



Range Management Advisory Committee

State Lands Grazing License and Land Management Management Action Plan (MAP) Template



California State Board of Forestry and Fire Protection ('Board')
Range Management Advisory Committee (RMAC)
State Grazing License and Land Management Sub-Committee ('RMAC Sub-Committee')

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FOREWARD

Describe relationship of this document to the other documents in the State Lands Grazing Packet.

A list of acronyms and definitions is provided in the associated Guidebook.



INTRODUCTION

California's grasslands in its Mediterranean climate zone are presently dominated by annual grasses and forbs. These plants were first introduced to California shores as seed from ship-borne livestock feed harvested and transported from the European Mediterranean region during Spanish exploration and colonization beginning in the mid-1500s and peaking in the mid through late 1700s. Mediterranean grasslands of Europe had evolved plant communities characterized by a diversity of both annual and perennial grasses, together with annual and perennial herbs, and various woody species. The introduction of these annual grasses into California's Mediterranean climate zone resulted in their dominance of most of California's Mediterranean-type grasslands. In high-altitude meadows, the Transverse Ranges, Mojave Desert, and east of the Mediterranean climate zone, many of the introduced Mediterranean species occur in the grasslands with the original native grassland and shrubland species. Paradoxically, California's Mediterranean grasslands are recognized as a global "hotspot" of biodiversity, with high numbers of endangered and threatened native species (Bartolome et al. 2014). Many of these native species benefit from grazing by livestock that reduces the mass and height of the introduced annual grasses. Without ongoing management, these grasslands can build up high volumes of annual grass residues, which together with woody fuels, increase ignition risks and the intensity and spread of wildfires (Ratcliff et al. 2022). These herbaceous fuels can often be effectively reduced by livestock grazing, and so also can some canopy components of shrublands be thinned and collapsed to reduce combustion rates and flame lengths.

Livestock grazing can be a practical and economical management tool for habitat conservation and fire fuel reduction in California grasslands. It is challenging for managers to balance grazing operations with the integration of conservation goals associated with many State lands. These objectives combine the conventional range management goals of preserving ecological functions, ecosystem stability, resilience, and productivity with the conservation objectives of minimizing soil erosion, invasive pest plant infestations and spread, and water pollution, and improving and sustaining conventional grazing operations to accomplish the combined objectives in specific locations and circumstances. Succeeding at this throughout California's diverse and dynamic grasslands, driven ecologically by variable and unpredictable weather, and by the demands for economically sustainable grazing operations, will require adaptable management guided by the best available science.

The Management Action Plan Team of the Board of Forestry's Range Management Advisory Committee (RMAC) and State Lands Grazing License and Land Management sub-committee (SLGLLM) recommends the template below for the development of Management Action Plans (MAP), including sections specifically devoted to the Grazing Management Plan (GMP) for use on state lands. Sections identified with asterisks (*) in the outline are critical to address in any MAP or GMP.

One example is the use of prescribed grazing, which this document focuses on, but can include many other activities based on the type of land and its uses. Land use or environmental objectives can range from simple "general vegetation reduction" for portions of the property to more selective reduction of specific plant canopies for wildlife habitat, minimizing fuels, maintaining access to trails, or other purposes. In the case of grazing, a state agency may need to establish an agreement with a livestock manager/grazing service provider for the work. The grazing agreement would be based on a MAP drafted to cover the grazing practice being contracted.

We recognize that some public agencies, conservation organizations, and private landowners might not have sufficient time or funding to develop a plan as described here prior to utilizing grazing, where an immediate need exists. We recommend those in that position seek assistance in developing a simplified initial plan. For state agencies or conservation organizations, such plans might be developed by modifying existing plans already created for other similar properties managed by the agency, organization or from plans created by other state or federal land management agencies or allied organizations. Sections identified with asterisks (*) in the outline are critical to address in any simplified plan. Examples of management plans that follow the suggested structure and content will be posted by RMAC and updated periodically for reference. These examples will eventually represent a fuller range of complexity and specificity in terms of land management objectives and operational constraints.

Private landowners can also receive planning assistance from staff at their local USDA Natural Resource Conservation Service office ([See under "Find your Local Service Center" on https://www.nrcs.usda.gov/conservation-basics/conservation-by-state/california](#)) or their local University of California Cooperative Extension/UCANR office (<https://ucanr.edu/About/Locations/>).

