

Appendix C: California and Nevada Rangeland Health Standards and Guidelines

Sierra Front-Northwestern Great Basin Area

PREAMBLE

The Standards and Guidelines for livestock grazing on Bureau of Land Management lands are written to accomplish the four fundamentals of rangeland health, insofar as they are affected by livestock grazing practices. Those fundamentals are:

- Watersheds are properly functioning;
- Ecological processes are in order;
- Water quality complies with State Standards; and
- Habitats of protected species are in order.

Other uses can affect the health of the land, and Guidelines for these currently exist or will be developed as needed. In addition, implementation of livestock grazing guidelines must be coordinated with other uses of the land, and collectively these uses should not detract from the goal of achieving public land health.

Standards, Indicators and Guidelines will be implemented through Standard public land management practices as defined in the Nevada Rangeland Monitoring Handbook and the other documents listed in Appendix A [of this appendix].

Standards: The goal to be achieved.

Indicators: Indicators are observations or measurements of physical, chemical or biological factors that should be used to evaluate site conditions or trends, appropriate to the potential of the site. Indicators assist in determining whether Standards are met or Guidelines followed.

Guidelines: Guidelines are livestock management practices (e.g., tools, methods, strategies and techniques) designed to achieve healthy public lands as defined by Standards and portrayed by Indicators. Guidelines are designed to provide direction, yet offer flexibility for local implementation through activity plans and grazing permits. Activity plans may add specificity to the Guidelines based on local goals and objectives as provided for in adopted manuals, handbooks and policy. Not all Guidelines fit all circumstances. Monitoring and site specific evaluation will determine if the Standards are being met or the trend on a particular site is toward desired objectives, and if the correct Guidelines are being applied. The BLM Authorized Officer, in consultation with public land users, will identify and document acceptable or unavoidable exceptions on a case-by-case basis.

STANDARDS FOR RANGELAND HEALTH

STANDARD 1. SOILS:

Soil processes will be appropriate to soil types, climate and landform. As indicated by:

- Surface litter is appropriate to the potential of the site;
- Soil crusting formations in shrub interspaces, and soil compaction are minimal or not in evidence, allowing for appropriate infiltration of water;

- Hydrologic cycle, nutrient cycle and energy flow are adequate for the vegetative communities;
- Plant communities are diverse and vigorous, and there is evidence of recruitment; and
- Basal and canopy cover (vegetative) is appropriate for site potential.

STANDARD 2. RIPARIAN/WETLANDS:

Riparian/Wetland systems are in properly functioning condition. As indicated by:

- Sinuosity, width/depth ratio and gradient are adequate to dissipate streamflow without excessive erosion or deposition;
- Riparian vegetation is adequate to dissipate high flow energy and protect banks from excessive erosion; and
- Plant species diversity is appropriate to riparian-wetland systems.

STANDARD 3. WATER QUALITY:

Water quality criteria in Nevada or California State Law shall be achieved or maintained. As indicated by:

- Chemical constituents do not exceed the water quality Standards;
- Physical constituents do not exceed the water quality Standards;
- Biological constituents do not exceed the water quality Standards; and
- The water quality of all water bodies, including ground water located on or influenced by BLM lands will meet or exceed the applicable Nevada or California water quality Standards. Water quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and antidegradation requirements set forth under State law, and as found in Section 303(c) of the Clean Water Act.

STANDARD 4. PLANT AND ANIMAL HABITAT:

Populations and communities of native plant species and habitats for native animal species are healthy, productive and diverse. As indicated by:

- Good representation of life forms and numbers of species;
- Good diversity of height, size, and distribution of plants;
- Number of wood stalks, seed stalks, and seed production adequate for stand maintenance; and
- Vegetative mosaic, vegetative corridors for wildlife, and minimal habitat fragmentation.

STANDARD 5. SPECIAL STATUS SPECIES HABITAT:

Habitat conditions meet the life cycle requirements of special status species. As indicated by:

- Habitat areas are large enough to support viable populations of special status species;
- Special status plant and animal numbers and ages appear to ensure stable populations;
- Good diversity of height, size, and distribution of plants;
- Number of wood stalks, seed stalks, and seed production adequate for stand maintenance; and
- Vegetative mosaic, vegetative corridors for wildlife, and minimal habitat fragmentation.

