

NEVADA RAC STANDARDS  
GENERAL

## STANDARDS AND GUIDELINES FOR NEVADA

### INTRODUCTION

The purpose of these Standards and Guidelines is to ensure that the Bureau of Land Management's (BLM) administration of grazing helps preserve currently healthy rangelands and restore healthy conditions to those areas that are not functioning properly. Standards and Guidelines provide specific measures of rangeland health and will identify acceptable or best management practices. The authority for these Standards and Guidelines is found in 43 CFR 4180.

### STANDARD AND GUIDELINES IMPLEMENTATION PROCESS

Upon approval of the Standards and Guidelines by the Secretary of the Interior, permits and leases shall contain terms and conditions that ensure conformance with the approved Standards and Guidelines.

The implementation process for Standards and Guidelines will occur under two separate processes as described below:

1. During the supervision and/or monitoring of an allotment, if it is determined that the existing terms and conditions of a grazing permit are not in conformance with the approved Standards and Guidelines and that livestock grazing was determined to be a significant factor in the non-attainment of a standard, then as soon as possible, or no later than the start of the next grazing year, the terms and conditions of the permit/lease will be modified to ensure that the grazing management practices or the levels of the grazing use will be in conformance with the Standards and/or Guidelines.

The modification of the terms and conditions of the permit/lease will be implemented by agreement and/or by decision.

2. The allotment evaluation process will continue to be the process used to determine if existing multiple uses for allotments are meeting or making progress towards meeting land use plan objectives, allotment specific objectives, Rangeland Program Summary objectives and land use plan decisions, in addition to the Standards and Guidelines for grazing administration.

Additionally, allotment specific objectives may have to be developed or amended, objectives in the land use plans further quantified at the allotment specific level, and terms and conditions of permits changed or revised to reflect the Standards and Guidelines. Allotment evaluations will continue to be completed based on district priorities.

a. The allotment evaluation consists of or involves:

- 1) The evaluation of current grazing use by all users (livestock, wild horses, wildlife) based on monitoring data analysis and interpretation;
- 2) Recommendations to change or adjust grazing systems;
- 3) Recommendations to change or adjust stocking levels; and
- 4) Establishment of stocking levels for wild horses.

b. The allotment evaluation also serves as the basis for either issuing multiple use decisions, agreements, or a no-change determination. Multiple use decisions are prepared subsequent to completion of land use plans and are based on the attainment or non-attainment of objectives established in the land use plans and allotment evaluations.

During the evaluation process, the existing terms and conditions of a permit will be evaluated to determine if they are in conformance with the approved Standards and Guidelines. If it is determined that the existing terms and conditions are not in conformance and that livestock grazing was a significant factor in the non-attainment, then as soon as possible or no later than the start of the next grazing year, the terms and conditions of the permit/lease will be modified to ensure that the grazing management practices or the levels of grazing use will be in conformance.

At the conclusion of the evaluation process, the multiple use decision process will continue to be used to establish:

- 1) The terms and conditions of the grazing permits;
- 2) The appropriate management level for wild horses and burros that occur within the allotment; and
- 3) Any recommendations for wildlife populations or habitat management actions required if it is determined that these actions are necessary.

The preamble to the final regulations contains additional information regarding what action BLM would take upon becoming aware that a standard is not being met. The following preamble language is found on page 9956 of the Federal Register notice:

"... The Department intends that failing to comply with a standard in an isolated area would not necessarily result in corrective action.

"The Department recognizes that it will sometimes be a long-term process to restore rangelands to proper functioning condition. The Department intends that Standards and Guidelines will result in a balance of sustainable development and multiple use along with progress towards attaining healthy, properly functioning rangelands. For that reason, wording has been adopted in

the final rule that will require the authorized officer to take appropriate action upon determining that existing grazing management practices are failing to ensure appropriate progress toward the fulfillment of standards....

"In some areas, it may take many years to achieve healthy rangelands, as evidenced by the fundamentals, established standards, and guidelines. The Department recognizes, that in some cases, trends may be hard to even document in the first year. The Department will use a variety of data, including monitoring records, assessments, and knowledge of the locale to assist in making the "significant progress" determination."

The acceptance of progress toward reaching the desired end state is also addressed in the regulatory text in 43 CFR 4180.1 Fundamentals of Rangeland Health which includes the "making significant progress toward" language in each of the four fundamentals.

The concept of "making progress toward" is a specific consideration when determining a course of action during implementation. Determining whether a standard is being met is a distinctly different concept from determining whether progress is being made toward or away from the standard. Determining a course of action is then dependent on a variety of factors, one of which is whether progress is being made toward the standard.

With regard to actions, it is the BLM's policy and intent to work in a collaborative manner to achieve or maintain the Standards necessary for healthy, productive rangelands. It is not the policy or intent of the BLM to arbitrarily and immediately remove all livestock from an entire allotment based solely on finding a range site that is not meeting a standard. As a practical matter, the BLM has neither policy, intent, desire nor capability to arbitrarily remove all livestock where acceptable progress is being made toward meeting the Standards.

## **GEOGRAPHICAL AREA COVERED BY THE STANDARDS AND GUIDELINES**

As shown below the three Resource Advisory Council (RAC) areas in Nevada are based on combinations of major land resource areas as developed by the Natural Resource Conservation Service for Nevada. This land classification system is recognized by the Bureau of Land Management, the Forest Service and other agencies as a basis for ecosystem data collection and analysis. The soil, vegetal and geophysical characteristics of each of the three areas are different and the text offered by the three RACs incorporates their understanding of the differing physical and biological needs of the rangeland ecosystems.

Recognition of these differences is critical to the successful protection of rangelands in Nevada. As a result of basing the RAC boundaries according to an ecosystem approach as opposed to strictly an administrative or jurisdictional approach, the RAC's advice and recommendations are more relevant to the on-the-ground management of natural resources. The area covered by the Standards and Guidelines is as follows. Adjustments will be made for grazing allotments that overlap the boundaries between the RAC areas.

1. Mojave-Southern Great Basin Resource Advisory Council recommends actions to the Nevada BLM State Director for all or portions of Clark, Nye, Esmeralda, and Lincoln Counties. This

includes portions of the Ely, Las Vegas and Battle Mountain Districts. The Standards and Guidelines would apply to lands within the Southern Nevada Basin and Range and Sonoran Basin and Range major land resource areas as defined by the Natural Resource Conservation Service.