As noted above, the MAP for grazing management will be separate from the RMP, which should include a broader explanation of how management of the subject land is governed by any purposefully or legally mandated processes, objectives, or constraints such as easements, Habitat Conservation Plans, resource management plans, or timber/forest management plans. The MAP for grazing management is meant to complement the RMP as a means of accomplishing the RMP's grazing related goals and objectives. Like any other management action undertaken with the purpose of producing specific outcomes, a practical evaluation of whether the grazing treatment(s) have produced these outcomes to the level intended must be a part of the MAP. The MAP need not reiterate all the work in the RMP, but should build on it.

Existing RMPs for a specific property may have information already developed that assesses relevant resource vulnerabilities to and benefits from grazing. In such cases, the current MAP for grazing management need only reference the RMP. An RMP will not normally provide for assessments of the implementation of specific land treatments, where a variety of different alternatives are possible, unless it is part of a RMP or other document used to comply with CEQA. It *should* provide for how the resources affected by those treatments will be monitored, though, and that information will be carried over into the monitoring component of the MAP for grazing management. Good documentation of how grazing and other land treatments were implemented, and other site-specific environmental factors at the time are crucial to interpreting the results of the efforts. The current planning effort presented at the link below should cover all items in the template. The Multi-Agency Cooperative Forest Management Plan developed by CAL FIRE (<https://ucanr.edu/sites/forestry/files/318079.docx>) is one example of an RMP. Other divisions within the CNRA likely have their own:

Livestock grazing has many interacting effects on resources of rangeland and associated pastureland that should be included in a plan that is intended to conserve ecosystems, not just targeted species or agricultural opportunities. The plan should include both real and effective conservation, but also be feasible and sustainable for grazing operators and their broader community that supports each grazing contractor (lessee/licensee). Plans for all significant management actions, including grazing, must include measurable objectives and performance standards, and include monitoring of implementation and effects (results/outcomes). Grazing management plans should include monitoring and adaptation plans, with methods and processes for making adjustments to the plan of operation well described.

The management goals and objectives derived from the RMP or developed separately from an RMP process and clearly stated in the MAP for grazing management should drive the actual grazing management. Grazing management strategies should be chosen to best achieve the identified natural resource objectives. Grazing management strategies should detail specifically the desired outcomes of the grazing. Conventionally, specifics of the grazing operation are included:

- ~~WHEN and WHERE~~ the grazing will occur;
- ~~WHAT STANDARDS~~ for forage utilization will apply (e.g., Residual Dry Matter standards in annual dominated grasslands, percent utilization in perennial systems);
- ~~WHAT KINDS OF ANIMALS~~ will be used (e.g., species, approximate weight, stage of production);
- ~~HOW LONG~~ the animals will remain in the property;
- ~~RETURN INTERVALS~~ (i.e., whether the grazing treatment is to be repeated within a season);
- ~~HOW FREQUENTLY~~ the animals are expected to return (e.g., how long in the property, how long removed before the return); and,
- Indication of likely conditions which would cause grazing to be suspended (e.g., saturated soils, public use, drought, etc.).

In general, it can be advantageous to allow the grazing operator to decide how to graze the land to best achieve the stated goals and objectives, so long as the pre-defined performance standards are met, and subject to the terms of the MAP for grazing management and the grazing lease/license. This gives more opportunity for collaboration, and more frequently results in the desired resource conditions. It also makes the job of monitoring more focused on results of grazing management rather than the grazing operations, and thus more likely to be conducted and useful.

Alternative text to above paragraph (beginning with “In general... and ending with... conducted and useful”): It can be advantageous to allow the grazing operator to decide how to graze the land to best achieve the stated goals and objectives, as long as the pre-defined performance standards are met, and subject to the terms of the MAP for grazing management and the grazing lease/license. This allows for more collaboration, which results more frequently in the desired resource conditions. It also focuses monitoring on the results of grazing management rather than the grazing operations, which can lead to monitoring data to be complete and useful for rangeland and grazing resources.

Preparation of MAPs for grazing management should be overseen or prepared by a professional with expertise in both rangeland management and livestock management. Individuals holding California Certified Range Manager (CRM) licenses can provide this expertise. Policy Number 12 of the Board of Forestry and Fire Protection (BOF) specifically requires a CRM for “rangeland management plans” as well as assessments and inventories on covered lands. In general, professional activities for most non-federal rangelands in California are covered. Those activities performed personally on the subject property by the landowner are exempt. A useful assessment of these legal requirements was provided by the California Attorney General (Bagley 2008). It stipulates that a CRM must be in charge of any such professional practice or the work of others who are not licensed; and that all professional work or documents must be produced by or under the supervision of the CRM on covered lands.