GUIDELINES FOR GRAZING MANAGEMENT:

1. Waters must be free from high temperature, biocides, organisms pathogenic to human beings, toxic, corrosive or other deleterious substances attributable to domestic or industrial waste or other controllable sources at levels or combinations to interfere with any beneficial use of the water. Compliance with the provisions of this subsection may be determined in accordance with methods of testing prescribed by the State. If used as an Indicator, survival of test organisms must not be significantly less in test water than in control water.
2. Grazing management practices should be planned and implemented to meet water quality provisions in either California State water law or Nevada Administrative Code Section 445A.120-121 as applicable.
3. Management practices within allotments will maintain or promote stream channel morphology, appropriate soil organisms; adequate amounts of ground cover to support infiltration, maintain soil moisture storage, and stabilize soils; and the hydrologic cycle, nutrient cycle and energy flow.
4. After a range fire or other natural catastrophic event, vegetation should be returned to the native species as rapidly as possible, to afford forage and habitat for native animals. If a nurse crop is needed to protect the land from erosion, all native nurse crops should be used first.
5. Treated areas will be rested from livestock grazing for two growing seasons or until seedlings are established or the vegetative response has achieved objective levels. Wild horse and burros removed from Herd Management Areas will be restored after rehabilitation objectives have been met.
6. Alternative solutions (e.g., reseeding, funding, labor, equipment use or rental) to facilitate fire rehabilitation may be included in cooperative agreements involving qualified groups and individuals who want to participate.
7. Appropriate livestock grazing treatments will be implemented to control the frequency, duration, and level of grazing use. Where livestock grazing is authorized, grazing systems will provide within any one grazing year one or more of the following treatments:
 - a. Rest or deferment from livestock grazing on a specified area as appropriate to meet Standards.
 - b. Systematic rotation of deferred use and/or rest from livestock grazing among two or more units.
 - c. Continuous, season-long use where it has been demonstrated to be consistent with achieving identified Standards. Once season long use is determined to be unacceptable, an alternative system will be developed and implemented before termination of season long use, prior to the next grazing season.
 - d. Excluding further livestock grazing within the affected use area through appropriate techniques when utilization objectives are reached.
8. Conservation of Federal threatened or endangered, proposed, species of concern (formally Category One and Two) and other special status species is promoted by the restoration and maintenance of their habitats.
9. Salt and/or supplements will be placed at least ¼ mile from live waters (springs/streams) and outside of associated riparian areas, permanent livestock watering facilities, wet or dry meadows, and aspen stands. Also salt should not be placed in known historic properties.
10. Night bedding of sheep will be located at least ¼ mile from live waters, streams, springs, seeps, associated riparian areas, wet or dry meadows, and aspen stands.

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11. Encourage the use of prescribed and natural fires, meeting prescription objectives, for the restoration and maintenance of healthy rangelands.
12. Departure from traditional grazing management practices may be authorized by BLM to achieve Standards on a case-by-case experimental basis for rangeland restoration and rehabilitation.
13. The best available science and technology will be utilized in monitoring and assessing the condition of rangelands from the pasture to the BLM District level.
14. Recognizing State Water Law requirements, wildlife and wild horses/burros within their Herd Management Areas will have access to surface water they customarily use.
15. Design of water facilities will incorporate features to ensure safe access and escape for small animals and birds.
16. The development of springs and seeps or other projects affecting water and associated resources shall be designed to maintain the associated riparian area and assure the attainment of Standards.
17. Grazing management practices shall be planned and implemented to allow for habitat requirements of wildlife and wild horses and burros within Herd Management Areas.
18. Implement aggressive action to reduce the invasion of exotic plant species into native plant communities. Control the spread of noxious weeds through various methods such as, grazing management, fire management and other vegetative management practices.
19. Riparian structural developments (i.e., gabions, dams, etc.) designed to achieve improvement in riparian and wetland conditions shall only be implemented in conjunction with changes in existing grazing management practices, where grazing is a significant factor contributing to a riparian condition needing such attention. Where grazing is not a significant factor causing a riparian condition needing attention, structural developments designed to achieve improvement in riparian and wetland conditions may be implemented independent of changes in existing grazing management practices.
20. The utilization, monitoring and evaluation process will be used as a tool to promote healthy rangelands and achieve Standards.
21. Implement grazing management practices that sustain biological diversity across the landscape.
22. To prevent transmission of disease between domestic and bighorn sheep, adopt and implement the "Guidelines for Domestic Sheep Management in Bighorn Sheep Habitats" contained in Mountain Sheep Ecosystem Management Strategy in the 11 Western States and Alaska.
23. Rangeland management plans will consider listings of known historic properties and new eligible properties as they become known

