The California Chaparral Institute

…the voice of the chaparral

June 25, 2008

San Diego County Board of Supervisors
County Administration Center
1600 Pacific Highway
San Diego, CA 92101

Re: Board proposal to conduct wide-scale prescribed burns on MSCP (Multiple Species Conservation Plan) preserves and other protected wildland areas in San Diego County.

Dear Supervisors:

We are writing to express our strong opposition to the Board's May 14, 2008 proposal to consider burning MSCP and other protected preserve areas in an attempt to reduce fire risk in San Diego County.

Our opposition is based on science, first hand firefighter experience, and public law. There is no question in our minds that if the County engages in the kind of burning program the Board described on May 14, **San Diego County would be less fire-safe, would irreversibly damage its natural resources, and would seriously compromise the ecological health of the region.** In addition, US Forest Service scientists have concluded that "**landscape mosaics are impractical, unnecessary, and probably not particularly effective"** in creating a strategic approach to fuel and fire management in chaparral (Conrad and Weise 1998).

Large-scale prescribed burns have also been rejected by the current California Fire Plan:

> *"The typical vegetation management project in the past targeted large wildland areas without assessing all of the values protected. Citizen and firefighter safety and the creation of wildfire safety and protection zones are a major new focus of the new prefire management program.*
>
> *The vegetation management program will shift emphasis to smaller projects closer to the new developments.*

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"Given that department funds for prefire projects are limited, the department must carefully and systematically select the projects that provide the greatest benefit for a given investment."

We concur with the State of California that shifting our fire management focus to the wildland/urban interface (WUI) with smaller fuel modifications directly around and near structures and communities is the most effective strategy to reduce wildfire risk. If a thorough analysis of the true costs of various fire-risk reduction strategies is performed, it becomes clear that **concentrating efforts directly where loss of life and property can occur will produce the greatest and most effective benefit.**

Focusing on fuel reduction within the WUI instead of burning vast stretches of San Diego County's protected wildlands will avoid a number of significant problems including:

1. **Aiming at the Wrong Target: There is no Strong Relationship Between the Age of Shrubland Fuel and the Probability of Fire**
2. **Ignoring the Right Target: The WUI**
3. **Prescribed Burning is an Expensive, High Risk Activity**
4. **Creating more flammable landscapes**
5. **Threats to Infrastructure: Water and Erosion**
6. **Air Pollution**
7. **Ignoring the Inevitability of Large Fires**
8. **Destroying the "Redwoods of the Chaparral"**
9. **Burning Protected Natural Areas is a Violation of Public Trust**

We discuss each one of these problems in the attached addendum.

We implore the Board to reconsider and reject its previous intentions to apply landscape-scale prescribed burning across San Diego County's protected wildlands.

We also strongly recommend that any task force, report, or other informative process designed to improve fire safety in our region take an **inclusive approach** by including *all* interested stakeholders. Riverside County conducted such an effort this year and produced a balanced, well-researched set of recommendations (FHRTF 2008). In only this way can the County produce a viable, long-lasting approach to fire-risk reduction.

Sincerely,

Richard W. Halsey
Director

Addendum

Why conducting wide-scale prescribed burns on MSCP (Multiple Species Conservation Plan) and other protected wildland areas in San Diego County would be counter productive to fire safety and a violation of public trust.

1. Aiming at the Wrong Target: There is no Strong Relationship Between the Age of Shrubland Fuel and the Probability of Fire

Contrary to popular opinion, the age of vegetation (time since last burned) does not have a strong relationship to hazard of burning. Analysis of several hundred fires over a broad expanse of California shrublands has demonstrated that extreme weather conditions (Santa Ana winds) overwhelm the influence of the age and spatial patterns of fuels (Moritz 1997; Moritz et al. 2004). This has also been demonstrated in Australian shrublands (Bradstock and Gill 2001; Whelan 2002). Such fires can burn easily through 5-10 year old stands (Dunn 1989). A study of the 1985 Wheeler fire in Santa Barbara County concluded that only 14% of the fire perimeter was established due to wildland fuel type changes (Dunn and Piirto 1987).

The inability of younger age classes to stop a fire was also shown during both the 2007 Witch and Poomacha fires in San Diego County. Of the total acreage burned in the County's 2007 firestorm, **more than 20% or approximately 70,000 acres was 4-year-old vegetation** recovering from the 2003 firestorm. In the Witch Creek fire hundreds of acres of overgrazed pasture land in Pamo Valley burned despite the fact that very little vegetation was present.

