UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

UC ANR Publication 8730 | October 2023
https://doi.org/10.3733/ucanr.8730
https://anrcatalog.ucanr.edu

UC PEER REVIEWED

Rapid User Guide: Postfire Grazing on California's Intermountain Rangelands

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One of the first questions that arise after fire on rangelands is when livestock can resume grazing (Little 2019). Rest from grazing is a viable option in some cases, but it is not always necessary. Vegetation's response to wildfire depends on multiple, interacting site factors, including the plant community that existed before the fire, the intensity of the burn, and postfire weather. Specific grazing management decisions, including whether or not to rest from grazing, should be based on field assessments made in the spring following fire.

This rapid user guide is intended to be used by public and private land managers and livestock producers. It specifically focuses on timelines for making key considerations that go into the decision-making process and available management options following wildfires on California's intermountain perennial rangelands (fig. 1).

I. Early planning for postfire grazing

In the summer or fall immediately after a wildfire, managers should start making plans regarding restoration needs and grazing contingencies; in the subsequent spring, they can make their final management decisions, based on field observations (see section II, below). When making plans for postfire grazing management, managers should always consider trade-offs between short- and long-term ecological and economic objectives. They should ask themselves the following key questions:

- **Is critical grazing infrastructure in place?** Fences, water developments, and corrals can be damaged by fire. Evaluate infrastructure conditions and plan for the funding, labor, and environmental clearances that will be necessary for postfire rebuilding. Check with local Farm Service Agency and National

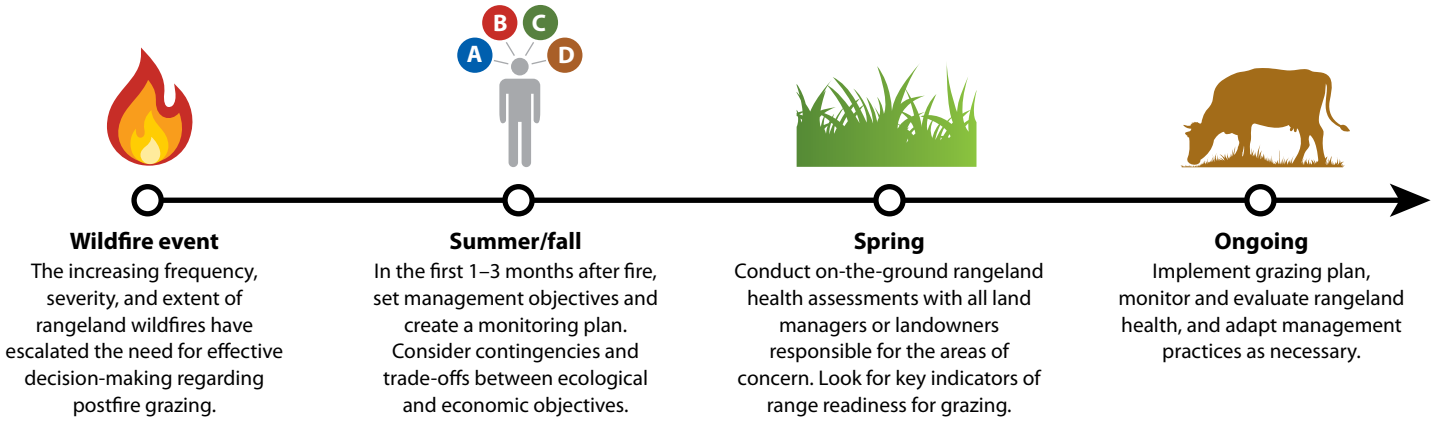

Figure 1. Postfire grazing timeline.

Resources Conservation Service offices for cost-share programs that may help with repairing or replacing damaged infrastructure. Develop a plan for removing hazard trees along fence lines to prevent further fence damage.

