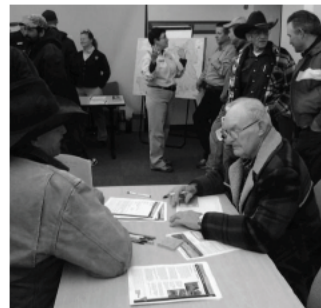


Livestock Grazing Plan Amendment EIS

SCOPING REPORT



May 2014

**NATIONAL
CONSERVATION
LANDS**

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ACRONYMS AND ABBREVIATIONS

Full Phrase

AUM	Animal Unit Month
BLM	United States Department of the Interior, Bureau of Land Management
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act of 1976
GCNRA	Glen Canyon National Recreation Area
GSENM	Grand Staircase-Escalante National Monument
MMP-A	Monument Management Plan Amendment
NEPA	National Environmental Policy Act of 1969
NPS	United States Department of the Interior, National Park Service
US	United States

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CHAPTER I

INTRODUCTION

I.1 BACKGROUND

The United States (US) Department of the Interior, Bureau of Land Management (BLM), Grand Staircase-Escalante National Monument (GSENM) is preparing a Livestock Grazing Monument Management Plan Amendment (MMP-A) and associated Environmental Impact Statement (EIS) to guide management of BLM-managed lands within GSENM, as well as lands for which GSENM has administrative responsibility for livestock grazing. Livestock grazing on the affected lands are currently managed according to land use decisions set by four regional management framework plans signed in 1981: Escalante, Paria, Vermilion, and Zion (BLM 1981a, 1981b, 1981c, and 1981d, respectively), and a subsequent plan amendment completed in 1999 (BLM 1999).

Under the NEPA and the Council on Environmental Quality's (CEQ) regulations for implementing the NEPA (40 Code of Federal Regulations [CFR] 1500-1501), federal agencies are required to consider the environmental effects of their actions prior to taking such actions. Actions that are subject to the NEPA include projects and programs that are entirely or partially financed, assisted, conducted, regulated, or approved by federal agencies; new and revised agency rules, regulations, plans, policies, or procedures; and legislative procedures (40 CFR 1508.18). The actions proposed by the BLM as part of the Livestock Grazing MMP-A are subject to the requirements of the NEPA.

I.2 PURPOSE OF AND NEED FOR THE MONUMENT MANAGEMENT PLAN AMENDMENT

Livestock grazing in the planning area is authorized and managed according to land use decisions set by the Escalante, Paria, Vermilion, and Zion regional management framework plans signed in 1981 (BLM 1981a, 1981b, 1981c, and 1981d) and a subsequent plan amendment completed in 1999 (BLM 1999). Much has changed at the local, regional, and national levels since land use plan-level decisions for livestock grazing were established. New information has become available, new policies have been established, and existing policies have been revised. These changes are as follows:

- establishment of GSENM
- acquisition of thousands of acres of land within the GSENM boundary

- issuance of new policy and guidance for National Conservation Lands
- establishment of the Utah BLM Standards for Rangeland Health and Guidelines for Livestock Grazing Management
- prioritization of science as a basis for land management
- spread of invasive species
- substantial and continuing increases in visitation to GSENM and the surrounding BLM- and National Park Service (NPS)-managed lands

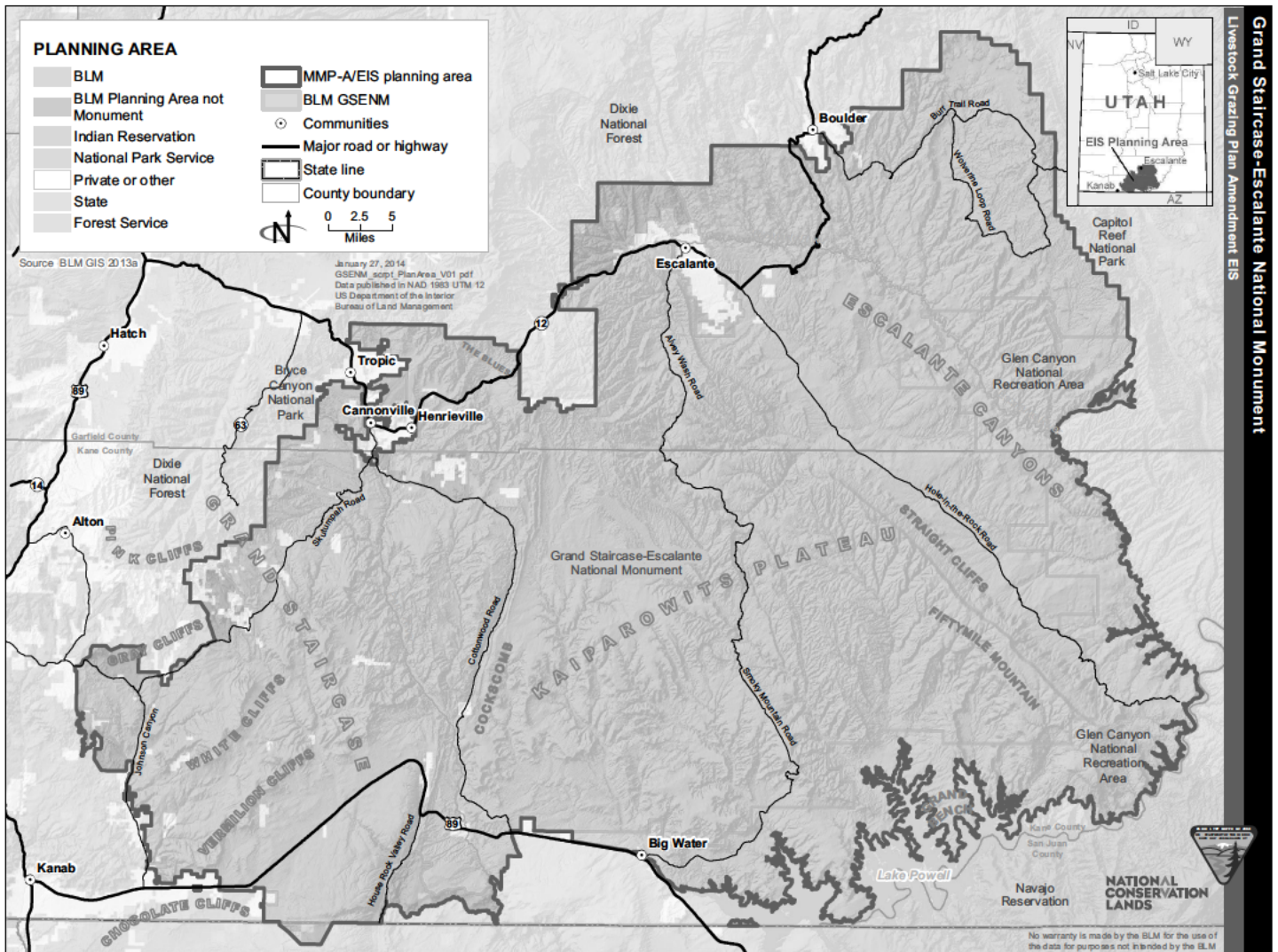
This MMP-A is needed to integrate livestock grazing and rangeland management into the existing MMP (BLM 2000). This MMP-A is also needed to provide for the comprehensive management of livestock grazing. This is to ensure the protection of the objects and values included in Presidential Proclamation 6920, which established GSENM. This MMP-A is also necessary to ensure protection of Glen Canyon National Recreation Area (GCNRA) values and purposes on NPS-managed lands where GSENM administers grazing permits in accordance with GCNRA enabling legislation (Public Law 92-593) and the NPS Organic Act. Finally, this MMP-A is needed to implement new or revised policy and consider new information or changed circumstances.

The purpose of this MMP-A is to identify all lands within the decision area as available or not available for livestock grazing. The BLM will also identify guidelines and criteria for future allotment-specific adjustments in the amount of forage available for livestock, season of use, or other grazing management practices. Finally, the purpose of this MMP-A is to provide flexibility to adapt to new and emerging issues and opportunities based on new information and monitoring.

I.3 DESCRIPTION OF THE PLANNING AREA AND DECISION AREA

The planning area encompasses approximately 2,316,200 acres in Garfield and Kane Counties, Utah, and Coconino County, Arizona. The planning area includes all BLM-managed lands within GSENM and BLM- and NPS-managed lands for which GSENM has livestock grazing administration responsibility. This includes lands within portions of the BLM's Kanab and Arizona Strip Field Offices, as well as lands managed by the NPS in GCNRA. The planning area is bordered on the west by Bryce Canyon National Park and the BLM Kanab Field Office, on the north by Dixie National Forest, on the east by Capitol Reef National Park and GCNRA, and on the south by the BLM Arizona Strip and Kanab Field Offices, Utah State and Institutional Trust Lands, and GCNRA. Small areas of state, municipal, and private lands are contained within the planning area (see Figure I-1, Planning Area).

The BLM's decision area for this planning effort includes all BLM-managed lands for which GSENM has livestock grazing management responsibility, including some lands within the BLM Kanab and Arizona Strip Field Offices. The NPS decision area includes lands within GCNRA for which GSENM has livestock grazing administration responsibility. The decision area totals approximately 2,253,700 acres within the planning area and does not include state, municipal, or private lands. Table I-1, Landownership, shows acres by land owner within the planning area and the decision area.



**Table I-1
Landownership**

Land Owner	Acres
Planning Area	
BLM	1,934,800
NPS	318,900
State	19,900
Private	42,500
Total	2,316,100
Decision Area	
BLM, GSENM	1,866,500
BLM, Kanab Field Office	54,800
BLM, Arizona Strip Field Office	13,500
NPS, GCNRA	318,900
Total	2,253,700

Source: BLM GIS 2014

Note: Acres have been rounded to the nearest 100.

Within the decision area, the BLM administers 79 allotments as available for livestock grazing and 16 allotments as unavailable for livestock grazing. The BLM has authorized 91 permittees to graze cattle and horses on the 79 available allotments. Of the 95 allotments in the decision area, 19 allotments (more than 300,000 acres) are within GCNRA. GSENM administers these allotments per enabling legislation for GCNRA and by means of a memorandum of understanding and interagency agreement between the BLM and the NPS.

I.4 DESCRIPTION OF THE PUBLIC INVOLVEMENT PROCESS

Public involvement entails “The opportunity for participation by affected citizens in rule making, decision making, and planning with respect to the public lands, including public meetings or hearings...or advisory mechanisms, or other such procedures as may be necessary to provide public comment in a particular instance” (FLPMA, Section 103[d]). The CEQ regulations and BLM planning regulations both provide for specific points of public involvement in the land use planning and NEPA processes to address local, regional, and national interests (see 43 CFR, Part 1610.2, and 40 CFR, Part 1506.6). Guidance for public participation on NPS-managed lands is found in Section 4.8 of Director’s Order 12 and associated handbook. The BLM and NPS will design public involvement efforts throughout the MMP-A/EIS process to meet the requirements of FLPMA, NEPA, and the National Historic Preservation Act.

Public involvement for this planning effort will include the following:

- scoping meetings and other forms of outreach requesting public comments to help determine the scope of issues and alternatives to be addressed
- public outreach via newsletters, news releases, the project website, and other media
- public review of the Draft MMP-A/EIS

This scoping report documents the results of the first component of the public involvement process.

I.5 DESCRIPTION OF THE SCOPING PROCESS

Scoping, as required by 40 CFR 1501.7, is an early and open process for determining the scope of issues to be addressed and identifying the significant issues related to a proposed action. Information collected during scoping may also be used to develop the alternatives to be addressed in an EIS. The process has two components: internal scoping and external scoping.

Internal scoping is conducted within the BLM and cooperating agencies to help determine what needs to be analyzed in the EIS. It is used to define issues, alternatives, and data needs. It may also be used to formulate and refine the purpose and need; identify any connected, cumulative, or similar actions associated with the proposal; start preparation for cumulative effects analysis; decide the appropriate level of NEPA documentation (i.e., an environmental assessment or an EIS); develop a public involvement strategy; and decide other features of the NEPA process (BLM 2008).

External scoping involves notification and opportunities for feedback from other agencies, organizations, tribes, local governments, and the public. It can be used to identify coordination needs with other agencies; refine issues through feedback on preliminary issues; identify new issues and possible alternatives; and begin identifying past, present, and reasonably foreseeable actions by others that could have a cumulative effect together with the BLM action. The intent of scoping is to focus the analysis on significant issues and reasonable alternatives, to eliminate extraneous discussion, and to reduce the length of the EIS (BLM 2008).

While CEQ regulations do not provide a standard duration for scoping periods, BLM land use planning guidance requires a minimum 30-day formal scoping period (BLM Handbook H-1601-1 [BLM 2005]). Formal public scoping begins following the publication of a Notice of Intent in the *Federal Register* (see Section 1.5.1, Notice of Intent). Informal internal and external scoping may occur before the formal public scoping period begins.

According to 43 CFR Part 1610.2(d), the BLM shall document public participation activities by a record or summary of the principal issues discussed and comments made. To satisfy this requirement for scoping, the BLM's NEPA guidance (Handbook H-1790-1 [BLM 2008]) requires the preparation of a scoping report. In this report are discussions of the issues raised during the scoping process, the issues to be addressed in the EIS, the issues that will not be addressed in the EIS and why, a list of participants in the scoping process, and the views of those participants.

1.5.1 Notice of Intent

The BLM published a Notice of Intent to prepare the GSENM Livestock Grazing MMP-A/EIS on November 4, 2013 (78 *Federal Register* 66064-66065). The Notice of Intent initiated the formal public scoping period. The public scoping period ended on January 13, 2014, 30 days after the last public scoping meeting. The public scoping period lasted 70 days, more than double the minimum required for BLM land use planning efforts. This report includes all comments received or postmarked by January 17, 2014. The BLM will consider all comments received during the planning process.

I.5.2 Project Website

The BLM maintains a project website to keep the public informed about the MMP-A/EIS process. The website is available at <http://blm.gov/pgld> and contains background information, maps, status updates, and other material.

I.5.3 Mailing List and Newsletter

In November 2013, the BLM mailed a newsletter announcing the public scoping period. The newsletter was sent to more than 350 individuals, agencies, and organizations. It provided the dates and venues for the three scoping meetings (see Section I.5.6, Public Scoping Meetings), included project background information, decisions to be made, a planning timeline, preliminary planning criteria and planning issues, and a description of the various methods for submitting comments, including dedicated electronic and postal mail addresses.

I.5.4 Press Releases and Other Media Coverage

A press release announcing the scoping period was sent to local media outlets and was posted on the project website on November 1, 2013. The press release provided the dates and locations of the scoping meetings (see Section I.5.6, Public Scoping Meetings). It also described the various methods for submitting comments. The press release was published on KCSG Television's website on November 1, 2013, and in the *Wayne & Garfield County Insider* on November 7, 2013.

A second press release, issued on November 27, 2013, provided additional details about the scoping meetings (see Section I.5.6, Public Scoping Meetings) and described the various methods for submitting comments. The press release was published in the *Wayne & Garfield County Insider* on December 5, 2013, and in *Deseret News* on December 6, 2013.

Two newspapers are known to have published articles covering the MMP-A/EIS and scoping period. Table I-2, Newspaper Articles, displays each newspaper's publication date of the articles.

Table I-2
Newspaper Articles

Newspaper	Date(s) Article(s) Appeared
<i>Salt Lake Tribune</i>	November 1, 2013; December 6, 2013
<i>Wayne & Garfield County Insider</i>	November 14, 2013

Additionally, "The County Seat," a TV program, ran a piece explaining the planning effort and the implications of changes to grazing on cattlemen and counties.

I.5.5 Public Scoping Meetings

The BLM hosted three scoping meetings to provide the public with opportunities to become involved, learn about the project and the planning process, meet the GSENM MMP-A/EIS team members, and offer comments. As shown in Table I-3, Scoping Meetings, 107 people signed in at the meetings. The meetings were advertised via press release, the project newsletter, the

project website, and via phone calls from BLM staff to potentially interested grazing permittees. The locations of the meetings are provided in Table I-3, Scoping Meetings.

**Table I-3
Scoping Meetings**

Location (Utah)	Venue	Date (2013)	Number of Attendees*	Number of Completed Comment Forms Received
Kanab	BLM Administrative Complex	December 10	35	1
Escalante	Interagency Visitor Center	December 11	56	1
Salt Lake City	Main Library	December 12	16	1
Total			107	3

*Denotes the number of attendees who signed in; additional attendees were present in some locations.

The meetings began with a presentation given by Ms. Sarah Schlanger, Associate GSENM Manager, followed by an open house. Garfield County Commissioner Mr. Leland Pollock also gave a speech at the Escalante meeting regarding Garfield County's role as a cooperating agency. During the open house, participants were encouraged to discuss concerns and questions with BLM and NPS staff representatives. Copies of the first issue of the project newsletter, a guide to providing substantive comments, and information regarding upcoming workshops and seminars (including socioeconomic workshops to be conducted as part of the project) were available at the sign-in station.

Blank scoping comment forms were available at a commenting table where participants could write and submit comments at the meetings. Resource posters were displayed showing the planning area, current livestock grazing allotments, range productivity, vegetation types, recreation management, and special designations. Ten additional resource fact sheets and project-related handouts provided an overview of current management practices and issues.

I.6 COOPERATING AGENCY COORDINATION

GSENM invited eligible federal agencies, state and local governments and federally recognized Native American tribes to participate as cooperating agencies during the development of the MMP-A/EIS. These agencies were invited to participate because they have jurisdiction by law or special expertise. More specifically, cooperating agencies "work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM Land Use Planning Handbook H-1601-1 [BLM 2005]).

On May 13, 2013, the BLM wrote to seven local, state, federal, and tribal representatives, inviting them to participate as cooperating agencies for the MMP-A/EIS. Four agencies have agreed to participate in the MMP-A/EIS process as designated cooperating agencies (Table I-4, Cooperating Agency Participation).

**Table I-4
Cooperating Agency Participation**

Agency/Tribe Invited to be a Cooperating Agency	Accepted?
US Department of the Interior, National Park Service – Glen Canyon National Recreation Area	Yes
US Department of the Interior, Fish and Wildlife Service	No
State of Utah	Yes
Garfield County, Utah	Yes
Kane County, Utah	Yes
Kaibab Band of Paiute Indians	No
Paiute Tribe of Utah	No

The first cooperating agency meeting was held on November 6, 2013. GSENM encouraged cooperating agencies to attend the scoping meetings and provide comments during the scoping period. One representative from GCNRA attended the meetings in Kanab and Escalante to answer questions from the public. Representatives from both Garfield and Kane Counties also attended the scoping meeting in their respective counties. The BLM received scoping comments from the State of Utah and Garfield and Kane Counties. The BLM and NPS will engage these agencies throughout the planning process, including during alternatives development.

I.7 COLLABORATION AND CONSULTATION WITH TRIBES

GSENM will initiate consultation with tribes that are identified as having interests or Traditional Cultural Properties in the planning area. The BLM will conduct the consultation required by the National Historic Preservation Act and the American Indian Religious Freedom Act. The identified tribes are Paiute Indian Tribe of Utah, Ute Indian Tribe of the Uintah and Ouray Reservation, Kaibab Band of Paiute Indians, Hopi Tribe of Arizona, Pueblo of Zuni, and Navajo Nation. Government-to-government consultation and coordination will be ongoing throughout the MMP-A process to ensure that the concerns of tribal groups are considered. The Navajo Nation and Hopi Tribe of Arizona submitted scoping letters, and their comments are considered in this report.

CHAPTER 2

COMMENT SUMMARY

2.1 METHOD OF COMMENT COLLECTION AND ANALYSIS

All written submissions received or postmarked on or before January 17, 2014, were evaluated and are documented in this scoping report. In addition, input received through discussions between BLM representatives and the public is summarized in Section 2.2.4, Feedback during Scoping Meetings. This information is not included in any of the tallies in the rest of this section but provides insight that may not have been received in written comments.

GSENM received a total of 564 written submissions during the public scoping period, comprising 205 separate submissions and 1 form letter, resulting in 1,287 discrete comments. Most written submissions included more than 1 comment, so the 564 submissions (including form letters) yielded 1,287 discrete comments. The most common format used for submissions was e-mail. Submissions were also hand-delivered to GSENM offices, mailed via US Mail, or faxed. Three comment forms were also completed at the public scoping meetings.

A letter campaign by Grand Canyon Trust and The Wilderness Society resulted in 359 electronic submissions; duplicates of some electronic submissions were also submitted via fax. Letters that represented slight variations of the form letter without significant additional information were treated as form letters. When significant comments were added to the form letter, these comments were entered into the comment-tracking database.

Examples of comments not considered significant, and therefore not entered into the comment-tracking database, are those that recounted a general experience in GSENM without relating it to the plan (e.g., "I have spent many weeks in the Monument area."); submissions that changed the order of the text from the master form letter; and comments unrelated to the plan (e.g., "This grazing is one of the reasons I have gone vegan!").

A list of commenters and their affiliations is provided in Appendix A, List of Commenters. The comment forms provided instructions for requesting confidentiality and for withholding individual names or addresses from public review or from disclosure under the Freedom of Information Act. Two submissions were anonymous.

To ensure that public comments were properly registered and that none were overlooked, the BLM used a multi-phase management and tracking system. First, the BLM logged and numbered written submissions. Once all comments were received and documented, the BLM assigned each comment to one of the following process categories:

- Issues to be addressed during this planning effort
 - Comments related to a resource topic for analysis
 - Comments that propose an alternative or that support a proposed alternative for consideration
 - General comments related to this planning effort
 - Recommended studies or reports to review and request for data
 - Comments related to laws, regulations, and policy
- Issues to be addressed through policy or administrative action (e.g., administrative record, agency consultation, public involvement and scoping process, permits, approvals, laws, regulations, and policies)
- Issues related to livestock grazing implementation (e.g., allotment boundaries, grazing permits, and range improvements)
- Issues that the BLM has addressed but should be better communicated to those who raised the issues
- issues beyond the scope of this planning effort (e.g., MMP decisions on managing resources or resource uses other than livestock grazing)

To assist with the analysis, the BLM entered comments into the Public Input and Comment Tracking database, which allowed the BLM to organize comments by planning issue categories and affiliation of the commenter. Finally, the BLM queried and tallied these identifiers to provide information on planning and other issue categories.

2.2 SUMMARY OF PUBLIC COMMENTS

2.2.1 Written Submissions by Affiliation

Table 2-1, Submissions by Affiliation, shows the number and proportion of written submissions received from each type of affiliation. Commenters who submitted comments on business, agency, or organization letterhead or where they signed using their official agency title were considered to represent that organization. Submissions on the BLM comment form provided at the scoping meetings and on the project website were assigned the affiliation that commenters noted on the form. All other letters were considered to represent individuals.

Federal agencies provided five written submissions (less than one percent), state agencies provided two written submissions (less than one percent), and local governmental agencies provided three written submissions (less than one percent). Submissions from government agencies comprised two percent of the submissions.

Tribal governments submitted less than one percent, elected officials submitted less than one percent, representatives from businesses submitted one percent, and educational institutions submitted less than one percent. Members of the general public provided 93 percent of the submissions received during the scoping period and nonprofit or citizen groups submitted 3 percent. The BLM received two anonymous comments, accounting for less than one percent of submissions. Appendix A is a list of commenters and their affiliations.

Table 2-1
Submissions by Affiliation¹

Affiliation	Number of Submissions	Percent of Submissions
Government Agency		
Federal	5	<1%
State	2	<1%
Local	3	<1%
Tribal Government	2	<1%
Elected Official	2	<1%
Business/Commercial Sector	7	1%
Educational Institution	4	<1%
Individual	522	93%
Organization (nonprofit citizen's group)	15	3%
Anonymous Comment	2	<1%
Total	564	

¹Letters on business, agency, or organization letterhead, or where the commenter signed using their official agency title, were considered to represent that organization. Submissions on the BLM comment form provided at the scoping meetings and on the project website were assigned the affiliation that commenters noted on the form. All other letters were considered to represent individuals.

2.2.2 Written Submissions by Geographic Area

Table 2-2, Submissions by Geographic Location, shows the number and proportion of written submissions received by the sender's geographic location. A total of 64 submissions (11 percent) were from Garfield and Kane Counties, which are in the planning area. Of the remaining submissions, 146 (26 percent) were from commenters in other Utah counties; 294 (52 percent) were from other states; and 60 (11 percent) did not indicate a geographic origin.

Table 2-2
Submissions by Geographic Location

Location	Number of Submissions	Percent of Submissions
Within planning area counties (Kane and Garfield)	64	11%
Outside planning area counties, within Utah	146	26%
Outside Utah	294	52%
Unknown	60	11%
Total	564	

2.2.3 Number of Comments by Process Category

Table 2-3, Comments by Process Category, shows the number of comments received in the submissions and the number of comments that were assigned to each process category.

Table 2-3
Comments by Process Category

Process Category	Number of Comments	Percent of Comments
Issues to be addressed during this planning effort		
Comments related to a resource topic for analysis	898	70%
Comments that propose an alternative or that support a proposed alternative for consideration	63	5%
General comments related to this planning effort	99	8%
Recommended studies or reports to review and request for data	53	4%
Comments related to laws, regulations, and policy	40	3%
Issues that will not be addressed during this planning effort		
Issues to be addressed through policy or administrative action (e.g., administrative record, agency consultation, public involvement and scoping process, permits, approvals, laws, regulations, and policies)	39	3%
Issues related to livestock grazing implementation (e.g., allotment boundaries, grazing permits, and specific range improvements)	48	4%
Issues that the BLM has addressed but should be better communicated to those who raised the issues	30	2%
Issues beyond the scope of this planning effort (MMP decisions on managing resources or resource uses other than livestock grazing)	17	1%
Total	1,287	

Of the 1,287 comments received, 898 (70 percent) were concerned a planning issue that GSENM will address in the MMP-A/EIS. While some comments addressed multiple planning issues, the BLM assigned most comments to one primary resource category for analysis. These comments are discussed in detail below under Comments Related to a Resource Topic for Analysis. The BLM received 63 comments (5 percent) concerning alternatives development, including comments that proposed an alternative for consideration or supported a proposed alternative for consideration.

In addition, 99 comments (8 percent) concerned issues that GSENM will address in the MMP-A/EIS but do not fall within a specific planning issue category. These comments included general comments on the MMP-A planning process, collaboration, and requirements of NEPA and other regulations (see Appendix B, Comments by Process Category and Planning Issue). Of the comments, 53 (4 percent) provided data, studies, or suggested examples for the BLM to review. These are included in Section 4.1.3, Additional Information Identified During Scoping. Finally, the

BLM received 40 comments (3 percent) concerning laws, regulations, and policy that the BLM should consider when preparing the MMP-A/EIS.

The remaining 10 percent of the comments concerned issues to be addressed through national policy or administrative action (3 percent), comments related to implementation-level decisions (4 percent), issues that the BLM has addressed but should be better communicated to those who raised the issues (2 percent), or issues beyond the scope of the MMP-A (1 percent). See Section 2.5, Issues That Will Not Be Addressed in the Monument Management Plan Amendment, for more detail.

Comments are provided in Appendix B, Comments by Process Category and Planning Issue. Comment letters can be viewed in their entirety at GSENM headquarters in Kanab, Utah.

Comments Related to a Resource Topic for Analysis

The BLM further categorized comments on issues to be addressed during this planning effort by resource topic for analysis. The BLM received 898 such comments. While all of these comments related to livestock grazing, they also described conflicts, or lack thereof, between grazing and other resources or resource uses.

Table 2-4, Planning Issue Comments by Resource Category, shows the number and proportion of comments received by resource category. A summary of the comments by resource category is in this section; the actual comments by resource category are in Appendix B, Comments by Process Category and Planning Issue.

Table 2-4
Planning Issue Comments by Resource Category

Resource Category	Number of Comments	Percent of Comments
Air quality	2	<1%
Biological/ecological resources	32	4%
Climate change and drought management	20	2%
Cultural and archaeological resources	19	2%
Economics	81	9%
Fire management	6	<1%
GCNRA values and purposes	6	<1%
GSENM objectives and values	17	2%
Livestock grazing (general)	91	10%
Livestock grazing (grazing management practices)	107	12%
Livestock grazing (forage availability and allocation)	93	10%
Livestock grazing (rangeland health)	37	4%
Monitoring and adaptive management	41	5%
Noxious weeds and nonnative invasive plants	21	2%
Paleontological resources	5	<1%
Public health and safety	6	<1%
Recreation	50	6%
Riparian and wetland vegetation	29	3%
Social/heritage resources (customs and culture)	73	8%

Table 2-4
Planning Issue Comments by Resource Category

Resource Category	Number of Comments	Percent of Comments
Soils	60	7%
Special designation areas (e.g., areas of critical environmental concern, wild and scenic rivers, and wilderness study areas)	8	1%
Special status species (plants and wildlife)	10	1%
Tribal interests and Native American religious concerns	3	<1%
Vegetation (general)	34	4%
Visual resources	1	<1%
Water resources	32	4%
Wildlife (general)	14	2%
Total	898	

Air Quality

The BLM received two comments (less than one percent) on air quality that focused on the region's general air quality and the effects of destabilized soils on air quality.

Biological/Ecological Resources

The BLM received 32 comments (4 percent) on the impacts of livestock grazing impacts on ecosystems and biological features. More than half of these comments stated that livestock grazing degrades vegetation, wildlife habitat, and environmental quality in aquatic and upland ecosystems. About one-third of comments stressed the ability of livestock to increase biodiversity, increase availability of clean water resources due to water improvements, and increase vegetative productivity. The remaining comments requested that these ecological resources be included in the MMP-A planning process.

Climate Change and Drought Management

The BLM received 20 comments (2 percent) on climate change and drought management. One-third of these comments focused on how the BLM would administer livestock grazing in the future with the forecasted impacts of climate change, including less annual precipitation, increased drought conditions, and the inability of stressed ecosystems to adapt to these conditions. A few comments questioned how the BLM would adjust forage levels in years of drought, while others noted that ranchers and livestock have adjusted well to past droughts and would continue to do so in the future. One-quarter of the comments recommended that the BLM include scientific climate studies in the MMP-A planning process.

Cultural and Archaeological Resources

The BLM received 19 comments (2 percent) on the impacts of livestock grazing on cultural and archaeological resources. All commenters stated that cattle impact cultural sites by trampling artifacts, rubbing off petroglyphs, and defecating on ground scatter. Comments noted that the BLM should make certain lands unavailable to grazing or fence those lands to prevent livestock from damaging cultural resources.

Economics

The BLM received 81 comments (9 percent) on the economic contribution of livestock grazing. Half of these comments expressed that livestock grazing is a vital economic contributor to the region, contributing to some or all of the annual income of many families in the region. Many comments noted that a decline in livestock grazing would affect local families, businesses, and economies. Just over one-third of comments requested that the BLM include a socioeconomic analysis in the MMP-A planning process, recommended the BLM analyze different aspects of grazing economics, and suggested relevant studies or scientific papers for the BLM to consider. The remaining comments said that the BLM should prioritize tourism, which is now the main contributor to the local economy. These comments stated that grazing supports tourism through the outfitters who provide opportunities to participate in cattle drives, and that BLM and NPS land management is important to local economies.

Fire Management

The BLM received six comments (less than one percent) on fire management. The majority of the comments noted that livestock controls the growth of invasive plants and undergrowth, preventing the spread of wildfires. One commenter noted that fire does more damage to wildlife habitat than livestock grazing.

Glen Canyon National Recreation Area Values and Purposes

The BLM received six comments (less than one percent) concerning how the BLM would administer livestock grazing in the allotments within GCNRA. All comments noted that the regulations governing GCNRA are different than GSENM, and, as such, the BLM and NPS should establish separate guidelines that include the requirements of the Organic Act and NPS management policies for those lands.

Grand Staircase-Escalante National Monument Objectives and Values

The BLM received 17 comments (2 percent) on the objects and values of GSENM, as outlined in its establishing proclamation in 1996. These comments included general statements and statements about individual objects and values, such as GSENM's geology, cultural and historical resources, paleontological resources, vegetation, soils, and unique ecosystems. Most comments noted that the BLM must protect GSENM's objects and values, that the BLM should emphasize these objects and values during the MMP-A process, and that livestock grazing impacts these objects and values. However, the comments varied on how to protect the objects and values while continuing livestock grazing on GSENM lands. Many comments suggested that livestock grazing was incompatible with the objects and values on all or parts of GSENM and should be removed. Other comments stated that grazing practices have no impact on the objects and values of the GSENM or that livestock grazing should be considered an historical object and value of GSENM and be allowed to continue.

Livestock Grazing (General)

The BLM received 91 comments (10 percent) on livestock grazing. About one-quarter of these commenters wanted livestock grazing to continue and stated that ranchers are good stewards of BLM- and NPS-managed land. About one-fifth of these commenters stated that livestock grazing damaged ecosystems and diminished user experiences. Another fifth of these comments requested a change in management practices to promote both productive ranching and better

user experiences. The remaining comments focused on valid existing rights for ranchers and the rights of permit holders, a desire for no reduction in livestock grazing, and a desire for exclusion of all livestock from the decision area.

Livestock Grazing (Grazing Management Practices)

The BLM received 107 comments (12 percent) recommending various livestock grazing management practices. The vast majority of the comments submitted one or more recommended methods that generally included season of use, seedings/reseedings, pasture rotation, water developments, stocking level adjustments, vegetation treatments, and grass bank use.

The remaining comments suggested that the BLM evaluate allotments and make recommendations for management practices individually instead of making a blanket set of recommendations. These comments stated that maintenance agreements are only given to grazing permittees but should be more transparent to the public and that monitoring should occur on the different treatments to track their success. Comments also recommended studies for the BLM to use in the MMP-A planning process.

Livestock Grazing (Forage Availability and Allocation)

The BLM received 93 comments (10 percent) on topics related to the amount of livestock forage available and how it is allocated (permitted animal unit months [AUMs]). The comments covered a variety of topics related to forage, with each topic representing one tenth or less of the comments.

The top four topics are summarized by the following recommendations:

1. Reduce the amount of AUMs permitted.
2. Allow permits to be retired and require scientific justification for doing so.
3. Conduct a variety of analyses to better display areas that are unsuitable for grazing (such as steep cliffs, slickrock, and barren areas).
4. Conduct thorough impacts analysis for any AUM level reductions.

Other topics included recommendations for updating the definition of an AUM for current livestock weights, providing enough forage for wildlife in forage calculations, setting a utilization rate for each allotment, and promoting sustainable forage levels.

Commenters also expressed that the BLM should open or close the entire decision area to livestock grazing, that the BLM should close certain areas (such as slot canyons) to livestock grazing, that the BLM should reopen closed allotments, or that the BLM should not change the AUMs or allotments from the current status. A few comments noted that the BLM should set forage levels using a below-average precipitation level and that the BLM should increase AUMs increase in wetter years.

Livestock Grazing (Rangeland Health)

The BLM received 37 comments (4 percent) on rangeland health in the decision area. One-third of these pertained to the evaluation or monitoring processes conducted during rangeland health

assessments. These comments noted that the BLM should conduct evaluations redone periodically, that staff should be properly trained and evaluations conducted consistently, and that the BLM's current rangeland health standards assessment protocol is insufficient to accurately assess whether all standards are being met. Another third of the comments focused on management actions that help or hinder compliance with rangeland health standards, and baseline standards that should be used to make these assessments. The remaining comments noted whether certain areas were making progress towards compliance or were not meeting the standards.

