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...the voice of the chaparral

Monterey FireSafe Council
2221 Garden Rd.
Monterey, CA 93940

May 21, 2010

Dear FireSafe Council Members,

We would like to congratulate you on your ongoing efforts to develop a strategy to help reduce fire risk in Monterey County through the Community Wildfire Protection Plan process. We have read the Plan, released January, 2010, and would like to make some important suggestions that will further your goal in protecting life, property, and the environment from wildfire.

While the importance of reducing fire risk is essential in California, such an effort cannot override all other important land planning concerns. To be effective, fire plans must incorporate the values of all stakeholders. **As written, the current Plan for Monterey County has the potential of compromising the very natural resources and community values that make the region such a remarkable place to live.**

Specifically, the Plan,

1. Uses scientifically incorrect, value-laden assumptions that are likely to lead to significant loss of wildland habitat and increased fire risk.
2. Recommends spending scarce, taxpayer dollars on expensive, highly questionable fuel treatments far from where the risk is greatest.
3. Advocates modifying 1.3 million acres of native habitat in 20-year rotation cycles that will lead to the degradation of native shrubland plant communities, potentially resulting in their conversion to non-native, flammable weedlands.
4. Recommends the suspension of numerous state laws that have been established over many years to protect citizens and the environment from poorly planned and/or capricious actions by private and governmental entities.
5. Appears to encourage the incorrect perception that any fuel treatment can be classified as responding to an "emergency" and therefore exempt from state environmental laws.

The intent of our comments and for providing a significant number of supporting, scientific documentation is to assist Monterey County in making sound, educated decisions concerning land management and improving fire safety. We are hopeful you will take our criticisms in the spirit they are being given - a sincere desire to protect citizens and natural resources from fire and help you avoid unnecessary conflict in the future over an issue that is so important.

Analysis

A. The myth of fire suppression and "overgrown" vegetation

One of the most inaccurate concepts found throughout the Plan is that Monterey County appears to be plagued by "over-mature and overgrown" vegetation due to past fire suppression practices. There is no scientific support for such a claim.

The Plan states (p. 10),

Over the past century, federal land management agencies and others have learned that the active suppression of fires has resulted in large contiguous areas of overgrown and overmature hazardous fire fuel beds...

While it is true that certain dry conifer forests in the southwest have accumulated unnatural levels of vegetation due in part to fire suppression, this is not the case for California's shrubland dominated landscapes like those in Monterey County. In fact, if it had not been for fire suppression activity and protective land management policies, many of the state's shrubland ecosystems remaining today would have been eliminated by fire and abusive land use practices.

Stating that fire suppression has successfully led to the unnatural exclusion of fire in Monterey County is a misapplication of research from other regions and ignores data that proves otherwise from studies conducted over the past twenty years. In a comprehensive examination of fire regimes in the United States, researchers have concluded that the chaparral covered coastal mountain region of California,

*...is dominated by human-caused ignitions, and fire suppression has played a critical role in preventing the ever increasing anthropogenic ignitions from driving the system wildly outside the historical fire return interval. Because the net result has been relatively little change in overall fire regimes, **there has not been fuel accumulation in excess of the historical range of variability**, and as a result, fuel accumulation or changes in fuel continuity do not explain wildfire patterns. (Keeley, et al. 2009)*

It is curious the authors missed this data since it is contained within two of the Plan's cited references (Sugihara et al. 2006, and Moritz 2003). Perhaps more revealing is the

fact that the Plan depends heavily on the Yosemite National Park Fire Management Plan that deals with an ecosystem that bears little resemblance to what occurs in Monterey County. In fact, one of the authors cited to support the Plan's viewpoint (footnote p.10) has been criticized by leading fire scientists in misapplying scientific research (Boxall 2006, Conard 2008).

From the policy/attitude perspective, the main problem with the fire suppression myth is that it supports the notion that ecosystems "need" to burn, regardless of type or location, and as a consequence we should let fires run their course or add more fire to such landscapes. It also supports prescribed burning for resource "enhancement" in shrublands when such action may likely destroy the very resource the burning is supposed to be enhancing. For example, a prescribed chaparral burn in Pinnacles National Monument type-converted the native plant community to an invasive weedland (Keeley 2006).

The Plan's incorrect assumption that the region's shrublands are all basically "overgrown" leads to the false conclusion that native, old-growth chaparral and sage scrub ecosystems can only be seen as "fuel," not valuable natural resources worthy of protection.

