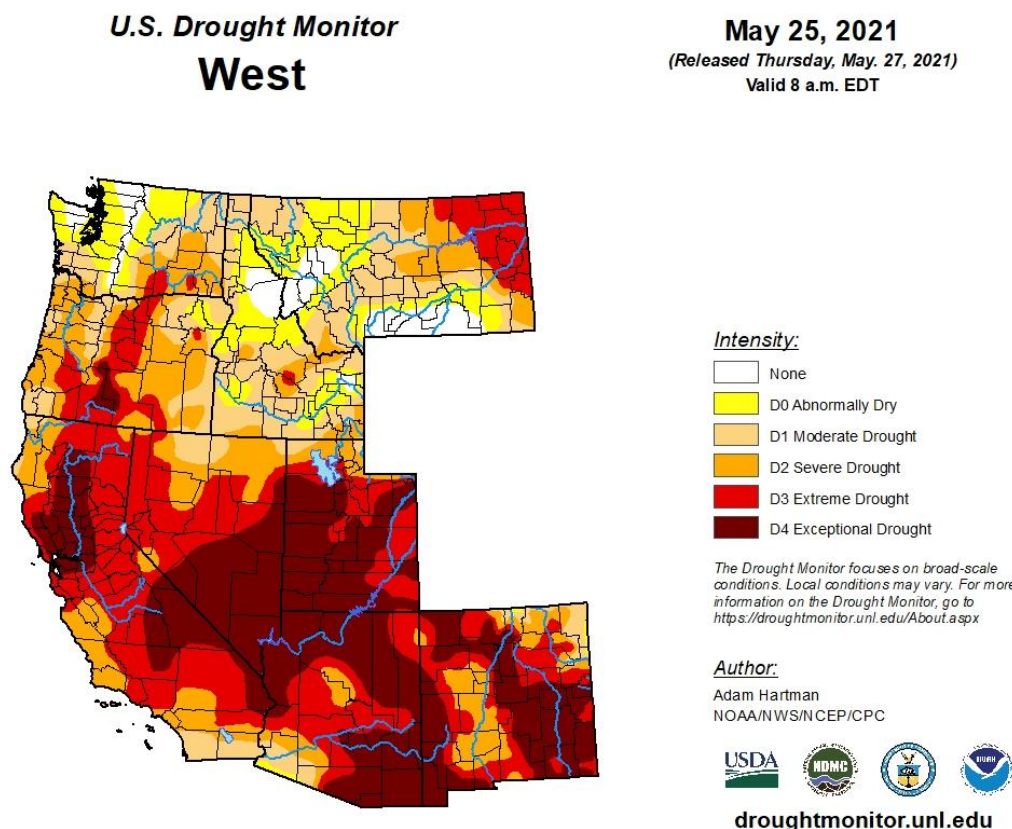


Figure 3a. U.S. Drought Monitor – West.
<https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?West>