Standards and Guidelines for Rangeland Health in Northeastern California and Northwestern Nevada

The Preferred Alternative described in the final EIS (Alternative 5), with minor changes for clarification, has been chosen as the Standards and Guidelines for Northeastern California and Northwestern Nevada. The changes reflected in this Decision are within the scope and analysis of the EIS. These Standards and Guidelines will take effect immediately upon their approval by the Secretary of the Interior. These standards and guidelines were developed for, and are hereby adopted for, that part of northeastern California and northwestern Nevada formerly known as the Susanville District.

Preamble

Healthy rangelands contribute to the social and economic well being of rural communities in Northeastern California and Northwestern Nevada, and they provide, over the long term, the most reliable harvest of rangeland resources. The objective of rangeland resource planning is to integrate BLM resources with other resources to achieve the mandate of multiple-use and sustained yield management of renewable resources in an environmentally sound and cost-effective manner.

The **Standards** of rangeland health are expressions of physical and biological condition or degree of function required for healthy, sustainable rangelands. The Standards are applied on a landscape scale. Some standards may not apply to all acres. For example, a mosaic of vegetation types and age classes Decision -- Page 3 may produce the diversity associated with healthy rangelands; however, some individual vegetation communities within the mosaic may lack diversity. The Standards always relate to the capability or potential of a specific site. The land will not be expected to produce vegetation or support habitats not attainable due to climate, soils, or other limiting attributes. In instances where site capability or potential has changed due to human-caused or natural disturbance, recognition will be given to the modified capability when setting or assigning a standard to (for) the site. The Standards are designed to establish the threshold for healthy rangelands. In some circumstances, an exception to the Standards or Guidelines may be necessary or unavoidable; however, **these instances should be under extreme conditions only**, and fully justified (documented) in order to be acceptable.

The **Guidelines** for grazing management are the types of grazing management methods and practices determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standard. The Guidelines were designed to provide direction, yet offer flexibility for implementation through activity plans and terms and conditions for grazing permits. The Bureau of Land Management (BLM) must operate within the constraints of other regulatory requirements that may affect how standards and guidelines are applied for livestock grazing, for example the Wild Free-Roaming Horse and Burro Act (1971).

STANDARD 1: UPLAND SOILS

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform, and exhibit functional biological, chemical and physical characteristics.

Meaning that:

Precipitation is able to enter the soil surface and move through the soil profile at a rate appropriate to soil type, climate, and landform; the soil is adequately protected against human-caused wind or water erosion; and the soil fertility is maintained at, or improved to, the appropriate level.

Criteria to Meet Standard:

* Ground cover (vegetation, litter, and other types of ground cover such as rock fragments) is sufficient to protect sites from accelerated erosion.

* Evidence of wind and water erosion, such as rills and gullies, pedestaling, scour or sheet erosion, and deposition of dunes is either absent or, if present, does not exceed what is natural for the site.

* Vegetation is vigorous, diverse in species composition and age class, and reflects the potential natural vegetation or desired plant community for the site.

STANDARD 2: STREAMS

Stream channel form and function are characteristic for the soil type, climate, and landform.

Meaning that:

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Channel gradient, pool frequency, width to depth ratio, roughness, sinuosity, and sediment transport are able to function naturally and are characteristic of the soil type, climate, and landform.

Criteria to Meet Standard:

* Gravel bars and other coarse textured stream deposits are successfully colonized and stabilized by woody riparian species.

* Stream bank vegetation is vigorous and diverse, mostly perennial, and holds and protects banks during high stream flow events.