Monitoring and Adaptive Management

The BLM received 41 comments (5 percent) on monitoring and adaptive management. Just under one-third of these comments recommended that the BLM create or expand reference sites to establish a comparison of non-grazed areas with varying soil and vegetation types with grazed areas with similar attributes. One-quarter of the comments wanted the BLM to conduct grazing monitoring that would help drive grazing management practices, allotment size, and forage levels. Another quarter of the comments said the BLM should implement monitoring practices that observe trends in ecological health or ecological site descriptions, rangeland health requirements, and water resources. The remaining comments recommended that the BLM include citizen and volunteer reporting in the monitoring plan, that the BLM display monitoring levels linked to BLM budgetary constraints, and that BLM monitoring activities should follow the 2005 BLM directive for Assessment, Inventory, and Monitoring.

Noxious Weeds and Nonnative Invasive Plants

A total of 21 comments (2 percent) were submitted concerning noxious weeds and nonnative invasive plants. Over one-third of these said that livestock grazing were a useful tool in managing invasive weed spread; another third said that livestock grazing promotes the spread of noxious weeds and nonnative invasive plants. The remaining comments discussed different potential management actions, including using certain nonnative grasses for grazing and focusing management on eradicating noxious weeds and nonnative invasive plants.

Paleontological Resources

The BLM received five comments (less than one percent) on the impact of livestock grazing on paleontological resources. One comment said that there are no conflicts between livestock grazing and paleontological research because they occur in different seasons (winter and summer, respectively). The rest of the comments noted that there are impacts from livestock trampling exposed and/or undocumented paleontological resources.

Public Health and Safety

The BLM received six comments (less than one percent) on public health and safety issues related to livestock grazing. The majority of these comments noted that ranchers help many recreationists or tourists who get lost, stuck, or are unprepared for the potentially harsh conditions of the planning area. A few comments said that livestock cause damage to maintained dirt roads or are on the scenic byway at night, causing a safety hazard to motorists.

Recreation

The BLM received 50 comments (6 percent) on recreation use and livestock grazing. Over half of these comments discussed the interaction between livestock grazing and recreation. The

majority of comments stated that livestock grazing adversely affected their experience because of cow droppings, poor water quality, and strong livestock odors. Slightly fewer comments noted that livestock grazing is beneficial to recreation because cattle create hiking paths and remove dense vegetation, which creates a better recreation experience. A few comments said that recreation, such as off-road use, and associated actions such as litter, also caused impacts on the land. About 14 percent of the comments wanted the BLM to close high-use or high-value recreation areas to livestock grazing. Other comments wanted the BLM to prioritize recreation because of its high value to the area economy. Others said livestock grazing should be prioritized because it a part of the culture and history of the area. The remaining comments noted conflicts between recreation and livestock grazing and stated interest in finding a solution amenable to both.

Riparian and Wetland Vegetation

The BLM received 29 comments (3 percent) on riparian and wetland habitats. Half of these comments called for the BLM to remove or exclude livestock grazing from critical riparian habitats because of the effects, including young vegetation removal, vegetation trampling, the overall ecosystem health decline, and wildlife habitat damage. Just under half of the comments suggested that the BLM should protect these types of ecosystems, including from protecting these areas from cattle trespassing onto Bryce Canyon National Park lands. The remaining comments provided baseline information or requested that the BLM collect baseline riparian information to be included in the MMP-A planning process.

Social/Heritage Resources (Customs and Culture)

The BLM received 73 comments (8 percent) on the social and heritage value of livestock grazing in the planning area. The vast majority of comments said that livestock grazing has been a part of this community for a very long time and is a crucial element to the culture and customs of the nearby towns. Many comments noted that the grazing lifestyle and knowledge has been passed down through generations and maintains a central role in a many peoples' lives, whether they are ranchers or not. Other comments stated that livestock grazing attracts many tourists to the area who want to see cattle drives and "real cowboys" at work. One comment suggested that the notion of livestock grazing in a desert is outdated.

Soils

The BLM received 60 comments (7 percent) concerning how soil conditions are impacted by livestock grazing. Over half of these comments stressed the importance of maintaining and restoring biological soil crusts to improve regional ecological health. Two of these comments stated that the BLM should not prioritize soil crusts and that the same ecological benefits could be achieved using grazing. About one-third of the comments indicated that grazing causes increased soil erosion levels, erosion features (such as rills, expanding gullies, and head cuts), fine sediments in streams, and a reduction in biological soil crusts, leading to increased wind and water erosion. The remaining comments discussed preventing livestock from grazing on steep slopes, closing to grazing those areas with soil types that cannot support consistent vegetation, and supporting or disapproving livestock grazing based on soil conditions.

Special Designation Areas

The BLM received eight comments (one percent) on special designation areas (e.g., areas of critical environmental concern, wild and scenic rivers, and wilderness study areas). Half of all comments wanted areas such as areas of critical environmental concern, eligible wild and scenic river segments, wilderness study areas, and wilderness characteristics in adjacent areas to be protected from further degradation from livestock. A quarter of the commenters requested that the BLM exclude livestock from important recreational areas, such as wilderness study areas and areas of critical environmental concern. One comment noted that livestock were heavily impacting portions of wilderness areas.

Special Status Species (Plants and Wildlife)

The BLM received 10 comments (1 percent) regarding the protection of special status species in conjunction with livestock grazing. Just under half of these comments said that the BLM should close areas containing endemic, sensitive, threatened, or endangered species to livestock grazing. Others voiced concern about the impacts grazing could have on such species, the protection of greater sage-grouse, and the need for valid scientific studies to determine if livestock grazing is impacting these sensitive species.

Tribal Interests and Native American Religious Concerns

The BLM received three comments (less than one percent) on tribal interests or Native American religious concerns. These comments requested that the BLM consult tribes in the area about their ecological knowledge and about planning area religious sites.

Vegetation (General)

The BLM received 34 comments (4 percent) regarding the interaction between vegetation and livestock grazing. Just over one-third of these focused on the damage to the vegetative landscape and the inability of native vegetation to recover from the grazing season. Just under one-third noted that grazing triggers natural growth cycles in grasses, that winter grazing clears out old grass to make room for new spring grasses, and that livestock transport seeds and provide nutrients. The remaining comments stressed the need for the BLM to collect data on vegetation conditions and trends to use in the MMP-A process, the need for the BLM to restore the herbaceous understory of sagebrush, and the need for the BLM to conduct pinyon-juniper treatments near grazing areas.

Visual Resources

The BLM received one comment (less than one percent) recommending that the BLM protect the viewshed along the Bryce Canyon National Park and GSENM border.

Water Resources

The BLM received 32 comments (4 percent) on the impacts of livestock grazing on water resources. Almost half of these called for the protection of water resources, such as seep, springs, ponds, and creeks. A similar number of comments noted that livestock defecating and urinating directly in or adjacent to water sources, livestock trampling and destabilizing streambanks, and dead livestock rotting in the waterways have impacted water quality. Commenters stated that this is dangerous for both wildlife and recreationists' water consumption and can limit the backcountry recreation experience due to a lack of drinking water sources. The remaining comments requested that the BLM consider baseline surface

water and groundwater information during the MMP-A planning process, and expressed concern about potentially losing federally owned water rights used for livestock watering operations if livestock grazing is reduced.

Wildlife (General)

The BLM received 14 comments (2 percent) on wildlife and livestock grazing interactions. Two-thirds of these comments noted that range improvements, such as watering tanks and clearing overgrown areas, improve wildlife access to water and habitat. The remaining comments noted the impacts of grazing on wildlife and suggested that the BLM discontinue predator-control methods and replace them with predator-friendly management practices.

Comments that Propose an Alternative or that Support a Proposed Alternative for Consideration

The BLM received 63 comments (5 percent of the total) concerning alternatives development. Two submissions (totaling 10 unique comments) included proposed alternatives with requests that the BLM analyze them in detail. Eleven comments were requests that the BLM look at increasing forage, opening up allotments that are currently unavailable for livestock grazing, and analyzing the entire decision area as available. Another comment suggested that the BLM should close the entire decision area to livestock grazing and that the BLM consider this as an alternative. Other comments provided support for a proposed alternatives submitted by an organization (37 comments). One comment stated that the BLM should choose an alternative or elements of alternatives that best protect GSENM resources and the natural processes that keep the ecosystem functioning and healthy.

General Comments Related to this Planning Effort

The BLM received 99 comments (8 percent of the total) that related to issues that GSENM will address in the MMP-A/EIS but that do not fall within a specific planning issue category. These were general comments on the MMP-A planning process, collaboration, and the requirements of NEPA and other regulations.

Comments Related to Laws, Regulations, and Policy

Comments relating to laws, regulations, and policy are those where the commenter cited applicable statutes and provided interpretations. Several commenters cited authorities under the Taylor Grazing Act of 1934 (Public Law 73-482), BLM grazing regulations, BLM land use planning decisions to be made for livestock grazing (BLM Land Use Planning Handbook), the FLPMA, GCNRA enabling legislation (Public Law 92-593), the Presidential Proclamation establishing GSENM (September 18, 1996), the NEPA, and other applicable laws and regulations. Other comments cited case law related to alternatives consideration.

2.2.4 Feedback during Scoping Meetings

Conversations between BLM representatives and the public at the scoping meetings, as well as general sentiments, are summarized in this section. The BLM did not take or transcribe oral comments verbatim but will consider these comments and ideas, as appropriate, during the MMP-A/EIS process.

Many people were interested in general information about the MMP-A/EIS and what the BLM was doing and why. Several people had questions about what the decision would entail. The

public was consistent in saying that they wanted the BLM to understand their points of view and take them into account throughout the process. Attendees were also interested in knowing what types of comments would be the most helpful. There were a few questions about how people could participate and some dissatisfaction with past public participation processes where commenters were unsure how or even if the BLM used the information they provided. One attendee requested that the BLM make all comment submissions available to the public.

The public also wanted to understand the different resources GSENM and GCNRA deal with and how those resources are analyzed throughout the process.

A couple of individuals were interested in how the BLM was going to allocate livestock forage. Several attendees wondered if the BLM's objective was to reduce livestock grazing throughout the decision area. Comments regarding the level of livestock grazing were on the spectrum from complete closure to full utilization, including opening areas currently closed to grazing. Some attendees feared that the BLM would close GSENM to grazing. Several attendees mentioned that the Monument creation was not supposed to affect grazing and they wanted the BLM to continue with current management.

Some attendees expressed worry that the BLM would change their grazing permits in a manner that would diminish their ability to effectively use the allotment within their grazing program. A couple of individuals asked about what the BLM was going to do about range seedings.

Attendees were concerned about overgrazing and land health in general, and about grazing impacts on biological soil crusts. Commenters raised concerns about changes to the landscape over the last 20 years, including erosion, invasion of noxious weeds, and loss of vegetation. Commenters suggested that the BLM create more exclosures throughout the Monument to monitor trends. One individual noted that livestock trailing along Hole-in-the-Rock road was damaging.

Several individuals mentioned the importance of livestock grazing to the local economies and the long history of grazing in the area. The public described livestock grazing as a heritage activity that provides an important sense of community and connection to the landscape. Other comments made the point that most of the ranchers care more for the land than the BLM and that the economics of ranching are important to local families who engage in it.

One attendee was emphatic that the BLM must use science as part of this process. Individuals suggested that the BLM look at how other agencies and areas were dealing with livestock grazing to ensure a successful effort. One individual suggested that the BLM should follow the process used to develop the Collaborative Group on Sustainable Grazing on the Dixie, Fishlake, and Manti LaSal National Forests: Final Report and Consensus Recommendations.

2.3 PLANNING ISSUES

As defined in the BLM Land Use Planning Handbook (H-1601-1) (BLM 2005), planning issues are disputes or controversies about existing and potential land and resource allocations, levels of resource use, production, and related management practices. Planning issues provide the major focus for development of alternatives.

The BLM identified the following preliminary planning issues in the Notice of Intent:

1. Effects on GSENM proclamation-identified scientific and historic objects and values
2. Lands available for livestock grazing within the planning area
3. Effects on the resources and values for which GCNRA was established
4. Forage currently available on an area-wide basis for livestock grazing and available for future anticipated demands
5. Guidelines and criteria for future allotment-specific adjustments, such as rotational grazing plans, that affect livestock use
6. Impacts on local custom and culture and the area's economy
7. Management of existing rangeland improvement seedings

Based on the public comments and issues that the BLM will address during this planning effort (see Section 2.2.3, Number of Comments by Process Category, and Appendix B), the BLM modified the preliminary planning issues and identified additional issues to be addressed in the MMP-A/EIS. GSENM has tentatively identified the following planning issues to guide the development of the MMP-A/EIS:

1. Effects of livestock grazing management on GSENM proclamation-identified scientific and historic objects and values
2. Effects of livestock grazing management on the resources and values for which GCNRA was established (e.g., public outdoor recreation use and enjoyment, scenic, scientific, and historic features)
3. Lands available for livestock grazing in the decision area
4. Forage currently available on an area-wide basis for livestock grazing and available for future anticipated demands
5. Guidelines and criteria for future allotment-specific adjustments, such as amount of forage available for livestock, season of use, or other grazing management practices
6. Management of existing range improvement seedings and opportunities for future range improvements
7. Effects of livestock grazing management on vegetation, including riparian vegetation
8. Effects of livestock grazing management on soils, including biological soil crusts
9. Effects of climate change and drought on forage availability
10. Effects of livestock grazing management on local custom and culture
11. Effects of livestock grazing management on the area's economy
12. Effects of livestock grazing management on recreation

2.4 DECISIONS TO BE MADE IN THE MONUMENT MANAGEMENT PLAN AMENDMENT

The Utah BLM State Director will decide whether to amend the MMP by integrating planning decisions for livestock grazing and rangeland management into the existing MMP. The underlying goal for completing the EIS process is to enable sustained use of the land through improved land health and science-based grazing management.

In the decision, the Utah BLM State Director will determine which lands are and are not available for livestock grazing and will identify an area-wide amount of forage available for livestock grazing. In making this decision, the State Director will consider the following:

- other uses of the land
- terrain characteristics
- soil, vegetation, and watershed characteristics
- the presence of undesirable vegetation, such as invasive weed infestations
- the presence of other resources that may require special management or protection, such as special status species or special recreation management areas

The BLM Land Use Planning Handbook (H-1601-1) at Appendix C, Section II(B), further states:

Decisions identifying lands available, or not available, for livestock grazing may be revisited through the amendment or revision process if the grazing preference or permit on those lands has been voluntarily relinquished, or if there are outstanding requests to voluntarily relinquish the grazing preference or permit. If an evaluation of Land Health Standards identifies an allotment or group of allotments where Land Health Standards cannot be achieved under any level or management of livestock use, then decisions identifying those areas as available for livestock grazing need to be revisited.

For lands available for livestock grazing, identify on an area-wide basis both the amount of existing forage available for livestock (expressed in animal unit months) and the future anticipated amount of forage available for livestock with full implementation of the land use plan while maintaining a thriving natural ecological balance and multiple-use relationships. The land use plan needs to describe how these public lands will be managed to become as productive as feasible for livestock grazing, including a description of possible grazing management practices such as grazing systems, range improvements (including land treatments), changes in seasons of use and/or stocking rates. In addition, identify guidelines and criteria for future allotment-specific adjustments in the amount of forage available for livestock, season of use, or other grazing management practices. (Joel Stamatakis, Steve Stamatakis; 98 IBLA 4 [1987])(BLM 2005)

The NPS is cooperating in the preparation of the environmental analysis and will issue a separate decision for lands within GCNRA. The NPS will issue its own decision that will be consistent with the GCNRA-enabling legislation and will integrate GCNRA values and purposes into livestock management decisions for lands within GCNRA where GSENM administers livestock grazing.

2.5 ISSUES THAT WILL NOT BE ADDRESSED IN THE MONUMENT MANAGEMENT PLAN AMENDMENT

As discussed in Section 2.2.3, Number of Comments by Process Category, approximately 10 percent of the comments concerned issues that will not be addressed in this MMP-A. These include implementation decisions that the BLM has already addressed or will address independent of the MMP-A, issues to be addressed through policy or administrative action, issues that the BLM has addressed but should be better communicated to those who raised the issues, comments related to laws, regulations, and guidance, and issues beyond the scope of the MMP-A. See Appendix B, Comments by Process Category and Planning Issue, for specific comments.

2.5.1 Issues to Be Addressed through Policy or Administrative Action

Administrative or policy issue comments included issues pertaining to national BLM policy that will not be addressed during the MMP-A process. Comments pertained to grazing permit costs, potential issues with subleasing permits, allowing fluid minerals development, firing or hiring BLM staff, and making allotment contracts and reporting documents available online.

2.5.2 Issues Related to Livestock Grazing Implementation

Implementation issues that the BLM has or will address outside of the MMP-A process include decisions that require on-the-ground action following the MMP-A decisions. Comments about implementation issues included requests for allotment-specific improvements (such as requests for treatments and structures), suggestions for removal of improvements or other items (e.g., fencing, barrels, trash, trash dumps, and stock tanks), requests for additional facilities and signage at recreation areas, and requests that water improvements be retrofitted to meet visual resource management objectives. Other comments concerned feral and trespass cattle, permit renewals, and operator compliance with permits.

BLM guidance for livestock grazing provides the following direction for implementation-level actions (BLM 2005):

For areas available for grazing, identify allotment-specific (for one or several allotments) grazing management practices and livestock forage amounts based on monitoring and assessment information, as well as constraints and needs related to other resources. Grazing management practices and levels of livestock grazing use must achieve the desired outcomes outlined in the land use plan, including rangeland health standards (or comprehensive Land Health Standards), or must result in significant progress toward fulfilling rangeland health standards; they must also conform to the guidelines required under 43 CFR 4180.2(b).

2.5.3 Issues That the BLM Has Addressed but Should Be Better Communicated to Those Who Raised the Issues

Comments received primarily requested reopening a road to the Wahweap Hoodoos. Additional comments related to generally closing additional routes or restricting OHV use and making routes available for administrative use by grazing permittees. Route designation in GSENM was completed in the MMP (BLM 2000).

One comment asked that the BLM provide for firewood gathering in GSENM. This decision is included in the MMP (BLM 2000) on page 28 in the “Forestry Products” section.

One commenter stated that it was difficult to find scoping information on the project website. All scoping documents are on the website's documents page (http://www.blm.gov/ut/st/en/fo/grand_staircase-escalante/planning0/livestock_grazing/documents.html).

2.5.4 Issues beyond the Scope of This Planning Effort

Issues outside the scope of the MMP-A are as follows:

- comments about land management on areas outside the planning area
- comments on issues for which the BLM has limited or no administrative authority, such as hunting, which is regulated by the Utah Division of Wildlife

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CHAPTER 3

PLANNING CRITERIA

During its initial planning sessions and internal scoping, GSENM staff developed preliminary planning criteria. Planning criteria establish constraints, guidelines, and standards for the planning process. Planning criteria help planners define the scope of the amendment process and estimate the extent of data collection and analysis. Planning criteria are based on standards prescribed by applicable laws and regulations; agency guidance; results of consultation and coordination with the public and other federal, state, and local agencies; analysis of information pertinent to the planning area; and professional judgment. The BLM may change planning criteria as a result of public input, as issues are addressed, or as new information is presented.

3.1 PRELIMINARY PLANNING CRITERIA

The following preliminary planning criteria were presented for public comment:

1. The MMP-A will be limited to making land use planning decisions specific to livestock grazing.
2. Lands addressed in the MMP-A will be lands managed by the BLM and the NPS.
3. Grazing within GCNRA will be administered in a manner that protects GCNRA values and purposes pursuant to Public Law 92-593 and in accordance with the 1916 NPS Organic Act.
4. The process must utilize the Utah BLM Standards for Rangeland Health and Guidelines for Livestock Grazing Management. The BLM will apply existing applicable Land Health Standards to all alternatives.
5. The approved MMP-A will comply with the FLPMA, NEPA, National Historic Preservation Act, CEQ regulations at 40 CFR 1500-1508, Department of the Interior regulations at 43 CFR 46 and 43 CFR 1600, the BLM H-1601-I, Land Use Planning Handbook (BLM 2005), the 2008 BLM H-1790-I NEPA Handbook (BLM 2008a), and all other applicable BLM policies and guidance.

6. Land use planning decisions must be consistent with the purpose and objectives outlined in the presidential proclamation for GSENM and the enabling legislation for GCNRA, as applicable.
7. Socioeconomic analysis will use an accepted input-output quantitative model such as Impact Analysis for Planning (IMPLAN) or Regional Input Output Modeling System (RIMS II), and/or Jobs and Economic Development Impact (JEDI) for analysis.
8. The BLM and NPS will review and use as appropriate current scientific information, research, technologies, and results of inventory, monitoring, and coordination to determine appropriate management strategies.
9. The BLM and NPS will coordinate and communicate with federal, state, local, and tribal governments to ensure that the BLM and the NPS consider provisions of pertinent plans, seek to resolve inconsistencies between federal, state, local, and tribal plans, and provide ample opportunities for federal, state, local, and tribal governments to comment on the development of amendments.
10. The MMP-A will be based on the principles of adaptive management.

3.2 ADDITIONAL SUGGESTIONS FOR PLANNING CRITERIA

Several commenters suggested changing the preliminary planning criteria.

Suggested changes to the preliminary planning criteria:

- BLM notes the use of the Jobs and Economic Development Impact (JEDI) Model for economic assessment in the scoping newsletter under planning criteria. Since this is designed by the National Renewable Energy Laboratory specifically for energy project impacts, this may not be an appropriate tool set. We recommend that BLM use the Economic Profile System-Human Dimensions Toolkit (EPS-HDT) designed and funded by a partnership with BLM and the US Forest Service.
- Analyze a full range of alternatives. NEPA requires that a range of alternatives be considered in the RMP and accompanying EIS, such that it would “preclude agencies from defining the objectives of their actions in terms too unreasonably narrow that they can be accomplished by only one alternative.”
- Adhere to standards for scientific accuracy and integrity.
- BLM’s planning criteria should include a requirement that promotes collaboration in making decisions on grazing use and management. Collaboration allows people to learn about issues and remedies by working together. We recommend that BLM incorporate into this plan the seven guiding principles in collaboration described in BLM’s Collaboration Desk Guide.
- Develop measurable grazing goals and objectives that lead to adequate management mechanisms.

3.3 PLANNING CRITERIA

Based on public comments and input from cooperating agencies, the BLM has modified the preliminary planning criteria. The BLM has identified the following planning criteria for use in preparing the Draft EIS/MMP-A:

1. The BLM will limit the scope of the MMP-A to making land use planning decisions specific to livestock grazing.
2. The BLM will address lands managed by the BLM and the NPS in the MMP-A.
3. The BLM and NPS will administer grazing within GCNRA in a manner that protects GCNRA values and purposes pursuant to Public Law 92-593 and in accordance with the 1916 NPS Organic Act.
4. Land use planning decisions must be consistent with the objects, values, and purposes in the presidential proclamation for GSENM and the enabling legislation for GCNRA, as applicable.
5. The approved MMP-A will comply with the FLPMA, NEPA, National Historic Preservation Act, and CEQ regulations at 40 CFR 1500-1508.
6. The approved MMP-A will comply with 43 CFR 1600, the BLM H-1601-I, Land Use Planning Handbook (BLM 2005), the 2008 BLM H-1790-I NEPA Handbook (BLM 2008a), and other applicable BLM policies and guidance.
7. Land use planning decisions for GCNRA will comply with applicable NPS Management Policies, Director's Orders, and Reference Manuals.
8. Utah BLM Standards for Rangeland Health and Guidelines for Livestock Grazing Management will be used (BLM 1997). The BLM will apply existing applicable Land Health Standards to all alternatives.
9. The BLM will apply the goals, objectives, and recommendations for grazing practices and management actions identified in the 1999 Grazing Management Plan for Glen Canyon National Recreation Area to all alternatives for NPS-managed lands to ensure protection of park resources and values as defined by the NPS.
10. The BLM will use an accepted input-output quantitative model such as Impact Analysis for Planning (IMPLAN), Regional Input Output Modeling System (RIMS II), Jobs and Economic Development Impact (JEDI), and/or the Economic Profile System-Human Dimensions Toolkit (EPS-HDT) for socioeconomic analysis.
11. The BLM and NPS will review and use as appropriate current scientific information, research, technologies, and results of inventory, monitoring, and coordination to inform management strategies. The use of scientific and scholarly information will be consistent with Department of Interior Manual 305 DM 3.
12. The BLM and NPS will coordinate and communicate with federal, state, local, and tribal governments to ensure that the BLM and NPS consider provisions of pertinent plans, seek to resolve inconsistencies between federal, state, local, and tribal plans. The BLM and NPS will also provide ample opportunities for federal,

state, local, and tribal governments to comment on the development of amendments.

I3. The BLM will base the MMP-A on the principles of adaptive management.

CHAPTER 4

DATA SUMMARY AND DATA GAPS

4.1 SUMMARY OF AVAILABLE RELEVANT INFORMATION

The BLM will use both new data and existing resource information to formulate management alternatives in the MMP-A/EIS. To facilitate this process, the BLM is compiling information and converting it to digital format using geographic information systems for use in analysis and map production. Because this information is necessary to quantify resources, update maps, and manipulate information during alternative formulation, this process must be completed before actual analysis can begin. The BLM will use the new data generated during the MMP-A/EIS process to address planning issues; this data will meet applicable established standards.

4.1.1 Plans and Documents

Management Plans and Guidance

- Glen Canyon National Recreation Area Enabling Legislation (Public Law 92-593, October 27, 1972)
- Glen Canyon National Recreation Area General Management Plan (NPS 1979)
- Escalante Management Framework Plan (BLM 1981a)
- Paria Management Framework Plan (BLM 1981b)
- Vermilion Management Framework Plan (BLM 1981c)
- Zion Management Framework Plan (BLM 1981d)
- Memorandum of understanding between the BLM and NPS for grazing administration within GCNRA (September 4, 1984)
- BLM (Utah and Arizona State Offices) and NPS (GCNRA) Interagency Agreement for Grazing Management (May 10, 1993)
- Presidential Proclamation 6920 establishing GSENM (September 18, 1996)
- Escalante Management Framework Plan and Approved Amendment (BLM 1999)
- Glen Canyon National Recreation Area Grazing Management Plan (NPS 1999)

- Grand Staircase-Escalante National Monument Management Plan (BLM 2000)
- Section II.B, Livestock Grazing, of Appendix C, Program-specific and Resource-specific Decision Guidance, of BLM Handbook H-1601-I, Land Use Planning Handbook (BLM 2005)
- NPS Management Policies (NPS 2006)
- Kanab Field Office Resource Management Plan (BLM 2008b)
- Arizona Strip Field Office Resource Management Plan (BLM 2008c)
- BLM Instruction Memorandum 2012-169, Resource Management Plan Alternative Development for Livestock Grazing (August 16, 2012)

Publications

- National Riparian Service Team Situation Assessment Report (National Riparian Service Team 2012)
- BLM Washington Office GSENM MMP Implementation Review Report and Action Plan (BLM 2010a, 2010b)

4.1.2 Data

- Rangeland inventory, assessment, and monitoring data
- BLM Colorado Plateau Rapid Eco-regional Assessment
- Southern Rockies Landscape Conservation Cooperative Strategic Synthesis
- Southwest Regional Gap Analysis Project (ReGAP) vegetation data
- Landscape Fire and Resource Management Planning Tools (LANDFIRE) vegetation data
- Recreation visitor use information
- Visitor experience surveys

4.1.3 Additional Information Identified During Scoping

The BLM received suggestions during scoping about studies to review, information to analyze, documents to consider as guidance, descriptions of existing landscape conditions, and examples of related information. The BLM will consider these suggestions during MMP-A/EIS development. The BLM will use the best available data pertinent to the decisions to be made, knowledge of the planning area, and professional judgment. Comments pertaining to information for review are in Appendix B, Comments by Process Category and Planning Issue.

4.2 DATA GAPS

The BLM will gather data for the EIS throughout the MMP-A/EIS process to ensure that data gaps are minimized. The BLM intends to use the Monument Advisory Committee to review data submitted by individuals, organizations, and agencies.

CHAPTER 5

FUTURE STEPS

5.1 SUMMARY OF FUTURE STEPS AND PUBLIC PARTICIPATION OPPORTUNITIES

On January 15, 16, and 17, 2014, the BLM hosted a series of community socioeconomic workshops in Escalante, Kanab, and Cannonville, Utah, respectively. The BLM encouraged ranchers, community leaders, and other interested individuals to participate in these workshops. Participants worked with BLM natural resource specialists to develop representative scenarios describing typical ways in which the ranches of different sizes and types use public and private lands in the GSENM region as part of their ranching operations. The BLM will use these scenarios as the basis for an economic analysis, to be conducted later, in which the BLM will evaluate EIS alternatives for their social and economic impacts. In total, 80 citizens, federal and local government representatives, and local interest group representatives signed in at the workshops (additional attendees were present in some locations but did not sign in).

The BLM Land Use Planning Handbook (H-1601-1 [BLM 2005]) requires the BLM to develop a report called the Analysis of the Management Situation. This report will describe the current conditions and trends of the resources and resource uses and activities in the planning area. The report will also document current management and opportunities for changes in management. The Analysis of the Management Situation will provide the framework from which to address the planning issues by developing alternatives. The BLM will develop the Analysis of the Management Situation before developing alternatives.

The next phase of the BLM's planning process is to develop a range of alternatives based on the issues presented in Section 2.3, Planning Issues. Alternatives development is guided by established planning criteria (as outlined in 43 CFR 1610) (see Chapter 3, Planning Criteria). In compliance with the NEPA, the FLPMA, CEQ regulations, and BLM planning regulations and guidance, the BLM will produce alternatives that address the identified planning issues, explore opportunities to enhance management of resources and resource uses, resolve conflicts among resources and resource uses, meet the purpose of and need for the MMP-A, are capable of implementation, and are feasible.

The BLM will document the analysis of the alternatives identify a preferred alternative in a Draft MMP-A/EIS. The BLM will distribute the draft document, anticipated to be published in 2016, to elected officials, regulatory agencies, and members of the public. The BLM will also make the draft document available on the project website. The BLM will announce the availability of the draft document via a Notice of Availability in the *Federal Register*, and a 90-day public comment period will follow. The BLM will hold public meetings near the planning area during the 90-day comment period.

At the conclusion of the public comment period, the BLM will review and analyze public comments and determine what changes need to be made to the document. The BLM will then revise the Draft MMP-A/EIS and will prepare a Proposed MMP-A/Final EIS. The Proposed MMP-A/Final EIS will then be published. The BLM will announce the availability of the Proposed MMP-A/Final EIS in the *Federal Register*. Following the notice of availability, the BLM will open a 30-day protest period. Concurrently, the BLM will request the affected governors to review the Proposed MMP-A/Final EIS for consistency with approved state and local plans, policies, and programs.

At the conclusion of the public protest period and the Governor's consistency review, the BLM will resolve all protests and any inconsistencies. If necessary, the BLM will publish a notice in the *Federal Register* requesting public comment on significant changes made as a result of protest. The BLM will then prepare the approved MMP-A and Record of Decision. The NPS will also prepare a Record of Decision and will make a determination regarding impairment of GCNRA values and purposes. The BLM will announce the availability of these documents in the *Federal Register*.

The BLM will publish all publications, including this report, newsletters, the Draft MMP-A/EIS, and the Notice of Availability, as well as pertinent dates regarding solicitation of public comments on the project website.

5.2 CONTACT INFORMATION

The BLM invites and encourages the public to participate throughout the MMP-A/EIS planning process. Some ways to participate are as follows:

- Review the progress of the MMP-A at the project website, <http://blm.gov/pgld>, which the BLM will update with information, documents, and announcements throughout the duration of the MMP-A/EIS preparation.
- Request to be added to or remain on the official project mailing list in order to receive future mailings and information (e-mail BLM_UT_GS_EIS@blm.gov).

Anyone wishing to be added to or deleted from the distribution list, wishing to change their contact information, or requesting further information may e-mail a request to BLM_UT_GS_EIS@blm.gov or contact Ms. Katherine Farrell, Planning and Environmental Coordinator, BLM GSENM, 669 S. Highway 89A, Kanab, Utah 84741, phone (435) 644-1200. Please provide your name, organization, mailing address, e-mail address, and phone number, as well as the preferred method to receive information.

CHAPTER 6

REFERENCES

- BLM (US Department of the Interior, Bureau of Land Management). 1981a. Escalante Management Framework Plan. BLM, Escalante Resource Area, Cedar City District. April 22, 1981. 366pp.
- _____. 1981b. Paria Management Framework Plan. BLM, Kanab Resource Area, Cedar City District. April 22, 1981. 406pp.
- _____. 1981c. Vermilion Management Framework Plan. BLM, Kanab Resource Area, Cedar City District. April 22, 1981. 460pp.
- _____. 1981d. Zion Management Framework Plan. BLM, Kanab Resource Area, Cedar City District. April 22, 1981. 304pp.
- _____. 1997. Utah BLM Standards for Rangeland Health and Guidelines for Livestock Grazing Management. Available online at:
http://www.blm.gov/ut/st/en/fo/vernal/grazing_/rangeland_health_standards.html.
- _____. 1999. Escalante Management Framework Plan Approved Amendment and Record of Decision. BLM Utah State Office, Salt Lake City, UT. March 15, 1999.
- _____. 2000. Grand Staircase-Escalante National Monument Management Plan and Record of Decision. BLM, Grand Staircase-Escalante National Monument, Cedar City, UT. February 2000. 129pp.
- _____. 2005. Handbook H-1601-I, Land Use Planning Handbook. BLM, Washington, DC. March 11, 2005. 161 pp.
- _____. 2008a. Handbook H-1790-I: NEPA Handbook. Rel. I-1710, January 30, 2008. BLM, Washington, DC.
- _____. 2008b. Kanab Field Office Record of Decision and Approved Resource Management Plan. BLM, Kanab Field Office, Kanab, UT. October 2008. 172 pp.

- _____. 2008c. Arizona Strip Field Office Record of Decision and Resource Management Plan. BLM, Arizona Strip Field Office, St. George, UT. February 2008. 362pp.
- _____. 2010a. Grand Staircase-Escalante National Monument Management Plan Implementation Review. Prepared for the Director of the BLM. August 4, 2010. 26pp.
- _____. 2010b. Grand Staircase-Escalante National Monument Management Plan Implementation Review Action Plan. BLM, Utah State Office, Salt Lake City, UT. December 10, 2010. 15pp.
- National Riparian Service Team. 2012. Grand Staircase-Escalante National Monument Situation Assessment Report. National Riparian Service Team, Prineville, OR. April 2012. 25pp.
- NPS (US Department of the Interior, National Park Service). 1979. Glen Canyon National Recreation Area Proposed General Management Plan, Wilderness Recommendation, and Road Study Alternatives Final Environmental Impact Statement. 357pp.
- _____. 1999. Glen Canyon National Recreation Area Grazing Management Plan and Finding of No Significant Impact. NPS, Glen Canyon National Recreation Area, Page, AZ. August 1999. 129pp.
- _____. 2006. Management Policies. US Department of the Interior, National Park Service. ISBN 0-16-076874-8.
- Public Input Comment Tracking database. 2014. Unpublished database of public scoping comments received by the BLM for the BLM Grand Staircase-Escalante National Monument Management Plan Amendment and Environmental Impact Statement. Environmental Management and Planning Solutions, Inc., Boulder, CO. January 16, 2014.

GIS Reference

- BLM GIS 2014. Base GIS data on file with BLM's eGIS Server used to describe the GSENM decision area and planning boundary. BLM, Grand Staircase Escalante National Monument, UT. January 2014.

Appendix A

List of Commenters

APPENDIX A

LIST OF COMMENTERS

The formal public comment period as required by NEPA began on November 4, 2013, with the publication of a Notice of Intent in the *Federal Register* (78 *Federal Register* 66064-66065, November 4, 2013), and ended on January 13, 2013. Table A-1, Commenters, lists the commenters who submitted written submissions to the BLM for the GSENM Livestock Grazing MMP-A/EIS as part of the public scoping process.