2. Sierra Front-Northwestern Great Basin Resource Advisory Council recommends actions to the Nevada BLM State Director for all or portions of Humbolt, Pershing, Washoe, Carson City, Douglas, Lyon, Mineral, Storey and Churchill Counties in Nevada and Lassen, Plumas, Sierra and Alpine Counties in California. This includes the Winnemucca and Carson City Districts. The Standards and Guidelines would apply to lands within the Sierra Nevada, Malheur High Plateau, Humbolt Fallon-Lovelock and Carson Basin major land resource areas as defined by the Natural Resource Conservation Service.

3. The Northeastern Great Basin Resource Advisory Council recommends actions to the Nevada BLM State Director for all or portions of Elko, White Pine, Eureka, and Lander Counties. This includes all of the Elko District and portions of the Ely and Battle Mountain Districts. The Standards and Guidelines would apply to lands within the Owyhee High Plateau and Central Nevada Basin and Range major land resource areas as defined by the Natural Resource Conservation Service.

## **STANDARDS AND GUIDELINES**

1. See Appendix A for the Mojave-Southern Great Basin recommended Standards and Guidelines.

2. See Appendix B for the Sierra Front-Northwestern Great Basin recommended Standards and Guidelines.

3. See Appendix C for the Northeastern Great Basin recommended Standards and Guidelines.  
See Appendix C(a) for Vegetation Guidelines.

4. See Appendix D for Off-Highway Vehicle Administration Guidelines for all Nevada RACs.

## APPENDIX A

### **MOJAVE/SOUTHERN GREAT BASIN AREA**

#### **PREAMBLE - GRAZING**

The Standards and Guidelines for grazing administration on BLM lands in southern Nevada apply to livestock grazing. The Mojave-Southern Great Basin Resource Advisory Council (RAC) intends that the Standards and Guidelines will result in a balance of sustainable development and multiple use along with progress, over time, toward attaining desired rangeland conditions. Standards are expressions of physical and biological conditions required for sustaining rangelands for multiple uses. Guidelines point to management actions related to livestock grazing for achieving the Standards. Guidelines are options that move rangeland conditions toward the multiple use Standards. Guidelines are based on science, best rangeland management practices, and public input. Guidelines indicate the types of grazing methods and practices for achieving the Standards for multiple use, are developed for functional watersheds and implemented at the allotment level.

The Mojave-Southern Great Basin Resource Advisory Council recognizes that it will sometimes be a long-term process to restore rangelands to proper functioning condition. In some areas, it may take many years to achieve healthy rangelands.

The Resource Advisory Council may be requested by any party to assist reaching agreement in resolving disputes.

#### **PREAMBLE - WILD HORSES AND BURROS**

Nevada is an arid State. The Standards and Guidelines for rangeland health and the guidelines for Wild Horse and Burro (WH&B) management on BLM lands in southern Nevada apply to Herd Management Areas (HMAs). The Mojave-Southern Great Basin Resource Advisory Council (RAC) intends that the Standards and Guidelines will result in a balance of sustainable development and multiple use.

The standards for rangeland health will be reached and maintained by managing wild horse and burro numbers so as not to exceed Appropriate Management Levels (AML) for each Herd Management Area. Controlling wild horse and burro numbers through gathers and other control programs is essential.

Standards are expressions of physical and biological conditions required for sustaining rangelands for multiple uses. Guidelines point to management actions related to HMAs for achieving the Standards. Guidelines are options that move rangeland conditions toward the multiple use Standards. Guidelines are based on science, best rangeland management practices, and public input. Guidelines indicate the types of management methods and practices for

achieving the Standards for multiple use and are developed for functional watersheds and implemented within HMAs.

The Mojave-Southern Great Basin Resource Advisory Council recognizes that it will sometimes be a long-term process to achieve proper functioning condition(s) on degraded rangelands. Healthy rangelands contribute to healthy herds.

The Resource Advisory Council may be requested by any party to assist in addressing issues related to these Standards and Guidelines.

## **STANDARDS AND GUIDELINES**

### **STANDARD 1. SOILS:**

Watershed soils and stream banks should have adequate stability to resist accelerated erosion, maintain soil productivity, and sustain the hydrologic cycle.

Soil indicators:

- Ground cover (vegetation, litter, rock, bare ground);
- Surfaces (e.g., biological crusts, pavement); and
- Compaction/infiltration.

Riparian soil indicators:

- Stream bank stability.

All of the above indicators are appropriate to the potential of the ecological site.

### **GUIDELINES: (for SOILS)**

1.1 Upland management practices should maintain or promote adequate vegetative ground cover to achieve the Standards. *(Apply to Wild Horse and Burro Guidelines also.)*

1.2 Riparian-wetland management practices should maintain or promote sufficient residual vegetation to maintain, improve, or restore functions such as stream flow energy dissipation, sediment capture, groundwater recharge, and streambank stability. *(Apply to Wild Horse and Burro Guidelines also.)*

1.3 When Wild Horse and Burro herd management practices alone are not likely to restore areas, land management practices may be designed and implemented where appropriate.

1.4 Wild Horse and burro herd management practices should address improvement beyond this

standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

## STANDARD 2. ECOSYSTEM COMPONENTS:

Watersheds should possess the necessary ecological components to achieve State water quality criteria, maintain ecological processes, and sustain appropriate uses.

Riparian and wetlands vegetation should have structural and species diversity characteristic of the stage of stream channel succession in order to provide forage and cover, capture sediment, and capture, retain, and safely release water (watershed function).

### Upland Indicators:

- Canopy and ground cover, including litter, live vegetation, biological crust, and rock appropriate to the potential of the ecological site.
- Ecological processes are adequate for the vegetative communities.

### Riparian Indicators:

- Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows.
- Elements indicating proper functioning condition such as avoiding accelerating erosion, capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:
  - Width/Depth ratio;
  - Channel roughness;
  - Sinuosity of stream channel;
  - Bank stability;
  - Vegetative cover (amount, spacing, life form); and
  - Other cover (large woody debris, rock).
- Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.

### Water Quality Indicators:

- Chemical, physical and biological constituents do not exceed the State water quality Standards.

The above indicators shall be applied to the potential of the ecological site.

#### GUIDELINES: (for ECOSYSTEM COMPONENTS)

2.1 Management practices should maintain or promote appropriate stream channel morphology and structure consistent with the watershed. *(Apply to Wild Horse and Burro Guidelines also.)*

2.2 Watershed management practices should maintain, restore or enhance water quality and flow rate to support desired ecological conditions. *(Apply to Wild Horse and Burro Guidelines also.)*

2.3 Management practices should maintain or promote the physical and biological conditions necessary for achieving surface characteristics and desired natural plant community. *(Apply to Wild Horse and Burro Guidelines also.)*

2.4 Wild Horse and Burro management practices will consider both economic and physical environment and will address all multiple uses including, but not limited to, (i) recreation, (ii) minerals, (iii) cultural resources, (iv) wildlife, (v) domestic livestock, (vi) community economics, (vii) Areas of Critical Environmental Concern, (viii) designated wilderness (iv) and wilderness study areas (WSAs).

