Fuels and Fire Behavior Advisory
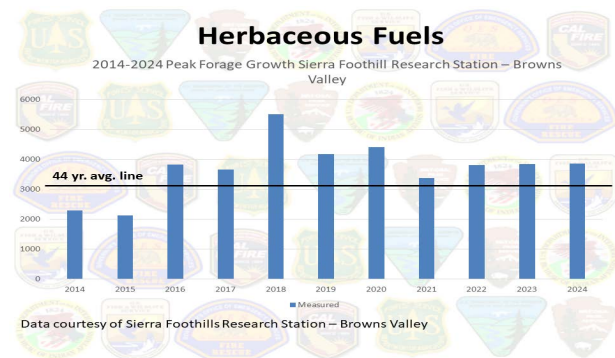## *California Grass and Herbaceous-Dominated Ecosystems*
June 24, 2024

Subject: Herbaceous fuel loadings are above to well above average across most of California's grass-dominated systems, including typically arid deserts and valleys that often do not support fire growth.

Discussion: Precipitation and temperature alignments throughout the winter and spring of 2024 have resulted in an above average load of herbaceous fuels across many grass-dominated systems throughout California. The above normal grass and herbaceous load creates a continuous fuel bed, allowing for rapid spread of fires when these fuels are cured. The continuous nature of the herbaceous fuel bed is enhanced by remnant thatch resulting from herbaceous growth during the abnormally wet late summer and fall of 2023 and multiple consecutive years of above average herbaceous growth.

Difference from normal conditions:
Herbaceous fuel loading in the Sacramento Valley and foothills is near 120% of normal, with reports of loading exceeding normal by a higher level across South Ops and the NE portion of the state. Below 3,000ft these fuels are nearly to fully cured. Curing and drying is increasing at upper elevations as the state enters a period of rapid heating with widespread single digit RH in the areas of concern.

Herbaceous Fuels
2014-2024 Peak Forage Growth Sierra Foothill Research Station – Browns Valley

44 yr. avg. line

Data courtesy of Sierra Foothills Research Station – Browns Valley

Concerns to Firefighters and the Public:
- Continuous fuel loading lowers the wind threshold need to initiate rapid spread of fires during initial attack. Under what are typically low to moderate wind speeds, rates of spread and flame lengths are likely to exceed direct attack capabilities without significant support from aircraft.
- Areas that typically resist fire spread, such as grazed areas, may not slow fire growth or reduce fire behavior as expected.
- Continuous fuels in arid and semi-arid ecosystem in deserts and high valleys are likely to support continuous fire spread in areas typically considered non-burnable.
- Heavy and continuous cured herbaceous fuels may serve as a catalyst for fire spread into brush fuel types, even at fuel moisture levels that would otherwise make them resistant to rapid fire spread.

Mitigation Measures:
- Brief all incoming resources about these conditions, especially out-of-area resources unfamiliar with local conditions.
- Consider augmentation of aircraft response for initial attack is in areas of heavy herbaceous fuels.
- Fire behavior prediction simulations using fuel models GR1 and GR2 are likely to underpredict spread; modification to GR4 or GR7 may be needed to accurately model fire spread in herbaceous fuels.
- Modify tactics to account for increased fire line intensity and spotting.

Area of Concern:
Across Central and Southern California, areas of concern focus on foothills, grasslands and deserts at or below 3,000 ft. in elevation. This includes portions of the following predictive services areas: NC02, NC03A, NC03B, NC04, NC05, NC07, and all South Ops PSA's.

Across the northeast portion of the state this includes hills, valleys, and deserts near and below 5,500 ft in elevation in parts of predictive services areas NC06 and NC08.

Issued By: Predictive Services Units from Northern California and Southern California, in coordination with Cal Fire and Cal OES Fire and Rescue Division.

Fuels and Fire Behavior Advisory
California Grass and Herbaceous-Dominated Ecosystems
June 24, 2024

Legend:
- Advisory Area
- Predictive Services Areas (PSAs)