I. SCOPE
The work shall consist of managing grazing or browsing animals to achieve specified objective(s) within management units as shown on the conservation plan map. Facilitating practices such as fencing and water developments will be installed as needed to implement prescribed grazing.

II. KINDS OF GRAZING LAND
Grazing lands in Nevada include:
- Native or Seeded Rangeland (including riparian area grazing)
- Irrigated Pasture
- Forest
- Aftermath Grazing of Hayland or Cropland
- Aquatic and wetland areas/habitat
- Wildlife Habitat

III. GRAZING SPECIFICATIONS
General
Prescribed grazing plans will be developed for all management units where livestock use is planned. Prescribed grazing plans are to be practical and provide flexibility to accommodate such variables as year-to-year climatic fluctuations, variations in forage production, and potential for change in livestock water availability.

Frequency of harvest and season of use will be based on management objectives, soil condition, the rate of plant growth, the physiological needs of forage plants and grazing/browsing animals and the life history needs of fish and wildlife.

Timing, duration, and intensity of grazing will be adjusted based on desired plant health and expected productivity of key forage species to meet management unit objectives. Forage utilization levels or stubble-height targets following livestock harvest are a tool used to help ensure that resource sustainability and producer objectives are being met.

Specifying a utilization level or grazed stubble-height for key species establishes a reference point to evaluate grazing management and its affect on the desired plant community.

Deferred grazing is required on all grazing lands following brush management, range seeding, prescribed fire, or wildfires that remove vegetative cover.

Where a management unit is divided into two or more sub-units to allow for periods of deferment or to rotate grazing use, a prescribed grazing schedule is to be prepared (Exhibit I).

Prescribed grazing schedules are to be developed following guidance in the NRCS National Range and Pasture Handbook.

Prescribed grazing plans will document a balance between grazing animal forage demand and available forage resources for the entire period that grazing animals are being managed. Prescribed grazing plans ensure ample forage quantity and quality to meet production and animal health objectives for the kind and class of animals being grazed.

Prior to practice implementation, the following forms will be completed for all areas planned:
- NV-CPA-52 Environmental Evaluation
- NV-EVC-01 Cultural Resources Worksheet
- NV-ECS-01a Range Inventory Worksheet
- NV-ECS-01b Rangeland Health Evaluation
- NV-ECS-03 Ranch Organization Summary
- NV-ECS-04 Ranch Planning Summary
- NV-ECS-XX Wildlife Habitat Evaluation Guide
- NV-ECS-34 Species Habitat Evaluation Guide for Sage Grouse (when in sage grouse range)
- NV-ECS-414 Proper Grazing Use
- NV-ECS-416 Browse Plant Utilization
- SCS-417 Forage Production and Composition Record

Conservation practice specifications are reviewed periodically, and updated if needed. To obtain the current version of this specification, contact the Natural Resources Conservation Service.
Prescribed grazing plans should incorporate harvest of hayland or crop aftermath harvest when available and feasible.

Livestock water supplies must be dependable and sufficient to meet the daily requirements of the number of livestock (kind and class) to be grazed for each specified period in each grazing unit.

Livestock herding and the control of access to water by livestock (where feasible) are alternatives to fencing in facilitating prescribed grazing.

Use of natural shelter features or installation of artificial shelter will be included as part of this practice application.

Livestock grazing intensity, duration, and timing can often be adjusted to effect a desired change in the structure or species composition of existing vegetation. Grazing prescriptions may also be developed for weed control, to prepare land for seeding, enhance wildlife habitat, and to manage fuel loads.

Initial stocking rates for implementing grazing will be based on:

- actual use records, coupled with trend evaluations, for each grazing unit
- comparisons with stocking rates for similar units that have been grazed properly
- on-site forage inventories
- management unit conditions that affect grazing use
- herbivory requirements of native ungulates and herbivores

Native or Seeded Rangeland

Prescribed grazing of rangelands is based on the management of key forage (or browse) plants within specified areas (key areas). Prescribed grazing is designed to use 25 to 30% (Harvest Efficiency) of annual air-dry growth on native rangelands and up to 35% on seeded range or pastures. Inventory of native rangeland plant communities is to be based on ecological sites. Forage inventory will be completed using form NV-ECS-01 and SCS-417 to record production of species (by weight), assess usable forage production, and to evaluate rangeland trend. Refer to the NRCS National Range and Pasture Handbook.

Forage inventory of seeded rangeland is to be based on total stand productivity, forage plant density, forage plant vigor, and usable forage production. Inventory will be completed using form NV-ECS-01 and SCS-417 to record estimates of species composition (by weight) and actual usable forage production.

Salt or other dietary supplements may be used as a means to achieve more even livestock distribution on rangelands and should be placed in areas not readily used by livestock.

Grazing readiness criteria are to be specified for each rangeland pasture. Grazing readiness is the defined stage of plant growth at which managed grazing may begin without damage to vegetation, soil, or animal health.

Utilization levels shall be recorded as the percent removal of annual growth or stubble height. Grazing use specifications indicate the amount of current season’s growth that can be safely removed from key forage or browse species without weakening these plants.

Form NV-ECS-414 will be used to document planned utilization levels/stubble height for key species within key grazing areas and to record actual grazing use. Form NV-ECS-416 will be used to record planned and actual use for browse species.

Key species will be selected based on the management objective(s) of the landowner.

Key grazing areas and designated key species within the key area will be used to judge grazing use in a grazing unit.

At least one key grazing area and at least one (to three) key species for each grazed unit shall be designated. A minimum of one key area will be selected per 1000 acres of grazing land within a grazing unit.

