



Southern Marin Fire Protection District

Emergency & Disaster Preparedness Committee

Director Christine DeBerry, Chair

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STAFF REPORT – 2021 Fire Season Outlook

Date

Tuesday April 13, 2021

Topic

Forecast of the 2021 Fire Season

Background

Wildfire is a natural and necessary process that keeps California’s landscape healthy. Last year, California was hit particularly hard as it relates to loss of life, structure loss, and acreage burned. Table 1 demonstrates data from CalFire that shows the increase in wildfire activity throughout the state.

Year	Incidents	Acre Burned	Structures Lost	Fatalities
2020	9,917	4,257,863	10,488	33
2019	7,860	259,823	732	3
2018	7,948	1,975,086	24,226	100
2017	9,270	1,548,429	10,280	47
Four-year Average	8,749	2,010,300	11,432	46

A summary of all 2020 incidents, including those managed by CAL FIRE and other partner agencies.



4,257,863 Acres

Estimated Acres Burned



9,917 Incidents

Number of Incidents



33 Fatalities

Confirmed Loss of Life



10,488 Structures

Structures Damaged or
Destroyed

The result is a record number of Spare the Air days (46) issued by the Bay Area Air Quality Management District. Continuing trends include longer fire seasons (80 additional days per year), with Southern California dealing with a continuous season. Climate change is considered the key driver of the trend towards protracted and more destructive fire seasons in California. Warmer and dryer springs, limited snowpack, and increased fuel availability will add to the intensity of the 2021 Fire Season. Of course, these factors alone lend

themselves to a hostile environment for California’s forest health, creating even more available fuels. According to the United States Geological Survey (USGS), *there is a growing realization that warming trends are associated with increases in size, frequency, and severity of forest fires in the West. While rising temperatures can create drought conditions that favor severe fires, it is also possible that drought limits trees' ability to survive a fire. There is less water available for trees during a drought, and more outbreaks of harmful insects and pathogens can occur.*

Drought is the predominant factor influencing the 2021 fire season. When comparing the drought picture from March 2020 to March 2021, it is easy to see that our drought is worsening without any relief seen in the mid-range forecasts. Drought is related to fire risk because it increases fuel dryness (in both live and dead fuels), which correlates closely to an increased probability of ignition and increased fire spread rate. Drought is also closely related to increasing the fire season's length as fuels are available for extended periods.

Figure 1.

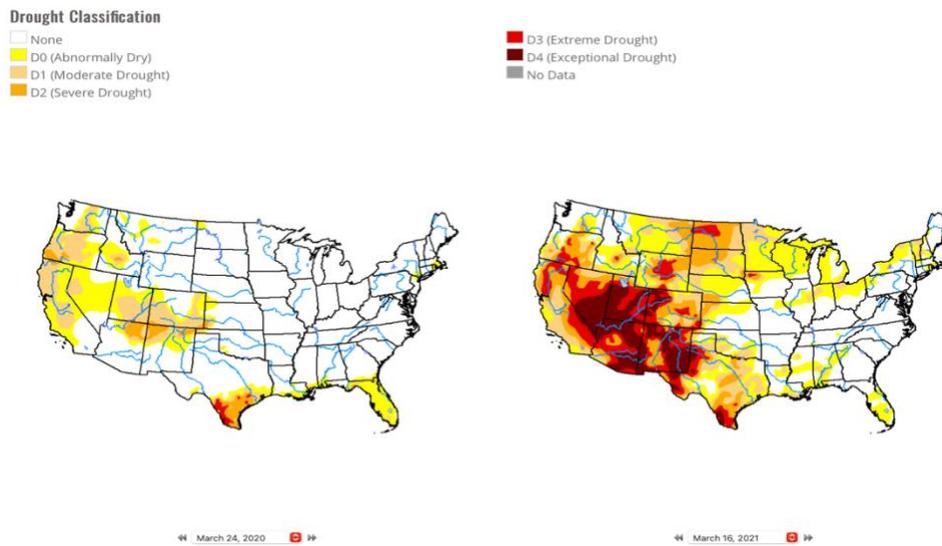


Figure 1 demonstrates the drought conditions for March of 2020 compared to current conditions (March 2021). With California’s destructive 2020 fire season, as noted in table 1, one can anticipate a significant increase in activity for the pending 2021 fire season.

