

# Register Now

## Prescribed Fire on Working Landscapes

### Webinar & Field Day Dates:

- Prescribed Fire Basics (Webinar) – March 30 (5-6:30pm)
- Burn Preparation Field Day – March 31 (Session 1: 8:30a-12p) (Session 2: 12:30-4p)
- Broadcast Burn (April – Date TBA)

**Location:** Edwards Family Tree Farm, Colfax, CA

**Description:** Prescribed fire is a critical tool for managing working rangelands and forests in the Sierra Nevada. This multi-session, hands-on workshop will focus on landowner-led efforts to reintroduce good fire into working rangeland and timber land. The workshop will include virtual classroom presentations, a hands-on burn preparation field day, and participation in a broadcast burn (weather permitting).

### Workshop Topics:

- Benefits of prescribed fire
- Permitting
- Planning your burn
- Liability issues
- Tools and equipment
- Burn planning and site preparation
- Personal protective equipment
- Working with neighbors

**Registration:** \$30 per person. Space is limited, so register early at <http://ucanr.edu/rxacademy/>

**For more information:** Please contact Dan Macon, (530) 889-7385 [dmacon@ucanr.edu](mailto:dmacon@ucanr.edu).

**Covid-19:** The entire workshop will be held outdoors. Participants will be required to wear masks and remain 6 feet apart throughout the workshop. There is ample room for social distancing and no carpooling will be necessary. Participation will be capped at 15 people total for each session. We will follow guidance from Placer County prior to the event and may cancel if current state and county health policies change.



Workshops are funded in part by [California Climate Investments](#), a statewide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment particularly in disadvantaged communities.

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## Prescribed Fire Liability in California

By Lenya Quinn-Davidson<sup>1</sup> and Jeffery Stackhouse<sup>2</sup>  
University of California Cooperative Extension

In California and beyond, prescribed fire is increasingly being recognized as one of the most cost-effective and ecologically appropriate tools for restoring and maintaining resilient landscapes, habitats, and communities. However, the prescribed fire discourse is riddled with questions, concerns, and uncertainty about liability, and liability is often cited as a primary barrier to the use of prescribed fire in California. With this paper, we aim to clarify basic liability laws in California, using state law and case examples to further the collective understanding and comfort around prescribed fire liability.

### The national context for liability

Across the United States, there are four general categories of state liability law (from Melvin 2018<sup>3</sup>):

- **Strict Liability** holds a person legally responsible for harm even if no negligence was found;
- **Simple Negligence** holds a person legally responsible for harm if reasonable care was not taken;
- **Gross Negligence** holds a person legally responsible for harm only if it can be shown that they took less care than even a careless person would use (i.e., reckless disregard for safety);
- Liability is **uncertain** in states where laws and administrative codes are vague regarding prescribed fire.

Generally speaking, strict liability laws are the least conducive to prescribed fire and gross negligence laws are the most conducive. Simple negligence laws fall in between, and states with uncertain liability laws often default to something similar to simple negligence.

California is a *simple negligence state*, and this is made clear by language in both the California Health and Safety Code and the Public Resources Code. Whether in reference to personal liability for property damage (Health and Safety Code § 13007), landowner liability for property damage (Health and Safety Code § 13008), personal liability for suppression costs (Health and Safety Code § 13009), liability for the cost of investigations and reports (Health and Safety Code § 13009.1), or permits for burning (Public Resources Code § 4494), the codes all refer to concepts of due diligence and negligence. But what do those words mean in practice?

### Case examples

In a case from 1957, a California court found a landowner guilty for causing damages to a neighbor's property due to negligence and carelessness (*Leuteneker v. Fisher*, 155 Cal.App.2d 33, 1957). In this case, the defendants did not comply with all of the specific elements of their burn permit, which had been issued to them by the California Department of Forestry and Fire Protection (CDF, now CAL FIRE). The permit required that the landowner remove a swath of brush at least 60 feet from the road, which was to serve as the fireline, and provide notification of burning to adjacent landowners. The defendant did neither of these things, and they had no one stationed on the side of the burn where the risk of escape was highest. The fire, ignited on a warm day in August, burned through brush and trees on the edge of the unit, eventually burning across the road and onto the neighbor's property. Interestingly, a CDF ranger directed and supervised the burning, but was not implicated in the case because the burn was ignited by the landowner on their land and was intended for their sole use and benefit. Public Resources Code 4491 does require that the Department provide standby fire protection for prescribed fire if resources are available; however, it was determined in this case that the decision to burn ultimately falls on the landowner in cases where they are the permittee, and it is the landowner's responsibility to ensure that permit requirements are met and conditions are appropriate for burning.

A more recent case offers similar lessons in due diligence and negligence (Massa 2019). In this case, a Monterey County landowner was conducting a winter burn in chaparral, and the burn escaped his control, burned onto an adjacent property, and caused the Encinal Fire, which burned approximately 190 acres over four days and involved a significant

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<sup>3</sup> Melvin, M.A. 2018. 2018 national prescribed fire use survey report. Technical Report 03-18. The Coalition of Prescribed Fire Councils, Inc. 23 pp.

and costly suppression response by the state. The landowner had obtained permits from the local air quality district as well as CAL FIRE, and provided notification to both agencies on the day of the burn. However, upon investigation, a number of factors emerged that pointed to negligence by the landowner: unit preparation was limited, and the control lines that had been established were not entirely on the landowner's property; the burn was ignited from the bottom of the slope in the absence of sufficient control lines at the top; the planned prescribed burn area was outside of the area outlined in his permit; he had a bulldozer on site with known fuel filter issues, and it was dysfunctional when the fire escaped and it was most needed; and the landowner waited until the evening to report the fire to CAL FIRE, at which point there was little daylight to allow for a sufficient or effective response. Other factors also supported the idea that the landowner wasn't sufficiently prepared for the burn; for example, the fire experience of his workers was unknown, external and internal communications were limited because they had no cell service or radios, no firing plan was outlined prior to ignitions, and the adjacent landowners had not been notified of the day's activities. In this case, the landowner was found negligent and held liable for a portion of the costs associated with the suppression of the Encinal Fire.