Affiliations were assigned based on self-identifying information in the submission. Commenters who submitted comments on business, agency, or organization letterhead or where commenters signed using their official agency title were considered to represent that organization. Submissions on the BLM comment form provided at the scoping meetings and on the project website were assigned the affiliation that commenters noted on the form. All other letters were considered to represent individuals. All comments received or postmarked on or before January 17, 2014, were included in this scoping report. The commenters are listed in alphabetical order.

Table A-1
Commenters

Commenter Name	Affiliation
Federal Government Agencies	
Suzanne Bohan, Director, NEPA Compliance and Review Program	US Environmental Protection Agency
Jeff Bradybaugh	US Department of the Interior, National Park Service, Bryce Canyon National Park
Briana Collier, Environmental Quality Division	US Department of the Interior, National Park Service, Intermountain Region, Indian Affairs and American Culture program
Christine Landrum	US Department of the Interior, National Park Service, Intermountain Region, Indian Affairs and American Culture program

Table A-1
Commenters

Commenter Name	Affiliation
State Government Agencies	
Sindy Smith, RDCC Coordinator	Governor's Public Lands Policy Coordination Office
Ronald G. Torgerson, Renewable Resource Specialist	State of Utah, School and Institutional Trust Lands Administration
Local Government Agencies	
Brian B. Bremner, Garfield County Engineer	Garfield County
Bruce Bunting, Chair	Kane County Conservation District
Doug Heaton, Commissioner	Kane County
Lonnie Pollock, Chair	Canyonlands Conservation District
Tribal Governments	
Tony H. Joe, Jr., Supervisory Anthropologist	The Navajo Nation
Leigh J. Kuwanwisiwma, Director, Hopi Cultural Preservation Office	The Hopi Tribe
Business/Commercial Sector	
Bayard H. Brattstrom	Horned Lizard Ranch
Heather Dunton	Lizard Ranch
Jared Dunton	Lizard Ranch
Mark Nelson	Slick Rock Ranch
Franz and Margaret Shakespear	Franz Shakespear Ranch
Craig Sorenson	Sage-Alpine Ventures
Sam Spencer	Lizard Ranch
Elected Official	
Shannon Allen, Mayor	Town of Antimony (Garfield County Municipalities)
Walon Brinkerhoff, Mayor	Town of Tropic (Garfield County Municipalities)
Eric Houston, Mayor	City of Panguitch (Garfield County Municipalities)
Lucinda Josie, Mayor	Town of Hatch (Garfield County Municipalities)
Bill Muse, Mayor	Town of Boulder (Garfield County Municipalities)
David Roberts, Mayor	Town of Henrieville (Garfield County Municipalities)
Rex Sacco, Public Lands Director, Roads, Access and Safety Administrator	Board of Commissioners of Carbon County, Utah
Jeff Stock, Mayor	Town of Cannonville (Garfield County Municipalities)
Jerry Taylor Mayor	Town of Escalante (Garfield County Municipalities)
David Tebbs, Mayor	Bryce Canyon City (Garfield County Municipalities)
Educational Institutions	
Matthew A. Bowker, Assistant Professor of Forest Soils & Ecosystem Ecology, School of Forestry	Northern Arizona University
Dennis M. Bramble, PhD, Professor Emeritus, Department of Biology	University of Utah
Kevin Heaton	Utah State University Extension

Table A-1
Commenters

Commenter Name	Affiliation
Coley Phyllis, Professor, Department of Biology	University of Utah
Individuals	
R K	
Tye	
Sandra Aberkains	
Eileen Adams	
George Alderson	
W. Frank Alleman	
Allen Family	
Gary Allen and Family	
Karl Allen	
Margaret Allen	
Steve Allen	
Melissa Amberson	
Anne Bell and Stephen Anderson	
Bradley Anderson	
Jennifer Anderson	
Bailey Ann Owen Ablitt	
Katie Austin	
JoAnne Avery	
Louis Avrami	
Reb Babcock	
Mark Bailey	
Sharon S. Bailey	
Marian Baker Gierlach	
Lynnet Bannion	
Alta Bardsley	
Dave Barger	
Joel Barnes	
Aram Barsch	
Trina Barsch	
Wulf and Kristen Barsch von Benedikt	
Melinda Bell	
Mark Belles	
Debra Bellingham	
Nicole Berkheimer	
Linda Bescrypt	
Ruth Bescrypt	
Gary Beverly	
Bettina Bickel	
Charles Biddulph	
Sieglinde Bieker	
Cathy Bilsky	

Table A-1
Commenters

Commenter Name	Affiliation
Lori Blauwet	
Christine Blunt	
Candy Bowman	
Jason Bowman	
Scott Braden	
Angie Branch	
Nathan Branch	
Pamela Brandt	
Kalman Brauner	
Joe Brazie	
Duke Breitenbach	
Brien Brennan	
John F. Brewer, III	
Ted R. Bright	
Roger Broadwell	
Michael R. Brody	
Eric Brooks	
Shawn Brooks	
Norris Brown	
Richard Brown	
Renate Brown	
Worth Brown	
Leila Bruno	
Ingrid Bucher	
Peter Bungart	
Bruce and Leah Bunting Family Trust	
Kenneth L. Burbridge	
Kathleen Burke	
Nancy Bush	
Cliff Butter	
Jane Butter	
Gerald Callahan	
Laura Cameron	
David Camp	
Donna M. Campbell	
Brenda Campbell	
Nadine Cano	
Sylvia Cardella	
Brian Cass	
Chris Cawley	
Mikki Chalker	
Darrell Chambers	
Anne Chambers	
Gregory Chambers	
Bobbi Chaney	

Table A-1
Commenters

Commenter Name	Affiliation
Trish Chaney	
Charles Chappell	
Nat and Sandee Childs	
Eric Chipman	
Michael Chizhov	
Jennifer Christiansen	
Ralph Chynoweth	
Dr. Dorothy K. Cinquemani	
Dallas Clark	
Glenn Clark	
Billy Clotere	
Margery Coffey	
Harriet Cohen	
Annapoorne Colangelo	
Julie Cole	
Lori Coleman	
Karin Collinsworth	
Chuck Combs	
Patrick Conley	
Eric Conn	
Rebecca Conner	
Cody Coombs	
Mike Coronella	
Sharon Coughlin	
Chuck Countryman	
Richard Coveny	
The Doug and Letita Cox Family	
Pamela Cox	
Evan Craig	
Mike Cremer	
Ed Crouser	
Lawrence Crowley	
Breck Crystal	
Rich Csenge	
Scott Cundy	The Wildland Trekking Company
Peter and Cheri Curia and Van Sant	
Tabor M. Dahl	
Marc Daniel	
Norman Davis	
Mr. and Mrs. Richard L. Davis	
Alice de Anguera	
Sue E. Dean	
Diana Dee	
Steve Defa	
Crystal DiPietro	

Table A-1
Commenters

Commenter Name	Affiliation
Cody Dolnick	
Talise Dow	
Albert Downs	
Gwen and Derek Dowsett	
Tim Duda	
Sinjin Eberle	
Noelle Eberz	
Veronica Egan	
Penny Elliott	
Jennifer Elzey	
Mark Elzey	
Anne Erikson	
Rachel Esbjornson	
Cody Esplin	
Dillon Esplin	
Jeff and Tina Esplin	
Douglas Estes	
Louise Eutropius	
David Evans	
Dennis A. Evans, DVM	
Dinda Evans	
Michael W. Evans	
Nolan Farkas	
David Fellner, Jr.	
Colin Ferguson	
Chadd Ferron	
Walter Fertig	
Kin Finicum	
Sherre Finicum	
James H. Fitch	
Don Fox	
Hannah Freed	
Christopher Frost	
Kirk Fullmer	
Barbara Funke	
Francisco Gadea	
James Gale	
Sherri Gallagher	
David Gardmer	
Lydia Garvey	
Lisa Gee	
Mary Kay Gehring	
Wynne Geikenjoyner	
Diane Gentile	
Brian R. George	

Table A-1
Commenters

Commenter Name	Affiliation
Peggy Geremia	
Pamela Gibson	
Sara Gibson	
Gary Gilardi	
Nancy Gillyson	
Judi Gines	
Stanton Gleave	
Jill Gleeson	
Bradford Goodwin	
Jim Grajek	
Gary Granat	
Dori Grasso	
Bill Gray	
Claudia Greco	
Vance Green	
Chilton Gregory	
Quinn Griffin	
Rex Griffiths	
Shauna Groll	
Jon Hager	
Nolan Hahn	
Harold Hamblin	
Irene Hamilton	
Jim and Shirley Hannah	
G. Scott Hansen	
Art Hanson	
Judy Hanson	
Natalie Hanson	
Adiyan Haran	
Amy Harlib	
Cristina Harmon	
Susan Harrington	
Julian Hatch	
Bill Hatcher	
Bob Haugen	
Charles F. Hayes, III	
Linda Heagy-Len	
Mark Heald	
Dan Heffernan	
Casey Heisler	
Steve Hemstreet	
Ron Henderson	
James Herther	
John Heyl	
Robert Hicks	

Table A-1
Commenters

Commenter Name	Affiliation
Diane Higgins	
Gael D. Hill	
Catherine Hirsch	
David Hoefer	
Micah Hogan	
Susan Holiday	
Michael and Kathleen Houghtaling	
Antarie Hoverman, Conservation Chair and CCL Delegate	Utah Chapter/Sierra Club
Linda Howe	
William Howell	
Clifford Hritz	
Ron Hubert	
Denise Hudson	
Ginger Ikeda	
Christina Jackson	
Suez Jacobson	
Sarah Jessop	
Ana Johnson	
Curtis Johnson	
Kandice Nikkol Johnson	
Moyle C. Johnson	
Que Johnson	
Kalen Jones	
Marie Jones	
Peter Kadrich	
Jim Kalember	
Todd Kaplan	Todd Kaplan Photographics
Robert B. Kaplan	
Kevin J. Keller	
Julie Ketchum	
James Kirks	
Al Kisner	
Gisela Kluwin	
Deanna Knickerbocker	
Betty Ann Kolner	
Rebecca Koo	
Dawn Kosec	
Karen Krause	
Elliott Krefetz	
Amanda Kuenzi	
Paul Lambeger	
Dorothy Lamm	
Richard Langsdorf	
Nancy LaPlaca	

Table A-1
Commenters

Commenter Name	Affiliation
Kent Larsen	
Candy LeBlanc	
Tom LeClair	
Bob LeCour	
Layne A. and Levi L. Lefevre	
Susan Lefler	
Robert Leggett	
Richard Leonard	
Cody LePow	
M Leszczynski	
Nancy Enz Lill	
KJ Linarez	
Danny Little	
Connie Livingston-Dunn	
Gary D Long	
Sue Longley	
Marcia Longley	
William Love	
Brian Lowe	
Mark Luttrell	
Constance Lynn	
Suzanne MacKenzie	
Eric Mail	
Dean Mair	
Jennifer Malik	
Elisabeth Malmborg	
Sonja Malmuth	
Bonnie Mangold	
Rebecca Mann	
Val Marjoricastle	
Robert Mark	
Susan Markowitz	
Rebecca Marshall	
Joy Martin	
Michele Martin	
Joel Masser	
Georgia L. Mattingly	
Richard "Dick" McCallum	
Michael McCartin	
Sudi McCollum	
Molly McCormick	
Danny McDowell	
Julian McIntyre	
Doris McLaughlin	
Ann McMullen	

Table A-1
Commenters

Commenter Name	Affiliation
Tana McTeer	
Matt McWright	
Jim Merrill	
Krista Mickelson	
Bryce Milne	
Kent Minault	
John Miskelly	
Roy Mitchell	
Timothy Moder	
Neil Montague	
Anthony Montapert	
Mary Moran	
Bernard Morenz	
Shayne Morgan	
Ann Morris	
Rich Moser	
Edward Mosimann	
Andrew Mount	
Jan Murayama	
Alexandra Murphy	
Pat Musick	
Raymond Muzzy	
Amy Nelson	
Cathy Nieman	
Kate Nisselson	
Peter and Nancy Norbeck	
Gina Norman	
Jodi Norris	
James Norton	
Nancy O'Halloran	
Ralph Oler, MD	
Nick and Christy Oprandy	
Nancy Ostlie	
Dennis Outwater	
Stephen Oviatt	
Patti Packer	
Charles M. Paden	
Jonathan Parker	
Steve Pavlick	
Joshua S. Pedersen	
Susan Silberberg-Peirce	
Dani Pen	
Lelia Pendleton	
Jessica Penfold	
Wayne Peters	

Table A-1
Commenters

Commenter Name	Affiliation
Tim Peterson	
Rox Petoskey	
Jill Phillips	
Todd Phillips	
Richard L. Pitman	
Terri Poe	
Lonnie Pollock	
Jami Porter Lara	
Donald Potter	
Alex Primm	
Jean Public	
Arkay Pugh	
Richard Quartaroli	
Aaron Rasband	
Dan Reed	
Debra Rehn	
Nancy Reynolds	
P. Reynolds	
Kirk Rhoads	
Ann Rich	
Thomas, Shilo, and Trinity Richards	
Trinity Richards	Upper Paria Grazing
William Ridgeway	
Brent Riggs	
Kelly Riley	
Fred Rinne	
Melissa Riparetti-Stepien	
Matthew Roberts	
Lisa Roberts	
Sandra Robinson	
Kirk Robinson	
Dan Roper	
Michael Rotcher	
Cordell Roy	
Rita Rubin	
Lisa Rutherford	
Michael Salamacha	
James Sams	
Paul Sanborn	
Sandra Sandberg	
Casey Sanders	
David V. Sanford	
John Sarkozy	
Beverly Sass	
Rebecca Savage	

Table A-1
Commenters

Commenter Name	Affiliation
Dick Scar	
Lee Schmidt	
John Schmittauer	
Carolyn Schmitz	
Tom Schrickel	
Wallace Schulthess	
Amy Schumacher	
Alisha SeTon	
Mike Seyfried	
Karl Shaddock	
Franz and Carl Shakespear	
Lynsey Shelar	
William Sheppard	
Luke Simons	
Alice Simpson	
Claudia Simpson	
Julie Skelton	
Debbie Slack	
Amy Smith	
Barry Smith	
Collin Smith	
Frances Smith	
Gordon Smith	
Judith Smith	
Shirley Smith	
Don Smoker	
Gerald Smolinsky	
Stewart Smythe	
Jason Snelson	
Marilyn Snyder	
Anton Solovyev	
Howard Sorensen	
Jake Sorensen	
Larry Spanne	
Dale Spencer	Spencer's Livestock
Mark Spencer	Kane County Conservation District
Richard Spotts	
Alex Steckel	
Herbert Stein	
Sherman Stephens	
Mark Sterkel	
Larry Stevens	
Mitch Stevens	
Bob Stevenson	
Douglas Stevenson	

Table A-1
Commenters

Commenter Name	Affiliation
Shane, Star, Rain, Mesa, and Echo Stotlar	
Dan Struble	
David Sucec	
Perry Suden	
Shirley Surfus	
Brian Swanson	
James Sweaney	
Richard Sylvester	
Tory Syracuse	
Sara Syswerda	
Winnie Taney	
Clelia Taylor	
Tony Taylor	
Amy Tendick	
Anita Thomas	
Margaret Thomas	
Jerry Thorson	
Schade Torgerson	
Paul Torrence	
Erin Treanor	
Irene Tremper	
Lionel Trepanier	
Ted Truex	
Ryan Twomey	
Bruce Van Haveren, PhD	
Jim Vance	
John and Martha Veranth	
Joel Vignere	
Barbara Viken	
Anca Vlasopolos	
Alex Vollmer	
Pamela VourasCallahan	
Cynthia Walker	
James Wannamaker	
Chip Ward	
Tyler Ward	
Andrea Wasserman	
Kate Watters	
Keith Watts	
Elizabeth Watts	
Robert Weinick	
Benjamin Weiss	
M.W. Wenner	
David Wenzel	

Table A-1
Commenters

Commenter Name	Affiliation
Tim Wernette	
Alex Wessen	
Janet Westbrook	
Stephen Westhoff	
Jay White	
Janet Williams	
Mary Williams	
Jennifer Willis	
David Wilson	
Lee Winslow	
W H Wolverton	
Kristin Womack	
Crista Worthy	
Jeff Wright	
Glenn Yocum	
David Young	
Joseph Yuska	
Paula Zerzan	
Jon Zimmerman	
Organization (nonprofit, citizen's group)	
John Carter, Manager	Yellowstone to Uintas Connection
Jim Catlin, PhD, Executive Director	Wild Utah Project
Dr. Sky Chaney, President	Taxpayer Association of Kane County
Dustin L. Cox, Kane County Farm Bureau President	Kane County Farm Bureau
David deRoulhac, Utah Forests Associate, Utah Forests Program	Grand Canyon Trust
Veronica Egan	Great Old Broads for Wilderness
Phil Hanceford, Associate Attorney	The Wilderness Society
Mary O'Brien	Grand Canyon Trust
Randy Parker, Chief Executive Officer	Utah Farm Bureau Federation
Erika Pollard, Program Manager	National Parks Conservation Association, Southwest Region
Jonathan Ratner, Utah Director	Western Watersheds Project
Shelley Silbert, Executive Director	Great Old Broads for Wilderness
Larry Spanne, President	Grand Staircase-Escalante Partners
Brent Tanner	Utah Cattlemen's Association
Dustin Van Liew	Public Lands Council and National Cattlemen's Beef Association
	Center for Biological Diversity
	Grand Canyon Wildlands Council
	Sierra Club
	Southern Utah Wilderness Alliance
	Wild Earth Guardians

Appendix B

Comments by Process Category and Planning Issue

APPENDIX B

COMMENTS BY PROCESS CATEGORY AND PLANNING ISSUE

The BLM received 1,287 discrete comments from submissions received during the scoping period. The BLM then classified these comments by process category and by planning issue. This appendix includes comments for each process category and for each planning issue. Comments are included verbatim from the comment letters; however, any extraneous information not considered a comment in the letters is not included here. Comment letters can be viewed in their entirety at the GSENM headquarters in Kanab, Utah. Tables in this appendix are:

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Table B-1
Air Quality

Several resource issues that are of particular importance in relation to management activities along the park borders include boundary protection, resource damage from unauthorized access (e.g., damage to fencing, trespass grazing, poaching, etc.), potential noxious weed introductions to the park via livestock and OHVs, protection of wilderness characteristics within the park, park soundscape and viewshed integrity, air quality, and threatened, endangered and sensitive species particularly where populations or key habitat transcend park/Monument boundaries.

Additional planning issues

Effects of ground cover and soil stability on particulate air quality.

Currently, exposed soil surfaces are producing dust in excess of the normal range of variability. This is affecting snowpack and hydrographs on a landscape scale. Recent studies, including one conducted on the Monument itself, show that wind erosion from degraded habitat is a dominant factor in soil loss. [26] (Mark Miller, pers. comm.).

Ecologists have only recently begun to look into the role of dust production in small- and large-scale ecosystem processes. This is a management issue that the Monument needs to consider carefully in the draft EIS. See Appendix H for more detailed information.

[26] Miller, M. 2005. Unpublished data.

Table B-2
Biological/Ecological Resources

Additionally, a vast amount of scientific evidence is available now, which documents that grazing by non-native species has led to severe and sometimes irreversible degradation of native ecosystems.
Additionally, livestock threaten sensitive species, trample vegetation, steal forage from native wildlife, reduce native wildlife habitat, accelerate soil erosion and/or compaction, spread noxious weeds, alter natural fire regimes, and degrade water quality with their waste. That these problems threaten to undermine an already fragile and unique ecosystem is an understatement of no small magnitude.
We hope to see BLM adopt a grazing management plan that supports the conservation purposes of GSENM by restoring native ecosystems, with key elements including healthy soil; healthy lands, waters and riparian areas; and healthy biological communities of flora and fauna.
The value of soil conditions, preservation of natural riparian areas, wildlife, cultural artifacts, and native plants should be considered.
Cattle grazing represents one use among a multitude within the monument, and cattle ranchers represent a very small portion of the public stakeholders and users of monument resources. Yet cattle grazing has had an inordinately large ecological impact on all other functions and values within the monument, particularly on the health of fragile soils, seeps, springs, and riparian areas.
Livestock grazing provides renewed growth of grasses and forbs, adequate water distribution and stewardship to maintain these improvements. In many cases, the best habitat for wildlife in our state are those areas prescriptively grazed by livestock.
I strongly urge you to limit grazing in the Grand Staircase- Escalante National Monument to protect the fragile environment. This includes protecting the soils, plants, existing water sources, and native species in the area.
I have seen firsthand the considerable damage done to the riparian areas, biological soil crusts, and native wildlife by the unrestricted grazing that has occurred for well over a hundred years. Tradition and history does not excuse this abuse, and we are well beyond the time to fix this problem.
Every single place in the GSENM has been horribly degraded as a result of cattle grazing--there's no wildlife, the riparian areas are decimated and virtually unusable, the vegetation trampled with an inordinate amount of invasive species as the living soil crusts have been decimated. Even finding a camp without feeling like we were in a barnyard toilet was difficult.
I have seen many precious water courses, seeps and springs trampled and befouled by cattle; I have seen large areas of cryptogamic soil destroyed by hooves of cattle, I have seen devastation in plant communities by cattle browsing.
I. Impacts of grazing on biological features of Grand Staircase-Escalante NM, including effects on native plant communities, BLM Sensitive and Threatened/Endangered plant and animal species, biological soil crusts, and game and non-game wildlife species.
I started a hike at the Deer Creek trailhead off the Burr Trail, walking south. The area was being actively grazed. Cattle had trampled the native vegetation, turning the riparian habitat of the creek into a mud hole. I saw very few birds and no wildlife, and the trail was impassable in spots because of a mixture of mud and cow pies. Then, within a mile of the trailhead, I came upon a dead cow lying in the creek. The bloated carcass was obviously poisoning the water.
If cattle cannot be kept out of fragile riparian areas, they should not be allowed within the Monument at all. I have also hiked in lower Calf Creek where cattle are not allowed, and the difference between the two drainages is remarkable. Calf Creek had beautiful, dense vegetation with numerous birds and small animals. That is the way that every drainage in the Monument should be.
Protect sensitive wildlife areas from grazing and damage caused from over use. This includes riparian areas, areas of endangered/endemic/rare species, and cultural/archeological sites.
The BLM should consider more than just cattle forage and utilization levels (e.g. biological soil crusts, native plant species diversity and presence, and intact riparian areas).
The Monument is an arid land, and climate change will only making it more so. With such little vegetation available, there is not much to sustain native critters. If the depth and breadth of the cattle grazing that has occurred thus far is allowed to continue, those native critters unique to the Monument will soon be gone forever. The losses may be subtle, but over time they will add up and eventually the land may not be able to support enough vegetation for even cattle to graze.

Table B-2
Biological/Ecological Resources

Beef raised in this way is scientifically proven to be superior to any of the method. Range science has proven that controlled grazing will improve the soil, the land, and the landscape.
Grand Staircase Escalante-National Monument is a delicate ecosystem where water is scarce. Forage for the indigenous grazers grows in these areas and this is where cattle congregate. The pressure that cattle put on these areas deprives the natural species from the same resources.
I have witnessed first-hand the widespread negative impacts of grazing on cultural resources, on springs, seeps, streams and other riparian areas, and on the overall ecological health of the environment, including plant and animal diversity, that has led to the undue prevalence of noxious exotic species.
They increase erosion of the steep sandy slopes in the riparian zone and upland zones, increase flies, trample vegetation and soils, diminish water quality from urinating and defecating in the stream and displace native wildlife. Soil erosion is a major concern, particularly where cryptobiotic soil crusts have been disturbed along cattle trails. Associate gullying can cause water tables to drop, resulting in the loss of riparian vegetation and loss of critical water sources for wildlife. With loss of ground cover, flash floods might be more intense and move more sediment. Looking at the grazing issue is difficult without also considering interrelationships with wildlife and ecology.
The best habitat for wildlife in our state are the areas prescriptively grazed by livestock. These areas provide new growth of grasses and forbs, adequate water distribution and stewardship to maintain these improvements.
The best habitat for wildlife in our state are those areas prescriptively grazed by livestock. These areas provide new growth of grasses and forbs, adequate water distribution and stewardship to maintain these improvements.
When range improves all birds and animals and plants benefit.
Grazing is a sustainable resource and properly managed grazing lands provide positive environmental benefits including: the provision of clean water supplies, the capacity to sequester atmospheric carbon and the potential to maintain biodiversity (Krueger, 2002).
Additional planning issues: Connectivity of native species.
Native species movement and wildlife connectivity are negatively influenced by excessive grazing. Restoring habitat to its ecological potential will assist in wildlife connections, an essential component to provide resilience to counter the influences of climate change.
Cows fertilize the ground allowing many species to grow
Grazing is important to the natural resource. It promotes growth and spreads the seed of the native species.
Grazing offers a lot of benefits. Some of the benefits include diversity of plant and animal species, habitat restoration for threatened and endangered species. Controlling erosion from water run off for improved water quality. Improving vegetation along stream banks, reducing wild fires like stated above
although there is plenty of science about the damage that cows can do to fragile biological soil crusts and the contamination of cow feces to precious water sources, this is also more than obvious to anyone who actually experiences the land firsthand. Our public lands have been hammered by cows and as climate change is underway, the damage is compounded.
Over grazing of cattle in the Monument has led to tremendous erosion, destruction of native plant life and fouled stream beds.
Please balance ecological concerns with the local economic needs. This typically means less cows.

Table B-3
Climate Change and Drought Management

The continuing and deepening drought of the intermountain region is accelerating the soil degradation in the GSENM. Add the effects of intensifying superstorms and violent weather events with overgrazing and failed land stewardship, one can see the impairment of public lands becoming more obvious and the problems accelerating. These impacts to soils, springs and riparian areas will likely increase with the increased climate extremes predicted, and these climate predictions must be taken into account in any planning for the future.

7. As you know, our area is susceptible to periods of drought. Do you have ideas or methods that would help BLM manage rangelands and reduce the fluctuation in your herds? Should permitted allocations be higher or lower?

Since the early 2000's the southwest has been experiencing a period of warm drought, only occasionally punctuated by wet years. General circulation models converge on projections of increasing warming in the future; there is little consensus on projections of precipitation patterns, but because warmer temperatures drive evapotranspiration, droughtier conditions are a reasonable expectation. It is my opinion that GSENM should allocate to reflect this reality, rather than to reflect wetter conditions of the past. Any decision about allocation should be documented and explicitly reference how recent climate trends and future projections influenced the decision.

Clearly, livestock grazing has huge impacts on plant communities, which reduce the ability of these habitats to respond to climate change.

"Managing rangelands and herds during drouth?" I think that having the forage reserves is a great thing. Perhaps all closed allotments could be used for this purpose?

The past summer we received a lot of rain. The feed on the ranges in our area looked the best I have ever seen there. At the present time the stand of grass and browse is very good. At the present time the condition of the range is determined more by the amount of moisture received than by the livestock grazing. (Enclosed are present pictures of the Upper Wahweap, January 2014).

3 Pictures Attached

With prolonged drought, increased cheatgrass and other invasives, the loss of crucial biological soil crusts, and other problems, it is clear that BLM "status quo" or "stay the course" GSEM grazing management is no longer appropriate or tolerable. Changes are necessary and BLM must use the best science and follow relevant laws and policies to adopt strong decisions and then effectively implement them.

The area we live in as we all know has droughts, this is something that we just have to deal with, when they are bad enough our herds may fluctuate that is something that we deal with. With the numbers that we run now even on bad years the cattle do just fine!

Second, any environmental analysis at GSENM should include an assessment of the historic record of climate change within and around the Monument. The amount of change that has already occurred over the last 100 years in GSENM and in southwest Utah is quite large, particularly when examining monthly temperature values during high stress months or when viewing changes in vapor pressure deficit (sources: multiple including PRISM and U.S. Historical Climate Network data). These increases in water stress are likely to have exacerbated stress on already fragile and recovering ecosystems, such that we should not expect the same level of resiliency or tolerance to grazing as might be expected in an unchanging environment.

I know it's impossible to go back to pre-European conditions, but it is not too late to halt further degradation and to begin to allow the landscape to heal. This is especially important in view of climate change and the fact that the American Southwest is predicted to be especially hard hit by its effects.

Certain environments are conducive for specific activities. Operating a cattle operation in an environment that is becoming increasingly stressed due to climate change ie., higher temps and less H2O shouldn't become a component of the management plan. An analogous situation occurred recently in the Pacific NW. Logger and timber co.'s cut the forests w/o a vision for the future. They clearcut from the ocean shores inland. Ultimately they adopted a shortsighted approach. The communities impacted by these policies have virtually become vestiges of what they once were.

The consideration of soil, moisture and precipitation dynamics in the study areas are mandatory to consider in an impact analysis.

Table B-3
Climate Change and Drought Management

I have seen the pedestalled clumps of vegetation and the increased erosion where the essential layer of living soil has been lost. This brings me concern about repeating the dust bowl as droughts continue and climate change for the southwest will have a continuing drying effect.

Climate change is of extraordinary significance for GSENM/GCNRA. As Schwinning et al (2008) note in their synthesis article, "Sensitivity of the Colorado Plateau to change: climate, ecosystems, and society":

"Vegetation patterns on the Colorado Plateau not only follow climatic drivers but also reflect a dominant human impact on the landscape through grazing over the past two centuries [citation]. Even today, Colorado Plateau ecosystems are changing as humans increase use of the most remote regions and invasive species continue to replace native vegetation, altering both fire regimes and the nitrogen (N) and carbon (C) cycles. [In this article] we describe the sensitivity of this ecological community to change and suggest that, due to its unique location, it may be among the most sensitive of ecosystems to past and current drivers of global change."

Beschta, et al. (2012) is a recent literature review of the multiple ways livestock grazing can exacerbate the features of climate change that are predicted in the West. The EIS will need to consider these, as so many are easily observable within GSENM under current grazing management. The authors conclude:

"Federal and state land management agencies should seek and make wide use of opportunities to reduce significant ungulate impacts in order to facilitate ecosystem recovery and improve resiliency. Such actions represent the most effective and extensive means for helping maintain or improve the ecological integrity of western landscapes and for the continued provision of valuable ecosystem services during a changing climate."

The GSENM should use current scientific information and research technology, including studies and efforts concerned with climate change, to carry out this EIS.

Additional planning issues

Livestock grazing and climate change -

What effect does grazing have on the ability of rangeland to adjust to disturbance? Designing metrics for habitat resilience in the face of drought and other influencing factors of climate change will be a key challenge.

Precipitation and Plant Production - The Monument suffers a majority of years with below normal precipitation and extended periods of drought. Because vegetation production is a function of annual precipitation, less forage is available in dry or drought years, in fact, only about ½ that of a normal year. Native bunchgrasses are sensitive to defoliation and need sufficient rest to recover from grazing or from drought.

All of these impacts are localized, but the regional effects are substantial as well. In Colorado, much of our high altitude snowpack is now melting off weeks earlier than normal, due to dust being brought in from west of our state.

Climate change is happening, droughts come and go, so should grazing on public lands.

As we face climate change and other challenges, our public lands should be managed through an adaptive, science-based process, with multiple users and values in mind (habitat for native plants and animals, the inherent value of pristine landscapes, and human users, from backpackers to ranchers).

Table B-4
Cultural and Archaeological Resources

I would like to stress the need to review the results and advice of all those involved with the archaeology of the area.

I have observed numerous examples of cattle presence in rock shelters and alcoves where damage is occurring to rock art panels, buried archaeological deposits, surface structures, and other features. Storage structures in shelters in the West Swag of Kitchen Canyon exhibit such damage from contact with cattle. The same is true of open-air sites where cattle tend to congregate or trail across archaeological deposits resulting in direct damage through trampling and surface erosion. Many of these archaeological sites are highly sensitive, fragile, and scientifically very important to our outdoor laboratory.

Areas with significant archeological or recreational resources should be made unavailable for livestock grazing. In the Comb Wash case, canyons with important recreational and archeological resources were closed to grazing under the multiple use sustained yield principles of FLPMA5. The author concluded:

The decision in the Comb Wash case was a vindication of the principle of multiple use and an indictment of the BLM's range management policies and practices. The case gave meaning to multiple use by revealing a pattern of management that is so irrational and so oblivious to values other than livestock production that it cannot be reconciled with even such a broad and vague concept. This pattern is not an aberration; it reflects BLM policies and practices in effect throughout the West. It simply stood out in bolder relief in the Comb Wash canyons than in some other places because of the gross imbalance there between enormous scenic, ecological, and archaeological resources and a paltry amount of livestock forage.

[4] http://www.defenders.org/sites/default/files/publications/protecting_people_property_and_predators.pdf
Protect cultural and archaeological sites from damage caused by cattle.

2. Impacts of grazing on archaeological and paleontological resources

Cattle grazing is in no way compatible with preserving both archaeological and historical sites, which were important goals of the Monument proclamation. The damage cattle have already done is shameful.

Examples:

a. In 1959 James H. Gunnerson wrote *Archeological Survey of the Kaiparowits Plateau*. In that book he detailed dozens of archaeological sites on the Kaiparowits Plateau, concentrating on the southeastern section of the plateau (from East End Spring to the Basin Canyon/Sunday-Monday-Tuesday canyon areas). Essentially none of those sites exist now; they have all been destroyed by cattle grazing. The sites that do exist are in places where cattle cannot go (the big site on Cougar Knoll as an example). A good field study would be to compare the descriptions and photographs from Gunnerson's book with what now exists.

b. In The Gulch, a tributary of the Escalante River, a pictograph panel - one of the finest in the area - has been partially destroyed by livestock. The lower part of the panel, which is under an overhang which cattle use, is now all worn off.

If cattle grazing is to continue in the Monument-NRA I would suggest:

Cattle should be controlled such that they do no more damage to archaeological and historical sites.

Protection of archeological areas is critical. As a site steward, I have seen first hand the damage caused to these sites. Archeology sites in particular should be non-use areas or action taken to protect from damage caused by grazing

Protect sensitive wildlife areas from grazing and damage caused from over use. This includes riparian areas, areas of endangered/endemic/rare species, and cultural/archeological sites.

One of the primary reasons that Grand Staircase-Escalante National Monument was designated was to preserve and protect the rich archaeological and historical resources found there. One of the most rewarding things about hiking in the GSENM backcountry is happening upon an archaeological feature, whether a stone structure, surface room block, lithic scatter or rock art. These sites are, or were, abundant. Over the years, however, the impacts of cattle have had devastating effects, whether trampling over surface sites or lounging under overhangs where structures have survived for hundreds of years only to fall to hooved intruders. I have revisited numerous sites after a decade or more absence, to find walls reduced to rubble and rock art rubbed off or buried in feces. The remoteness of these sites precludes impacts by hordes of human visitors, as some would like to plead. These

Table B-4
Cultural and Archaeological Resources

places are not visited by casual hikers. The same conditions pertain in remote "cowboy camps" that are not accessible by vehicle, as well.
I have witnessed first-hand the widespread negative impacts of grazing on cultural resources, on springs, seeps, streams and other riparian areas, and on the overall ecological health of the environment, including plant and animal diversity, that has led to the undue prevalence of noxious exotic species.
Livestock needs to be excluded from areas of high-density archeological and historic sites. The Hackberry canyon and its cabin should be protected from livestock. I have seen some remarkable archeological sites in alcoves and other less protected areas through out the monument. Livestock should be kept out of these areas.
Cattle tend to congregated under alcoves, many of which are archeological sites. Such accessible archeological sites located within grazing allotment areas might need to be fenced or otherwise protected from damage by cattle.
NPCA is especially concerned about impacts to park cultural and paleontological resources, which may not be adequately inventoried inside the NRA and where impairment from livestock grazing may be irreversible, as well as critical water resources including seeps and springs, sensitive soils and vegetation, and recreational use of the NRA's extensive backcountry.
In considering the concept to restrict or relinquish grazing to "protect" special status species or special recreation management areas; 4,000 year old tools believed to have been used by the Fremont Indians were discovered in the meadows where cattle grazed since the 1880's on the Wilcox property in the West Tavaputs region of Utah just after it was purchased by the State of Utah. It wasn't until it was opened to recreation use and archeological studies did reports of vandalism and thefts begin.
Eliminate lands with significant archeological or paleontological values from available lands per the Comb Wash case.
I have personally witnessed the amount of damage that livestock does to the land while camping by Chimney Rock, a spectacular and historic location.
Eliminate from grazing the following lands: ...lands containing significant archaeological or historical features...
Issue #2 Livestock damage to important scientific resources such as archaeological, paleontological, and historic sites.