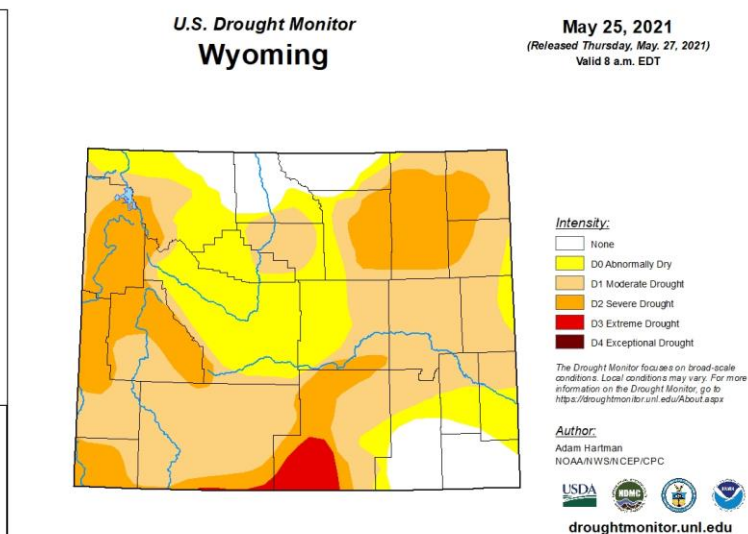
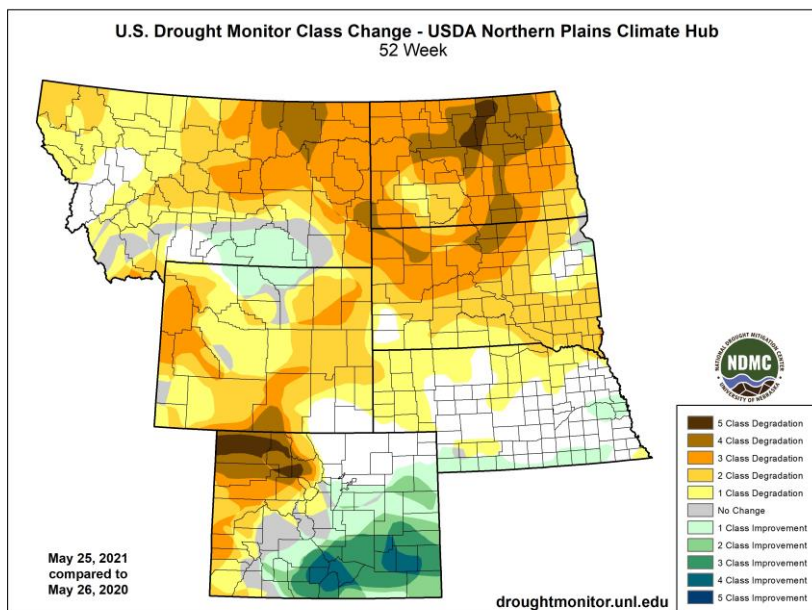


Figure 3b. U.S. Drought Monitor Class Change – USDA Northern Plains Climate Hub, one-year change.
https://droughtmonitor.unl.edu/data/chng/jpg/20210525/20210525_ch_northern_plains_chng_52W.jpg.

Figure 3c (right). U.S. Drought Monitor – Wyoming – May 25, 2021.
<https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?WY>.