Uncertainties remain about the precise definition and application of the term “forested landscapes” as related to covered rangelands. Nonetheless, it is becoming an increasingly common practice to require

CRM licenses for both employees and grant recipients (e.g., University of California Department of Agriculture and Natural Resources, California Department of Food and Agriculture's Healthy Soils Program [CITE BOTH]). The Program for Certification of Rangeland Managers (approved by BOF 2021) supports a Certification Panel that is currently working to improve to the certification process to produce more CRMs and make more existing CRMs available to meet the increasing demand for their services. Thus, this RMAC Sub-Committee strongly endorses the practice of plan development by a CRM.

MANAGEMENT ACTION PLAN (MAP) TEMPLATE

MANAGEMENT ACTION PLAN (PRESCRIBED GRAZING)

***1.0 Introduction**

***1.1 Relationship of this plan to existing applicable resource management plans, easements, law/codes/regulations, or other regulatory documents**

Cite all available documents; include applicable plans, federal or state code or legal agreements, environmental reviews, and concise presentation of relevant management goals and requirements in these document

***1.2 Purposes and uses of this MAP (including referencing in any grazing lease/license)**

Describe intended benefits and expectations of the effects of grazing and associated activities on the grazed lands; the related grazing license will refer to this Management Action Plan.

***1.3 Preparers, including the supervising licensed California Certified Rangeland Manager, where required**

May be identified on title page; requires review of applicable state code, including but not limited to the following: California Deputy Attorney General Bagley's 2008 analysis (Bagley 2008).

***2.0 Description of Current Site Conditions**

Reference other relevant planning documents to avoid redundancy.

*Note: Impacts of grazing will be discussed in **Section *4.0 Monitoring, Reporting, and Plan Adaptation***

***2.1 General description of property**

Physical location, topography

***2.2 Native/Naturalized Vegetation**

Based on Manual of California Vegetation [MCV] Vegetation Types; map

***2.3 Invasive Pest Plants**

***2.4 Wildlife and Habitats**

- 2.5 Aquatic and Hydrologic Resources
- 2.6 Soils and Topography—Productivity, Erosion, and Compaction
- 2.7 Fire Hazards and Risks
- 2.8 Woody Encroachment

***1.0 Impacts of Grazing on Resources of Concern**

***1.1 Grazing Context**

Describe type of grasslands/forage, grazable areas, grazing hazards, infrastructure, neighbors, access, and current grazing program or activities.

***1.2 Summary of Special Considerations for Grazing Management**

Describe special species, natural communities, habitats, soils, fire fuels, and other sensitive resources affected by grazing.

***1.3 Summary of Expected Grazing Effects on Special Resources and Desired Management Outcomes**

Describe the specific goals, strategies, and outcomes expected with grazing program.

***1.4 Potential Conflicts with Wildlife, Recreation, or Neighbors**

Describe any problems that might exist when implementing a grazing program under current management and conditions and plans to alleviate those problems.

1.5 Expected Effects of Climate Change

Describe any management strategies that could be used to adapt to annual changes environmental conditions.

1.6 Priorities for ongoing Maintenance

Describe ongoing strategies that will be used and timing of these activities to maintain the vegetation at desired levels

***2.0 Grazing Management Goals, Objectives, and Performance Standards**

***2.1 Identify Goals, Objectives, and Performance Standards to Meet RMP Objectives**

Objectives and Performance Standards need to be practical and measurable.

***3.0 Grazing Program**

***3.1 Glossary of Terms**

Define any industry-specific or site-specific terms that may need clarification

***3.2 General Prescription**

***3.2.1** *Location(s) of treatment*

3.2.2 *Period(s) of treatment*

3.2.3 *Types, approximate weights, and numbers of animals to be used*

3.2.4 *Anticipated length of grazing periods*

3.2.5 *Frequency of grazing revisits to previously grazed units (if any)*

***3.3 Grazing Capacity and Recommended Initial Stocking Rates**

Based on available forage, management goals and objectives, and consistent with terms of the grazing license

***3.X Forage Utilization Standards**

- Describe outcome-based standards that will be applied to grazing management and monitoring.
- For annual dominated rangelands this is usually managing for Residual Dry Matter (RDM) standards (Bartolome et al 2002 and Clawson et al 1982).
- For perennial dominated rangelands, meadows, and great basin range types – a percent utilization standard on desirable forage species is usually adopted.

***3.4 Special Management Areas (clusters of special resources affected by grazing), Targeted and Deferred Grazing**

Describe any areas that will be targeted or avoided due to various resource needs.