Background

The GSENM Management Plan of 2000 states: "The Presidential Proclamation and Antiquities Act provide a clear mandate- to protect the myriad historic and scientific resources on Grand Staircase-Escalante National Monument. To meet this objective, the Monument will be managed according to two basic principles. First and foremost, the Monument will remain protected in its primitive frontier state, ensuring the remote, undeveloped nature of this landscape remain for generations to come. Second, the Monument will serve as an outdoor laboratory, providing scientific and educational opportunities to study biological and earth sciences, prehistoric life and environments, archaeology and pioneer history."

In order to meet the aforementioned mandate and preserve the scientific resources essential for the operation of an outdoor laboratory, damage to those resources resulting from livestock grazing must be prevented. Clearly there are many such resources today that are being seriously degraded through damage caused by livestock grazing

Table B-5
Economics

Ranching is not only apart of Escalante's heritage it is a large part of our city's economy. Making any further restrictions on grazing rights would severely impact our town and the families that use those allotments. As you are probably aware, Escalante is already an economically depressed area; any other loss of industry in this area would be devastating.

The areas scientific uniqueness brings jobs and money into the communities more monies than the grazing leases and cattle.

SITLA manages trust lands for the benefit of Utah's Public Schools including revenues generated from livestock grazing on trust lands. Any reduction of grazing on the BLM Allotments that affects trust lands may have a negative and un-acceptable economic impact on SITLA and our beneficiaries.

1. What portion of the value produced by cattle and sheep operations is associated with the feed used?

2. What portion of the feed for those cattle and sheep operations comes from grazing on federal lands?

3. What portion of the total agricultural activity involves raising cattle and sheep?

4. What part of the total economy is represented by agriculture?"[1]

[1] Power, T. 2002. Measuring the Relative Economic Importance of Grazing on Federal Lands. In: Wuerthner, George and Mollie Matteson. 2002. Welfare ranching: the subsidized destruction of the west. Island Press. p. 263-269.

In order to justify any decisions under NEPA, a socio-economic analysis will have to include in its modeling the amount of historic use by livestock AUM's compared with local income numbers. To establish a credible time frame for a model, the AUM use and income numbers prior to designation of the Glen Canyon National Recreation Area in 1972 to the present should be considered as a starting point to provide the public with a scope of information for comparison. Using past and present revenue and tax roll income information can be very helpful to demonstrate an actual economic trend and could also show the local impacts to many of the federal actions that took place over those years.

The DEIS should display and explain the social impacts on nearby communities. An IMPLAN model could show numbers of workers employed in certain fields at present, but should include a comparison of those separate occupation numbers prior to 1972 for consistency in comparison with recent numbers. This information could also show trends of private sector jobs as compared to government jobs over the past 40 years. One of the real tests of local socio-economic stability is how many private sector jobs have been created or lost compared to government jobs. Another factor which emphasizes the impact to local residents and families is school enrollment. This demographic information is vital for developing justification for any action the plan would take. Trends in the town of Escalante specifically depict impacts from the monument's creation since 1996.

Under the Dyksterhuis doctrine, there is a principal need to evaluate the economic impact of any decisions, such as the effects that the removal grazing has to a community. There is no science that supports a loss or reduction of grazing income to the economy can be mitigated by recreation use. Economically, when changes in activities occur on the western landscape it takes decades for communities to return to a stable economic condition.

Since the GSENM was established, a developing economy based on tourism now accounts for over half the revenue in Garfield and Kane Counties. In some cases, tourists truly enjoy seeing cattle and cowboys as part of their "western" experience. However, the effects of overgrazing and poorly managed grazing allotments have a very negative impact on the experiences of others in the GSENM. For example, notes in the trailhead register at The Gulch Outstanding Natural Area often complain about the poor condition of this riparian corridor due cattle overgrazing, dead cattle lying in the streams polluting the water, and other associated problems. In contrast, since the acquisition of grazing allotments along the Escalante Canyon corridor, this popular tourist destination has shown an amazing recovery of native grasses, especially on benches located above the floodplain. If we want tourists to continue to come to our area, we need to show them that we are proper steward of these incredible landscapes - this means using sustainable livestock grazing practices.

Money collected by grazing fees generate income for the economy and range improvement.

Cattle are beneficial in all aspects of the monument. Not only will the grazing fee generate income, it provides benefits to the plants that would not be able to generate through methods of its own, Cattle transport the seeds, plant the seeds, as well as provide nutrients for seeds to grow.

Table B-5
Economics

The livestock industries, in rural areas of the west, depend on the use of public lands. This industry is vital for the rural economy; supporting of families, communities, business, schools and much more.
I believe that grazing should be continued in this area. It is a vital help to the local economy.
They are a vital part of ranching since only 10% of the land here is privately owned. These allotments also have monetary value since they are bought and sold.
The Monument is a place for cattle grazing and is important to the area and the economic vitality of the area.
grazing is good for the land and it is good for the people that are making a living in the area!
As it stands now, much of Grand Staircase-Escalante National Monument is primarily managed to provide graze for cattle. Recreation and archaeological and historical preservation are secondary. Times have changed and the BLM must realize that. Tourism is the economic driver for southern Utah, not cattle grazing.
Cattle grazing may have been a dominant use of the land in the past, but the economics are not what they once were. Like family farms in Wisconsin, unfortunately I suspect that economic realities will reduce the number of cattle ranchers regardless of the Amendment. In addition, part of the reason that cattle ranchers graze so much of the Monument land may be due to the artificially low rate that the ranchers pay per acre for the grazing; the Amendment should recognize that the amount of land grazed would reduce if the cost per acre on the amount of land would be raised (after all, is it realistic that the rate it would never be raised?). Thus, the Amendment should consider whether economic changes are eminent and would cause ranchers to graze fewer cattle, and factor those changes into the rangeland plan.
Hardships may be created for cattle ranchers when consideration is rightfully given to concerns of others, but are likely unavoidable. Knowing the pain and anguish that can result, I suggest that changes to cattle grazing practices take this into consideration when implementation occurs.
In order to justify any decisions, a socio-economic analysis will have to include in its modeling the amount of historic use by livestock compared with local income. To establish a credible time frame for a model, the AUM use and income numbers prior to designation of the Glen Canyon National Recreation Area in 1972 to the present could be considered as a starting point to provide the public with a scope of information for comparison. Using past and present with tax roll income information to demonstrate an actual economic trend would help in showing local impacts to many of the federal actions. Wildlife trends from the same dates should also be used to establish comparative data as one way to show both ecosystem health and recreation values. Social impacts experienced by towns adjacent to the monument should also be presented. Trends in Escalante specifically depict impacts from the monuments creation since 1996. The EIS should display and explain the monument impacts on nearby towns. Please note that recent studies which incorporate socio-economic data from Cedar City, St. George and other large communities that are not impacted to the same level as the communities in Kane and Garfield Counties are scientifically flawed and dilute actual monument impacts on the residents most affected.
An IMPLAN model could show numbers of workers employed in certain fields at present but should include a comparison of those separate occupation numbers prior to 1972 for consistency to compare recent numbers. This information could also show trends of private sector jobs as compared to government jobs over the past 40 years. One of the real tests of local socioeconomic stability is how many private sector jobs have been created compared to government jobs.
Carbon County as a local government understands the impact of land use changes on its population and the instability that such changes can make. Under the Dyksterhuis doctrine, there is a paramount need to evaluate, by science the economic impact of any decisions, such as the effects that the removal grazing has to a community. There is no science that supports a loss or reduction of grazing income to the economy can be mitigated by recreation use. Economically, when changes in activities occur on the western landscape it takes 40-years for communities to return to a stable economic condition.
The "human environment" is essential. This includes the physical, social, and economic environments of the residents of both counties.
Ranching is very important to the economies of Kane and Garfield Counties. To take permits away or to ultimately make grazing on the monument untenable and impossible to make a living on would further impoverish the residents of both counties.

Table B-5
Economics

The economy should also be considered. Most people augment their incomes through some form of ranching and farming, and it is very important to continue to use the public lands in the same form as before the monument was declared as people have done for generations and as implied in the proclamation.

Perhaps a solution is to make sure that cowboys can have a living wage to support a family. If they are in the saddle 5 days a week moving the cattle, to protect their investment in the grasses, the cattle's health and weight will increase, creating higher prices. Then the ecosystem will have a chance to recover and the continued degradation can be reversed. This helps ensure a full range of constituents find value and enjoyment as well as a livelihood here.

Tourists are the drivers of this economy as we witnessed in the government shutdown in fall 2013. We need to insure the stability of this economy by spreading the success stories on blogs, twitter, facebook, press and media. This also helps create a long-term sustainable tourism economy in this spectacular region of GSENM in southern Utah.

We all can have a huge impact on the good of grazing whether we work for the government or a individual rancher, but one thing is for sure, it would be devastating to the local economy if grazing was shut down.

Live stock grazing and Ranching are important resources to us here in Southern Utah/Northern AZ. We rely on the rights to ranch and graze our cattle on BLM land for our jobs and raising our families. These resources are very important for us.

Since the GSENM was established, a developing economy based on tourism now accounts for over half the revenue in Garfield and Kane Counties. In some cases, tourists truly enjoy seeing cattle and cowboys as part of their "western" experience.

We recommend that the grazing EIS contain a thorough economic component that addresses the full array of economic issues associated with cattle ranching. The EIS should implement policies for effectively managing grazing from a financially-based perspective, one that recognizes the very limited role ranching plays in the current economy of Kane County.

Based on these economic trends of declining ranching and the increasing value of tourism, the Taxpayer Association of Kane County recommends that the grazing EIS include the following:

1. Research and address current trends in the local economic input of ranching and tourism in the economies of both Kane and Garfield Counties.
2. Assess the amount of taxpayer dollars currently being spent on cattle ranching in the Monument versus recreation and tourism. Implement policies that redirect dollars toward those activities that generate the most money for our local economy, ie, tourism.

The EIS should assess and estimate the lost opportunity dollar value associated with tourists having negative experiences on the Monument because of cattle grazing and subsequently not returning to the Monument or Kane County.

The EIS should assess and include the following topics related to the spending of taxpayer dollars:

- a. How much of local ranchers' incomes is government subsidy (state and federal), versus net income derived from the actual business of ranching?
- b. How much does the Monument actually spend on range management, including staff, operations, equipments, etc?
- c. Does the BLM range management program pay its way through the collection of revenue from the ranchers and other sources?
- d. What is the monetary value of the impacts on ecological health, damage to water and riparian areas, lost potential for wildlife, damage to air quality, and other measurable impacts of grazing in the Monument?
- e. What is the economic impact of postponing the implementation of new grazing policies on Monument allotments?
- f. What is the economic impact of failing to enforce grazing policies including science-based allotment standards, seasons of use, and other requirements for permittees?

Not only does grazing provide a livelihood for many, many people in the area, it also provides the necessary care that the land requires.

When/if the EIS compares alternatives for their economic impacts, it will be important to distinguish between private costs and benefits and public costs and benefits. That is, who is paying for what aspects of grazing management, e.g., fencing, piping, water troughs, monitoring, administration? Who is receiving money from grazing on the Monument? What are public benefits? What are public costs?

Table B-5
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When the Fishlake National Forest used a narrow input-output method for comparing alternatives for grazing management on eight cattle allotments on the Fishlake NF, the EIS was appealed on economic analysis grounds. An Appeal Resolution regarding the inadequacy of the EIS economics analysis resulted in the Trust working a year with the USFS Washington Office Economist to agree jointly on guidelines (Trust 2008) for comparing grazing alternatives within an EIS. These guidelines include consideration of natural resources costs/benefits and unquantified economic costs. The BLM IM 2013-131, "Guidance on Estimating Nonmarket Values" provides some direction for including nonmarket values in the economics analysis.

Data and information from the 2013 Headwaters Economics report on the economics of the Utah counties surrounding GSENM, i.e., A Profile of Agriculture: The Utah Counties Adjoining Grand Staircase-Escalante National Monument; Garfield County UT, Kane County UT) will be important to incorporate in the EIS (Headwaters 2013b). A second report (Headwaters 2013a) is similar but includes Coconino County in Arizona, and thus provides additional data. The Bureau of Land Management and Forest Service have made significant financial and intellectual contributions to the operation and content of the Economic Profile System-Human Dimensions Toolkit that automatically generated the reports from publicly accessible and referenced information.

It will be important to accurately represent the data in these (and all) reports. For instance, in 2011 (the most recent year for which data were available in Spring 2013 when the Headwaters report was compiled), Garfield County had 8.11% farm employment as the percent of all Garfield County employment (Headwaters 2013a at p. 1). However this does not distinguish between part-time and full-time employment. As for farm earnings as a percent of all Garfield County earnings, Garfield County had -2.8%, i.e., less was earned than was spent on farm operations.

Ecosystem services valuation will be important as well in the economics analysis, e.g., the economics services when biological soil crust's ability to prevent blowing sand and dust, and to prevent erosion is foregone by livestock grazing. See a USGS pilot project to value ecosystem services on the San Pedro River (Bagstad et al. 2012). Using ecosystem services valuation tools, Bagstad et al. quantified gains or losses of ecosystem services under three categories of scenarios: urban growth, mesquite management, and water augmentation. The BLM could quantify gains or losses of various ecosystem services under the various alternatives being assessed in the EIS. In the case of the Sustainable Grazing Alternative, an assessment might be made assuming one-half of the Monument was not grazed by livestock. Currently 96.4% is grazed, but the Sustainable Grazing Alternative allows for increases in non-grazed areas through voluntary relinquishment of term permits and designation of some allotments and/or pastures for other uses that do not involve livestock grazing.

Closer to home, a 2011 report by Mark Buckley of ECO Northwest, "The Economic Value of Beaver Ecosystem Services: Escalante River Basin, Utah" described a method by which the ecosystem services of beaver dams in the Escalante River Watershed (including GSENM) can be economically valued.

All grazing activities need to be analysed economically and practically to determine whether there is a need to carry out the monitoring by the government required by grazing non native cattle.

Tourism is considered an important economic driver in the region. Please consider the effects of this Livestock Grazing Plan Amendment on tourism efforts. Both grazing and tourism-based businesses, volunteer events, and tourism promotion are economic drivers in the region - please write this amendment to address the impacts of livestock grazing on GSENM. I believe there are methods and action steps that can be implemented, if incorporated in this plan, for the sustainability and enhancement of BOTH livestock grazing and tourism.

In order to justify any decisions under NEPA, a socio-economic analysis will have to include in its modeling the amount of historic use by livestock AUM's compared with local income numbers. To establish a credible time frame for a model, the AUM use and income numbers prior to designation of the Glen Canyon National Recreation Area in 1972 to the present should be considered as a starting point to provide the public with a scope of information for adequate comparison. Using past and present revenue/tax roll income information can be very helpful to demonstrate an actual economic trend and could also show the local impacts to many of the federal actions that took place over the years. This will allow for an informed decision, based on facts, to be made and account for potential economic impacts of proposed alternatives.

Table B-5
Economics

Some of the most recent science available shows that land designation, as monuments or otherwise removing lands from multiple use, has a negative economic impact, thus further restrictions on or reductions in multiple use including livestock grazing should be avoided.

Communities in and around the monument have seen cultural and economic losses and school closures.

Wildlife trends using the same dates discussed in paragraph one of this subsection, should also be considered to establish comparative data and an indicator of both ecosystem health and recreation values. Social impacts experienced by towns adjacent to the monument should also be presented. Trends in Escalante specifically depict impacts from the monuments creation since 1996. The EIS should display and explain the monument impacts on nearby towns. Please note that recent studies which incorporate socio-economic data from Cedar City, St. George and other large communities that are not impacted to the same level as the communities in Kane and Garfield Counties are scientifically flawed and dilute actual monument impacts on the residents most affected.

An IMPLAN model could show numbers of workers employed in certain fields at present but should include a comparison of those separate occupation numbers prior to 1972 for consistency in comparison with recent numbers. This information could also show trends of private sector jobs as compared to government jobs over the past 40 years. One of the real tests of local socioeconomic stability is how many private sector jobs have been created or lost compared to government jobs. Another factor which emphasizes the impact to local residents and families is school enrollment. This demographic information is vital for developing justification for any action the plan would take

Under the Dyksterhuis doctrine, there is a principal need to evaluate, by science the economic impact of any decisions, such as the effects that the removal of grazing has to a community. There is no science that supports a loss or reduction of grazing income to the economy can be mitigated by recreation use. Economically, when changes in activities occur on the western landscape it takes 40-years for communities to return to a stable economic condition. According to the Council for Environmental Quality (CEQ), NEPA's regulatory agency, "NEPA requires Federal agencies to consider environmental effects that include, among others, impacts on social, cultural, and economic resources, as well as natural resources" (underline added) (http://ceq.hss.doe.gov/nepa/Citizens_Guide_Dec07.pdf).

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Table B-5
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have been going through this.

Quite frankly, if livestock were removed or AUMs reduced on the Monument, my responsibilities and programming for sustainable livestock and forage production would diminish, possibly to the point that USD would reassign my position.

Not only is livestock grazing a renewable economic driver for generating new dollars in the economy, but it also directly supports the local tourism industry. Many tourists visit southern Utah to see the national parks and surrounding scenic beauty, but while they are here they hope to see a real, live working cowboy, riding horse-back, moving cattle from one pasture to another. Horse-back recreation and trail riding is prominent in the area, especially by tourists who visit the area. Working ranches directly support these tourist activities by providing well-trained, gentle, trail-broke horses that are familiar with rough terrain.

Here's a list of horse related tourism businesses and events that would be effected by any decrease in livestock grazing on the GSEMN: Red Rock Ride, Old West Outfitters Trail Ride and Cattle Drives, Ruby's Inn Trail Rides and Rodeo, Canyon Trail Rides, Bryce Canyon Pines Trail Rides, The Western Legends Festival, Jacob Hamblin Ranch Rodeo, both Kane and Garfield County Fairs and associated rodeos, and Kane and Garfield School Districts high school rodeo programs. Just imagine what the Western Legends Festival in Kanab would be like if there were no cowboys or horses in the parade or walking the streets. Any reductions in livestock grazing will show direct impacts to the local communities, the local tourism industry and the remaining ranching community.

One example of relying on a tourism based economy is the town of Escalante. Escalante is almost entirely surrounded by the GSEMN. Natural resource use around Escalante has been reduced substantially in the last 15 years including closure of the local sawmill. In the last 12 years, student enrollment in the schools has decreased by 59% which equates to less than 14 students per grade (Miller, 2012). Everywhere else in Utah too many students in a class are the problem. Escalante has the opposite challenge, not enough students to maintain a class. This demonstrates the critical need for a diverse economy in each of the small communities of rural Utah. If grazing levels are reduced, the town of Escalante, most notably, and the other communities of Kane and Garfield Counties will see direct impacts, including lower student enrollments.

Planning criteria

Socio-economics

The relative socio-political and economic importance of grazing in the Monument for the economies of communities must answer the following four questions:

- "1. What portion of the value produced by cattle and sheep operations is associated with the feed used?
2. What portion of the feed for those cattle and sheep operations comes from grazing on federal lands?
3. What portion of the total agricultural activity involves raising cattle and sheep?
4. What part of the total economy is represented by agriculture?[3]

BLM notes the use of the Jobs and Economic Development Impact (JEDI) Model for economic assessment in the scoping newsletter under planning criteria. Since this is designed by the National Renewable Energy Laboratory specifically for energy project impacts, this may not be an appropriate tool set. We recommend dropping this from use in this analysis.

We recommend that BLM use the agency approved Economic Profile System-Human Dimensions Toolkit (EPS HDT) designed and funded by a partnership with BLM and the U.S. Forest Service.[4] This free analysis tool provides objective independent data on economic factors in rural communities. Incorporate the analysis conducted by Dr. Power (2004)[5] concerning the fiscal impacts of retiring grazing on this Monument into the economic analysis.

Economic analysis should also describe the economic inputs and outputs of BLM's range problem in the larger context of BLM's budget in managing the Monument. For example, such economic analysis should include grazing fees paid, proportion of those fees returned to the Monument, and the total costs for the range program in the Monument.

Table B-5
Economics

[3] Power, T. 2002. Measuring the Relative Economic Importance of Grazing on Federal Lands. In: Wuerthner, George and Mollie Matteson. 2002. Welfare ranching: the subsidized destruction of the west. Island Press. p. 263-269.

[4] Contact Robert Winthrop, PhD, Senior Social Scientist, Bureau of Land Management.

[5] Power, T. M. 2004. The Fiscal Impacts of Closing Certain Federal Grazing Allotments in the Grand Staircase-Escalante National Monument. Economic Department, University of Montana. (unpublished)

Grazing Rights have a monetary value (Defacto!), leading institutions, individuals, and environmental groups have proven this fact! At any rate, value has been established that exceeds the value of range improvements only!

Cattle grazing is an acceptable and important use of public lands in the monument and the other BLM managed lands adjacent to it. The economies of Kane and Garfield Counties rely heavily on agricultural production and public lands grazing is an integral part of the production. Loss of BLM grazing would severely impact the production of food and fiber. The economic impact on the local economy needs to be studied and included in the management alternatives considered.

Livestock grazing is very important for the GSENM and surrounding communities. It is an important tool for our local ranchers to run a somewhat profitable business.

Grazing is more than an economic gain by an individual, it supports its local economy. Grazers spend their money on many other products that keep a lot of business open.

It is important to keep grazing because it is the way my family makes our living. My kids enjoy going to the desert to move cows. If you take this away they won't have a way to make a living for their families. Grazing is my boy's future.

Its also an economical benefit to the small towns of Southern Utah

It's very important to me, because it is my livelihood. I depend on it to make a living. It is also my way of life. I grew up ranching and I love my job.

As far as a economic standpoint. Taking grazing away would be a disaster. If we don't use this ground then that cuts back on are cattle numbers. That raises the price of beef to the consumer and hurts the rancher. It also put a shortage on beef for the growing populations. It also hurts are little towns in Southern Utah. These towns depend on agriculture. That is why these towns are here in the first place. Not because of tourism like some people think. Tourism is helpful but we can live without it. We cannot live without agriculture. Agriculture is the backbone to are little communities and are country as a whole.

Please take into consideration the economic, historical and cultural values of livestock use on the monument.

Grazing is a sustainable resource important to me personally, and to the economy as a whole to which it contributes.

In conclusion I would like to say that these allotments are vital to out operation. If grazing was cut or eliminated our ability to make a living would be eliminated also. This ranch is the only source of income that my family has.

My family depends on cows for a living.

My family depends on grazing for a living.

This is our way of life and how we make a living, and our only source of income.

The Farm Service Agency, part of the USDA, loaned the new owner of my ranch, 100% percent of the value the AUM's had, based on the historical use. If now the management of this ranch is determined by people who know very little about ranching and grazing is reduced, who is going to have to pay the difference?

Before and since the Monument Proclamation- grazing has been both a historic and current value and land use in Kane County since Mormon pioneers settled the area beginning in the late 1800's. Livestock grazing remains a significant staple and contributor to Kane County and the area's economy, heritage, traditions and culture.

As stated in the Kane County Resource Management Plan, adopted on August 28, 2011, page 4; "One of the basic common themes that crosses [sic] all economic and cultural foundations in Kane County is access to the public lands base. Access rights of way and water rights were critical to the early pioneers in Kane County, and remain critical today. The federal government controls 85.5% of the 2.6 million acres of land in Kane County. The State of Utah owns 8.1% of this land, leaving only 4.4% in private ownership. Crossing federal land is necessary for many private landowners to access their property and to exercise water rights, as well as to use adjudicated grazing preference rights. Viable and effective use of private land is totally dependent upon a management style and

Table B-5
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technique for the federal and state lands which is compatible with the commercial and business activities which provide the base for economic stability of Kane County."

Additionally, on page 5 of the Kane County Resource Management Plan; "Privately owned land is adjacent to federal and state lands. Management decisions for the federal and state lands directly impact use of, and the economic value of, private land. Restrictions on, and reductions of, grazing on federal lands, for example, will require the rancher to greatly increase grazing on private lands, reduce herd sizes, find alternative grazing land, or seek relief through a combination of these measures. If ranchers are forced to graze herds solely on private ground, the primary source of winter forage will be lost. Forage costs will dramatically increase. There is no alternative land available in Kane County, so even if alternative forage is found outside the County, transport costs are extremely high. Reductions in herd size, higher feed costs, and increased transport costs result in a critically adverse outcome. Economists hold that for every dollar loss to the rancher, there will be a four-fold loss to business income in the surrounding areas of the County."

The Kane County General Plan, August 12, 2013 goes on to state; "While agriculture has been an important base of economic activity in Kane County, the total amount of land devoted to agricultural pursuits is relatively minor. Use of Federal and State lands in Kane County becomes more essential in protecting and preserving the economic and cultural aspects of the Agricultural Industry. According to the 2007 Census of Agriculture, Kane County contained 145 farms encompassing a total of 113,417 acres. This acreage represents a 46% reduction in total farmland in Kane County since the 1992 Census of Agriculture. Of the 113,417 acres, 8,691 acres was cropland, and approximately 4,300 acres was irrigated. Most of the irrigated cropland was devoted to hay production (1,658 acres). The 1992 to 2007 Census of Agriculture illustrates that land in orchards has decreased by 80% to a current level of 12 acres in orchards."

"However, the majority of BLM and National Forest public lands have been included in livestock grazing allotments. According to the 2007 Census of Agriculture, Kane County contained 91 cattle/calf operations running over 6,786 head of cattle. This represents a 28.6% reduction in total head of cattle and a 14.2% reduction in cattle/calf operations in Kane County since the 1992 Census of Agriculture. There were also 9 sheep operations running about 451 head of sheep. In similar fashion as the reduction in cattle operations, sheep operations saw a dramatic 50% reduction in total farms and a 92.5% reduction in sheep inventory in Kane County since the 1992 Census of Agriculture."

"While many of these operations are not the sole source of income for the operators, they are a vital tie to the traditional lifestyles valued by county residents and visitors. Furthermore, the dramatic decreases in agricultural activity are unsustainable in terms of economic and environmental factors. The Utah Agricultural Statistics and Utah Department of Agriculture and Food 2012 Annual Report prepared by Utah Agricultural Statistics stated that in 2010 Farm Income and Expenses for livestock and Products estimated to be 8.2 million dollars, crops is 0.3 million dollars with a total combined of 8.5 million dollars. Also in the same estimate for the total number of cattle in Kane County are 6,300. Historically, agricultural pursuits have been a vital base of economic activity in Kane County. Although, agricultural pursuits are not as pronounced in the 21st century, they still provide valuable opportunities for supplemental income and open space preservation. Further, much of the vegetation manipulation on both public and private rangelands is tied directly to overcoming impacts caused by encroachment of woody species such as sage brush, pinyon- juniper, wildland fire suppression, or to improve the forage value for current livestock and wildlife use."

Changing the grazing would be detrimental to the land, the economy, and the tourism.

This is a lot of our income for my family, not only is it a great opportunity for them it is also the food on my table for my family.

I also know my family would not stay alive around here, without our cattle for food and money.

It is also a big part in my family salary, living in a small community we live in is hard to raise a family, but with the cattle it has helped us provide for our family and their needs.

Multiple-use of the public lands is critical to the economic well-being of rural Utah, especially Kane and Garfield Counties. The mix of private and public lands ranching for generations has created new wealth through the harvest of annually renewable forage that drives our rural economies. In addition, livestock grazing on the public lands

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provides a benefit to all Americans, not just those physically and financially able to visit the public lands states, and the Grand Staircase-Escalante National Monument. Livestock production is the economic underpinning of rural Utah!

Legitimate, locally based ranching interests are critical to rural communities. Agriculture, food production and processing along with other related industries are the catalyst for more than 80,000 Utah jobs and \$2.7 billion in wages.

From a micro economic standpoint important to Kane and Garfield Counties, it is important to recognize the impact of displacing even one single average sized cattle or sheep operation. Consider the following:

- Utah is a cow-calf cattle production state with cattle and calves contributing more than one-third of the state's farm gate sales. An average cow-calf operation with 500 mother cows creates a direct impact on the local economy of over \$400,000 based only on farm gate sales. This is based on a ninety-five percent calf crop, 550-600 pound feeder calves marketed at Producers Livestock Auction in the fall of 2013 at \$1.35 - \$1.50 per pound.

- Livestock grazing in Southeast Utah is critical to the economic health of our rural communities. For each dollar through the sale of livestock, the multiplier effect in rural Utah communities is three to four times creating jobs and generating tax revenue.

- There are currently approximately 11,000 Animal Unit Months (AUMs) authorized by the BLM for livestock grazing on the Monument - or about 11,000 cow/calf pairs.

- The current price for feeder calves coming off Utah rangelands is around \$1.40-\$1.50 per pound. Assuming 10,000 feeder calves averaging 500-600 pounds per head are marketed from cattle grazing the GSENM, local cattle ranchers produce and market five million pounds of beef on the hoof with a farm sales value of \$7,000,000. In addition, economists estimate the cattle industry's ripple effect on the economy including fuel, equipment, vehicles, trucking and so on is two times the farm gates sales. Beef cattle raised on the Grand Staircase-Escalante National Monument are contributing more than \$14,000,000 to Kane & Garfield Counties as well as the state economy every year!

This is an annual economic contribution to the local, state and national economy that provides meat protein to feed Americans, certainly of greater significance than the few tourists who make their way onto the Monument. As these livestock generated dollars ripple through the local economy, they are paying taxes for roads, hospitals, law enforcement and search and rescue – of growing importance to those who recreate in the Monument.

When Congress began to regulate livestock grazing on federal lands in 1934 with the passage of the Taylor Grazing Act, a key component of the regulatory focus was "the economic stability of the ranching community". The BLM manages nearly 23 million acres in Utah, accounting for about 42 percent of the state's land base. Rural Utah communities depend on the economic contributions and annual new wealth generated by livestock ranching operations. Historically and culturally, it is a way of life. Ranchers are good stewards of the land they use. Ranchers must be good stewards to maintain productive, viable operations.

We assert maintaining sustainable grazing in accordance with healthy productive rangelands and allotments are beneficial to our local communities, our custom, our culture, our heritage and our rural lifestyle. We further assert that any declines in grazing activity are detrimental to those same aspects of our communities.

We also ask that you analyze all social and economic aspects very carefully.

Most importantly take into account the permittees who are trying to make a living on these lands. The additional layers of bureaucratic red tape make it difficult to keep a business alive. The communities in Kane and Garfield counties can't afford to lose any more industries. These people have been the stewards of these lands for generations. Work with them to find solutions that allow both the rancher and the landscape to prosper.

Please balance ecological concerns with the local economic needs. This typically means less cows.

Throughout the history of Kane and Garfield Counties, livestock grazing has been and continues to be a very important part of our economy, heritage and culture.

Table B-6
Fire Management

Cattle also remove undergrowth and prevent fires.
Cows ranging helps if not prevents overgrowth responsible for wildfires and the ability for fire to travel. Wild land fires are far more destructive than cows.
It also controls weeds and help reduce potential fire hazards
Wild fires destroy more sage grouse and wildlife habitat than grazing by cattle could ever think of hurting.
The cattle graze on the land and eat down the grass. While eating down the grasses they are diminishing the fuel for a grass fire or wild fire to start.
Livestock grazing controls the growth of non-native plants and helps reduce fire hazards due to overgrowth.

Table B-7
Glen Canyon National Recreation Area Values and Purposes

3. The EIS Should Include Explicit and Separate Guidelines for Grazing Administration in GCNRA

Because NPS units are managed according to the Organic Act with a distinct mission from BLM managed lands, it is critical that the BLM's Livestock Grazing Plan Amendment EIS clearly address the differences in administering grazing within the NRA. NPCA recommends the BLM develop separate guidelines for grazing inside GCNRA and provide information to the public regarding how they will work with the NPS to effectively address the different management requirements within GCNRA as opposed to the BLM managed Grand Staircase Escalante National Monument. As such, GCNRA should be listed under the "Special Designations" section and addressed in detail within the EIS.

The BLM states that the Livestock Grazing Plan EIS will address which allotments will be open and which will be closed to grazing. As a component of the EIS, the BLM needs to ensure that currently grazed allotments within GCNRA are meeting grazing standards and not damaging or impairing NRA values, purpose and resources. In order to determine this, the BLM, in partnership with the NPS, needs to analyze all relevant data for the current condition of open allotments inside GCNRA.

Where resource impairment is present within the NRA, the BLM is obligated to make changes to current permitted grazing activities and/or close all or portions of allotments to allow for rehabilitation and resource protection.

Grazing should only be allowed to continue within the monument where it is consistent with the values and purposes of the NRA and in a manner in which NRA resources are not damaged or impaired (see NPS Management Policies 2006 at I.4.7.1).

NPCA urges the BLM to ensure that scientifically based decisions are made in terms of where grazing is appropriate inside the NRA and how permits will be managed and monitored in partnership with the NPS for the protection and preservation of NRA values and purposes.

Since the legislative mandate for the NRA is different in that it is more protective of Recreation Area values than the Proclamation or FLPMA protections that relate to Public Lands or the Monument, I recommend that at least some different and separate guidelines be developed for the administration and management of grazing in the Recreation Area.