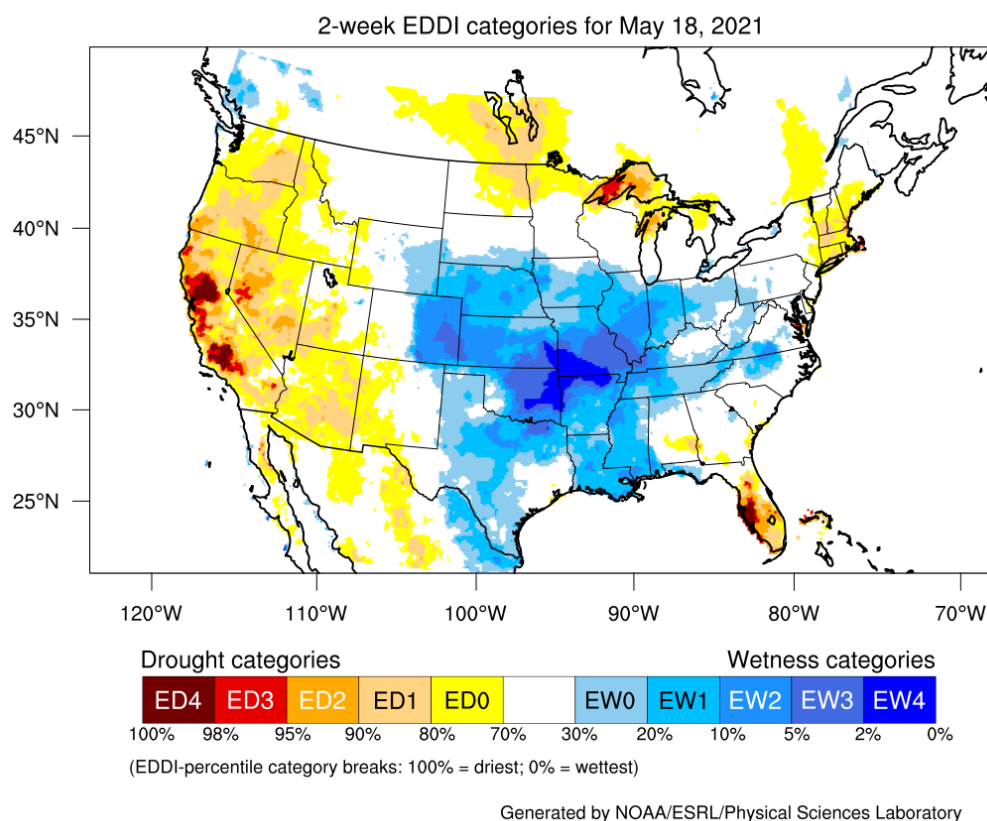
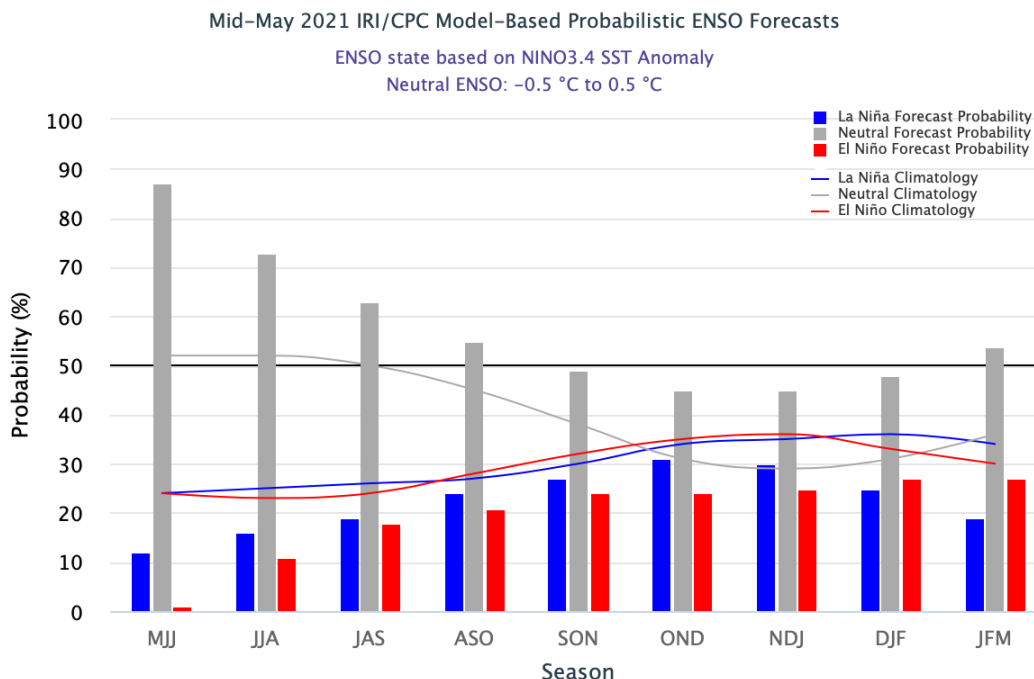


Figure 3d. Evaporative Demand Drought Index, prior two weeks. This index can reflect recent moisture trends and also may forecast drought transitions.
https://psl.noaa.gov/eddi/realtime_maps/images/EDDI_02wk_20210518.png.

(4) Oceanic Niño Index (for tracking El Niño / La Niña / ENSO-Southern Oscillation)

The mid-month ENSO Forecasts (Figure 4 below - [IRI – International Research Institute for Climate and Society | May 2021 Quick Look \(columbia.edu\)](https://www.columbia.edu/iri/quicklook/may2021/)) tracks *El Niño* (warm) and *La Niña* (cool) events in the tropical Pacific. In July-August-September 2020 we transitioned to weak and then moderate *La Niña* conditions. This summer a transition to ENSO neutral conditions is forecast. In some years, this may lead to climatical norms, but this season those norms are expected to be replaced with dry-warm conditions and drought impacts.



CURRENT STATUS:

- A recent transition from *La Niña* conditions to **ENSO neutral conditions** will likely continue through summer 2021 (73% chance for ENSO neutral for June-August 2021). By September-October-November 2021, the probabilities increase for a return to *La Niña* conditions next winter.