### **Lessons learned**

In both of the aforementioned cases, it is clear that the landowners did not comply with the specifications of their permits. In California, Senate Bill 1260 (Jackson 2018) recently clarified that "compliance with a permit issued pursuant to this article shall constitute prima facie evidence of due diligence" (Public Resources Code § 4494). This new language did not represent a change to state law, but it did offer helpful clarification.

However, due diligence and negligence relate not only to the language in a permit; as we see in the cases above, other factors may also be considered during a determination of negligence. According to California law, a person is not negligent if "the person did what might reasonably be expected of a person of ordinary prudence, acting under similar circumstances, who desired to comply with the law." In consideration of an escaped prescribed fire, the court may seek expertise on the types of actions that would be reasonably expected of a diligent prescribed fire practitioner, and these actions would likely include some level of prescribed fire planning, unit preparation, and forethought on issues of staffing, equipment, and communications. In times of year when CAL FIRE permits are not required,<sup>4</sup> these considerations may be even more critical to determinations of negligence and due diligence, as there is no permit for reference.

### **Recommendations for mitigating prescribed fire liability concerns in California**

- **Include neighbors in the planning and implementation** of projects whenever possible.
- **Always obtain and comply with relevant permits**, including air quality permits (year-round) and CAL FIRE permits (during declared fire season). Take an active role in the development of permit parameters, and strive for specific parameters rather than generalized statements. For example, request a permit that outlines the number of personnel and engines that CAL FIRE would recommend for controlling the fire rather than a permit that says you need to have enough resources to keep the fire under control. (In effect, the latter is a backdoor way of imposing a strict liability framework in a simple negligence state, and it should be avoided.)
- **Ensure that you have planned and prepared your unit adequately** for the time of year and the conditions under which you will be burning. Even under mild winter conditions, it is wise to have a basic burn plan/prescription, control and/or contingency lines, and a water resource on site.
- **Consider using release of liability forms** if you have volunteers or others working on your prescribed burn; injuries could be an additional liability for the landowner.
- **Request that CAL FIRE provide contingency resources for your burn**, as outlined in PRC § 4491. If your CAL FIRE unit has resources available, they are required by law to support prescribed fire projects on private lands.
- **Consider the types of additional actions that you should take as a reasonable, prudent prescribed burner.** Working with a community group like a prescribed burn association, having functional equipment, ensuring good communications with crew members and neighbors, and other similar actions can help demonstrate due diligence and responsible behavior.

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<sup>4</sup>In the upper 2/3 of the state, CAL FIRE permits are only required during declared fire season, May 1-~late fall. See PRC § 4423, PRC § 4413, and PRC § 4414 for guidance on permit requirements in different parts of the state.



# Weather Resources that Aid the NORCAL Burner

1. NWS Red Flag Warning-Fire Weather Watch: <https://www.wrh.noaa.gov/fire2/cafw>
2. NWS hourly Tabular and Graphical Forecasts:
  - a. <https://weather.gov>
  - b. Move cursor to the appropriate location on the map.
    - i. Choose local forecast office.
    - ii. Example: North Central CA or NW CA Coast
  - c. Scroll down webpage to area map.
    - i. Double click on map at approximate location for the burn.
  - d. Scroll down to small map (right side).
    - i. Refine your location by moving the cursor in the map and double clicking.

**Detailed Forecast**

Tonight	Clear with a low around 36. Northwest wind 6 to 10 mph.
Monday	Sunny with a high near 66. East-southeast wind 3 to 6 mph.
Monday Night	Clear with a low around 41. East wind 3 to 6 mph.
Tuesday	Sunny with a high near 67. Southeast wind around 8 mph.
Tuesday Night	Mostly clear with a low around 42. South-southeast wind 6 to 8 mph.
Wednesday	Mostly sunny with a high near 70.
Wednesday Night	Partly cloudy with a low around 44.
Thursday	Mostly sunny with a high near 52.
Thursday Night	Partly cloudy with a low around 39.
Friday	A slight chance of showers, with thunderstorms also possible after 11pm. Mostly sunny with a high near 56.
Friday Night	A chance of rain and snow showers. Some thunder or sleet possible. Mostly cloudy with a low around 35.
Saturday	A chance of rain and snow showers. Mostly cloudy with a high near 50.
Saturday Night	A chance of rain and snow showers. Mostly cloudy with a low around 33.
Sunday	A chance of rain and snow showers. Some thunder or sleet possible. Partly sunny with a high near 50.

**Additional Forecasts and Information**

Hourly Weather Forecast (highlighted in red box)

Forecast Area: 3 (Reno) (48° 01' 30" N, 122° 28' 00" W) (Elev: 5400 ft)

Last Update: 2:27 pm PDT Apr 22, 2018

Forecast Valid: 3pm PDT Apr 22, 2018 - 6am PDT Apr 23, 2018

Forecast area location

- ii. Choose either Hourly Weather Forecast or Tabular Forecast highlighted by the red box.
- e. Forecast's are in 2 day increments. Pick and choose which elements you want to display.
- f. Remember to bookmark the webpage for future use.
  - i. Notice lat/long in the web address.
  - ii. You can change the lat/long when you change project location.
- g. NWS Text Discussions: Area Forecast Discussion (2 methods)

**NATIONAL WEATHER SERVICE**

**NWS Forecast Office Reno, NV**

**Spring Greening**

**Spring Greening? Average Last and Freeze Dates**

Location	Start 20° Record	Average Last 32° (Front)	Latest 32° on Record
Reno, NV	5/11	4/24	6/13
Carson City, NV	6/6	5/7	6/10
Minden, NV	6/13	6/2	7/24
Fallon, NV	5/12	5/14	6/13
Yerington, NV	5/7	4/29	4/8
Lovecks, NV	4/6	3/27	4/20

**Detailed Forecast**

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**Additional Forecasts and Information**

Forecast Discussion (highlighted in red box)

Forecast Area: 3 (Reno) (48° 01' 30" N, 122° 28' 00" W) (Elev: 5400 ft)

