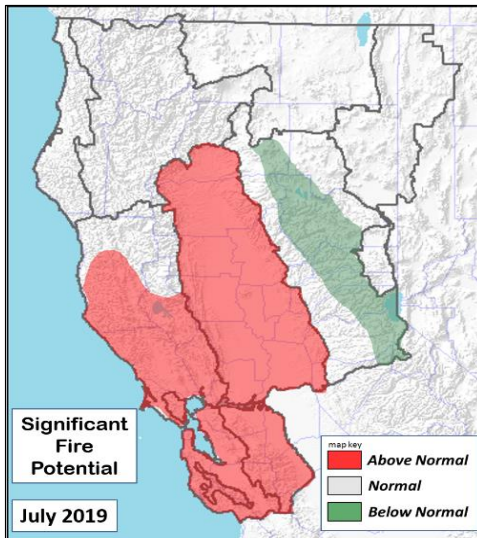
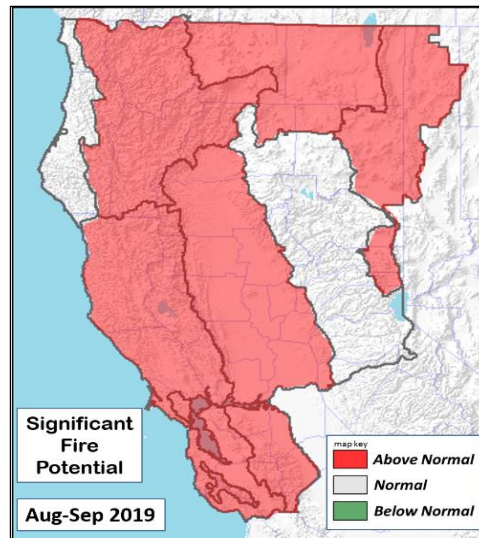