2.5 New facilities should be located away from riparian and wetland areas if existing facilities conflict with achieving or maintaining riparian and wetland functions. Existing facilities will be used in a way that does not conflict with achieving or maintaining riparian and wetland functions or they will be relocated or modified when necessary to mitigate adverse impacts on riparian and wetland functions.

2.6 Subject to all valid existing rights, the design of spring and seep developments shall include provisions to maintain or promote ecological functions and processes.

2.7 When proper Wild Horse and Burro herd management is not likely to restore areas of low infiltration or permeability, land management practices may be designed and implemented where appropriate. When setting herd management levels on ephemeral rangeland watersheds, reliable estimates of production for drought conditions should be used to avoid adverse effects on perennial species and ecosystem processes and retain a desired minimum level of annual growth or residue remaining.

2.8 Wild Horse and Burro herd management practices should address improvement beyond this standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

#### STANDARD 3. HABITAT AND BIOTA:

Habitats and watersheds should sustain a level of biodiversity appropriate for the area and conducive to appropriate uses. Habitats of special status species should be able to sustain viable

populations of those species.

Habitat Indicators:

- Vegetation composition (relative abundance of species);
- Vegetation structure (life forms, cover, height, and age classes);
- Vegetation distribution (patchiness, corridors);
- Vegetation productivity; and
- Vegetation nutritional value.

Wildlife Indicators:

- Escape terrain;
- Relative abundance;
- Composition;
- Distribution;
- Nutritional value; and
- Edge-patch snags.

The above Indicators shall be applied to the potential of the ecological site.

GUIDELINES: (for HABITAT AND BIOTA)

3.1 Mosaics of plant and animal communities that foster diverse and productive ecosystems should be maintained or achieved. *(Apply to Wild Horse and Burro Guidelines also.)*

3.2 Management practices should emphasize native species except when others would serve better for attaining desired communities. *(Apply to Wild Horse and Burro Guidelines also.)*

3.3 Wild Horse and burro herd management should provide for growth, reproduction, and seedling establishment of those plant species needed to reach long-term land use plan objectives. Measurements of ecological conditions, trend, and utilization will be in accordance with techniques identified in the Nevada Rangeland Handbook.

3.4 Wild Horse and Burro herd management practices should be planned and implemented to provide for integrated use by domestic livestock and wildlife.

3.5 Wild Horse and Burro herd management practices will promote the conservation, restoration and maintenance of habitat for special status species.

3.6 Wild Horse and Burro herd management practices will be designed to protect fragile ecosystems of limited distribution and size that support unique sensitive/endemic species or communities. Where these practices are not successful, herd levels will be reduced or eliminated from these areas.

3.7 Where Wild Horse and Burro herd management practices alone are not likely to restore areas, land management practices may be designed and implemented as appropriate.

3.8 Vegetation manipulation treatments may be implemented to improve native plant communities, consistent with appropriate land use plans, in areas where identified standards cannot be achieved through Wild Horse and Burro herd management practices alone. Fire is the preferred vegetation manipulation practice on areas historically adapted to fire; treatment of native vegetation with herbicides or through mechanical means will be used only when other management techniques are not effective.

3.9 Wild Horse and Burro herd management practices should address improvement beyond this standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

#### STANDARD 4: WILD HORSES AND BURROS

Wild horses and burros within Herd Management Areas should be managed for herd viability and sustainability. Herd Management Areas should be managed to maintain a healthy ecological balance among wild horse and /or burro populations, wildlife, livestock, and vegetation.

Herd health indicators.

- General horse and/or burro appearance: Problems are often apparent and can be easily identified by just looking at the herd.
- Crippled or injured horses and/or burros: Excessive injuries can indicate problems.

Herd demographics indicators.

- Size of bands: A band with one stud or jack, one mare or jenny, and one foal indicates a problem. An oversized band also indicates there is a problem. Band sizes of 5-10 animals with one dominant stud per band is a good indicator.
- Size of Bachelor Bands: Large bachelor bands in the immediate vicinity of other bands could indicate potential problems.

Herd viability indicators.

- Heavy trailing into water sources may indicate a significant problem with forage availability or water distribution. Animals may be traveling considerable distances to obtain water or forage.
- Waiting for water. When available water becomes so scarce that a waiting line develops, horses and burros are in trouble.
- Availability of water. Address legal and/or climatic considerations. Situations exist where WH&B are present only because they currently have access to water which they could legally be deprived of under Nevada Water Laws. Situations exist where existing WH&B populations are dependent upon water hauling. If water hauling were to cease these animals would die within a matter of days.
- Depleted forage near all available water sources. Adequate water, and forage adjacent to water sources, are essential.

#### GUIDELINES: (for WILD HORSE AND BURRO)

4.1 Wild Horse and Burro population levels in HMAs should not exceed AML.

4.2 AMLs should be set to reflect the carrying capacity of the land in dry conditions based upon the most limiting factor: living space, water or forage. Management levels will not conflict with achieving or maintaining standards for soils, ecological components, or diversity of habitat and biota.

4.3 Interaction with herds should be minimized. Intrusive gathers should remove sufficient numbers of animals to ensure a period between gathers that reflects national wild horse and burro management strategies. Non intrusive gathers such as water trapping can be done on an "as needed" basis.

4.4 Herd Management Plans should be made with the best predictive information available. When emergency actions occur the Herd Management Plan should be re-evaluated.

4.5 Viable sex and age distribution should be a long term goal of any Wild Horse and Burro Herd Management Plan. Sex and age distribution of the herd should be addressed when (after) AML has been reached.

4.6 When Wild Horse and Burro herd management alone is not likely to restore areas, land management practices may be designed and implemented where appropriate.

4.7 Wild Horse and Burro herd management practices should address improvement beyond this standard, significant progress toward achieving standards, time necessary for recovery, and time necessary for predicting trends.

#### **GLOSSARY**

Definitions are taken from "A Glossary of Terms Used in Range Management" developed through the Society for Range Management or Bureau of Land Management Technical Reference or from the Dictionary of Ecology, Evolution and Systematics except where noted. Other definitions are from Grazing Administration Regulations Code of Federal Regulations, Chapter 43 Sec. 4100.0-5. Definitions also include meanings that were developed by the Mojave Southern Resource Advisory Council to understand their intent in the Standards and Guidelines.