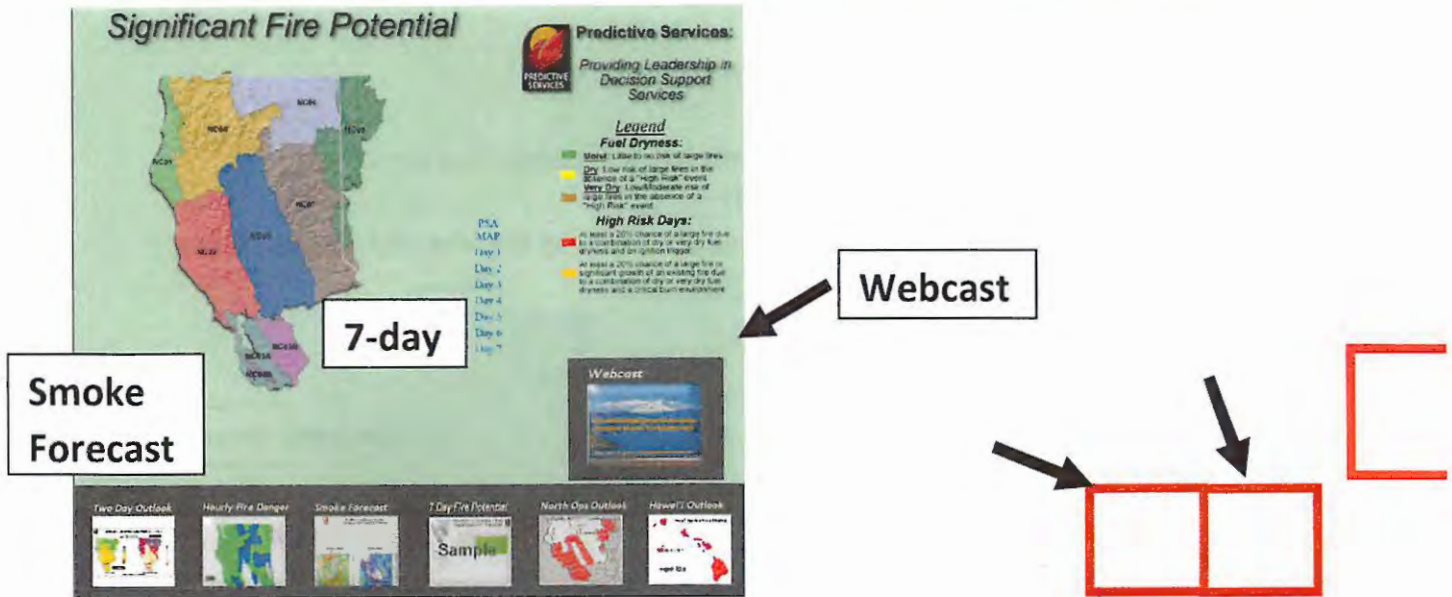
Last Update: 2:27 pm PDT Apr 22, 2018

Forecast Valid: 3pm PDT Apr 22, 2018 - 6am PDT Apr 23, 2018

h. Fire Weather Planning Forecast Discussion

- i. Choose "Fire Weather" in drop down menu.
- ii. Double click on the map.
- iii. Or visit <https://www.wrh.noaa.gov/fire2/cafw> and click on the map.

3. North Ops Predictive Service Website: <https://gacc.nifc.gov/oncc/predictive/weather/index.htm>



4. High Resolution Weather Models

- a. CANSAC WRF: [https://cansac.dri.edu/cansac\\_output.php?model=wrf](https://cansac.dri.edu/cansac_output.php?model=wrf)
  - i. 2km domain: Sfc 10m Wind speed or Sfc RH (NW quad)
- b. HRRR: [https://rapidrefresh.noaa.gov/hrrr/HRRR/Welcome.cgi?dsKey=hrrr\\_ncep\\_jet](https://rapidrefresh.noaa.gov/hrrr/HRRR/Welcome.cgi?dsKey=hrrr_ncep_jet)
  - i. Change domain to NW
  - ii. Weather fields: 10m Wind, 10m wind gust, 2m RH, Composite Reflectivity, total acc precip
- c. Tropical Tidbits: <https://www.tropicaltidbits.com/analysis/models/>
  - i. Click on Mesoscale tab and choose NAM3km
  - ii. Click on Region tab and choose Southwest
  - iii. Click on Precip/Moisture tab and choose from several useful fields like MSLP & Precip (Rain/Frozen)

5. Air Resource Board Met Program: <https://www.arb.ca.gov/smp/met/met.htm>

- a. Choose Air Basin and click on it.

6. Missoula Lab Fire Weather Alert System (FWAS): <https://weather.firelab.org/fwass/>

- a. Set your location
- b. Name alert
- c. Set your watch radius
- d. Set expiration time
- e. Set weather thresholds
- f. Input contact info (cell # or email)

Created by: Brent Wachter (Predictive Services) and Brett Lutz (National Weather Service) presented at the 2018 Northern California Prescribed Fire Council meeting in Mt. Shasta, CA.

## Understanding Liability and Responsibility in the Use of Prescribed Fire

Understanding California Laws as it pertains to use of fire for control burning or the use of prescribe fire can be viewed from three perspectives as outlined in the Public Resources Code and the Health and Safety Code.

1. Understanding what an "uncontrolled fire" is:
  - a. Threatens to destroy life, property or resources.
  - b. Is unattended.
  - c. Attended, but unable to prevent its unrestricted spread.
  - d. Burning with such velocity or intensity that it could not be readily controlled with ordinary tools available to private persons at the fire scene.
2. Proper precautions to avoid an "uncontrolled fire".
  - a. Obtaining applicable permits and following the terms of the permit.
  - b. Take proper precautions to prevent unwanted spread.
  - c. Take precautions and preparations in advance; such as the preparation of firebreaks and the firefighting equipment and personnel desirable to conduct the prescribed burning.
  - d. Make certain that tools and equipment are serviceable and in good working order prior to ignition.
3. Avoiding harm to others and/or damage to their property by an "escaped" fire.
  - a. Showing "due diligence".
  - b. Acting as a "prudent person".
  - c. Demonstrating through "action" a desire to comply with the law.

If you take the above and mitigate and/or demonstrate that you have taken appropriate actions, or "due diligence" you demonstrate your "desire to comply with the law".

