Honorable Assembly Member Laura Friedman
Capitol Office, Rm 2137
PO Box 942849
Sacramento, CA 94249-0043

August 13, 2018

Subject: Assembly Bill 2911

Dear Assembly Member Friedman,

We urge you to remove the provision in Assembly Bill 2911 (AB 2911) that amends PRC 4291.3 in that,

> (b) The director may authorize an owner of a property not listed in subdivision (a) to construct a firebreak with a radius of up to 300 feet from a structure, or to the property line, whichever distance is shorter, if it is determined by the director as necessary to protect life, property, and natural resources from unreasonable risks associated with wild land fires.

Removing the 300-foot clearance amendment is vital for the following five reasons.

1. Clearing 300 feet can actually **increase the risk of structure ignition.**

2. While there is solid scientific research supporting 100 feet of defensible space immediately around structures as per PRC 4291, **there is no scientific support for expanding this distance to 300 feet, the length of a football field (Figure 1).**

3. The bill language is confusing as it conflates defensible space with fuel breaks. The bill makes no differentiation between fuel breaks that might have value (that is, for access as mentioned below) and those that would not. It would perpetuate an indiscriminate use of fuel breaks in locations where they will be ineffective.

The use of the term fuel break effectively expands the defensible space zone of 100 feet as supported by science and as described in PRC 4291 to an unsupportable 300 feet.

4. Fuel breaks fail to perform as intended more than half the time. During wind driven

wildfires, the wildfires that cause nearly all the fatalities and all the damage, fuel breaks are often useless.

5. Clearing 300 feet can cause significant environmental harm to our state's fragile habitats. With climate change threatening the continued existence of both chaparral and forests in many parts of the state, **we can ill afford to increase that threat by clearing tens of thousands of acres that football field-length clearance distances would cause.**

The science is clear on these points. The traditional approach of trying to control fuel loads is often counterproductive to protecting lives and property. Most structures do not burn from an imagined "wall of flame," but rather from wind-driven embers that can travel a mile or more ahead of the flame front.