* The stream water surface has a high degree of shading, resulting in cooler water in summer and reduced icing in winter.

* Portions of the primary floodplain are frequently flooded (inundated every 1-5 years).

STANDARD 3: WATER QUALITY

Water will have characteristics suitable for existing or potential beneficial uses. Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California and Nevada State standards, excepting approved variances. Management Objective: For water bodies, the primary objective is to maintain the existing quality and beneficial uses of water, protect them where they are threatened, and restore them where they are currently degraded. This objective is of even higher priority in the following situations:

- a. Where beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the Federal Clean Water Act;
- b. Where aquatic habitat is present, has been present, or is potentially present for Federal threatened or endangered, candidate, and other special status species dependent on water resources; and
- c. In designated water resource sensitive areas such as riparian and wetland areas.

Meaning That:

BLM will:

Maintain the physical, biological, and chemical integrity of waters flowing across or underlying the lands it administers.

Protect the integrity of these waters where it is currently threatened.

Insofar as is feasible, restore the integrity of these waters where it is currently impaired.

Not contribute to pollution and take action to remedy any pollution resulting from its actions that violates California and Nevada water quality standards, Tribal water quality standards, or other applicable water quality requirements (e.g., requirements adopted by SWRCB or RWQCB in Decision -- Page 5

California, or U.S. EPA pursuant to Section 303(d) of the Clean Water Act or the Coastal Zone Reauthorization Act). Where action related to grazing management is required, such action will

be taken as soon as practicable but not later than the start of the next grazing year (in accordance with 43 CFR 4180.1). Be consistent with the non-degradation policies as identified by the States. Develop and execute a Management Agency Agreement with the States of California and Nevada for the efficient protection of water quality associated with BLM's management. Work with the States' water quality administrative agencies and U.S. EPA to establish appropriate beneficial uses for public waters, establish appropriate numeric targets for 303(d)- listed water bodies, and implement the applicable requirements to ensure that water quality on public

lands meets the objectives for the designated beneficial uses of the water. Develop and implement Best Management Practices (BMPs) approved by the States to protect and restore the quality and beneficial uses of water, and monitor both implementation and effectiveness of the BMPs. These BMPs will be developed in full consultation, coordination, and cooperation with permittees and other interests.

State or Tribal approved variances or exceptions to water quality standards may be applicable within their Basin Plans for specific types of activities or actions. BLM will follow State or Tribal administrative procedures associated with variances.

As Indicated By:

- * The following do not exceed the applicable requirements for physical, chemical, and biological constituents including, but not limited to: temperature, nutrients, fecal coliform, turbidity, sediment, dissolved oxygen, aquatic organisms and plants (e.g., indicator macroinvertebrates, fish, algae, and plants).
- * Achievement of the standards for riparian, wetlands, and water bodies.
- * Monitoring results or other data that show water quality is meeting the standard.

STANDARD 4: RIPARIAN and WETLAND SITES

Riparian and Wetland areas are in properly functioning condition and are meeting regional and local management objectives.

Meaning that:

The riparian and wetland vegetation is controlling erosion, stabilizing stream banks, shading water areas to reduce water temperature, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater and increasing recharge of ground water that is characteristic for these sites. Vegetation surrounding seeps and springs is controlling erosion and reflects the potential natural vegetation for the site.

Criteria to Meet Standard:

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- * Riparian vegetation is vigorous and mostly perennial, and diverse in species composition, age class and life form sufficient to stabilize stream banks and shorelines.
- * Riparian vegetation and large woody debris are well anchored and capable of withstanding high stream flow events.
- * Negligible accelerated erosion as a result of human related activities is evident.
- * Age class and structure of woody riparian and wetland vegetation are appropriate for the site.

Exceptions and Exemptions to Standard 4 (where Standard 4 is not applicable)

- * Structural facilities constructed for livestock/wildlife water or other purposes are not natural wetland and/or riparian areas. Examples are: water troughs, stock ponds, flood control structures, tailings ponds, water gaps on fenced or otherwise restricted stream corridors, etc.

STANDARD 5: BIODIVERSITY

Viable, healthy, productive and diverse populations of native and desired plant and animal species, including special status species, are maintained.

