



College of Agricultural, Consumer and Environmental Sciences

Cooperative Extension Service and Agricultural Experiment Station
Range Improvement Task Force
MSC 3AE
New Mexico State University
P.O. Box 30003
Las Cruces, NM 88003-8003
575-646-5102, fax: 575-646-3488
ritf@nmsu.edu

U.S. Forest Service, Director
Forest Management
Range Management and Vegetation Ecology
201 14th Street SW, Suite 3SE
Washington, DC 20250-1124

April 16, 2021

Dear Director,

Thank you for the opportunity to provide recommendations for consideration regarding the December 2020 Proposed Rangeland Management Directives Update of the U.S. Forest Service contained in the Forest Service Manual (FSM) 2200, Forest Service Handbook (FSH) 2209.13, and FSH 2209.16. The Range Improvement Task Force (RITF) at New Mexico State University (NMSU) has a 42-year history of working with livestock producers and federal land management agencies using science to inform natural resources management decisions. Extensive experience working at the intersection of science and policy as it relates to livestock grazing and natural resources management on federal lands makes us well suited to provide realistic and science-based recommendations for consideration. Excerpts are indented and drawn from identified sections of the U.S. Forest Service documents provided unless specifically identified otherwise. Text recommended for deletion are ~~struck through~~ and text additions are underlined.

General Comment:

Changes to the documents were not easily identifiable even with the master digest and major changes summary table. We recommend that future changes should be clearly and obviously highlighted in the actual document and not summarized to in a table or separate document. Because of the difficulty in determining what was changed, we viewed the entirety of each of the documents reviewed as open for comment.

§ FSM 2200 – RANGELAND MANAGEMENT MANUAL

Chapter Zero Code

Apparent Trend. An interpretation of trend based on observation and professional judgment at a single point in time. An assessment, using professional judgment, based on a one-time observation. It includes consideration of such factors as plant

vigor, abundance of seedlings and young plants, accumulation or lack of plant residues on the soil surface, and soil surface characteristics (i.e. crusting, gravel pavement, pedestalled plants, and sheet or rill erosion) (see Interagency Technical Reference 1734-4).

The Interagency Technical Reference (1734-4) defines trend as, “Trend refers to the direction of change. Vegetation data are collected at different points in time on the same site and the results are then compared to detect a change.” It is not possible to defensibly determine a trend in natural resources through a one-time subjective assessment and professional judgement. These types of assessments often lead to conflicts and increases the probability of an indefensible decisions based on preference. Attributes including plant vigor, seedling abundance, litter accumulation and soil characteristics are realized within a natural range of variability, within ecosystems and among plant species. Moreover, a one-time assessment does not promote understanding variables that influence the observed traits, which are often critical to informing a management decision. We recommend Apparent Trend be redefined as:

~~Apparent Trend~~ Subjective Assessment. An interpretation of ~~trend based on~~ observations and professional judgment at a single point in time. An assessment, using professional judgment, based on a one-time observation. It includes consideration of such factors as plant vigor, abundance of seedlings and young plants, accumulation or lack of plant residues on the soil surface, and soil surface characteristics (i.e. crusting, gravel pavement, pedestalled plants, and sheet or rill erosion). The primary use for these assessments are to identify areas that require further monitoring using defensible quantitative and qualitative methods. (See Interagency Technical Reference 1734-4).

Frequency (of use as a management tool). The number of times forage plants are defoliated during the grazing period. (see Reed, Floyd, Roy Roath, and Dave Bradford. 1999. The Grazing Response Index: A Simple and Effective Method to Evaluate Grazing Impacts. Rangelands 21(4): 3-6.)

The application of frequency as a management tool is more complicated than as described by Reed et al. (1999). Reed et al. (1999) provides a preliminary assessment of grazing intensity, but does not account for the proportion of the rangeland unit that is represented by the Grazing Response Index (GRI) estimate. Also, the GRI must be interpreted differently, dependent upon the dominance of either cool- or warm-season grasses, as the opportunity for regrowth of plants is based on spring and early summer growth data. Holechek et al. (2011) suggests that exceeding grazing guidelines (stubble heights or residues) on 30 percent of the rangeland unit in a particular year should be allowed. Moreover, they recommend that guidelines be tailored to individual allotments. The shortcoming of the GRI estimate is that it fails to include guidance necessary for appropriate interpretation based on dominant plant species and area represented by the GRI estimate. Sampling intensity is also key to understanding the frequency of individual plant defoliation. Reed et al (1999) assumes all plants will be grazed on a 7 to 10 day grazing reoccurrence, requiring assumptions about stocking rate, plant abundance, pasture size, terrain and other environmental attributes that may not be recognized by assessors. The current definition and references do not provide a clear understanding of Frequency (of use as a

