Fuels and Fire Behavior Advisory

Southwest Geographic Area

SW06S, Southeast Arizona

May 23, 2025

Subject: A blend of fully cured herbaceous fuels with moderate to very high fuel loading and shrub/live woody fuel moistures that are 30% below average are present in lower elevation desert areas of southeast Arizona. This combination of fuel continuity and shrub dryness combined with wind creates conditions for extreme fire behavior with significance resistance to containment. Extremely dry chaparral in the mid-elevation portions of the sky islands has been fully consuming during fires with little to no wind.

Discussion: Early spring and subsequent monsoonal moisture in 2024 led to moderate to high herbaceous yield in the lower elevation southeast Arizona desert grasslands. These moderate to high yield conditions followed by a historically dry winter and severe drought conditions have left a blend of continuous fully cured herbaceous fuels and exceptionally dry shrubs. Measured live woody fuel moisture in the shrubby fuels is 30% below average. This combination of herbaceous fuel continuity and dry shrubs when combined with wind will cause rapid rates of spread and high fire intensity in the lower elevation areas of the advisory area that will be highly resistant to containment actions. Fires established in the mid-elevation chaparral will actively grow with little wind and have the potential for rapid rates of spread on steeper slopes or with moderate winds. The extreme SE corner of Arizona has experienced long-term drought. Desert grassland fuels there are likely not continuous enough to produce large wildfires.

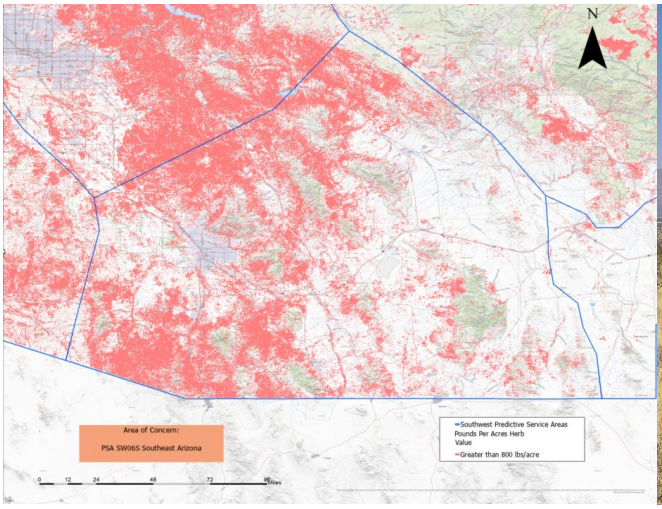

Figure 1: Area of concern 2024 herbaceous production lbs/acre above 800 lbs/acre from RMRS Fuelcast application. Does not account for 2025 growth.

Photo 1: Sierra Vista RD moderate load grass fully cured

Difference from normal conditions: 800 pounds per acre of herbaceous fuel will generally support large fire growth under moderate wind speeds. The area above in pink ranges from 800-2000 lbs per acre according to the Fuelcast 2024 herbaceous yield estimates from Rocky Mountain Research Station. Measured live woody fuel moistures are trending toward record lows across the area of concern. ERCs are trending toward 97th percentile.

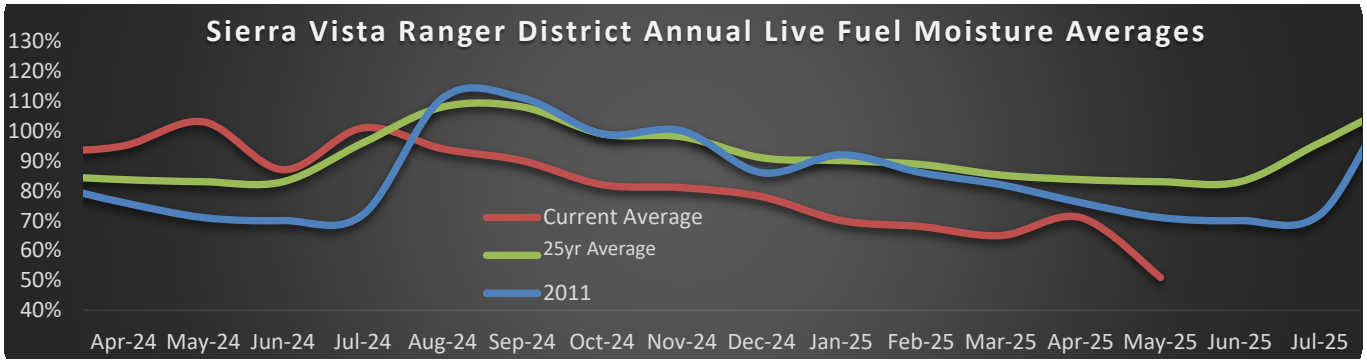

Figure 2: Current year average measured live fuel moistures compared to 20-year average and a year to remember.