Table B-8
Grand Staircase-Escalante National Monument Objectives and Values

The scientific lands, archeological sites and unique geological formations, sensitive vegetation and critical springs and watershed should be closed to livestock uses.
The goals for the Livestock Grazing Monument Management Plan must be consistent with the Presidential Proclamation that created the monument.
The Presidential Proclamation identifies protection of several features of the Monument as justification for the Monument including geologic, paleontological, archeological, human historical and biological features. None of these features, the protection of which is the purpose of the Monument, are enhanced in any way by expanded grazing on the Monument. Nothing in the Proclamation suggests, even remotely, that grazing should be encouraged beyond the legal mandates of Valid Existing Rights. Clearly issuance of new grazing permits would be in direct conflict with Presidential Proclamation.
While changes to grazing current grazing policies and laws may take years to change and implement the BLM has been mandated by the Senate to "manage the monument and the resources within the monument in accordance with the principles of multiple use and sustained yield "using the principle of economic and ecological sustainability." When the GSENM was founded in 1996, President Clinton made clear that one of the fundamental purposes for establishing the National Monument was to protect its outstanding biological diversity. The BLM's own 2000 Monument Management Plan reinforces the objective to manage in order to preserve biological resources (plan, at pg 2.2). The evidence of deleterious impacts of cattle grazing to the Monument's biological and ecological resources is great.
I hope that the upcoming Grazing EIS will thoroughly address the many values other than forage for cattle that our Monument was designated to protect, preserve. And restore.
The Monument is a place not only for plants and wildlife, but for all of us, and how cattle are grazed affects multiple Monument values. MAN and grazing animals have co-existed in the Monument for thousands of years.
I realize that there are several objectives and values that the management of the GSENM need to be concerned with. I believe that these objectives can be met and existing grazing on the monument can continue without adversely affecting them. If there are serious conflicts every effort should be made to resolve them between the partners involved. Grazing should not be cut or eliminated just so other objectives in the monument plan can be accomplished. I am not aware of, at least on the area where my grazing permits are, that there are any serious conflicts between grazing and other monument objectives.
As you know, BLM must protect the objects and values in the GSEM proclamation consistent with the Antiquities Act and associated BLM policies. As such, livestock grazing and other multiple uses can only be authorized if they do not harm these protected objects and values. This is the dominant direction to GSEM managers and it must be followed. The burden of proof should be on those proposing multiple uses to demonstrate the absence of such harm.
Where GSEM objects and values have been or are likely to be harmed but livestock grazing, those lands should be designated as "Not Available" in the Record of Decision. For example, important riparian and wetland habitats, special status species habitats, and biological soil crust areas should be so designated.
I can not strongly enough urge the BLM to reign in the cows and the cattle industry in our most valuable and delicate public lands and to protect the natural values that inspired the proclamation of this National Monument.
In my experience cattle grazing is incompatible with the preservation of the natural flora, fauna, and scenic values of the Escalante - Grand Staircase National Monument.
The Monument is a place not only for plants and wildlife, but for all of us. How cattle are grazed affects multiple Monument values.
Protect the Monument's Objects and Values: Partners recognizes that grazing will continue as a valid use within the Monument, as so stated in the GSENM Proclamation. However, the Proclamation also requires the protection of Objects and Values that prompted the establishment of the GSENM. These Objects and Values have been identified in the Monument Management Plan (MMP) and they are no less important today as they were when the MMP was signed.
GSENM compliance with the National Conservation Lands (NCL) System: The NCL System was established and codified by Congress to take significant lands managed by the BLM in order to recognize and protect the Objects and Values associated with these lands. The GSENM is recognized as a unit of the NCL System. , Accordingly, it cannot be assumed that every management practice accepted by the BLM Districts and Field Areas on public land is similarly appropriate on units of the NCL. This point must be stressed as the multidisciplinary planning team is

Table B-8
Grand Staircase-Escalante National Monument Objectives and Values

working its way through the EIS and the Grazing Management Plan.

Additionally, livestock grazing should be considered one of the scientific values of the monument and should be given equal status, funding, etc. as other scientific disciplines, i.e. botany, paleontology, archeology, zoology, etc.

Planning Issues

"Effects on GSENM Proclamation-identified scientific and historic objects and values"

It is recommended to specifically list each object and value in the Monument that is influenced by grazing. These include paleontological values, archeological objects, historic values, ecological values (five life zones, springs and streams, vegetation communities, endemic plants, their pollinators, relict communities, biological crusts, a long list of plant and wildlife species, and other biological values).

Especially troubling to me was this statement in the Objects and Values Fact Sheet, "This Livestock Grazing Plan Amendment EIS strives to find a decision that will enable sustained use of the land through improved land health and science-based grazing management. What about finding a decision that will allow continued grazing while protecting special resources, values and purposes and, in the case of the NRA, acknowledging and respecting the non-impairment mandate of the NPS Organic Act, as directed by the Glen Canyon establishing legislation?"

Table B-9
Livestock Grazing (General)

I feel that grazing should not be permitted inside the monument.
I ask that you do not limit, or revoke any current grazing allotments from the men and women who are continuing support of our local heritage and our towns economy.
I love Southern Utah as much as anywhere I've ever traveled. Unfortunately, my last trip to The Grand Staircase Escalante National Monument my experience was FAR less than desirable, in fact it was depressing, annoying, smelly and unpleasant. HOW can this be I thought as I walked through Buckskin Gulch from Wire Pass and cow and horse shit littered the ground. How can the BLM let this practice continue in these slot canyons?
I urge you to change your management practices NOW so this stunning area can be enjoyed. I have no plans on returning to any of the cow riddled drainages of southern Utah until this matter is resolved. It is disturbing that this practice continues and this NEEDS to be changed NOW. This is DISGRACEFUL, ABSOLUTELY DISGRACEFUL.
Why can't cows and cattle be limited to grazing lands (such as grasslands with hardy soils) that can actually sustain itself while the cows get better quality feed? The cows would be healthier and would wreak far less havoc on fragile ecosystems. It would be a win-win situation. There are certain climates and locations that simply were never meant to support cattle grazing. These areas include more arid and fragile desert ecosystems. I would like to see smarter ranching that actually benefits the animals as well and let the fragile areas recover.
Although some efforts have been made to keep cattle out of sensitive habitat in the main Escalante River drainages, I am concerned that there are still areas that need to be addressed. Two areas of concern are the Deer Creek drainage between the Burr Trail and Escalante River and the Escalante River between Harris Wash and Fence Canyon. I have seen cattle in these areas recently. There should be no cattle allowed down in these sensitive and beautiful areas. These areas as well as other side canyons of the Escalante should be free of cattle left to rehabilitate.
With regard to grazing, any plan must recognize and preserve valid existing rights. There are no imperatives in law or the proclamation to expand grazing rights. The decisions regarding grazing fall naturally into two broad categories, those being management of valid existing rights and determination of whether any additional grazing rights should be permitted.
Cattle should not be allowed in the Canyons within the National Monument.
The removal or reduction in livestock grazing would be a mistake and a great loss to the monument.
Several resource issues that are of particular importance in relation to management activities along the park borders include boundary protection, resource damage from unauthorized access (e.g., damage to fencing, trespass grazing, poaching, etc.), potential noxious weed introductions to the park via livestock and OHVs, protection of wilderness characteristics within the park, park soundscape and viewshed integrity, air quality, and threatened, endangered and sensitive species particularly where populations or key habitat transcend park/Monument boundaries.
N37 22'57.3" W 20'02.6" (Rogers) N37 30'45.4" W 29'56.5" (Willard)
--There is substantial cow dung in these canyons that is not breaking down, either by micro organisms, insects, or hoof action. As a result, the dung forms dehydrated bricks which last for years and inhibit any plant growth around or under it.
I find it interesting that the monument sets down rules for hikers and backpackers to follow, to protect the natural resources, but at the same time, the monument allows cattle to enter and damage the same resources that you ask other visitors to protect. Do you not see the hypocrisy? Maybe it's time to reduce cattle numbers, control them in the same manner as you expect hikers and other visitors. If that cannot be done, then maybe it's time to remove them altogether. At least from the areas that attract people from all over the world.
I believe that grazing regulations must be based on current scientific data, and that grazing should not be uniformly the highest priority on public lands. That is a mis-reading of the Multiple Use concept; however that seems to be how it is in many of our public lands in the West. Sometimes the highest priority should be no use what so ever, and sometimes it should be protected areas to be used for research. Un-grazed areas are needed as controls in order to have good studies and good science, hence I fully support the establishment of such areas.

Table B-9
Livestock Grazing (General)

Livestock grazing is not a permitted use in most National Parks and Monuments because of its known impacts on natural and cultural resources. We consider the BLM's 19th Century multi-use mission to be obsolete in the management of National Monuments in 21st Century, and currently resulting in use and preservation conflicts in which preservation is "mitigated" as a result of use impacts. Therefore, we support the long term elimination of livestock grazing on the Grand Staircase Escalante National Monument and Glen Canyon National Recreation Area.

In summary, I believe that the current grazing situation on the Monument does not negatively impact the overall experience one can have there. I would hope that Monument planners will craft a Grazing Plan that can maintain the status quo (perhaps tweaking a few things here and there) while addressing the concerns of all who enjoy the various uses of the Monument.

While the Secretary has the discretion to discontinue grazing, (only for the term of a planning action) careful consideration must be given to its detrimental effects. Eliminating grazing in part or totally in a grazing district may:

- disrupt the orderly use of the range,
- breach the Secretary's duty to adequately safeguard grazing privileges,
- disrupt or impair the fiduciary responsibilities of states under the provisions of their Enabling Act,
- be contrary to the protection, administration, regulation and improvement of public lands within grazing districts,
- hamper the government's responsibility to account for grazing receipts,
- impede construction and maintenance of range improvements as foreseen by the TGA and FLPMA, or
- contradict provisions of the Monument's proclamation.

Generally, cattle tend to stay in areas where the forage is located and only traverse areas across barren terrain to access other forage areas or to water. This will not create heavy livestock use in areas that are not considered rangeland. Yet the area is still an important part of the allotment.

BLM should provide for diversity of grazing arrangements to reflect a diversity of values. Large areas should be allowed for uses other than grazing...

I am strongly for ALLOWING cattle to graze in the staircase area. I have been hiking that area my whole life and do not see any negative effects of letting cattle graze in the area. I do believe however that there are many bad effects that will happen by not allowing it.

Cattle grazed the Grand Staircase long before it's designation as a monument. When placed as a monument ranchers were guaranteed that all existing grazing practices would remain in place. It is my opinion that such practices should continue as promised. I believe that grazing and conservation does and can co-exist.

Grazing livestock on the GSENM is an excellent way to use the renewable resources on the Monument. Used as a management tool it can improve and enhance the range conditions and watershed on these lands.

BLM should prioritize the health of the staircase and always graze all areas, with cattle forever.

In addition, President Clinton proclaimed under 34 Stat. 225, 16 U.S.C. 431 "Nothing in [the monument] proclamation shall be deemed to affect existing grazing permits or leases for levels of livestock grazing on federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws regulations other than this proclamation". We assert this means grazing within the monument is protected by the proclamation and at a minimum should be preserved.

I am a frequent visitor to the GSENM area in pursuit of recreational activities (hiking, camping, botanizing and birding), and I am well familiar with the fragility of the soils and and plants. I am a very responsible outdoors person, adhering to principles of "Leave No Trace" whenever I'm out on the land. It is therefore very dismaying to me to see the degradation of the land by large scale livestock grazing.

It is time to recognize that large-scale livestock grazing has a very negative impact on our dry public lands in the West.

The GSENM was established, in part, as a natural laboratory in which science might be pursued with the objective of better informing managers on how best to restore, maintain and sustainably utilize this spectacular landscape. An accepted "use" is that of livestock grazing. But no other authorized use has the potential, if not properly managed, to negatively impact the landscape and its natural resources so widely and in so many ways.

I am in favor of continuing grazing on the Monument, and feel it is very beneficial for both land and people.

Table B-9
Livestock Grazing (General)

So far with the monument the management has been pretty good, we have been able to get along with the people at the local level, and they have seemed like they want to work with us and make the right decisions for the parties involved!

Allow "Multi-Use" to include grazing AND non-grazing; portions of the forest are grazed and are not grazed under this "Multi-Use" definition.

Unless one is hiking on solid slickrock, which is certainly possible for hours, if not days at a time in the Monument, the general experience of hiking and camping in GSENM is dominated by the sense of a landscape that has been occupied by cattle for many decades and as such has been negatively altered. Touted as "the Science Monument" in its early days, GSENM shows very little evidence of having been managed scientifically over the years. Rather, it appears that grazing management has been managed (or not) with a business-as-usual attitude, in which the public's interest in responsible natural resource stewardship has been absent. The result is a landscape that contains a fraction of the biodiversity that this place must have supported over 100 years ago

we also need a grazing plan b/c as we have seen in CO and WY too, cattle will overgraze if not moved on the landscape.

From the field work and trail hiking that I've done in the Monument, damage to the land from cattle grazing is evident - severe and extensive. If you don't think, take a hike into DCW and you'll see the contrast that I saw: grasses and meadows instead of scrubbed soil; rabbit and deer droppings instead of fields of sagebrush; and insects, butterflies and anthills instead of acres vacant of such vital species. The contrast shows me that the Monument has far to go for even some of its areas to attain such sights, sounds and smells, but it can if the BLM creates and implements a strong livestock grazing plan.

We strongly recommend that livestock grazing will continue in the monument unabated.

There are places where cattle can't access that remain pristine but once cattle are introduced the landscape is dramatically and forever changed.

Therefore I would like to see a dramatic reduction or elimination of cattle in the Grand Staircase Escalante-National Monument.

Many scientific peer reviewed studies have shown the benefits of managed grazing on western lands. The best habitat for wildlife in our state are those areas prescriptively grazed by livestock that provide new growth of grasses and Forbes, adequate water distribution and stewardship to maintain these improvements.

The new GSENM grazing plan should be formulated around helping grazers increase their profitability by getting out on the landscape and seeing what the grazers see. Looking at the landscape through the eyes of a grazer by working together to formulate a plan that works for all parties involved. Be flexible and allow for change. Grazing practices change and should change with the natural cycle. Some years there is better feed than others due to drought, fire, pests etc... And with a flexible grazing plan all parties involved could have a plan that works.

Rancher are the ultimate Conservationists who need the land to provide for their animals.

Livestock grazing has been a foremost use of the GSENM region for many generations. Indeed, ranchers saw the land for what it was, not verdant green meadows, but a rugged, desert landscape that would, with careful planning, support limited grazing in perpetuity if they managed it right.

Mistakes were made, certainly, and a few operators were not as careful as they might have been. Still, these hardy ranchers made it from year to year, allowing for unpredictable rainfall, blistering heat, and cold winters, and adjusting their operations to make them work. Their great-great grandchildren are still on the land, smarter, educated, and keenly aware of their responsibility to the land, because their livelihood depends on it. My point is: the ranchers are the best stewards of this public land.

Not only does grazing provide a livelihood for many, many people in the area, it also provides the necessary care that the land requires.

As ranchers, we take our responsibility of being good stewards over the land very seriously. If we do not take care of the land, it cannot take care of us or our families.

I understand the cultural importance of the ranching life-style, locally, and support grazing done in an appropriate and sustainable manner.

Table B-9
Livestock Grazing (General)

While the Secretary has the discretion to discontinue grazing but only for the term of a planning action, careful consideration must be given to its detrimental effects. Eliminating grazing in part or totally in a grazing district may:

- Disrupt the orderly use of the range,
- Breach the Secretary's duty to adequately safeguard grazing privileges,
- Disrupt or impair the fiduciary responsibilities of States under the provisions of their Enabling Act
- Be contrary to the protection, administration, regulation and improvement of public lands within grazing districts,
- Hamper the government's responsibility to account for grazing receipts,
- Impede construction and maintenance of range improvements as foreseen by the TGA and FLPMA, or
- Contradict provisions of the Monument's proclamation.

Generally, livestock tend to stay in areas where the forage is and only traverse areas across barren terrain to access other forage areas or to water. This will not create heavy livestock use in areas that are not considered rangeland. Yet the area is still an important part of the allotment.

Grazing relinquishments though possible, should be a last resort and need to be supported by credible, peer reviewed scientific information; the basis of which is found to be justified by both State range conservationists and the local affected county representatives. When adjustments in season of use could produce the same results as AUM reductions, BLM's conscientious coordination with permittees using some administrative flexibility is vital to ensure that long term management goals can be met but do not financially impact grazers.

Even though the Secretary has the discretion to discontinue grazing, but only for the term of a planning action, careful consideration must be given to its detrimental effects. Eliminating grazing in part or totally in a grazing district may:

- Disrupt the orderly use of the range.
- breach the Secretary's duty to adequately safeguard grazing privileges,
- disrupt or impair the fiduciary responsibilities of States under the provisions of their Enabling Act
- be contrary to the protection, administration, regulation and improvement of public lands within grazing districts,
- hamper the government's responsibility to account for grazing receipts,
- impede construction and maintenance of range improvements as foreseen by the TGA and FLPMA, or
- Contradict provisions of the Monument's proclamation.

Generally livestock tend to stay in areas where the forage is and only traverse across areas of barren terrain to access other forage areas or water. This will not create heavy livestock use in areas that are not considered rangeland. Yet the area is still an important part of the allotment.

Grazing relinquishments though possible, should be a last resort and need to be supported by credible peer reviewed scientific information; When adjustments in season of use could produce the same results as AUM reductions, BLM's coordination with permittees using some administrative flexibility is vital to ensure that long term management goals can be met but do not financially impact grazers.

When ranchers do well all does well.

BLM should provide a for diversity of grazing arrangements to reflect a diversity of values.

Commercial grazing animals are a very damaging use of land unless they are managed very carefully.

Livestock grazing on public lands has become a major issue in states with significant areas of public lands. Some people view livestock use of public and private lands as harmful. However, environmental impacts of livestock on grazing lands can be prevented, minimized, or ameliorated by control of when, where, how long, and how intensively livestock graze on forages growing within the landscape (Krueger, 2002). Simply, this is called, "scientifically managed livestock grazing." Un-managed livestock grazing can be a source of environmental consequences. Managed livestock, with application of science-based range management principals will maintain the resource, enhance the environment and provide a stable economic driver for the local economy.

BLM has delayed fixing long-standing grazing management problems. BLM has renewed all the grazing permits in the Monument unchanged for more than a decade thus not making the changes needed to fix identified problems.

As far as grazing is concerned it is right to put cattle out on these lands and I don't think it is right to have them taken away. They were granted to the people in these area when the homestead act was going on. The

Table B-9
Livestock Grazing (General)

Government issued those permits like they did the homestead property. They did not give deeds like they did land but gave right to use permits to help them make a living in these small town area of the west.

My father, Norris (Doc) Brown started purchasing private property and the allotment in 1954. He bought the allotments of several other ranchers to develop a working ranch now called the Vermillion Allotment. He worked and improved the ranch many years. In 1962, with a cooperative agreement with the BLM, the trees were railed and stacked, crested wheat was planted and the ranch was fenced into several pastures. The ranch subsequently became easier to manage and much more productive. During this period of time the mandate was to be as productive as possible. Currently, productivity does not seem to be the top priority for the BLM even though multiple-use, sustained yield is still the mandate from congress.

Is it imperative that we keep and save our cattle ranchers. Every cattle rand that goes under leaves us all more dependent on other countries. We cannot feed our own country already. It is critical to provide range land to cattle ranchers or we will lose everything that brought and brings people to our area. We need the cattle ranges for sustainability.

Grazing rights were specifically addressed in the proclamation that designated the area a monument. "Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock on Federal lands within the Monument ". Much of the bitterness that resulted by the designation of the monument has been mitigated by the fact that grazing has continued at about the same level for the past 15 years since monument designation. To curtail this permitted use by amending management policy would reignite the bitterness of the original action.

CONFLICT Resolution: Conflicts between user groups are the result of misunderstanding, misinformation, or selfishness and can be resolved if reason and cooperation are employed. Ranchers feel that grazing is a serious economic issue which affects livelihood while other uses are a matter of convenience. I don't feel all uses are equal but I am sure that all people have the right to permitted uses of the monument and can resolve conflicts sensibly. Each conflict should be approached with the understanding that exclusion of other uses is nor an option. I think the management plan should include a mechanism for resolving conflicts. User groups and land managers should meet and discuss possible solutions [exclusion is not an option]. Perhaps the Monument advisory team could develop workable solutions.

The way I see grazing on the monument, has been very responsible by ranchers. They have protected all of the historical sites. They have pointed out the beauty of the area to the public and kept it the way it has always been.

The Rancher has a right to run cattle on allotments in the GSENM. They are the same as water rights or private land. No one should have any say as how to change grazing on the monument except the Ranchers especially not the public.

Ranchers will defend their Rights however they have to.

Grazing is an effective and efficient way to harvest a natural renewable resource.

Grazing is not a privilege it is a right. It is bought and sold just like real estate. The government know this because the Farm Service Agency borrows money against it.

When I bought my permit, I bought a right. That means nobody can take that right from me. I'm protected by the United States Constitution. Most people don't know or are unwilling to believe that we are a republic. That means the BLM should protect my right to graze. If they will not protect is, I guess I'm forced to do so.

The rancher is who takes care of most of these lands and if we take grazing away it will got to hell. Like the wasted wildernesses we have set aside.

The ranchers are responsible about the grazing on the monument. They will protect this land because they plan on returning every year.

It is their right to graze these lands and a privilege for everyone to see the beauty of the monument.

Grazing in the monument should not be managed under any further restriction than exist on any other BLM managed lands.

Grazing has been a part of monument lands as far back as 1876 in recent times and as stated in the "Presidential Proclamation" creating the document shows "extensive use... by ancient Native American Cultures" which would imply significant grazing in those times as well. The state proclamation also indicated two significant civilizations- the Anasazi and Fremont, which would have used the land extensively. Other groups such as the Navajo, Mormon

Table B-9
Livestock Grazing (General)

Pioneers and towns such as Paria also indicate and demonstrate grazing as a historic use of the land inside the Monument.
Some have tried to make the argument that the area has a "low resistance to, and slow recovery from, disturbance. However, as President Clinton declared in the Proclamation "natural processes continue unaltered by man. These include relict grasslands"
I believe it is plain to see that President Clinton was correct in these statements. With the evidences of human habitation and use which grazing was a part and his (President Clinton's _ designation of the area after all those years of use and grazing an "unspoiled natural area". It is clear that grazing helped to create and is an essential element of what makes the area a Monument to our people and must continue as historically utilized.
We have been caring for this land for 150 plus years and it was made into a monument because of its beauty and value. This shows that we have not degraded this land. It is disheartening that the decisions for the use of this land are made by people who are not living and working on the land. The ranchers are the ones that developed the water and kept it flowing for wildlife and birds. They are also the ones out watching for poachers and marijuana growers on the monument.
I think this land can be protected and grazed at the same time by management. The forage is a renewable resource. The grasses need to be harvested to remain healthy. As ranchers we can see what has happened to the forest land by the policies of non use. The forest was much healthier when the timber was being harvested and it also helped the local economy. They also did not have the trouble with wildfires like we do now.
The ranchers are the last ones that wish to damage the resource.
And if you look at the history of the grazing, the cows have been there to clean up the river and willows, maybe some cow pies but the trails were maintained by the cattle and the ranchers PAID to have them there. Now "we the people" pay to have employees of the government agencies to go down and clean up trails in the river.
Grazing on the land is tied directly to rain and the timing of its occurrence. I know this because I have seen the usage, as declared by BLM employees, to be 5% to higher, depending on the rains.
You will find that where cattle are managed correctly the land is healthier and less costly to maintain for the next generation and generations to come.
My name is Tye and I think grazing is important because you get meat from cows and if we didn't have cows we wouldn't have meat.
I believe that grazing on the monument should continue. It is a constitutional amendment as part of the monument and shouldn't be changed.
Changing the grazing would be detrimental to the land, the economy, and the tourism.
While a certain level of traditional grazing activity is beneficial, it is clear from my trips into the monument over the past few years that certain areas are still heavily and negatively impacted by over grazing.
Cows have significantly ruined the landscape.
While there may be a place for cattle grazing within the Monument I am not sure it is a good idea and I am not sure it can be done without having too much of an impact.
As a frequent hiker and explorer in the GSENM, I have been appalled at the poor condition of the landscape, primarily due to heavy overgrazing.
BLM should not sacrifice arid public lands for the benefit of private interests. Welfare ranching has no place on our public lands.
Why do we continue to allow a few "ranchers" to do enormous, long lasting damage to OUR public lands?
I am a frequent visitor to GSENM and enjoy seeing cattle on the monument but am also dismayed at some of the grazing practices and consequent damage to the land.
I think it will be beneficial to the BLM, ranchers, and the desert environment of the Monument if the grazing patterns are regulated in ways that will benefit all parties.
Cow corpses, belligerent bulls, and an otherwise magnificent ecology speckled with cowpies weakens the vitality, integrity, and spirit of the place.

Table B-9
Livestock Grazing (General)

While part of the genius of the designation of the area as a national monument was to allow for some grazing--to engage the support of local ranching communities--it is counterproductive to continue in the way this has been practiced since the beginning.

It is time for cattle interests to realize the harm they are doing and that times have changed. I doubt if the permit costs could offset the damage cattle cause, or that the ranchers would pay to rehab the land.

Cattle just don't belong in that Monument!

Of all the challenges to maintaining healthy ecosystems in our arid environment, I strongly believe that unmanaged grazing is the worst detriment.

Our public lands are not a giveaway sacrifice for the ranching industry, especially when extremely sensitive desert habitats are involved.

Table B-10
Livestock Grazing (Grazing Management Practices)

Fences must be erected AND maintained to keep cattle out of critically sensitive riparian habitat in the Grand Staircase Escalante National Monument.
We already do a good job of pasture rotation in the pastures we are allowed to use. Grass pastures in the spring/ browse pastures in the fall. More reespining would be great to add more pastures to our rotation to take more pressure and stress off of our pastures currently in the rotation. Water development would be great also to help utilize and better manage our pastures. We need more reseeds using more of native grass that naturally do well in our dry climate.
I think pastur rotations are crucial. It seems to me that you need to encourage a more sustainable way to manage cattle if indeed cattle will continue to be permitted in the GSENM.
While there are examples of ranchers using progressive techniques to abate the negative environmental effects of grazing such as; rotational grazing, fencing off sensitive areas, and removing cattle from drought stricken land in some remote grazing allotments "such as the GSENM" progressive grazing techniques are hard, if not impossible, to implement. Many of the grazing allotments in Grand Staircase-Escalante National Monument are of this type.
Grazing systems in areas that are considered suitable for grazing should include season-long rest periods to ensure that areas that see livestock grazing have opportunities to recover.
Supplemental forage should be brought to these animals as the desert does not have adequate forage for both the cattle and its wildlife inhabitants.
All options to improve vegetation for livestock and wildlife use should be implemented i.e. chaining, reseeding, water development.
Directly related to grazing management decisions on the Monument, range condition of allotments that border or are in proximity to Bryce Canyon National Park have the potential to affect park resources (including recommended wilderness areas) when livestock seeking ungrazed conditions trespass onto park lands resulting in resource damage. By ensuring that the BLM's established Rangeland Health Standards (as codified in 43 CFR 4180.1) are met on all grazing allotments, inadvertent livestock trespass onto neighboring lands may be reduced. We request that the Upper Paria Allotment in particular (Henderson Canyon, Upper Jim Hollow and Bulldog Bench pastures specifically), which borders the park, be managed using actions focused on restoration of rangeland health, with attention on improving upland soils, riparian and wetland areas, and water quality. Should this allotment be unable to meet all rangeland health standards, changes/modifications to livestock grazing (e.g., seasonal use restrictions, implementation of grazing management systems, or reduction in AUMs) should be placed on designated pastures until rangeland health standards are achieved and pastures can be re-opened with appropriate terms and conditions of use. Management practices which include targeted restoration efforts should be utilized to ensure Rangeland Health Standards are met.
2. The following measures for excluding or restricting numbers of livestock in sensitive wetland areas should be considered:
a. Relocation or redesign of fencing that restricts access to wetlands so it is less prone to washouts during flood events.
b. Where the above (a) is not feasible, major realignment of pasture fences should be accomplished to restrict access.
c. Complete closure of certain sensitive pastures may be necessary where (a) and (b) above are not feasible.
d. Environmentally sensitive and visually unobtrusive water sources, such as retention ponds, guzzlers, and stock troughs, should be developed in intermediate areas between natural wetlands in order to disperse livestock away from those resources. Retention ponds, when strategically located and sealed, could also help improve water quality by capturing salts which would be subject to periodic removal.
e. Limit livestock access to rapid or "flash" grazing for certain wetlands where appropriate.
f. Encourage allotment holders to graze those breeds of cattle that are less likely to frequent wetland areas for long periods of time and are likely to graze more evenly across the entire pasture.

Table B-10
Livestock Grazing (Grazing Management Practices)

g. Employ rotation of certain pastures, where appropriate, so that they are only grazed every 3, 5, or 10 years (for example), as appropriate, to allow healing of wetlands, re-growth of native vegetation, and return of key wildlife species.

h. Establish more experimental exclusion areas in wetlands and elsewhere across the monument and other grazed lands to determine the number of years necessary for healing of vegetation and re-establishment of native species. In the late 1980s I was involved in an effort on Federal land along the Central California Coast to protect an extremely significant, 100-acre archaeological site from cattle that were creating large, 4 foot deep dust wallows in the archaeological deposits along the edge of a small perennial stream. A 200-acre area, centered on the archaeological site, was fenced to exclude livestock. After several years, wetland trees and other native plants began to grow along the streambed where there had been none before. After 10 years, a small riparian woodland had emerged. In other parts of the exclusion area, perennial native grasses replaced exotic annual grasses of Mediterranean origin and Native shrubs and wildflowers emerged in abundance. Native wildlife, including endangered species, began to frequent the area in greater numbers.

Develop and implement a set of measures designed to address the types of damage to scientific resources and degradation of visitor experience described above. These might include permanent pasture closures, resting pastures for a period of years (pasture rotation), temporary closure of pastures upon observation of ongoing damage to resources until the situation can be remedied, construction of barriers or fences to protect individual resource sites, etc.

Although there have been improvements in vegetation treatment in recent years, damage to scientific resources is probably still occurring across the Monument as a result of this practice. While “chaining” has largely been replaced by other mechanical means of vegetation removal, there is still a potential for damage from track or wheel vehicles to damage sensitive resources exposed on the ground surface. There may also be damage caused by controlled burns, chemical treatment, and other methods. Consequently, in order to protect resources, scientific inventories should be performed prior to the actual vegetation treatment.

Recommendations

2. Reseed with native species wherever possible and phase out the introduction of non-natives. Note: Pinyon and Juniper are not invasive plants. They are natives and will simply repopulate areas where they have been found historically. Sufficient numbers of these plants should be retained in treatment areas to provide food and shelter for animals and shade for cattle, which they otherwise might seek in riparian areas.

We would like to see BLM use a lengthy menu of grazing arrangements, by which grazing can be designed to fit the specific land situation in each area of GSENM. Range science has given BLM many options, and all options should be deployed in GSENM to help reduce impacts and restore the native ecosystems. Long-term non-use or retirement of grazing privileges may be the best solution for some abused areas. Rest rotation or deferred rotation may be appropriate for others. Combining multiple allotments into a single system may be necessary for some areas. Changing the kind or class of livestock, or changing the time of use may help in some places.

BLM should provide a for diversity of grazing arrangements to reflect a diversity of values. Large areas should be allowed for uses other than grazing; collaborative grazing experiments would improve grazing management; and the time, timing, and intensity of grazing should vary with different years and areas.

The GSENM has the potential to become a model of excellence in resource management, but this will require new ways of thinking about and acting on grazing. Large areas of the monument should be reserved for uses other than grazing, and the time, timing, and intensity of grazing should vary with different years and areas. The GSENM should investigate and implement innovative grazing techniques, based on successful, proven programs elsewhere in the southwest and carefully monitored and continually improved through adaptive management.

BLM should provide a for diversity of grazing arrangements to restore health of the land using holistic planned grazing and other state of the art techniques.

BLM should provide a for diversity of grazing arrangements to reflect a diversity of values. Large areas should be allowed for uses other than grazing; collaborative grazing experiments would improve grazing management; and the time, timing, and intensity of grazing should vary with different years and areas.

Table B-10
Livestock Grazing (Grazing Management Practices)

4. Which areas should or should not be available for livestock grazing and why?

Major riparian areas, unique plant communities, and sites with erosion prone soils should be reviewed for possible closure, reduction of stocking, or altered timing of use.

5. What kinds of vegetation treatments do you believe are acceptable within the Monument? Why?

Should vegetation treatments, such as seedings, be used to influence forage allocated for livestock?

Seeding with native forage species is acceptable, provided it does not require major soil-disturbances. Seeding with non-native species is not desirable. Most problem weeds are intentional introductions that became a problem. As a general principle, it is my opinion that any vegetation treatment should first be studied on a sub-hectare scale before being applied at large scales.

6. How should BLM deal with past seedings that are no longer working well? What methods should be used? Are there particular areas that should be considered?

In my opinion, they should not be reseeded with exotic species because the failure of these seedings is a strong indicator that this practice is not sustainable in that location. First, any soil erosion problems should be addressed, possibly with ground covers, silt fences or straw checkerboard, or other strategies. Ideally native vegetation should be encouraged, even if the natives are not ideal forage species. The focus in such areas, like the failed Circle Cliffs seeding, should be on recovering resilient native vegetation cover.

Our families improvements with the water system, grass plantings, careful management of the eco-systems in the area have made it more productive not only for cattle, but also the many plants and wildlife that exist in this area, as early Kane County records indicate

Pastures should be rested from livestock grazing in all allotments that fail to meet standards or where no demonstrable progress toward compliance has occurred. I believe that this is the most meaningful remedy to achieve eventual compliance with the standards when they are chronically not being met. Another remedy may be for the permit to be revoked and transferred to a more cooperative and/or capable holder.

Maintenance agreements for range improvements are uniquely a responsibility under TGA that is only given to grazing permittees.

...collaborative grazing experiments would improve grazing management; and the time, timing, and intensity of grazing should vary with different years and areas.

Spring grazing that is detrimental to seed production and propagation of native spring grasses.

It's also true of course that overgrazing is very harmful. I'd like to see the new Grazing Plan be much more proactive and versatile in its approach, allowing BLM personnel and ranchers to utilize updated and scientific grazing and management practices - managing for the health of the range - including intense rotation, mob grazing, different, extended, and rotating on and off dates, reseeding, and more.

On one of your fact sheets you ask questions - "are more range improvements needed?" I think improvements are always good. Added stock water would allow for much better rotation.

"Vegetation treatments?" - I personally don't like herbicides, fungicides, and pesticides. Their use should be very limited. Reseeding would be really beneficial.

The winter ranges that I am acquainted with are in much better condition than they were in the past and they continue to improve. When my father ran cattle on the Upper Wahweap, the cattle were there during the summer and sometimes the winter months also. This was not beneficial for the range. Although the range seemed to maintain itself, it did not tend to improve much. In about 1970 the grazing schedule was changed and the Wahweap was grazed only during the winter months from November 1 to April. The permittees later agreed to change it to November 1 to March 15, because we all worked together in resolving this situation. Since changing the allotment grazing schedule to winter grazing only, the condition of the range has improved considerable and continues to improve. This is mainly due to not having the cattle on the range during the growing season.

I believe this protection includes reducing the impact through both temporary resting of large grazing allotments and permanent retirement of certain allotments.

If cattle are grazed on the monument, they need to be much better managed. They need cowboys (riders) who move them from place to place and make sure they are taken care of and not causing undue damage.

Table B-10
Livestock Grazing (Grazing Management Practices)

Unsustainable range improvements, ie: vegetation "treatments", water diversions, seeding, and chaining are not a viable solution for an environment that cannot and should not support cattle grazing.

Garfield County strongly supports adaptive management principles. Given the variety of soil types, terrain, precipitation patterns, and vegetation, it is unlikely that a single standard to be compared with reference areas is possible. Arbitrary standards based on public opinion should not be used. Any standards used in the EIS must be achievable and compatible with established rangeland principles. Arbitrary numbers selected by special interest groups should not be summarily accepted.

Redevelop all the springs for wildlife.

Monocultures of exotic grasses put the landscape at increased risk of undesirable state transitions by eliminating the resistance and resilience to disturbance that is naturally embedded in the complex, multi-species plant (and animal) communities that are native to the area. These are, after all, communities that have evolved and adapted over millennia to the physical environment of the region, including the major stressors (e.g., prolonged severe drought) that are predicted to increase in both intensity and frequency under nearly all climate change scenarios. Moreover, such rangeland treatments are clearly at odds with the stated mission of the GSENM, which is to promote, restore and maintain healthy landscapes dominated by native communities whenever possible. With the single exception of emergency measures to prevent the immediate loss of soil, there is simply no justification for replacing native vegetation with exotic species when the same areas can be restored with native species (although possibly at greater expense, including longer rest from grazing pressure). Miller's analysis (Ref. 5) of range condition on the GSENM indicates that "treated" sagebrush habitat has generally failed to provide the ecological improvements that were intended.