1. Understanding what an "uncontrolled fire" is:
  - a. Threatens to destroy life, property or resources.
    - i. **Mitigation**-Address items b, c and d.
  - b. Is unattended.
    - i. **Mitigation**- Fire is attended by sufficient able body personnel with appropriate tools and equipment to readily control both the "planned" fire and any "unwanted" fire, such as a spot fire across a fire control line or fire break.
  - c. Attended, but unable to prevent its unrestricted spread.
    - i. **Mitigation**- Prior to ignition establish fire breaks whether naturally occurring or constructed wide enough that contain fire spread. A fire break is an area that is non-combustible, often referred to as a "fire control line", "fire line" or just "the line". Four-foot-wide fuel breaks to mineral soil is a recommended minimum width for surface fuel fires. Surface fuels are grasses, forbs, leaves, needles and small branches. All of these fuels are one inch (1-inch) in diameter or less and are generally dead and or dying.

- ii. Remove fuel buildups, logs or "jackpots" of fuel adjacent to fire breaks that will burn with intensity that may allow the fire to cross your fire break.
  - iii. Remove and reduce fuels under trees that will cause the trees to "torch out", throwing embers across your fire break (fire control line) and igniting spot fires.
  - iv. Remove and/or limb up trees to remove "ladder fuels" to prevent trees from torching out.
  - v. Pull fuels back from the base of trees, particularly conifers where fuel buildup has occurred so fire will not climb the bark of the trees. On conifers look for excessive "pine pitch" that will readily ignite and rapidly "climb up" the tree. On hardwood species such as oak trees, especially old mature trees inspect for areas of rot or hollow spaces where fire can enter the tree. Also check up the tree for rotten and decaying branches that embers may reach and ignite. Often these trees are hollow inside and can burn with great intensity throwing embers across control lines and become a significant safety concern to all personnel. Additionally, these fuel build ups referred to as "duff doughnuts" if not pulled back and reduced may actually kill trees you wish to retain.
  - vi. Pull back and ring all snags (dead trees) one hundred feet (100-feet) from the edge of your control line in the proposed burn area. Large dead and down logs that will burn with intensity should be similarly lined to prevent ignition.
  - vii. Check for old stumps within at least thirty feet (30-feet) of your control that may ignite allowing fire to travel along the old root system that may cross your control line underground and ignite fuels weeks and even months later. This is particularly relevant in dry or drought years.
  - viii. Consider fuels mitigation on the opposite side of the fire break referred to as the "green" that if ignited would be difficult to control.
  - ix. Another technique referred to as "orcharding" is the process to limb up trees and shrubs so it has the appearance of a fruit orchard from the ground level. The burn side of the fire break is "orchard up" 30 to 50 feet in, while the green side (non-burn side) is "orchard up" to 10 feet in.
  - x. Consider locating personnel, fire control tools and equipment in areas where concerns exist that threaten to pose a risk to unwanted fire spread. Example; after pulling back fuels from a snag or stump in the proposed burn unit locating or repositioning buckets full of water close by with a person to readily extinguish any accidental ignition demonstrates "due diligence".
  - xi. Prepare a personnel and equipment list to properly "staff" the line to maintain control of the fire and suppress any unwanted fire.
- d. Burning with such velocity or intensity that it could not be readily controlled with ordinary tools available to private persons at the fire scene.

- i. **Mitigation for Velocity-** Velocity in simple terms is the speed at which the flaming front spreads. Often referred to as the Rate of Spread (ROS) measured in feet per minutes or chains per hour (a chain is 66 feet in length), the velocity or ROS can be altered. Both velocity and intensity are often interdependent.
- ii. Reduce velocity by “backing” the fire down the hill, or burning against the slope. Since slope for all practical purposes affects fire like a blowing wind, the steeper the slope the slower the ROS as fire backs down. The inverse is true that if, the fire is at the bottom of the slope the steeper the slope the faster the ROS as it moves up the slope.
- iii. Reduce velocity by backing fire into the wind. Fire backing into the wind burns with less intensity and velocity. Again, the inverse is true.
- iv. Burn in cool, relatively moist conditions with no to very light winds. Termed a “prescription”, burning in conditions that are on the “cooler” end of the prescription will both help mitigate velocity and intensity.
- v. Burn in the early part of the day where temperatures are generally cooler, relative humidity is higher, and winds are lighter. All burn locations have different weather conditions and weather conditions monitoring before, during and after the burn is essential. Target your burn for cool, moist and calm conditions before and during the burn to mitigate velocity and intensity. Night time burns may be another option.
- vi. Burn on days where there is cloud cover that provides shading that cools the fuels surface temperatures.
- vii. Burn fuels in the shade of trees to reduce the fuels further, particularly near fire control lines (fire breaks) to “strengthen” the lines before allowing the fire to advance through the remainder of the burn site.
- viii. Establish “check lines”. Check lines are a break in fuel continuity that stop or “check” fire spread. While not constructed to the standard of a fire break they separate fuels so that fire spread can be temporarily halted. These can be physical separation of fuels by use of a rake, leaf blower or other tools, or can be established with the use of water called a “wet line”. Wet lines have the added advantage of quickly being established with minimal effort as long as you have available water. Check lines have the added advantage of allowing to adjust your plan, reposition personnel and equipment, evaluate the success and objective of your burn. They segment your fire for rapid containment and control.
- ix. Slope aspect burning. A “slopes aspect” is its relationship to the sun. In our northern hemisphere south, southwest, west facing aspects and flat areas are hotter and drier than north, north east, and east aspects that tend to be cooler and moister. Burning out



hotter and drier aspects during the cooler part of the prescription, and then burning out your cooler aspects later in the hotter part of the prescription will help to regulate velocity and intensity.

