

Fuels and Fire Behavior Advisory

Louisiana into Portions of Arkansas, Mississippi, Alabama and the Florida Panhandle

Date Advisory Effective – October 2, 2023

Subject: Drought continues to expand or intensify across the Lower Mississippi Valley into portions of Alabama and the Florida panhandle. Hot and dry conditions have returned to the advisory area after a period of milder and more humid weather, but an expected pattern change may increase the potential for dry frontal passages and critical fire weather heading into the second week of October. Fuels will be subjected to accelerated drying where a soaking rainfall does not materialize.

Discussion: Wetting rainfall of at least a quarter inch has been limited the past two weeks and was isolated except in far northwest Louisiana and southwest Arkansas. Rainfall anomalies in the 30- and 60-day period ending in late September remain in the negative in most areas, with growing coverage of values below 25% of normal. Dead fuel moisture has been fluctuating, but abnormally dry air feeding into the region is likely to result in a drying trend. Showers and thunderstorms are forecast to accompany a cold front late this week, but widespread beneficial rainfall is unlikely, and eastern portions of the advisory area are more likely to see dry conditions and intensifying drought. An extended period of dry and breezy conditions, with temperatures trending cooler, is anticipated to follow the front, but confidence in weather conditions by mid-October is below average. Meanwhile, the Gulf of Mexico should be closely monitored for tropical cyclone development as frontal boundaries stall over its abnormally warm waters.

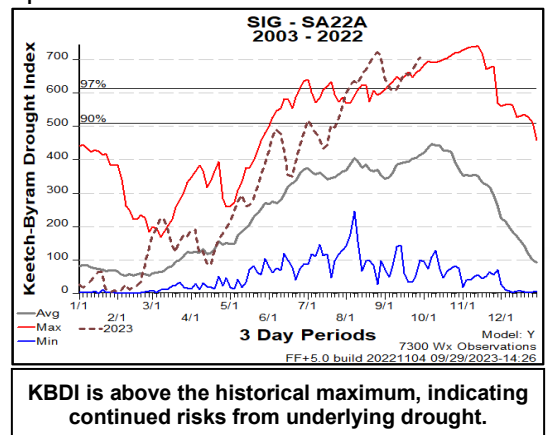
Difference from normal conditions: The expanding footprint of Keetch-Byram Drought Indices (KBDIs) above 700 is indicative of the persistent or worsening drought throughout most of the advisory area. Annual rainfall deficits exceed 12 inches in some parts of the region, while coastal marshes across southern Louisiana are estimated to need as much as two to three feet of rainfall to end the drought. Pervasive dryness throughout nearly the entire Mississippi River Basin has resulted in low water levels that have allowed wildfires to burn up to the water's edge in hardwood river bottoms across parts of Mississippi and Arkansas, as reported by the U.S. Fish and Wildlife Service. Deciduous trees have shown some modest leaf drop earlier than normal, but pine-dominant areas and underlying southern rough are anticipated to remain the primary fuels at risk due to depleted live fuel moisture from the lengthening drought. KBDIs in the central and south Mississippi predictive service area (SA22A, shown below) are back to setting records after a brief reprieve.

Concerns to Firefighters and the Public:

- Extreme fire line intensity is to be expected during both initial attack and extended attack.
- Typical barriers to fire spread, like roads, rivers, and hardwood bottoms may not be relied upon to stop fire progression.
- Active fire behavior may extend into the overnight hours during periods of poor RH recovery.
- Spotting up to ¼ of a mile away has routinely been reported, including small initial attack fires.
- Reburn of scorched needle cast continues to occur during the days or weeks after suppression, while roots burning underground may result in green trees falling.
- Critical fire weather may be associated with but is not limited to: compressional warming in unstable pre-frontal environments, dry cold fronts followed by windy and dry conditions, strong high pressure over the northern U.S. combined with low pressure south of the advisory area, subsidence adjacent to tropical cyclones, sea breeze fronts and erratic winds associated with outflow from nearby thunderstorms.