In general, for native herbaceous plants designated as key species, not more than 50 percent of the current year’s growth should be harvested when these plants are grazed during the growing season (see Table I). No more than 50 percent of the current year’s growth of designated key browse species (based upon twigs only) should be harvested.

No more than 65 percent of the previous year’s growth of a key species is to be harvested when grazed during the dormant season.

Adjustments in stocking rates will be considered for areas that are not accessible by livestock because of physical factors such as slope, aspect, and distance to water. Refer to the National Range and Pasture Handbook Chapter 5, Section 3 for guidance on adjustments.

For soils with a high potential for erosion, adjust the allowable use factor as needed to maintain a stable vegetative cover.

Prescribed grazing schedules that account for periods of deferment or rotations of grazing use are to be developed for rangeland areas that are divided into two or more units.

The length of a deferment that has been prescribed to promote natural revegetation and increase vigor of desired species (key species) will be from before plant growth in the spring until after
the key species have completed their growth for the year and have produced seed. Deferment for two consecutive growing seasons may be required if drought, low vigor of key species, or other conditions prevail that prevent more rapid plant recovery.

Prescribed grazing schedules should provide a period of deferment for key species through a portion of the critical growth period.

Scheduled periods of deferment for each grazing unit will be arranged to ensure that the same range unit is not grazed at the same time during the growing season in successive years.

Complete nonuse by domestic livestock is required during prescribed periods of deferment.

For rangeland areas supporting a predominance of annual grasses and forbs, prescribed grazing plans will provide for adequate litter or plant residue to be left on the soil surface for erosion control. The amount of residue to remain following grazing use should be a minimum of 300 pounds (air-dry weight) per acre on slopes less than 15% and 500-pounds (air-dry weight) per acre on slopes greater than 15%.

**Riparian Area Grazing - Riparian Pasture**

Riparian areas are a special kind of native rangeland that occur adjacent to streams or open water bodies where vegetation is strongly influenced by the presence of water. Riparian areas may support a mix of both native and introduced herbaceous plants.

Grazing management strategies for riparian areas need to be tailored to the site-specific resource conditions, soil and vegetation capabilities, water quality requirements, livestock, fish and wildlife needs, and management objectives.

See Table II and Table IV for guidance in evaluating the impacts of various types of grazing systems on riparian vegetation.

Consider the entire watershed in evaluating alternatives for grazing management on riparian areas.

Where improvement of a riparian area is the goal, management objectives and grazing management plans should be focused specifically to riparian zone features while considering the needs of the entire watershed.

In addition to the management considerations required for all grazing lands, major considerations in establishing management objectives for riparian areas include:

- kind and amount of vegetation required to trap (and hold) sediment deposits during runoff events to build streambanks and replenish groundwater aquifers;
- maintenance of streambank/shoreline stability and elimination of bank shearing by hoof action;
- maintenance of stream channel, streambank, and floodplain conditions required for proper functioning of riparian area;
- aesthetic value of healthy, properly functioning, riparian ecosystems;
- importance of riparian area to riparian-dependent wildlife and upland wildlife species that are attracted periodically to riparian areas;
- restoration / maintenance / enhancement of aquatic and/or waterfowl habitats.

Grazing management of riparian areas is to provide for adequate cover and height of vegetation on streambanks and floodplains to support natural stream functions (i.e., sediment filtering, bank building, and water storage).

Timing of grazing shall be managed to minimize damage to streambanks when most vulnerable to trampling. Riparian areas are not grazed when the soil is wet and subject to compaction.

Inventory of riparian rangeland plant communities is to be based on ecological sites. Inventory will be completed using form NV-ECS-01 and SCS-417 to record riparian zone ecological site species composition (by weight), assess usable forage production, and to evaluate rangeland trend.

Inventory of riparian-wetland areas is also based on assessments using Stream Visual Assessment Protocol Ver. 2 (USDA-NRCS, 2009) and Proper Functioning Condition (USDI-BLM, 1994, 1998).

In addition to specifications listed for Native or Seeded Rangeland, for riparian areas also specify the kind and amount of vegetative cover needed on streambanks to minimize erosive effects of runoff events; the minimum stubble height of streambank vegetation to remain following grazing; the regrowth period for key forage species within the grazed riparian area; and critical growth and establishment period(s) for key riparian browse species.

If a riparian area receives applications of supplemental moisture by waterspreading, water is applied in accordance with conservation practice WATERSPREADING (Code 640) specifications.

Riparian areas that are mowed for hay should be harvested using wildlife-friendly harvesting strategies such as:

- Harvest the area from the inside outward to allow an escape route for wildlife.
- Reduce ground speed in areas where birds have been observed, nesting activity is expected or fawning/calving occurs.
- When possible, harvest hay no earlier than the first of July.
- If there are several fields to harvest, save the fields closest to wetlands and woody cover for last.
Flushing bars are useful for flushing birds from nests.

**Irrigated Pasture**

Prescribed grazing plans developed for irrigated pasture are based on stand productivity, seasonal variability of forage production, and forage quality. Prescribed grazing is designed to use from 30% (Harvest Efficiency) on continuously grazed irrigated pastures to 50% (Harvest Efficiency) under a managed intensive grazing system.

Inventory of irrigated pasture will document date of pasture establishment, species composition, stand density, stand productivity, and vigor of forage plants. The Pasture Condition Score Sheet (NV-ECS-08a and 08b) will be used to assess the condition of the pasture and identify what treatment needs are required to improve pasture productivity and protect soil, water and air quality.

Forage inventory can be completed using form NV-ECS-01 and SCS-417 to record species composition (by weight), usable forage production, and forage plant vigor.

Irrigated pastures may be divided into two or more fields with rotation of grazing use to permit forage crop regrowth and to avoid grazing use while soils are wet.