management tool) which promotes confusion. We recommend the elimination of this definition and suggest using multiple measurements of grazing intensity to quantify the frequency of defoliation in the context of grazing management outcomes (See Holechek et al. 2011).

Frequency (as a measurement for trend). The ratio between the number of sample units that contain a species and the total number of sample units.

Bonham (2013) defines frequency as the percentage of a species present in a sampling unit. This could be generalized to: the percentage of an attribute present in a sampling unit. Bonham goes on to say that frequency is influenced by the size and shape of the sampling unit. Furthermore, the index is highly sensitive to abundance and pattern of growth and selection of appropriate plot size and shape requires preliminary study of the vegetation type. The offered definition does not address this important consideration nor intra-plot enumeration of individual plant species. These shortcomings may contribute to confusion among managers when trying to effectively apply this index. We recommend the following revisions:

Frequency (as a measurement for trend). The ratio between the number of sample units that contain a species and the total number of sample units. This indices is sensitive to plot size and shape and preliminary study of vegetation type is necessary to ensure estimates are accurately represented.

Chapter 2210 – Rangeland Management Planning

2210.2 –Objectives

2. Provide for enhanced protection of rangeland ecosystems and restoration of rangeland ecosystems that are not meeting or moving toward desired conditions.

Rangelands represent a suite of ecosystems representing a broad range of natural variation that may or may not benefit from enhanced protection. Some rangeland ecosystems are in states that will not respond to further protections and require substantive disturbance followed by appropriate inputs to achieve a restored state or desired conditions. Some of these areas may not respond reliably to any efforts of enhanced protection or intensive restoration management. Desired conditions may also be subjective, based upon a preconceived target, without the benefit of historical scientific and ecological data to inform its selection. Assessing desired conditions are most reliably achieved using objective, repeatable and quantitative methods and clearly defined inferential space. Furthermore, a review of the appropriateness of the assigned desired condition should occur at regular intervals to ensure stated desired conditions are congruent with known ecological status of specific rangelands. We recommend the following changes to this objective:

2. Provide for ~~enhanced protection~~ scientifically defensible assessment of the ecological status of rangelands to inform a) understanding of movement towards desired conditions, b) review of appropriateness of selected desired condition, and c) subsequent rangeland management and

~~restoration planning of rangeland ecosystems and restoration of rangeland ecosystems that are not meeting or moving toward desired conditions.~~

§ FSH 2209.13 – GRAZING PERMIT ADMINISTRATION HANDBOOK

Chapter 10 – Term Grazing Permits

FSH 2209.13 Grazing Permit Administration Handbook

Chapter 10

13.61 Designation of a Forage Reserve Allotment

1. There must be an appropriate level of environmental analysis and decision, and consultation if required, to allow for authorization of livestock use on the allotment, except in situations such as fire, drought, or other emergency displacement of permittees from normally assigned allotments (36 CFR 222.3(c)(2)(i)(E)). If the current environmental analysis is not sufficient for designation, schedule the allotment and determine the appropriate priority with other allotments being analyzed.

Allotment analyses and decisions should prioritize assessment for grazing management to ensure availability of forage under adaptive grazing management scenarios and exceptional circumstances. This ensures the intent to allocate reserve forage is met when needed and increases management flexibility for Forest Service decisionmakers and livestock producers. To provide continuity with active and vacant allotments, explicit language should be included to acknowledge FRA may again become offered for a 10-year grazing permit following an explicit request of a qualified individual and NEPA analysis. A limit on the number of FRA allowed within a Ranger District should be mandated to promote optimal spatial distribution of reserve forage. Reclassification of active or vacant grazing allotments to a FRA status may represent a financial burden to rural communities by limiting available forage for local residents and should be specifically addressed in the allotment analysis. The Forest Service should strive to activate vacant allotments by showing a track record of seeking permit holders at the District, Forest and Regional level prior to consideration as a FRA. Explicit and rigorous criteria should be developed and met prior to an allotment being eligible to become a forage reserve.

