July – October 2023 South Ops Highlights

• Shower and thunderstorm activity will be below normal in July and then become near to above normal August through October.

• Temperatures will be above normal through September and then become near to below normal in October.

• The marine layer over the coastal areas will be shallower than normal through October.
Weather Discussion

A series of closed low pressure areas moved into California from the Pacific Ocean through June 16th. These low-pressure areas brought well below normal temperatures to the entire area. They also brought isolated to scattered showers and thunderstorms mainly to the Sierra and Northern Deserts each day. On a few days, these showers and thunderstorms covered much of Central California. The marine layer was deep every morning, with low clouds and fog making it well up the coastal mountain slopes. This deep marine layer brought measurable drizzle to many locations of Southern California from the coastal mountain slopes westward. From June 17th through the end of the month, the closed lows were centered further north over the Pacific Northwest and Northern California and the area was under an open trough. The deep marine layer remained intact over the coastal areas, but there was only isolated shower and thunderstorm activity over the Sierra on a couple days. Temperatures remained well below normal across the region. Overall, for the month, maximum temperatures were well below normal across the entire region (Fig 1). Precipitation was near to well above normal across most of the area (Fig 2). The snowpack in the Sierra is currently 350% to 450% of normal and is between 10% and 20% of normal as of April 1st which is when the snowpack is normally at its deepest (Fig 3). It is very unusual to have a measurable snowpack left by July. There were strong westerly winds through the desert passes most of the month.
Fuels Discussion

There was no change in the drought in June. Most of the region continues to have no drought, but abnormally dry to moderate drought continues across the deserts (Fig 4). The cool and fairly humid conditions caused the 1000-hr and 100-hr dead fuel moisture to remain above normal in June (Figs 5 and 6). The grass across the lower elevations is now fully cured. Some of the brush across the lower elevations has cured, but there is still quite a bit of green. The live fuel moisture remains mainly between 80% and 150% and is well above normal for this time of year (Fig 7).

Fig 4: Drought Monitor June 29th, 2023

Fig 5: Central Coast Interior 1000 hr Dead fuel moisture June 28th

Fig 6: Western Mountains 100 hr Dead fuel moisture June 28th

Fig 7: LPF Live Fuel Moisture June 15th
The sea surface temperatures in the Gulf of Alaska and off the West Coast are continuing to warm. The sea surface temperatures in the Gulf of Alaska and just off the California Coast are now a little above normal (Fig 8). These above normal sea surface temperatures will likely cause high pressure to become the dominant weather feature in July and the center will wobble back and forth between the Desert Southwest and California. As sea surface temperatures continue to warm off the West Coast, expect high pressure to move further north and migrate between the Four Corners Area and the Great Basin in August and September. Temperatures will likely be above normal through September. There will be likely below normal monsoonal shower and thunderstorm activity in July as the center of high pressure is further south than normal. As the center of high pressure moves northward, the monsoonal shower and thunderstorm activity will become above normal in August and September. This is due to more moisture being available due to projected above normal sea surface temperatures over the sub-tropical Pacific Ocean and Gulf of Mexico (Fig 9). The marine layer will likely be shallow through September and only move over the coastal areas as high-pressure rules. Still expecting below normal large fire activity across the higher elevations and near to a little below normal large fire activity across the lower elevations through September.

Moderate to strong El Nino conditions will likely cause a significant rainfall to occur early in the fall. The large fire threat will be near to a little below normal across the region in October, but as time gets closer, may need to put in a below normal large fire threat across the lower elevations.

Fig 8: Sea Surface Temperature Anomaly, June 29th, 2023

Fig 9: Forecast Temperature Anomalies for July through October, June 29th, 2023
Maps with Counties and Select Intel Links used in the forecast

July - September 2023

Climate

- [https://calclim.dri.edu/pages/anommaps.html](https://calclim.dri.edu/pages/anommaps.html)

100 hr dead fuel moisture


Current sea surface temperatures

- [https://www.ospo.noaa.gov/Products/ocean/sst/anomaly/](https://www.ospo.noaa.gov/Products/ocean/sst/anomaly/)

Contact: riverside.fwx@fire.ca.gov.