

DRAFT USFS REGION 5 BMPs based on draft national core BMPs

Rangeland Management Activities

The purpose of this set of BMPs is to protect water quality and- aquatic and riparian resources that may be affected by rangeland management activities. Rangeland management involves range analysis of multiple resources, allotment management planning and improvement, and the grazing permit system. Administration of the program includes controlling overall livestock numbers and season of use, controlling livestock distribution, implementation and maintenance of structural and non-structural improvements and improvement of deteriorated rangeland soil and water resources.

Livestock grazing is recognized as an appropriate and compatible use of NFS lands when properly managed. A primary purpose of the rangeland management program is to provide forage for commercial livestock operations. Grazing can also be a means of managing vegetation to meet other resource management objectives, such as fuels management and reduction of competing vegetation in plantations.

Historically, grazing use was often uncontrolled and much heavier than it is currently. In many allotments, grazing use has been adjusted to a level more compatible with resource capability through the application of improved grazing systems, improved forage management technology, elimination of grazing in unsuitable land types, and adjustment of animal numbers. Rangeland use includes grazing by cattle, sheep and goats, horses and saddle stock used to manage the range. On some National Forests there is also grazing use by transportation or recreational stock. The Forest Service administers both term and temporary livestock grazing permits that define criteria for privately owned stock to graze within defined areas (allotments) on NFS lands.

Trained and qualified watershed and other specialists are available to work with range management specialists in planning and administration. Tasks include identification of beneficial water uses, development and application of state-of-the-art water quality control methods and techniques, and assistance in evaluating management and monitoring results.

The Forest Supervisor or delegated District Ranger approves the Allotment Management Plans (AMPs). AMPs, including numbers permitted and seasons of use, are revised at any time during the term of the permit. Reasons for revisions include resource conditions, or the need to conform to changes brought about by law, regulation, Executive Order or land management planning.

The line officer on each administrative subunit is responsible for implementing the Forest Service administrative directives that require water quality protection and improvement during livestock grazing activities. The directives referenced in this Section provide details on methods to incorporate water quality controls into each phase of the range management program.

The full implementation of BMPs in livestock grazing activities may require application of other BMPs as well as those listed in this section. For example, if burning is a means of range improvement, appropriate BMPs for Wildland Fire Management will be implemented. Similarly

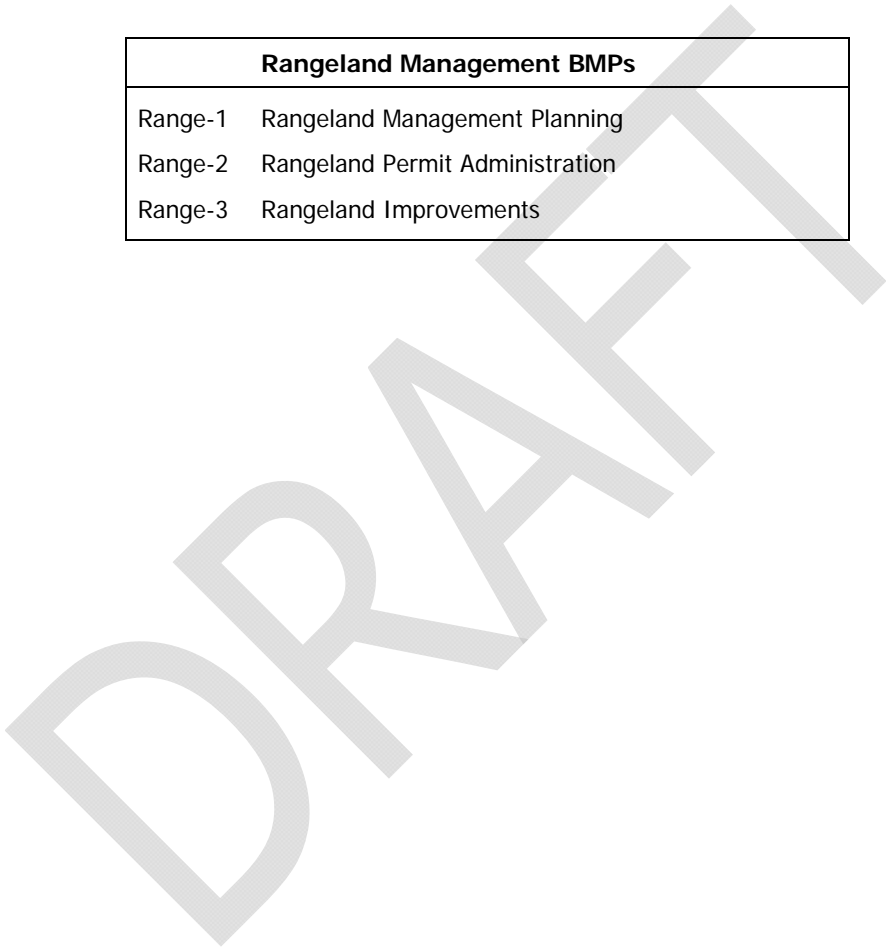
1 if system roads are involved, appropriate BMPs for Road Management will be implemented.
2 Often improvements to stream channels and riparian areas are implemented as watershed
3 improvement projects (Aquatic Ecosystem Activities) and are not the responsibility of the
4 permittee as outlined in BMP Range-3.