2. The Forest Service may be responsible for maintenance of structural or nonstructural range improvements that had previously been assigned to the allotment permittee. This maintenance will be assigned to any permittee(s) authorized to use the forage reserve allotment.

The Forest Service must be responsible for maintenance of range improvements while a FRA is not being actively grazed to ensure it is capable of serving its function as a forage reserve in a timely manner. The phrase “may be responsible” allows the Forest Service to abdicate their responsibility for maintenance. Moreover, the maintenance responsibility may fall on a permit holder needing to temporarily use a FRA. The Forest Service may be compelled to require a

prospective user of an FRA to bring a neglected FRA into grazing capable status. This may represent an undue burden to livestock producers and limit timely access to a FRA, undermining its intended purpose. Furthermore, this language may obligate the Forest Service to increase neighboring allotments maintenance responsibilities to the detriment of those family businesses.

We recommend the following revisions:

2. The Forest Service ~~may be~~ is responsible for maintenance of structural ~~or~~ and nonstructural range improvements that had previously been assigned to the allotment permittee under the same maintenance standards. This maintenance will be assigned to any permittee(s) authorized to use the forage reserve allotment.

4. A Memorandum of Understanding (MOU) may be established with a third party to operate a forage reserve allotment. The MOU will identify the responsibilities and requirements for the allotment for the third party and the FS including:

- a. Criteria and procedures for allocating grazing use to prospective permittees (FS).
- b. Maintenance of existing improvements (by agreement).
- c. Construction or reconstruction of new improvements (by agreement).
- d. Annual management and grazing use criteria (FS).
- e. Monitoring (by agreement; but with FS quality control and quality assurance).
- f. Administration responsibilities (FS).

Use of a third party MOU for FRA infrastructure maintenance promotes failure for the intended purpose of improving management flexibility, promoting rangeland restoration and responding to exceptional circumstances in a timely manner. We request the Forest Service consider 1) a permitting or contractual approach (*i.e.*, use of a contract bond) when entering into a maintenance agreement with a third party, or 2) hiring or assigning existing Forest Service personnel with the maintenance responsibility.

15.3 - Exhibit 01

NOTE also: The AUM definition for capacity and permitting (1.0, with or without calf at side) is not the same thing as an AUM (1.32) as shown in the RIMS database calculations.

The use of an AUM (1.32) is confusing and not documented in the scientific literature related to cattle. The text should clarify the use of 1.32 AUM in the RIMS database. We could not find reference, in the 177 page file of Chapter 10, as to what RIMS meant. Acronyms should be identified in each separate Adobe file that is presented for public comment. We assumed RIMS refers to Rangeland Information Management System (RIMS) and is used for billing purposes. Between 2007 and 2009, we engaged the Forest Service, Region 3, for use of a 1.32 Animal Unit

conversion for grazing capacity and permitting purposes. The ultimate source was identified as the 1.32 used for billing purposes as associated with Head Months. We engaged Region 3 and the Forest Service offices in Washington D.C. to address the misuse of this conversion. During this period the Forest Service explained that a $HM \times (1.32) = 1 \text{ AUM}$. Once this misuse was recognized, Region 3 issued a directive to stop the use of an AUM of 1.32 from being used for capacity and permitting purposes, as it was not supported by science. We are concerned that its continued reference may promote confusion among managers and recommend the following addition:

NOTE also: The AUM definition for capacity and permitting (1, with or without calf at side) is not the same thing as an AUM (1.32) as shown in the RIMS database calculations. Use of an AUM at 1.32 is prohibited in determining grazing capacity or for permitting purposes and is to only be used for billing purposes.

§ FSH 2209.16 – ALLOTMENT MANAGEMENT HANDBOOK

17 - FORAGE RESERVES AND CURRENTLY AVAILABLE FORAGE RESOURCES

We recommend the following revisions:

17.1 - Forage Reserve Allotments

Forage Reserve allotments (see also FSM 2200, chapter 2205, Definitions) are a designation for a type of allotment on which there is no current term permit obligation for some portion or all of the estimated livestock grazing capacity, and where there has been a project level environmental analysis and decision made to ~~infrequently~~ authorize use for available forage on the allotment to enhance management flexibility for authorized livestock grazing use or to achieve a desired vegetative condition, ~~(e.g. to create a “forage reserve”)~~. These are variously referred to as a “swing pasture or swing allotment,” or other various terms. The Forest Service will refer to these types of allotments as forage reserves.

