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FROM : National Wildfire Coordinating Group
REPLY TO : NWCG@nifc.gov
DATE : 06/17/2005
SUBJECT : SAFETY ADVISORY : Fine Fuels

A very wet winter in the West, including the Southwest, Great Basin, Southern California and other areas has led to abnormally high grass and brush growth leading to an increase in wildfire potential in the lower elevations (primarily below 6,500 ft).

Long-term forecasts call for a greater than even chance for the monsoon in the Southwest to be weak and/or delayed. Indications are that the monsoon onset this year could be similar to 2004, with many areas west of the continental divide seeing a delay in the onset of consistent precipitation. Additionally, climate models are showing July, August and September outlooks for above average temperatures and below average precipitation throughout the Southwest, Great Basin and Southern California.

http://www.cpc.ncep.noaa.gov/products/predictions/multi_season/13_seasonal_outlooks/color/page2.gif

There is abundant anecdotal evidence from these areas of record high fine fuel loadings with potential for extremely rapid fire growth and high resistance to control once fuels cure. Firefighters throughout the United States should be mindful of the hazards they will encounter when fighting fires in these fuel conditions. With no significant relief in sight the NWCG members request that all Operations resources, including Aviation, who may be assigned to these Geographic Areas, be oriented to the key messages from this safety alert to assist them in preparing for assignments in which they may be exposed to extreme fire behavior.

The attached talking points, written by two seasoned Southern California firefighters, are a good foundation for beginning a discussion on the exceptional hazards posed by this years fuel conditions.

The National Wildland Fire Outlook through September can be found at:
http://www.nifc.gov/news/intell_predserv_forms/season_outlook.html For additional information on weather and fuel predictions, visit the NIFC predictive services website at:
http://www.nifc.gov/news/pred_services/Main_page.htm



FineFuels.doc

- A fine, flashy fuel is one of the Common Denominators of Fatal or Near Miss Fires. The others are...You know them...Wind shifts, Topographic problems (chimneys, chutes) and small fires or deceptively quiet parts of larger fires. Some sources also list aircraft downdrafts or vortices as one of the Common Denominators.
- Fine, flashy fuels are 1-Hr Time Lag fuels that can change their dead fuel moisture content within one hour. We could have fog in the morning with damp grass but come the afternoon and the grass will burn.
- Think about the fine, flashy fuel differences due to different weather factors. Right now (0935 hours) it is partly cloudy and still damp in Perris but the Banning Pass and Desert are ready to burn.
- This year, there are fine, flashy fuels where old-timers have never seen grass. There is grass right against the west side of the desert communities. Some relate this year to 1980 when the Dry Falls Fire scooted up the east face of the San Jacinto Mountains and then burned south all along the east escarpment. We have not had this amount of grass for many years. The grass will be a significant wick leading the fire to heavier fuels.
- In the wind, a fast burning fire in fine, flashy fuels can easily burn 4 mph. A good walker can only move 4 mph. Put that same fire on a slope and its spread will increase and your ability to walk will maybe reduce to $\frac{1}{2}$ to 1 mph. You cannot out run a fire! Fire burns 17X faster uphill than downhill.
- More FF's are killed or injured on indirect attacks than on direct attacks. Remember that fact when you are working in fast burning, fine, flashy fuels. Some FF's were only 20 feet or so from a safety zone when they were burned at grass fires. This is not to say don't make indirect attacks, just be safe and realize the increased risk of unburned fuel between you and the main fire.
- Most FF's that are burned at fires burning in fine, flashy fuels later state that they were only exposed to the heat for 15 to 30 seconds. They also state that they did not have time to deploy their fire shelters. This is a critically important factor with fine, flashy fuels.

Fine Fuels and Firefighter Safety

In a statistical fire occurrence and climate study done by Scripps Institute at the University of California San Diego in 1999, a correlation was made between a busy fire season in number of fires and acres burned, and a particular climatic sequence. That sequence is a drought followed by a wet winter. In the next fire season following that sequence, fires and acres reached record levels. Sound familiar?

We are our own worst enemy in that we almost always make a statement in the press or amongst ourselves that this coming fire season will be the worst ever. And after a while we become immune to the hype. But this year we have before us the sequence described above and a long fire season ahead of us. Now is the time for extra awareness and training to prepare and stay alert to the inherent dangers of the fine flashy fuels that have been lacking or absent for the past several years.

Fine flashy fuels in large heavy amounts have been responsible for many memorable fire seasons in the State of California. Ask the old timers about 1951, 1964, 1971, and some not so old timers about 1978, 1980, 1988, 1993, 1996-98, and 2003. This past years Statewide Rain Event has produced record amounts and heights of the fine flashy fuels in all terrains at all elevations. Fine fuels burn rapidly, are sensitive to small changes in wind speed and direction, can rapidly dry out after damp mornings and have been responsible for many fatal fire runs, as the fine fuels responded to increased winds, steep slopes and high temperatures. A stand of 1' tall grass can easily produce 12-18' flames in normal afternoon winds of 6-15 mph. Have escape plans ready and ensure that everyone is using full PPE. There will not be time to put on gloves when this kind of fire run ensues.

In the larger diameter dead fuels, the drought is still present, as it takes more than one wet winter to replenish moisture deep inside large dead fuels. Anything 8" in diameter or larger is still critically low in fuel moisture and will be for several more years.

In the live fuels, the good news is that the living chaparral has normal high spring fuel moistures, over 100% in most areas of California. But the bad news is the drought has left tremendous amounts of dead fuels in the crowns of the brush and has killed off many individual plants completely. The amount of dead material in most stands is the same as if the stands were 80+ years old.

And lest we forget the bug killed timber above 4000 feet elevation although showing some signs of recovery in some stands there is still a large amount of the dead fuels still standing or down on the ground.

The potential for a fire to spread from the grass, through the brush into the dead timber is high in many areas. Such a scenario will produce a devastating fire to lives and property. This is the fire season we are expecting and YOU need to ensure the safety of yourself and your crew.