Meaning that:

Native and other desirable plant and animal populations are diverse, vigorous, able to reproduce, and support nutrient cycles and energy flows.

Criteria to Meet Standard:

- * Wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations.

- * A variety of age classes are present for most species.
 - * Vigor is adequate to maintain desirable levels of plant and animal species to ensure reproduction and recruitment of plants and animals when favorable events occur.
 - * Distribution of plant species and their habitats allow for reproduction and recovery from localized catastrophic events.
 - * Natural disturbances such as fire are evident, but not catastrophic.
 - * Non-native plant and animal species are present at acceptable levels.
 - * Habitat areas are sufficient to support diverse, viable, and desired populations and are connected adequately with other similar habitat areas.
 - * Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients and maintain soil health.
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GUIDELINES FOR LIVESTOCK GRAZING

The following guidelines are meant to apply to one or more of the standards for rangeland health.

Guideline 1: Adequate stubble will be present on all stream-side areas at the end of the growing season, or at the end of the grazing season if grazing occurs after fall dormancy. The residual or regrowth should provide sufficient herbaceous forage biomass to meet the requirement of plant vigor maintenance, bank protection, and sediment entrapment. Stubble height thresholds will be set on a site-specific basis, except for those allotments to which Guideline 16 applies (see Guideline 16 for an explanation of when Guideline 16 applies). Utilization of stream-side herbaceous and woody plants should be limited to a specified amount of the current growth, and/or livestock should be removed to allow sufficient time for plant regrowth.

- a. Late season use (summer or fall grazed pastures) requires more restrictive utilization based on site specific situations.
- b. Special situations such as fragile fisheries habitats or easily eroded stream banks may require more restrictive utilization thresholds.
- c. Hoof action impacts or chiseling on stream banks will not exceed specified thresholds so that stream bank stability is maintained or improved.

Guideline 2: Desired seral states will be determined through the Allotment Management Plan development process; generally the goal will be to achieve advanced ecological status in the riparian zone, except where site-specific objectives call for lower ecological status (such as meadows in important sage grouse habitat, where the objective might call for a pattern of meadows in different seral stages from mid-seral to the potential natural community). These site-specific objectives will be determined through allotment management plans or other plans and analyzed through the NEPA process.

Guideline 3: Periods of rest from livestock grazing or other avoidable disturbances must be provided during/after periods of stress on the land (e.g.: fire, flood, drought) and during critical times of plant growth.

Guideline 4: Plans for grazing on any allotment must consider other uses (recreation, archaeological sites, wildlife, horses and burros, mineral resource extraction, etc.) and be coordinated with the other users of public lands so that overall use does not detract from the goal of achieving rangeland health.

Guideline 5: Intensity, frequency, season-of-use, and distribution of grazing shall provide for growth and reproduction of desired plant species and the achievement of the potential natural vegetation or desired plant community.

Guideline 6: Grazing permits will include site-specific, measurable terms and conditions.

Guideline 7: Design and work towards implementation of a grazing management strategy for livestock for each grazing unit (pasture) within I (Improvement) and M (Maintenance) category allotments, to maintain or improve rangeland health. This may consist of, but not be limited to, season-of-use, rotation, or by setting utilization levels for desirable plants. Each management plan implemented will incorporate the factors necessary to maintain the health of desirable plants.

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Guideline 8: Determination of grazing use by livestock must provide for the habitat requirements of fish and wildlife.

Guideline 9: Grazing management practices must sustain biological diversity across the landscape. A mosaic of seral stages, vegetation corridors, and minimal habitat fragmentation must be maintained.

Guideline 10: Take aggressive action to reduce the invasion of undesirable exotic plant species into native plant communities. The spread of noxious weeds will be controlled through appropriate methods such as grazing management, fire management, and other management practices.

Guideline 11: Prescribed fire and (natural) prescribed fire will be utilized to promote a mosaic of healthy plant communities and vegetative diversity.

Guideline 12: Grazing and other management practices shall take advantage of transitional opportunities (e.g., drought, flood, fire) to enhance or establish populations of desirable tree, shrub, herbaceous and grass species. Utilization levels will be established for desired seedlings, saplings, and/or mature plants to promote their presence in the plant community.

