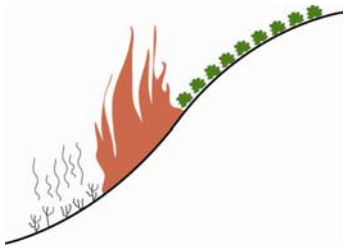
The California Chaparral Institute

…the voice of the chaparral



April 6, 2009

County of San Diego
Department of Planning and Land Use
MSCP Division
5201 Ruffin Road, Suite B
San Diego, CA 92123

Re: North County MSCP Draft

Dear MSCP Review Committee:

After more than five years of intense effort by many of the most prominent fire scientists and ecologists in Southern California, we were hopeful that San Diego County would have the necessary background to incorporate a modern understanding of fire into its conservation land planning process. Unfortunately, we have found many of the same misunderstandings about fire as it relates to shrubland ecosystems in the current North County MSCP document as have been present in previous county reports. These errors have been pointed out to the county innumerable times through comment letters and public testimony (2/5/04: Wildland Fire Task Force Report, 1/09: Vegetation Management Report/Planning Commission hearing, 3/25/09: Expert testimony on Vegetation Management Report for the SD County Board of Supervisors).

These errors may be the result of the significant amount of time that has lapsed since the MSCP document's Independent Science Review. It was completed in 2001 (Appendix C). Since that time there have been 6 huge wildfires that have scorched a significant portion of the county, dramatically changing region's ecological landscape (the 2007 fires were one of the reasons given for the need to complete a supplemental draft EIS in 2008 for the Sunrise Powerlink). In addition, there has been a tremendous amount of scientific research that has changed our understanding of chaparral ecology, the impact of fires on shrubland ecosystems, and the impact of global climate change.

However, we are concerned that the fire related errors contained within the MSCP document may still reflect the county's adherence to an outdated paradigm that incorrectly views chaparral as an ecosystem that "needs" active management to maintain its ecological health, is resilient to nearly any vegetation treatment, and is more of a fire threat than a valuable natural resource.

For example, on March 19, 2008 a "Wildfire Issue Paper" was presented to the East County MSCP Steering Committee meeting that repeated many of the same misconceptions found within the current North County MSCP document. We have attached a review of this Issue Paper at the end of our comment letter.

To prevent the continued perpetuation of these misconceptions about fire in shrubland ecosystems within the North County MSCP we urge San Diego County to take the following steps:

1. Correct the errors regarding chaparral ecology and fire as listed below.

2. Conduct a supplemental Independent Science Review of the North County MSCP document specifically relating to shrubland ecosystems and fire.

3. Since the largest vegetation type addressed by the North County MSCP is chaparral, it is imperative that the new Independent Science Review committee include chaparral ecologists, fire scientists, and watershed experts who have a thorough understanding of shrubland ecosystems. This review committee also needs to have the ability to assemble itself independently of county's process.

4. Recognize that the condition of shrubland ecosystems in San Diego County is constantly changing, especially in light of shortening fire return intervals. This fact requires the county **conduct CEQA reviews of any future fire management activities at the project level**, not as part of the CEQA review for the entire MSCP as the county now proposes. Increasing fires and changing climatic conditions will make older CEQA reviews irrelevant.

5. Withdraw the Wildfire Issue Paper presented to the East County MSCP Steering Committee.

We were encouraged that the county removed most of the misconceptions about fire and shrubland ecosystems in the final copy of the Vegetation Management Report that was adopted by the Board of Supervisors on March 25, 2009. We urge the county to continue this process by updating the fire science in the current North County MSCP document.

Sincerely,

Director

cc: Rory Wicks, Coast Law Group

The following errors/misconceptions concerning fire and chaparral ecology need be corrected in the current North County MSCP Draft:

MAIN TEXT

4.5.2 Fire Clearing (pg 33)

> "Typical clearing for fire safety is up to 100 feet from a home, which amounts to approximately one acre (200 by 200 feet). Additional clearing (approximately one acre) will also be required along driveways and roadways, and for accessory structures such as sheds, barns and corrals. This means that about two acres are normally required to accommodate fire safety around a typical home in the unincorporated area."