Although such a perception is common, especially since there has been so much attention in the media about protecting forests and getting rid of the "brush," such a notion fails to consider a fundamental fact; dense shrubland ecosystems are natural and define Monterey's backcountry like none other, providing a significant number of recreational and cultural values to the community.

The notion that old-growth shrublands are "over-mature and overgrown" is more a reflection of personal values relating to backyard gardens and tree farms. It is not based on a scientific understanding of Monterey County's native ecosystems.

The overwhelming bias against native shrublands is perhaps best reflected by the Plan's attempt to equate their removal to fundamental Constitutional rights when it states,

*State laws should acknowledge that Californians have fundamental inalienable rights, pursuant to Article 1, Section 1 of the California Constitution, to defend life, protect property, and pursue and obtain safety, **and that hazardous overgrowth assaults each of these rights if individuals are not free to address it.***

Such hyperbolic statements are not conducive to creating the collaborative, fact-based effort that is essential for any fire protection plan to be successful.

B. High-intensity fires and mosaics

The Plan states (p. 11),

Problems associated with vegetation changes that increase the risk of unnatural high-intensity wildland fires tend to be especially prevalent at elevations common

in mountainous areas of Monterey County. There, the natural mosaic of diverse vegetation types and ages can be replaced by dense, continuous stands of shrubs and trees because of the success of fire suppression.

There is nothing "unnatural" about large, infrequent "high-intensity" wildland fires in the mountainous areas of Monterey County. Such fires are a historical, natural part of the region. For example, the 178,000 acre Marble Cone Fire in 1977 re-burned an area that had been scorched in 1906 by another intense, 150,000 acre fire. Other large fires in the region have been recorded even earlier, well before the era of fire suppression began.

Chaparral has a crown fire regime. By definition, low to moderate intensity fires are not associated with crown fire regimes. **The natural pattern in the chaparral ecosystem is for infrequent, high intensity, crown fires to burn through vast areas, especially under severe weather conditions** (Keeley and Zedler 2009, Keeley and Fotheringham 2001). One sign of a healthy, chaparral ecosystem that is properly recovering from a fire are large areas of blackened ground (punctuated with resprouting shrubs and tiny shrub seedlings) remaining long after the first rainy season.

In fact, high intensity fires are vital for the proper recovery of chaparral plant communities. Extensive research has shown that older chaparral stands with high "fuel loads" show significantly greater seed recruitment levels for many obligate seeding species after a fire than do younger stands (Keeley et al. 2005). Such high intensity fires also destroy the seeds of invasive species, allowing recovering chaparral to resist the colonization by non-native weeds. To state, as the Plan does, that somehow such fires radically alter the natural environment is contrary to our understanding of Monterey County's native plant communities.

The Plan's contention that mixed-aged "mosaics" are the natural condition, implying that "continuous stands of shrubs" are somehow unnatural and in need of immediate mitigation, is also contrary to scientific research. While there are certainly areas within the 2008 Basin-Indians Fire scar that failed to ignite, leaving behind "patches" of unburned vegetation, they were relatively small when compared to the total burn area. Large, contiguous stands of old-growth chaparral are perfectly natural and remain dynamic, healthy plant communities (Fenn et al. 1993, Halsey 2008a, Hubbard 1986, Keeley 1973, Larigauderie et al. 1990, Patric and Hanes 1989, Specht 1969, Zedler and Zammit 1989).

Attempts to alter the chaparral's natural fire regime through prescribed fire and other fuel treatments will risk its ecological health and alter its natural successional processes.

The Plan also states (p. 11),

Unnaturally high heat intensity fires alter natural processes and typically result in hydrophobic layers in soils, vegetation type-conversion and loss of habitat.

Hydrophobic layers have been the focus of more than a dozen studies in recent years and they all show that this layer is very short-lived, often disappearing within an hour or so of the first light rains, and do not result in habitat loss. Hydrophobic soils are not a significant factor in post-fire chaparral environments (Hubbert et al. 2006).

C. Creating chaparral "mosaics" is wasteful and ineffective

The Plan states that,

Maintaining groups of shrubs is recommended to provide a mosaic pattern in the landscape.

There is no scientific justification for such a recommendation from either a biological or fire safety perspective.

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 (Conard 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.

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.**

Attempting to create artificial "mosaics" in native shrublands is a waste of taxpayer money, money that could be better spent directly around the nearby rural communities.