**-A-**

**Annual Growth.** The amount of production of new above ground plant biomass for a given site during a given year.

**-B-**

**Biodiversity.** The diversity of organisms in a region; made up of species diversity in individual community-types and the turnover of species across different community-types.

**Biological (Cryptogamic) Crust.** Community of non-vascular primary producers that occur as a "crust" on the surface of soils; made up of a mixture of algae, lichens, mosses, and cyanobacteria (bluegreen algae).

**Biotic.** Refers to living components of an ecosystem, e.g., plants and animals and micro-organisms.

**-C-**

**Canopy.** (1) The vertical projection downward of the aerial portion of vegetation, usually expressed as a percent of the ground so occupied; (2) the aerial portion of the overstory vegetation.

**Canopy Cover.** The percentage of ground covered by a vertical projection of the outermost perimeter of the natural spread of foliage of plants. Small openings within the canopy are included. (BLM Technical Reference 4400-7)

**Climate.** The average or prevailing weather conditions of a place over a period of years. (BLM Technical Reference 4400-7)

**Conservation.** The planned management of natural resources; the retention of natural balance, diversity and evolutionary change in the environment.

The use and management of natural resources according to principles that assure their sustained economic and/or social benefits without impairment of environmental quality.

**Cover.** A. (1) The plants or plant parts, living or dead, on the surface of the ground. Vegetative cover or herbage cover is composed of living plants and litter cover of dead parts of plants; (2) The area of ground cover by plants of one or more species.

B. (1) The combined aerial parts of plants and mulch, and (2) shelter and protection for animals and birds. (BLM Manual 4400)

C. (1) Plant material, living (vegetative cover) and dead (litter cover) on the soil surface; (2) the area of ground covered by the canopy projections of a particular plant species, expressed as a scale or as a percentage of total ground surface area.

**Cultural Resources.** A broad, general term meaning any cultural property and any traditional lifeway value. (BLM Manual 8100)

**Cultural property.** A definite location of past human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. (Manual 8100)

**-D-**

**Desert Pavement.** A cemented, hydrophobic layer of rocks or small pebbles that occurs over time on desert soil surfaces; prevents water infiltration into soils and wind/water erosion of the soil; often covered with a chemical varnish layer.

**Desired Natural Plant Community.** The type of plant community which is desired for a particular ecological site. This could include native and non-native species depending on the desired land use, but as a natural plant community it must have native species adapted to the climate and soil type as dominants or co-dominants in the community.

**Desired Plant Community.** Of the several plant communities that may occupy a site, the one that has been identified through a management plan to best meet the plan's objectives for the site. It must protect the site as a minimum.

**Diversity.** (1) The absolute number of species in a community; species richness; (2) A measure of the number of species and their relative abundance in a community; low diversity refers to few species or unequal abundances, high diversity to many species or equal abundances.

**-E-**

**Ecological Processes.** Natural functions including the hydrologic cycle, the nutrient cycle, and energy flow. (see also 43 CFR 4180.1(b))

**Ecological Site.** The kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in its ability to produce vegetation and to respond to management. (BLM Manual 4400)

**Edaphic.** Refers to the soil.

**Endemic Species.** Native to, and restricted to, a particular geographical region, community type,

or specific habitat.

**Ephemeral Rangelands.** Rangelands characterized by low, highly seasonal and often episodic rainfall, resulting in annual plants comprising a significant proportion of annual primary production.

**Erosion.** (v.) Detachment and movement of soil or rock fragments by the action of water, wind, ice or gravity. (n.) The land surface worn away by running water, wind, ice, or other geologic agents, including such processes as gravitational creep.

**Exotic.** An organism or species which is not native to the region in which it is found. Synonym *non-native*: Not native; alien; a species that has been introduced into an area.

**-F-**

**Forage.** The plant material actually consumed by (or available to) grazing animals.

**Fragile Ecosystems.** Uncommon ecosystems of limited distribution and size that support unique sensitive/endemic species or communities; ecosystems that have low resilience to environmental stress or to disturbance.

**Frequency.** The ratio between the number of sample units that contain a species and the total number of sample units.

A quantitative expression of the presence or absence of individuals of a species in a population. It is defined as the percentage of occurrence of a species in a series of samples of uniform size. (BLM Technical Reference 4400-4)

**-G-**

**Grazing Distribution.** Dispersion of livestock grazing within a management unit or area.

**Ground Cover.** The percentage of material, other than bare ground, covering the land surface. It may include live and standing dead vegetation, litter, cobble, gravel, stones and bedrock. Ground cover plus bare ground would total 100 percent. (BLM Technical Reference 4400-4)

**Ground Water.** Subsurface water that is in the zone of saturation. The top surface of the ground water is the "water table." Source of water for wells, seepage, springs.

**-H-**

**Habitat.** The natural abode of a plant or animal, including all biotic, climatic, and edaphic factors affecting life.

**Hydrologic Balance.** The balance between hydrological inputs (infiltration of incident precipitation, run-on) and hydrological outputs (run-off, deep drainage) for an ecological site.

-I-

**Infiltration.** The flow of a fluid into a substance through pores or small openings. It connotes flow into a substance in contradistinction to the word *percolation*. The process by which water seeps into a soil, as influenced by soil texture, aspect and vegetation cover.

**Infiltration Rate.** Maximum rate at which soil under specified conditions can absorb rain or shallow impounded water, expressed in quantity of water absorbed by the soil per unit of time, e.g., inches/hour.

**Integrated Use.** To merge the use of each type of public land use through a series of land management practices.

-L-

**Land Use Plan.** Land use plan means a resource management plan, developed under the provisions of 43 CFR part 1600, or management framework plan. These plans are developed through public participation in accordance with the provisions of the Federal Land Policy and Management Act of 1976 and establish management direction for resource uses of public lands. (43 CFR 4100)

**Litter.** The uppermost layer of organic debris on the soil surface; essentially the freshly fallen or slightly decomposed vegetal material. (BLM Technical Reference 4400-4)

-M-

**Management Objective.** The objectives for which rangeland and rangeland resources are managed which includes specified users accompanied by a description of the desired vegetation and the expected products and/or values.

**Management Plan.** A program of action designed to reach a given set of objectives.

**Marsh.** Flat, wet, treeless areas usually covered by standing water and supporting a native growth of grasses and grasslike plants.