Rotational grazing permits the use of forages when they are at their peak production, protein content, and palatability. Rotational grazing improves the plant diversity of pastures and provides higher-quality of habitat for grassland birds. Deferring grazing in some pastures for the duration of nesting season should be considered.

Pastures that are mowed should be harvested using wildlife-friendly harvesting strategies such as:

- Harvest the field from the inside outward to allow an escape route for wildlife.
- Reduce ground speed in areas where birds have been observed or nesting activity is expected or fawning/calving of wild ungulates occurs.
- When possible, harvest hay no earlier than the first of July.
- If there are several fields to harvest, save the fields closest to wetlands and woody cover for last.
- Flushing bars are useful for flushing birds from nests.

Grazing readiness criteria are to be specified for key forage species in each pasture.

The recommended regrowth interval for each key pasture forage species is to be recorded (see Table I). Regrowth period or interval is the time (in days) required for harvested forage plants to return to grazing readiness stage.

The "dry out" period, or the time (in days) following an irrigation necessary for the soil to dry sufficiently to allow animal traffic without soil compaction or damage to forage plants, is to be determined and recorded for each pasture.

Irrigation water application should be adjusted to meet consumptive use requirements of the pasture forage species – see NRCS Nevada Irrigation Guide.

During the active growing season, irrigations shall be scheduled to maintain soil moisture above 50 percent of the soil available water holding capacity.

Correlate irrigation interval with livestock rotation to provide an adequate regrowth interval between grazing periods and avoid grazing wet pastures.

Irrigation applications will be in accordance with conservation practice IRRIGATION WATER MANAGEMENT (Code 449) conservation practice standards and specifications.

Use fertilizers as needed to maintain optimum forage growth and nutrient quality. Use soil tests or tissue analysis to determine need for fertilizer and other soil amendments in absence of local experience.

As nutrient quality of forage plants increases, the fiber content of animal waste is reduced and decomposition rates for manure are accelerated.

Prescribed grazing generally improves grazing animal distribution and animal waste is less concentrated.

Fertilizer, manure (dry or slurry), and soil amendment applications will be in accordance with NUTRIENT MANAGEMENT (CODE 590) conservation practice standards and specifications.

Utilization levels shall be recorded as the residual forage to be left following the grazing period with assessments made in terms of pounds per acre or stubble-height remaining after harvest (see Table I). Percent removal of annual growth may also be recorded as the level of grazing use, however, a means to measure ungrazed forage production within the pasture evaluated must be available.

**Forest**

Prescribed grazing is designed to use 25% (Harvest Efficiency) of annual air-dry growth on native grazed forestlands. Inventory of forest communities is to be based on ecological sites. Inventory will be completed using form NV-ECS-01 and SCS-417 to record estimates of forest ecological site overstory canopy cover and to record understory species composition (by weight) and usable forage production.

Basal area transects are made to determine existing tree spacing of forest overstory. Using...

NRCS Nevada
January 2014
this information, adjustments in the overstory canopy can be planned that will provide increased forage production (add one-foot to two-feet to the suggested D+ spacing guide for the appropriate forest cover type) – see NRCS National Forestry Manual.

The intensity of grazing will be adjusted to allow for maintenance or enhancement of wildlife habitat, watershed protection, and timber or wood product production, with special emphasis being placed on protecting desirable tree seedling and sapling stands.

Grazing by livestock can reduce danger of fire in tree plantations. Livestock may be used as an alternative to prescribed fire or herbicides for control of plant competition to tree seedlings.

Prescribed grazing schedules that account for periods of deferment or rotations of grazing use are to be developed for forested areas that are divided into two or more grazing units.

Some forests receive significant seasonal use (i.e., wintering areas for deer) and this use will be considered when developing livestock grazing plans.

In addition to specifications listed for Native or Seeded Rangeland, for grazed forest areas also specify the present overstory canopy and D+ spacing as well as the recommended overstory canopy and D+ spacing. The recommended D+ spacing provides for optimum forage production while meeting timber or wood product production objectives.

**Aftermath Grazing on Hayland and Cropland**

Prescribed grazing plans will be coordinated with crop rotations, tillage operations, irrigation, and other cultural practices applied on cropland. Prescribed grazing is designed to use from 10% to 35% (Harvest Efficiency) crop and hay aftermaths. Inventory of crop or hay aftermath production will be recorded on SCS-417 as pounds per acre (air-dry weight) of standing crop planned for harvest by grazing animals.

Aftermath grazing of hayland must be managed properly to maintain a residue cover sufficient to prevent erosion during critical periods and plant health. Adequate stubble height is also critical for over-wintering wildlife.

For aftermath grazing, specify:
- type of crop or hay to be grazed;
- number of fields to be grazed;
- size of each field to be grazed;
- estimated usable forage within each field to be grazed;
- number, kind, and class of animals to be grazed;
- supplemental feed (if any) to be provided to animals while being grazed;
- timing of grazing use and length of grazing period(s) for each field;
- planned amount of residual forage (pounds/acre) to be left following grazing and/or the minimum stubble-height to remain following the grazing period.

**Wildlife Habitats**

On rangeland where the landowner is managing for wildlife habitat, wildlife species have the priority in allocating forage and livestock grazing is prescribed to meet wildlife management goals. Refer to NRCS National Range and Pasture Handbook, Chapter 8.

Prescribed grazing can often be used to manipulate vegetation to better suit the food or other habitat requirements of specific wildlife.

Livestock grazing is often more acceptable in vegetation management than use of prescribed burning, herbicides or mechanical treatment. Livestock grazing can be used to control excessive vegetative growth or utilize forage in excess of wildlife needs. Prescribed grazing of livestock can also reduce fuel build-up and reduce risk of wildfire to critical wildlife habitat.