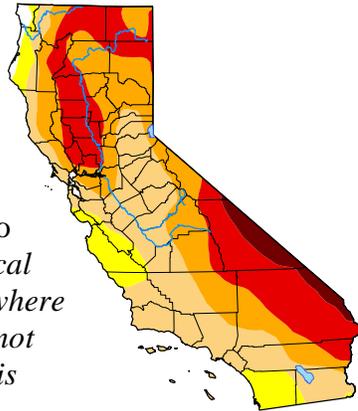
Discussion:

Predictive services for the Northern Operations has issued the following statement:

March - June 2021 North Ops Highlights

- *Occasional precipitation has not been enough to remove drought status from the North Ops region. Most areas are at 70% or less of average rainfall for the date.*
- *New green grass crop has come in at lower elevations (≤ 2500 ft), and occasional N- NE/Offshore wind events will not lead to a high risk of large fires until grass crop cures.*
- *Middle elevations where continuous dead and dormant fuels are exposed may see elevated fire potential after approximately ten days or more of dry weather during breezy weather.*
- *The outlook calls for overall drier and warmer than average March-June.*

**U.S. Drought Monitor
California**



March 16, 2021
(Released Thursday, Mar. 18, 2021)
Valid 6 a.m. EDT

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.78	99.22	90.62	58.59	29.54	3.75
Last Week (03-09-2021)	0.75	99.25	90.89	58.59	29.54	3.75
3 Months Ago (12-15-2020)	0.00	100.00	95.17	74.35	33.75	1.19
Start of Calendar Year (12-31-2020)	0.00	100.00	95.17	74.34	33.75	1.19
Start of Water Year (09-26-2020)	15.35	84.65	67.65	35.62	12.74	0.00
One Year Ago (03-17-2020)	24.64	75.36	47.59	1.26	0.00	0.00

Intensity:
 None
 D0 Abnormally Dry
 D1 Moderate Drought
 D2 Severe Drought
 D3 Extreme Drought
 D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

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indicator for the far this rainy remain Longer than expected to swaths of vulnerable to Predictive threat of new continuous received precipitation in potential may threat is on a

Live fuel moistures are a significant fire season. Drier than usual weather so season has allowed drought conditions to widespread throughout the Bay Area. expected dry weather stretches are persist through the Spring creating large vegetation (specially brush and trees) an early and longer fire season. According to Services, *Dry, windy weather will pose a local large fires at elevations from 3000-6000 ft where bare/exposed dead and dormant fuels have not more than a week until green-up occurs. This arrive again in late March, but the local- scale and not widespread. Therefore, the North Ops region's significant fire potential is "Normal" in all areas from March through June 2021.*

From March through May, Normal Significant Fire Potential is defined as less than one large fire per Predictive Service Area (PSA) per month. In June, Normal is defined as 2-2.5 large fires in the Sacramento Valley and Foothills and Far Eastside PSAs and up to 1.2 large fires elsewhere.

Summary

Fire Seasons is just around the corner and, given all current information, will be longer and as destructive as previous years. Mitigation activities are necessary to enhance our community's survivability/resiliency (life, property, and the environment). How do we prepare a community for the wildland fire season? We accomplish mitigation through the 4 E's (Education, Engineering, Enforcement, and Emergency Response):

- Education: The Southern Marin Fire District (SMFD) and Mill Valley Fire Department (MVFD) believe that robust efforts to educate the public on risks faced during fire season results in a call to action for residents. We continue:
 - Living Room Chats
 - Evacuation zoom classes
 - Evacuation mailer (sent annually)
 - Social Media Feeds
 - Neighborhoods organizing into Neighborhood Response Groups
 - CERT Training
 - Neighborhood Evacuation Drills.
- Engineering Controls: Often described as proactive measures employed to remove (mitigate) hazardous conditions from a community. Examples include ridge top fuel breaks, wide-area fuel breaks, emergency notifications, chipper programs (tons per acre removal of fuel), and evacuation route fuel reduction programs (to include steps, lanes, and paths). Projects include:
 - Tam Valley Southern Area Fuel Break (Phase 1 complete)
 - Enhancements and installation of the Long-Range Acoustical Device (LRAD).
 - Evacuation route clearing
- Enforcement Activities: Enforcement activities often include education, property evaluation, and multiple notifications of violation. Education can be enough to compel action among residents, however, at times (infrequently), additional remedies are needed, such as citations and other legal

remedies. Both Mill Valley and Southern Marin Fire start residential inspection programs on May 1 and continue throughout the fire season. Education regarding this subject is ongoing throughout the year.

- Emergency Response: Even with all of the mitigation activities listed above, we still require emergency response to protect our community and keep small fires small. Highly trained, well-equipped, experienced firefighters are at the ready to respond 24 hours per day. Members are also used to educate our community.

Similar to last year, the fire season outlook is predicted to be initially normal through May. Small fires will increase in frequency following/during protracted Northwind events, as the grass crop cures and high-temperature days serve to reduce fuel moisture. If drought conditions persist, the available fuels for wildfire will continue to increase, adding to the pending fire season's intensity and destructiveness.

Both SMFD and MVFD are actively working to educate our communities regarding the risks and their responsibilities. Work continues enhancing our Enforcement, Engineering Controls, and Emergency Response.

Recommendation(s)

Receive report, ask questions and provide direction