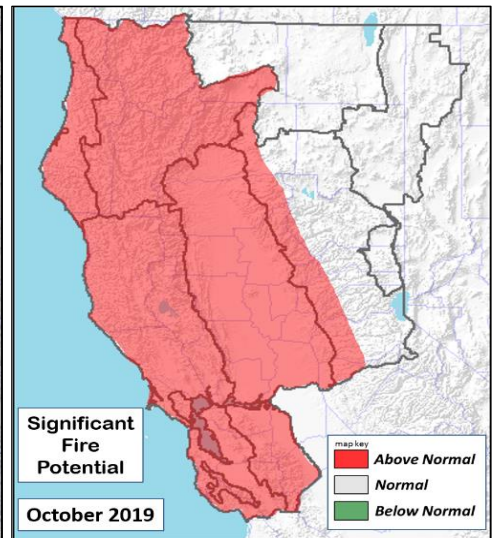
SIGNIFICANT FIRE POTENTIAL



July 2019
Significant Fire Potential



August - September 2019
Significant Fire Potential



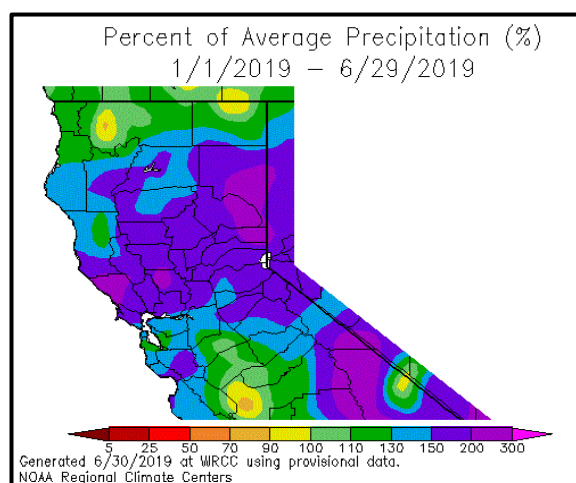
October 2019
Significant Fire Potential

July - October 2019 HIGHLIGHTS

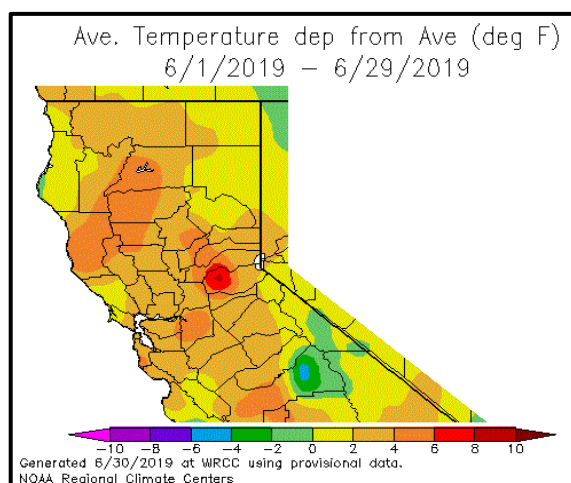
- *Warmer and drier than average through October.*
- *Weak El Niño continuing through the fall.*
- *Above average fine fuel crop, mostly cured below 4500 ft in July, and below 6000 ft in August.*
- *Above normal brush growth. Live fuel moisture above normal, dropping to below normal by late July below 6000 ft.*
- *Below normal amount of summer lightning due to frequent SW-W flow.*
- **Above Normal Significant Fire Potential at lower elevations with mostly cured fine fuels in July, spreading to most areas below 6000 ft in August and September and west of the Cascade-Sierra crest in October.**
- *Above normal snow pack to finish melting off in July. Fire activity remaining fairly quiet at elevations above 6000 ft.*

PAST WEATHER DISCUSSION

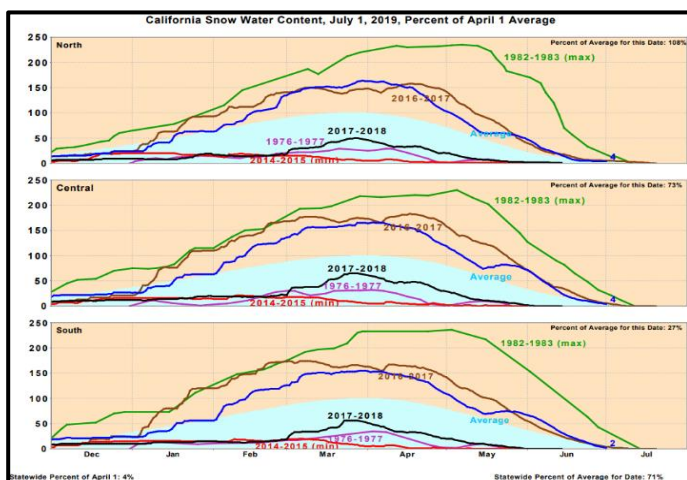
Other than occasional convective showers and thunderstorms in the mountains, June was dry in the North Ops region. Since January 1st, however, the region has received well above average precipitation, with only a few small areas in the far north slightly drier than average (**Fig 1**). June was notably warmer than average in all areas, with the warmest areas in the west-central portion of the region (**Fig 2**). The warm weather led to a more rapid melting of the high elevation snowpack (**Fig 3**), from well above the daily average at the start of the month to below normal as we enter July. The ongoing weak El Niño pattern in the equatorial Pacific is expected to continue into the fall/winter months (**Fig 4**). The few comparable years when an El Niño pattern continued through the summer indicate a more frequent SW-W flow over the North Ops region. A prevailing SW-W flow pattern tends to limit the amount of lightning days in the region to below average in the summer months.