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6 The BMPs that follow are to be applied as needed for the control of non-point source pollution
7 associated with livestock grazing activities on NFS land. Each BMP is based on administrative
8 directives that guide and direct the Forest Service planning and permitting of livestock grazing
9 activities on NFS land.

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Rangeland Management BMPs	
Range-1	Rangeland Management Planning
Range-2	Rangeland Permit Administration
Range-3	Rangeland Improvements

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1 Range-1. Rangeland Management Planning

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3 [Reference: FSM 2200 and FSH 2209.13 Chapter 90](#)

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5 Objective: Use the Allotment Management Plan (AMP) planning process to develop measures
6 to avoid, minimize, mitigate and/or restore adverse impacts to water; aquatic and riparian
7 resources during rangeland management activities.

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9 Explanation: Analysis of existing rangeland conditions and other resource values is conducted
10 for each allotment in the development of an AMP. The AMP is the primary document that
11 guides implementation of forest plan direction for rangeland resources at the allotment
12 (project) level. It is included as part of the grazing permit and provides special management
13 provisions, instructions, and terms and conditions for that permit. The risk from livestock
14 grazing can be managed in the planning process by using the appropriate techniques from the
15 following list adapted as needed to local site conditions.

16 Techniques:

- 17 • Apply techniques of BMP Plan-1 (Project Planning and Analysis) as applicable.
- 18 • Determine potential grazing suitability.
- 19 • [Determine rangeland condition as part of rangeland analysis and planning process.](#)
- 20 • [Assess the current functionality in relation to water quality of rangeland and riparian](#)
21 [areas using Proper Functioning Condition protocols .](#)
- 22 • [Identify sites at risk of degradation using PFC protocols.](#)
- 23 • [Assess long-term trends of rangeland sites within riparian allotments using accepted](#)
24 [protocols i.e. the rooted frequency protocol.](#)
- 25 ~~• Assess the current condition of the rangeland.~~
- 26 • Establish desired conditions for rangelands that consider linkages to riparian and
27 aquatic systems.
- 28 • Establish desired conditions for riparian and aquatic systems that reflect their
29 ecological potential.
- 30 • Review past management within the allotment.
- 31 • Identify potential management strategies.
- 32 • Identify improvement needs.
- 33 • Include management objectives for livestock grazing and all resources affected by
34 livestock grazing in AMP, Grazing Permit and Annual Operating Instructions (AOI).
35
 - 36 ○ The objectives are derived from management direction in the Forest Plan,
37 Biological Opinions or other binding direction.
- 38 • Establish management requirements such as the season of use, number, kind, class of
39 livestock and the grazing system to be used in the AMP.
 - 40 ○ Management requirements should maintain or move resources in the allotment
41 toward desired conditions.
- 42 • [Establish annual endpoint indicators of use related to the desired conditions and](#)
43 [triggers \(thresholds\) for management actions, including modification of livestock](#)

1 [intensity, frequency, duration and timing of livestock use i.e. better distribution of](#)
2 [stock, change in animal months and/or season of use , and livestock exclusion.](#)

3 ~~• Establish annual indicators of use related to the desired conditions.~~

4 • Set the indicator thresholds at levels that protect or improve condition of riparian areas
5 and aquatic ecosystems.

