OKLAHOMA FORESTRY SERVICES
Department of Agriculture, Food and Forestry
2800 North Lincoln Boulevard
Oklahoma City, OK 73105

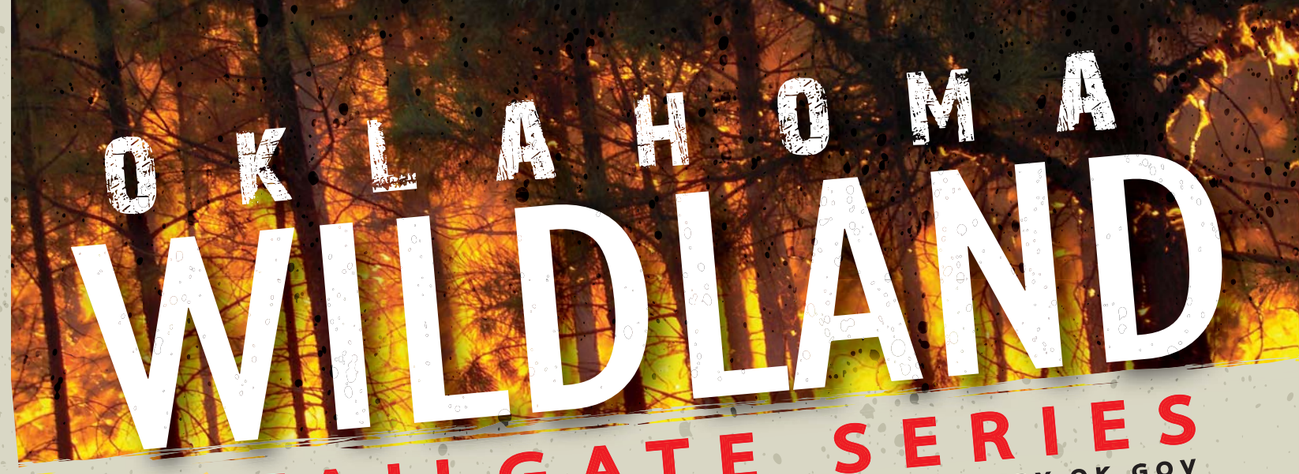
MEET OUR FIREFIGHTERS

Doug Morgan

Doug Morgan is a Forest Ranger II who has served with Oklahoma Forestry Services for 29 years. Based out of the Big Cedar Unit, Talihina District, East Central Area; Doug works fires in some of the greatest topographical relief in Oklahoma. A few of the mountains in this area rise over 1700 feet above the valley floor. Topography and the scarcity of roads in this area lead to fires that have potential to become large and are difficult to fight.

Doug is qualified through the National Wildfire Coordinating Group as a Type 4 Incident Commander, Engine Boss and Dozer Boss. In addition to his firefighting duties, Doug trains new rangers and assists with wildland fire training for local fire departments. As with all Forest Rangers, Doug travels the state as needed to fight wildfire and respond to other disasters. An interesting anecdote is that all in the course of one day he once assisted with clearing roads following a blizzard in western Oklahoma and subsequently dispatched to fight fire the same day in southeast Oklahoma. A testament to the dynamic weather in Oklahoma as well as the diversity of tasks assigned to Rangers and dedication with which they execute their duties.

For questions or comments contact Drew Daily, fire management staff forester, at drew.daily@ag.ok.gov or call 405-522-6158.
To sign up for our email list, suggest topics for future issues or download Oklahoma Wildland Tailgate issues visit forestry.ok.gov/tailgate.



OKLAHOMA WILDLAND TAILGATE SERIES

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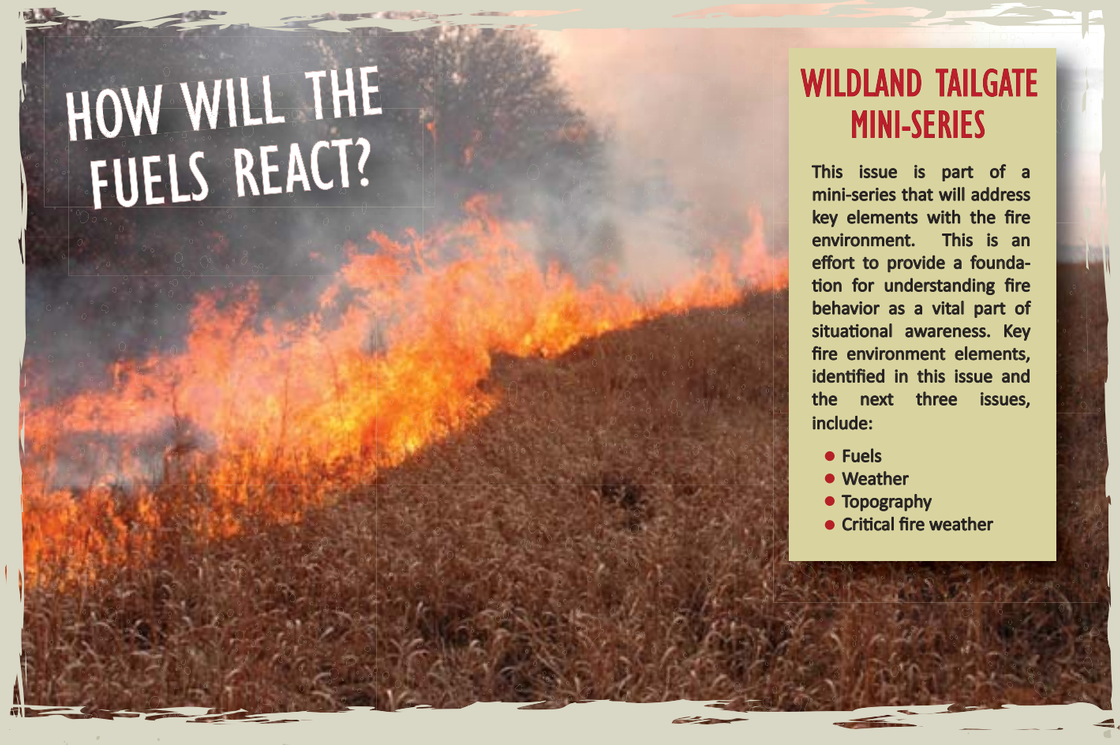
Oklahoma Forestry Services developed this training tool for fire departments as a supplement to formal firefighter training. Watch for a new message quarterly to use in formal safety meetings or in small "tailgate" groups as an effective way to increase preparedness and improve safety. The Tailgate Series is available at www.forestry.ok.gov