- x. Pretreat fuels with water. If you are fortunate to have large amounts of water available applying water before and during fire consumption can regulate velocity and intensity. However, CAUTION here is stressed if water is needed particularly continuously you are likely out of the prescription and on the threshold of losing control.
- xi. Recognize fuel types that burn readily and are significantly influenced by slight changes in wind and/or slope. Referred to as 'light and flashy fuels' these are typically dried annual grasses. The thinner and taller the grasses the more quickly they burn. Fire fighters are more likely to be injured and killed in light flashy fuels. Adjusting burn techniques, modifying the fuel through mechanical treatment can alter the burn characteristics. However, anticipating the expected fire behavior and planning accordingly is the proven tactic over time.
- xii. **Mitigation of Intensity**- While the previous techniques, tactics or adjustments also can lessen fire intensity, "mechanical" manipulation of fuels can additionally reduce fire intensity and velocity.
- xiii. Avoid large accumulations and/or building piles of fuels that will serve as "jackpots". Rather distribute the fuels over large areas to decrease the intensity. Cut or "lop" the fuels to reduce both volume and size. Lower to the ground generally equates to less intensity.
- xiv. Prior to broadcast burning reduce fuel availability by cut, pile and burning before broadcast burning to reduce fuel loading. Fuel removal is preferred to fuel rearrangement as fuels are still present in the burn site and may have different burning characteristics. As an example, cutting and chipping of large volume of fuels will alter the intensity, but may increase fire severity damaging soils, trees and shrubs you wish to retain.
- xv. "Drop, lop and scatter". This is the process cutting down and cutting up fuels both breaking up and reducing fuel loading. Again, CAUTION needs to be noted if large volumes of living green fuel are dropped, lopped and scattered and allowed to dry before a broadcast burn; they may actually serve to increase fire intensity.
- xvi. Mechanically alter the fuels to reduce intensity, such as the use of a "string" weed eater to reduce dead grass fuels to approximately six inches (6-inches) in height, which will both reduce intensity and velocity. This is done adjacent to control lines to a predetermine depth representative of the fuels that will be involved. It can also be done around trees that may be too young to survive fire passage or may receive excessive heat damage (scorching). Additionally,

- consider "weed eating" the other side of the line to reduce available fuels to lessen the probability of fire control difficulties or escapes.
- xvii. Recognize (if possible) the fuel type and burn characteristics of the fuels to be burned. This usually requires the knowledge of a skilled fire practitioner who is knowledgeable in native plants and their burn characteristics as it pertains to fire adaptability, non-fire adaptability, fire avoidance, fire dependence, etc. Certain native plants are highly flammable and may readily ignite and spread fire with both intensity and velocity while appearing green and fire resistant. This may also be true of non-native invasive plants.
  - xviii. "Winter time black lining" is a technique of broadcast burning the planned fire control lines for a future prescribed fire burn, with the intention of strengthening the main fire control lines for the future burn and protecting internal islands of trees. This is very useful in range management burns that are intermixed with oaks and conifers. Standard fuels reduction and removal occurs under the trees to be retained and on a favorable burn day the leaf and needle cast is burned and at the transition zone between the tree understory and the rangelands the fire is extinguished, or is self-extinguished as it burns into winter green grasses that will not support fire spread. Later that same year when the range is dry enough to support fire spread and meet management objectives ignition is made. As the fire approaches the areas of the winter time burns there is seldom enough fuels for fire spread and what little fuels that remain result in very low intensity fire under the trees. It provides the extra advantage of providing "checks" to fire spread.
  - xix. "Winter time burns". These burns are conducted after wetting rains have been received and burn permits are not required. While generally safer to conduct, burn with less intensity and velocity, reducing "risks" while maintaining the "gains", they need to be treated to the same standard of care and attention that a "permitted" burn would require. Often these burns are highly successful and occur where California Black Oaks and Ponderosa Pines are present where needle and leaf casts will support fire spread.
  - xx. "Phase burning" as the name implies is to phase fuels out through repetitive burns in cooler moist conditions. While comparable to both "winter time burns" and "winter time black lining" it more directly applies to areas of heavy duff layers, heavy wood chip layers, or masticated fuel treatment areas where the fuels can not be removed or reduced by effective mechanical means, and where burning these fuel beds will result in damage to both trees and soils. The goal is to remove the surface layers in phases of broadcast burning where only the very top layers burn off, but the underneath layers are to wet for combustion. This reduces the likelihood of damaging soils through heat transfer downward

through an excessive amount of burning coals, while the same layers of coals "roast" the tree canopies and trunks (or boles of the tree). The process of overheating the soils and killing tree roots and soil biology, while damaging tree crowns, and doing cambial injury or damage to the base of the trees results in severe tree mortality. This is a particular challenge in masticated fuels under forest canopies where the treated fuels have not had sufficient time to decompose.

- xxi. In general, fuels reduction, manipulation, removal, and ignition prevention can all have significant impacts to fire intensity and velocity.
- xxii. Flaming front management. The flaming front management is the process of regulating the advancing flaming front and maintaining a low intensity state that is readily controlled. It is recommended that flame height should not routinely exceed greater than two feet (2-foot) in height. This does not include the occasional increase fuel loading or isolated jackpot that does not possess a threat to fire control. Higher or taller flame fronts often require specialized equipment, hotter prescriptions, and special considerations for the reason or objectives of the burn. It is directly proportional to experience, number of personnel, tools and equipment available to manage the flaming front. The simple rule applies that less fire is better for control purposes so, "When in doubt put it out!".
- xxiii. **Mitigation- "readily controlled with ordinary tools available to private persons at the fire scene"**.
- xxiv. Readily controlled means just what it says. It is directly related to the number of personnel, experience, tools, equipment and water available at the fire scene. However, it is a function of velocity and intensity demonstrating that low intensity and velocity fires are readily controlled.
- xxv. Ordinary tools available to private persons should be viewed as the minimum standard of tools at the fire scene. These would be tools available that anyone can secure from a general-purpose hardware store. It is important to note that these need to be in good working order or "serviceable". Both specialized or equipment designed for fire suppression is recommended as the complexity, scope, scale and size of the burn increases, but this is also a factor to preparation work that has been done. However, it does not need to be expensive. Simple and effective tools and equipment can be built or repurposed that can significantly increase fire suppression capabilities. Areas that have not burned in years with heavy fuel loading can be reduced in complexity and difficulty in control through other fuel reduction efforts and is often recommended with broadcast burning being the final step and the preferred maintenance "tool" in the future, allowing for the use of "ordinary tools".