Providing an adequate number of pastures will allow flexibility in wildlife management and facilitate control of the amount and timing of grazing use by livestock.

Prescribed grazing plans developed for wildlife habitat will address critical periods for wildlife food, water, cover, nesting, and reproduction and parturition of resident and migratory wildlife species as they relate to management objectives. Other spatial needs, such as interspersion of habitat types, home ranges, and travel corridors between specific land use cover types and ecological sites will also be considered.

Special habitat and seasonal requirements such as fawning, kidding, calving, and nesting and brood rearing areas will be identified.

Prescribed grazing for wildlife habitat is in accordance with prescribed grazing specifications for the subordinate land use (i.e., irrigated pasture, rangeland, or forest).

In addition specify:
- management objective(s) for prescribed grazing plan;
- wildlife species to be managed and complete appropriate Species Habitat Evaluation (SHE) form;
- complete appropriate Wildlife Habitat Evaluation Guide (WHEG);
- If available, include habitat maps for the species of concern.

NRCS Nevada
January 2014
IV. PRESCRIBED GRAZING PLANS

A Prescribed Grazing plan, in narrative form, will be prepared for all management units where grazing will occur. The grazing management plan will be site specific, will meet the land manager's goals and objectives, and will promote the maintenance and/or improvement of the plant, animal, soil, and water resources. Seek measures to avoid adverse effects to endangered, threatened, and candidate species and their habitats. Prepare a prescribed grazing plan for all management units where grazing will occur according to state standards and specifications. The grazing system will be selected by the land manager and will be flexible in terms of adjusting to climatic conditions and other factors. The manner of documentation will depend on the size and complexity of the operating unit and the details required for the grazing system.

Prescribed grazing plans will include the following information:

- **Goals and Objectives** - clearly stated goals, objectives, and desired future conditions to be achieved with the grazing plan;
- **Resource Inventory** – resource conditions/concerns, ecological sites, existing structures, facilities, soils, animal numbers and class;
- **Forage Inventory** - the seasonal quantity of forage expected and key forage plants for each management unit (pasture); include other leased or federal allotments;
- **Forage-Animal Balance** - forage surpluses and deficiencies by seasonal period for each kind and class of livestock and wildlife of concern; the number and kind of grazing or browsing wildlife of concern anticipated within each management unit; include wild horses or burros;
- **Wildlife, including Threatened, Endangered, and Species of Concern (Plant or Animal)** - the grazing plan will address the life history needs of the species and document grazing effects to the species and habitats; if client objectives include providing suitable habitat then appropriate grazing schedule, cover patterns, and plant height to provide suitable habitat for the desired species should be identified; the plan map will include locations of known occurrences and habitats;
- **Water Requirements** – evaluate water quality, water yield and water requirements for livestock and wildlife;
- **Supplemental Feed** - any supplemental feed provided to livestock in order to meet animal performance objectives is to be documented;
- **Utilization Records** - a record of actual use and season of use related to current forage inventory so that a comparison to established demand is easily made;
- **Grazing Schedule** - a grazing schedule to guide livestock movements and identify periods of grazing, deferment, rest, and other treatments for each grazing management unit or set of management units (Exhibit I); identified regrowth periods (when appropriate) for key forage species will be identified and incorporated into the grazing schedule;
- **Key Areas and Key Plant Species**: key plant species, the proper degree of grazing use for each key species (or minimum grazing height), and the location within each management unit to evaluate grazing effects on key forage plants (National Range and Pasture Handbook). Key areas will be identified on the plan map.
- **Monitoring Plan** – developed with appropriate methods to assess whether the grazing strategy is meeting objectives.
- **Contingency Plan** - that accounts for potential management problems (i.e., drought, insects, poisonous plants, wildfires) and a guide for adjusting the grazing prescription to ensure grazing land resource protection.

Prescribed grazing plans will also specify when assessments of the current feed and forage supply should be made (i.e., stored forages, pasture/range forage utilization).

V. MONITORING

A monitoring plan will be developed with appropriate monitoring protocols to assess whether the grazing strategy is meeting objectives. The monitoring plan should provide enough information to assist the land manager with decisions concerning the grazing schedule and stocking rates. A combination of short and long term monitoring methods should be incorporated into the plan. Monitoring plans will include (at a minimum) a record of grazing use on key forage plants and changes (trend) in plant community structure, species composition, and productivity (for each key area), actual grazing dates, climatic conditions, stock density adjustments, livestock condition, and livestock performance.

Monitoring protocols for grazing plans developed under the Sage Grouse Initiative are listed in Appendix A.

VI. OPERATION AND MAINTENANCE

Grazing management can often be fine tuned through adaptive management to more efficiently and effectively accomplish objectives. Provide needed follow-up for evaluation of monitoring data and fine tuning of the grazing management plan.
and adjust grazing strategies to meet new planning goals if significant changes in plant composition, plant health or vigor, kind or class of grazing animal, or management objectives occur.

Closely monitor the intensity, frequency, and duration of grazing and modify, as needed, to maintain the biotic integrity of the plant community, or to direct the present vegetation toward the desired plant community.

Delay grazing newly planted pastures until plants are well rooted and can withstand animal traffic and herbivory.

For irrigated pasture, consider "dragging" pastures after each grazing period, in order to scatter manure and encourage decomposition. "Dragging" of a pasture is not recommended if the application or timing of this practice will adversely affect adjacent surface waters or ground nesting birds.

For irrigated pasture, ungrazed plants should be mowed as necessary to maintain uniform pasture growth.