FIRE ENVIRONMENT WILDLAND FUELS

Wildland fuels are typically thought of as plant material, but actually include any burnable material present on the fireground. Developing an understanding of fuel characteristics aids fire personnel in estimating fire behavior and developing situation awareness that is elementary for successful fire suppression.



WILDLAND TAILGATE MINI-SERIES

This issue is part of a mini-series that will address key elements with the fire environment. This is an effort to provide a foundation for understanding fire behavior as a vital part of situational awareness. Key fire environment elements, identified in this issue and the next three issues, include:

- Fuels
- Weather
- Topography
- Critical fire weather

WHAT YOU NEED TO KNOW

FUEL CHARACTERISTICS:

- **Fuel Type - Fuels are grouped according to what will primarily carry the flaming front. Examples include:**
  - Light Fuels - Grass, leaf litter and brush exhibiting fast moving intense fires.
  - Heavy Fuels – Limbs, logging slash, storm debris yielding slower moving, high-severity fires.
- **Fuel Loading – The amount of fuel that is present typically expressed in tons/acre.**
- **Fuel Availability – Are the fuels in a burnable state? Typically live fuels will either not burn or burn without vigor; whereas dead and dormant fuels will dry quickly and burn more readily.**
- **Fuel Arrangement – We typically analyze fuel arrangement considering both horizontal and vertical aspects:**
  - Horizontal continuity of fuels relates to fire spread over a certain area. Continuous fuels will burn more uniformly and consistently.
  - Vertical arrangement of fuels relates to the ability of a surface flaming front transitioning into aerial fuels. Fuels that connect surface fuels to aerial fuels are referred to as ladder fuels and are typically a shrub layer that connects grass and leaf litter to tree canopy.
- **Fuel Moisture - Fuel moisture content is the amount of water in a fuel expressed as a percent of the oven dry weight of that fuel and is a direct indicator as to how well a particular fuel will burn.**
  - Dry fuels will combust rapidly; whereas wet fuels have to evaporate moisture before they can combust.

FUEL INDICATORS THAT MAY LEAD TO PROBLEMATIC OR EXTREME FIRE BEHAVIOR:

- Heavy loading of dead and down fuels such as storm damage or logging debris.
- Ample ladder fuels connecting surface fuels to aerial fuels.
- Tight crown spacing in coniferous stands or drought impacted hardwoods.
- Numerous sources of firebrands that may produce spot fires.
- Standing dead trees that are susceptible to fire.
- Drought impacted live fuels.
- Unusual amount of fine-dead fuels including grass, leaf litter and needle cast.

Ladder fuels connecting surface fuels to canopy.

Flanking fire in continous fuels

Photo credit: OHP Air Support

ON THE FIREGROUND

APPLYING WHAT YOU'VE LEARNED

THE SITUATION

You are the Incident Commander on a quickly growing initial attack fire that is burning across an old pasture with fire moving into some wooded areas. It has been a typical March in Oklahoma and the past few days have been warm and dry.

The resources that you arrived with are progressing well with "attack from the black" engine tactics in the old pasture, but additional resources are going to be needed to assist with suppression in the woods and to support the growing fire in the grassland.

SKILLS REVIEW

1. Describe the differences that you would expect between fire behavior in the pasture and in the timber (flame length, rate of spread).
2. With regard to the fire that has entered the timber, what are you looking for to determine if there is a potential for aerial fire activity such as torching or crowning?
3. Describe the differences in tactics that you use to suppress fire in grass and timber. Does that affect the type of resources that you order?

Key: 1) Grass dominated fuels typically produce greater flame length and rate of spread than timber litter fuels given the same fire weather. 2) Look for Ladder Fuels – shrubs, low hanging limbs and heavy fuel concentrations that may transfer fire activity from the surface into the canopy. 3) In grass dominated fuels, fast-moving mobile attack works well. Timber fuel types may require direct tactics including hand-line, blower line and/or dozer line.

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