**Fig 1: Jan-Jun Precipitation
(% of Ave.)**



**Fig 2: Jun Temperature
(Departure from Ave.)**



**Fig 3: Snow water content chart -
as of July 1, 2019**

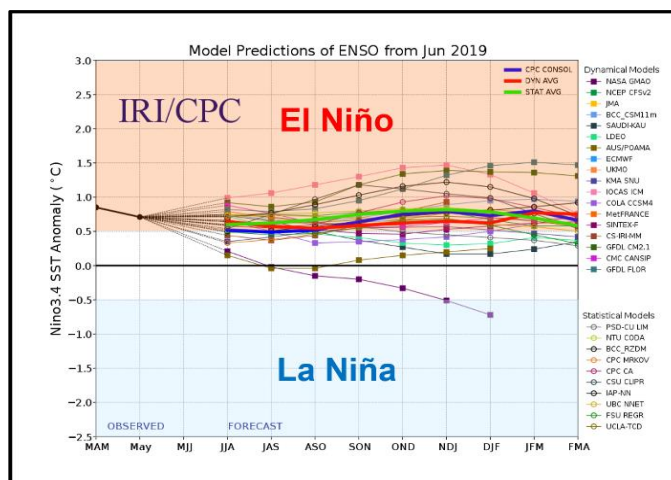


Fig 4: ENSO Plume diagram - June 2019

FUELS AND DROUGHT

The annual fuel loading of the grass crop is well above normal for a fourth consecutive year, and is mostly cured at elevations below 3000 ft inland from the coast (**Fig 5**). Live fuel moisture is above normal in most areas and at most elevations. Live fuel moisture values peaked well above normal due to the wet rainy season, but values in most areas are now past their peak. Dead fuel moisture showed a considerable drop in June to near the daily average (**Fig 6**) due to the warm and dry weather, and will likely drop to below average in the coming weeks as the warmer and drier than average conditions continue. Drought conditions currently do not exist in California, but may begin to spread during the early fall if the dry outlook verifies. Middle elevations (3000-6000 ft) will see enough curing of fine fuels by late July or early August to have above normal significant fire potential. Other fuels issues that will contribute to above normal significant fire potential this fire season include the following: A rare heavy snow event in the northern Sacramento Valley has led to lots of dead and down trees and limbs (**Fig 7**), and an increase in tree mortality in the past year, as shown in the Tree Mortality Task Force density map (**Fig 8**).



**Fig 5: Cured fine fuels in the Sacramento Valley
- June 2019**

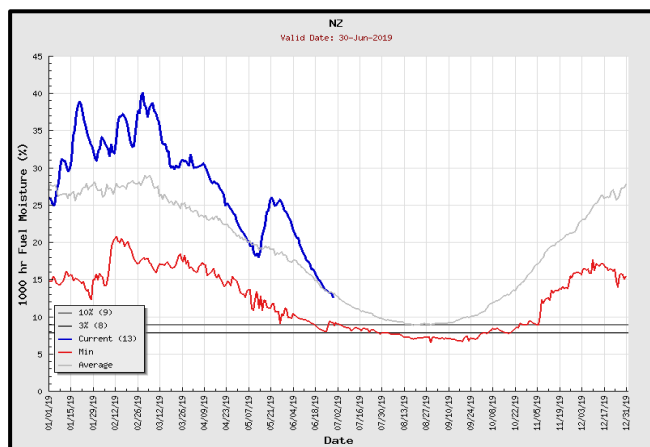


Fig 6: N Ops 1000-hr Fuel Moisture



**Fig 7: Dead and down dry limbs and trees in the
northern Sacramento Valley - June 2019**

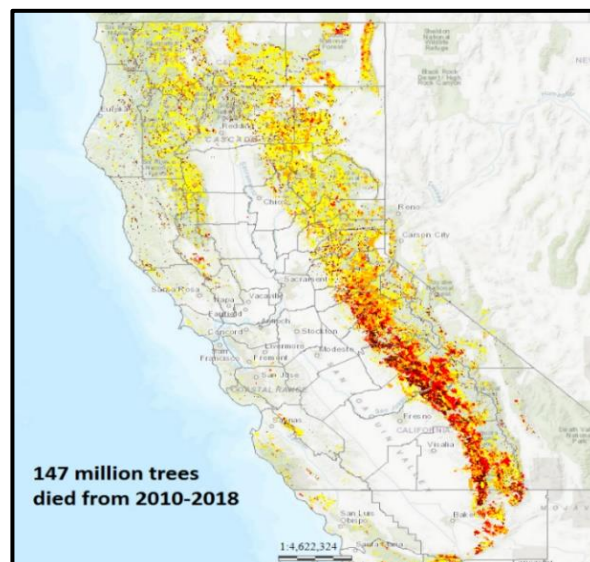


Fig 8: Tree Mortality density - Feb 2019

NORTHERN OPERATIONS MONTHLY/SEASONAL OUTLOOK

ISSUED JULY 1, 2019

VALID JULY – OCTOBER 2019



NORTH OPS OUTLOOK

The 4-month Predictive Service outlook calls for warmer and drier than normal conditions in the North Ops region through October (**Fig 9**). The high elevation snow pack will finish melting off by mid July in most locations below 8000 ft, but fuels and soils above 6000 ft will likely remain moist through the end of the month. Little to no significant fire activity is expected in July at elevations above 6000', and fire activity there will likely be on the quiet side of the normal range in Aug-Oct. Lower elevations (below 3000') will see increasing grass fire occurrence in July, and the potential of fires there growing to large sizes is Above Normal. Middle elevations (3000-6000 ft) will gradually dry out a normal to slightly slower than normal rate, reaching above normal significant fire potential in many areas by late July or August. El Niño patterns during summer months tend to correlate with a prevailing SW-W flow aloft, leading to fewer monsoon surges into the North Ops region, and therefore, less lightning occurrence than usual. Due to the moist conditions, any lightning strikes at upper elevations in July will not be as likely to produce large fires, compared to 2018 when the snow pack was below normal. By August most areas below 6000 ft have Above Normal Significant Fire Potential, and this will continue in September. In October areas east of the Cascade-Sierra crest drop back to Normal while most areas west of the crest below 6000 ft remain Above Normal.