Guideline 13: Development of springs, seeps, and other water related projects shall be designed to promote rangeland health. Wherever possible, water sources shall be available year long for use by wildlife.

Guideline 14: Apply the management practices recognized and approved by the States of California and Nevada as Best Management Practices (BMPs) for grazing related activities to protect and maintain water quality.

Guideline 15: In watersheds draining into water bodies that have been listed or are proposed for listing as having threatened or impaired beneficial uses, and where grazing activities may contribute to the pollutants causing such impairment, the management objective is to fully protect, enhance, and restore the beneficial uses of the water.

Guideline 16: Utilization Levels to be Applied to those Allotments Not Meeting or Making Significant Progress Toward Meeting the Standards

If monitoring or documented observation indicates that one of more of the standards is not being met, and if significant progress is not being made toward meeting all of those standards that are not being met, and if there is evidence that current grazing practices are causing or contributing to this unsatisfactory condition, then the following utilization levels will be applied.

Utilization of key upland herbaceous species

UTILIZATION GUIDELINES

(adapted from Holechek 1988 and Holechek et al. 1998)

Community Type Percent of Use of Key Herbaceous Species

Salt desert shrubland 25-35

Semi-desert grass and shrubland 30-40

Sagebrush grassland 30-40

California annual grassland 50-60*
Perennial grass communities within the
California annual grassland vegetation type 30-40
Coniferous forest 30-40
Mountain shrubland 30-40
Oak woodland 30-40
Pinyon-juniper woodland 30-40
Alpine tundra 20-30

* Residual dry matter (RDM) guidelines will be used instead of these utilization levels for management of annual species in the California annual grassland. These RDM levels correspond approximately with these utilization levels. The RDM levels given in the table in the Final EIS under Alternative 5, Ukiah RAC Recommended Standards and Guidelines (Section 2.92), will be used for those few annual allotments within the area covered by this ROD.

Utilization of key upland browse species

There will be no more than 20 percent utilization of annual growth on key browse species prior to October 1 within identified deer concentration areas. These concentration areas are those areas within mule deer habitat where mule deer numbers are most likely to be concentrated during the winter season (winter season normally occurs from December 16 through March 31). These areas have been identified through State Fish and Game Agency fall and spring counts over a period of several years. Maps of these deer concentration areas are on file at the BLM Eagle Lake Field Office.

Utilization of key riparian species

A 4-6 inch minimum stubble height will remain at the end of the growing season in most riparian areas. There should be no more than 20% utilization on key riparian trees and shrub species in those areas where the presence of woody riparian species is necessary to meet standards.

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Application of the above utilization levels

These utilization guidelines will be applied to those areas of the allotment responsible for the determination that the allotment is not meeting the standards. For example, an allotment has 10 riparian areas, of which 6 have been determined to be in proper functioning condition and 4 have been determined to be functional—at risk. The utilization guidelines for riparian species given above would be applied to the 4 riparian areas that are functional—at risk, not to the 6 that are in proper functioning condition (although *all* of the riparian areas will be managed to meet the standards). Also, only those guidelines that are applicable to making progress toward meeting the standards that are not being met would be applied. For example, if only riparian standards are not being met, then only the guidelines applicable to utilization and stubble height of riparian vegetation would be applied. These utilization levels will be implemented unless and until a current site-specific analysis is completed and new utilization levels are developed for specific allotments and documented in allotment management plans, other management plans, and/or in terms and conditions of grazing permits/leases. New site-specific utilization levels that are developed may be more restrictive than the guidelines presented above, consistent with achieving the desired resource conditions (as prescribed in land use plans and activity plans) and progress toward meeting the standards.