Placement of supplemental feed, salt or mineral blocks and location of facilitating practices such as fencing and water developments should minimize adverse impacts to soil, water, air, plant, and animal resources.

Installation of livestock driveways or movement lanes to and between rangeland or forestland (large scale) grazing units are included as part of the ACCESS ROAD (Code 560) conservation practice. See ACCESS ROAD conservation practice standards and specifications.

All facilitating practices (i.e. fence, watering facilities, etc.) that are needed to affect adequate grazing distribution as planned by the practice standard will be maintained in good working order.

VII. BASIS FOR ACCEPTANCE

The prescribed grazing system shall conform to all applicable federal, state, and local laws.

After the practice has been applied, an on-site inspection will be conducted to determine if the condition(s) of the practice have been adhered to.

REFERENCES:


Boulder, CO.


<table>
<thead>
<tr>
<th>PASTURE</th>
<th>NUMBER OF ANIMALS</th>
<th>KIND AND CLASS OF ANIMALS</th>
<th>MONTHS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1&lt;sup&gt;st&lt;/sup&gt; YEAR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; YEAR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; YEAR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4&lt;sup&gt;th&lt;/sup&gt; YEAR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5&lt;sup&gt;th&lt;/sup&gt; YEAR</td>
</tr>
<tr>
<td>Plant Name</td>
<td>Plant Height to Begin Grazing (inches)</td>
<td>Phenological Stage of Plant Growth</td>
<td>Plant Height to End Grazing (inches)</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------------------------</td>
<td>-----------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Alkali sacaton</td>
<td>10</td>
<td>Vegetative</td>
<td>8</td>
</tr>
<tr>
<td>Baltic Rush (Wiregrass)</td>
<td>4</td>
<td>Vegetative</td>
<td>3</td>
</tr>
<tr>
<td>Basin Wildrye</td>
<td>16</td>
<td>Vegetative</td>
<td>8</td>
</tr>
<tr>
<td>Beardless Wildrye</td>
<td>5</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>7</td>
<td>Vegetative</td>
<td>3</td>
</tr>
<tr>
<td>Big Bluegrass</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Blue grama</td>
<td>4</td>
<td>Vegetative</td>
<td>1.5</td>
</tr>
<tr>
<td>Blue Panicgrass</td>
<td>14</td>
<td>Vegetative</td>
<td>8</td>
</tr>
<tr>
<td>Bluebunch Wheatgrass</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Bottlebrush Squirreltail</td>
<td>5</td>
<td>Vegetative</td>
<td>3</td>
</tr>
<tr>
<td>Cereal Grains</td>
<td>8</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Creeping Meadow Foxtail</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Creeping Wildrye</td>
<td>8</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Crested/Desert Wheatgrass</td>
<td>6</td>
<td>Vegetative</td>
<td>3</td>
</tr>
<tr>
<td>Galleta</td>
<td>4</td>
<td>Vegetative</td>
<td>2.5</td>
</tr>
<tr>
<td>Idaho Fescue</td>
<td>6</td>
<td>Early Boot</td>
<td>4</td>
</tr>
<tr>
<td>Indian Ricegrass</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Inland Saltgrass</td>
<td>4</td>
<td>Vegetative</td>
<td>3</td>
</tr>
<tr>
<td>Intermediate/Pubescent Wheatgrass</td>
<td>10</td>
<td>Early Boot</td>
<td>6</td>
</tr>
<tr>
<td>Italian (Annual) Ryegrass</td>
<td>8</td>
<td>Vegetative</td>
<td>2</td>
</tr>
<tr>
<td>Kentucky Bluegrass</td>
<td>6</td>
<td>Vegetative</td>
<td>3</td>
</tr>
<tr>
<td>Meadow Bromeoegrass (Regar)</td>
<td>8</td>
<td>Early Boot</td>
<td>4</td>
</tr>
<tr>
<td>Millets</td>
<td>8</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Mountain brome</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Muttongrass</td>
<td>6</td>
<td>Vegetative</td>
<td>3</td>
</tr>
<tr>
<td>Needlegrass species (Achnatherum)</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Nevada Bluegrass</td>
<td>8</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Orchardgrass</td>
<td>6</td>
<td>Boot</td>
<td>4</td>
</tr>
<tr>
<td>Prairie Junegrass</td>
<td>5</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Redtop</td>
<td>8</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Reed Canarygrass</td>
<td>8</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Russian Wildrye</td>
<td>8</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Sandberg Bluegrass</td>
<td>4</td>
<td>Vegetative</td>
<td>3</td>
</tr>
<tr>
<td>Sedges, Broadleaf</td>
<td>6</td>
<td>Vegetative</td>
<td>3</td>
</tr>
<tr>
<td>Siberian Wheatgrass</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Slender Wheatgrass</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Smooth Bromeagrass</td>
<td>8</td>
<td>Early Boot</td>
<td>4</td>
</tr>
<tr>
<td>SorghumX Sudangrass(^2)</td>
<td>8</td>
<td>Vegetative</td>
<td>6</td>
</tr>
<tr>
<td>Streambank Wheatgrass</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Sudangrass(^2)</td>
<td>18</td>
<td>Vegetative</td>
<td>6</td>
</tr>
<tr>
<td>Tall Fescue</td>
<td>8</td>
<td>Early Boot</td>
<td>4</td>
</tr>
<tr>
<td>Tall Wheatgrass</td>
<td>10</td>
<td>Vegetative</td>
<td>6</td>
</tr>
<tr>
<td>Thicksedge Wheatgrass</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Timothy</td>
<td>8</td>
<td>Boot</td>
<td>4</td>
</tr>
<tr>
<td>Tufted Hairgrass</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
<tr>
<td>Western Wheatgrass</td>
<td>6</td>
<td>Vegetative</td>
<td>4</td>
</tr>
</tbody>
</table>

NRCS Nevada
January 2014
1/ Remove livestock before minimum height is reached on the majority of the forage.