**Monitoring.** The orderly collection, analysis, and interpretation of resource data to evaluate progress toward meeting management objectives. (BLM Technical Reference 4400-7)

**Monitoring.** Monitoring means the periodic observation and orderly collection of data to evaluate: (1) Effects of management actions; and (2) Effectiveness of actions in meeting management objectives. (43 CFR 4100.0.5)

**Morphology.** The form and structure of an organism, with special emphasis on external features.

**Multiple Use.** The management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American

people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals watershed, wildlife and fish, natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return of the greatest unit output. (Federal Land Policy and Management Act)

-N-

**Native Species.** A species which is a part of the original fauna or flora of the area in question. Indigenous; living naturally within a given area and was part of the areas flora or fauna prior to human settlement of the region.

**Naturalized Species.** An exotic or introduced species that has become established and exhibits successful reproduction in an ecosystem.

-P-

**Percolation.** The flow of a liquid through a porous substance.

**Productivity.** The potential rate of incorporation or generation of energy or organic matter (biomass) by an organism, population or trophic unit per unit time per unit area; plant productivity is termed primary production, and animal productivity is termed secondary production.

**Proper Functioning Condition.** Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilized streambank against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. (BLM Technical Reference 1737-9)

-R-

**Range Improvement.** Range improvement means an authorized physical modification or treatment which is designed to improve production of forage; change vegetation composition; control patterns of use; provide water; stabilize soil and water conditions; restore, protect and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. The term includes but is not limited to, structures, treatment projects, and use of mechanical devices or modifications achieved through mechanical means.

**Residual Vegetation.** Amount, cover, and species composition of the vegetation on a site after it has been grazed for a period of time.

**Resource.** Any component of the environment that can be utilized by an organism.

**Riparian.** Pertaining to, living or situated on, the banks of rivers and streams. 'Xeroriparian' refers to being situated on dry washes (ephemeral streams).

-S-

**Seep.** Wet areas, normally not flowing, arising from an underground water source.

**Soil.** (1) The unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants. (2) The unconsolidated mineral matter on the surface of the earth that has been subjected to and influenced by genetic and environmental factors of parent material, climate (including moisture and temperature effects), macro- and micro-organisms, and topography, all acting over a period of time and producing a product -soil- that differs from the material it was derived in many physical, chemical, biological, and morphological properties and characteristics.

**Soil Productivity.** The organic fertility or capacity of a given area or habitat.

**Species.** A taxon of the rank species; which is the basic unit, and lowest principal category, of biological classification; in the hierarchy of biological classification, the category below genus; a group of organisms formally recognized as distinct from other groups.

**Species Composition.** The proportions of various plant species in relation to the total on a given area. It may be expressed in terms of cover, density, weight, etc. Synonym *Vegetative composition*.

**Surface Characteristics.** The amount of bare ground, litter, rock and basal cover of live vegetation, which may include cryptogams. (Nevada Rangeland Monitoring Handbook)

**Sustained yield.** The achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use. (FLPMA)

-T-

**Traditional lifeway values.** The quality of being useful in or important to the maintenance of a specified social and/or cultural group's traditional systems of (a) religious belief, (b) cultural practice, or (c) social interaction, not closely identified with definite locations. Another group's shared values are abstract, nonmaterial, ascribed ideas that one cannot know about without being told. (BLM Manual 8100)

**Trend.** The direction of change in ecological status or resource value rating observed over time. Trend in ecological status should be described as *toward*, or *away from* the potential natural community, or as not apparent. (BLM Technical Reference 4400-4)

-U-

**Upland.** Terrestrial ecosystems located away from riparian zones, wetlands, springs, seeps and dry washes; ecosystems made up of vegetation not in contact with groundwater or other permanent water sources.

-V-

**Vegetative Life Form.** The characteristic structural features and method of perennation of a plant species, e.g., annuals, perennial forbs, shrubs, trees and succulents.

-W-

**Watershed.** (1) A total area of land above a given point on a waterway that contributes runoff water to the flow at that point. (2) A major subdivision of a drainage basin.

**Wetlands.** Areas characterized by soils that are usually saturated or ponded, i.e., hydric soils, that support mostly water-loving plants (hydrophytic plants).

In areas of arid low lying land that is submerged or inundated periodically by water, and is characterized by hydric soils that support mostly water-loving (hydrophytic) plants.

## Appendix B

### 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 land form.

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.

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.

## **NORTHEASTERN GREAT BASIN AREA**

### **PREAMBLE**

The Nevada Northeastern Great Basin Resource Advisory Council (RAC), as chartered by the Department of the Interior to promote healthy rangelands, has developed Standards and Guidelines for grazing administration on about 16.2 million acres of public lands and Standards and Guidelines for maintaining healthy wild horse and burro herds on Herd Management Areas (HMA's) administered by the Bureau of Land Management within the designated geographic area of the Northeastern Great Basin. The RAC in developing these Standards and Guidelines, understands and agrees that grazing and wild horses and burros are two of the multiple uses recognized under the Federal Land Policy and Management Act (FLPMA) of 1976 (43 U.S.C. 1739, 1740). The RAC recognizes the limited management options currently available for wild horses and burros. Unlike domestic stock that can be husbanded and controlled regularly, or wildlife that can be controlled through sport harvest, free-roaming wild horses and burros must be managed by capture and adoption or placement in sanctuaries to achieve a sustainable relationship with land and resources year-round. The RAC in recommending these Standards and Guidelines urges the Bureau to aggressively implement the management strategies to expeditiously establish, achieve and maintain Appropriate Management Level's (AML's) of wild horses and burros within HMA's and remove them from outside HMA's. These recommended Standards and Guidelines reflect the stated goals of improving rangeland health while providing for the viability of the livestock industry, all wildlife species and wild horses and burros in the Northeastern Great Basin Area.

### **NE RAC'S INTENDED USE OF STANDARDS AND GUIDELINES**

Standards and Guidelines will be implemented through terms and conditions of grazing permits, leases, and other authorizations, grazing-related portions of activity plans (including Allotment Management Plans), and through range improvement-related activities.

Standards and Guidelines for wild horses and burros will be implemented through control of population levels within established HMA's, related portions of activity plans (including Allotment Management Plans), and through range restoration related activities. Wild Horse and Burro herd management practices should consider both economic and physical environment and will address all multiple uses including, but not limited to recreation, minerals, cultural resources, wildlife, domestic livestock, community economics, Areas of Critical Environmental Concern, designated wilderness and wilderness study areas (WSAs).

The RAC anticipates that in most cases the Standards and Guidelines themselves will not be terms and conditions of various authorizations but that the terms and conditions will reflect the Standards and Guidelines.

The RAC intends that the Standards and Guidelines will result in a balance of sustainable

development and multiple use along with progress towards attaining healthy, properly functioning rangelands and healthy wild horse and burro herds. For that reason, wording has been adopted in this final rule that will require the authorized officer to take appropriate action upon determining the existing management practices are failing to ensure significant progress toward the fulfillment of the Standards and towards conformance with the guidelines.