D. Negative impacts of unnecessary fuel treatments

Much of the landscape in the Monterey Ranger District of the Los Padres National Forest has burned in excess of the natural fire regime. This has been graphically illustrated by a recent map of the Forest developed by US Forest Service scientists (Attachment #1 - the areas with excess fire are shown in green, orange, and red). The map clearly refutes the Plan's contention that Monterey County is being plagued by unnaturally "overgrown" vegetation.

While there are indeed some areas within the Los Padres National Forest that show a positive departure from their natural fire regime (areas shown blue colors are possibly missing 1 or more fire cycles), this is **not** the case for most other areas in the region.

Understanding this issue is critical because high fire frequencies are leading to the elimination of healthy chaparral and other shrubland ecosystems throughout much of California through the process of type-conversion and the consequent expansion of highly-flammable, weedy grasslands. While type-conversion is currently much more significant in Southern California than other parts of the state, it is predicted that climate change and increased population growth (resulting in more ignitions) will increase the rate of shrubland loss throughout the region. Applying even more fire on the ground in the form of large, prescribed burns, or conducting large mastication treatments, will only accelerate this process. The occurrence of additional fires in treatment areas while the landscapes are recovering is a near certainty. The cumulative harm caused by prescribed fire, vegetation modification, and accidental fires will pose a significant ecological risk to native shrubland ecosystems.

Therefore, it is **crucial that the county look forward rather than backward in assessing the potential impact of the Plan's land management recommendations.**

There is also well documented evidence that cool-season burns can lead to type-conversion (Le Fer and Parker 2005). Populations of fire responsive native species can be decimated if timing or heating requirements for regeneration are not met (Odion and Tyler 2002). Such a risk should not be dismissed by the Plan.

Regarding mastication, we know such fuel treatments can negatively impact the long-term survival and health of shrubland ecosystems by increasing the population and spread of invasive species (Merriam et al. 2006, Gelbard and Belnap 2003). In addition, masticated areas that burn during a wildfire can have significantly lower rates of recovery for native species (Moreno and Oechel 1994).

Fuel treatments in shrubland ecosystems involving mastication or prescribed burning should only be done with the recognition that the resource is being sacrificed for fire hazard reduction. Dr. Jon E. Keeley (2009) addressed this issue in a comment letter to San Diego County when he wrote,

When treatments such as mastication are applied to shrubland ecosystems they have major environmental impacts on both the flora and fauna. Some have suggested that these impacts are temporary and the systems will recover to form perfectly natural functional ecosystems after a period of years. There is no scientific evidence to support such allegations. In addition, that sort of thinking is inconsistent with the purpose of using these treatments, which is typically to produce permanent fuel breaks.

By recommending the broad scale use of fuel treatments across the landscape (20-year rotational treatments over 1.3 million acres, p. 79), the Plan actually advocates risking the possibility of destroying some the region's most remarkable native landscapes.

The failure to recognize the negative impact of fuel treatments can be seen in the Plan's statements concerning the maritime chaparral community at the former Fort Ord (Appendix I). The Plan states,

Until 1991, the majority of maritime and coastal chaparral has burned at one to ten year intervals in defensible polygon mosaics.

We are not sure where this data came from, but maritime chaparral cannot survive a fire return interval of one to ten years. Whatever has been burning in this location, it certainly is not a healthy maritime chaparral plant community.

The Plan continues to state that,

Management as a habitat reserve will involve the BLM promulgating a mixed-age structure of maritime chaparral and periodic prescribed burning. The BLM anticipates that this prescribed burning may treat up to 1,500 acres each decade.

Burning maritime chaparral at such frequencies will inevitably destroy this habitat. If the intent of the Plan is to insure the elimination of maritime chaparral in order to reduce fuel loads, then this should be acknowledged in the document.

E. Dangers of flammable, weedy fuels

The Plan seriously underestimates the potential of herbaceous and grassy fuels. Non-native, weedy fuels have the potential of creating extremely dangerous fires because they dry out sooner than native shrubs, ignite more easily, and create massive amounts of heat instantly. While they certainly do not create the high intensity and flame lengths associated with shrubland fuels, they are quite capable of being responsible for significant damage when they carry a wildfire.

This was demonstrated during the 2008 Jackson fire in Sacramento County. 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 19 people. The 2006 Esperanza Fire in Riverside County that killed five Forest Service firefighters was started and made its initial run in grassy fuels. One of the common factors in firefighter fatalities is the presence of highly-flammable grassy fuels.