2/ Sorghum or Sudangrass regrowth should not be grazed following cutting, within 2 weeks following a frost, or during drought conditions to avoid Prussic acid (HCN) poisoning. Grazing sorghum X sudangrass hybrids until 30-inches tall or until sudangrass is-18 inches tall, reduces HCN poisoning concerns.

3/ Care should be taken when grazing most legumes to avoid bloat.

### Table II. Evaluation and Rating of Grazing Strategies as Related to Stream-Associated Riparian Habitats

(Leonard et al, 1997)

<table>
<thead>
<tr>
<th>Grazing Management Strategy</th>
<th>Expected Utilization Level</th>
<th>Control of Animal Distribution</th>
<th>Streambank Stability</th>
<th>Woody Species Condition</th>
<th>Seasonal Plant Growth</th>
<th>Riparian Rehabilitative Potential</th>
<th>Rating a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous - Season-long (Cattle)</td>
<td>Heavy</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>1</td>
</tr>
<tr>
<td>Holding (Sheep or Cattle)</td>
<td>Heavy</td>
<td>Excellent</td>
<td>Poor</td>
<td>Poor</td>
<td>Fair</td>
<td>Poor</td>
<td>1</td>
</tr>
<tr>
<td>Short Duration-High Intensity</td>
<td>Heavy</td>
<td>Excellent</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>1</td>
</tr>
<tr>
<td>HRM (Cattle or Sheep)</td>
<td>Heavy to Light</td>
<td>Good</td>
<td>Poor to Good</td>
<td>Poor</td>
<td>Good</td>
<td>Poor to Excellent</td>
<td>2-9</td>
</tr>
<tr>
<td>Deferred (Cattle)</td>
<td>Moderate to Heavy</td>
<td>Fair</td>
<td>Poor</td>
<td>Poor</td>
<td>Fair</td>
<td>Fair</td>
<td>3</td>
</tr>
<tr>
<td>Deferred-Rotation (Cattle)</td>
<td>Moderate to Heavy</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
<td>4</td>
</tr>
<tr>
<td>Stuttered Deferred-Rotation (Cattle)</td>
<td>Moderate to Heavy</td>
<td>Good</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
<td>4</td>
</tr>
<tr>
<td>Rest-Rotation (Cattle)</td>
<td>Moderate to Heavy</td>
<td>Good</td>
<td>Fair to Good</td>
<td>Fair</td>
<td>Fair to Good</td>
<td>Fair</td>
<td>5</td>
</tr>
<tr>
<td>Winter Use (Cattle or Sheep)</td>
<td>Moderate to Heavy</td>
<td>Good</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair to Good</td>
<td>Good</td>
<td>5</td>
</tr>
<tr>
<td>Double Rest-Rotation (Cattle)</td>
<td>Moderate</td>
<td>Good</td>
<td>Good</td>
<td>Fair</td>
<td>Good</td>
<td>Good</td>
<td>6</td>
</tr>
<tr>
<td>Riparian Pasture (Cattle or Sheep)</td>
<td>As Prescribed</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>8</td>
</tr>
<tr>
<td>Corridor Fencing (Cattle or Sheep)</td>
<td>None</td>
<td>Good</td>
<td>Good to Excellent</td>
<td>Good to Excellent</td>
<td>Good</td>
<td>Excellent</td>
<td>9</td>
</tr>
<tr>
<td>Rest or Exclusion (Cattle or Sheep)</td>
<td>None</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
<td>Excellent</td>
<td>10</td>
</tr>
</tbody>
</table>

a Rating based on 1 (poorly compatible) to 10 (highly compatible with fishery needs) scale.
### Table III. Grazing Management Strategies

**Continuous Season-long Grazing** – annual grazing of a pasture throughout the entire growing season.

**Deferred** – Postponing grazing or resting an area for a prescribed period, usually to meet a specific management objective.

**Deferred-Rotation** – A system where seasonal deferment is rotated among pastures each year and the system will need to follow through a complete cycle where each pasture receives a full growing season deferment on the key species a minimum of once every three years.

**Deferred-Rotation** – A system where seasonal deferment is rotated among pastures each year and the system will need to follow through a complete cycle where each pasture receives a full growing season deferment on the key species a minimum of once every three years.

**Double Rest-Rotation** – Complete rest over two consecutive years for those pastures having highest riparian values within a grazing unit (employing a rest-rotation grazing system).

**Holding** – Holding grazing animals for long periods within a selected area. This strategy often employed while waiting to move animals to another area (*i.e.* until shipping).

**Short Duration-High Intensity** – A rotational grazing system employing high stocking density with several pastures for short multiple periods of time (3 to 10 days), principally during the growing season. This system is commonly used on irrigated pastures.

**HRM** – Typically, a strategy based on high density of use with movement of grazing animals dependent upon the condition of forage plants-includes frequent monitoring of animal performance and grazing impacts on soil and vegetation.

**Stuttered Deferred-Rotation** – Deferment period for each pasture within a deferred-rotation system is repeated in consecutive years.

**Rest-Rotation** – A grazing system employing various combinations of full year rest, deferment, and full season grazing, commonly in a 3- to 5- year cycle.

**Winter Use** – Livestock grazing only during the winter period.

**Riparian Pasture** – Stream-riparian areas are included with upland range areas within a single pasture; however, the timing and use of pasture forage is determined by needs of riparian area.