> *"The extent to which landscape level fuel treatments are effective is a function of weather conditions during the fire event. Under extreme weather conditions, there is overwhelming evidence that young fuels, or even fuel breaks, will not act as a barrier to fire spread" (Keeley et al. 2004).*

During the May 14, 2008 Board of Supervisor's meeting it was suggested that San Diego County replicate the fuel mosaic pattern of mixed-aged vegetation that has been claimed to reduce the size of fires in Baja California, a pattern that appears to have also compromised many of that region's native plant communities.

Regarding the use of such mosaics, US Forest Service researchers Susan G. Conrad and David R. Weise (1998) concluded after an extensive examination of the literature that,

> *While an age-class mosaic could be effective at moderating fire intensity in young stands, and for making fires more amenable to control, especially under moderate burning conditions and on the flanks of a fire, it is important to recognize that a high-intensity fire will typically burn through any age class of*

vegetation. And as discussed earlier, these are the fires that burn most of the acreage.

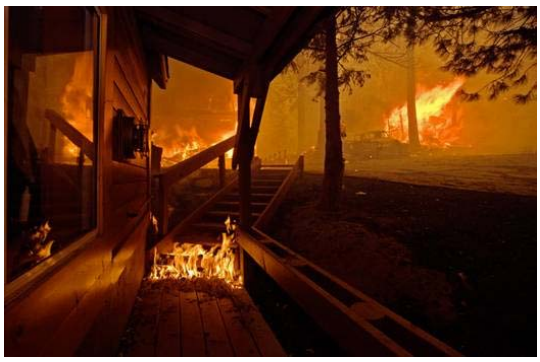
To achieve their goal of creating a strategic approach to fuel and fire management in chaparral Conrad and Weise concluded that, "**landscape mosaics are impractical, unnecessary, and probably not particularly effective."**

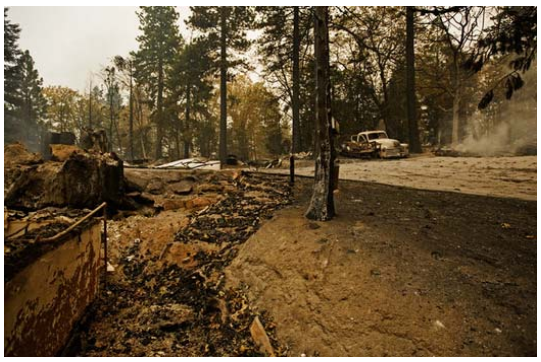
2. Ignoring the Right Target: The WUI

Dr. Jack Cohen (2000), a research scientist with the US Forest Service, has concluded after extensive investigations that home ignitions are not likely unless flames and firebrand ignitions occur within 120 feet of the structure. His findings have shown that,

> …*effective fuel modification for reducing potential WUI (wildland/urban interface) fire losses need only occur within a few tens of meters from a home, not hundreds of meters or more from a home. This research indicates that home losses can be effectively reduced by focusing mitigation efforts on the structure and its immediate surroundings* (Cohen 1999).

Cohen's work is consistent with the research on homes with nonflammable roofs conducted by other scientists. During WUI wildland fire events, the Stanford Research Institute (Howard et al. 1973) found a 95 percent survival rate for homes with a defensible space of 30 to 54 feet, and Foote and Gilless (1996) at Berkeley found an 86 percent home survival rate for homes with a defensible space of 84 feet.





Homes burn because they are flammable. As seen in the left photo, this home near Lake Arrowhead in the town of Running Springs caught fire in October 2007 when pine needles on a wooden deck were ignited by embers. The right photo shows the remains of the same house the following day. Notice the surrounding trees. They didn't burn. This community had spent a lot of time and money conducting fuel management activities, but many homes burned anyway because the *entire* fire risk equation had not been properly considered. Landscape-scale prescribed burns would do nothing to address this issue while still consuming vast amounts of scarce fire management dollars. Photos: Mark Thiessen, National Geographic.

3. Prescribed Burning is an Expensive, High Risk Activity

Prescribed burns in Southern California are typically quite expensive, take years to plan and require a large number of resources to help insure they burn as predicted. Based on a 1995 estimated cost of $250/acre, burning the amount of land the Board's suggested program requires (approximately 50,000 acres/year) would likely cost more than 12 million dollars per year (Bell et al. 1995). This money could be used much more wisely by permanently funding San Diego County's Fire-Safe Council and increasing support for a County-wide fire agency.

Unfortunately, prescribed burns frequently do not turn out as expected. A five acre prescribed burn turned into a 10,000 wildfire at the northern tip of the Cleveland National Forest in Orange County on February 6, 2006. Fortunately no lives were lost or structures destroyed. Such was not the case when a prescribed burn escaped May 2000 in northern New Mexico. It started the Cerro Grande fire, burning 47,650 acres and destroying over 350 homes (Griggs, et al. 2001).