Each allotment on the Grand Staircase-Escalante Monument is unique. Don't set a strict blanket policy that doesn't allow you to work with the individual permit holders to manage their allotment in the best way. In some areas grazing needs to be increased. In others, water system and fence improvements need to be made. It would be beneficial to plant hardy drought resistant grasses in some places. Set this grazing plan so you are working with the individual permit holders to best manage the land.

I would like to see the places that need to be seeded on the ranges be able to be maintained as needed! Seedings are not only good for cattle but they are good for the wildlife too. Past seedings should be able to be reseeded if there is a need for it, we should make the ranges the best we can!

5. Seedings - should the BLM be in the business of cultivating non-native grasses for the benefit of livestock and local ranchers? Why is BLM using non-native species such as Forage kochia and Crested wheatgrass and montane cultivars of native grasses that are not adapted to desert environments? Will BLM implement management actions to improve the likelihood of success for restoration projects? Will BLM follow the existing land use plan regulations on chaining?

Perhaps one strategy to remedying issues is to revisit those who leases and evaluate situations case by case based on positive stewardship of the land and care for the cattle. Another strategy is to have trainings on Holistic Range Management and require that ranchers follow certain guidelines in order to keep their leases.

Do not allow development or improvements to artificially create an environment suitable for grazing, such as water development and vegetation treatments, especially when it compromises the overall health of the lands.

Range Treatments: For the past few years or so, my wife and I have been monitoring some range treatments off of highway 89, east of Kanab. This has been an interesting process and although neither of us are biologists, some question have come up.

The treatments in these cases resulted in new plants appearing in a fairly impressive manner. My questions are: Why wait only two years before allowing the cattle back in? It seems like a few more years would give the plants a much better chance to become established. Why let the cattle in when the plants are flowering? It would make more sense to let the plants produce mature seed heads.

Why use non-native seeds if you are trying to "restore" the ecosystem? Are the treated areas scientifically monitored afterward? Why not do some experimental grazing to see what works best? How about rest rotation systems?

Table B-10
Livestock Grazing (Grazing Management Practices)

Drought has been hard on some areas, reducing available grasses and encouraging the encroachment of pinions and junipers as well as non primary forage brushes into open chained areas. Options should be established for reclaiming the open areas and re establishing grass as a primary forage.
Lands lacking in water should also be considered available with a stipulation that grazing may only be authorized after installing water developments (e.g., wells, pipelines, spring development, and catchment reservoirs) or requiring water hauling—if feasible. If range improvements have not been maintained, and an area is no longer being used for grazing because of non-maintained range improvements—the area should still be made available for grazing if maintaining or constructing new improvements would allow for proper livestock grazing.
Prior to closing grazing areas to avoid conflicts with other uses, adjustments to season of use, forage utilization levels, grazing duration, and stocking levels shall first be considered. Areas could then be considered unavailable for grazing if conflicts are still significant. Many conflicts between livestock grazing and recreational use on the Escalante River could be minimized by changing the season of use for grazing to avoid high recreational use.
Grazing rotation schedules should be implemented in allotments where grazing occurs during the early spring growing season. Grazing rest should be implemented every other year in areas where grazing occurs during April-May on native rangeland. Use of current crested wheatgrass seedings should be used during any spring grazing to relieve pressure on native rangeland. These seedings can withstand grazing pressure better than native range and should be maintained to relieve grazing pressure during the critical growing season on native rangeland. Fencing should be installed, water developed, or other improvements allowed that would facilitate successful grazing rotation systems. Historically, season of use in the Boulder-Escalante area has been winter/early spring. This season should continue as it is least impacting to plants in that region.
Development of other range improvements (fences, water) should be considered to improve livestock distribution and reduce areas of high utilization on native range. Installing range improvements should be considered prior to closing, or restricting grazing use. Each allotment evaluation should consider the status of existing range improvements, and those improvements should be fixed or removed if no longer necessary. New improvements should be proposed to improve livestock distribution and utilization.
During periods of drought where livestock adjustments may be necessary, use of vacant allotments should be considered. Allotments that have been closed for more than three years should be allowed for use on an emergency basis by permittees affected by drought. If an allotment has been closed, but the vegetation is sufficient to allow grazing, this should be considered during periods of drought. Perhaps designating allotments that are currently in closed status as forage reserve” allotments could help during drought situations.
Rest areas of overgrazed allotments until native plant species have had a chance to recover reproductive vigor and/or can out-compete invasive and exotic species. If such recovery is not forthcoming, permanently retire the allotment.
Manage grazing to reflect actual moisture availability. If drought conditions exist rest areas until substantial plant recovery has occurred. If recovery does not occur, retire the allotment.
Prohibit planting of non-native forage species such as Crested Wheat Grass.
Eliminate water development as a management tool.
Provide for a diversity of grazing arrangements, including areas of long-term reduced use, NON-USE, CLOSED ALLOTMENTS, size-worthy reference areas, and experimental grazing methods.
Although domestic livestock grazing will continue within the Monument boundaries, non-native grass seedings and other such vegetation manipulations were not protected by the Monument creation. No new non-native grass seedings should be allowed within the Monument boundaries. Instead, existing non-native grass seedings should be restored back to native vegetation communities.
Grazing management can be improved by collaborative grazing experiments while also maintaining other values over time. Survival of native plants and animals will always be tenuous due to the fragile, arid climate, so whatever grazing is allowed should vary from year to year, from area to area, and from intense to mild, to allow nature to replenish the damage that cattle grazing causes.
Plan ideas: If there was an adequate amount of grass banks available for equal use by all grazers it would help take the pressure off a stressed range. These grass banks could come from some of the closed/retired ranges. And while this range is resting allow for increased infrastructure to take place on stressed range. (Reseeding of

Table B-10
Livestock Grazing (Grazing Management Practices)

previously overused range with drought hardy natives and grasses. New fencing if needed. Upgrading water systems to allow for better rotation.)

Allow and work side by side with innovative grazers to try new ideas on grazing practices. 1 Mob, short term grazing over several allotments. 2 Mob grazing on the Escalante River during the off season. 3 Rotational grazing within designated allotment with increased and upgraded water/fencing systems. 4 Allow for flexibility with grazing dates. 5 Have workshops on innovative grazing and ways to increase range fertility.

Fencing improvements, to break allotments into smaller sections for greater ease in management and ability to study different grazing practices. Also, increased fencing in areas where tourists have detrimental effects on cattle; ie, pushing them into slot canyons where they get stuck and can die.

Help existing permittees work with scientists to try different strategies for range improvements in different biomes.

Range improvements are a must and benefit all wildlife and livestock and reseeding for livestock also benefits other animals.

Changes in management that I would like to see include: Fencing to better rotate pastures and manage their use.

Changes in management that I would like to see include:

Reduction of thick stands of pinyon-juniper, leaving islands of cover for livestock and wildlife.

Seedings and management to create and maintain more useful forage for wildlife and livestock.

Changes in management that I would like to see include: Development of water in under-utilized areas to relieve pressure from more favored areas.

This plan needs to be a living document that can change the time, timing and intensity of livestock grazing to reduce the impact of exotic and invasive species. An established 80% threshold with the reference areas and seed banks is essential.

Archaic chaining that makes dust bowls and creates habitat for crested wheat is not a sustainable practice and should be reduced and eliminated in this plan. The denuded sagebrush needs long-term rest as well as changes in the timing and intensity of livestock grazing.

Right after the Russian Olives were removed the cows were kept off of the test area acres for 2 years, the improvement in the growth of natives in the marshy lands all around the headwaters was remarkable. A year later, the cows have returned and it is noticeably compromised. The cows cannot reasonably be contained to the permit area (even with good fences) and thus are on private property, SITLA land, BLM land, out in the road, out in the highway, etc.

I would like to see some improvements (e.g. watersheds, waterlines, spring development, pasture fences, Seedings brush and juniper treatments etc). With these types of improvement we would see range that could handle the cattle along with the wildlife, we would see native plants and grasses return the the area. With these things in mind we need to make sure that our agenda is not to ruin the land or the rancher. If the projects were put into order in a timely manner with trust in ranchers opinion, we would see huge improvements in the range land. Livestock is a huge part of our heritage and our livelihood. We can look back on many projects before all the regulations and see the good that it made on the range and the land.

In all rangeland improvement projects, the GSENM should try to use native plants and bunch grasses rather than non-native/ introduced plant species. Rather than risk the unintended consequences associated with introduced species, the ecology and probably the rangeland health of the monument would most benefit from reestablishing native plants. Rather than importing "native" plants from Idaho or Colorado, locally derived strains of native plants such be utilized wherever. In addition to rangeland improvement areas, reseeding burn areas after range fires would add to the demand for such local native plants. If buyers of local native seed were willing to commit to purchase substantial crops over a long period of time, farmers and ranchers living in communities bordering the monument might find new economic opportunities.

Enforce seasonal removal of cattle from allotments based on a scientific approach to setting the timing of grazing seasons. End the current practice of allowing a "grace period" where ranchers can continue grazing in violation of their established season.

Table B-10
Livestock Grazing (Grazing Management Practices)

Stop wasting taxpayer dollars on failing restoration projects. Restoration-seeding is expensive, and based on observations, more than half of the projects fail to meet their objective, often turning into wastelands inhabited largely by sagebrush.

All allotments that are not satisfactory or in poor condition must be assessed and the removal of all cattle grazing should be taken until they do become satisfactory. Areas of allotments that are suitable to be used need to be identified and the EIS needs to identify where all grazing range improvements are located including whether the fences are to insure that trespass is not occurring at present. Identify all areas inside of each allotment that are not suitable should be permanently removed from allotments similar to closing of an allotment that has been done in the past. The actual allotment boundaries should reflect the suitability considering the ability to ever contain vegetation needed for forage with only those areas that are specifically found to be suitable for grazing and that actually have vegetation present or possible. Large areas of slick rock sandstone and steep grades should be eliminated from the boundaries of the allotments so the actual amount of grazing acreage included in an allotment is realistic and do not include areas that are not possible or likely to be able to be grazed including the exclusion of areas that are not accessible to bring cattle in and out in a timely manner.

Cattle grazing should be taken until they do become satisfactory. Areas of allotments that are suitable to be used need to be identified and the EIS needs to identify where all grazing range improvements are located including whether the fences are to insure that trespass is not occurring at present. Identify all areas inside of each allotment that are not suitable should be permanently removed from allotments similar to closing of an allotment that has been done in the past. The actual allotment boundaries should reflect the suitability considering the ability to ever contain vegetation needed for forage with only those areas that are specifically found to be suitable for grazing and that actually have vegetation present or possible. Large areas of slick rock sandstone and steep grades should be eliminated from the boundaries of the allotments so the actual amount of grazing acreage included in an allotment is realistic and do not include areas that are not possible or likely to be able to be grazed including the exclusion of areas that are not accessible to bring cattle in and out in a timely manner.

The timing and season of use for cattle grazing should be made more uniform for areas of the GSENM such as making all allotments in the eastern Burr Trail Circle Cliffs on the East side of the Escalante conform so they are more or less grazed uniformly and at the same times. This will make it more easy for the public to avoid the cattle grazing and for those who need to monitor the grazing such as environmental, scientific, and BLM staff to do so.

Old treatment areas that have failed or contain non native plants need to be phased out and re-treated with native plants that would scientifically have been determined to have been there except for the presence of cattle grazing.

One example of this is the issue of water management. Riparian areas are always at risk for abuse and over-use. Because of my involvement in the ranching workshops, I have become involved in constructing several water harvesting and storage sites. These are far from riparian areas. Because I now have spread my water locations, my cattle graze my pastures better. My cattle do not trample fragile and scarce riparian sites. Also, the benefit to wildlife is immense and immeasurable.

Yes. Please consider guidelines such as Alan Savory's rangeland health method referred to as "Desertification" - this method, if used as a guideline and/or pilot project would incorporate rotating the livestock more often through allotments per his method. This method relies on livestock to restore landscapes that once were grasses and now are going to deserts and drought. But with this method there would be more attention, rotation, and monitoring necessary. Thus more work for the cowboys and the range staff. Thus more resources put toward the effort. Still it appears to be a new idea, based on old principal of natural wild large animal grazing patterns. This method would guide the consideration toward the amount of forage for best practices. Try it!

Identify the vegetative manipulations that are appropriate for NCL units. Chaining, spiking (chemical treatment to kill native and non-native vegetation), disk harrows, clear cutting and other vegetative manipulations currently employed on BLM lands may not be suitable for NCLS units. The Grazing Management Plan must evaluate all manipulations to assess their environmental impacts and identify any manipulations that are suitable for NCL units.

Use only locally bred, native grasses for reseeded in the GSENM. The GSENM maintains a list of "native grasses" that includes Secar Snake River Wheatgrass (2.0 lbs/acre); Critana Thickspike Wheatgrass (1.4 lbs/acre); Arriba Western Wheatgrass (3.0 lbs/acre); Paloma Indian Ricegrass (1.8 lbs/acre); Sanddrop seed (2.0 lbs/acre); Needle and Thread (0.4 lbs/acre); and Antelope Bitterbrush (0.2 lbs/acre). It is interesting to note that those species native to the GSENM include the lowest planting rates.

Table B-10
Livestock Grazing (Grazing Management Practices)

Our research indicates that the first two species were cultivars specifically developed for Montana and the Northern Great Plains. The NRCS bulletins on these species do not recommend the use of Secar or Critana for the GSENM. And though the three wheatgrasses and the ricegrass are technically "native", they were bred from seed stock grown in different areas and climates of the western U.S. For greater effectiveness, suitability and hardiness, Partners encourages the use of desert-adapted cultivars of native species for seeding, or native seed from the general area in and the Monument, or ideally, hire local residents to grow native grasses with seeds bred from a local seed source. Finally, to provide a reasonable opportunity for the establishment of new grasses, Partners recommends that newly reseeded areas should not be grazed for at least 2 grazing seasons or more, depending upon winter and summer moisture.

Coordination between the USFS and GSENM for timing of Turn-In and Take-off for allotments or pastures. This is a critical issue. We understand that in cases when the USFS requires a rancher to remove his/her livestock from USFS land earlier than planned, the GSENM staff will often allow that rancher to move his/her cattle onto the Monument prior to the GSENM established turn-in date. If this is in fact the case, this issue must be formally addressed between the two agencies and in the Grazing Management Plan.

Maintenance agreements for range improvements are uniquely a responsibility under TGA that is only given to grazing permittees.

Maintenance agreements for range improvements are uniquely a responsibility under TGA that is only given to grazing permittees. These efforts and background information should be placed into the DEIS to explain the benefits and scientific support of grazing in this planning, allowing for public review.

I have been on the ground and seen the current range improvements completed and those in the planning process within the GSENM; which are impressive with positive outcomes.

When range is good with extra forage extended time or more stock or different timing.

Burns and seeding and water helps wildlife also to help all.

...the time, timing, and intensity of grazing should vary with different years and areas.

Water developments are critical for improving grazing management. Every water development that enhances grazing distribution and management should be given priority clearance for implementation. Scientifically, water developments will improve grazing management. Water developments should be given special clearance to utilize the necessary tools and equipment for proper installation, just like paleontology scientists are given special clearance to use jackhammers to conduct scientific research. Additionally, water developments benefit wildlife and improve biodiversity.

Three fundamental principles of the Utah Grazing Improvement Program are time (duration/length of grazing use in an area), timing (when, what season, an area is grazed), and intensity (how much get eaten by livestock while they are in an area). Time refers to how long animals stay in a specific pasture or grazing area. This principle is about creating appropriate rest periods for pastures by having shorter grazing periods, and reducing the frequency at which individual plants are grazed during rapid growth. Timing refers to when (what stage of plant growth) livestock graze in a specific area. For example, a change in timing might involve taking livestock to allotments earlier or later during the season. Intensity refers to how heavily the area gets grazed, resting a pasture to almost everything being eaten.

Used together these three principles afford the foundation for improving the sustainability of grazing. Grazing management could be changed to include use of pastures at different times of year, rest of pastures, or other adjustments to grazing patterns that contribute to ecological, social, and economic sustainability. A detail of these key principles and other grazing management strategies are outlined at <http://www.ag.utah.gov/documents/GIPgrazingprinciples.pdf>

In addition, vital infrastructures that facilitate grazing management are a necessary component to proper grazing management. Fences, water developments such as springs, ponds, pipelines, and troughs need to be installed and maintained to advance ongoing grazing management. This allows for more flexible, resource-condition based grazing management decisions. These grazing management tools are essential for proper grazing management and should be maintained in the new plan.

Table B-10
Livestock Grazing (Grazing Management Practices)

Over time, habitat improvement has been seen in some important places. For example in the comparison of photographs taken of the Dry Fork of Coyote Wash between 1970 and today, more riparian vegetation can be seen. BLM records don't explain exactly what changes were made in management and what caused this improvement. The reported grazing use in this stream area actually increased in the allotments involved. The problem for the public and BLM is that we don't know how to repeat successful remedies. Without a more transparent evidence based system, we are unable to apply the lessons learned to other problem allotments. The Conservation Science Alternative seeks to learn from this past.

Planning criteria- Description of potential management actions

Further, the plan needs to provide management protocols that implement practices that systematically evaluate each grazing allotment and apply the required actions based on measurable habitat conditions described in the Goals and Objectives portion of the plan.

Planning Issues

"Guidelines and criteria for future allotment-specific adjustments, such as rotational grazing plans which affect the livestock use."

This issue must be broadened to include the development of requirements and limitations that will adjust stocking levels, periods of grazing use, and grazing sequences in a manner that is consistent with rangeland health standards and that considers economic and soils goals.

Planning Issues

"Management of existing rangeland improvement seedings"

Current management to re-treat past vegetation treatments and to new areas in the Monument is in sharp contrast with the legal obligations to protect the biological values in the Monument. Appendix D describes in detail the nature of this issue. The current MMP has 18 separate decisions regarding non-native plants and seedings (see Appendix E). The scoping notice itself says that the focus of this plan will only be determining capability and suitability of lands for grazing. Since non-native treatments solely to provide forage for livestock are expressly prohibited in the plan (GSENM MMP NAT-5), management of existing rangeland improvement seedings should promote ecological restoration to natural plant communities for treated areas.

In a review paper that considered grazing systems, grazing intensity and season of use, Holechek et al (1998) determined that[59], "financial returns from livestock production, trend in ecological condition, forage production, watershed status and soil stability are all closely associated with grazing intensity." They found that grazing systems such as rest-rotation had limited or no benefit in arid systems. Citing long-term studies in Arizona, they documented that after 12 years of rest-rotation management compared to continuous grazing, neither forage plant densities nor forage plant production differed between the treatments. Grazing intensity employed was 30 - 35% use with occasional high use of 50% or more. "Rest and deferment were not sufficient to overcome the effects of periodic heavy use on primary forage plants when rest-rotation grazing was applied on big sagebrush range in northern Nevada." In an Arizona study comparing winter-spring grazing with summer-fall rest to continuous grazing, the rotation scheme was inferior to the year-long system from the standpoint of perennial grass density and production. Perennial grass production was closely associated with the degree of use and was highest where grazing use was lowest. They cited a Vale, Oregon study, lasting over 20 years in which moderate grazing intensity and rotational grazing showed no advantage over season-long grazing in improving range condition or forage production. "The key factor in range improvement appeared to be the reductions in grazing intensities that were applied when the project was initiated."

Holechek et al (1999) in a review of the "classic" range studies, which are the long-term stocking rate and grazing system studies that provided much of the scientific foundation for modern range management showed that light use is closer to sustainable use, while heavy use is not[60]. They concluded that relying on additional water developments, fences and grazing systems will not alleviate the problem of overstocking. Results from 18 western grazing system studies by Van Poollen et al (1979)[61] found that adjustment of livestock numbers, or stocking intensity was more important than implementing grazing systems to improve herbage production. Holechek et al (2000)[62] also showed that the various claims made by advocates of short-duration or time-controlled grazing

Table B-10
Livestock Grazing (Grazing Management Practices)

were not proven.

A discussion of rest-rotation is found in Clary and Webster's General Technical Report titled "Managing Grazing of Riparian Areas in the Intermountain Region." [63] They summarized studies showing that significant increases in forage production occurred with decreased intensities of grazing. The article described the improvements found in reducing grazing from heavy, to moderate and then to light grazing. Grazing with utilization above 50% was described as heavy, moderate was 30 - 50% and <25-30% was called light grazing in most of these studies. Clary and Webster's study concluded that "managers should place more emphasis on proper stocking intensity and less on grazing system implementation. The concentrated use of grazing pastures is not compensated for during rest years if grazing use is heavy. In summary, although grazing systems have great intuitive appeal, they are apparently of less consequence than once thought. In fact as long as good management is practiced so that there is control of livestock distribution and grazing intensity, the specific grazing system employed may not be significant."

Briske et al (2008) analyzed published results from peer reviewed studies to evaluate the relative performance of continuous and rotational grazing systems on plant production and animal performance [64]. They found that plant production (87% of cases) and animal production (92% of cases) were equal to or greater in continuous grazing when compared to rotational grazing systems. One reason for the lack of superior performance of these rotational systems, which incorporate rest or deferment to promote plant growth and recovery from grazing, is that the periods of rest or deferment occur during times of reduced moisture, resulting in no net benefit to the plants. Another reason is the expectation that rotational grazing is some sort of "silver bullet" in which it is assumed that grazing systems possess some inherent characteristics that enable them to compensate for ineffective management. "These results further corroborate the long-standing conclusions that stocking rate and weather variation account for the majority of variability associated with plant and animal production on rangelands."

[59] Holechek, Jerry L., Hilton de Souza Gomes, Francisco Molinar and Dee Galt. 1998. Grazing intensity: critique and approach. *Rangelands* 20(5):15-18.

[60] Holechek, Jerry L., Hilton Gomez, Francisco Molinar and Dee Galt. 1999. Grazing studies: what we've learned. *Rangelands* 21(2):12-16

[61] Van Poollen, H.W. and J. R. Lacey. 1979. Herbage response to grazing systems and stocking intensities. *Journal of Range Management* 32:250-253.

[62] Holechek, Jerry L., Hilton Gomez, Francisco Molinar, Dee Galt and Raul Valdez. 2000. Short-duration grazing: The facts in 1999. *Rangelands* 22(1):18-22.

[63] Clary, Warren P and Bert F. Webster. 1989. Managing Grazing of Riparian Areas in the Intermountain Region. USDA Forest Service GTR-INT-263.

[64] D. D. Briske, J. D. Derner, J. R. Brown, S. D. Fuhlendorf, W. R. Teague, K. M. Havstad, R. L. Gillen, A. J. Ash, and W. D. Willms. 2008. Rotational grazing on rangelands: reconciliation of perception and experimental evidence. *Rangeland Ecology and Management* 61:3-17.

Over-utilization and lack of rest are common across BLM and Forest Service land in the west. Agencies refer to deferment as "rest", but areas are still grazed each year, while the rest periods may occur in months with little precipitation or plant growth potential due to dry conditions.

Hormay and Talbot (1961) originally developed guidance for rest-rotation grazing based on intensive field studies [72]. They stated, "While the idea of incorporating rest in grazing management is not new, the concept of longer rest periods than have heretofore been recommended, at least for mountain bunchgrass ranges, and of closer correlation of resting and grazing with plant growth requirements, is new." They found that even with the rest-rotation system, some areas were more heavily used than others, re-growth was minimal on clipped plants after the seed-in-milk phase and clipping during active growth reduced total herbage yield during that year. A single season of clipping reduced basal area of forbs and grasses the next year. Four consecutive seasons of clipping at the seed-in-milk phase reduced basal area of Idaho fescue 80%, bottlebrush squirreltail 62%, longspur lupine 91% and wooly wyethia 16%. Four years' rest after four years' clipping resulted in little or no recovery of Idaho fescue, wooly wyethia and longspur lupine. They also found that cool-season grasses such as Idaho fescue varied in production by a factor of three due to changes in annual precipitation, while the beginning of growth varied by up

Table B-10
Livestock Grazing (Grazing Management Practices)

to a month with similar variations on time to flowering and seed ripening. Based on this research, the basic principle was to require adequate years of rest to allow the native plants to recover their vigor before again being grazed. They also recommended that it is important to include adequate monitoring of each grazed unit or pasture to determine if these rest periods are sufficient to maintain or restore production.

Native cool-season perennial bunchgrasses can be very sensitive to defoliation and growing season use. Anderson (1991) stated in regards to bluebunch wheatgrass[73], "Effects of growing season defoliation injury are well documented: basal area, stem numbers and both root and forage yields are reduced and mortality can be high.... Defoliation to very short stubble heights during the boot stage has been reported to essentially eliminate plants within as few as three years. ... Vigor recovery has been found to require most of a decade, even with complete protection from grazing." The author went on to describe experiments in which a single clipping of the grass during the growing season produced 43% less herbage and 95% fewer flower stalks the following year than unclipped plants. He cited a deferred rotation system in eastern Oregon, in which it was reported that bluebunch wheatgrass could not be maintained at 30 - 40% use in the boot stage (early June). A one time removal of 50% of the shoot system during active growth may require six years' rest even in an area with 17" precipitation. "The belief that range improvement will occur after one or two years of rest following a single season of more than 'light' use during the growing season is erroneous." Mueggler (1975) also determined that Idaho fescue of moderately low vigor required 3 years of rest for recovery while bluebunch wheatgrass and Idaho fescue in very low vigor could require 8 years and 6 years of rest, respectively, for recovery[74].

Eckert and Spencer (1986, 1987) concluded that no management system appears to be satisfactory if that system results in overgrazing during the growing season in order to defer or rest vegetation in other grazing periods[75, 76]. They concluded that the amount of deferment and rest provided by the 3 pasture system was not sufficient to overcome the effects of periodic overuse. They recommended utilization levels that allow plants of desirable species to respond to proper management by adjusting stocking rates to forage production levels. In studies of long-term rest at Idaho National Engineering Laboratory, the recovery rate of native perennial grasses in sagebrush communities was slow, but real, progressing from 0.28% to 5.8% over 25 years[77], while non-natives such as cheatgrass had an inverse relationship to native perennial grasses[78].

[72] Hormay, A. L. and M. W. Talbot. 1961. Rest-rotation Grazing - A New Management System for Perennial Bunchgrass Ranges. USDA Forest Service Production Research Report No. 51.

[73] Anderson, Loren D. 1991. Bluebunch wheatgrass defoliation, effects and recovery - A Review. BLM Technical Bulletin 91- 2, Bureau of Land Management, Idaho State Office.

[74] Mueggler, W.F. 1975. Rate and pattern of vigor recovery in Idaho fescue and Bluebunch wheatgrass. *Journal of Range Management* 28(3):198-204.

[75] Eckert Jr., Richard E. and John S. Spencer. 1986. Vegetation response on allotments grazed under rest-rotation management. *Journal of Range Management* 39(2):166-174.

[76] Eckert Jr., Richard E. and John S. Spencer. 1987. Growth and reproduction of grasses heavily grazed under rest-rotation management. *Journal of Range Management* 40(2):156-159

[77] Anderson, Jay E. and Karl L. Holte. 1981. Vegetation development over 25 years without grazing on sagebrush dominated rangelands in southeastern Idaho. *Journal of Range Management* 34(1):25-29

[78] Anderson, Jay E. and Richard S. Inouye. 2001. Landscape-scale changes in plant species abundance and biodiversity of a sagebrush steppe over 45 years. *Ecological Monographs* 71(4):531-556

Holechek et al (2001)[79] indicated that, depending on topography, areas of severe degradation, or "sacrifice areas" occur around water sources including water developments which can extend from 1 mile to several miles from water sources. Holechek et al (2004)[80] noted the effects of water developments on forage production and native bunchgrasses, including that nearly 100% of forage is used around water developments and this decreases with increasing distance from water. In studies from New Mexico, under moderate grazing intensities, forage production was most severely reduced in the zone 0.5 miles from water. They noted that "perhaps the greatest problem with additional water developments is degradation of rangeland in high ecological condition." They noted further that "Regrettably we have observed the degradation of many publicly owned, high condition rangelands when permanent water developments were installed."

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In a comprehensive study of the effect of water developments on plant communities in the Little Missouri National Grassland, Rinehart and Zimmerman (2001)[81] analyzed the effects of water developments for livestock on total species, native bunchgrasses, decreasers, increasers, perennials, native species, vegetation structure, and grass production (Table 8).

[Table 8. Plant community structure v. distance from water]

We conducted measurements of habitat structure for sage grouse on 1000 foot transects leading away from four new water troughs in the Duck Creek allotment in Rich County, Utah, three years after the installation of the troughs. Canopy cover of shrubs, forbs and grasses and ground cover of forbs, grasses and bare soil were measured. The data is shown in Figure 3. Shrub canopy ranged from 25.2 to 37.7%, forb + grass canopy ranged from 6.6 to 7.9%, bare soil ranged from 31.1 to 38.9% and grass + forb ground cover ranged from 3 to 7.1%. At a long term ungrazed location in the adjacent Highway 30 right of way measured in 2012, cover found was 45% shrub canopy, 36% grass + forb canopy, and bare soil was 14%. At a second big sagebrush ungrazed site in the Highway right of way, in October 2008, shrub canopy was 48%, grass + forb canopy was 60%, and bare soil was 2%. Clearly, the presence of troughs has affected plant cover, soil cover and habitat structure negatively and severely. The 1000 foot transects did not reach the full extent of the influence of the troughs, but provides validation for the information in the Holechek reference above indicating that damage from trough influence indeed covers large areas and as, Holechek et al (2001) said, up to a mile from the water source.

[Figure 3. Average Habitat Characteristics within 1,000 feet of New Troughs-Percent Canopy or Ground Cover.]

[79] Holechek, Jerry L., Rex D. Pieper and Carlton H. Herbel. 2001. Range Management: Principles and Practices, Fourth Edition. Prentice-Hall, New Jersey. 587p

[80] Holechek, J.L., R.D. Pieper and C. Herbel. 2004. Range Management Principles and Practices – Fifth Edition. Pearson- Prentice-Hall, New Jersey. 607p

[81] Rinehart, S.M. and A.F. Zimmerman. 2001. The Bullseye Study: A Quantitative and Qualitative Assessment of Vegetation Community Characteristics Observed as a Function of Distance from Water on the Little Missouri National Grassland, Western North Dakota. 34p. U.S. Forest Service Region I, Missoula, Montana.

Grazing Systems - The science shows that grazing systems do not compensate for overstocking, therefore stocking rate is the key factor in grazing management, along with active management of daily herding of livestock by permittees. When utilization levels are reached, livestock should be moved or removed from the allotment or pasture.

b. Riparian Grazing - Research shows that cattle linger in or near streams, springs and water sources, particularly in lands <10% slope. Therefore, to allow riparian areas to filter sediment and provide habitat, utilization levels should remain below 25% in the riparian area and its floodplain and this should be accomplished by herding or moving livestock to the next pasture.

c. Rest - Deferment is not rest. To maintain productivity and vigor of sensitive native plants, particularly bunchgrasses, after grazing, the pasture or allotment should be rested for sufficient years to recover both production and vigor.

d. Water Developments - Water developments generate widespread damage up to a mile or more from the development. Studies show that species number and cover increase with increasing distance from the development. The ecosystem degradation from water developments is so severe that they should not be a management tool in the Monument.

If range health is not adequate than logically range improvements should be allowed, reseeding, P.J. removal, etc.

It is my understanding that BLM plans to do away with the crested wheat seeding areas on Vermillion Allotment. Even after over forty years of use, the crested wheat areas are the most productive areas on the allotment. As the owner of this allotment, I object and protest any removal of the crested wheat areas.

I would like to recommend more seeding and improvement of vegetation for livestock and wildlife. There are many areas within the boundaries of the allotment which are overgrown by sagebrush. These areas, where grass still exists, would improve if Spike were used to control the sagebrush encroachment.

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Whatever treatment or planting that is done on this allotment going forward requires proper preparation of the soil before the seeds are planted. Common sense dictates that the soil must be disturbed enough by disking, chaining, plowing or the like to hold and nurture the seed.
Whatever treatment or planting that is done on this allotment going forward requires proper preparation of the soil before the seeds are planted. Common sense dictates that the soil must be disturbed enough by disking, chaining, plowing or the like to hold and nurture the seed.
RANGE REHABILITATION: A number of allotments include chaining and seedings that were done in the 1960s and 1970s. A portion of them have deteriorated and need to be treated to restore productivity. I'm sure there is differing opinions on what species should be planted. My recommendation is to replant them with drought resistant species proven to be successful in the locale. If that is not an option then at least native species could be planted.
I would like to see some management improvements as in rotational grazing, fence, and rangeland improvements.
Grazers improve the land by reseeding and water project improvements.
I want you to allow us to maintain our equity, both finical and sweat equity in these permits. By being allowed to treat our existing seedings and put them back to the shape they were in when this was made a National Monument.
My concern regarding the issue of grazing on the monument is that despite repeated requests, very little range improvement has been allowed under GSENM management.
I know that the BLM is under a lot of pressure from environmental groups to end grazing. My solution to the problem is to continually improve these allotments, so that these groups have nothing to complain about. We can do this by reseeding, thinning, water improvements, etc.
BLM should consider the benefits to the landscape offered by rotational grazing. Deseret Land and Livestock has successfully been managing under these guidelines for about 3 decades. There is currently work taking place on public lands in the 3 creeks area in Rich County. Visit this link for more info. https://www.youtube.com/watch?v=_FEG2Q256yg
I know the Grand Staircase is a more arid area but rotational grazing seems to use cattle in a way that compliments the landscape and as a result cattle grazing becomes yet another tool that can be used to improve the range.
Make sure projects include plans for reseeding using native grasses and use cattle grazing to stimulate the plants and control invasive weeds
Maintenance agreements for range improvements are uniquely a responsibility under TGA that is only given to grazing permittees
Treatments such as tree mastication or chaining followed by seeding, sagebrush mowing followed by drill seeding, or inter-seeding sagebrush should be considered.
Standardized protocol for use of Grass Banks or Forage Reserve. Partners has learned decisions over when to allow use on the allotments/pastures set aside for Grass Banks are made by local range staff. If that is the case, we believe a protocol should be developed that requires agreement between the Grazing Division Chief and the Monument Manager. Such a protocol was developed in the March 15, 1999, "Escalante Management Framework Plan Approved Amendment and Decision Record." We believe this protocol would be a good basis for an updated revision.
The Partners support the use of more grass banks, if the opportunity presents itself, from either buyouts or other means. They help protect the permittees after experiencing fires or droughts.

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Grazing allotments need to be retired on the basis of the largest number of livestock in the areas determined to be in the most sensitive areas.

The goal of GSENM and GCNRA is to reduce livestock grazing numbers (AUMs) to the point it is no longer viable.

Then Grand Canyon Trust will acquire the allotments and retire them from usage. The end run is to abolish livestock grazing all together.

Given the problems with drought, lack of adequate vegetation (eg. Need large land mass to provide adequate nutrition). It does not seem cattle on these lands is sustainable in the numbers currently allotted. I feel that cattle is best on areas that can support them adequately without adversely impacting the environment or at detriment to the environment.

Other areas of our country are better suited to this endeavor and we should encourage/ support livestock grazing in these areas to maximize the sustainability of grazing operations.

That said, the grazing load, measured in AUMs has consistently been over-allotted.

The BLM should consider variations in the shortening grazing seasons and limiting AUMs within the existing permits to ease the grazing load on these permitted areas. Where the permit holder wishes to abandon their permits, these permits should be retired and not re-issued. Where the permit holder wishes to under-utilize the permitted season or AUMs, the permit holder should be allowed to do so without revocation of the permit. There are many local ranchers that have a desire to improve the range in this manner. They should be enabled to do so.