- xxvi. "At the fire scene" needs to be viewed with a little clarity. This means "readily" available for use. A central tool cache, neat, clean and organized is recommended. Tools and specialized equipment may be prepositioned or "staged" for rapid access. As an example, prepositioning several five (5) gallons buckets of water for the purposes of filling backpack pumps, fire suppression, etc. is superior than trying to urgently carry them up a hill in a time of need. Stock troughs repurposed for the day of the burn and prefilled could provide extra water. As well as portable plastic tanks that can be prepositioned and filled.
2. Proper precautions to avoid an "uncontrolled fire".
- a. Obtaining applicable permits and following the terms of the permit.
    - i. **Mitigation-** The state of California requires burn permits at all times of the year from May 1<sup>st</sup> to the time at which CAL FIRE determines they are no longer needed. They are required at all times of the year in southern California.
    - ii. The terms of the permit must be met to prove "due diligence" (PRC 4494).
    - iii. The preparation work you do to manage fire velocity and intensity may often meet and exceed the terms that may be written into the permit. Further, it demonstrates competency and knowledge to fire control officials and may help secure a permit, but it does not guarantee the issuance of a permit.
    - iv. Recognize the overarching intent of the permit system is to avoid "uncontrolled fires".
    - v. Burn permits for prescribed fire in State Responsibility Areas (SRA) are referred to as LE-7 and LE-8 Burn Permits. An LE-5 burn permit can be issued for small parcels or strips of grass and other fuels associated with buildings such as residences.
    - vi. Additionally, for the use of prescribed fire, a smoke management permit may be required so check with your local Air Quality Management District (AQMD).
  - b. Take proper precautions to prevent unwanted spread.
    - i. **Mitigation-** See previous.
  - c. Take precautions and preparations in advance such as the preparation of firebreaks and the firefighting equipment and personnel desirable to conduct the prescribed burning.
    - i. **Mitigation-** See previous.
  - d. Make certain that tools and equipment are serviceable and in good working order prior to ignition.
    - i. **Mitigation-** See previous
3. Avoiding harm to others and/or damage to their property by an "escaped" fire.
- a. Showing "due diligence".
  - b. Acting as a "prudent person".
  - c. Demonstrating through "action" a desire to comply with the law.

- i. **Mitigation-** By obtaining applicable permits when required and adhering to the terms of the permits. Or when rising to the standards of the terms of a permit when permits are not required; combined with taking proper precaution and preparations, you demonstrate a desire to not to cause harm to others or damage their property.
- ii. An escaped fire is a fire that enters onto a property that is not your own, or under your legal control and you must take every reasonable precaution to avoid this. Liability cannot be eliminated, but it can be mitigated to a point of acceptability of Risk vs. Gain
- iii. California is a "simple negligence" state that basically asks did you act with due diligence, as a prudent person, desiring to comply with the law?
- iv. All burning of fuels has an associated risk whether it is in the form of a pile or a broadcast burn spreading across open ground. That risk is directly proportional to both the failure or the implementation of preparation and precautions taken.

The following excerpts from the California Public Resources Code, Health and Safety Code, along with definitions addressing liability, prudent person, due diligence, etc.

**California Code, Public Resources Code - PRC § 4103**

"Forest fire" means a fire burning uncontrolled on lands covered wholly or in part by timber, brush, grass, grain, or other flammable vegetation.

**California Code, Public Resources Code - PRC § 4103.4**

"Open fire" means any fire, controlled or uncontrolled, including a campfire, burning outside of any structure, mobilehome, or living accommodation mounted on a motor vehicle. "Open fire" does not include portable lanterns designed to emit light resulting from a combustion process.

**California Code, Public Resources Code - PRC § 4104**

The term "uncontrolled fire," as used in this division, means any fire which threatens to destroy life, property, or resources and either: (1) is unattended by any person; (2) is attended by persons unable to prevent its unrestricted spread; or (3) is burning with such velocity or intensity that it could not be readily controlled with those ordinary tools available to private persons at the fire scene.

**California Code, Public Resources Code - PRC § 4170**

Any uncontrolled fire burning on any lands covered wholly or in part by timber, brush, grass, grain or any other flammable material, without proper precaution being taken to prevent its spread notwithstanding the origin of such fire, is a public nuisance by reason of its menace to life and property.

**California Code, Public Resources Code - PRC § 4421**

A person shall not set fire or cause fire to be set to any forest, brush, or other flammable material which is on any land that is not his own, or under his legal control, without the permission of the owner, lessee, or agent of the owner or lessee of the land.

**California Code, Public Resources Code - PRC § 4422**

A person shall not do any of the following:

- (a) Willfully or knowingly allow fire to burn uncontrolled on land which he owns or controls, or to escape to the lands of any person other than that of the owner.

(b) Allow any fire kindled or attended by him to escape from his control or to spread to the land of any person other than from the land from which the fire originated.

#### **California Code, Public Resources Code - PRC § 4423**

A person shall not burn any brush, stumps, logs, fallen timber, fallows, slash, grass-covered land, brush-covered land, forest-covered land, or other flammable material, in any state responsibility area, area receiving fire protection by the department by contract, or upon federal lands administered by the United States Department of Agriculture or Department of the Interior, unless the person has a written permit from the department or its duly authorized representative or the authorized federal officer on federal lands administered by the United States Department of Agriculture or of the Interior and in strict accordance with the terms of the permit:

(a) At any time in Zone A.

(b) At any time in Zone B between May 1st and the date the director declares, by proclamation, that the hazardous fire conditions have abated for that year, or at any other time in Zone B during any year when the director has declared, by proclamation, that unusual fire hazard conditions exist in the area.

The issuing agency may require the permittee to contact the agency to determine permit suspension status prior to burning.

#### **California Code, Public Resources Code - PRC § 4427**

During any time of the year when burning permits are required in an area pursuant to this article, no person shall use or operate any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices from which a spark, fire, or flame may originate, which is located on or near any forest-covered land, brush-covered land, or grass-covered land, without doing both of the following:

(a) First clearing away all flammable material, including snags, from the area around such operation for a distance of 10 feet.

(b) Maintain one serviceable round point shovel with an overall length of not less than forty-six (46) inches and one backpack pump water-type fire extinguisher fully equipped and ready for use at the immediate area during the operation.

This section does not apply to portable powersaws and other portable tools powered by a gasoline-fueled internal combustion engine.