Needed Corrections: The word "clearing" should be eliminated from this entire document and be replaced with the word "thinning." The importance of this change is evidenced by the large number of parcels throughout the county that have been "cleared" down to bare mineral soil or have had natural habitat areas unnecessarily damaged. The word "clearing" is taken literally by many citizens and they act accordingly. Numerous individuals emphasized this problem in their testimony during the January 5, 2009 San Diego County Planning Commission Hearing.

> "Homeowners should also incorporate fire hardening principles to all dwellings."

Needed Corrections: Fire hardening of structures is an essential component of fire risk reduction and we are pleased that the county included it in the document. However, it must have a greater emphasis. We suggest the following wording: "It is essential that homeowners understand that the thinning of vegetation alone will not protect their homes from fire since embers can travel a half-mile or more from the fire front. It is strongly recommended that in addition to the required vegetative thinning that homeowners incorporate fire hardening principles to all dwellings and use fire resistant landscaping."

> "If none of the projects currently in process or any additional projects were ever developed, and all parcels were cleared to the maximum extent allowed by General Plan density and the exemptions under this plan, the clearing could result in the impact of up to 19,000 acres (13,000 acres within PAMA and 6,000 acres outside) of natural habitats within the Plan area…Impacts to natural vegetation have been calculated for the Plan area and will be mitigated for with County contributions to the preserve assembly. Habitat losses will be tracked in HabiTrack for clearing associated with new permits."

Needed Corrections: The responsibility for habitat loss monitoring needs to be clarified and properly funded. There is no explanation for what "HabiTrack" is or how it will be used. This term needs to be clarified. The problem of proper tracking of habitat destruction has been illustrated by the lack of accounting for the loss of coastal sage scrub in the South County Subarea Plan. Although defined limits for loss were set, no agency has kept track of that loss.

8.5.1 Repetitive Fire (pg 114)

> "For the purpose of defining Changed Circumstances, repetitive fire is defined as fire occurring in the same location as a previous fire three times in a 10-year period and causing repeat damage within preserves to 10 – 100 acres of riparian habitat and/or 200 – 1000 acres of coastal sage scrub. Repeat fire on more than any of the maximum amounts above, would constitute an Unforeseen Circumstance."

Needed Corrections: This definition needs to be eliminated entirely and replaced with one based on the most recent scientific literature. **It must also include the impact of repetitive fire on chaparral plant communities.** The absence of such a reference is curious since chaparral arguably represents one of the most threatened plant communities by repetitive fire in the county. While there is not a lot of research concerning the response of coastal sage scrub to changing fire regimes, there is a significant amount of research that demonstrates chaparral can be threatened by fire return intervals greater than once every 15-20 years. In fact the Independent Science Review within this MSCP document notes this fragility. It states,

> Appendix C, pg. 20: "…fires that are too frequent can have a detrimental effect on their long-term viability. **Fire return intervals of 5, 10, or even 20 years could eliminate some of these plant populations within the planning area.** To abate this threat, we suggest that the County work with state/local fire agencies to develop ecological fire management/suppression plans that identify protection measures for known rare plant populations and other sensitive resources when wildfires occur."

Please see Addendum for additional information and references on this matter.

Risk Assessment (pg 115)

> **"**Fire is an important natural disturbance within the Plan area that promotes vegetation and wildlife diversity, releases nutrients, and eliminates heavy fuel accumulations that can lead to catastrophic burns."

Needed Corrections: The MSCP document needs to acknowledge that while natural fire regimes were an important evolutionary force that helped shape chaparral plant communities in the past that is no longer the case. Natural fire regimes no longer exist in Southern California because nearly all fires today are anthropogenic. Such fires threaten the existence of many threatened and endangered species as well as entire ecosystems. This is acknowledged throughout the document including the quoted statement below. What is critical now is to develop a plan to reduce fire frequency through appropriate development plans, increased fire prevention and suppression efforts, and public education. Please see Addendum for additional information and references on this matter.

> "However, certain repetitive fires within the same location of the preserve may adversely affect the Covered Species due to degradation of natural habitat(s) to those dominated by invasive or non-native weeds. This is generally a greater concern for coastal sage scrub habitats, which regenerate mainly by seed. Many other chaparral habitat types regenerate by resprouting and therefore are not as prone to this shift in species dominance."

