

## The Sustainable Grazing Alternative

### I. Six Fundamental Assumptions of the Sustainable Grazing Alternative

The Sustainable Grazing Alternative is based on six assumptions that are rooted in BLM policy (see Section IV - Rationale):

1. Native species diversity should not be depleted and ecosystem functions should not be degraded due to domestic livestock grazing. Ecosystem functions include timing and duration of water flow, water quality, water quantity, soil stability, nutrient cycling and pollination.
2. Livestock grazing simultaneously meets Bureau of Land Management (BLM) regulations and policies and protects Monument values and objects identified within GSENM Proclamation.
3. Best available science is used to inform management of grazed and non-grazed areas
4. A diversity of interested publics, including permittees, are encouraged to discuss options for grazing management where native biodiversity and/or ecosystem functions have been degraded.
5. A diversity of grazing arrangements, i.e., a mixture of conventional grazing; collaborative grazing experiments for time, timing and intensity of grazing; temporary rest; long-term non-use; and non-grazed areas will best provide for essential reference areas, grazing management improvements, restoration and/or protection of native biodiversity and ecosystem functions, and resilience in the face of climate change.
6. A number and variety of sizes of ungrazed areas is essential to:
  - (a) demonstrate the ecological potential of GSENM/GCNRA ecosystems and plant communities;
  - (b) understand impacts of livestock management practices;
  - (c) understand the potential rate of recovery where native species diversity or ecosystem functions have been depleted or degraded;
  - (d) distinguish climate impacts (e.g., drought) from livestock grazing impacts;
  - (e) protect particular values, species, or Monument objects that are adversely affected by or incompatible with livestock grazing; and/or
  - (f) allow for possible restoration of species diversity and/or ecological processes that have been compromised by livestock grazing.

### II. The Sustainable Grazing Alternative

#### A. GOALS

1. **GOAL 1 Watersheds** are in, or are making significant, measurable progress toward, properly functioning physical and biological condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil

moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.

2. **GOAL 2 Native plant communities** are healthy, diverse, and productive, or are making significant, measurable progress toward such conditions.
3. **GOAL 3 Ecological processes**, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant, measurable progress toward their attainment, in order to support healthy biotic populations and communities.
4. **GOAL 4 Riparian and wetland areas** exhibit, or are making significant, measurable progress toward exhibiting potential native vegetation diversity, density, age structure composition, and cover. Stream channel morphology and functions are appropriate to soil type, climate and landform.
5. **GOAL 5 Soils** exhibit, or are making significant, measurable progress toward permeability and infiltration rates that sustain potential site productivity or improve site productivity, considering the soil type, climate, and landform.
6. **GOAL 6 Habitats** are supporting, or are making significant, measurable progress toward supporting their full complement of GSENM/GCNRA native species and are exhibiting conditions expected to provide for recovery (“conservation”) of Federal threatened and endangered species or Federal proposed or candidate threatened or endangered and other special status species.

## B. OBJECTIVES

1. **Objective 1. Native Plant Communities**
  - 1.1. Native plant communities reflect approximately 80% of the native plant diversity, density, age classes, and productivity of relevant ungrazed reference sites (i.e., GSENM or GCNRA sites which are of similar potential to support the native diversity and have been ungrazed by domestic ungulates for ten years).
  - 1.2. Native plant communities support (at 80% of reference sites based on appropriate quantitative measures) GSENM-specific values identified within the GSENM Proclamation, including:
    - 1.2.1. Plant species endemic to GSENM or the Colorado Plateau
    - 1.2.2. Rock crevice and canyon bottom native vegetation
    - 1.2.3. Dunal pockets that hold unique plant species adapted to shifting sands
    - 1.2.4. Plants highly adapted to saline areas
    - 1.2.5. Relict plant communities
  - 1.3. Native species reoccupy habitat niches and voids caused by disturbances at 80% the rate of reoccupation in recovery reference sites (i.e., similarly disturbed sites recently excluded from grazing) based on appropriate quantitative measures.
  - 1.4. Native plant communities support the following, at levels of at least 80% of relevant ungrazed reference areas:
    - 1.4.1. Pollinator diversity, with pollinators often dependent on a particular species, genus, or plant family.
    - 1.4.2. Cover, nesting, calving, and/or food habitat for native declining, uncommon, and endemic vertebrate animals.