6 • Include schedules in the AMP for:

7 ○ rehabilitation of rangelands that do not meet Forest Plan objectives;

8 ○ initiation of range improvements; and

9 ○ maintenance of existing improvements (see BMP Range-3).

10 • Include monitoring requirements in the AMP to evaluate:

11 ○ compliance with [triggers and](#) annual [endpoint](#) indicators of use (e.g. utilization,
12 stubble height, stream alteration) and other Forest Plan standards as appropriate;
13 and

14 ○ ~~ecological status and change, including water quality, aquatic habitats and~~
15 ~~beneficial uses. Indicators of management effectiveness, such as including green line~~
16 ~~vegetation stability, bank stability, greenline to greenline width, and shrub height.~~

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Range-2. Rangeland Permit Administration

Reference: [FSH 2209.13](#)

Objective: Manage rangeland vegetation and grazing to protect water; aquatic and riparian resources through administration and monitoring of Grazing Permits and Annual Operating Instructions (AOI).

Explanation: Improper grazing can adversely affect watershed condition in several ways. Loss of effective ground cover in the uplands leads to increases in overland flow and peak runoff. Soil compaction, loss of ground cover and plant vigor in riparian areas decreases the ability of the riparian area to filter pollutants and function as a floodplain. Streambank trampling increases stream channel width/depth ratio resulting in a change in stream type and a lowering of the water table. Wider and shallower streams have higher stream temperatures and lower dissolved oxygen content. Introduction of sediment, nutrients and pathogens from grazing can lower water quality. The potential for these impacts can be limited by managing livestock numbers, distribution, timing and season of use.

A temporary or term grazing permit is used to authorize livestock grazing on NFS lands. The permit delineates the area to be grazed, defines the number, kind and class of livestock to be grazed, and the season of use. The permit includes both general and special terms and conditions. Required management practices are included under the special terms and conditions. These practices contain standards designed to protect water quality and other resource values. Standards included in the permit may be derived from the Forest Plan, applicable Biological Opinions, or site specific measures developed during range analysis. The permit also includes the location and type of monitoring to be conducted to assess compliance with standards, and determine trend in range condition.

When an AMP is in place, Annual Operating Instructions (AOI) are issued to the grazing permittee. The AOI specify those annual actions needed to implement the management direction set forth in the project-level NEPA-based decision. Actions in the AOI must be within the scope of the project-level decision, and as such are not required to undergo any additional site-specific environmental analysis. The AOI identify the obligations of the permittee and the Forest Service, and clearly articulate annual grazing management requirements, standards, and monitoring necessary to document compliance.

The Forest Supervisor or District Ranger will approve grazing permits and annual operating instructions; the permittee carries out the terms and conditions of the permit under the immediate direction and supervision of the District Ranger.

The risk from livestock grazing can be managed by using the appropriate techniques from the following list adapted as needed to local site conditions.