Could you explain the utility of determining an "area wide amount of forage" when forage is allocated at the allotment level? SO lets say you go out and clip and determine there are 53 billion AUM's available "areawide".That information is totally worthless unless it is allotment by allotment.

I feel that livestock grazing on the Grand Staircase-Escalante National Monument should remain at the same levels it is now, and that all areas being grazed now should be grazed in the future

If 96 percent of the lands within GSENM are still being used for livestock grazing, it is too much. We ask BLM to exclude domestic livestock from more of the monument, with a priority on areas where the lands and waters have been abused, such as impaired riparian habitat, and places where visitors most often go for wildland recreation.

As an outdoor enthusiast and a biology teacher, I feel strongly that the BLM should reduce the number of cattle, and the amount of land that the cattle are grazing on.

Lands determined not available for livestock grazing or permits voluntarily relinquished along with the numbers and class of livestock associated with that permit will be permanently removed from future livestock grazing. The Land Use Plan will map and describe these lands with language appropriate to maintaining them livestock-free going forward and provide a mechanism to include lands with waived permits as they occur.

Only preferred species should be used in the forage base calculation, otherwise overuse of these more sensitive species (decreasers) will occur before the less preferred species (increasers) are used. This can have the effect of decreasing productivity of these species or eliminating them in the extreme case. In order to avoid overutilization and overstocking, the forage amount to be used for livestock should be determined based on below normal precipitation years and the preferred species.

As described above, the Soil Survey (Table 5) provides the potential vegetation production for above normal, normal and below normal precipitation years. These values vary over a wide range from dry to wet years. The Soil Survey also described, as we noted above, that current production and ground cover in some areas of the Monument are only about one-fourth of potential. This means we cannot rely on the Soil Survey or Ecological Site Descriptions for determining current forage capacity for lands determined to be available for livestock grazing. We assume here that current Ecological Site Inventories have been completed for the Monument that will provide current production by species so that the total forage base can be calculated. The precipitation analysis above shows that more than half the years are below normal, therefore, ESI data should be adjusted to reflect below normal precipitation years for determining pounds/acre of available forage. In the event no ESI data is available, then, based on the Soil Survey, we recommend use of one-fourth the preferred forage listed in the Soil Survey (Table 5) or ESD for the site. This is based on the Soil Survey statement that ground cover and vegetation is reduced to one-fourth in some areas. Until a current Ecological Site Inventory can be carried out for this determination, this is a rational approach that is protective of the native plant and soil community.

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Galt et al. (2000) and Holechek et al. (2010) provided recommendations for establishing stocking rates that recognize the constraints of topography, water availability and forage production on livestock stocking rates, including basing capacity for cattle on slopes and distance to water, reducing grazing capacity on steeper slopes and further from water. These are also adopted in the NRCS National Range and Pasture Handbook as cited above. They also recommend grazing capacity surveys at no more than 10 year intervals. Grazing capacity on available lands should be reduced by the factors in Table 7 to reflect distance to water. This reduces the risk of excessive grazing nearer water sources. This calculation of current available preferred forage is then adjusted by: (1) the forage consumption rates of livestock and; (2) utilization percent to determine the stocking rate.

[Table 7. Factors for adjusting stocking rates based on distance to water]

The current weights of cattle and sheep with their forage consumption rates must be used. We have reviewed USDA statistics and other sources to determine the current weights of cow/calf pairs and domestic sheep[43]. The NRCS Range and Pasture Handbook[44] uses 3% of body weight/day as air dry forage consumption. Applying this to the current weight of 1,680 pounds for a cow/calf pair, the daily forage consumption would be 50.4 lbs of air-dry forage per day, or for a month (30.4 days), 1532 pounds of forage per AUM. Domestic sheep ewe/lamb pair weight was determined to be 275 lbs, which at 3% of body weight consumed as air dry forage each day, would result in consumption of 276 lb/month for each ewe lamb pair. If five ewe/lamb pairs are considered an AUM for sheep, then the monthly rate of forage consumption for each AUM of sheep would be 1380 lbs/month. These values should be used as the best available data for current livestock forage consumption rates.

[43] Carter, J. 2008. Updating the Animal Unit Month. Available for download at:
<https://app.box.com/s/95f2ff0a89104d164ab5>

[44] USDA Natural Resources Conservation Service. 2003. National Range and Pasture Handbook Revision 1, Chapter 6. Grazing Lands Technology Institute.

A series of publications from Texas A&M[55, 56, 57] base proper utilization on the "take half/leave half" principle. Half of the forage produced each year is left for soil protection and future forage production. Twenty-five percent is consumed by insects, wildlife, trampling and decomposition. The remaining 25% may be allocated to livestock. The USDA Natural Resources Conservation Service bases its forage utilization recommendations on two principles[58]. First, based on Crider (1955) they recognize that "healthy plant roots are essential for soil stability and erosion control". Second, "When wildlife are on the site, allocate feed to them first." Livestock forage is then allocated based on preference by livestock grazing the area, with 35% use of preferred plant species, 25% use of desirable plant species and 15% use of undesirable species. The median value of 25% is applied in the example used.

Based on this research, we recommend a utilization rate of 25% applied to preferred plant species and no grazing during drought periods.

[55] McGinty, Allan. 2000. Reference Guide for Texas Ranchers. Agrilife Extension, Texas A&M University.

[56] White, L.D. and A. McGinty. 1997. Stocking rate decisions: Key to successful ranching. Texas A & M Res. Ext. Serv. Publ. 13-5036. <http://texnat.tamu.edu/library/publications/stocking-rate-decisions/>

[57] White, L.D. and T.R. Troxel. 1989. Balancing Forage Demand with Forage Supply. Agrilife Extension, Texas A&M University. Publication B-1606.

[58] USDA Natural Resources Conservation Service. 1997. National Range and Pasture Handbook. Chapter 5.

7. As you know, our area is susceptible to periods of drought. Do you have ideas or methods that would help BLM manage rangelands and reduce the fluctuation in your herds? Should permitted allocations be higher or lower?

Since the early 2000's the southwest has been experiencing a period of warm drought, only occasionally punctuated by wet years. General circulation models converge on projections of increasing warming in the future; there is little consensus on projections of precipitation patterns, but because warmer temperatures drive evapotranspiration, droughtier conditions are a reasonable expectation. It is my opinion that GSENM should allocate to reflect this reality, rather than to reflect wetter conditions of the past. Any decision about allocation should be documented and explicitly reference how recent climate trends and future projections influenced the decision.

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Livestock Grazing (Forage Availability and Allocation)

Personally, I would like to see all grazing eliminated on the NM but I know that would have too great of an impact on the local communities and ranchers. The next option is to get the livestock numbers to a sustainable level and remove them from the prime stream bottoms, prime recreation and wildlife use areas/sites, and areas that are more sensitive to grazing.

Close some allotments or pastures when a permittee no longer wants to graze them or when they have become degraded.

Exclude or mitigate grazing in high recreation areas, sensitive wildlife areas, areas where biological soil crust is degraded, and areas where sensitive, endangered, endemic, or rare species are present.

UCA is supportive of any action to sustain production and yield of forage for the benefit of both livestock and wildlife.

Grazing relinquishments, though possible, should be a last resort and must be supported by credible scientific information; the basis of which is found to be justified by both state range conservationists and the local affected county representatives. When adjustments in season of use could produce the same results as AUM reductions, BLM's conscientious coordination with permittees using some administrative flexibility is vital to ensure that long term management goals can be met, while not financially impacting grazers.

Justification of any action is paramount if consideration in this plan is given to AUM reduction and in any way reduces operators' carrying capacity or displaces grazing permits. Regulation will require full disclosure, and should be supplied and placed into the DEIS to explain the purpose of the taking as well as a plan for compensation to those permittees affected. (See footnote #1)

Footnote:

1. The following information is from the transcripts of the Congressional Committee Hearings during the creation of the Taylor Grazing Act; Secretary of the Interior, Harold Ickes, during the Taylor Grazing Act Senate Hearings had stated: "We have no intention to...drive stockmen off their ranges or deprive them of rights to which they are entitled either under State laws or by customary usage.

(Report No. 1182; Calendar No. 1258; published May 26, 1934.) However, sometime before June 12, the Administration intervened with rejection of the language by Secretary Ickes and a threatened veto by President Franklin D. Roosevelt.

Senator Patrick McCarran of Nevada offered replacement language with intentional ambiguity to replace Section 3: "[N]o permittee complying with the rules and regulations laid down by the Secretary of the Interior shall be denied the renewal of such permit, if such denial will impair the value of the grazing unit of the permittee, when such unit is security for any bona fide loan."

The new wording effectively meant that grazing preferences and authorized use would exist in perpetuity as long as the ranch unit as a whole was pledged security on a loan. In a colloquy on the Senate floor to clarify the intent of the McCarran provision on June 12, 1934, it was stated:

Mr. McCarran: "[O]ne holding a farm or a homestead who has heretofore depended upon the public range as a part of an integral unit of which his homestead may have been a minor part, shall have the privilege of going to a loaning agency and asking permission to borrow, and having recognition of the fact that he has * upon the public domain which shall not be interfered with during the term of the loan."

Mr. Mahoney: "If I understand the Senator correctly, his purpose is merely to guarantee that the rights to grazing privileges which are conveyed by the bill shall be so definite that they may be recognized as security when the holder seeks a loan."

Mr. McCarran: "That is exactly correct."

In considering forage currently available on an area-wide basis for livestock grazing, and for future anticipated needs, a balanced impact analysis requires historic data spanning from at least 40 years to the present of forage availability and numbers of livestock permitted. Good range management demands that in order to keep up production, with the exception of variations in precipitation and weather conditions, forage vegetation needs to be grazed or harvested to stimulate reproduction and to keep the plants healthy and palatable for consumption by wildlife as well as livestock. Wildlife trends using the same dates should also be considered to establish comparative data as an indicator of both ecosystem health and recreation values.

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Lands available for livestock grazing and forage currently available for livestock grazing - Existing maps of grazing allotments imply that the entire monument is suitable for grazing. However, large expanses of slickrock, dry washes, inaccessible cliffs and mesas, and desert areas offer no grazing potential (due to lack of accessible forage). Improved roads and other surface developments would also need to be subtracted from acreage available for grazing. Each mile of road uses about 2 acres of land that could otherwise be productive for wildlife, grazing, and watershed. Furthermore, variations in geology, soils, water availability and local climate create variability in forage quality and availability from place to place. Calculate Monument lands available to grazing productivity and deduct roads, slickrock, surface disturbances, and inaccessible topographic areas and manage accordingly. An approach that focuses on available habitat would be an essential management tool for GSENM determine how to best to utilize available forage in livestock allotments.

"Should permitted allocations be higher or lower?" I believe that the GSENM is holding it's own nicely with current numbers. If better and more versatile grazing practices were instituted the complete health of soil, water, and grass/vegetation on the monument would greatly improve, allowing allocations to be adjusted higher.

I do not feel that the grazing schedule or number of AUMs on the Upper Wahweap and surrounding allotment need to be changed from what it is now. If there are dry years and there is not sufficient growth on the vegetation, then percentage of use can be lowered for the grazing season as it has been in the past. It is my opinion that these decisions should be made on an allotment basis.

Since the "status quo" is broken, part of the solution on lands available for grazing will be allocating forage resources cautiously to account for future drought and invasives problems. BLM should err on the side of conserving range vegetation that will likely face less rain, more heat, greater invasives competition, and higher biological stress.

I believe this protection includes reducing the impact through both temporary resting of large grazing allotments and permanent retirement of certain allotments.

Cows shouldn't be in the desert and they absolutely don't belong in a National Monument--there is no way to protect the invaluable natural resources while cattle grazing is rampant.

I would like to see grazing be opened to areas that have been closed to grazing to bring in more of the historic image we wish to continue, and to provide more jobs for our community. It is great seeing the amount of tourists who stop and take pictures of the cows, and cowboys in action.

You do not need to develop a grazing management plan. You need to stop grazing!

Close all 77 grazing allotments to grazing by domestic livestock for a period of at least 15 years.

I think that all areas should be available for grazing,

4. Capacity or suitability of grazing- BLM should identify how many AUMs can graze specific areas of GSENM sustainably.

If cattle grazing is to continue in the Monument-NRA I would suggest:

If cattle are being a problem, the BLM default should be to exclude the cattle. In the past, the default has been to just give up and let the cattle do what they want and go where they will.

Areas to be considered as non-use should include:

- Buckskin Gulch
- Hackberry Canyon
- Upper Paria
- The Gulch
- West Clark Bench
- Coyote Gulch
- 50 Mile Mt.
- Lon Canyon
- Any area that is an entrance to a slot canyon (many cows are trapped and die each year in such circumstance.).

Grazing permits should be retired and stock removed from the Monument at the earliest possible date.

Grazing in GSENM should at the very least be greatly reduced and eventually phased out so this beautiful area can be restored.

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Areas currently closed (mostly in the Escalante-Boulder Area), such as the Cottonwood and River Sections of the Deer Creek Allotment, Escalante River Sections of the Big Bowns Bench Allotment, Escalante River Allotment, and Steep Creek Allotment shall be considered available to livestock grazing. Serious consideration shall be given to the current vegetation condition of these allotments as they can support some grazing with proper season of use. The Phipps Allotment is also another allotment that has not been used for decades that should be used to maintain proper ecological health. Some portions of the Escalante River have become overgrown with vegetation, and could benefit from short-term grazing to maintain access through this scenic region.

Sound analysis shall be used to determine areas available for grazing and amount of use allowed. Consideration of range improvements and items discussed above should be allowed before closing allotments or "retiring" grazing permits. Specific criteria should be established in the Plan Amendment that describes the process for closing an allotment to livestock grazing. The three main items to consider should be water, forage and topography. If these three items are conducive to grazing, the area should be open with a designated season and forage available for use. If a group or individual approaches the BLM to "retire" a permit and has no desire to use the permit, 3LM should allow application of the permit by qualified permittees if the area (allotment) does not meet the closure criteria.

Criteria should also be established for opening an allotment after closed. Periodic evaluations shall be made to determine if closed areas shall be opened. Consideration should also be given to use grazing as a management tool to improve ecological function - including any areas closed to grazing.

A utilization rate of 25% is reasonable on the majority of Monument lands used for grazing. When utilization levels are reached, livestock should be moved or removed from the allotment or pasture. This is especially true in riparian areas.

Isolated areas that have their own problems of natural access, and continued destruction of any attempts at man-made access such as: Jack Riggs Bench----an isolated connection of mesas above the Wahweap area with very poor access and very little water.

The Heads of the Creek, which circle around from Smoky Mt. all the way to Tibbetts Bench and Nipple Creek, with overall stunted vegetation and very arid conditions----where 1,000 acres per cow might be too little. Grand Bench, which is mostly in Glen Canyon National Recreation Area, and abounds in sparse vegetation and barely any reliable water along with generally poor access by any means except walking. Burning Hills and Little Valley, two separate parts of different allotments, that contain more bare rock and sand than vegetation, more likely for storing animals in for a time period and hoping they survive, in time to move them to slightly better locations.

The largest area that would be better not to graze is 50 Mile Mountain, the northeast edge of the Kaiparowits Plateau, where access has always been a problem due to only a few steep and narrow rocky trails that livestock have problems traveling up and down, as well as horses used by the ranchers to be able to push the cattle one way or another and then when necessary to go find the cows on top of this long plateau that rises a little over 7,000 feet in elevation. It has had a history of a feral herd of wild cows left behind on top for probably 100 years or more, ever since it began to be used for grazing. The Monument tried to remove this rampant herd off the mountain during the drought of 1998 to 2005 with only limited success and great expenditures of helicopter contracts, contractors, and employee time and money. They were unable to achieve their goal, and after a couple years of non-use for some unfathomable reason, allowed grazing to resume even though the problem was never resolved. 50 Mile Mt. would be a distinct and unique eco-system if it was allowed to go back to its natural state, as well as all the archaeological resources that remain, though many have been so compromised by unfettered livestock and very poor management. The difference between what is and what could be with the health of the natural landscape so compromised by this travesty of use begs for change in a positive way. But the BLM seems to be committed to little or no change despite all the severe evidence to the contrary.

One other allotment is a very questionable area of concern, and that is the East Clark Bench allotment, which includes parts of Arizona, Utah State Land, and Monument land. Most of the allotment is within Utah but for some strange reason is managed by the AZ Strip BLM out of St. George, which is in itself geographically very distant for realistic management. No good explanation has ever been given for this arrangement, despite the fact that a part of the water is supplied by the main well at the Paria Station on US 89. This well, almost running continuously, as well

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as a pipeline connecting to tanks several miles away at a higher elevation on this allotment and others north along the Cottonwood Rd. has been basically financed by the BLM at a loss of thousands of dollars. The pipeline keeps breaking and failing, and pumps have been replaced probably 6 or 7 times (one pump, a modern computerized apparition that was going to solve the problem cost almost \$20,000 and failed) since the year 2000. This hardly seems economically viable, and again proves that grazing is a loss leader for money spent by the BLM to sustain a western tradition who's time needs to run out.

Grazing relinquishments though possible, need to be supported by credible, peer reviewed scientific information; the basis of which is found to be justified by both State range conservationists and the local affected county representatives. Justification of any action is paramount if consideration in this plan is given to AUM reduction and in anyway reduces operators' carrying capacity or displaces grazing permittees. The demographic information should be supplied to illustrate this impact.

Some years the ability to implement higher AUM's levels will not only spike the local economy but higher moisture levels correlate to an increase of cheat grass and other invasives that the allowance of increased grazing on a temporary basis could mitigate.

In considering forage currently available on an area-wide basis for livestock grazing and for future anticipated needs a balanced impact analysis requires historic data spanning from at least 40 years to the present on forage availability and numbers of livestock permitted to allow full public disclosure. Good range management demands that in order to keep up production with the exception of variations in precipitation and weather conditions, forage vegetation needs to be grazed or harvested to stimulate reproduction and to keep the plants healthy and palatable for consumption.

Ways of making it easier for young families and small operators to be able to continue to buy permits in this area and continue the ranching tradition, for example opening up for sale allotments that have been retired or not used for grazing by the permittee. Allow in any such sales small bundles of permits to be purchased by multiple individuals who could not afford the whole set of permits.

Every area should be available for livestock grazing, lets use the resources we have, the ranchers take care of the land and have an understanding of how much and when to use, no permit as been overused why would we want our animals not well fed.

As for the questions for comment all areas of the monument should be open for grazing. There should not be any areas that are closed. The BLM was formed mainly for managing livestock grazing not closing the land to grazing. If the grass is not used it starts to die out making it unusable for any animal. Good management practices and people already know this. Too many cattle grazing the land can damage it, but too few or none can also damage it by underuse.

Changes in management that I would like to see include:

The consideration of different forages for both livestock and wildlife in areas where forage is poor or non-existent, or native grasses have disappeared.

History has shown that this area is not "manageable" because the cows can't be kept where they are allowed either by the property owners or the cattlemen.

All areas that currently have a grazing permit tied to them, should be part of the improvement plan and allow grazing!

Existing maps of grazing allotments imply that the entire monument is suitable for grazing. However, large expanses of slickrock, dry washes, inaccessible cliffs and mesas, and desert areas offer no grazing potential (due to lack of accessible forage). Improved roads and other surface developments would also need to be subtracted from acreage available for grazing. Furthermore, variations in geology, soils, elevation, water availability for plants, distance from water source for cattle, and local climate creates variability in forage quality and availability from place to place. Yet, I do not think that the GSENM has a detailed map showing variations in grazing potential in the monument. Ultimately, a map illustrating differing amounts of sustainable forage available in different parts of an allotment would help to define its overall grazing potential. The sustainable forage scale for the map might be given in Animal Unit Months (AMUs)/acre to help to accurately determine the total sustainable AMUs/allotment . Such a map would be an essential management tool for GSENM Range personnel and also useful for ranchers wanting best utilize available forage on their allotments.

All grazing of large ungulates (wildlife) need to be factored into the equation allowing cattle grazing along with the hunting issue.

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For example: the lower Gulch below the Burr trail needs to be considered for removal of all cattle given the resource conflict and the fact that the fence between the King Bench and Deer Creek allotment has seldom been maintained over the past twenty years.

None of the deep sandstone canyons should have any cattle grazing at all and need fences to keep the cows out. Uplands are better suited but the grasses and forbes used by cattle are mostly now missing from the over grazing that has occurred in the past.

The two week use of the Upper Gulch should now be completely ended because the cost benefit does not make sense and the use for recreation is more important besides the continued trespass situation. A boundary fence needs to be in place between the USFS and BLM at the top of the Gulch.

The BLM needs to provide the actual use with numbers of cattle presently and during the past twenty years so that if an area or allotment is in poor condition but has only had half of the cows that is allowed under the allotment plan, then the numbers allowed in the plan need to be likewise reduced or closed completely.

Permit holders do not own the permits for resale and this needs to be made clear to everyone by the BLM. Any permit should be able to be ended and the allotment closed. That being said, it would benefit everyone if permit holders are helped and given consideration by trying to determine where and when each allotment area is suitable for use. If some allotments need to be closed permanently then perhaps other willing buyers and sellers could come forward so that a rancher could set in place some kind of coherent plan to be able to use areas in a chain over the months needed. For example: having AUM's on a suitable portion of one allotment for a month and then being able to move the cattle to another allotment area for another month and remedy the need to keep trying to force the cattle into unsuitable areas of an allotment only to have them move right back down to the riparian zone or areas of high usage. A permit holder in one place may be happy to change the scenario or allotment with another so that the best for each is accomplished and the environment is helped also or a conflict with recreation is solved. The EIS could consider what the laws and case law show and form a policy that could be used to integrate all uses so that they are more compatible.

Much land within monument allotments is unsuitable for grazing or is too fragile to graze at an economic scale. These areas should be excluded from permits and if barriers to livestock movement are necessary to keep cattle out, install them. Identify such areas on maps of appropriate scale.

Continue to Maintain Existing Closed Areas: There are areas in the GSENM and GLCA that have been closed to grazing for about 13 years. These areas have been closed because of wildlife issues, high recreation values or ecologically sensitive needs. These reasons for closure continue to be valid today.

PLC and NCBA are supportive of any action to sustain production and yield of forage for the benefit of both livestock and wildlife.

Justification of any action is paramount if consideration in this plan is given to AUM reduction and in anyway reduces operators' carrying capacity or displaces grazing permittees.

In considering forage currently available on an area-wide basis for livestock grazing and for future anticipated needs, a balanced impact analysis requires historic data spanning from at least 40 years to the present on forage availability and numbers of livestock permitted to allow full public disclosure. Sound range management demands that in order to keep up production, with the exception of variations in precipitation and weather conditions, forage vegetation needs to be grazed or harvested to stimulate reproduction and to keep the plants healthy and palatable for consumption by wildlife as well as livestock.

I support actions to sustain production and yield of forage for the benefit of both livestock and wildlife.

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In considering forage currently available on an area-wide basis for livestock grazing and for future anticipated needs a balanced impact analysis requires historic data spanning from at least 40 years to the present on forage availability and numbers of livestock permitted to allow full public disclosure. Good range management demands that in order to keep up production with the exception of variations in precipitation and weather conditions, forage vegetation needs to be grazed or harvested to stimulate reproduction and to keep the plants healthy and palatable for consumption by wildlife as well as livestock.

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I have serious questions about the appropriateness of grazing in the Escalante-Grand Staircase National Monument. There is limited forage for cattle. They must range widely in search do adequate forage and in the process, trample delicate soils.

While not an expert, I suspect there are areas where livestock can forage in areas with adequate feed and with an eye to minimizing damage to the delicate areas of the monument.

In an ideal world, livestock grazing could be moved from the GSENM to more productive grazing lands which are more suitable for grazing beef animals. In fact, many ranchers would trade their permit for irrigated pasture grounds more conveniently located to their home ranch. Reality is that the livestock industry in the region and state is a stable industry utilizing the majority of the available grazing resources. Interestingly, livestock grazing the rough terrain and forage conditions of the GSENM are productive and sustain themselves quite well. Livestock readily adapt to harsh forage conditions, if they are taught how and where to forage and obtain water as young calves (Burritt, 2009). Simply put, ranchers graze livestock on the GSENM, because it is a viable resource, no cost effective alternatives exist and livestock readily adapt to the rough terrain and foraging conditions.

In 2000, Utah State University Extension surveyed GSENM permittees to identify alternative forage resources, to determine the economic dependence of livestock operators on the GSENM and determine potential losses or gains if livestock graze on the GSENM was reduced or discontinued. Seventy-five percent of the beef cattle grazing on the monument spent 9 months or more on the monument which show a great reliance on the monuments grazing resources. Survey respondents indicated that they manage 1,276 acres of alfalfa hay, 5,600 acres pasture, and 17,500 acres of private range ground. Assuming average production in Garfield County, alfalfa hay acres, pastures and private range ground would provide 10,500, 5,600 and 9,264 AUMs, respectively, for a total of 25,364 AUMs. Twenty-four permit holders that responded to the survey represented 22,497 AUMs on the GSENM (Heaton, 2000). By comparing the two numbers, it appears that GSENM permittees would be able to remove all livestock off from their GSENM permits and still be able to maintain cow numbers. However, southern Utah ranchers are very efficient managers and private lands are currently used at capacity to generate income through forage production. Any reduction in GSENM AUMs would not be reallocated or absorbed onto private land. Any reductions in livestock grazing on the GSENM will be a net loss to the resource.

Any reductions of GSENM livestock grazing AUMs will have a direct effect on the economy, the communities, the tourism industry, and most importantly on the history, customs and culture of our area

When the Grand Staircase-Escalante National Monument (Monument) was designated, under Presidential Proclamation 6920, specific intent language noted that. .. " areas that were grazed at the creation of the monument should and in fact according to the proclamation must remain open to grazing." [1] The state expects BLM to uphold and maintain existing grazing areas as stated in the proclamation. In addition, the state recommends forage allocations persist at the same intensity as they were at the time the Monument was designated.

[1] See 61 F.R. 186 p. 50223.

BLM has completed carrying capacity calculations for 48 of the 82 allotments administered by the Monument. Of those assessed, 22 allotments today have permitted numbers in excess of BLM's last carrying capacity analysis. Grazing in excess of the carrying capacity significantly damages habitat.

Carrying capacity analysis that we have conducted based on more current data show that most of the allotments have livestock stocking numbers in excess of the lands' carrying capacity.

Planning Issues: "Lands available for livestock grazing within the planning area"

This should clearly identify those lands both capable and suitable for livestock grazing.

Planning Issues: "Forage currently available on an area-wide basis for livestock grazing and available for future anticipated demands"

Since forage is allocated at the allotment level, forage analysis has to be conducted on the same scale. To offer an adequate baseline for management decisions, such forage analysis has to be on an allotment basis. "Area-wide" forage availability provides no useful information to develop the MMP amendment managing grazing on the Monument. To be meaningful in planning and management, currently available forage needs to be, at a minimum, described at the allotment scale or preferably at the soil map unit scale. To meet BLM range management goals and the Proclamation's direction, calculating forage demands should include all uses, including ecological components such as wildlife consumption and maintenance or recovery of ecological processes. Thus the availability of forage

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for consumptive use needs to be in deference to the requirements to maintain Rangeland Health Standards and protect the ecological values of the monument. This issue should be reworded so that it's clear that other ecological values are met in determining the amount of forage available for livestock.

Additional planning issues: Capability analysis/Forage production assessment.

To comply with FLPMA, TGA, PRIA, NEPA, and the APA, the plan amendment must only approve livestock grazing within the limits of current forage productivity. However, past monitoring and assessments have not comprehensively gathered data on forage production in the Monument. The BLM relies on production estimates that are decades old, even though some studies show that forage productivity today is significantly less than habitat at its potential.[14] Without such data, stocking levels cannot be adequately established, and BLM will not have an adequate baseline on which to design future management. Consequently, an accurate assessment of forage production for each allotment is necessary for this EIS.

[14] 2009 conservation community comments on BLM's 2008 GSENM grazing DEIS.

Additional planning issues: Stocking rate.

Stocking rate (number of AUMs allocated to each allotment): "Selection of the correct stocking rate is the most important of all grazing management decisions from the standpoint of vegetation, livestock, wildlife, and economic return." [15] Changes in grazing practices have not resolved overstocking problems (see Briske et al. (2008)[16] comprehensive synthesis paper of 38 independent studies of grazing practices.) This EIS should create a process that estimates stocking levels based on today's conditions for each allotment as permits are renewed and set permitted grazing use number consistent with this carrying capacity analysis. The next few issues present several points that are part of BLM's decision on permitted numbers of livestock. Such analysis is necessary for assessing which lands are capable of livestock grazing, which is a large part of the purpose of this plan amendment. Many permits on the Monument exceed past carrying capacity estimates, especially since forage production has declined in many allotments.[17]

[15] Holechek, J. L., R. D. Pieper, and C. H. Herbel. 2000. Range management, principles and practices. Fourth edition. Prentice hall.

[16] Briske, D. D., J. D. Derner, J. R. Brown, S. D. Fuhlendorf, W. R. Teague, K. M. Havstad, R. L. Gillen, A. J. Ash, and W. D. Willms. 2008. Rotational Grazing on Rangelands: Reconciliation of Perception and Experimental Evidence. Rangeland Ecology and Management 6:12-17 (January).

[17] BLM. 2008. GSENM grazing planning amendment, DEIS, Appendix A and Monument AMPs

Additional planning issues: Utilization levels.

The percent of native plant annual forage that BLM currently allocates to livestock conflicts with current range management knowledge and is not ecologically based. The amount of forage allocated to livestock is a key factor in establishing stocking levels, and it's critical that this amount be based on science. While no written BLM policy with justification has been found for the current agency policy, BLM traditionally allocates 50% of the forage to livestock, although there is no scientific justification for this high level of utilization. In fact, many range scientists recommend lower utilization levels, especially in arid desert ecosystems and degraded habitats. In the absence of analysis that validates use of 50% utilization for grazing use in the Monument, such a percentage must be considered arbitrary and in conflict with today's knowledge. Such a high level of utilization is not supported by many range. Holechek et al. (2000)[18], Lacey et al. (1994)[19], White and McGinty (1997)[20], Johnson et al. (1996)[21] and NRCS (1997)[22] recommend using a 25% utilization for allocation for livestock. The plan amendment needs to establish a defensible utilization level that is ecologically appropriate for the Monument. Because the utilization rate influences annual stocking number decisions (as part of the "stock and monitor" policy) and carrying capacity assessments that influences permitted numbers of livestock, BLM's choice of a livestock utilization percentage is a significant issue.

[18] Holechek, J. L., R. D. Pieper, and C. H. Herbel. 2000. Range management, principles and practices. Fourth edition. Prentice hall. pg 233.

[19] Lacey, J., E. Williams, J. Rolleri, and C., Marlow. 1994. A guide for planning, analyzing, and balancing forage supplies with livestock demand. Montana State University Extension Service Publication E13-101.

[20] White, M.F., A. McGinty. 1997. Stocking rate decisions. Texas A&M Agricultural Extension Service Publication

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[21] Johnson, P.W., G. M. McKeon, and K. A. Day. 1996. Objective "safe" grazing capacities for southwest Queensland Australia: Development of a model for individual properties Rangeland Journal 18(2):244-258.

[22] United States Department of Agriculture-Natural Resources Conservation Service. 1997 Range and pasture handbook. Washington, D.C.

Additional planning issues: AUM forage requirements.

The amount of forage required to support one cow/calf pair has increased in recent years along with increases in the size of livestock. This increase in forage requirements has not been reflected in the numbers on grazing permits, however. Average weight for a cow calf pair today requires an increase in forage (lb/AUM) that is roughly 60% more today than it was 40 years ago based on agricultural statistics. This increase becomes a significant factor when assessing permitted numbers. The BLM should adjust stocking numbers reflecting the increased forage use by today's livestock's weight in this EIS. Appendix B, a study conducted by Dr. Carter, documents the growth in size of today's cattle and the need to account for this in range management.

Additional planning issues: Voluntary relinquishment.

The BLM should include in each alternative a criteria to assess a voluntary waiver for grazing permits and amend plans to relinquish grazing for allotments that meet the planning criteria.

Land Use Plan Amendment will map and describe these lands that are not available for livestock grazing and permanently retire them from future grazing. It will also include provisions to permanently retire permits and the associated numbers of animal when permits are voluntarily relinquished.

All grazing should be back on the Table!

Any future management of stocking numbers should hold unused AUM's in temporary non-use rather than permanent suspension! Flexibility is an appropriate management tool!

It is my opinion that we need to open more range land. Not less or none.

DEFINITION OF AUM: In the documents distributed at the meeting kicking off the scoping process AUM was defined as the forage necessary to support a cow and calf pair. In some allotments this is the case but on over 80% of our allotments the use is limited to a single cow since that use is during the winter months as calving does not begin to the approximate time the cattle are taken off the allotment. This is probably the case on a significant portion of the monument, especially those grazed during winter months.

Which areas should or should not be available for livestock grazing and why?

All- natural selection

Do not restrict any areas from grazing and follow nature's rules to determine numbers of livestock.

I would suggest there should be less grazing in general. It was on the national news tonight that beef consumption is down. The meat of choice is now chicken for supper. Less BLM land should be devoted to cattle grazing.

I personally am a staunch supporter of no grazing in many areas, but at the very least a sustainable plan should be implemented

So, my recommendation is that you should prohibit livestock grazing in the narrow canyons and virtually all the slickrock country.

All lands where forage, water, and topography are conducive for livestock grazing shall be made available for livestock grazing. These criteria shall be the basis for determining lands available for grazing.

Table B-12
Livestock Grazing (Rangeland Health)

habitat Restoration in areas of high impact from cattle.

We know that grazing is a very important part of our rangeland health. The harvesting of our renewable, natural resources, in the most cost effective way, is grazing. There are numerous studies on rangeland health and they all point to responsible grazing. There are those who believe that grazing is the cause of range damage. The rangeland trends that the BLM range cons, and other agencies, have been collecting over the years, are proof that the rangelands are improving. The years that the trends are in a down decline are the years that precipitation is severely limited, and studies show that.

When we choose not to use our renewable, natural resources we are also placing ourselves at a disadvantage economically. Instead of a revenue off of renewable, natural resources our rangeland becomes overgrown killing out native, desirable forage, and we are subject to catastrophic forest and range fires, that cost tax payers billions of dollars with no recoup. We have seen this occur over and over where grazing, and harvesting of natural, renewable resources is limited or eliminated.

The range standards should not be based on the rangeland health of the past 170 years, but rather on the natural state of the rangeland prior to organized human managed grazing. It will not be possible, consistent with the Presidential Proclamation to return to rangeland to its natural state prior to organized grazing, but the management of the area should strive to move the health of the rangeland towards that natural state.

A large part of that area simply cannot sustain intensive, year after year livestock grazing without adversely affecting vegetative conditions and ultimately diminishing vegetative quality, soils such as they are in the area, and even the visual quality of the landscape. It appears to me that the current level and management of livestock grazing in the Monument cannot be sustained without ultimately diminishing the quality and productivity of the land.

Specifically, because rangeland health is an objective standard, we assert rangeland health evaluations need to be conducted by properly trained personnel. Where previous studies have not been conducted by qualified staff, we request that areas be reevaluated by individuals with adequate experience and understanding to make an accurate evaluation, especially where allotments failed to meet rangeland health standards as determined by staff that lacked experience and expertise. Given the length of time that has elapsed since the previous determinations and the ever changing weather patterns, it seems logical that all substandard areas will be re-evaluated and we request that action.