- 1.4.3. Diversity of native aquatic biota.
  - 1.4.4. Diversity of soil invertebrates.
  - 1.5. Habitats are connected at a level to enhance populations of native species, including pollinators, based on estimated connectivity requirements using best available science.
- 2. Objective 2. Riparian and Wetland Areas.**
- 2.1. Streambank vegetation, at 80% of reference riparian areas,:
    - 2.1.1. consists of, or shows an independently measurable trend toward, native species with root masses capable of withstanding high streamflow events;
    - 2.1.2. maintains cover adequate to protect stream banks and dissipate streamflow energy associated with high water flows, protect against accelerated erosion, capture sediment, and provide for groundwater recharge.
  - 2.2. Riparian vegetation reflects, at 80% of reference riparian areas, maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, and large woody debris when site potential allows; and provides food, cover and other habitat needs for dependent animal species.
  - 2.3. At 80% of reference riparian areas, point bars are revegetating and lateral stream movement is associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position.
  - 2.4. An active floodplain is present.
- 3. Objective 3. Soils**
- 3.1. Ground cover (including litter) is maintained at 80% of a relevant (e.g., similar soil, vegetation type, precipitation) GSENM ungrazed site in order to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, retard soil moisture loss by evaporation, and provide appropriate biological soil crust ecosystem functions (hydrology and nutrient cycling).
  - 3.2. Biological soil crusts (aka cryptobiotic soils) which are critical for soil stability and nutrient availability are protected from trampling and other physical disturbance within at least 60% of their predicted available habitat within GSENM; and within 80% of GCNRA predicted available habitat.
  - 3.3. Indicators of excessive erosion such as rills, soil pedestals, mass wasting, and actively eroding gullies and headcuts are within 80% of appropriate, identified reference sites.
- 4. Objective 4. Water Quality Standards.** The GSENM is in compliance with water quality standards established by the State of Utah (R.317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM Lands will fully support the designated beneficial uses described in the Utah Water Quality standards (R.317-2) for surface and groundwater as indicated by:
- 4.1. Water quality parameters, including but not limited to nutrient loads, total dissolved solids, chemical constituents, fecal coliform, water temperature and algae meet standards
  - 4.2. Macroinvertebrate community diversity and composition meet standards and are within 80% of relevant reference stream reaches.
  - 4.3. Fine sediments do not exceed 80% of an equivalent ungrazed reference stream.
- 5. Objective 5. Habitats of Species of Concern**, including native, threatened, endangered, proposed and special status-species, are sufficient to ensure reproductive capability and recovery.

- 5.1. Habitats are, or are making significant progress toward, being restored or maintained for conservation (i.e., recovery) of Federal threatened, endangered, proposed, candidate or other special status species. “Significant progress toward restoration of habitat” for such species is demonstrated by maintaining progress at a rate that is 80% that of relevant ungrazed recovery reference areas.
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## C. MANAGEMENT ACTIONS

### 1. Public Transparency and Engagement

- 1.1. Prior to allotment permit renewal, allotment management plan development, or vegetation projects for conditions impacted by livestock grazing, notice will be provided for a public tour to obtain comment and provide input.
- 1.2. Prior to a Decision Notice, all Environmental Assessments (EAs) will provide for public comment on the alternatives and their analyses.
- 1.3. Annual plans of use.
  - 1.3.1. A map and annual plan of use for each allotment (with pastures) will be posted prior to livestock seasonal entry on the allotment.
  - 1.3.2. Annual plans of use for the previous two years will be displayed on the website.
- 1.4. Mid-season adjustments of the annual permit will be posted as a revised annual permit.
- 1.5. Pre-annual permit meetings. When requested by a member of the public, BLM will participate in a pre-annual permit meeting to discuss problems observed/documenting on the allotment the previous year, and proposed solutions to those problems. Such meetings will be available to the permittee and other members of the public.
- 1.6. Collaborations. GSENM will encourage the establishment of independent, multi-stakeholder, consensus collaborations that include representatives of all relevant stakeholders, for purposes of advising BLM on increasing the sustainability of grazing and diverse grazing arrangements on GSENM/GCNRA. BLM staff may participate as resources for these consensus collaborations, which would be convened or co-convened by non-BLM entities.
- 1.7. Interested publics will be encouraged to participate in and contribute to on-ground implementation and monitoring of grazing experiments developed by interested public, permittees and BLM personnel.

