



September 18, 2009

Greg Casselberry, Acting District Ranger  
San Jacinto Ranger District  
PO Box 518  
Idyllwild, CA 92549

Re: Scoping Comments on the Santa Rosa Fuels Reduction Project

Dear Mr. Casselberry,

Thank you for the opportunity to comment on the Santa Rosa Fuels Reduction Project in the San Jacinto Ranger District of the San Bernardino National Forest.

We strongly support project goals to "reduce the fuel hazard near communities, rural residences, evacuation routes, and other infrastructure." At the end of these comments we provide detailed recommendations for measures to maximize the effectiveness of vegetation management in the Forest Service's designated Defense Zones around at-risk communities and facilities. Treatment activities in the Defense Zone should be considered the highest project priority and implemented before all other Santa Rosa project activities.

We also support project goals to "*restore or maintain vegetation that is resilient to wildfire and is within the historic range of fire behavior...*" as they apply to conifer forest vegetation at the higher elevations of the project. We appreciate the Forest Service's proposal to apply prescribed fire in this area. Treatment of conifer forest vegetation in the high elevations of the San Rosa project should be implemented as the second highest priority.

However, the Forest Service's stated goal to restore vegetation within the historic range of fire behavior cannot be reasonably applied to areas dominated by chaparral vegetation in the Santa Rosa project area. Proposed prescribed fire in chaparral would be unnecessary and even harmful and counterproductive. The Forest Service's own data shows that chaparral in this area is already within the historic fire regime or has burned too frequently, and because too much fire in chaparral can actually increase the risk of fire when native shrubs are replaced by highly flammable invasive grasses and weeds in a process known as type conversion.

Overall, the District's approach to the biologically rich and unique chaparral ecosystem that surrounds the lower portions of Santa Rosa Mountain appears to be based on significant misunderstandings about the chaparral's natural fire regime, a strong bias against shrublands in favor of forested communities, and an unfamiliarity with the Forest Service's own research.

We would also like to point out that this project should not be processed under the Healthy Forests Restoration Act. For past projects processed under the HFRA, the San Jacinto Ranger District has restricted public participation and formal "objections" to just those groups or individuals who have provided comments on scoping notices such as that for the Santa Rosa project distributed in August 2009. However, in the case of the Santa Rosa project scoping notice, the question of whether the project would be processed under the HFRA was never addressed. As such, the public has not been reasonably notified that their future opportunities to comment or object to this project may be limited. In recent negotiations on the Thomas Mountain project, Forest Service staff also expressed regret for not conducting more extensive public outreach on potentially controversial issues and proposed vegetation treatments. The Santa Rosa project provides an excellent opportunity to improve public outreach. Processing the Santa Rosa project under the HFRA would unnecessarily extend the past trend of excluding public participation in this important and potentially controversial project.

### **Creating Chaparral "Mosaics" is Wasteful and Ineffective**

The District states that in applying prescribed fire to shrub ecosystems, *"the main focus within the montane chaparral is to reduce a portion of the old perennial chaparral in a mosaic pattern to perpetuate younger and more vital shrubs and reestablish a varied age class of chaparral across the landscape."*

It is crucial that the District understand that there is no scientific justification for such a focus 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.**

By attempting to create artificial "mosaics" in the valuable old-growth chaparral that surrounds Santa Rosa Mountain, the District is wasting taxpayer money that could be better spent directly around the nearby rural communities.

We also challenge the District's contention that "mosaics" need to be "reestablished" within the montane chaparral stands on Santa Rosa Mountain. We are unaware of any scientific evidence that supports the claim that mosaics are the natural condition of chaparral on Santa Rosa Mountain. In fact, there is nearly unanimous scientific consensus that the natural condition of chaparral in Southern California is large, dense, contiguous stands that are typically entirely burned during infrequent, large fires (Please see Attachment #1).

### **There is no Strong Relationship Between the Age of Shrubland Fuel and the Probability of Fire**

Contrary to the apparent assumptions used to justify the project's proposed vegetation treatments in chaparral, 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). Similar observations have been made regarding the 2007 Zaca Fire in Santa Barbara County: 50% of the fire perimeter stopped at vegetation more than 70 years old (Keeley et al. 2009).

The inability of younger age classes to stop a fire was also shown during both the 2007 Witch Creek 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).*

### **Misunderstanding Chaparral Fire Regimes**

Chaparral has a crown fire regime. By definition, low and 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.** 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. 2008). Such high intensity fires also destroy the seeds of invasive species, allowing the recovering chaparral to resist the colonization of non-native weeds.