The RAC intends that assessments and corrective actions will be undertaken in priority order as determined by BLM.

The BLM will use a variety of data including monitoring records, assessments, and knowledge of the locale to assist in making the “significant progress” determination. It is anticipated that in many cases it will take numerous seasons to determine direction and magnitude of trend. However, actions will be taken to establish significant progress toward conformance as soon as sufficient data are available to make informed changes relative to numbers of wild horses and burros, herd management decisions and grazing practices.

## **STANDARDS AND GUIDELINES**

### **STANDARD 1. UPLAND SITES:**

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and land form.

#### **As indicated by:**

Indicators are canopy and ground cover, including litter, live vegetation and rock, appropriate to the potential of the site.

#### **GUIDELINES:**

- 1.1 Livestock grazing management and wild horse and burro population levels are appropriate when in combination with other multiple uses they maintain or promote upland vegetation and other organisms and provide for infiltration and permeability rates, soil moisture storage, and soil stability appropriate to the ecological site within management units.
- 1.2 When livestock grazing management and wild horse and burro herd management alone are not likely to restore areas of low infiltration or permeability, land management treatments should be designed and implemented where appropriate.
- 1.3 Livestock grazing management and wild horse and burro herd management are adequate when significant progress is being made toward this standard.

*See Appendix C(a) for additional guidelines for vegetation management.*

### **STANDARD 2. RIPARIAN AND WETLAND SITES:**

Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

**As indicated by:**

Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows. Elements indicating proper functioning condition such as avoiding accelerating erosion, capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:

Width/Depth ratio; Channel roughness; Sinuosity of stream channel; Bank stability; Vegetative cover (amount, spacing, life form); and Other cover (large woody debris, rock).

Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.

Chemical, physical and biological water constituents are not exceeding the state water quality standards.

**GUIDELINES:**

- 2.1 Livestock grazing management and wild horse and burro population levels will maintain or promote sufficient vegetation cover, large woody debris, or rock to achieve proper functioning condition in riparian and wetland areas. Supporting the processes of energy dissipation, sediment capture, groundwater recharge, and stream bank stability will thus promote stream channel morphology (e.g., width/depth ratio, channel roughness, and sinuosity) appropriate to climate, landform, gradient, and erosional history.
- 2.2 Where livestock grazing management and wild horse and burro herd management are not likely to restore riparian and wetland sites, land management treatments should be designed and implemented where appropriate to the site.
- 2.3 Livestock grazing management and wild horse and burro herd management will maintain, restore or enhance water quality and ensure the attainment of water quality that meets or exceeds state standards.
- 2.4 Livestock grazing management and wild horse and burro herd management are adequate when significant progress is being made toward this standard.

*See Appendix c(a) for additional guidelines for vegetation management.*

**STANDARD 3. HABITAT:**

Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species.

**As indicated by:**

Vegetation composition (relative abundance of species);

Vegetation structure (life forms, cover, heights, or age classes)

Vegetation distribution (patchiness, corridors);

Vegetation productivity; and Vegetation nutritional value.

**GUIDELINES:**

- 3.1 Livestock grazing management and wild horse and burro population levels will promote the conservation, restoration and maintenance of habitat for threatened and endangered species, and other special status species as may be appropriate.
- 3.2 Livestock grazing intensity, frequency, season of use and distribution and wild horse and burro population levels should provide for growth and reproduction of those plant species needed to reach long-term land use plan objectives. Measurements of ecological condition and trend/utilization will be in accordance with techniques identified in the *Nevada Rangeland Monitoring Handbook*.
- 3.3 Livestock grazing management and wild horse and burro management should be planned and implemented to allow for integrated use by domestic livestock, wildlife, and wild horses and burros consistent with land use plan objectives.
- 3.4 Where livestock grazing management and wild horse and burro herd management alone are not likely to achieve habitat objectives, land treatments may be designed and implemented as appropriate.
- 3.5 When native plant species adapted to the site are available in sufficient quantities, and it is economically and biologically feasible to establish or increase them to meet management objectives, they will be emphasized over non-native species.
- 3.6 Livestock grazing management and wild horse and burro herd management are adequate when significant progress is being made toward this Standard.

*See Appendix C(a) for additional guidelines for vegetation management.*

**STANDARD 4. CULTURAL RESOURCES:**

Land use plans will recognize cultural resources within the context of multiple use.

**GUIDELINES:**

- 4.1 Rangeland management plans will consider listings of known sites that are National Historic Register eligible or considered to be of cultural significance and new eligible sites as they become known.
- 4.2 Wild horse and burro herd management will be designed to avoid or mitigate damage to significant cultural resources.

**STANDARD 5. HEALTHY WILD HORSE AND BURRO POPULATIONS:**

Wild horses and burros exhibit characteristics of a healthy, productive, and diverse population. Age structure and sex ratios are appropriate to maintain the long term viability of the population as a distinct group. Herd management areas are able to provide suitable feed, water, cover and living space for wild horses and burros and maintain historic patterns of habitat use.

As indicated by:

Healthy rangelands that provide sufficient quantities and quality of forage and water to sustain the appropriate management level on a year long basis within a herd management area.

Wild horses and/or burros managed on a year-long basis for a condition class greater than or equal to five to allow them normal chances for survival in the winter (See glossary for equine body conditioning definitions).

Highly adoptable wild horses and burros that are readily available from herd management areas.

Wild horse and burro herds that exhibit appropriate age structure and sex ratio for short and long term genetic and reproductive health.

**GUIDELINES:**

- 5.1 Implement the objectives outlined in the Wild Free-Roaming Horses and Burros Tactical Plan for Nevada (May 1999).
- 5.2 Manage for wild horses and/or burros in herd management areas based on the capability of the HMA to provide suitable feed, water, cover and living space for all multiple uses.
- 5.3 Set appropriate Management Levels based on the most limiting habitat factor (eg. available water, suitable forage, living space and cover) in the context of multiple use.

- 5.4 Manage herd management area populations to preserve and enhance physical and biological characteristics that are of historical significance to the herd.
- 5.5 Manage wild horse and burro herds for short and long term increases and to enhance adoptability by ensuring that wild horses and burros displaying desirable traits are preserved in the herd thus providing a reproductive base to increase highly adoptable horses and burros for future demands.
- 5.6 Identify and preserve historic traits and characteristics within the herd which have proven to be highly desirable by the adoption public to increase the long term availability of animals bearing these features.
- 5.7 Wild horse and burro selective removal criteria are modified on a per herd basis to correct deficiencies in population age and sex ratios which threaten short and long term genetic diversity and reproductive health.