***3.5 Conflict Mitigation Strategies**

Describe potential conflict mitigations, including requirements to minimize the conflicts in specified situations (e.g., protected wildlife require feed, which contributes to feed losses for the grazing licensee) and offer of fee-credits or payments by the landowner for in-lieu work performed by the grazing licensee to fix or to compensate for damages or trade-offs.

3.6 Fire Hazards and Risks Mitigation Strategies

Describe any potential fire risks and any strategies that will be used to minimize these risks

***3.7 Supplemental Feeding, Feeding Areas**

Describe whether or not supplemental feeding may occur on site, what type of supplemental feeding, as well as location and timing.

***3.8 Animal Distribution Improvements**

Describe any infrastructure or management strategies to be used to aid in livestock distribution.

***3.9 Restrictions**

Dogs, horses, building of structures, supplementary enterprises, use for non-grazing purposes, private recreation or hunting access

***3.10 Communications**

- Mutual expectations for communications between the landowner and licensee for general planning as well as emergency response
- Within how many hours does the landowner expect the grazing licensee or representative to arrive at the property to respond to emergency calls
- Annual planning meetings and reports

***3.11 Livestock Lease/License Options and Recommendations**

Describe any pertinent lease details as they relate to timing and management of grazing.

***3.12 Grazing Fee Credit Options and Other Incentives for Stewardship Cooperation**

Describe payment options such as land improvements or specific management that could apply to grazing payments or discounted rates.

***3.13 Infrastructure**

Applicable state code regarding livestock fencing, and concise presentation of required compliance by licensee with California Department of Food and Agriculture Code, Division 9, Part 1, Chapter 6, Sections 17121-4 and Chapter 8 for electrified fences

***3.13.a Existing Grazing-related Infrastructure**

Describe all infrastructure such as corrals, fencing, water troughs, pumps, etc.

***3.13.b “Wildlife-friendly” fencing**

“Wildlife-friendly fencing” should be used or required only at segments where specified wildlife may be directly harmed by regular fence; fence segments where no such conflict is expected should use regular fence; however, all fence should meet or exceed the CDFA “good and substantial fence” code

***3.13.c Required Improvements**

Describe any infrastructure improvements that will need to be made before grazing can be implemented or during the course of the grazing agreement.

***3.13.d Maintenance and Unexpected Repairs**

Describe which party is responsible for maintenance and repairs of infrastructure on the property.

***3.13.e Estimated Costs and Responsibilities**

Costs of permanently installed infrastructure (with useful life expected to exceed the term of the grazing license) related to the desired grazing operation are typically covered by the landowner; costs of maintenance of that infrastructure are typically covered by the grazing licensee.

3.14 Extreme Weather (drought, flood, debris flows, infrastructure damage) Preparations, Special Monitoring, and Response Plan

Describe management strategies to be used during extreme weather such as when animals will be removed and when they can return to the property.

***4.0 Monitoring, Reporting, and Plan Adaptation**



***4.1 Monitoring and Reporting**

Describe required methods and variables

***4.2 Plan and Practice Adaptation**

- Describe required changes to existing grazing plans at time of license that must be negotiated (including responsibilities for any costs) with all parties before requiring those changes; clarify timing and expectations for modifications to grazing strategy that may be required during extreme weather and other emergencies
- Clarify how periodic monitoring will be conducted (by landowner and licensee), and how licensee will be expected to respond to updates to the linked GMP; who will any resulting added costs to licensee be covered
- Clarify timing and expectations for modifications to grazing strategy will be required during extreme weather and emergencies

***4.3 Roles and Responsibilities of Grazing Program Managers and Grazing Lessees/Licensees**

***5.0 Summary of Requirements and Recommendations**

***5.1 Concise summary of key management requirements described in the plan**

***5.2 Supplementary assessments and planning (such as the plan elements above without asterisks)**

***6.0 References** Bagley, Shana A., Deputy Attorney General, 2008. Memorandum, Certified Rangeland Management Licensing Issues.

<http://www.elkhornsloughctp.org/uploads/files/1223682249DAG%20Opinion%20on%20CRM.pdf>

Bartolome, J., W. Frost, and N. McDougald, 2002. Guidelines for Residual Dry Matter on Coastal and Foothill Rangelands in California. Rangeland Monitoring Series. University of California Division of Agriculture and Natural Resources. ANR Publication 8092.



Clawson, J.W., N.K. McDougald, and D.A. Duncan, 1982. Guidelines for Residue Management on Annual Range. Cooperative Extension Division of Agricultural Sciences University of California. Leaflet 21327.