**Corridor Fencing** – All stream-riparian areas are fenced apart from upland range to form separate pasture(s).

**Rest or Exclusion** – Nongrazing for a specified period of time, generally extended to a full year along with foregoing grazing on one year’s complete forage crop.

<table>
<thead>
<tr>
<th>Grazing Management Strategy</th>
<th>Stream Gradient &gt;4% Steep Low Sediment Load</th>
<th>Stream Gradient &gt;4% Steep High Sediment Load</th>
<th>Stream Gradient 2 to 4% Moderate Low Sediment Load</th>
<th>Stream Gradient 2 to 4% Moderate High Sediment Load</th>
<th>Stream Gradient &lt;2% Flat Low Sediment Load</th>
<th>Stream Gradient &lt;2% Flat High Sediment Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Season-long</td>
<td>Woody Plants - Herbaceous - Streambanks 0 to -</td>
<td>Woody Plants - Herbaceous - Streambanks 0 to -</td>
<td>Woody Plants - Herbaceous - Streambanks -</td>
<td>Woody Plants - Herbaceous - Streambanks -</td>
<td>Woody Plants - Herbaceous - Streambanks -</td>
<td>Woody Plants - Herbaceous - Streambanks -</td>
</tr>
<tr>
<td>Winter or Dormant Season</td>
<td>Woody Plants + Herbaceous + Streambanks 0 +</td>
<td>Woody Plants + Herbaceous + Streambanks 0 +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
</tr>
<tr>
<td>Spring or Early Season</td>
<td>Woody Plants + Herbaceous + Streambanks 0 +</td>
<td>Woody Plants + Herbaceous + Streambanks 0 +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
</tr>
<tr>
<td>Summer</td>
<td>Woody Plants - Herbaceous - Streambanks 0 to -</td>
<td>Woody Plants - Herbaceous - Streambanks 0 to -</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
</tr>
<tr>
<td>Spring and Fall</td>
<td>Woody Plants - Herbaceous - Streambanks 0 to -</td>
<td>Woody Plants - Herbaceous - Streambanks 0 to -</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
</tr>
<tr>
<td>Fall - Late Season Use</td>
<td>Woody Plants + Herbaceous + Streambanks 0 +</td>
<td>Woody Plants + Herbaceous + Streambanks 0 +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
</tr>
<tr>
<td>Deferred-Rotation</td>
<td>Woody Plants - Herbaceous - Streambanks 0 to -</td>
<td>Woody Plants - Herbaceous - Streambanks 0 to -</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
</tr>
<tr>
<td>Rest-Rotation - ≥3 Pastures</td>
<td>Woody Plants - Herbaceous - Streambanks 0 to -</td>
<td>Woody Plants - Herbaceous - Streambanks 0 to -</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
<td>Woody Plants - Herbaceous - Streambanks - to 0</td>
</tr>
<tr>
<td>Rest or Exclusion No Grazing</td>
<td>Woody Plants + Herbaceous + Streambanks 0 +</td>
<td>Woody Plants + Herbaceous + Streambanks 0 +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
<td>Woody Plants + Herbaceous + Streambanks +</td>
</tr>
</tbody>
</table>

(-) = decrease  (+) = increase  (0) = no change
A. Sagebrush Canopy Cover by Species - Continuous line intercept is one of the most common techniques used to estimate shrub canopy cover. This technique involves measuring the amount of the live sagebrush canopy intersected by an imaginary vertical plane that is bisected lengthwise by the tape. Care should be taken to exclude large spaces between branches or foliage so that only live shrub cover intersecting the line is counted.

- Continuous line intercept – 100 ft. tape intercanopy gaps of 2 inches or more (5 cm) are not considered canopy

**Materials:**
- Measuring tape (at least 100 ft)
- Two steel pins for anchoring tape
- One pointer—a straight piece of wire or rod, such as a long pin flag, at least 2.5 feet long.
- Clipboard, Continuous Line Intercept Data Form and pencil(s), or tablet computer

**Standard methods (rule set)**
1. Pull out the tape and anchor each end with steel pin.

**Rules**
- Line should be tight.
- Line should be as close to the ground as possible (thread under shrubs using a steel pin or PVC pipe as a needle).

2. Begin at the “0” end of the line. Always stand on the same side of the tape.

3. Work from left to right.

**Rules**
- Look straight down on the line. Use a meter stick or steel pin or other stiff stick to project the line vertically to the ground.
- Assume that there is a wall at each end of the tape. Do not consider gaps or vegetation that occurs off the end of the tape.

4. Canopy intercept. Record the beginning and end of each sagebrush plant canopy by species or sub-species.

**Rules**
- Identify sagebrush to species and/or sub-species.
- Canopy occurs any time the tape edge intercepts live or dead sagebrush foliar or branches based on a vertical projection from canopy to ground.
- Exclude gaps in the sagebrush canopy greater than 2 inches.
- Include sagebrush leaves and stems as canopy whether live or dead.

B. Plant Composition by Foliar Cover for Species/Life Form - Line-point intercept is rapid, accurate method for quantifying ground cover, including vegetation, litter, rock and biotic crusts.

- Line point – 100 ft tape 100 points

**Materials:**
- Measuring tape (at least 100 ft)
- Two steel pins for anchoring tape
• One pointer—a straight piece of wire or rod, such as a long pin flag, at least 2.5 feet long and less than 1/10 inch in diameter
• Clipboard, Line-Point Intercept Data Form and pencil(s), or tablet computer

**Standard methods (rule set)**

1. Pull out the tape and anchor each end with a steel pin.

   **Rules**
   - Line should be tight.
   - Line should be as close to the ground as possible (thread under shrubs using a steel pin or PVC pipe as a needle).

