



## Natural Resources Conservation Service

### CONSERVATION PRACTICE STANDARD

## PRESCRIBED BURNING

### CODE 338

#### (ac)

#### DEFINITION

Planned fire applied to a predetermined area.

#### PURPOSE

Use this practice to accomplish one or more of the following purposes:

- Manage undesirable vegetation to improve plant community structure and composition
- Manage pests, pathogens, and diseases to reduce plant pressure
- Reduce wildfire hazards from biomass accumulation
- Improve terrestrial habitat for wildlife and invertebrates
- Improve plant and seed production, quantity, and/or quality
- Facilitate distribution of grazing and browsing animals to improve forage-animal balance
- Improve and maintain habitat for soil organisms and enhance soil health

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies on all lands as appropriate.

#### CRITERIA

##### General Criteria Applicable to All Purposes

All prescribed burn plans and applications shall address the following items:

- Location and description of the burn area
- Preburn vegetation cover
- Resource management objectives
- Required weather conditions for prescribed burn
- Notification checklist
- Preburn preparation
- Equipment checklist, personnel assignments, and needs/safety requirements
- Firing sequence
- Ignition method
- Basic smoke management practices to minimize smoke impacts
- Approval signatures
- Postburn evaluation criteria

### **Additional Criteria for Prescribed Burn Planning**

- The procedure, equipment, weather conditions, and the number of trained personnel shall be adequate to accomplish the intended purposes.
- Inventory the location of utilities, such as electric power lines and natural gas pipelines, to prevent damage to the utility and to avoid personal injury and human and vehicular traffic that may be impeded by heat or smoke.
- Monitor weather parameters, smoke dispersion, and other conditions that will affect fire behavior during the burn.
- Use information in “Basic Smoke Management Practices” (O’Neill et al., 2011 or NRCS-CA Technical Note [TN-AQ-CA-07 Basic Smoke Management Practices for Prescribed Burning \(11/16\)](#), eFOTG Section 1, TechNotes) for planning and mitigating smoke impacts. Be aware of your state’s smoke management program and utilize the specific tools your state has implemented to address smoke. Be mindful of the potential air quality impacts that burning might have on downwind communities.
- Timing of burning will correspond with desired soil and site conditions to maintain site productivity and minimize effects on soil health.
- Control points; existing barriers such as lakes, streams, wetlands, roads, and constructed firebreaks; and areas devoid of fuel are important to the design and layout of this practice.
- Notify adjoining landowners, local fire departments, and public health and safety officials as appropriate within the airshed prior to burning.
- Per Prescribed Burn Policy Section 413.3 B. and C., notify the client of their responsibility for obtaining all permits and clearances as required by law and regulation; and clients must be informed in writing of their potential liability.
- All Prescribed Burn Plans shall have a “Burn Complexity Rating” A suitable rating system is found in National Wildfire Coordinating Group (NWGC) Publication PMS 424 titled “*Prescribed Fire Complexity Rating System Guide*”, July 2017.

### **CONSIDERATIONS**

Prescribed burning is one of many alternatives used for vegetation management. Alternatives should be discussed thoroughly with the cooperator.

The objectives of prescribed burns will be documented. The planning objectives for using prescribed burning can vary significantly from single to multiple purpose. Some of the common objectives are:

1. Restore or maintain ecosystem services.
2. Improve fish and wildlife habitat.
3. Improve forest health and manage fuels.
4. Improve range health and productivity.

There are rotational burns (often range burns) and silvicultural burns. Type conversion burns (land use change) are not considered in this standard.

Rotational burns are those in which portions of an area are burned in a set sequence and then reburned at planned time intervals. Rotational burns are used to break up large, even-aged stands of brush, provide shrub regeneration with greater palatability and nutritive values, increase diversity, improve accessibility and increase forage production.

Silvicultural burns are usually conducted as understory burning to remove or reduce competing vegetation to allow for natural regeneration or under planting, reduce fire hazards by the reduction of forest floor fuel loadings, or weed or thin, especially in young forest stands.

Burning in chaparral: Burning in chaparral should be avoided unless specific planning objectives demonstrate need. State Range Conservationist shall review and concur on all chaparral projects. See TN-Range-CA-62, Planning Brush Management in California, March 2018.

Consider using prescribed burning as a pathway for restoring ecological sites to reference or other states referred to in the ecological site description(s) and state and transition models for the area.

Consider integration of NRCS Conservation Practice Standards (CPSs) Firebreak (Code 394) ,Fuel Break (Code 383), Forest Stand Improvement (666), Woody Residue treatment (384) and/or Tree and Shrub Pruning (660) into land preparation prior to the prescribed burn. Utilize NRCS CPS Prescribed Grazing (Code 528) to manage fuel loads prior to the burn and grazing use of vegetation postburn.

Consider minimizing carbon release by the timing and intensity of the burn.

Consider utilizing prescribed burning to prepare sites for planting or enhancing seed and seedling production.

Consider using prescribed burning to remove slash and debris.

Integrate safety and health precautions into the timing, location, and expected intensity of the burn.

### **Wildlife Considerations**

Consider wildlife and pollinator needs such as nesting, brood rearing, feeding, and cover when applying prescribed burns.