#### **California Code, Public Resources Code - PRC § 4491**

(a) Cooperation by the department, as provided in this article, with a person desiring to use prescribed burning as a means of converting brush-covered lands into forage

lands or to help meet wildland management goals, which has as its objective the prevention of high intensity wildland fires, watershed management, range improvement, vegetation management, forest improvement, wildlife habitat improvement, restoring ecological integrity and resilience, community wildfire protection, carbon resilience, enhancement of culturally important resources, and maintenance of air quality, or any combination thereof, is declared to be for a public purpose.

(b) This article shall be administered by the director or, if responsibility therefor is delegated by the director, by the chief of a county fire department in a county contracting with the department pursuant to [Section 4129](#).

(c) In furtherance of this article, the department shall provide advisory service to applicants for permits as to precautions to be taken by the applicant to prevent damage to the property of others by reason of the prescribed burning, and shall provide standby fire protection, to the extent the personnel, fire crews, and firefighting equipment are available.

#### **California Code, Public Resources Code - PRC § 4493**

Upon receipt of an application, the department shall inspect the land in company with the applicant to determine whether a permit shall be granted, shall prescribe the manner in which the site for the prescribed burning shall be prepared, and shall require any precautions to be taken by the applicant as may be considered reasonable to prevent damage to the property of others by reason of the burning. The precautions shall, if deemed necessary, include the advance preparation of firebreaks and the firefighting equipment and personnel desirable to conduct the prescribed burning.

#### **California Code, Public Resources Code - PRC § 4494**

(a) Upon the conclusion of the examination provided for in [Section 4493](#), the department may issue to the applicant a burning permit that shall specify the site preparation requirements and required precautions to be exercised prior to and during the burning. The issuance of a permit by the department does not relieve the permit holder from the duty of exercising due diligence to avoid damage to property of others in conducting the burning of vegetation as authorized by the permit.

(b) Compliance with a permit issued pursuant to this article shall constitute prima facie evidence of due diligence.

#### **California Code, Health and Safety Code - HSC § 13007**

Any person who personally or through another willfully, negligently, or in violation of law, sets fire to, allows fire to be set to, or allows a fire kindled or attended by him to escape to, the property of another, whether privately or publicly owned, is liable to the owner of such property for any damages to the property caused by the fire.



### California Code, Health and Safety Code - HSC § 13008

Any person who allows any fire burning upon his property to escape to the property of another, whether privately or publicly owned, without exercising due diligence to control such fire, is liable to the owner of such property for the damages to the property caused by the fire.

### California Code, Health and Safety Code - HSC § 13009

(a) Any person (1) who negligently, or in violation of the law, sets a fire, allows a fire to be set, or allows a fire kindled or attended by him or her to escape onto any public or private property, (2) other than a mortgagee, who, being in actual possession of a structure, fails or refuses to correct, within the time allotted for correction, despite having the right to do so, a fire hazard prohibited by law, for which a public agency properly has issued a notice of violation respecting the hazard, or (3) including a mortgagee, who, having an obligation under other provisions of law to correct a fire hazard prohibited by law, for which a public agency has properly issued a notice of violation respecting the hazard, fails or refuses to correct the hazard within the time allotted for correction, despite having the right to do so, is liable for the fire suppression costs incurred in fighting the fire and for the cost of providing rescue or emergency medical services, and those costs shall be a charge against that person. The charge shall constitute a debt of that person, and is collectible by the person, or by the federal, state, county, public, or private agency, incurring those costs in the same manner as in the case of an obligation under a contract, expressed or implied.

(b) Public agencies participating in fire suppression, rescue, or emergency medical services as set forth in subdivision (a), may designate one or more of the participating agencies to bring an action to recover costs incurred by all of the participating agencies. An agency designated by the other participating agencies to bring an action pursuant to this section shall declare that authorization and its basis in the complaint, and shall itemize in the complaint the total amounts claimed under this section by each represented agency.

(c) Any costs incurred by the Department of Forestry and Fire Protection in suppressing any wildland fire originating or spreading from a prescribed burning operation conducted by the department pursuant to a contract entered into pursuant to Article 2 (commencing with [Section 4475](#)) of Chapter 7 of Part 2 of Division 4 of the Public Resources Code shall not be collectible from any party to the contract, including any private consultant or contractor who entered into an agreement with that party pursuant to [subdivision \(d\) of Section 4475.5 of the Public Resources Code](#), as provided in subdivision (a), to the extent that those costs were not incurred as a result of a violation of any provision of the contract.

(d) This section applies to all areas of the state, regardless of whether primarily wildlands, sparsely developed, or urban.

## **Negligence-Ordinary Person-Due Diligence**

### **“Acting Under Similar Circumstances”**

According to California law, a person is **not negligent** if “the person did what might reasonably be expected of a person of ordinary prudence, acting under similar circumstances, **who desired to comply with the law.**”

#### **Ordinary Prudent Person Definition**

The failure to do that which an ordinary, reasonable and prudent person would do or the doing of some act which an ordinary, reasonable and prudent person would not do. Due care Standard of conduct which is exercised by an ordinary, reasonable, prudent person.

#### **Merriam-Webster**

Due diligence has been used since at least the mid-fifteenth century in the literal sense “requisite effort.” Centuries later, the phrase developed a legal meaning, namely, “**the care that a reasonable person takes to avoid harm to other persons or their property**”; in this sense, it is synonymous with another legal term, ordinary care.

In legal contexts, diligence means “the degree of care required in a given situation.” In this way, due diligence is the level of care or caution that a specific situation calls for

#### **Reasonable / Prudent Man Law and Legal Definition**

Reasonable or Prudent man is a hypothetical person used as a legal standard, especially to determine whether someone acted with negligence. **This hypothetical person exercises average care, skill, and judgment in conduct that society requires of its members for the protection of their own and of others' interests.** The conduct of the reasonable man serves as a comparative standard for determining liability. For example, the decision whether an accused is guilty of a given offense might involve the application of an objective test in which the conduct of the accused is compared to that of a reasonable person under similar circumstances.

#### **Negligence**

The failure to exercise reasonable or prudent care that an ordinary person would make under the same circumstances. To prove negligence, the following elements are required: (i) the **defendant owed a duty to the injured party or to the general public (such as driving a car),** (ii) **the actions or failure to act by the defendant was not representative of reasonable or prudent conduct that an ordinary person would make under similar circumstances,** and (iii) that the defendant’s negligent act or inaction **was the proximate cause of the injury suffered by the plaintiff.**

The failure to observe, for the protection of the interests of another person, that degree of care, precaution, and vigilance, which the circumstances justly demand, whereby such other person suffers injury

The opposite of care and prudence; the omission to use the means reasonably necessary to avoid injury to others.