The notion that mixed-aged "mosaics" are needed to "perpetuate younger and more vital shrubs" implies that valuable, old-growth chaparral of the type on Santa Rosa Mountain "needs" to burn. There is no scientific research that supports such a conclusion. Old-growth chaparral stands remain dynamic, healthy plant communities (Fenn et al. 1993, Halsey 2008, Hubbard 1986, Keeley 1973, Larigauderie et al. 1990, Patric and Hanes 1989, Specht 1969, Zedler and Zammit 1989).

One sign of a healthy, chaparral ecosystem that is 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. **Attempts to alter the chaparral’s natural fire regime through prescribed fire by will risk its ecological health and alter its natural successional processes.**

In fact, 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. 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.*

## **Negative Impacts of Unnecessary Fuel Treatments**

Much of the chaparral and sage scrub habitat in the San Bernardino National Forest has burned in excess of their natural fire regimes. This has been graphically illustrated by a recent map of the Forest developed by Forest Service scientists (Please see Attachment #2).

The statement that the majority of the project area has "missed two or more cycles of low-to-moderate intensity fires" is inaccurate and fails to consider the Forest Service's own data as shown in Attachment #2. As mentioned above, chaparral has a crown fire regime, so missing a "low-to-moderate" fire cycle is not possible. Secondly, the chaparral near the Santa Rosa Mountain Truck Trail that is scheduled for mastication shows a negative departure from its natural fire regime. Rather than missing any fire cycle, it is bordering on having too much fire. The area on the north side of the mountain scheduled for prescribed burning is old enough to be able to recover from a natural fire, but it is by no means in need of fire as the District implies.

We urge the District to not over-generalize mixed-conifer fire regimes and apply them to other plant communities. While there is clear evidence the forest on Santa Rosa Mountain shows a significant positive departure (not enough fire) from its natural fire regime, this is **not** the case for the surrounding lower elevation chaparral plant community.

Understanding this issue is critical because high fire frequencies are leading to the elimination of healthy chaparral and other shrubland ecosystems throughout Southern California to the process of type conversion and the expansion of highly-flammable, weedy grasslands. Applying even more fire to the ground in the form of large, prescribed burns, or conducting large mastication treatments will only make this problem much 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 in 2008, 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 Forest Service firefighters was started and made its initial moves in grassy fuels.

We find the proposed project's claim that, "*Historically we have not experienced type conversions as a result of mosaic prescribed burns within the montane chaparral fields on the San Jacinto Ranger District,*" extremely shortsighted. With climate change, continuing drought that may or may not be associated with such change, and increasing human-caused ignitions, the District needs to look forward rather than backward in assessing the potential impact of its land management actions. Perhaps chaparral burned in just those prescribed fire treatments in the Santa Rosa project will recover, although this is questionable for chaparral in the western portion of the project that has already burned too frequently. However, the occurrence of additional accidental fires in these same treatment areas in the future during recovery of the chaparral is a near certainty. The cumulative harm caused by the combination of deliberate prescribed fire and future accidental fires will almost certainly cause large scale type conversion in this area.

There is also well documented evidence that cool-season burns can lead to type conversion (Le Fer and Parker 2005). Populations of fire dependent 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 District.

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).

In field observations, we have already noted the entirely predictable spread of non-native grasses and weeds in the previously masticated areas along State Highway 74. With implementation of the Santa Rosa project, weeds will inevitably continue to spread in the proposed extensive mastication treatments along the Santa Rosa Mountain Truck Trail and other treated areas (Please see Attachment #3).

### **Cumulatively Significant Impacts**

The San Bernardino National Forest is implementing vegetation modification projects on a scale that clearly requires increased scrutiny of cumulative effects.

NEPA documents must include an analysis of all effects of the proposed action, including cumulative impacts from other related activities. 40 C.F.R. § 1508.8 (effects include ecological, aesthetic, historical, cultural, economic, social or health impacts, whether direct, indirect, or cumulative). NEPA defines a "cumulative impact" as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts

can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7. If the combination of these cumulative effects would result in significant impacts to the human environment, the Forest Service must prepare a full EIS. Inland Empire Public Lands Council v. Schultz, 992 F.2d 977, 981 (9th Cir. 1993).

The District has implemented numerous fuels reduction projects and plans many more, according to the Environmental Assessment for the Thomas Mountain project. These projects and many other Forest Service and non-Forest Service fuels projects are radically changing the face of vegetation communities throughout much of the San Jacinto Ranger District and are resulting in significant harm to natural resources that has yet to be meaningfully reviewed in any systematic NEPA cumulative effects analysis.