Needed Corrections: The last two sentences of this section are not supported by current research and are in fact opposite to what is known. Coastal sage scrub plant communities generally respond to fire by resprouting and do not have any dominant obligate seeding shrubs. In contrast, many of the dominant shrub species in chaparral are obligate seeders and will in fact disappear with repetitive fires (e.g. many ceanothus species, all but a few manzanitas, bush poppy, etc.). While coastal sage scrub is definitely threatened by increased fire frequency, it generally has a higher tolerance for fire than do chaparral plant communities.

APPENDIX G: Framework Resource Management Plan

2.3 Fire Management (pg 5)

> "Fire Management for ecosystem and species health will also be considered in the development of ASMDs."

Needed Corrections: There is absolutely no scientific support for using fire management techniques, be it prescribed burning or mastication, to "improve" species or ecosystem health in shrubland ecosystems. This issue was addressed during the evaluation period of the county's Vegetation Management Report (VMR). Dr. Jon E. Keeley made the point clear when he commented on the VMR in a letter on 2/5/09. He wrote,

"All references to using fire for ecosystem health must be explicit about the fact that this refers only to forests. Our subcommittee was quite clear on this issue. **I cannot support San Diego County justifying the burning of chaparral or sage scrub on the grounds that it will enhance ecosystem health.** The only justification is fire hazard reduction."

3.4 Vegetation Management (pg 17)

> "Vegetation management including fuel load management will be incorporated for all preserves as an Ecosystem Health Plan in the ASMD. Vegetation management activities are covered under the Plan and lead to ecosystem health, resiliency, and fire safety."
>
> "Each Ecosystem Health Plan will be prepared using the guidelines in Section 4 for the particular vegetation communities in mind."

Needed Corrections: Again, any reference to ecosystem health needs to specify this applies only to forested systems, not shrubland ecosystems.

Table 7, Fire (pg 22)

Need Corrections: This entire Table needs to be updated with the most recent scientific information regarding chaparral. In its present form, it supports the need to use fire and other active management strategies in shrubland ecosystems that have the potential of causing significant harm.

> "Chaparral communities are adapted to natural fire regimes."

As mentioned earlier, a clear distinction needs to be made that anthropogenic fire is now the controlling, and threatening, factor in chaparral plant communities.

> "These communities support different assemblages of plants at each stage of development – "fire following" annuals and animals that prefer open areas in early stages and "old growth" and cryptic species in later stages – therefore, maintaining a variety of age classes is important to maintain these characteristic species assemblages."

There is strong evidence that the natural condition of chaparral in Southern California is large, continuous stands of vegetation, not a "mosaic" of age classes. An in depth discussion of this issue with references can be found on our website at:

http://www.californiachaparral.org/firescience.html

Consequently, it would be inappropriate to attempt to create an artificial "variety of mixed age classes" because as the Independent Science Review states on page 5 (Appendix C),

> "In any case, the diversity sought should be natural habitat diversity, **not an artificially enhanced diversity, which is likely to increase fragmentation and favor weedy species.**"

The following sections in Table 7 also do not reflect what we now understand about fire in chaparral plant communities. References for additional information on this subject can be found on the webpage listed above.

Current MSCP Document	Comments/Corrections
---Large and/or rapidly spreading fires can impact natural communities. Large fires can kill more animals than small or moderate fires since there are fewer opportunities to escape. Species not well adapted to post-fire landscapes may have difficulty finding refugia or repopulating large burned patches.	Large and/or rapidly spreading fires are the natural condition for Southern California shrublands. What is not natural is the increased fire frequency due to anthropogenic fire.