# California Standardized Prescribed Fire Plan

Project Title: \_\_\_\_\_

Prescribed Fire Burn Boss (CARX): \_\_\_\_\_

Author of Plan: \_\_\_\_\_

Agency Having Jurisdiction (AHJ): \_\_\_\_\_

Property Owner: \_\_\_\_\_

Date Created: \_\_\_\_\_ Date Re-Evaluated\* (if applicable): \_\_\_\_\_

*\*Burn plans should be re-evaluated as needed to account for changes in fuel/site conditions or project objectives.*

## 1. Project Area Description

Location Description: \_\_\_\_\_

***Latitude and longitude (in Degrees Decimal Minutes (DMM)):***

Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Property Ownership (private, state, etc.): \_\_\_\_\_

Unit Size (acres): \_\_\_\_\_

***Unit Description:***

	<b>Within the Unit</b>	<b>Adjacent to Unit</b>
Fuel type/model		
Slope		
Aspect		
Special features		

**Prescribed fire goals and objectives** (include overarching project goals as well as specific project objectives. Objectives should be S.M.A.R.T. (specific, measurable, attainable, relevant, time-bound)):

time-bound)):

## 2. Pre-burn Considerations

**Plan for unit preparation** (describe line type/construction, pre-treatment of fuels, pre-burn

land management considerations (e.g., grazing deferment), etc.):

**Water supply** (describe quantity, location, and other considerations):

**Unit access** (describe roads, signage needs, etc.):

**Plan to protect values at risk** (if applicable; e.g., structures, water lines, sensitive species, cultural sites, etc.):

**3. Prescription**

<b>Element</b>	<b>Minimum (cool)</b>	<b>Desired</b>	<b>Maximum (hot)</b>
Temperature (F)			
Relative Humidity (%)			
Mid-Flame Wind Speed (mph)			
Fine Dead Fuel Moisture (%)			
Probability of Ignition (%)			

*\*Include other prescription elements as appropriate*

**Wind direction** (acceptable range and optimal): \_\_\_\_\_

**Seasonality of burn** (if applicable; in many cases, implementation will be appropriate at any time that prescription parameters are met): \_\_\_\_\_

\_\_\_\_\_

**4. Smoke Management Plan**

(to be prepared according to local air district rules; refer to SMP for detailed plan):

- Submitted through PFIRS
- Submitted in hard copy to air district
- Not required by air district based on project size/emissions

**5. Ignition Plan**

- Firing Boss to be designated

*Note: test fire will be conducted in a location that is representative of the burn unit. Location to be determined by Burn Boss on the day of burn based on environmental conditions.*

**Firing plan** (describe sequence, patterns, techniques, and devices needed to meet objectives):

**Holding plan**

- Holding Specialist to be designated

<b>Anticipated Fire Behavior (head fire)</b>	<b>Flame length (FL) (feet)</b>	<b>Rate of spread (ROS) (chains/hour)</b>
<i>Within the unit</i>		
<i>Adjacent to unit</i>		
<b>Production Rates</b>	<b>Chains/hour</b>	
<i>Crews/resources</i>		

**Resources** (describe total number and type of resources needed to implement burn safely, based on production rates outlined above. Include description of plan for on-site weather

*observations and weather forecasting):*

## 6. Post-Burn Activities

**Mop-up and patrol plan** (describe activities, timeframes, and standards):

**Other post-burn activities** (optional; include appendices for marked activities):

Fire effects monitoring plan

Project rehabilitation plan (including infrastructure, improvements, and land rehabilitation)

Other (describe): \_\_\_\_\_

## 7. Notifications

### Pre-Burn Notifications:

#### Adjacent Landowners

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

#### Air Quality Management District

Name/Title: \_\_\_\_\_ Phone: \_\_\_\_\_

#### Fire Agency Having Jurisdiction

Name/Title: \_\_\_\_\_ Phone: \_\_\_\_\_

Other notifications may be required based on parameters outlined in the smoke management plan (e.g., schools and other sensitive receptors). Record additional notifications on separate page and include in appendices.



**Day-of-Burn Notifications:**

CAL FIRE Emergency Command Center (ECC):

Name/Title: \_\_\_\_\_ Phone: \_\_\_\_\_

Air Quality Management District

Name/Title: \_\_\_\_\_ Phone: \_\_\_\_\_

Other Fire Agency Having Jurisdiction (if applicable):

Name/Title: \_\_\_\_\_ Phone: \_\_\_\_\_

Other (if applicable: e.g., law enforcement, adjacent landowners, etc.):

Name/Agency: \_\_\_\_\_ Phone: \_\_\_\_\_

Name/Agency: \_\_\_\_\_ Phone: \_\_\_\_\_

Name/Agency: \_\_\_\_\_ Phone: \_\_\_\_\_

**8. Wildfire Conversion Plan**

Person designated to make declaration: \_\_\_\_\_

Designated Incident Commander in case of wildfire: \_\_\_\_\_

Person(s) to contact for declaration:

Name/Position: \_\_\_\_\_ Phone/frequency: \_\_\_\_\_

Name/Position: \_\_\_\_\_ Phone/frequency: \_\_\_\_\_

Name/Position: \_\_\_\_\_ Phone/frequency: \_\_\_\_\_

Size-up/reporting considerations:

- Rate of spread
- Fuel type
- Structure threat
- Potential acreage
- Current actions being taken

**9. Risk Management Activities**

***Check boxes for risk management activities/plans attached to the prescribed fire plan:***

- Contingency plan (required)
- Medical plan
- Communications plan
- Management Action Points (M.A.P.)
- Briefing checklist
- Safety plan (e.g., safety review, onsite assessment, 215A, etc.)
- Other (describe): \_\_\_\_\_

### **10. Other Attachments**

***Check boxes for other pertinent attachments included with the prescribed fire plan:***

- Project and area maps (required)
- Go-no-go checklist (recommended)
- Other (describe): \_\_\_\_\_