

Fuels and Fire Behavior Advisory

Big Horn Basin, Wyoming

July 19, 2017



Subject: Exceptional fine fuel loading of annual grasses has created extreme fire behavior conditions in the Big Horn Basin of Wyoming at elevations lower than 6000 feet. This extreme fire behavior was observed on the Chain fire of July 8. This fire had moderate fire weather conditions, which created spread rates exceeding 20ft/min and flame lengths exceeding 15 ft with wind speeds of 12 mph.

Discussion: Remarkable annual grass growth during the late 2016 and early 2017 growing seasons have resulted in an average of 1900 lb/acre of continuous, fine fuels available for combustion. This fuel load fosters exceptional fire growth and intensity that is now exacerbated with daytime temperatures of 100 °F and greater. Fast moving fires are defying control efforts. The potential for dangerous fire behavior will remain until annual autumn precipitation occurs.

Difference from normal conditions: Fine fuel load is 50% higher than average for time of year, but continuity and components are remarkable. Mats of shorter annual grasses are acting as ladder fuels to taller grasses. Continuity is punctuated with moats of deep grasses up to 2 foot tall. These fine fuels are present under sagebrush canopies as well.



Three annual grasses forming 2040 lb/acre continuous, cured fine fuel outside of Worland, WY on June 23, 2017



A single annual grasses' continuity under and around Wyoming big sagebrush east of Worland, WY July 4, 2017

Concerns to Firefighters and the Public:

- Extreme to unprecedented fire growth and intensity should be expected with any new or ongoing fires particularly under critical fire weather conditions. This should be expected on all areas of fire perimeters, including the normally less active flanks and heel.
- Typical barriers to fire spread and behavior cannot be depended upon, including roads, areas burned earlier in the year, or areas with lower fuel loading.
- Fire spread and behavior may not abate during cooler, more humid periods including overnight hours.
- The public will need to be advised to avoid areas near ongoing fires, monitor the media, and heed advisories and evacuation notices.

Mitigation Measures:

- Quick aggressive initial attack, with aviation resources will be critical to controlling fire spread.
- Engines working in tandem, utilizing inside out tactics will be most successful.
- Firefighters should expect to construct wider control lines than typical in all fuel types.
- Fire managers should be prepared to support periods of longer duration wildfire incidents.

Area of Concern: The Big Horn Basin of Wyoming at elevations below 6000 feet. This area includes portions of Big Horn, Hot Springs, Park, and Washakie Counties.

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