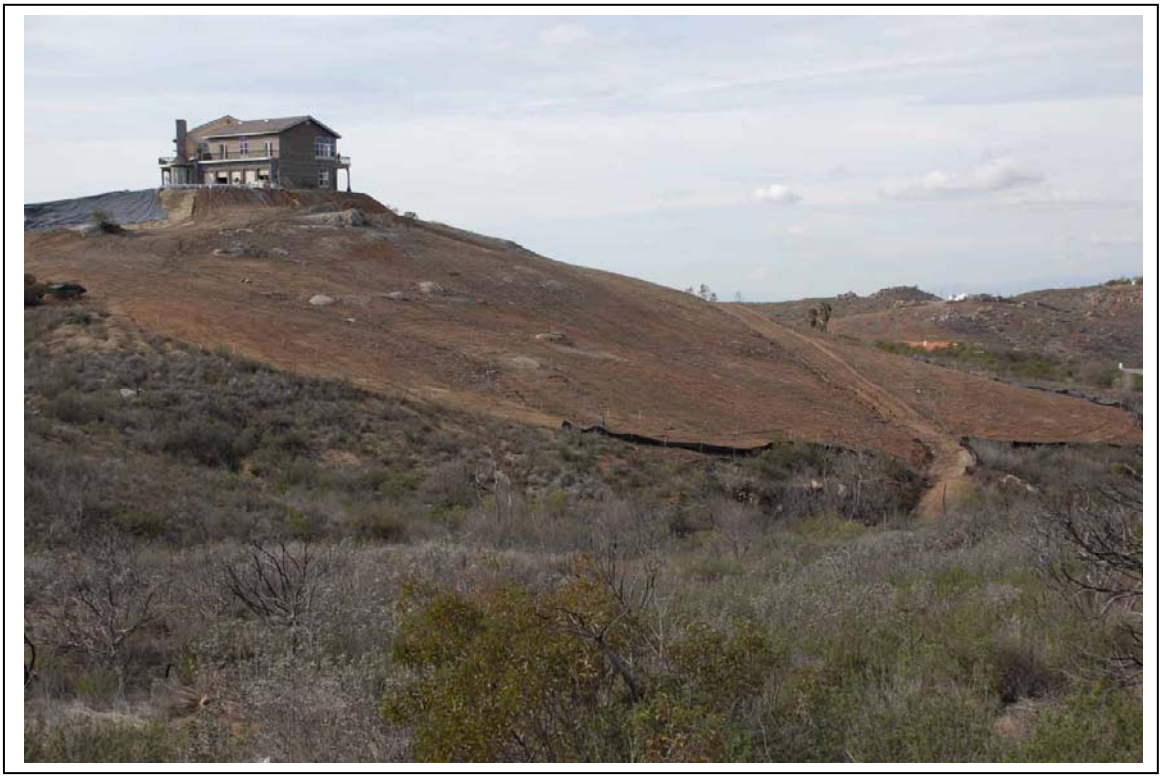

Figure 1. Football field-length clearance. A home with 300 feet of clearance, increasing the risk of embers impacting and igniting the structure.

Clearance beyond 100 feet unjustified

In a major 2014 study of 700,000 addresses in the Santa Monica Mountains and San Diego County exposed to wildfires between 2001 and 2010, it was found that:

A. There is no additional structure protection provided by clearing beyond 100 feet, even on steep slopes. The most important treatment zone is from 16-58 feet.

B. The most effective measures to reduce structure losses are to reduce the percentage of woody cover up to 40% immediately adjacent to the structure and to ensure that vegetation does not overhang or touch the structure.

A concise summary of the study from USGS can be downloaded here.

The full study: Syphard, A.D., T.J. Brennan, and J.E. Keeley. 2014. The role of defensible space for residential structure protection during wildfires. International Journal of Wildland Fire 23:1165-1175.

Cleared areas can increase fire risk

Researchers have also examined vegetation growing within roughly half a mile of structures and concluded that **the exotic grasses that often sprout in areas cleared of native habitat like chaparral could be more of a fire hazard than the removed shrubs (Figure 2).** *"We ironically found that homes that were surrounded mostly by grass actually ended up burning more than homes with higher fuel volumes like shrubs,"* Syphard said.

A concise summary of the study from USGS can be downloaded here.

The full study: Syphard, A.D., J.E. Keeley, A. Bar Massada, TJ Brennan, V.C. Radeloff. 2012. Housing arrangement and location determine the likelihood of housing loss due to wildfire. PLoS ONE 7(3): e33954. doi: 10.1371/journal.pone.0033954

Figure 2. Creating a more flammable landscape. The spread of highly flammable, invasive, nonnative weeds is often the consequence of fuel treatments. The oldest treatment area is in the background, now filled with weeds. The freshly treated area is in the foreground. Note the soil disturbance. Soil disruption like this destroys the soil crust, allowing the spread of weeds. Location: Painted Cave, Santa Barbara County.

It's about embers

In a thorough study of the 2007 Witch Creek fire in San Diego County, researchers found that, *"Wind-blown embers, which can travel one mile or more, were the biggest threat to homes in the Witch Creek Wildfire. There were few, if any, reports of homes burned as a result of direct contact with flames"* from wildland fuels.

The full study: Institute for Business and Home Safety. 2008. Mega Fires: The Case for Mitigation. The Witch Creek Wildfire, October 21-31, 2007.

The notion that if 100 feet of defensible space is good, then 200-300 feet must be better is not supported by broad, scientific studies. Creating large areas of clearance with little or no vegetation creates a **"bowling alley" for embers**. Without the interference of thinned, lightly irrigated vegetation, a structure becomes the perfect ember catcher.

To make matters worse, when a fire front hits a bare fuel break or clearance area, a shower of embers is often released.

The full study: Koo, E, R.R. Linn, P.J. Pagni, and C.B. Edminster. 2012. Modeling firebrand transport in wildfires using HIGRAD/FIRETC. International Journal of Wildland Fire 21: 396-417.