F. Placing fuel treatments where they matter most

While the Plan recognizes the importance of reducing the flammability of structures and the creation of reasonable defensible space zones as per PRC 4291 (California's defensible space law), a significant portion of the document focuses on large fuel reduction projects. By improperly interpreting the Los Padres National Forest Management Plan (p. 26), the Monterey document appears to advocate extending the WUI up to 7.5 miles from structures in order to justify conducting large fuel treatments far from where they will actually be effective in reducing community fire risk. There is no scientific evidence to support such a proposition.

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, Foote and Gilless (1996) at Berkeley found an 86 percent home survival rate for homes with a defensible space of 84 feet.

Combined with the use of the word "clearance" and the near state of panic many citizens have regarding wildfire, many properties are totally denuded of vegetation through the use of heavy equipment, herbicides, or overgrazing. Clearance distances in excess of 200 feet from structures are common. Yet in the recent 2007 fires, many of the homes on such properties were lost because of burning urban fuels and ember ignition. The owners failed to recognize that properly maintained vegetation can act as a heat sink and a barrier to embers. To help correct this problem, we suggest emphasizing terms such as defensible space and thinning while eliminating words like "clearing" and "clearance" when describing defensible space with the public. This should be coupled with an educational program explaining the role of embers and urban fuels in home ignition.

The role of embers was made clear during the 2007 Witch Creek Fire in San Diego County. Houses in the Rancho Bernardo community started burning by ember

contact when the fire front was three miles away. Two-thirds of the burning homes were set on fire by embers (Maranghides and Mell 2009). Another detailed report added additional insight when it concluded, “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” (IBHS 2008).

Please see several examples of excessive clearing at this link:

<http://picasaweb.google.com/chaparralian/ExcessiveClearance#>

G. Circumventing the law

The Plan also appears to favor expediting any fuel treatment without an effort to analyze its effectiveness when it states (p. 21),

To the extent that favorable interpretation of regulations is not adequate to avoid regulatory hindrances, this MCCWPP recommends changes to law to allow and facilitate reduction of hazardous fuel loads in Monterey County.

Rather than viewing proper scientific oversight and efforts to insure that taxpayer money is spent wisely as "hindrances," the Plan should recommend an inclusive process that embraces the law and invites all stakeholders. While democracy can be inconvenient to those who are unwilling to consider other opinions and data they are unfamiliar with, it is the best way to create a successful community-wide plan.

In an apparent attempt to support its contention that any fuel treatments are above regulatory oversight, the Plan has grossly misinterpreted the Memorandum of Understanding (MOU) between San Diego County and federal and state wildlife agencies. The MOU does NOT give a fire chief carte blanche to conduct "any measures as deemed necessary" in the name of fire protection as the Plan implies. The MOU specifically relates to 100 feet of defensible space around structures as per PRC 4291, limited fuel breaks to protect improved property, and 30 feet of clearance along roadways. Large fuel treatments of the type the Plan advocates are still subject to state and federal environmental laws. This has been confirmed by the court in *The California Chaparral Institute v. San Diego County (2010)*.

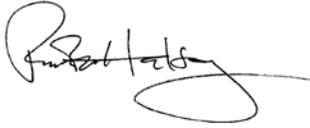
Allowing any government agent the type of uncontrolled authority without accountability that appears to be advocated by the Plan is unacceptable under state and federal law.

Conclusion

Fire is an incredibly complex issue and research is continually changing our understanding of its impact on ecosystems and human communities. In this light, we are hopeful that you will reevaluate the present Monterey County CWPP in order to incorporate the latest fire science. In this way, the County can develop an extremely

useful document that will help guide the community in creating truly fire safe communities in order to protect life, property and the valuable natural resources that make the Monterey region such a remarkable place to live.

Thank you for your consideration.



Director
California Chaparral Institute
rwh@californiachaparral.org

The California Chaparral Institute is a non-profit, 501(c)(3) corporation that specializes in analyzing Community Wildfire Protection Plans in addition to carrying out research and educational programs to help the public and government agencies better understand the fire-prone ecosystems in which we live. A major focus of our organization is to communicate the most recent scientific research as it applies to shrubland ecosystems, especially the chaparral.

Attachments

1. Los Padres National Forest Fire Regime Departure Map (Safford and Schmidt 2008).

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Attachment #1**Los Padres National Forest Fire Regime Departure Map (Safford and Schmidt 2008)**