Mitigation Measures:

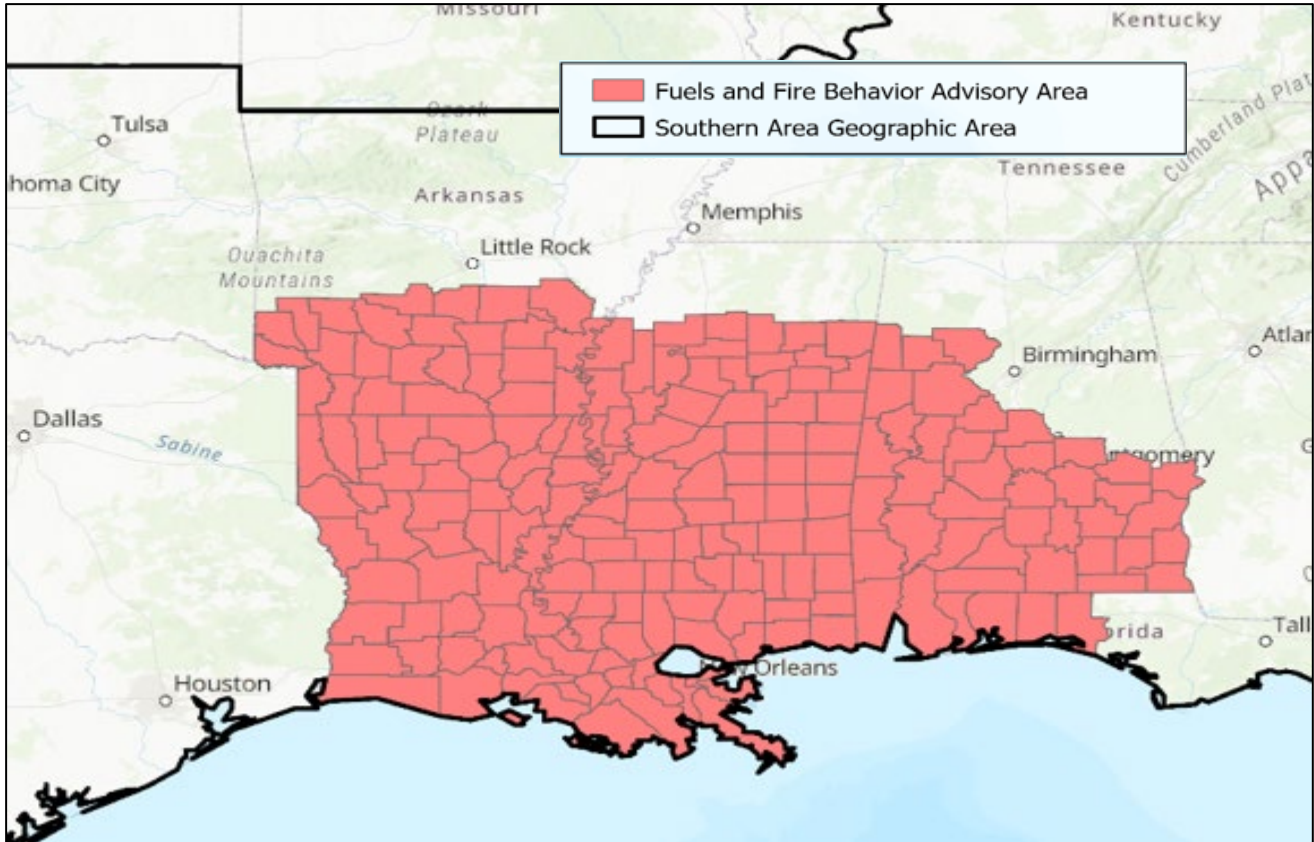
- Fire managers should be prepared to support periods of increasing fire occurrence, as well as complex, long-duration incidents.
- Firefighters should anticipate constructing wider than normal control lines, with dozers and graders (maintainers) working in tandem with engine support.
- Large-diameter surface fuels and duff layers may burn more readily and hold heat longer due to low 1000-hr fuel moisture and underlying drought. The time and effort toward mop up will continue to be elevated as these fuels hold heat, especially in areas that do not experience wetting rainfall the next two weeks.



Issued By: Southern Area Predictive Services in coordination with state and federal partners.

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Needle cast remains a source of reburn on the Tiger Island Fire in Louisiana (left). Overnight dozer operations on a fire in Amite County, Mississippi, courtesy of the Mississippi Forestry Commission (right).