### 2. Interested publics, including permittees, are encouraged to engage with the BLM to discuss and propose management options:

- 2.1. Where native diversity, density, age class structure, and/or productivity are less than 80% of the potential native diversity of relevant ungrazed reference sites, or do not support values identified within the GSENM Proclamation (Objective 1.2) or are not reoccupying habitat niches and voids caused by disturbances;
- 2.2. where native vegetation support for wildlife (Objective 1.4) is less than 80% of relevant ungrazed reference areas or stream reaches, permittees and interested public are encouraged to engage with the BLM to discuss options to achieve such support;
- 2.3. where ground cover is less than 80% of a relevant ungrazed site or indicators of excessive erosion are present (Objective 3.1);
- 2.4. when less than 60% of GSENM biological soil crust predicted habitat is protected from trampling (Objective 3.2);

- 2.5. where native riparian or wetland plant diversity, density, age class structure, and/or productivity are less than 80% of the potential native diversity of relevant riparian or wetland reference sites, or desired stream dynamics (Objective 2.1.2) are not present or a potential floodplain is not active;;
  - 2.6. where water quality standards are not being met or parameters are not being maintained within 80% of relevant reference stream reaches (Objective 4); and/or
  - 2.7. where significant, measurable progress is not being made toward restoring habitat for Federal threatened or endangered species, or candidate or proposed threatened or endangered species, or other special status species (Objective 5).
3. **A Diversity of Grazing Arrangements** will be encouraged within GSENM, including such arrangements as:
    - 3.1. Collaborative grazing experiments
    - 3.2. Multiple allotments combined into a single system
    - 3.3. Range improvements
    - 3.4. Changing kind and class of livestock (within existing limitations)
    - 3.5. Rest-rotation systems
    - 3.6. Deferred rotation systems
    - 3.7. On-off systems
    - 3.8. Grass banks/forage reserve areas
    - 3.9. Reduced use areas
    - 3.10. Suspended use areas
    - 3.11. Non-use areas
    - 3.12. Closed areas
  4. **Time, Timing and Intensity** of livestock grazing will be adaptively managed to insure that Goals and Objectives are met.
  5. **Utilization.**
    - 5.1. A 30% utilization standard, both for riparian and upland areas will be instituted, one pasture a year for each allotment until all pastures in each allotment have a 30% utilization limit.
    - 5.2. Utilization limits of 25% will be operative within all pastures during a drought year using the [Standardized Precipitation Index](#) of the National Drought Mitigation Center.
  6. **Allotment Action Plans.** When monitoring of indicators shows an allotment or pasture is failing to meet or move towards Objectives, plans will be drawn up for meeting or moving towards Objectives. The plans must be based on evidence that the proposed activities or management have resulted in movement toward the particular Objectives in other settings and must include methods for measuring whether conditions are improving under the action plan.
    - 6.1. If movement toward Objectives is not being observed/measured, further conversations will be in order, and adjustments to the action plan will be made.
  7. **Annual Use Plans.** Each annual use plan will reflect the best estimate that the number of days authorized and other instructions will result in Objectives being met or moved toward.
    - 7.1. Staggered seasonal use. At a minimum, there will be six weeks between the beginning of seasonal use of a particular allotment or pasture one year and when the season of use begins the following year. If this is not possible in a particular area, the area will be rested every other year.