(5) Fuel Moisture

Initial sampling in Grand Teton National Park and the West Zone and prescribed burns on Bridger-Teton National Forest show green-up occurring at a typical or slightly earlier rate. Live and dead fuels are generally drier than average for June 1. At sampling sites at Grand Teton National Park, live woody sagebrush, live woody conifer and 1000-hour dead fuels are at the driest 90th percentile for June 1.

https://www.wfas.net/nfmd/public/current_state_data.php?gacc=EGBC&state=WY&submit_button=Submit+Request

Dry Quad Prescribed Burn – North Zone 05/28/2021				West Zone		
Sagebrush	Site AVG	Aspen Slash	Site AVG		Hams #1	Hams #2
LH Grass	238%	LW Douglas Fir	86%	LW Subalpine	100%	60%
LW Sagebrush	137%	10 HR	10%	LW Lodgepole	100%	100%
1 HR Thatch	8%	100 HR	14%	LW Threetip		
		1000 HR	15.5%	Sage	160%	n/a
				1000 HR	22%	20%

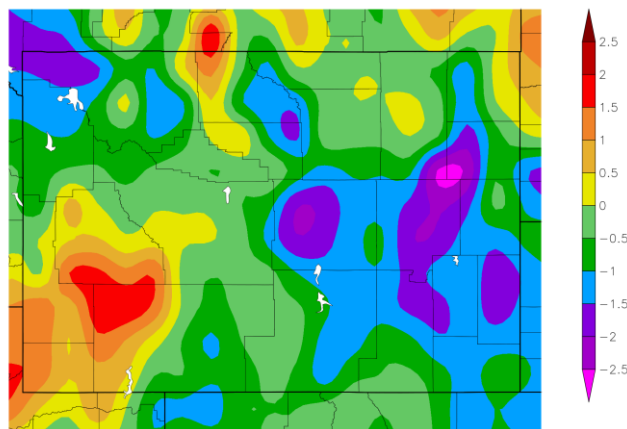
Grand Teton - Representative Sites (05/31/2021)

Sagebrush	30-year AVG	2021	Conifer	30-year AVG	2021
LH Grass	187%	165%	LH Grass	213%	195%
LW Sagebrush	154%	132%	LW Conifer	101%	94%
1 HR Dead Fuel	10%	8%	1000 HR Dead Fuel	27%	29%

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

COOLER WINTER. This winter was cooler than normal in the Teton Interagency area (see Figure 6a), though this was offset by a warmer spring and earlier than normal snowmelt at indicator SNOTEL sites.

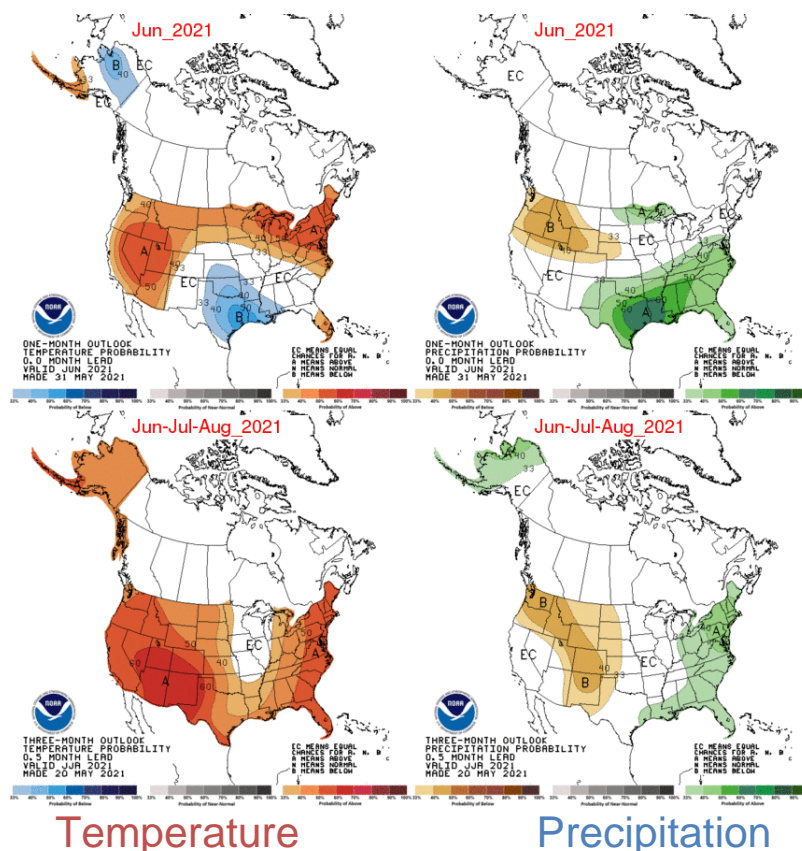
Departure from Normal Temperature (F)
10/1/2020 – 6/2/2021