Additional information on the impact of embers is available in the following publication: Maranghides, A. and W. Mell. 2009. A Case Study of a Community Affected by the Witch and Guejito Fires. National Institute of Standards and Technology Technical Note 1635. US Department of Commerce.

Fuel breaks are usually ineffective

In a comprehensive study of the 2007 fires in southern California researcher found that despite extensive fuel treatments in some areas, *"fire control was complicated by a patchwork of untreated private properties and mountain homes built of highly flammable materials. In a fashion reminiscent of other recent destructive conifer fires in California, burning homes themselves were a major source of fire spread. These lessons suggest that the most important advances in fire safety in this region are to come from advances in fire prevention, fire preparedness, and land-use planning that includes fire hazard patterns."*

The full study: Keeley, J.E, H. Safford, C.J. Fotheringham, J. Franklin, and M. Moritz (2009). The 2007 Southern California wildfires: lessons in complexity. Journal of Forestry, September: 287-296.

Examining fuel breaks over a 28-year period on the Los Padres National Forest, researchers found that, "*Many fuel breaks never intersected fires, but others intersected several, primarily in historically fire-prone areas. Fires stopped at fuel breaks 46% of the time, almost invariably owing to fire suppression activities... This study illustrates the importance of strategic location of fuel breaks because they have been most effective where they provided access for firefighting activities."*

In fact, the Holy Fire, currently burning above Lake Elsinore, California, has jumped multiple fuel breaks and clearance areas on national forest land. Importantly, this was not a wind driven event.

Key Point: Fire will exploit the weakest link. Many structures with adequate (or excessive) defensible space have still burned to the ground because embers have entered through attic vents, ignited flammable materials around the home (litter in the gutter, wood stacks, wood fencing), or found their way under roofing materials.

Solution: Reduce the flammability of the home as much as possible, install ember resistant vents, Class A roofing, external sprinklers operated with an independent system, and remove flammable materials from around the structure.

Federal grants have been made available to help communities retrofit homes to make them more fire safe. Details of these grants can be found in Attachment 1.

We also offer a full set of 12 recommendations on how to reduce wildfire risk in Attachment 2.

Wildfire-caused disasters are not inevitable

Finally, we urge you to watch USFS fire scientist Dr. Jack Cohen's and the National Fire Protection Association's short video found at this link: https://youtu.be/vL_syp1ZScM

Dr. Cohen explains that while extreme, wind-driven wildfires are inevitable, wildfire-caused disasters to communities are not. It's about making fire safe communities, not trying to control nature through excessive clearance operations.

We can not continue our current approach to wildfire risk reduction, clearing larger and larger areas. It is equivalent to trying to stop earthquakes. We must look at the science and develop strategies to save lives and property, not continually try to control fire through fuel treatments. As the losses suffered in the 2017 fires and many others have shown, our current focus on trying to control nature is not working.

We urge you affirm the balanced approach to fire risk reduction represented by the currently accepted 100-foot defensible space guidelines, efforts to improve building design, and fire safe land planning.

Football field-length clearance distances are not part of this balanced approach. Consequently, we urge you to remove the 300-foot clearance amendment in AB 2911.

Sincerely,

Richard W. Halsey
Director
California Chaparral Institute

Dan Silver
Executive Director
Endangered Habitats League

Monica Bond
Principle Scientist
Wild Nature Institute

Ara Marderosian
Executive Director
Sequoia ForestKeeper

Claire Schlotterbeck
Executive Director
Hills for Everyone

Mike Wellborn
President
Friends of Harbors, Beaches and Parks

Attachments:

1. An Appeal to Fire Agencies:
http://www.californiachaparral.org/fire/apleaitstheembers.html

2. Letter to Governor Brown. Twelve Recommendations to Reduce Fire Risk
http://www.californiachaparral.org/images/Gov_Brown_2017_Wildfires.pdf