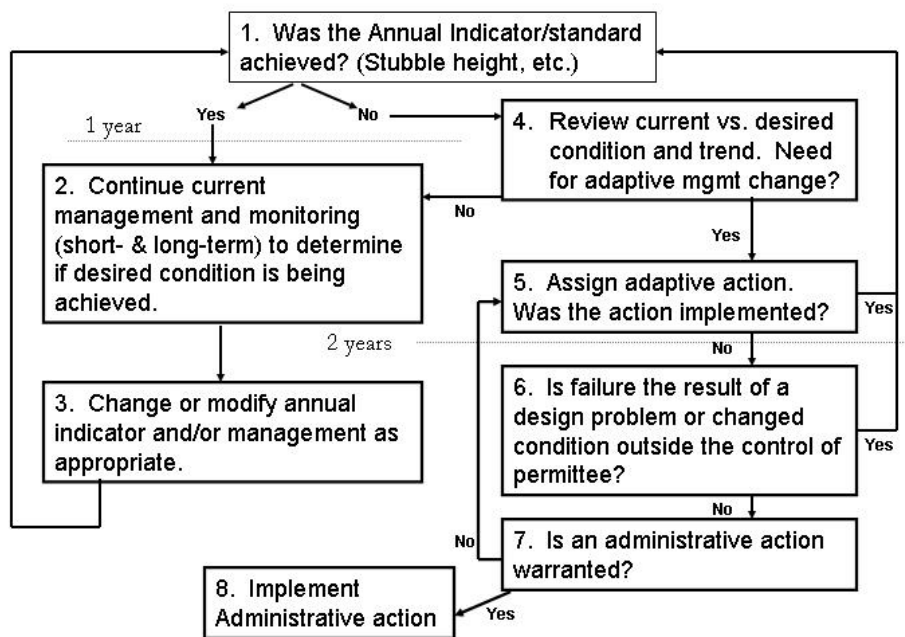
Techniques:

Monitoring

- Make field checks and measurements at least annually (by Forest Service or permittee with quality control provided by the Forest Service).

- Emphasize monitoring that determines permittee compliance with permit provisions.
- Include indicators of annual use that relate to water quality, riparian and aquatic ecosystem protection in compliance monitoring; such as forage utilization, streambank alteration or utilization of woody riparian vegetation.
- Use monitoring results as an adaptive management feedback loop to revise the AOI to account for current allotment conditions and trends.
 - Figure 2 illustrates the adaptive management process employed in the management of range allotments.
- Monitor [indicators of management effectiveness and trends that affect water quality](#) ~~water quality, as well as~~ habitat or other beneficial uses as necessary (e.g. 303 listed streams, terms of Biological Opinions).

Figure 2. Adaptive Management Process for management of range allotments.



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Livestock Number and Distribution

- Use results of annual compliance monitoring and periodic trend monitoring, as well as forage utilization by wildlife, to determine allowable annual amount of livestock use in order to meet rangeland desired conditions.
- Document allowable use, the planned sequence of grazing on the allotment, and any other operational changes in the AOI issued to the permittee each year.

- 1 • Alter livestock distribution when monitoring and periodic assessments indicate consistent
2 non-compliance with permit provisions.
- 3 • Manage livestock use through control of time/timing, intensity, and duration/frequency
4 of use in riparian areas and wetlands to
 - 5 ○ maintain or improve long-term [functional](#) stream condition.
 - 6 ○ allow for riparian hardwood growth extension [and/or other stabilizers \(herbaceous](#)
7 [plants\)](#) and reproduction where the riparian plant community is below its desired
8 condition and livestock are a key contributing factor.
- 9 • ~~Manage Exclude~~ livestock [to prevent further degradation of from](#) riparian areas and
10 wetlands [that which](#) are not meeting or moving towards desired condition objectives.
- 11 • [Exclude livestock if where](#) monitoring information shows continued livestock grazing
12 would prevent attainment of those objectives.
- 13 • [Locate Keep](#) stock tanks, salt supplements, and similar features [to distribute cattle](#)
14 [evenly over the allotment and prevent concentrations of cattle in out of](#) SMZs and
15 wetlands.
- 16 • Keep stock driveways out of riparian areas except to cross at designated points.
- 17 • ~~EConsider degre~~establish triggers for ~~of~~ livestock trampling and riparian vegetation
18 utilization on or immediately adjacent to stream banks [for when](#) timing livestock moves
19 between units.
- 20 • Manage livestock herds to avoid concentrating in riparian areas and wetlands during the
21 hot season (mid-to-late summer).

22 *Season of Use*

- 23 • Adjust livestock numbers and/or season of use when monitoring and periodic
24 assessments show consistent non-compliance with permit provisions.
- 25 • [Manage to avoid](#)~~Do not allow~~ livestock grazing through an entire growing season in
26 pastures that contain riparian areas and wetlands.
 - 27 ○ Apply short-duration grazing as practicable (generally less than 20 days) to minimize
28 re-grazing of individual plants, to provide greater opportunity for regrowth and to
29 manage utilization of woody species and reduce soil compaction.