Escape cover (brush waist-high, usually more than 7 years old) should be in useable proximity to fresh burns (1-3 years old). Small burns scattered through a brush field are better habitat than the mosaic formed by repeated burning adjacent to last year's projects. A mosaic created through elevation is more acceptable than one created laterally.

Burns should connect or create open ridges, swales, and saddles adjacent to timber and brush stands.

Unless it is a resource management objective, avoid burning trees. Trees and larger vegetation provide needed thermal cover, roosting cover and food for wildlife.

Utilization of material to be burned should be considered when feasible either for fuel or forage or piled for wildlife cover as an alternative to burning.

Prescribed burning of wetlands is a good management tool. It seldom kills the wetland vegetation if the soil is saturated. Dry peat burns readily and a peat fire is difficult to control except by total submergence.

### **Water Quality Considerations**

When the area is burned in accordance with the specifications of this practice the nitrates with burned vegetation will be released to the atmosphere. The ash, will contain phosphorous and potassium, which will be in a relatively highly soluble form. If a runoff event occurs soon after the burn there is a probability that these two materials may be transported into the ground water or into the surface water. When in a soluble state the phosphorous and potassium will be more difficult to trap and hold in place.

Erosion and sedimentation rates may increase the first year after burning. Downstream effects should be considered in planning prescribed burns and provisions will be made to reduce anticipated adverse effects.

Unburned buffer strips should be planned for and retained in all prescribed burns adjacent to all stream courses. As a general guide, the minimum width will be 50 feet. When burning is necessary in the stream buffer strips, refer to the Best Management Practices for Prescribed Fire in National Best Management

Practices for Water Quality Management on National Forest System Lands. April 2012. FS-990-a. Pg 53  
Aquatic Management Zone [AMZ] Planning.

Active landslides, slips, gullies, unproductive sites, or areas with dry raveling should not be burned.

Access roads to burns and firebreaks should be carefully located and designed including erosion control measures.

## **PLANS AND SPECIFICATIONS**

Qualified individuals will complete a written prescribed burn plan with specifications for each site using approved burn plan templates, specification sheets, implementation requirements, and technical notes, in support of the conservation plan. Ensure landowner or operating manager has obtained all necessary State, local, and Tribal permits prior to implementation of the burn plan.

## **OPERATION AND MAINTENANCE**

### **Operation**

During the implementation of this practice, the variability of inherent site factors (e.g., topography, fuels, and weather conditions) on fire behavior, as well as heat and smoke impacts on people, vehicles, and property, must be accounted for and monitored, as appropriate.

Prescribed burning activities shall follow the direction of the burn boss (ultimate decision-maker) and designated personnel in accordance with the approved burn plan and NRCS policy. The prescribed burn plan, and the actions contained in the burn plan as carried out at the direction of the burn boss and designated personnel, will reduce risk to life and public safety and provide protection of values at risk for prescribed fire participants as well as adjacent and local values at risk.

Appropriate levels of trained and equipped personnel are essential for the successful and safe implementation of prescribed fires in all scenarios and land uses.

Requirements for burn weather, necessary resource staffing, and equipment availability correspond to expected fire behavior. The burn boss can override these requirements—in writing at the time of burn—if conditions warrant such action.

A test fire should be ignited prior to all burns to monitor fire behavior, fire effects, consumption, and smoke dispersal.

To effectively minimize postfire escapes, suppression and mop-up must be completed that ensures no fire, embers, or other ignition sources will escape beyond the designated burn area.

### **Maintenance**

All fires will be monitored and evaluated postfire to determine that predetermined burn objectives and metrics were met based on the identified resource concern. This may include but is not limited to targeted—

- Density, structure, and composition of native plant communities.
- Plant productivity and health.
- Reduction of plant pest populations and nonnative plants.
- Reduction in hazardous fuels.
- Improvements in wildlife habitat elements.
- Vegetative regrowth to aid in the retreatment scheduling.

Maintenance shall include monitoring of the burned site and adjacent areas until ash, debris and other consumed material is at pre-burn temperatures.

A maintenance plan will be prepared which shall list various items that are to be inspected and follow-up work to be conducted.

All postfire monitoring will be used to inform prescriptions for future burn plans to ensure safe, efficient, and effective application of prescribed fire to achieve resource concern objectives across all scenarios and land uses. Employ NRCS CPS Prescribed Grazing (Code 528) to maintain overall objectives of the burn and manage vegetation for livestock. Consider maintaining firebreaks using NRCS CPS Firebreak (Code 394) for followup burns and wildfire protection. Firebreaks which are no longer needed will be stabilized and/or revegetated. Repair erosion control measures as necessary to ensure proper function.

When considering replanting after a burn refer to the CAL eVeg Guide for approved plant species.

Deferred grazing may be required on all prescribed burns for a minimum of one growing season immediately preceding the burn to maximize vegetative material. This will also improve vigor of desirable forage plants for better recovery following burning. On soils that support oak-grass vegetation and have a moderate or severe erosion hazard, livestock will be withheld until an adequate grass stand is established. See Access Control (472).

On burned areas where livestock use is anticipated Prescribed Grazing (528) will be a follow-up management practice on all prescribed burns for a minimum period of one growing season, or until ground cover and forage production are adequate. Seeding may be required to reduce the erosion. Refer to the CPS Range Planting (550) and Critical Area Planting (342).

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