2. Begin at the “0” end of the line.

3. Move to the first point on the line and work from left to right. Always stand on the same side of the line.

   **Rules**
   - Start at 1.0 ft.
   - Read transect at one foot increments (or whatever spacing gives 100 readings/transect).

4. Drop a pin flag to the ground next to the tape

   **Rules**
   - The pin should be vertical.
   - The pin should be dropped from the same height each time. A low drop height minimizes “bounces” off of vegetation but increases the possibility for bias.
   - Do not guide the pin all the way to the ground. It is more important for the pin to fall freely to the ground than to fall precisely on the mark.

5. Once the pin flag is flush with the ground, record every plant species it intercepts.

   **Rules**
   - Record the species of the first stem or leaf intercepted in the “Top canopy” column, using its common name or the scientific code for the genus and species.
   - If no leaf or stem is intercepted, record “NONE” in the “Top canopy” column, unless it hits a plant base. All plant base intercepts also are considered canopy.
   - Record all additional species intercepted by the pin.
   - Record herbaceous litter as “L,” if present. Litter is defined as detached dead stems and leaves that are part of a layer that comes in contact with the ground. Record “W” for detached woody litter that is greater than 5 mm or 1/4 inch in diameter and in direct contact with soil.
   - Record each canopy species only once, even if it is intercepted several times.
   - If you can identify the genus, but not the species and don’t plan to identify the species, record “XX” for the species code (Poa species = POXX).
   - If you cannot identify the genus, use the following codes:
     - **AF#** = Annual forb (also includes biennials) (# = unique number for the plant)
     - **PF#** = Perennial forb
     - **AG#** = Annual grass
     - **PG#** = Perennial grass
     - **SH#** = Shrub
     - **TR#** = Tree
     - If necessary, collect a sample of the unknown off of the transect for later identification.
   - Canopy can be alive or dead, but only record each species once. Be sure to record all species intercepted.

6. Enter a species code or one of the following in the “Soil surface” column:

   - **R** = Gravel, cobble, stones (> 5 mm or 1/4 inch in diameter)

NRCS Nevada
January 2014
BR = Bedrock  
LM = Embedded litter mat  
M = Moss  
LC = Lichen crust on soil (lichen on rock is recorded as “R”)  
S = Soil that is visibly unprotected by any of the above

**Rules**  
- For unidentified plant bases, use the codes listed under 5.7.  
- Record embedded litter mat as “LM” where there is no clear boundary between litter and soil or where the litter is not removed during typical storms (occurring annually).  
- Additional categories may be added, such as “CYN” = dark cyanobacteria crust

**C. Plant Height** - Plant height measurements provide information on the height of the tallest living or dead shrub and herbaceous plants (including seed heads) closest to the designated transect marks.

- Measure closest woody **and tallest** herbaceous plant (within 12” diameter circle) to every 3 foot mark along the 100 ft line and identify to species. (3 ft, 6 ft, 9 ft...99ft.).

**Materials:**  
- Tape measure (at least 100 ft long)  
- Two steel pins for anchoring tape  
- Measuring device (tape measure, yard stick, etc.)  
- Clipboard, plant height form and pencil(s) or tablet computer

**Standard methods (rule set)**  
1. Pull out the tape and anchor each end with steel pin.  
   **Rules**  
   - Line should be tight.  
   - Line should be as close to the ground as possible (thread under shrubs using a steel pin or PVC pipe as a needle).

2. Begin at the “0” end of the line. Always stand on the same side of the tape.

3. Work from left to right.  
   **Rules**  
   - At each designated mark, determine the tallest living or dead shrub **and** herbaceous plant to the transect mark.  
   - Record the plant species.  
   - Record the total height of the plant.  
   - **Do not stretch the plant while making the measurement.**

4. Record plant height determinations based on the following plant height categories:

<table>
<thead>
<tr>
<th>Plant Height</th>
<th>Record to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0’ to 2’</td>
<td>Nearest 0.5 inch.</td>
</tr>
<tr>
<td>2’ 1” to 5.0’</td>
<td>Nearest inch</td>
</tr>
<tr>
<td>5’ 1” to 15’</td>
<td>Nearest foot</td>
</tr>
<tr>
<td>&gt; 15’ 1”</td>
<td>Nearest 5 feet.</td>
</tr>
</tbody>
</table>

For shrubs and trees that are taller than the pole and canopy extends across the vertical projection of the pole, estimate the height of the tree or shrub.
D. Canopy Gaps - Gap intercept measurements provide information about the proportion of the line covered by large gaps between plants.

➢ Line intercept – 100 ft tape.

Materials:
• Tape measure (at least 100 ft long)
• Two steel pins for anchoring tape
• Meter stick, steel pin or other stiff stick
• Clipboard, Gap Intercept data forms and pencil(s) or tablet computer

Standard methods (rule set)
1. Pull out the tape and anchor each end with steel pin.

Rules
• Line should be tight.
• Line should be as close to the ground as possible (thread under shrubs using a steel pin or PVC pipe as a needle).

2. Begin at the “0” end of the line. Always stand on the same side of the tape.

3. Work from left to right.

Rules
• Look straight down on the line. Use a meter stick or steel pin or other stiff stick to project the line vertically to the ground.
• Assume that there is a wall at each end of the tape. Do not consider gaps or vegetation that occurs off the end of the tape.

4. Canopy gap intercept. Record the beginning and end of each gap between plant canopies ≥ 1 foot.

Rules
• Canopy occurs any time 50% of any 0.1 foot segment of tape edge intercepts live or dead plant canopy based on a vertical projection from canopy to ground.
• The minimum gap size can be increased or decreased as appropriate for the site. Be sure to record the minimum gap size on the data form.
• A plant canopy can stop a gap whether live or dead.