For example, the Forest Service has implemented, and has plans to implement over 23,000 acres of prescribed burning on the District. Other agencies like CalFire are planning other nearby prescribed fire projects. This is a stunning level of modification to a valuable natural resource, with significant potential for harm to people, wildlife, and plants that must be considered in a cumulative effects analysis.

### **Chaparral as a Valuable Natural Resource**

A common fire management approach to chaparral, seeing it as a “fuel” rather than a valuable natural resource, is a systematic problem within the Forest Service that needs to be rectified. In the land management plans for the four national forests in Southern California, forest types were carefully distinguished and management strategies were offered for each. Silvicultural methods were detailed for seven forest types. Yet when it came to chaparral, types were neither distinguished nor was a vegetation management plan developed.

The seeming focus of the proposed project to unnecessarily sacrifice chaparral to achieve the worthy goal of protecting higher elevation conifer forest vegetation on Santa Rosa Mountain continues this unfortunate bias by failing to recognize the intrinsic natural resource value of the old-growth chaparral on the mountain's lower elevations. Fuel treatments to protect the conifer forest should be conducted **within** the forest stand itself. The integrity of the valuable old-growth chaparral stands at the lower elevations must be preserved.

Rather than just seeing chaparral as "fuel," the old-growth stands of chaparral on Santa Rosa Mountain present a significant conservation opportunity and evoke the Forest Service's duty to conserve a valuable and extremely threatened mature chaparral ecological community. Accidental wildfires in this area will inevitably occur, and are likely to occur with increasing frequency with growing nearby populations, and harm from these accidental fires should not be deliberately compounded by application of prescribed fire or mastication projects.

## Cost/Benefit Analysis

We urge the Forest Service to conduct an honest cost/benefit analysis of the proposed landscape scale chaparral treatments vs. treatments to vegetation immediately adjacent to homes and communities and grants for fire resistant retro-fitting of homes. Although we know there is considerable pressure to perform fuel treatments because of “acres treated” quotas and available funding, such pressure must not prevent the implementation of the least damaging and most effective fire risk reduction strategy. Establishment and maintenance of defensible space around homes, retrofitting unsafe structures, and supporting community based fire safe education programs are in the long run much more cost effective in preventing the loss of life and property from wildfire than compromising large amounts of native vegetation in the National Forest (Please see Attachment #4).

Dr. Jack Cohen (2000), a research scientist with the 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.

We understand the objective of reducing fuel loads near communities and at strategic locations to create safety zones and assist fire suppression efforts. This is why we urge the Forest Service to focus fuel treatments within and adjacent to human communities. We also support the use of fuel treatments and prescribed fire to restore conifer forests. Unfortunately, a significant portion of the Santa Rosa Fuels Reduction Project fails to address such objectives by emphasizing the modification (and therefore destruction) of native chaparral communities in wildland areas.

The proposed 3,756 acres of prescribing burning of chaparral on the north side of the mountain is also extreme and will likely cause significant ecological damage.

The extensive nature of the mastication treatments of chaparral along Forest roads 7S02 and 7S05D are also beyond overkill and will destroy one of the most remarkable, old-growth stands of red shanks chaparral in the District. Mastication along these roads will become counterproductive as the inevitable highly flammable weeds that will colonize the area following mastication will in turn cause more accidental fire from careless



human activities. Forest Road 7S02 is far too long and windy to facilitate safe evacuation from the mountaintop in the event of fire, and much of this and Forest Road 7S05D are too dangerous and/or not strategic for fire fighting activities. For the purposes of mountaintop evacuation, the Forest Service should instead establish and post at least one shelter-in-place/helicopter evacuation site in the vicinity of mountaintop recreation sites.