Concerns to Firefighters and the Public:

- Expect extreme to unprecedented fire growth and intensity. Flow aligned with terrain features may enhance wind speeds beyond what is forecast.
- Typical barriers to fire spread, like roadways, rivers and hardwood river bottoms have been ineffective at stopping fire progression on windy days.
- Typical chaparral fire behavior relies on 3 factors for alignment to create elevated fire behavior: 1. Wind, 2. Slope, 3. High Temperatures. Typically, once one or more of the 3 factors falls out of alignment, chaparral tends to “shut off.”
- Live fuels conditions this year are extreme enough that a lack of alignment of wind, slope, and high temperatures won’t likely matter. Fire behavior in chaparral this year will likely move freely and with extreme fire behavior with only one of the three factors.
- Chaparral this year is likely to exhibit robust fire behavior at night despite cooler temperatures and RH recoveries.

Mitigation Measures:

- Wider than normal control lines may need to be constructed to reduce spotting.
- Stay alert for abrupt changes in fire weather and be prepared to respond quickly; be able to respond to wind shifts and unanticipated changes in direction of spread.
- Local briefings need to be thorough and highlight specific fire environment conditions.
- Lookouts, both on the ground and in the air, can help identify the initiation and location of crown fire. Fire behavior they encounter this year may exceed previous experiences before due to the drought factor. Normal strategies and tactics may need to be adjusted to account for the drought factor

Area of Concern: Predictive Service Area SW06S Southeastern Arizona

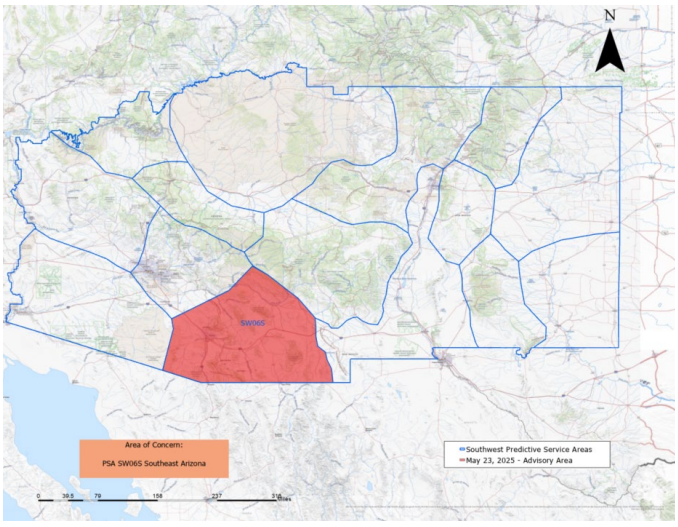

Figure 3: Area of concern SW06S Southeast Arizona.

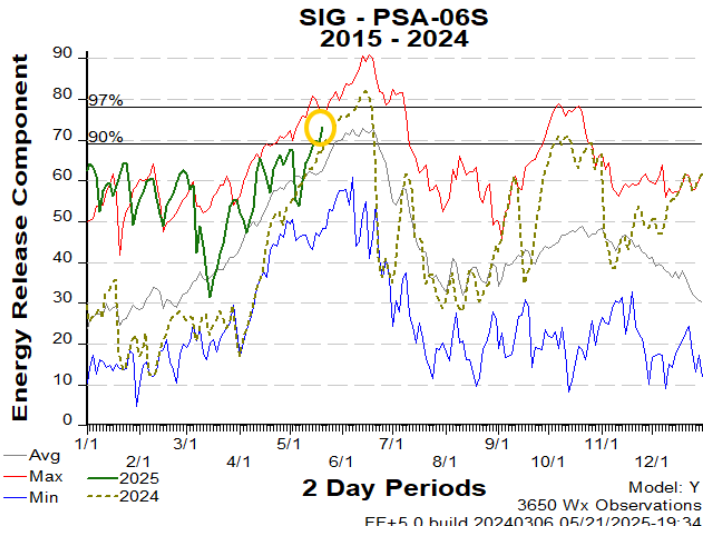

Figure 4: SW06S Energy Release Component Chart (ERC) through 5/21/25 from SWCC website.