Implementation of this guideline

1. Uplands (including perennial grass and browse communities). Guideline 16 will be implemented only on those upland areas that are responsible for the determination that the allotment is not meeting one or more of the standards and for which lighter utilization would be expected to move these areas toward meeting the standard(s). Management changes (such as changes in season of use, timing, duration, and/or intensity; rotational grazing; fencing; herding; and/or adjustments in stocking rates) will be implemented if utilization guidelines on the average of the upland key areas across the pasture (or allotment if there is only one pasture)

are exceeded for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of upland key areas on the pasture (or allotment) are not to exceed maximum utilization guidelines in most years. Because of the potential long-term damage to perennial grass species associated with severe grazing, severe grazing use (>70% utilization) in any upland key area in any year will result in a management change the following year. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents. The average (mean) utilization on key species will be estimated at each key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few

years. See Appendix 20 of the Final EIS for further discussion on this issue. The management options to be implemented to meet this guideline will be determined in full consultation, cooperation, and coordination with affected permittees and other interests. For allotments not meeting or making significant progress toward meeting the standards (and for which lower utilization levels of perennial upland species would be expected to help move these allotments toward the standards), utilization data already in hand will be used to determine whether a management change is necessary. Thus, for example, if utilization on a particular key area has exceeded the thresholds for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval. In addition to implementing management changes that are expected to bring utilization levels within threshold values, close monitoring will follow to ensure that the grazing use levels are not exceeded during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

2. Riparian areas (including herbaceous and woody plant communities). Guideline 16 will be implemented only on those riparian areas that are nonfunctional or functional—at risk and lighter utilization levels would be expected to move these areas toward meeting the standards. The guideline will apply where the riparian area in a healthy state has the capability to produce vegetation of the prescribed height. The stubble heights will be measured at the end of the growing season to determine if the guideline has been met. Management changes (such as changes in season of use, timing, duration, and/or intensity; rotational grazing; fencing; herding; and/or adjustments in stocking rates) will be implemented if stubble heights on the average of the key riparian areas across the pasture (or allotment if there is only one pasture) fall below the guidelines for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of riparian key areas on the allotment are to exceed minimum stubble heights in most years. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents. Because stream banks may be inadequately protected by heavy use in any one year and because stubble heights below 3 inches result in cattle shifting their preference to shrubs, stubble heights below 2 inches in any one year will require a management change in the following year. The mean stubble height on key riparian species will be estimated at each riparian key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 of the Final EIS for further discussion on this issue.

For allotments not meeting or making significant progress toward meeting the standards (and for which higher stubble would be expected to help move these allotments toward the standards), stubble height data already in hand will be used to determine whether a management change is necessary. Thus, for example, if stubble heights on a particular key area have fallen below the thresholds for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval. In addition to implementing management changes that are expected to bring stubble heights within threshold values, close monitoring will follow to ensure that the grazing use levels are not exceeded

during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

The management options to be implemented to meet this guideline will be determined in full consultation, coordination, and cooperation with affected permittees and other interests.

If reductions in permitted use are required

Any reductions in permitted use required as a result of implementing this guideline will be held in suspension and apportioned back to the permittee(s) or lessee(s) authorized to graze in the affected allotment if rangeland health improves to the extent that the authorized officer determines additional forage to be available (see Implementation, Appendix 1, for more information on this).

Guideline 17: Rangeland monitoring to determine utilization of forage resources and trend of rangeland health will be conducted in each allotment based on current accepted practices and techniques as directed in the Interagency Technical References: *Utilization Studies and Residual Measurements* (BLM et al. 1996b) and *Sampling Vegetation Attributes* (BLM et al. 1996a). Monitoring methodologies will be applicable to local conditions and developed in consultation with permittees and interested publics. To the extent possible, monitoring methods will be simple and easily accomplished. BLM, permittees, or others will do the monitoring. BLM will be responsible for ensuring that the monitoring is conducted in accordance with currently accepted practices and techniques, for analyzing and interpreting the data collected (in consultation, coordination, and cooperation with affected permittees and other interests), and for the accuracy of the data.

Existing key areas will be used where they exist. New key areas will be selected in full consultation, coordination, and cooperation with affected permittees and other interests. BLM will periodically review established key areas to determine if they continue to be appropriate to management. This review will be done in full consultation, coordination, and cooperation with affected permittees and other interests. If there is disagreement between BLM, permittees, and other interests over the location of key areas, the RAC will be asked for ideas on resolution. The final decision on the placement of key areas, however, rests with BLM.

BLM, in cooperation with other agencies, including Cooperative Extension, the Natural Resources Conservation Service, and the Forest Service, will provide training for permittees and other interested parties on rangeland monitoring methods.