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## APPENDIX A—STANDARDS FOR PUBLIC LAND HEALTH AND GUIDELINES FOR LIVESTOCK GRAZING MANAGEMENT

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### STANDARDS FOR PUBLIC LAND HEALTH

Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Standards are applied on a landscape scale and relate to the potential of the landscape.

**Standard 1:** “Upland” soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, landform, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor and minimizes surface runoff.

□ Indicators:

- Expression of rills and soil pedestals is minimal.
- Evidence of actively eroding gullies (incised channels) is minimal.
- Canopy and ground cover are appropriate.
- There is litter accumulating in place and is not sorted by normal overland waterflow.
- There is appropriate organic matter in soil.
- There is diversity of plant species with a variety of root depths.
- Upland swales have vegetation cover or density greater than that of adjacent uplands.
- There are vigorous, desirable plants.

**Standard 2:** Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment and provides forage, habitat, and biodiversity. Water quality is improved or maintained. Stable soils store and release water slowly.

□ Indicators:

- Vegetation is dominated by an appropriate mix of native or desirable introduced species.
- Vigorous, desirable plants are present.
- There is vegetation with diverse age class structure; appropriate vertical structure; and adequate composition, cover, and density.
- Streambank vegetation is present and comprises species and communities that have root systems capable of withstanding high streamflow events.
- Plant species present indicate maintenance of riparian moisture characteristics.
- Stream is in balance with the water and sediment supplied by the watershed (e.g., no headcutting, no excessive erosion or deposition).
- Vegetation and free water indicate high water tables.
- Vegetation colonizes point bars with a range of age classes and successional stages.
- An active floodplain is present.
- Residual floodplain vegetation is available to capture and retain sediment and dissipate flood energies.
- Stream channels with size and meander pattern appropriate for the stream's position in the landscape and parent materials are present.
- Woody debris contributes to the character of the stream channel morphology.

**Standard 3:** Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and the habitat's potential. Plants

and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations and ecological processes.

- Indicators:
  - Noxious weeds and undesirable species are minimal in the overall plant community.
  - Native plant and animal communities are spatially distributed across the landscape with a density, composition, and frequency of species suitable to ensure reproductive capability and sustainability.
  - Plants and animals are present in mixed-age classes sufficient to sustain recruitment and mortality fluctuations.
  - Landscapes exhibit connectivity of habitat or presence of corridors to prevent habitat fragmentation.
  - Photosynthetic activity is evident throughout the growing season.
  - Diversity and density of plant and animal species are in balance with habitat or landscape potential and exhibit resilience to human activities.
  - Appropriate plant litter accumulates and is evenly distributed across the landscape.
  - Landscapes are composed of several plant communities that may be in a variety of successional stages and patterns.

**Standard 4:** Special Status, threatened and endangered species (federal and State), and other plants and animals officially designated by the Bureau of Land Management (BLM) and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

- Indicators:
  - All the indicators associated with the plant and animal communities standard apply.
  - There are stable and increasing populations of endemic and protected species in suitable habitat.
- Suitable habitat is available for recovery of endemic and protected species.

**Standard 5:** The water quality of all water bodies, including ground water, where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground water include the designated beneficial uses, numeric criteria, narrative criteria, and anti-degradation requirements set forth under State law as found in 5 CCR 1002-8, and as required by Section 303(c) of the Clean Water Act.

- Indicators:
  - Appropriate populations of macroinvertebrates, vertebrates, and algae are present.
  - Surface and ground waters only contain substances (e.g., sediment, scum, floating debris, odor, heavy metal precipitates on channel substrate) attributable to humans within the amounts, concentrations, or combinations as directed by the Water Quality Standards established by the State of Colorado (5 CCR 1002-8).

## GUIDELINES FOR LIVESTOCK GRAZING MANAGEMENT

Guidelines are the management tools, methods, strategies, and techniques (e.g., best management practices) designed to maintain or achieve healthy public lands as defined by the standards. Currently, the only guidelines for BLM Colorado that have been developed in concert with the Resource Advisory Councils are livestock grazing management guidelines.

1. Grazing management practices promote plant health by providing for one or more of the following:

- Periodic rest or deferment from grazing during critical growth periods

- ❑ Adequate recovery and regrowth periods
  - ❑ Opportunity for seed dissemination and seedling establishment.
2. Grazing management practices address the kind, numbers, and class of livestock, season, duration, distribution, frequency, and intensity of grazing use and livestock health.
  3. Grazing management practices maintain sufficient residual vegetation on both upland and riparian sites to protect the soil from wind and water erosion, assist in maintaining appropriate soil infiltration and permeability, and buffer temperature extremes. In riparian areas, vegetation dissipates energy, captures sediment, recharges ground water, and contributes to stream stability.
  4. Native plant species and natural revegetation are emphasized in the support of sustaining ecological functions and site integrity. Where reseeding is required on land treatment efforts, emphasis will be placed on using native plant species. Seeding of non-native plant species will be considered based on local goals, native seed availability and cost, persistence of non-native plants and annuals and noxious weeds on the site, and composition of non-natives in the seed mix.
  5. Range improvement projects are designed consistent with overall ecological functions and processes with minimum adverse impacts on other resources or uses of riparian/wetland and upland sites.
  6. Grazing management will occur in a manner that does not encourage the establishment or spread of noxious weeds. In addition to mechanical, chemical, and biological methods of weed control, livestock may be used, where feasible, as a tool to inhibit or stop the spread of noxious weeds.
  7. Natural occurrences such as fire, drought, flooding, and prescribed land treatments should be combined with livestock management practices to move toward the sustainability of biological diversity across the landscape, including the maintenance, restoration, or enhancement of habitat to promote and assist the recovery and conservation of threatened, endangered, or other Special Status Species by helping provide natural vegetation patterns, a mosaic of successional stages, and vegetation corridors thus minimizing habitat fragmentation.
  8. Colorado best management practices and other scientifically developed practices that enhance land and water quality should be used in the development of activity plans prepared for land use.

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