There is no question that prescribed burning is an important tool. Many fire management agencies already use a combination of prescribed burning and other fuel management techniques to reduce fuel loads in a *strategic* manner near communities and other valuable assets. First hand firefighter experience has proven that younger fuels do provide opportunities to suppress fires if they are found in *strategic* locations, namely where there would be an opportunity for successful fire suppression activities (Halsey, manuscript in process). However, given the high cost and risk of prescribed burns, they need to be restricted to strategic locations as they presently are, not applied broadly across the landscape.

4. Creating more flammable landscapes

We know much of San Diego County's chaparral and sage scrub habitat has burned in excess of their natural fire regimes (Zouhar, in press). In fact, most of the wildland vegetation in San Diego County is now under 10-years of age. This is leading to the elimination of healthy shrubland ecosystems through the process of type-conversion and the expansion of highly-flammable, weedy grasslands. Laying more fire to the ground in the form of large, prescribed burns, will only make this problem worse.

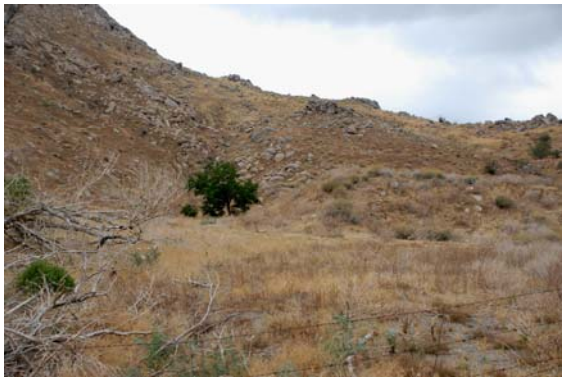
Invasive, grassy fuels can create a more dangerous fire environment because they dry out sooner than native plants, ignite more easily, and create massive amounts of heat instantly. One of the common factors in firefighter fatalities is the presence of highly-flammable grassy fuels.

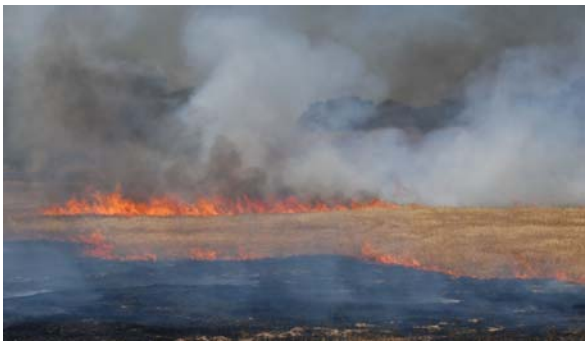
As the Jackson fire in Sacramento County clearly illustrated this summer, grass fires can be extremely dangerous. Five homes were destroyed, 6,400 acres were burned, and a fire captain was seriously injured when he was overcome by flames. The fuel was dried, non-native, invasive grasses. Grass fires that swept across Texas and Oklahoma between

December 2005 and April 2006 burned more than two million acres and killed 11 people. The 2006 Esperanza fire in Riverside County that killed five USFS firefighters was started and made its initial moves in grassy fuels.

Many areas burned in the 2007 firestorm are already extremely flammable under moderate weather conditions after less than one-year's growth of grassy fuels, especially portions of the lower San Dieguito River Valley, Otay Mesa, and the San Diego River Valley above Harbison Canyon.

Replacing native shrublands with non-native grasses will increase fire risk rather than reduce it. One of the best ways to create flammable grassy fuels is to conduct the type of burning program the Board is suggesting.





The photo on the left shows the origin of the 2006 Esperanza fire that killed five USFS firefighters. Two years later, weedy fuels have returned to the same level they were when the fire was started by an arsonist. The right photo shows a fast moving grass fire, similar to the ones that have burned in northern California this summer and those in Texas and Oklahoma in 2005/06. Photos: R.W. Halsey.

5. Threats to Infrastructure: Water and Erosion

More than 26,000 acre feet of water were supplied annually by existing ground water projects by the San Diego Water Authority in 1997 (SDWA 1997). Nearly 2 million acre feet are estimated to be stored in the County's underground aquifers (the County used 673,000 acre feet of water in 2001). Underground water is present primarily because of the valuable watershed provided by native vegetation, especially chaparral. The removal of this watershed by burning will have a significant impact on the County's underground water availability.

When vegetation is burned, erosion increases up to twenty times greater when compared to unburned watershed (Radtke 2008). This amount of sediment flowing into the County's river basins and drainage infrastructure can be incredibly costly and damaging, especially to infrastructure and natural resources.

6. Air Pollution

The dense shrub cover chaparral provides helps to moderate the local impacts of climate change by reducing temperatures and storing carbon. If burned, not only will the stored carbon be released into the atmosphere, but air pollution will increase dramatically. This is the one issue that makes prescribed burning generally unfeasible in Southern California.