- **Will the burned area be seeded?** Range seeding can promote establishment of desirable perennial species while suppressing fireprone annual grasses. The practice of range seeding is most typical in Great Basin sage-steppe rangelands (Ott et al. 2016). Consult your county Cooperative Extension office to ask for technical advice and learn about options for rangeland seeding. When postfire range seeding is warranted, plan to rest from grazing for two growing seasons to allow perennial seedlings to fully establish.
- **Are forest management activities anticipated?** In forested areas, management activities such as removing standing dead timber and reforestation can improve subsequent forest health and reduce future fire risk (Stewart et al. 2020). However, these activities may create logistical challenges in the years following fire and need to be accounted for in grazing plans.

During this initial planning phase managers should also design a monitoring plan to track and assess the results of management practices (Herrick et al. 2015). The information from the monitoring plan can also be used to adapt management strategies.

II. Spring rangeland health assessment

A postfire range assessment should be completed in the field by grazing and resource managers. This assessment should typically occur in the spring season following fire—when actual vegetative responses can be observed. Field visits and on-the-ground decisions should be made in cooperation with all landowners and managers responsible for the area being assessed.

Here is what to look for:

- Are forage production and availability adequate to meet the nutritional needs of livestock?
- Do existing perennial grass crowns exhibit regrowth or are new seedlings present? Plant regrowth from existing crowns can benefit from mature root systems and reestablish quickly with more vigor than new seedlings, which may require more cautious grazing management (fig. 2).

Figure 2. Regrowth of burned bunchgrass from plant crown. *Photo:* Laura Snell.

- Are range health indicators (Pellant et al. 2005) related to invasive species, bare ground, or potential soil erosion present that would require grazing to be limited or deferred, or that indicate a need for postfire restoration?

III. Postfire grazing management

Grazing intensity, frequency, duration, and timing, as well as livestock species or class, are always important to consider in rangeland management decisions. Depending on these factors, as well as infrastructure conditions and postfire vegetation response, there are several grazing management options to consider.

- **Graze with normal stocking rate during the usual grazing season.** This approach is appropriate on resilient range sites where forage production is plentiful and desirable plant species demonstrate good vigor.
- **Defer grazing until after seed ripens.** This approach allows perennial grasses a full growing season to establish, grow, and produce seed—while also providing livestock a viable grazing opportunity.
- **Graze unburned areas but avoid grazing burned areas.** This approach is applicable when a portion of the grazing unit requires rest because it exhibits

range health concerns such as those identified above, but substantial areas are unburned. Be aware that livestock may be attracted to new growth in areas where burn severity is low to moderate. Consider using herding, water and supplement distribution, or temporary fencing to achieve management goals.

- **Fully rest from grazing for one or more seasons.** This approach is necessary when postfire seeding is conducted, when important fences or water developments are unrepaired, or reestablishment of desirable rangeland vegetation is delayed. Slow vegetative response might arise due to high-severity fire, severe drought conditions, or relatively poor range health before the fire.
- **Control invasive and undesirable plants.** Strategically time grazing to coincide with the target species' most palatable growth stages or times when perennial grasses are dormant. Chemical or mechanical treatment may also be necessary.
- **Avoid heavy grazing of perennial grasses that are reestablishing.** Fire removes vegetative competition and releases soil nutrients, promoting regrowth of grasses that may be substantially more palatable than before the fire. These changes may alter the grazing patterns from previous years. Observe postfire grazing patterns and prepare to manage livestock distribution to avoid concentrated grazing of desirable perennials.

Questions?

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Telephone 1-800-994-8849
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Publication 8730
ISBN-13: 978-1-62711-226-0

An electronic copy of this publication can be found at the UC ANR catalog website, http://anrcatalog.ucanr.edu/.

This publication has been anonymously peer reviewed for technical accuracy by University of California scientists and other qualified professionals. This review process was managed by UC ANR Associate Editor for Natural, Marine, and Freshwater Resources William Stewart.

web-10/23-LC/DES/BC