## GLOSSARY

Most Definitions are taken from "A Glossary of Terms Used in Range Management" developed through the Society for Range Management. If a definition has been slightly modified it is marked with an \*. Other definitions are from Grazing Administration Regulations Code of Federal Regulations, Chapter 43, Sec. 4100.0-5 or Bureau of Land Management Technical Reference. Definitions also include meanings that were developed by the Northeastern Great Basin Resource Advisory Council to understand their intent in the Standards and Guidelines.

### B

**Biotic** - Refers to living components of an ecosystem, e.g., plants and animals.

### C

**Canopy** - (1) The vertical projection downward of the aerial portion of vegetation, usually expressed as a percent of the ground so occupied. (2) The aerial portion of the overstory vegetation.

**Canopy Cover** - The percentage of ground covered by a vertical projection of the outermost perimeter of the natural spread of foliage of plants. Small openings within the canopy are included.

**Climate** - The average or prevailing weather conditions of a place over a period of years.

**Conservation** - The use and management of natural resources according to principles that assure their sustained economic and/or social benefits without impairment of environmental quality.

### D

**\*Distribution (Grazing)** - Dispersion of grazing animals within a management unit or area.

### E

**Ecological Site** - The kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in its ability to produce vegetation and to respond to management.

**Edaphic** - Refers to the soil.

**Equine body conditioning** -

1. Poor. Extremely emaciated; spinal processes, ribs, tailhead, tuber coxae and ischii projecting prominently, no fatty tissue can be seen.

2. Very Thin. Emaciated; slight fatty covering over base of spinal processes; transverse processes of lumbar vertebrae feel rounded; spinal processes, ribs, tailhead, tuber coxae and ischii prominent; withers, shoulders, and neck structure faintly discernible.

3. Thin. Fat buildup about halfway on spinal processes; transverse processes cannot be felt; slight fat covering over ribs; spinal processes and ribs easily discernible; tailhead prominent, but individual vertebrae cannot be identified visually; tuber coxae appear rounded but easily discernible, tuber ischii not distinguishable; withers, shoulders, and neck accentuated.

4. Moderately Thin. Slight ridge along back; faint outline of ribs discernible; tailhead prominence depends on conformation – fat can be felt around it; tuber coxae not discernible; withers, shoulders and neck not obviously thin.

5. Moderate. Back is flat (no crease or ridge); ribs not visually distinguishable but easily felt around tailhead and area beginning to feel spongy; withers appear rounded over spinal processes; shoulders and neck blend smoothly into body.

6. Moderately Fleishy. May have slight crease down back; fat over ribs spongy; fat around tailhead soft; fat beginning to be deposited along the side of withers, behind shoulders, and along sides of neck.

7. Fleishy. May have crease down back; individual ribs can be felt, but noticeable filling between ribs with fat; fat around tailhead soft; fat deposited along withers, behind shoulders and along neck.

8. Fat. Crease down back; difficult to feel ribs; fat around tailhead very soft; area along withers filled with fat; area behind shoulder filled with fat; noticeable thickening of neck; fat deposited along inner thighs.

9. Extremely Fat. Obvious crease down back; patchy fat appearing over ribs; bulging fat around tailhead, along withers, behind shoulders, and along neck; fat along inner thighs may rub together, flank filled with fat.

**Erosion** - (v.) Detachment and movement of soil or rock fragments by water, wind, ice or gravity. (n) The land surface worn away by running water, wind, ice, or other geologic agents, including such processes as gravitational creep.

**Exotic** - An organism or species which is not native to the region in which it is found. **Synonym non-native.**

## **G**

**\*Grazing** - For the purposes of this document grazing refers to the removal of vegetation by domestic livestock.

**Ground Cover** - The percentage of material, other than bare ground, covering the land surface.

It may include live and standing dead vegetation, litter, cobble, gravel, stones and bedrock. Ground cover plus bare ground would total 100 percent.

**Ground Water** - Subsurface water that is in the zone of saturation. The top surface of the ground water is the "water table". Source of water for wells, seepage, springs.

**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 or site specific evaluation will determine if significant progress is being made towards achieving the standards, and if the appropriate guidelines are being applied.

## H

**Habitat** - The natural abode of a plant or animal, including all biotic, climatic, and edaphic factors affecting life.

**Herd Area** - means the geographic area identified as having been used by a herd as its habitat in 1971.

**Herd Management Area** - Herd Area or portion of a Herd Area that has been designated through the planning process where horses and/or burros can be managed as a component of the public lands.

## I

**Indicators** - Indicators are observations or measurements of physical, chemical or biological factors used to evaluate site conditions or trends, appropriate to the potential of the site. Indicators will be used to determine whether or not Standards are being met.

**Infiltration** - The flow of a fluid into a substance through pores or small openings. It connotes flow into a substance in contradistinction to the word percolation.

**Infiltration Rate** - Maximum rate at which soil under specified conditions can absorb rain or shallow impounded water, expressed in quantity of water absorbed by the soil per unit of time, e.g., inches/hour.

**Intensity (Grazing)** - A reference to grazing density per unit of time.

## L

**Land Use Plan** - Land use plan means a resource management plan, developed under the provisions of 43 CFR part 1600, or management framework plan. These plans are developed through public participation in accordance with the provisions of the Federal Land Policy and Management Act of 1976 and establish management direction for resource uses of public lands. (43 CFR 4100.5)

**Litter** - The uppermost layer of organic debris on the soil surface; essentially the freshly fallen or slightly decomposed vegetal material.

## M

**Management Objective** - The objectives for which rangeland and rangeland resources are managed which includes specified uses accompanied by a description of the desired vegetation and the expected products and/or values.

**Management Plan** - A program of action designed to reach a given set of objectives.

**Marsh** - Flat, wet, treeless areas usually covered by standing water and supporting a native growth of grasses and grasslike plants.

**Monitoring** - The orderly collection, analysis, and interpretation of resource data to evaluate progress toward meeting management objectives.

**Morphology** - The form and structure of an organism, with special emphasis on external features.

## N

**\*Native Species** - A species which is a part of the indigenous fauna or flora of the area in question.

## O

**Overstory** - The upper canopy or canopies of plants. Usually refers to trees, tall shrubs and vines.

## P

**Percolation** - The flow of a liquid through a porous substance.

**Plant Cover** - (1) The plants or plant parts, living or dead, on the surface of the ground. Vegetative cover or herbage cover is composed of living plants and litter cover of dead parts of

plants. (2) The area of ground cover by plants of one or more species.