Before any agency burns they must receive permission from the local air quality board. The board considers not just air quality at the time but weather patterns and requires conditions that will ensure smoke is dissipated. More often as not, when acceptable air quality conditions are right, weather conditions are not suitable for burning; when both air quality and weather conditions are aligned, the necessary fire fighter resources aren't available.

As a result of air quality concerns, it may be possible to conduct only few small burns a year.

7. Ignoring the Inevitability of Large Fires

San Diego County is no stranger to large wildfires. The newspaper article below describes the impact of a large fire in the Cuyamaca Mountains in 1889.

> LOS ANGELES TIMES. Sept 29, 1889: San Diego County. Great devastation by fires in timber lands. Flames fought night and day by men and women---still raging in Cuyamaca Mountains.
>
> SAN DIEGO, Sept. 28.---[Regular Correspondence.] The forest fires in the mountains of this county, which have been raging for the past two weeks are the worst fires known here. Reports today from Palomar Mountain give graphic descriptions of the great devastation of timber in that beautiful park region. Men and women have been fighting fire day and night, many going two or three days without food or sleep. About five miles square of the choicest timber lands of Smith Mountain (Palomar Mountain) are utterly destroyed, and many settlers had to fight bitterly to save their houses. Many cattle are known to have been burned. Deer, snakes and mountain lions have been driven down to the settlements. The fire is now partially under control, though those burning on the Cuyamaca Mountains, twenty miles south, are still raging.

Large fires have always been part of the landscape of Southern California (Mensing, et al. 1999) and will likely continue to occur. The difference now is that they are coming more frequently due to human caused ignitions. USGS research indicates that fire suppression and fuel build up are not responsible for shrubland fires in Southern California, but are driven by ignitions and severe fire weather (Keeley et al. 1999; Keeley and Fotheringham

2003).

Pursuing a policy of landscape scale prescribed burning ignores what we have learned about wildfire over the past twenty years.

8. Destroying the "Redwoods of the Chaparral"

The impression the Board gave while discussing the proposal to burn public lands covered by older shrubland ecosystems was that these native systems are viewed only as fuel, not worthy of protection. This is a common perception because there has been so much attention in the media about protecting forests and getting rid of "brush." However, shrubland ecosystems define our region and provide a significant number of recreational and cultural values to our community.

The public does not support the removal of the giant redwoods in California because they are aware of their magnificent beauty. We submit that our region's **old-growth chaparral stands, often with magnificent specimens of ancient manzanita, have equal beauty, beauty that deserves protection.** By advocating the generalized burning of vegetation across the landscape, the Board would destroy some of San Diego's most remarkable natural wonders.

An ancient manzanita killed in the 2007 Witch fire in San Diego County. Such magnificent specimens represent one of the most remarkable treasures found in old-growth chaparral. Unfortunately, very few old-growth chaparral stands exist anymore due to the unnatural increase in fire frequency caused by human activity. Photo: R.W. Halsey.

Chaparral does not “need” to burn, nor is it “born to burn.” The chaparral is extremely sensitive to particular fire patterns involving frequency, seasonality, and intensity. Artificially applying the wrong kind of fire at the wrong time to chaparral and other shrubland ecosystems will ultimately lead to their destruction and the desertification of San Diego County.

Increased fire frequencies or fires during the wrong time of year can eliminate a rich chaparral ecosystem (left) and convert it into a hillside of invasive, flammable weeds that can easily carry a wildfire every year (right). Photos: California Chaparral Institute.

9. Burning Protected Natural Areas is a Violation of Public Trust

As stated in County documents,

> *The MSCP is designed to preserve a network of habitat and open space, protecting biodiversity and enhancing the region's quality of life. The MSCP also provides an economic benefit by reducing constraints on future development and decreasing the costs of compliance with federal and state laws protecting biological resources.* ***The MSCP Plan has been developed cooperatively by participating jurisdictions and special districts in partnership with the wildlife agencies, property owners, and representatives of the development industry and environmental groups.***

To conduct wide-scale prescribed burning without any kind of public review and environmental oversight as suggested by several members of the Board is especially worrisome. Wildlands preserved through land purchases by the public and private citizens, government agreements, and collaborative planning efforts have been set aside to protect the natural environment. Ignoring such commitments is a violation of public trust.

Implementing the MSCP as planned is consistent with fire safety. As we have described in this document, science has demonstrated that there need not be a conflict between conservation and protecting the public from wildfire. If we can concentrate our resources on creating both fire safe communities and a well funded, county-wide fire agency, we can successfully adapt to the fire-prone environment in which we live. Trying to force nature to adapt to us will only lead to failure.

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