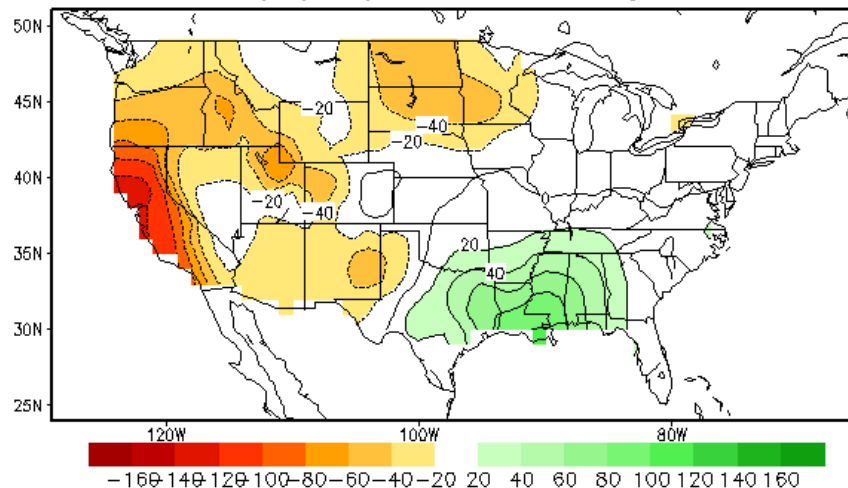
Generated 6/3/2021 at HPRCC using provisional data.

NOAA Regional Climate Centers

Figure 6a (above). Departure from Normal Temperature, Wyoming, October 1, 2020 through May 31, 2021 (Water Year-to-Date) indicates a cooler winter than normal in the north and east zones of TIDC and warmer to south and southwest. <https://hprcc.unl.edu/products/maps/acis/hprcc/wy/WaterTDeptHPRCC-WY.png>. Figure 6b (below): 30-day and 90-day Outlooks, Temperature and Precipitation (June and June through August).



Lagged Averaged Soil Moisture Outlook for End of JUN2021
units: anomaly (mm), SM data ending at 20210603



Lagged Averaged Soil Moisture Outlook for End of AUG2021
units: anomaly (mm), SM data ending at 20210603

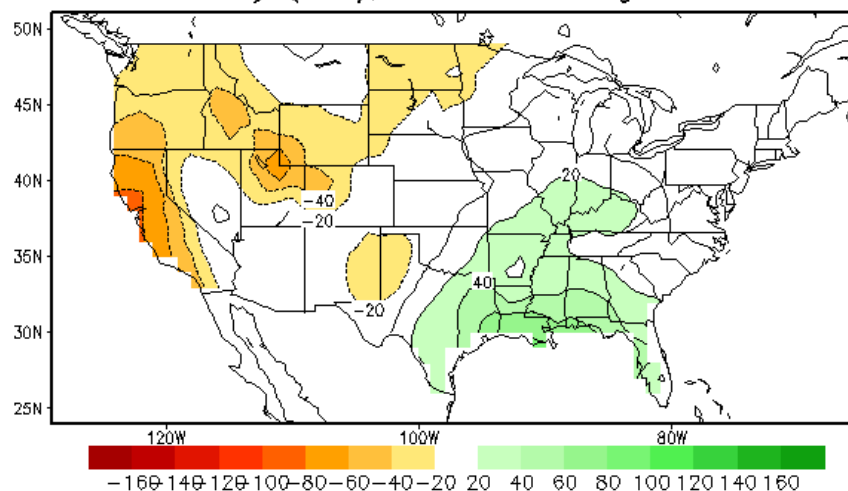


Figure 6c: Soil Moisture Outlook for end of June and August, 2021.

https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Outlook/CAS/SM.shtml

SEASON OUTLOOKS – Warmer temperatures with below normal precipitation.

The 30- and 90-day temperature and precipitation outlooks (Figure 6b above) show a higher probability for a warmer and drier summer for the TIDC area, along with much of the US West. This trend is supported by soil moisture outlooks (figure 6c). This warmer-drier trend, if realized, may increase wildfire activity to begin earlier and burn more and larger fires than normal.

(http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.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 fire activity trends. The season outlooks excerpted below support an outlook for normal fire activity in the Teton Interagency Dispatch area, with potential for above-normal fire activity by August for western Wyoming, eastern Idaho and northern Utah.

Excerpts of National - Regional Outlooks from "National Wildland Significant Fire Potential Outlook" (June 1, 2021, NICC Predictive Services). http://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.