- 7.2. **Pasture movement within annual permits.** Gathering of livestock will commence prior to the end date of the use of a pasture or area such that all livestock will have been moved and stragglers found by the off date.
8. **Passive and Active Vegetation Treatments.** Vegetation treatments will:
- 8.1. Have the objective of restoring or supporting potential native vegetation and ecosystem processes;
  - 8.2. Address underlying causes of the problematic conditions prompting vegetation treatments;
    - 8.2.1. When livestock and/or wild ungulate grazing have contributed to the problematic conditions being treated, grazing will be managed to avoid return of the problematic conditions.
  - 8.3. Utilize native seeds or seedlings only, of local genetic stock whenever possible;
  - 8.4. Include measurable Desired Outcomes and the methods that will be used to monitor outcomes when compared to outcomes in a portion of the treated area that is not grazed.
  - 8.5. Be detailed in project-level plans and NEPA analyses, which provide for public comment on a full range of reasonable alternatives.
  - 8.6. Use a variety of measures to protect planted and naturally regenerated seedlings from the effects of trampling, browsing, and girdling by livestock and wildlife. Such measures will typically include temporary suspension of grazing, and may include fencing, tubing, netting, and/or animal repellants; and
  - 8.7. Mimic natural processes to the degree possible, including, but not limited to succession and use of prescribed fire.
9. **Wild Ungulates and Vegetation Treatments.** Where applicable, initiate communication with the Utah Division of Wildlife Resources and/or Arizona Game and Fish Dept. to provide for protection of vegetation treatment
10. **Revegetation** (including maintenance) of sites formerly seeded to exotic species will utilize native species only.
11. **Riders.** A pre-season plan and daily log will be filled for documentation of physical presence of a rider with the rider's livestock 5 out of every 7 days throughout the season of use of the allotment
12. **Fencing to Meet Objectives.**
- 12.1. If fencing is necessary to meet any Objective the permittee will construct and maintain the fencing unless BLM is required to do so by an existing authorization.
  - 12.2. All fences and other annual permit infrastructure must be maintained and functional prior to livestock entry for the season
13. **Non-native and/or Invasive Plant Species**
- 13.1. Passive restoration and non-chemical methods will be the first priority for preventing the introduction, establishment and spread of exotic, invasive plant species.
  - 13.2. If herbicides are deemed essential, least-use of herbicides will be accomplished using Integrated Vegetation Management principles, including reducing or eliminating stressors contributing to the introduction, establishment and/or spread of exotic, invasive plant species.

**14. Water Trough/ Watering Pond Non-native, invasive plant species** The permittee(s) will manually maintain an area free of all invasive, exotic plant species within 100 feet radius of a watering trough or watering pond.

**15. Gates**

- 15.1. Exclosures with gated openings accessible to livestock will be locked, with GSENM/GCNRA providing a key to the permittee; and retaining another key for as-needed use by public members who wish to access the site for non-grazing purposes.
- 15.2. Gate signs. A sign on any gate through which the public passes will indicate the current dates of livestock in the unit (e.g., allotment, riparian pasture) on either side of the fence and direction to keep the gate closed during those times the livestock should be in one of the two adjacent units.

**16. Fire.** Grazing will be suspended from post-fire areas for at least two years or until the majority of native plant species in the area have seeded, whichever is longer.

**17. Roads for Livestock Management.** Maintain roads and trails essential for facilitating livestock grazing in a manner that minimizes the effects on landscape hydrology (avoid concentrating overland flow, prevent sediment transport, and minimize compaction to maintain infiltration capacity).

**D. ALLOWABLE USES**

- 1. **Availability and Unavailability for Livestock Use.** Designation of allotments as available or unavailable for livestock grazing is provisional. Areas that are deemed “available” at one time may become “unavailable” depending on site conditions. Conversely, areas that are currently “unavailable” to livestock grazing due to resource concerns may become “available” if conditions are significantly improved and grazing practices are predicted, on the basis of scientific evidence, to retain the improved resource conditions.
  - 1.1. Criteria used to identify GSENM areas that will be grazed by livestock
    - 1.1.1. Areas currently grazed that meet Objectives or are measurably moving toward such Objectives in relation to ungrazed reference areas, using independently verifiable methods; and
    - 1.1.2. the permittee(s) wish to continue livestock grazing on the allotment/pasture; or
    - 1.1.3. another permittee obtains the permit and continues to meet or move toward Objectives.
  - 1.2. Criteria that identify GSENM areas that will not be grazed by livestock
    - 1.2.1. Areas closed to livestock grazing via a Record of Decision supported by NEPA analysis and documentation.
    - 1.2.2. Areas in suspended use.
    - 1.2.3. Areas that are not meeting or significantly and measurably moving toward Objectives in relation to ungrazed reference areas.
  - 1.3. Criteria that identify GSENM areas that may be set aside for other uses
    - 1.3.1. Areas that are particularly difficult to graze on a geographic (e.g., remoteness), productivity, and/or environmental (e.g., lack of water sources or forage production) basis.
    - 1.3.2. Areas voluntarily relinquished or otherwise available for retirement and containing any of the following or combinations of the following:
      - 1.3.2.1. Areas that would serve as valuable reference areas