**Proper Functioning Condition** - Riparian-Wetland areas are functioning properly when adequate vegetation, land-form, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. [BLM Technical Reference 1737-9]

## R

**Range Improvement** - Range improvement means an authorized physical modification or treatment which is designed to improve production of forage; change vegetation composition; control patterns of use; provide water; stabilize soil and water conditions; restore, protect and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. The term includes but is not limited to, structures, treatment projects, and use of mechanical devices or modifications achieved through mechanical means.

**Riparian** - Referring to or relating to areas adjacent to water or influenced by free water associated with streams or rivers on geologic surfaces occupying the lowest position of a watershed.

## S

**Seep** - Wet areas, normally not flowing, arising from an underground water source.

**Soil** - (1) The unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants. (2) The unconsolidated mineral matter on the surface of the earth that has been subjected to and influenced by genetic and environmental factors of parent material, climate (including moisture and temperature effects), macro- and micro-organisms, and topography, all acting over a period of time and producing a product - soil - that differs from the material it was derived in many physical, chemical, biological, and morphological properties and characteristics.

**Species** - A taxon or rank species; in the hierarchy or biological classification, the category below genus.

**Species Composition** - The proportions of various plant species in relation to the total on a given area. It may be expressed in terms of cover, density, weight, etc. Synonym *Vegetative composition*.

**Spring** - Flowing water originating from an underground source.

## T

**Trend** - The direction of change in ecological status or resource value rating observed over time. Trend in ecological status should be described as *toward*, or *away from* the potential natural community, or as *not apparent*. Trend in a resource value rating for a specific use should be described as *up*, *down* or *not apparent*. Trends in resource value ratings for several uses on the same site at a given time may be in different directions, and there is no necessary correlation between trends in resource value ratings and trend in ecological status. Some agencies use *trend* only in the context of *ecological status*. Syn. *range condition trend*.

## U

**Utilization** - The proportion of current year's forage production that is consumed or destroyed by grazing animals. May refer either to a single species or to the vegetation as a whole.

## W

**Watershed** - (1) A total area of land above a given point on a waterway that contributes runoff water to the flow at that point. (2) A major subdivision of a drainage basin.

**Wetlands** - Areas characterized by soils that are usually saturated or ponded, i.e., hydric soils that support mostly water loving plants (hydrophytic plants).

## Appendix D

### **OHV ADMINISTRATION GUIDELINES FOR NEVADA PUBLIC LANDS**

#### **PREAMBLE**

The Nevada Northeastern Great Basin Resource Advisory Council (RAC), the Sierra Front Northwestern Great Basin RAC, and the Mojave-Southern Great Basin RAC, as chartered by the Department of the Interior, have developed Guidelines for the administration of Off-Highway Vehicle (OHV) use on public lands within the State of Nevada . These guidelines are intended to promote cooperation among user groups, to share resources, and to minimize conflicts in accordance with the Nevada Standards for Rangeland Health. While recognizing the legitimacy and necessity of OHV use on public lands, it has become necessary to define guidelines for management of OHVs to insure the protection of land health and the availability of the public lands for all multiple users. These guidelines are to assist land managers in administrative and planning decisions. Administrators may use the guidelines for managing for land health and making decisions with regard to restricting, or not restricting OHV activity. Additionally, administrators may use the educational guidelines as tools to provide training for land managers and to inform the public on OHV use issues and ethics. Planners should use these guidelines in developing timely plans for resources and recreation use, while addressing the increasing demand for OHV use.

#### **ON-THE-GROUND MANAGEMENT GUIDELINES**

- Encourage OHV use on existing or designated roads and trails, except in closed areas, prior to land use plans being updated and road and trail inventories completed.
- Locate and manage OHV use to conserve soil functionality, vegetative cover, and watershed health. Manage OHV use to minimize the impact on the land, while maintaining OHV access.
- Manage OHV use by type, season, intensity, distribution, and/or duration to minimize the impact on plant and animal habitats. If seasonal closures become appropriate to minimize adverse OHV impact(s) on public lands resources, managers will strive to preserve public access by designating alternative routes.
- Manage OHV activities to conserve watershed and water quality.
- Monitor the impact(s) of OHV activities on all public land, water, air and other resources and uses.

- Maintain an inventory of existing road and trail systems.
- Manage OHV use to preserve cultural, historical, archeological, and paleontological resources.
- Engineer, locate, and relocate roads and trails to accommodate OHV activities while minimizing resource impacts.
- Encourage cooperation in law enforcement among all agencies.
- OHV use pursuant to a permitted activity shall be governed by the terms of the permit.

## **PLANNING GUIDELINES\_ \_**

- In land use plans or plan amendments, designate areas as open, limited, or closed to OHV use.
- Address OHV management including land use and/or route designations, monitoring and adaptive management strategies, such as applying the Limits of Acceptable Change process, when developing new land use plans or amending existing land use plans. Work closely with local, state, tribal, and other affected parties and other resource users in OHV planning.
- Establish and maintain an inventory of existing routes and trails as part of the land use planning process.
- Provide for other resources and uses in OHV planning. This includes livestock grazing, other recreational uses, archeological sites, wildlife, horses and burros, and mineral extractions and coordinate with other users of public lands.
- Conduct an assessment of current and future OHV demand, and plan for and balance the demand for this use with other multiple uses/users when developing all land use plans.
- Include in land use plans, social/economic effects of OHV use, including special recreation events.
- Integrate concepts of habitat connectivity into OHV planning to minimize habitat fragmentation.
- For addressing/resolving local site-specific OHV issues/concerns, use collaborative planning groups consisting of local representative(s), affected/interested group(s) and agency(s).
- Clearly identify route and area designations.

- Where land health permits, develop sustainable OHV use areas to meet current and future demands, especially for urban interface.

## **EDUCATION GUIDELINES**

- Cooperatively develop/improve public outreach programs to promote trail etiquette, environmental ethics, and responsible-use stewardship ethic.
- Promote/expand/disseminate materials from programs such as, but not limited to, “Tread Lightly!” and “Leave No Trace.”
- Provide OHV management education and training for managers, staff, partners and volunteers. Training should focus on state of the art practices and be tailored to meet local needs. Encourage communication between agencies, managers, staff, partners and volunteers to share expertise and effective techniques.
- Encourage the private sector, as well as the public sector, to conduct responsible marketing of activities on public lands while avoiding the promotion of products, behaviors and services that are inconsistent with existing regulations and land use plans.
- Develop communication and environmental education plan(s). Assess all situations where OHV use may require public information and education. Develop materials and programs appropriate to each situation.
- Utilize high use areas and special events to maximize the dissemination of responsible use education materials and concepts to the public.