30 *Permit Administration*

- 31 • Use permit authorities to change operations to protect water; aquatic and riparian
32 resources when special circumstances (e.g. drought) occur.
- 33 • Take corrective actions if monitoring and periodic assessments show consistent non-
34 compliance with permit provisions. Actions might include:
 - 35 ○ Adjusting livestock numbers and/or season of use
 - 36 ○ Altering livestock distribution
 - 37 ○ Installing fences and water developments, etc.
 - 38 ○ Rest, placing the allotment [\(or unit of concern\)](#) in non-use status for a period of time
39 that allows for natural recovery of resource condition [where potential exists](#).

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- Apply suspension and cancellation guidelines in cases of intentional noncompliance with the terms and conditions of the permit.
 - Modify, cancel or suspend the permit in whole or in part as needed where it has been determined to be necessary to ensure proper use of the rangeland resource and protection of other resources, such as water quality.

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Range-3. Rangeland Improvements

[Reference: FSM 2240](#)

Objective: Implement range improvements to protect, maintain or improve water; aquatic and riparian resources and associated beneficial uses.

Explanation: Rangeland improvements targeted at water; aquatic and riparian resources are designed to protect or improve conditions of sensitive areas such as streams, riparian areas, and wetlands [or upland areas in danger of crossing a threshold to a less desirable condition](#) and move these resources toward desired conditions. Improvements should emphasize protecting the beneficial uses in these areas. Improvements may supplement administrative actions such as rest or changes in annual use levels, seasonal use, distribution and number.

Development and maintenance of rangeland improvements can be the responsibility of either the permittee or the Forest Service. The District Ranger will assure that the permittee is involved as a cooperator in rangeland improvements. And, as appropriate, the permittee may participate in the construction and or maintenance of improvements under Forest Service direction. Implementation may also be done by Forest Service crews, or contractors.

Use the appropriate techniques from the following list adapted as needed to local site conditions to implement rangeland improvements.

Techniques:

- Identify range improvement needs during watershed analysis, watershed condition assessment, AMPs or other assessment efforts.
- Evaluate improvement needs in the AMP.
- Include and schedule improvement actions as appropriate in the AMP and grazing permit.
- Design improvements to sustain forage production for livestock and provide protection to the other resources.
- Consider the following when evaluating need for improvements:
 - Fencing
 - Soil and stream rehabilitation
 - Off-site water development
 - Seeding and planting

Rangeland Management References

- Compendium of Best Management Practices to Control Polluted Runoff: A Source Book. J. Meitl and T. Maguire, eds. Idaho Department of Environmental Quality. March 2003. (http://www.deq.state.id.us/water/data_reports/surface_water/nps/reports.cfm#bmps)
- BMPs for Grazing. Montana Department of Natural Resources and Conservation. 1999.
- Best Management Practices for Grazing. Wyoming Department of Environmental Quality. 1997. (<http://deq.state.wy.us/wqd/watershed/Downloads/NPS%20Program/92602.pdf>)
- NRCS National Conservation Practice Standards (<http://www.nrcs.usda.gov/technical/standards/nhcp.html>) -- 383 Fence
- [University of Idaho, 2004, Stubble height study report: University of Idaho Forest, Wildlife, and Range Experiment Station Contribution No. 986, 33 pp.](#)
- [TR1737-15 Riparian Area Management – Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas. USDAI –BLM; USDA FS; USDA NRCS. 1998.](#)
- [TR1737-16 Riparian Area Management – Guide to Assessing Proper Functioning Condition and the Supporting Science for Lentic Areas. USDAI –BLM; USDA FS; USDA NRCS. 1999.](#)
- [FSM 2240](#)
- [FSH 2200](#)
- [FSH 2209.13](#)
- [Monitoring Streambanks and Riparian Vegetation – Multiple Indicators. Technical Bulletin No 2008-5. Timothy A. Burton, Steven J. Smith, and Ervin R. Cowley.](#)

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