

October 1, 2018

Santa Barbara County Board of Supervisors
105 East Anapamu Street
Santa Barbara, CA 93101

Re: Santa Barbara County Board of Supervisors Hearing, October 2, 2018 - Agenda Item #4 (18-00776)

Dear County Supervisors:

I am a Professor of plant ecology/vegetation science at UC Santa Barbara where I hold a joint position between Environmental Studies and the Department of Ecology, Evolution and Marine Biology. I have taught courses on the Ecology and Management of California Vegetation for two decades, and I conduct research related to chaparral ecology and management. Additionally, I have conducted research and published about the relationship between invasive grasses and fire regimes since 1990.

The use of controlled or prescribed fire to manage fuels, particularly understory and ladder fuels, is a successful strategy to reduce fire risk in *conifer dominated ecosystems*. Prescribed fire to manage fuels in chaparral is very different, and in the SB front country would be dangerous and logistically almost impossible for the following reasons:

(a) Chaparral, unlike conifer forest, is a crown fire ecosystem. Consumption of fuel occurs from the base of shrubs to the top of the canopy. The result is high intensity fire, which is natural in these systems. Thus, unlike conifer ecosystems, there is no understory to 'burn out' using prescribed fire.

(b) Because there is no way to use fire to interrupt vertical fuel continuity within a stand of chaparral, the goal of a prescribed fire program in chaparral would presumably be to create horizontal discontinuities where young vegetation that would have higher live fuel moisture (LFM) and contain less dead vegetation, would be adjacent to older vegetation and thus would serve as a barrier to the spread of a wildfire. The concept of younger vegetation near older chaparral is known in the science community as the 'mosaic hypothesis' and it is controversial. Younger vegetation can slow fire spread in some limited situations, but not if it is heavily invaded by non-native annual grasses. Also, younger fuel classes do not stop the spread of fire during extreme fire behavior as has been demonstrated by the research of Max Moritz and Jon Keeley.

(c) Using prescribed fire in chaparral requires the creation of safe zones or black lines around proposed burn areas. These would need to be installed without damage to ESHA and without creating threats of erosion or threats of fire during their creation. Given the steep and varied terrain of the SB front country including the presence of streams and riparian habitat, it is difficult to imagine controlled burns of the size proposed by Chief Peterson and others, where a safe perimeter line could be created without the previously mentioned problems. Without a full safe perimeter, there is a strong threat of escape.

(d) Prescribed fire in the wildland urban interface (WUI) will require the generation of Environmental Assessments and these can be expensive, subject to legal challenges, and time consuming. This was an important contributing cause to the USFS abandoning its prescribed burn program between its first and second forest management plans for the Southern California forests. Furthermore, any prescribed fire in the WUI is a threat to homes as well as to air quality. Burn windows (timing) tend to be very small because of the fear and threat of fire escape, and finding both weather and air quality conditions under which to do the burns can be quite challenging. Burning under almost anything but wet conditions, when LFM is high, is a threat to homeowners while burning under wet conditions is difficult because shrubs will not ignite easily when LFM is high unless there is wind. Wind would preclude burning.

A final comment on prescribed fire: The first USFS general management plan for the southern California forests including the LPNF, included prescribed fire as a management tool in the 1960s and into the 1980s. The goal was to create a mosaic of young or different aged fuels in order to curb the movement of wildfires. Because of air quality concerns, issues with timing of burns, fears (and some realities) of escape fire, EA preparation and budget issues, they moved away from this idea. Retired LPNF Ecologist Mark Borchert, and retired LPNF Fire manager Jeff Saley, both of whom were on the LPNF during the era of prescribed burning, could provide useful input on this topic.

I believe we could be at the forefront of adaptive fire mitigation strategies in shrubland ecosystems and I encourage you to insist that we go there.

Sincerely,



Dr. Carla M. D'Antonio