The suggested revision improves clarity that one of the intents of a FRA is to improve management flexibility among grazing allotments as well as for exceptional circumstances.

17.12 - Designation of a Forage Reserve Allotment

If an allotment becomes vacant, the first decision should be to attempt to restock it or to combine it with an adjacent active allotment. If these decisions are not feasible, then ~~each allotment that becomes~~ a vacant allotment ~~should~~ may be evaluated for its potential for designation as a forage reserve allotment. The number of forage reserve allotments allowed in any one Ranger District should

be limited to a minimum level allowing adequate reserve forage for remaining active allotments.

Suggested revisions limit the number of FRA allowed in each Range District to ensure optimal distribution of FRAs in support of Forest Service management obligations.

To change the ~~designation for~~ status of an allotment to a Forage Reserve, the area already contains a manageable amount and spatial distribution of suitable and capable acres as determined at the LMP level and site-specific environmental analysis. To change a Forage Reserve Allotment to an active grazing allotment a) a request by a qualified entity must be made, b) the area already contains a manageable amount and spatial distribution of suitable and capable acres as determined at the LMP level, c) maintenance by the District of improvements and infrastructure brought to current and operational levels to at least the same standards required of term permit holders, and c) a site-specific environmental analysis is completed.

This suggested revision closes the loop on uncertainty regarding the status of a FRA in relation to active and vacant allotments and provides flexibility to the Forest Service administration of grazing allotments in the future.

For the sake of efficiency, environmental analysis for changing ~~vacant an allotment's status to forage reserve allotments or active allotments~~ (*e.g., vacant, active, forage reserve*) should be included with the environmental analysis for other adjacent and intermingled allotments on a watershed or landscape scale. This allows for a more comprehensive look at management options on all included allotments for fulltime or intermittent livestock grazing options.

Suggested revision provides continuity with previous suggested revisions.

17.14 - Maintenance of Structural Improvements on Forage Reserve Allotments

Forage Reserve allotment ~~designation~~ decisions should be approached with care because the continual maintenance of structural improvements will likely become an issue. In the absence of a contractual third party agreement (~~or a volunteer~~), or a permittee temporarily authorized to make use of the Forage Reserve allotment (and therefore obligated to maintain improvements), the responsibility for maintenance ~~will fall back~~ must be on the Forest Service and must be completed to at least the same standards and timeliness required of the previous term permit holders.

Revision provides continuity with previous suggested revisions and clarifies the Forest Service's responsibility of maintaining improvements at the same level as expected of grazing permit holders.

In the instance of an active allotment that becomes a Forage Reserve allotment, provide for maintenance of rangeland improvements. This may include assignment of maintenance responsibilities to willing permit holders on the adjacent allotments for shared fences; or contractual agreements with third parties; ~~and/or other viable arrangements (such as with volunteers)~~. In the instance of a vacant allotment that becomes a forage reserve, some other arrangement needs to be made so as to sustain the utility and life of the improvements; this ~~may~~ must include agency maintenance requirements.

Suggested revisions reduce the potential that establishment of a FRA represents an undue burden on neighboring active grazing allotments and provides continuity with previous recommended revisions.

Maintenance responsibility for improvements not assigned to another willing term permit holder will be assigned to those parties authorized to make use of the Forage Reserve allotment under permit modification or temporary permits.

Revision provides continuity with previous recommendations.

Thank you for the opportunity to review and comment on planned updates to Forest Service Directives.

Respectfully,



Samuel T. Smallidge, Ph.D.
Coordinator



Casey Spackman, Ph.D.
Rangeland Management Specialist



Doug Cram, Ph.D.
Forest & Fire Specialist



Marcy Ward, Ph.D.
Livestock Specialist

Literature Cited

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- Holechek, J.L., R.D. Pieper, C.H. Herbel., 2011. *Rangeland Management: Principles and Practices*. Prentice Hall, Upper Saddle River, New Jersey.