- 1.3.2.2. Vegetation types that are either not represented or are underrepresented in currently ungrazed GSENM areas.
  - 1.3.2.3. Monument objects that are not compatible with or are damaged and impacted by livestock grazing (e.g., biological soil crust, rare and scattered riparian areas, declining native plant or wildlife species)
  - 1.3.2.4. Significant cultural resources.
  - 1.3.2.5. Significant opportunities to conserve or restore historical, cultural, soil health, biological soil crust, fish, wildlife, riparian, vegetation and/or water quality objectives of the Monument Management Plan.
  - 1.3.2.6. Riparian areas, springs and hanging gardens that have potential to be impacted or are currently impacted by livestock grazing.
  - 1.3.2.7. Moderate to high recreation values that are compromised by livestock grazing
  - 1.3.2.8. Populations or habitat for threatened, endangered species; candidate or proposed threatened or endangered species; and special status species, or their habitat (e.g., Southwest willow flycatcher, sage grouse, desert bighorn sheep, Mexican spotted owl).
2. **Reduced Use or Non-use.** A permittee request for multi-year non-use or partial use will be granted for conservation or recovery outcomes that can be objectively documented and measured. An approved monitoring plan and schedule will be part of the application.
  3. **Voluntary Relinquishment.** Upon receiving any request for voluntary relinquishment of permitted livestock grazing, the Authorized Officer will re-evaluate whether livestock grazing is in the best interest of achieving Objectives and protecting Monument values and objects, utilizing the above criteria and consider amending the MMP to allocate forage for a different purpose pursuant to Instruction Memorandum No. 2013-184.

## **E. MONITORING**

1. **Protocols for Measuring Indicators of Objectives.** Within one year of the Record of Decision, BLM will designate, with interested public/permittee input, the methods BLM will use to measure Indicators that Objectives are being met
  - 1.1. BLM monitoring methods will be posted on the GSENM website, including methods used to measure
    - 1.1.1. Meeting or moving toward Objectives
    - 1.1.2. Existing long-term trend transects GSENM/GCNRA
    - 1.1.3. IIRH points or transects, PFC assessment points or stream reaches, AIM points
    - 1.1.4. Effectiveness of treatments at reaching both individual project and Monument-wide Desired Outcomes
    - 1.1.5. Any other methods used systematically by the BLM within GSENM/GCNRA
2. **Reference Areas.** Reference areas exist or are established for all Objectives in order to demonstrate potential for Objectives to be met, and/or potential rate of change toward meeting Objectives. Reference areas are established across GSENM that represent the full range of ecosystem and plant community types (both riparian and upland) including sites that have received exotic vegetation treatments. A reference area, with the exception of recovery reference areas (see 2.4 below) consists of a site that has not been grazed or accessible to livestock for at least ten years.

- 2.1. Establishment of reference areas. Where local reference areas are preferable but do not exist, designate local areas to attain future reference area status (i.e., at least ten years of non-use by livestock). In the interim, use a more distant, reference site that has not been grazed for at least ten years.
  - 2.2. Reference area size. Prioritize establishment of larger, landscape-scale reference areas whenever feasible, in order to allow for recovery and/or protection of ecosystem functions, a patchwork of habitats, species diversity, and other elements not easily documented within small reference areas.
  - 2.3. Permanent range cages. At least two permanent range cages (at least 16' X 16') are maintained in each grazed pasture, in representative areas frequently used by livestock.
  - 2.4. Recovery reference areas are areas where livestock grazing has ceased, but which have not been ungrazed for ten years. Exclosures of various sizes can begin to provide immediate benefits for comparison with sites on which livestock are being adaptively or experimentally managed for recovery toward particular Objectives. Recovery on the grazed sites (particularly for such physical features as ground cover, sheet erosion, and streambank protection; or for seedhead production) can be compared with the recently-ungrazed sites for comparative rates and types of recovery.
3. **Utilization Cages.** For purposes of quantitatively measuring utilization, utilization cages must have been in place for two years (rather than one) in order to more accurately depict expected production.
4. **80%.** Objectives generally will be considered to have been met when monitoring documents the Indicators are at least 80% (e.g., of soil cover, willow density, native plant species richness) of those in reference areas of the same ecological site (e.g., soil type, precipitation, elevation, slope as relevant). Such reference areas may consist of exclosures, ungrazed pastures/allotments, permanent range cages, or ungrazed recovery reference areas. Conditions below 80% of the reference site(s) are appropriate subjects for problem-solving among the BLM, permittees and interested public.
5. **Independent Monitoring.** Upon objective documentation of on-ground indications that Objectives are not being met, any member of the public can arrange for a meeting with BLM staff to discuss and propose solutions to the problem(s). A written record of evidence of the problem(s), solutions considered, and commitments by BLM, interested public, and/or permittees will be retained in the file(s) of the relevant allotment(s).
- 5.1. Objective, repeatable data gathered independently (e.g., use of BLM monitoring methods or methods in Appendix 9 of the 2012 *Final Report and Consensus Recommendations* of the Collaborative Group on Sustainable Grazing for National Forests in Southern Utah) is required in problem-solving meetings. All such meetings are open to the permittees and other interested publics.
6. **Social/Economic Indicators** will be used to monitor the social and economic sustainability of GSENM grazing, including both the economic and cultural values of livestock grazing, and the social value of participation in public lands grazing management decisionmaking by publics interested in public lands grazing and/or ecosystem services provided by public lands. Social/economic Indicators are best developed via consensus among BLM, GSENM, GCNRA personnel; permittees; and interested publics.
- 6.1. Social/economic Indicators may include the following, which were published in the [Report and Consensus Recommendations of the Collaborative on Sustainable Grazing for National Forests in Southern Utah \(2012\)](#):