National – Fire Activity Outlook

The year-to-date acres burned remains well below the 10-year average and significant fire activity was also limited during May. The absence of critical fire weather patterns in areas with very dry fuels helped limit significant fire activity in May. Fuels remain very dry across large swaths of the Southwest, Great Basin, and California with fuel dryness in much of the West two to four weeks ahead of schedule. Drought expanded and intensified over the West, especially in California. More than 87% of the West is now categorized in drought and over half the West in the highest two categories of drought. Snowpack set new record lows in parts of the West, including the Sierra, in May.

Climate outlooks indicate warmer and drier than normal conditions are likely for much of the High Plains and West through summer continuing and exacerbating drought there. Near normal timing and precipitation is likely with the Southwest Monsoon in July, which should help alleviate drought conditions and significant fire activity, at least temporarily.

- Southern Area is likely to have near normal fire potential through the summer with below normal potential across the southern Plains in June. Near normal significant fire potential is also likely for Eastern Area and Alaska through the summer, although elevated periods of activity are possible during short-term drying episodes.
- The Southwest is forecast to have above normal significant fire potential through June before the Southwest Monsoon arrives. Above normal significant fire potential will expand northward into the Great Basin and Rocky Mountain Geographic Areas through August with areas closer to the monsoon likely returning to near normal significant fire potential in July and August.
- Central Oregon into southeast Washington is likely to have above normal significant fire potential beginning in June with portions of the Coast Ranges, Sierra, and Cascades in California increasing to above normal in June and July and continuing through September. West of the Continental Divide in the Northern Rockies is expected to have above normal significant fire potential in July before spreading across the entire geographic area during August, then likely returning to normal in September. Leeward locations of Hawaii are likely to have above normal significant fire potential into September due to heavier fuel loading and forecast warm and dry conditions

Great Basin

Great Basin fire potential will remain above normal in the southern Great Basin with above normal conditions expanding farther north into Utah and eastern Nevada through June, especially at higher elevations. Above normal fire potential will cover much of the eastern half of the Great Basin by July and be mainly located over the northern half of the region in August and September. Above normal fire potential is also expected to develop in the mid to higher elevations of the Sierra Front possibly by late June, but more likely into July and August as snow melts and fuel moistures drop to critical levels.

Great Basin Coordination Center – Seasonal Outlook for June-September 2020 (excerpt).

<https://gacc.nifc.gov/gbcc/predictive/docs/monthly.pdf>

Fire potential increasing. Fire potential will continue to increase with above normal fire potential in June in Utah and Eastern Nevada, spreading north into Idaho, Wyoming and the higher elevations of the Sierra Front by July and August. Warmer and drier conditions may be an issue in the north and west still in September.

CURRENT FIRE ACTIVITY

Fire Activity: Teton Interagency Dispatch Center

<https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/predictive-services/intelligence>

Early season wildland fire activity is typically limited to a period after snowmelt and prior to green-up. The early fire season saw minimal fire activity, limited to two human-caused fires. Prescribed fires in spring 2021 treated 1823 acres with eight fires, with prescribed fire activity continuing into early June.

Table 3: Year-to-Date Fire Activity (Unplanned and Planned Ignitions).

TETON INTERAGENCY FIRE MANAGEMENT AREA TOTALS	Human Fires	Human Acres	Natural Fires	Natural Acres	RX Fires	RX Acres
	2	3	0	0	8	1823

Selected Sources

- Precipitation Tracking: <https://water.weather.gov/precip/>
- Precipitation Tracking focused on [Snotel sites, Wyoming](#) (beta site)
- Climate Prediction Center, 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>
- Drought.gov Portal / Wyoming: <https://www.drought.gov/states/wyoming>
- Intermountain West Climate Dashboard: <https://wwa.colorado.edu/climate/dashboard.html>
- Regional outlooks from “National Wildland Significant Fire Potential Outlook” (first of each month during fire season, NIFC Predictive Services): https://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.
- Great Basin Area – Predictive Services/Outlooks: <https://gacc.nifc.gov/gbcc/outlooks.php>.
- Rocky Mountain Area – Predictive Services/Outlooks: <https://gacc.nifc.gov/rmcc/outlooks1.php>.
- Teton Interagency Dispatch: www.tetonfires.com / <https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/>.

* * *

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