Current MSCP Document	Comments
--Erosion is often increased after fires due direct exposure of soil to the elements. Erosion and runoff may also be accelerated in some areas due to altered chemical properties of the soil from exposure to extreme temperatures, reducing the organic content of the soil among other changes.	Hot, extreme fires are a natural condition during chaparral fires. In fact, it has been demonstrated that such fires are essential for the proper recovery of chaparral ecosystems.
---In some cases prescribed fires may be used as a form of habitat management.	Again, this may be appropriate in forested ecosystems, but not chaparral.
---Fire history maps maintained by CALFIRE should be reviewed at least once every 10 years to determine if preserve lands are within natural fire return intervals & for estimation of fuel age class.	This implies that there is an upper limit at which chaparral "needs" to burn to maintain its "natural fire return" interval. Such a view point fails to recognize that chaparral in Southern California is not threatened by not enough fire, but rather too much. Please see additional information and references on this topic at the webpage listed above.

Addendum

Review of the Wildfire Issue Paper issued during the March 19, 2008 East County MSCP Steering Committee meeting.

We are requesting that this Issue Paper be withdrawn from the MSCP process because of faulty assumptions about fire and the failure to make important distinctions between forests and shrubland ecosystems. Such errors will likely lead to inappropriate land management practices for MSCP lands throughout the county.

The Issue Paper makes a fundamental error when it states,

> Fire and other related disturbances must be allowed to play their natural roles in the ecosystem if vegetation communities are to remain viable.

The Paper also appears to focus primarily on forested ecosystems that can tolerate frequent, low intensity fires. It fails to recognize that chaparral, the county's dominant ecosystem, is adapted to infrequent, high intensity fires. Large, old-growth stands of chaparral are natural, healthy communities, not artifacts of past fire suppression activity.

Artificially applying the wrong kind of fire at the wrong time to chaparral or other shrubland ecosystems will ultimately lead to their replacement by non-native weeds.

The Paper inaccurately states that fires in the past,

> …burned primarily during the summer monsoon season and were limited when they encountered fire resistant young vegetation" and that "The fire regime has shifted from one of frequent small (1,000-5,000 acres) summertime fires to infrequent large fires occurring in the fall under Santa Ana wind conditions.

Such statements appear to be based on out-dated research that has been rejected over the past twenty years by numerous scientists. 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).

The Wildfire Issue Paper later states that,

> Fires in chaparral less than 20 years of age are rare…For fires over 10,000 acres in San Diego County, the average vegetation age at the area of origin is 60 years. Conversely, fires have started under extreme weather conditions in four year old chaparral with only limited spread.

These statements are contrary to what has occurred in San Diego County during both the

2003 and 2007 firestorms. Approximately 70,000 acres that burned in the 2007 fires had burned in the 2003 fires. The vegetation was "four-years-old" and represented about 20% of the total area burned.

In another section, the Paper claims,

> Maintaining a patchwork of different aged vegetation areas by integrating mechanical clearing, biological clearing, and prescribed burning can limit wildfire size and intensity, while improving biodiversity.

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 2003; 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).

As mentioned above, 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. In addition, hundreds of acres of overgrazed pasture land in Pamo Valley burned during the Witch fire 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).*

Regarding the use of a "patchwork of different aged vegetation" to limit wildfire size, 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."**

Regarding prescribed burning the Paper claims,

> Limiting the size and intensity of fires through planned burning during moderate weather conditions will reduce such adverse effects following fire.

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 and Keeley Fire Management Today in press). 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 in MSCP lands.

Finally, the Paper appears to view chaparral as an invasive pest rather than the important ecosystem it is.

> Cuyamaca Rancho State Park is in serious jeopardy of becoming a chaparral and oak woodland since the Cedar fire destroyed over 90% of the pines, cedars, and firs in this area. Without seed trees, conifers will need to be planted and chaparral controlled.

While protecting our forested ecosystems is important, it is critical to understand that native ecosystem succession is a natural process. Efforts to "speed-up" reforestation in Cuyamaca and "control" chaparral may lead to ecosystem degradation in the long run. Ceanothus, one of the chaparral species currently dominating the post-fire environment in Cuyamaca, is an important nitrogen fixing organism. If the plant is removed as some suggest in order to make way for artificially seeded trees, the natural process of nitrogen fixation will be interrupted and the soil will be less capable of supporting a healthy ecosystem, forested or otherwise.

We are hopeful future MSCP documents relating to fire will reflect the most current science and make important distinctions between ecosystems.

Sincerely,

Richard W. Halsey
Director
The California Chaparral Institute

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