- 6.1.1.1. Investment in grazing practices. Dollar value of time, capital and other investments (e.g., short and long-term infrastructure, monitoring, land improvement projects) related to grazing management changes on GSENM-GCNRA/ allotment by:
  - 6.1.1.1.1. Permittees,
  - 6.1.1.1.2. BLM, and
  - 6.1.1.1.3. Other entities
  - 6.1.1.1.4. Total pounds of meat production/acre/allotment (5-10 year average)
  - 6.1.1.1.5. Opportunities to participate in livestock grazing programs within GSENM
- 6.1.1.2. For permittees: Number of individual permits and Animal Unit Months (AUMs) per permittee
  - 6.1.1.2.1. Permitted AUMS by month
  - 6.1.1.2.2. Grazing use reported by month
- 6.1.1.3. For other entities: Identification of programs and partners engaged in grazing management arrangements, e.g.:
  - 6.1.1.3.1. Utah Division of Wildlife Resources (UDWR)
  - 6.1.1.3.2. Conservation organizations
  - 6.1.1.3.3. Utah Dept. of Agriculture's Grazing Improvement Program (GIP)
  - 6.1.1.3.4. Watershed Restoration Initiative (WRI)
  - 6.1.1.3.5. Natural Resources Conservation Service( NRCS)
- 6.1.1.4. Diversity of grazing management arrangements
  - 6.1.1.4.1. Number and acreage by year of diverse grazing management arrangements, including but not limited to:
    - 6.1.1.4.1.1. Multiple allotments combined into a single system
    - 6.1.1.4.1.2. Range improvements
    - 6.1.1.4.1.3. Changing kind and class of livestock
    - 6.1.1.4.1.4. Rest-rotation systems
    - 6.1.1.4.1.5. Deferred rotation systems
    - 6.1.1.4.1.6. On-off systems
    - 6.1.1.4.1.7. Reduced use
    - 6.1.1.4.1.8. Suspended use
    - 6.1.1.4.1.9. Non-use
    - 6.1.1.4.1.10. Closed areas
    - 6.1.1.4.1.11. Grass banks
  - 6.1.1.4.2. Public involvement that reflects a broad range of societal values:
    - 6.1.1.4.2.1. Basis of (NEPA) administrative appeals or formal objections of GSENM grazing management decisions.
    - 6.1.1.4.2.2. The number of GSENM/GCNRA grazing decisions made annually that have participation from multiple interests (BLM, permittee and others). Count to be broken down by these four decision types:
      - 6.1.1.4.2.2.1. National Environmental Policy Act (NEPA) analysis leading to decisions on grazing systems
      - 6.1.1.4.2.2.2. Allotment Management Plan (AMP) revisions
      - 6.1.1.4.2.2.3. Permit revisions
        - 6.1.1.4.2.2.3.1. Annual monitoring (collection of data, report out of the findings, and discussions about the results and implications for future management)
      - 6.1.1.4.2.2.4. Community/County-level economic impact of public lands grazing

**6.1.6.1.** Average expenditures per “cow unit” (1 cow/year) per county by ranchers who use public land. *[This indicator would likely respond only to large-scale changes in grazing management on GSENM and GCNRA.]*