### **Comply with environmental laws and the Forest Plan**

Please take care to comply with several environmental laws and regulations and the San Bernardino Land Management Plan during preparation of the Santa Rosa project:

- NEPA requires preparation of an Environmental Impact Statement for a project of this magnitude where there are likely to be significant impacts to the environment. An EIS is required for the Santa Rosa project because, at least: 1) The project could significantly impact public safety; 2) The project area contains unique characteristics; 3) Project impacts on the environment are likely to be highly controversial; 4) Project impacts on the environment are highly uncertain or involve unique or unknown risks; 5) The project may establish a precedent for future actions with significant effects; 6) The project would likely result in cumulatively significant impacts, and; 7) The project could significantly impact special status species;
- NEPA requires that any Environmental Assessment disclose whether an Environmental Impact Statement will be prepared;
- Proposed Santa Rosa project hand/ground treatments in chaparral (that would include mechanical mastication) would be inconsistent with the Forest Plan's Back Country, Non-Motorized Land Use Zone;
- Proposed Santa Rosa project hand/ground treatments in chaparral would also be inconsistent with Forest Plan direction for the Anza Place to maintain "...a historic and natural appearing landscape..." and "...providing a natural continuous expanse of vegetation as viewed from the High Country." See Forest Plan at page 43. Chaparral vegetation in the Santa Rosa project is already within the natural fire regime or has burned too frequently so proposed prescribed fire in this vegetation would violate Forest Plan direction for both the Anza Place and the Santa Rosa and San Jacinto Mountains National Monument Place to maintain "*Chaparral communities ... at pre-fire suppression conditions.*" *Id.* at page 44. See also *Id.* at page 91. The extensive and unnecessary mastication of chaparral proposed in the project would also be extremely ugly in violation of Forest Plan Scenic Integrity Objectives.

### **Recommendations**

The following recommendations should be incorporated and fully analyzed in a “Fire Safety and Chaparral and Forest Conservation Alternative” in any NEPA documents for the Santa Rosa project:

1. Implement effective vegetation treatment / fuels reduction to protect the public, firefighters, and private property

For the purposes of fire suppression to protect public and firefighter safety and private property, vegetation treatment and fuels reduction activities should take place only within the actual wildland/urban interface, identified by the Forest Service as the “Developed Area Interface Land Use Zone” in the Land Management Plan - Part 2 San Bernardino National Forest Strategy. Fire suppression activities in these areas should follow the Four Forests Guidelines for Development and Maintenance of WUI Defense and Threat Zones:

- WUI Defense Zone – For chaparral vegetation, break up vegetation fuel continuity within a maximum of 100 – 300 feet of structures. Remove vegetation immediately adjacent to structures, treat the structures themselves, and remove weeds at least annually from treated areas. The Chaparral Institute will vigorously oppose unfounded chaparral treatments as measured from the boundary of National Forest land instead of structures unless such treatments correspond to the recommended Forest Plan treatment distances from structures.
- WUI Threat Zone – No treatment of chaparral vegetation is necessary or effective in the WUI Threat Zone according to the Four Forests WUI guidelines, with the possible exception of removal of weed infestations using hand tools or hand-held power tools.

See Appendix K of Land Management Plan - Part 3 design Criteria for the Southern California National Forests. Threat Zone treatments are probably unnecessary on the Santa Rosa project as there is little or no forest vegetation within the Developed Area Interface Land Use Zone within the boundaries of the Santa Rosa project.

Vegetation treatment and fuels reduction activities may also be appropriate along limited, designated, and strategic fire access roads. However, proposed mastication treatments along Forest roads 7S02 and 7S05D are unnecessary and counterproductive.

The Forest Service must anticipate the problem of colonizing exotic invasive weeds and grasses as a part of the Santa Rosa project and include a long-term plan for at least annual treatment of weed infestations. Deferring this crucial project element to a future project or decision will greatly increase the risk of harmful wildlife to both people and chaparral vegetation.

2. Provide grants to homeowners in nearby communities for effective fire safety activities – Reduction of native vegetation and landscaping fuels near structures and retrofitting homes with fire resistant materials

### 3. Protect valuable chaparral vegetation

- Eliminate proposed prescribed fire treatments in chaparral vegetation so as to retain the unique and valuable mature stands of this natural community in the Santa Rosa Mountains and reduce future fire risk from highly flammable, colonizing exotic weeds and grasses;
- Bar use of mechanized masticators and other heavy equipment outside of the designated Developed Area Interface Land Use Zone and on any slopes exceeding 20 percent grade;
- Retain all monarch shrub specimens where any portion of the stalk is 6 inches or greater in diameter.
- Suspend cattle grazing in treated areas to limit the spread of weeds and facilitate ecological recovery, and;
- Anticipate, monitor, and provide for perpetual treatment of weed infestations anywhere within the project area using hand tools and hand-held power tools.