Normal large fire occurrence in July is defined as 2-3 large fires in the Sacramento Valley and NW Mtns and 1-2 large fires in all other PSAs. In August normal is defined as 3-6 large fires in the NW Mtns, NE CA, and Northern Sierra PSAs and 1-3 large fires in all other areas. In September normal is defined as 2-3 large fires in the Mid Coast, NW Mtns, and Sacramento Valley PSAs and 1-2 large fires elsewhere. In October normal is defined as 1 or more large fires in the Mid Coast, Sacramento Valley, and Northern Sierra PSAs and less than 1 large fire in all other PSAs.

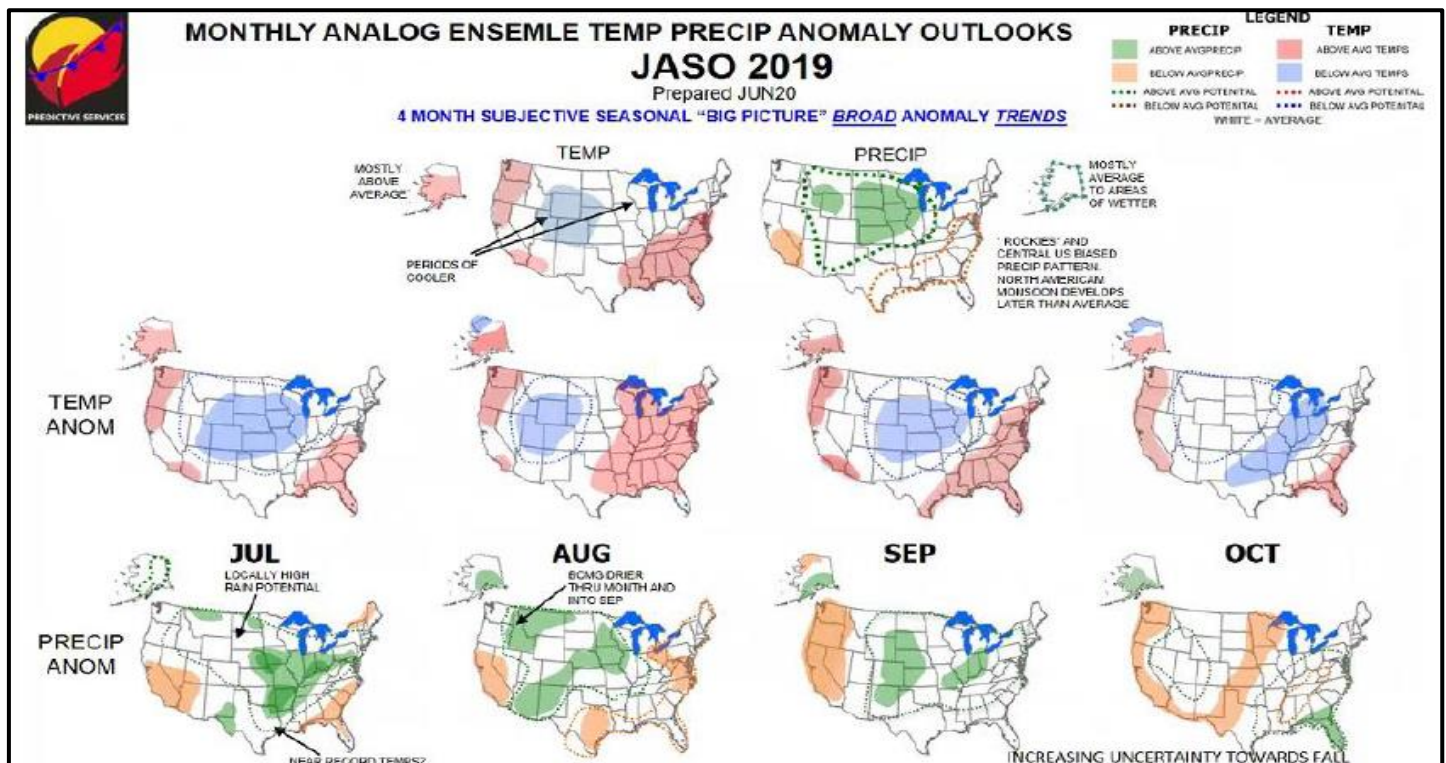


Fig 9: Predictive Services graphical Outlook for July through October 2019