### 4. Implement beneficial vegetation treatment to protect conifer forests

- Retain all larger diameter trees and snags greater than 14 inches dbh;
- Selectively thin and remove conifers less than 14 inches dbh and shrubs less than 6 inches (at largest diameter of stalk) in and around conifer forest vegetation using hand tools or hand-held power tools. Retain all oak species where any portion of the stalk is 6 inches or greater in diameter. After initial thinning treatments use prescribed fire for maintenance;

Please note that “conifer forest vegetation” means areas that are clearly dominated by conifer trees. Chaparral vegetation with the occasional scattered conifer should be considered chaparral vegetation and should be managed for the benefit of chaparral ecology, not for the protection of isolated conifers;

- Where patches of chaparral vegetation are present inside areas otherwise dominated by conifer forest vegetation, chaparral patches should be retained at a level roughly consistent with the amount of area located outside of the drip line of conifer forest patches.
- Selectively remove actual hazard trees near homes, along limited/designated/strategic fire access roads, and recreation areas. However, given extensive past removal of hazard trees and snags on Santa Rosa Mountain (see Attachment #5), all larger diameter snags greater than 14 inches dbh should be retained away from homes, fire access roads, and recreation areas;

- Bar use of mechanized masticators and other heavy equipment outside of the Developed Area Interface Land Use Zone and on any slopes exceeding 20 percent grade;
- Suspend cattle grazing in treated areas to limit the spread of weeds and facilitate ecological recovery, and;
- Anticipate, monitor, and provide for perpetual removal of weed infestations anywhere within the project area using hand tools and hand-held power tools.

5. Implement specific California spotted owl protection measures

- Prohibit treatments in California spotted owl nest stands outside the Developed Area Interface Land Use Zone;
- In spotted owl Protected Activity Centers outside the Developed Area Interface Land Use Zone, retain all trees greater than 9 inches and snags greater than 12 inches. Please note that Mexican spotted owl PACs have a 9 inch diameter limit, and that the 2001 Sierra Framework California spotted owl PACs had a 6 inch limit when mechanical treatments were determined to be absolutely necessary (mechanical treatments in PACs were discouraged). For PAC stands with canopy cover over 70%, do not reduce to below 70%. For stands with canopy cover between 50% and 70%, do not reduce to below 50%;
- In spotted owl Home Range Cores outside the Developed Area Interface Land Use Zone, retain all trees greater than 12 inches and snags greater than 14 inches. For stands with canopy cover over 50%, do not reduce to below 50%. For stands with canopy cover between 40% and 50%, do not reduce to below 40%, and;
- Prohibit tree cutting and other proposed treatment activities in any California spotted owl habitat during the breeding season in owl habitat.

6. Implement other resource conservation measures

- Do not treat Riparian Conservation Areas outside the Developed Area Interface Land Use Zone;
- Identify suitable habitat for Bell's sage sparrow, Gray vireo, Quino checkerspot, and southern mountain yellow-legged frog. Do not treat suitable habitat for these species outside the Developed Area Interface Land Use Zone;
- Prior to treatment identify suitable habitat and conduct surveys (to protocols where available) for all other Endangered, Threatened, Candidate, and Forest Sensitive species as well as species identified in the California Natural Diversity

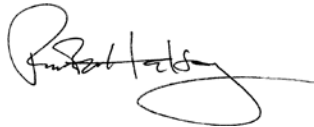
Data Base. Do not treat occupied habitat for these species outside of the Developed Area Interface Land Use Zone;

- Collect and present population trend data on any Management Indicator Species in any NEPA documentation, and;
- Flag and avoid any areas within 33 feet (10 meters) of downed logs, rocky outcrops, boulders, pack rat middens, and brush piles. Trees should not be felled across rocky outcrops or downed logs.

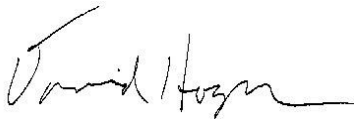
We are hopeful that the Forest Service will reevaluate their present proposal for Santa Rosa Mountain in order to better protect human communities and valuable natural resources, including the chaparral.

Thank you for your consideration.

Sincerely,



Director  
California Chaparral Institute  
[www.californiachaparral.org](http://www.californiachaparral.org)



Boardmember  
California Chaparral Institute

### **Attachments**

1. Resolving the Controversy - Why Large Fires in Southern California? (Halsey 2008)
2. San Bernardino National Forest Fire Regime Departure Map (Safford and Schmidt 2008).
3. Fuel modification impacts on nonnative plant invasion (Keeley 2006)
4. Chaparral fuel modification: What do we know – and need to know? (Keeley 2005)
5. Photograph of logged hazard trees on Santa Rosa Mountain

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