We recognize the value of the land and of rangeland health. We assert rangeland health conditions impact wildlife, erosion patterns, sediment transport, economics, health, safety, welfare, potential for wildfires and numerous other aspects which affect communities adjacent and near the monument. Even the town of Antimony can be significantly impacted from air pollution associated with natural dust transport and wildfires within the monument.

I believe that grazing should continue on GSENM wherever rigorous scientific field research data demonstrates that healthy rangeland conditions can be maintained or steadily improved over time, as outlined in the original monument management plan. This may require that based on such rigorous field data using new, scientifically based management protocols, some allotments be reduced in size or even closed to grazing for a time, while conditions sufficiently recover to meet the four Fundamentals for Rangeland Health listed on page 89 of the approved 2000 GSENM Monument Management Plan.

I. My first, very general comment is that rangelands are more than just forage production systems. In addition to livestock forage, rangelands also store erodible sediment, provide habitat for game and non-game wildlife and plants (e.g. endangered species), store carbon, provide recreational opportunities, provide hydrological function, etc. Each of these has value. Production of beef is an ecosystem service, but if this service is overexploited, other ecosystem services can be degraded. A grazing management strategy should balance all rangeland services, to provide a portfolio of several of them.

However, rangeland health varies between different allotments, due to variations in soils, available forage, and grazing practices of ranchers holding those allotments. Many of the most degraded allotments have not been managed in accordance with existing grazing regulations. Although some ranchers are good stewards of the land and properly manage their livestock, other ranchers have neglected their herds and it shows in the health of the livestock and the rangeland.

Focus on the economics of ranching - the health of the range and resulting health of their livestock is a major factor in their profitability (the number of AMUs allowed is secondary to the number of pounds of beef taken to market; healthy cattle are literally beefy and healthy cows have higher fertility and longer lifespans). A shared

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Livestock Grazing (Rangeland Health)

understanding of why rangeland health is so important will certainly reduce conflicts between ranchers and BLM range managers.
Grazing areas should be minimized, and prescribed. Minimizing is crucial. This is the only practical method of preserving some of the GSENM in its natural state. Prescribed grazing areas should be monitored closely to determine when certain thresholds of damage are reached .so that grazing can be suspended to prevent further damage to the environment. Careful monitoring is necessary to ensure any sincere plan.
Specifically, because rangeland health is an objective standard, we assert rangeland health evaluations need to be conducted by properly trained personnel. Where previous studies have not been conducted by qualified staff, we request that areas be reevaluated by individuals with adequate experience and understanding to make an accurate evaluation, especially where allotments failed to meet rangeland health standards as determined by staff that lacked experience and expertise
Given the length of time that has elapsed since the previous determinations and the ever changing weather patterns, it seems logical that all substandard areas will be re-evaluated; and we request that action.
Similarly, water quality standards should be applicable for the situation. Water quality standards in Utah are often based on the end use of the water. Culinary, above ground irrigation, below ground irrigation, industrial discharge, and other standards are not applicable to the Monument. In addition, water quality is largely dependent on natural causes that vary over time and / or the landscape. Objective science should be the basis for analysis.
I strongly suggest that the new grazing plan for the Monument include provisions for assessing rangeland condition and potential management targets that are likewise more inclusive than those traditionally employed (e.g., primarily forage production), as is increasingly acknowledged in the recent literature (Refs. 3,4). The more expanded list of services and attributes would include forage production, biodiversity, invasive species risk, carbon sequestration, dust mitigation, water production, recreation potential and perhaps other factors. The assessment used on the Monument need not be that used by Bowker et al., but a more inclusive evaluation process is clearly needed. A starting point could be the recent analysis of Miller (Ref. 5).
This past summer I attended a talk on Holistic Range Management and was quite impressed by how cattle can serve as a tool to both restore and improve ecosystem health while actually increasing the numbers in a herd of cattle. Obviously this is a win-win situation where the land is improved and ranchers can maintain their livelihood and thrive. (Flyer for workshop is attached below).
Many of the pinyon-juniper dominated areas in the Circle Cliffs and Alvey Wash area do not meet the BLM standards for rangeland health as the interspaces between trees is bare ground with high erosion potential.
Past seedings should be evaluated against rangeland health standards. If not meeting standards, they should be treated to improve function. These seedings were originally developed to improve livestock grazing capacity within the area, and should be managed specifically to improve livestock management within the specific allotment. The seedings can normally relieve pressure from native rangeland and grazing management systems should strategically utilize the seedings to improve native rangeland. An example would be to graze the seeding area during the spring for two years, testing it every third year. This would allow native range to be rested two years.
Colorado Plateau desert ecosystems did not evolve with large herbivorous ungulates (Mack and Thompson, 1982; Shinneman et al., 2008). The ecological response of these ecosystems to domestic livestock grazing (sheep, cattle, horses) beginning in the mid- to late-1800s was degradation of soils and vegetation communities on a massive scale. The application of BLM rangeland standards and guidelines throughout the Colorado Plateau region must recognize this basic fact.
Rangeland health issues need to consider plant and animal species diversity, endangered species, invasive plants, long-range vegetation changes related to climate change, and allocation of forage between grazing and wildlife. Specific Scoping Issues: These are implied on the Range Management fact sheet, but should be made more explicit in the detailed planning process.
The EIS needs to take action to restore the rangeland health using decisions based by the best available scientific analysis.
Reintroducing native plants and perhaps letting the range rest in some parts of allotments is the only way to reestablish rangeland health in much of the GSENM.
However, rangeland health varies between different allotments, due to variations in soils, available forage, and grazing practices of ranchers holding those allotments. Many of the most degraded allotments have not been managed in accordance with existing grazing regulations. Although some ranchers are good stewards of the land

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and properly manage their livestock, other ranchers have neglected their herds and it shows in the health of the livestock and the rangeland. Permittees must be held accountable! If a rancher doesn't adequately manage their allotments, they should see penalties such as decreased AMUs or forfeiture of their allotment permits. Permittees who are good stewards of the land should be rewarded with the opportunity to obtain allotments forfeited due to overgrazing or other abuse. In the past, grazing management has been politicized, so that poor stewards have been able to abuse their grazing rights.

We are concerned about grazing impacts on native vegetation, soil and water infiltration on some of these landscapes. In some areas we have hiked through large piles of Russian thistle and skirted eroding gullies, some with hanging water pipes near water developments.

Grazing is a viable use and we think it should continue on areas that monitoring show native vegetation and soil are stable and do not conflict with other resources such as paleo and archeology sites.

Our hopes are that the best available science will be used to bring the grazing portions of the Monument into compliance with the Standards and Guidelines for Healthy Rangelands.

The "BLM's overall objective in managing livestock grazing on public rangelands is to ensure the longterm health and productivity of these lands" (FACT SHEET: Livestock Grazing, BLM). Removing grazing will threaten the health of the land. It needs to be responsibly managed, but definitely NOT removed.

However, grazing conducted in a manner which is not or cannot be documented to meet the Rangeland Health Standards (43 CFR § 4180.1) and measurable Desired Conditions, I would consider to be a betrayal of the privilege, by both the agency and the permittee(s).

In the EIS, document down to 10-acre scale, areas declining in condition and those areas evaluated as in less than Fair condition. I want to see where the problem areas are on a decent scale map and I want to know who the permittee is for these areas.

Range and forage restoration must be a priority on all grazing lands. Vegetation treatments targeting pinion/juniper expansion and decadent sage brush stands must be implemented. Rangeland management is critical to the health of the land, soils and vegetation. Simply, passive management is no substitute and will only further degrade the resource. In appropriate areas, livestock grazing should be used to manipulate vegetation resources for rangeland health improvement.

Even in those areas where progress has been seen, BLM's Range Land Health (RLH) standards are not yet met including the Dry Fork of Coyote Wash.

In 2006, BLM determined that 21 allotments in the Monument did not meet standards or making significant progress and livestock was a factor. Since that time, BLM monitoring has not reported the measurable ecological improvements required.

Additional planning issues

Rangeland Health assessment consistency.

Interpretation of Rangeland Health assessments has varied with staff constituency. Beginning more than a decade ago, BLM staff undertook Rangeland Health assessments for the Monument, primarily relying on BLM's Technical References. The results were more faithful to the methods than usually found in most BLM Field Offices and a number of habitat problems were identified. Over the years, BLM has modified the scaling used to determine which lands meet Rangeland Health Standards so that now almost all allotments are incorrectly assessed as meeting standards. By incorrectly deciding that habitat functioning at risk meets standards, the Monument change past Rangeland Health determinations. As a result since BLM now incorrectly assumes that most sites now meet standards, no management changes are necessary, although in reality conditions have not improved on the ground.

The modification of scoring is inconsistent with agency training and practices using these assessment methods and leads to results that are in conflict with actual habitat conditions.

Working with the conservation community, BLM should develop a consistent way to make Rangeland Health determinations that are consistent with the standards and reflect habitat conditions. See Appendix C for background and more details.

Table B-12
Livestock Grazing (Rangeland Health)

Additional planning issues

Rangeland Health standards

All land uses including grazing are required to occur in a manner that meets the Rangeland Health Standards. Recent rulings by the Office of Hearings and Appeals confirm that the assessment protocol BLM has been using fails to adequately assess whether all the standards are met[24]. Scientists with the conservation community have participated in recent BLM peer review of proposed updates two key technical references which provide the primary assessments used by BLM to determine if Rangeland Health standards are met.[25] These documents conclude that current assessment methods fail to adequately evaluate the ecological indicators for RHS standards. BLM should update the assessment methods to correct the identified short comings of current methods.

[24] Department of the Interior, Office of Hearings and Appeals. 2013. Order of appeal UT-020-09-01, Appeal and petition for stay fCurrerom acting assistant field manager's final decision dated September 12, 2008 involving the Duck Creek Allotment, Salt Lake Field Office, Utah

[25] See comments submitted to BLM during their peer review process for revision of TR 1737-15, lotic PFC assessments, and TR 1734-6 Interpreting Indicators for Rangeland Health.

While attending a Rangeland Management class taught at S.U.U by the late and renowned rangeland expert, Dr. James Bowns, he stated that "Our rangelands are in the best condition they've been in for over a hundred years." This is due to the past years of diligently managing the land with proper grazing methods.

I have been actively involved with this area long before it became a monument or recreation area. And may I say the it was well taken care of and the land involved was in as good or better shape then than it is now. Most of the problems have come do to the restrictions and regulations that limit our ability to maintain and improve our allotments. Examples: Not being able to apply spike, thru the use of airplanes to control brush. No chaining or bn lsh hogs or burning of overgrowth, pinion or juniper trees. Not being able to control erosion to the top soil, waterlines or roads.

We have seen the land at a time where there were very few fences to control the cattle grazing to in the late 60's and early 70's a lot of work was done to Improve the grazing by chaining and seeding thousands of acres . Fences were built and the permit was divided into 5 pastures. Springs were developed and water was piped into each of these pastures. The permittees were able to utilize their full AUM's and the area produced more than enough vegetation for the cattle and the wild life. The grass looked like a green sea blowing in the wind. It was a beautiful sight.

Over the years, the sage, rabbit brush. Pinion pine, scrub oak and juniper trees have encroached on the land and with the help of the droughts that are common in this area the grasses that produced so much forage has been choked out and is mostly gone. The AUM's have been utilized at 50% or less for the last several years. Where we use to see deer and elk on a regular basis, we now see very few each year. The animals that use the land are forced to live off the scrub oak and browse that is available, the land is basically in a state of non-productivity. We still use a rotation schedule for grazing so that the pastures are not overgrazed, but there is not much to begin with each year.

We recognize the value of the landscape and the value of rangeland health. Healthy rangeland that is managed to the best of our ability and with sound science impact wildlife, soil erosion, sediment transport, threats of catastrophic wildfire, economics, health, safety and welfare of the public adjacent to the monument, and many other aspects within our local communities in this region.

Table B-13
Monitoring and Adaptive Management

Project Design Criteria, Mitigation and Monitoring

We support the development of design criteria to be utilized and refined during site specific analyses, including adaptive management/mitigation and monitoring measures to reduce the potential for aquatic resource impacts. Inspection, maintenance and adjustment of Best Management Practices (BMPs) will help protect groundwater and surface water resources. We recommend that the MMPA/EIS include a list of potential mitigation measures with consideration of the following:

- Special protections, such as buffer zones, for high quality riparian and wetland resources including springs and fens.
- Management to limit deposition of animal waste in and adjacent to water bodies, such as protecting or repairing any existing exclusions and providing upland water developments and development of new range improvements to discourage congregation near water bodies.
- Enhanced monitoring of resource conditions adjacent to high value water resources.
- Monitoring to assess effectiveness of range improvements in protecting aquatic resources.

Monitoring Rangeland Condition

The NOI indicates that the MMPA process will utilize BLM's Utah Standards for Rangeland Health and Guidelines for Livestock Grazing Management. We recommend the MMPA/EIS include discussion of monitoring requirements that will be applied at the project level to ensure that these standards and guidelines are being met. An explanation would be helpful regarding how the Annual Operating Instructions will ensure compliance with project level monitoring requirements for parameters such as water quality.

To help evaluate and adjust grazing management strategies, EPA also recommends that the MMPA/EIS include a monitoring section that describes how monitoring will be implemented on an allotment level and at the watershed or sub-watershed level to determine rangeland condition (including water quality) status and trends. A wide array of monitoring options exists, and we are available to discuss options if desired.

Please increase the amount of ungrazed areas to use for scientific reference. Please set triggers and benchmarks that indicate overgrazing and enforce them.

In addition, large areas should be rested from grazing so that science can be used to identify differences between grazed and ungrazed areas. Similarly, a system of exclosures and photo points should also be used to help identify changes between grazed and ungrazed areas with different soil, slope, vegetation, and precipitation characteristics.

BLM should welcome and encourage collaborative grazing experiments which may lead to improved grazing management. These experiments would include changing the time, timing, and intensity of grazing during varied years and among varied areas.

BLM should ensure that adequate monitoring would occur so that no allotments would fail to meet the standards and guidelines for rangeland management, and so that current allotments "making progress" toward meeting them would continue to make measured progress until full attainment is achieved.

I would like to see research and reference areas set aside to monitor areas and track the changes in plant communities. This research will help evolve the conversation between stakeholders. And the public should be considered a stakeholder!

Establish many diverse reference areas within the Monument that demonstrate ecological potential. These grazing exclosures should exclude cattle at a minimum, though some should also exclude other ungulates and even rodents. Land management is to some extent an experiment and these exclosures will act as a control in the GSENM's rangeland experiment. The responses of the plant communities within these exclosures have the potential to inform management decisions for decades to come. The exclosures should attempt to cover all ecotypes on the GSENM and bigger is better.

BLM needs to develop new monitoring protocols carefully so that decisions can be successfully defended in the future. BLM should use a citizen science program that should afford opportunities for partners to engage in range condition assessments once new monitoring protocols are in place.

Table B-13
Monitoring and Adaptive Management

This monitoring can be achieved through both government personnel and through citizen involvement in voluntary efforts. A system should be established whereby citizen reports are acknowledged quickly in order to prevent further damage and to assist in developing solutions. Enlisting volunteers from the public can vastly expand the government's limited resources and capabilities.

Given flat or declining BLM budgets, cautious forage allocations are also appropriate because GSEM monitoring and range staff will likely be reduced. It may be unrealistic to promise or set utilization maximum levels without sufficient BLM range staff to ensure they are followed.

Scientific experimentation should be strongly encouraged to evaluate different grazing methods by time of year, varied duration, and varied intensity. A comprehensive system of exclosures and photo points should be used to evaluate different grazing methods and effects between grazed and ungrazed lands with different soil, slope, precipitation, and other characteristics.

9. Monitor the area for the 15 years.

10. It will look so good that you will decide to permanently close the area to grazing – or maybe not.

There is a critical need for large, ungrazed "reference areas" that can be used to reveal how the land actually, in the absence of anthropogenic stressors (e.g., grazing, off-road vehicle use) wants to organize itself and what processes and functions underpin its natural health and reliance. The fact is that there are few to no models on the public lands (including GSENM) that permit these sorts of determinations. The reason is that virtually all of these landscapes have been degraded to varying degrees and that even those that are considered relatively "intact" are nonetheless altered. The problem is that there is no immediate way to know how altered they are because there is nothing in the area to look to for comparison. Reference areas and reference conditions are central to modern rangeland health assessments (e.g., Indicators of Rangeland Health, Ref. 9) in addition to guiding all programs of ecological restoration (Ref. 10).

What is required is a systematically established network of enclosures that are strategically located and properly maintained over the long haul as well as a monitoring program to capitalize on information the network offers. The reference areas must be of sufficient size to minimize the influence of surrounding grazed lands and to allow the reestablishment of natural processes (e.g., nutrient and water cycling) and biological associations (e.g., biological crusts, plant-animal interactions) that underpin rangeland health and sustainability at the landscape level. In addition to the obvious role in providing an objective local standard by which to assess rangeland condition and trend, the reference area network will also provide the infrastructure necessary to support (even attract) scientific studies in support of rangeland management. Such studies might include small-scale experimental manipulations within the reference areas (e.g., soil and vegetation treatments; novel grazing protocols) provided the reference areas are of sufficient size.

Monitor/measure the Cottonwood and Aspen tree growth, seed heads, and hummocks to track the health of the ecosystem and a greater understanding of the imposed impacts.

Construct several livestock exclosures of at least 5 acres in different ecological zones. They should be carefully maintained and used to determine the potential plant production under ungrazed conditions.

The GSENM Proclamation allowed for the continuation of domestic livestock grazing within the Monument boundaries. However, the Proclamation states that "existing grazing uses shall continue to be governed by applicable laws and regulations." The Proclamation specifically mentions "areas of relict vegetation." Livestock grazing should be excluded from such relict areas and from other areas that harbor reference conditions representing good to excellent ecological health. The reference state is defined by the BLM as the state where the functional capacities of a site, represented by soil and watersheds stability, hydrologic function, and biotic integrity, are performing at a near-optimum level under the natural disturbance regime (Pellant et al., 2005). Such reference areas are invaluable sources of information on the function and structure of native plant communities (Shinneman et al., 2008). But good reference sites are few and far between in the GSENM (Miller, 2008). The BLM should consider using research natural areas, ACECs, other special designations, and livestock exclosures to protect ecological reference areas within the GSENM.

The Plan Amendment must include a scientifically credible monitoring plan. Ecological monitoring must include attention to BSC communities and must address ecological integrity (both structure and function of ecosystems).

We need to give the plants a chance. No Mans Mesa is an example where the above scenario is not happening as it has only been grazed by sheep decades ago and cattle are not on it. This area is a small reference area that could

Table B-13
Monitoring and Adaptive Management

be used to compare the grazed with the un-grazed so that the BLM could establish 60% threshold triggers. If this plan could set up as large reference areas of thousands or 10,000 acres they would become the parakeet in the coal mine metaphorically for us to see the effects of climate change, independently of cattle grazing.

It makes sense that these reference areas be established in each of the 10 ecological areas (Pinyon Juniper, Black Brush, Mixed Salt Brush etc.) of GSENM. Some example reference areas that could be included would be West Clark, Last Chance, Big Bounds Bench, No Mans Mesa. When I was exploring the Cottonwood road after mile 4 or so I was surprised to see such an amazing landscape where the plants had adapted to the selenium of the bentonite. There were cattle out there and I felt sorry for their health as well as the cowboys who had to keep track of them as every footstep left a scar in the landscape. Areas like this could/should be a reference area as well.

We need the public to help be stewards to not only protect riparian areas but also to monitor and lend a hand in reporting when they see seed head maturation on the grasses. We need to ensure that the grasses successfully seed each year so that we can get recruitment and addition to the seed bank.

Again large reference areas could be established in all ecosystems to act as a control to let allotments rest and act as seed banks to naturally reseed.

BLM and GSENM must carefully develop its new monitoring protocols in order to properly administer grazing on monument allotments. I recommend involving range scientists from both academic and governmental institutions to develop verifiable criteria based upon the best available range science practices to determine rangeland health and suggest ways to improve range conditions. Guidelines should be established to allow for sustainable livestock grazing. The most important variable, precipitation, should meet certain thresholds in order to allow grazing at the guideline levels or appropriately be reduced to prevent overgrazing. With the potential effects of climate change and drought, dry years should be factored in with accordingly reduced AMUs in order to prevent damage to long-term rangeland health. These policies should be peer reviewed by the knowledgeable and unbiased range scientists. Perhaps, an independent panel of unbiased range scientists can be established to review your monitoring protocols. Such a panel might be retained to independently assess range conditions in the event of contested management decisions by allotment permittees. Fair BLM policies based upon the best modern range management assessments and practices should help prevent unnecessary lawsuits.

Any range improvement project should be looked upon as a scientific analysis of how the range responds to different range improvement techniques, requiring documentation of the nature of the treatment areas before, during and after treatment with a follow-up analysis on a regularly basis. It is most useful to know what techniques work and what doesn't work; based upon sound observations conducted in an appropriate scientific manner.

The EIS should develop a policy of collecting tourist reports on a regular basis and using them to modify grazing practices.

4. Assessment, Inventory and Monitoring. A 2005 directive from the Office of Management and Budget required BLM to develop a strategy, Assessment, Inventory and Monitoring (AIM), to create a consistent framework for monitoring across BLM- managed lands. AIM's objective of collecting and organizing data with a statistically valid method, is meant to enable the use of such data across various programs and approaches. AIM uses a variety of monitoring methods and geospatial data to collect trends of landscape conditions. The AIM Monitoring Strategy sets out five important goals:

1. Determine the status, condition, and trend of priority resources and key ecosystem components and processes.
2. Determine the location, amount, and spatial pattern of priority resources, key ecosystem components and processes, disturbances, and other changes on the landscape.
3. Provide a conceptual understanding of key ecosystem components, processes, and sustainability concepts that should be incorporated into land use plans, National Environmental Policy Act (NEPA) documents, cumulative effects analyses, etc.
4. Generate quantitative and spatial data to address goals 1 and 2 and to contribute to existing land health assessment and evaluation processes at multiple scales of inquiry.
5. Generate quantitative and spatial data that are necessary to defensibly determine if management actions (e.g., land treatments) are moving resources toward desired states, conditions, or specific resource objectives identified in planning or related documents or legal mandates (USDI 2011).

Goal two of the AIM Monitoring Strategy, listed above, is to identify and describe key resources, ecosystem components, processes and disturbances. Livestock grazing in GSENM represents the singular, most prolific

Table B-13
Monitoring and Adaptive Management

disturbance to soils, upland native plant communities and riparian areas. If ungrazed areas are present for comparison, AIM can be an important tool for quantifying livestock disturbances to Monument objects identified within the GSENM Proclamation, conservation elements described by REAs and important "resources, key ecosystem components and processes" outlined by AIM.

5. Ecological Site Descriptions. AIM and REA use Ecological Site Descriptions (ESDs) that have been developed by the Natural Resource Conservation Service (NRCS) as reference conditions for unique ecosystem types based largely on soil type and climate (i.e. precipitation, elevation). ESDs identify a variety of data including soil type, climate, precipitation, state and transition models and the conditions expected for the site. Whether an ESD reference site is a grazed site or ungrazed site is not always discernable through the ESD, especially in the case of older ESDs. As well, ESD reference sites may be many miles away from the Monument.

The AIM Monitoring Strategy (at p. 7) states that new efforts are forthcoming to identify "current and reference condition based on land potential at broader scales using a combination of field and remote sensing data." ESDs, remote sensing and field-based monitoring are important tools for identifying reference conditions and quantifying land health at the landscape scale. However, without the addition of field-based monitoring of ungrazed sites within the Monument, the land-use planning process is missing a crucial tool for understanding both the impacts of livestock grazing in the Monument, and the potential for movement of damaged Monument areas toward reference conditions if ungrazed

A close scrutiny of the way that monitoring is being conducted and what changes need to be made to that monitoring so it is better and more effective in keeping those allotments that are in satisfactory condition in at least as good a condition or better.

The EIS needs to identify quantitatively, the number of positions and hours needed to staff the GSENM so that actual monitoring is carried out in a meaningful way. How many positions does it require and what times of year?

In the EIS, list the history by allotment of any allotment evaluation and monitoring conducted since the last grazing EIS was completed. The purpose is to illustrate the scope and scale of these evolutions with respect to the grazed land within the monument by allotment.

Has the agency established reference areas for the various vegetation types presently grazed? Display on a map, the extent of veg types which do not currently have established, documented and characterized reference areas.

NPCA urges the BLM to ensure that scientifically based decisions are made in terms of where grazing is appropriate inside the NRA and how permits will be managed and monitored in partnership with the NPS for the protection and preservation of NRA values and purposes.

Need for more Exclosures for monitoring the affects of Grazing. Some of us have read the December 23, 2013, GSENM Report on exclosures by Grand Canyon Trust researcher David deRoulhac. If it is true that there are only 20 exclosures for the nearly 2 million acres of grazed land, that seems way too few exclosures. In addition deRoulhac reported of the 17 exclosures he visited only 7 were intact exclosures with no sign of compromise, trespass, breaching, and which are not inside vegetation treatment areas. Apparently exclosures are not being used to their full potential. We encourage developing a schematic review of allotments and a determination on how may exclosures are appropriate.

...collaborative grazing experiments would improve grazing management...

Range trend monitoring should be considered "scientific research" if done by qualified individuals. From this annual research, GSENM staff should produce outreach, presentations, and scholarly publications in the appropriate professional societies, i.e. Society for Range Management.

Additional planning issues

Reliable and verifiable method to assess grazing utilization:

Adaptive management requires accurate assessments of grazing use and habitat condition in order to make informed decisions. As described in Appendix B, BLM's use of the key species method to assess utilization often leads to agency conclusions that underreport utilization. Working with the conservation community, scientists, and others, BLM should design a means of utilization monitoring that accurately reflects ungulate forage use that can be validated. Without such a tool, adaptive management is not possible

Table B-13
Monitoring and Adaptive Management

Additional planning issues

Trend monitoring.

Trend monitoring fails to show changes in habitat relative to ecological site potential. Past trend monitoring has failed to provide adequate information on changes in indicators for Rangeland Health such as changes in bare ground, plant community functional groups, changes in spring and stream flows, and changes in water quality. Additionally, past trend monitoring has failed to show changes in forage production. The inadequacy of past trend monitoring makes it impossible for BLM to apply adaptive management based on evidence. This plan amendment should prescribe trend monitoring that is consistent with the ecological indicators used in making management decisions.

In addition to long term trend studies decisions on stocking rates should also be monitored seasonally so as to account for short term affect of weather. The past 10 years BLM range specialists have toured grazing allotments with permittees if there is doubt of the suitable condition for normal stocking rates. When a particular pasture is not in condition for normal permitted numbers a variety of alternatives are available. Several pastures historically graled have not been used regularly and they may be used to lighten the concentration when another pasture has had dryer than normal growing seasons. Examples of the pastures within our allotments include: Pasture Canyon, Henderson Canyon, North Canyon, and Cad Bench. Adjustments in the stocking rates or the season of use has also been beneficial Shortening the grazing season has improved the condition of Headquarters pasture and a turnout date 10 to 15 days later in addition to reduction in numbers has helped maleirnite forage production of Coal Bench and Merrill's Bench. Herding and salt placement has also helped us distribute cattle into areas that are not often utilized.

Range monitoring needs to be done using sound scientific principles and by people familiar with ecosystems in the local areas. In my experience land managers are not familiar with forage species and their biology. Often they make judgments based on their experience in totally different ecosystems. When range evaluations are done during a drought a much different conclusion may be made as compared to an evaluation done after a period of adequate precipitation.

047_Determining Grazing as the Cause for Failure to Meet SG.pdf

Table B-14
Noxious Weeds and Nonnative Invasive Plants

Several resource issues that are of particular importance in relation to management activities along the park borders include boundary protection, resource damage from unauthorized access (e.g., damage to fencing, trespass grazing, poaching, etc.), potential noxious weed introductions to the park via livestock and OHVs, protection of wilderness characteristics within the park, park soundscape and viewshed integrity, air quality, and threatened, endangered and sensitive species particularly where populations or key habitat transcend park/Monument boundaries.

Livestock grazing increases soil disturbance and promotes increases in invasive species and noxious weeds in addition to favoring unpalatable native increasers at the expense of decreasers. Water developments, salting areas, fencelines and roads are subject to increased populations of invasives. A review of livestock grazing related to weeds described a number of mechanisms by which livestock grazing exacerbates weed infestations[35]. Livestock transport weed seeds into uninfested sites on their coats, hooves and in their guts; they preferentially graze native plant species over weed species; create patches of bare, disturbed soils that act as weed seedbeds; and destroy microbiotic crusts that stabilize soils and inhibit weed seed germination. Grazing also creates patches of nitrogen-rich soils, which favor nitrogen-loving weed species; reduces concentrations of soil mycorrhizae required by most western native species; and accelerates soil erosion that buries weed seeds and facilitates their germination. The most stable ecosystems are those that are most intact, i.e., those that are functioning closest to their natural potential. Reisner et al. (2013)[36] found that the best way to inhibit cheatgrass was to restore the native perennial bunchgrasses and biological soil crust. Grazing, the study found, actually promotes cheatgrass dominance through exposure of bare soil and removal of native perennial vegetation.

Many areas we have visited in the Monument are populated with invasive species such as cheatgrass and Russian thistle. These areas should be identified and mapped and be made unavailable for livestock grazing because of the role of livestock in spreading weeds.

[35] Belsky, A. J. and J. L. Gelbard. 2000. Livestock grazing and weed invasions in the arid west. Oregon Natural Desert Association. Bend, OR. 34p.

http://www.publiclandsranching.org/htmlres/PDF/BelskyGelbard_2000_Grazing_Weed_Invasions.pdf.

[36] Reisner, Michael D., James B. Grace, David A. Pyke and Paul S. Doescher. 2013. Conditions favoring *Bromus tectorum* dominance of endangered sagebrush steppe ecosystems. *Journal of Applied Ecology* p1-11.

Grazing is the only viable way to address cheat grass as well as other invasive species.

With prolonged drought, increased cheatgrass and other invasives, the loss of crucial biological soil crusts, and other problems, it is clear that BLM "status quo" or "stay the course" GSEM grazing management is no longer appropriate or tolerable. Changes are necessary and BLM must use the best science and follow relevant laws and policies to adopt strong decisions and then effectively implement them.

Control noxious and invasive weeds. Don't. Worry about introduced grasses. They are essentially native after over 50 years in place.

We fight invasive plants all the time since they have such a good foothold now after so many years of cattle grazing.

Lack of unbroken soil surface promotes the spread of exotic, invasive weeds whose seeds are dispersed in livestock feces. The proliferation of Russian Thistle has made many huge areas un-grazeable and un-hike-able. Infestation of miles of riparian areas by Tamarisk and Russian Olive has caused the disappearance of native plant and animal species and rendered these important corridors impassable by human visitors and wildlife alike.

Invasive species are adapted for disturbed soil. We need to plan for the future to reduce the amount of available habitat for the Russian thistle and other very competitive exotics. I have seen thistle in Escalante Canyon and its devastating effects.

Introduction of invasive plants such as tumbleweed and cheat grass mostly infest places that have been overgrazed, especially near stock tanks.

All vegetation treatment must adhere to the Monument Plan restrictions for implementation and only native seed or plants should be considered. The influx of non native plants is an expensive problem that has been born out by the Russian Olive situation in the Escalante River and elsewhere. Study of the disturbance created by cattle hooves that leads to the ability of non natives to colonize and invade needs to be undertaken and timing of implementation should be considered in the EIS.

Table B-14
Noxious Weeds and Nonnative Invasive Plants

I'd like to also put in a good word for non-native grasses. We nearly all prefer native grasses, but for a variety of reasons and conditions they don't compete well against troublesome introduced species like Russian Thistle (tumbleweed). Well-tested and safely-introduced plants such as Immigrant Forage Kochia gives us all something in our arsenal to fight back. My own test planting of Immigrant Forage Kochia shows great promise of being able to go head to head against Russian Thistle and even overcome it. To even the playing field against invasive plants we need continued scientific upgrades and to not remain in the Dark Ages of Native Grass purists.

Grazing is the only viable way to address cheat grass as well as other invasive species.

Grazing is a viable way to address cheat grass as well as other invasive.

Additional planning issues

Exotic species introduction.

Past and present use of exotic plant species in the monument is a significant issue, the consequences of which have not been assessed at this time. The introduction of exotic wildlife species in the Monument compounds habitat influences by livestock grazing and goes against the Proclamation, which emphasized the restoration of native species.

Presence of Undesirable Vegetation Including Invasive Plants - Areas populated with weeds and invasives such as cheatgrass, Russian thistle and other species should be eliminated from lands available for livestock grazing due to livestock's role in spreading these species.

Cattle also eat mistletoe known to kill cedar trees

It also controls weeds and help reduce potential fire hazards

When land is left without grazing you have evasive plant and trees take over.

Grazing benefits are essential to maintain the public land and also private. It controls the growth of non native grasses so that native grasses and wild flowers can regenerate and coexist with them.

Eliminate from grazing the following lands: ...lands severely infested with noxious or exotic plant species...

Grazing is the only viable way to address cheat grass as well as other invasives.

Table B-15
Paleontological Resources

Livestock grazing, through trampling and trailing, is similarly affecting paleontological sites such as Dinosaur trackways and exposed fossils that have not yet been documented scientifically and collected. The same is true of other significant geologic features and exposed historic structures.

My winter permits are on the Headwaters allotment (Upper Wahweap). As you know the monument has allowed a considerable amount of scientific research regarding dinosaurs and other prehistoric life in this area. Universities and others (including the BLM) have spent the last several years searching for and digging up the remains of these prehistoric animals. To my knowledge there have been no serious conflicts between grazing permittees and these dinosaur hunters. In fact we have worked well together. This lack of conflict is partly due to the fact that they work during the summer and it is during the winter that our cattle are permitted on the same area. Even if it were at the same time I can see no conflict that could not be resolved.

2. Impacts of grazing on archaeological and paleontological resources

NPCA is especially concerned about impacts to park cultural and paleontological resources, which may not be adequately inventoried inside the NRA and where impairment from livestock grazing may be irreversible, as well as critical water resources including seeps and springs, sensitive soils and vegetation, and recreational use of the NRA's extensive backcountry.

Eliminate lands with significant archeological or paleontological values from available lands per the Comb Wash case.

Table B-16
Public Health and Safety

We assert that grazing is essential for the health safety and welfare of the area. Numerous lost individuals, unprepared visitors and hikers have found themselves in trouble only to encounter a local cowboy as their first contact with civilization. In years past, grazing in Escalante River bottom provided an appropriate path for human hikers. Since the exclusion of grazing in that area, willows and other vegetation has grown so thick that it has become impossible for a normal individual to have an enjoyable hiking experience. All of these factors, and many more, evidence the beneficial effects grazing on the health, welfare and safety of the citizens and residents in our area.

Cattle operations also do moderate to severe damage to maintained dirt roads, damaging shoulders, banks and road bases. Depending upon weather conditions and number of cattle they can quickly degrade a recently graded road. The addition of truck traffic with trailers accelerates the formation of washboard and deeply rutted roads that make for unsafe road conditions.

because of the cattlemen the monument can be enjoyed by more people.

We assert that grazing is essential for the health safety and welfare of the area. Numerous lost individuals, unprepared visitors and hikers have found themselves in trouble only to encounter a local cowboy as their first contact with civilization.

All of these factors, and many more, evidence the beneficial effects grazing on the health, welfare and safety of the citizens and residents in our area.

Many cows are found on the highway during the grazing season. This leads to serious safety issues along Scenic Byway 12, not to mention risk for the animals - cows have been killed, drivers are in danger, vehicles have been damaged. Please, implement a public protocol for responding to these situations, and implement the mending and installing of secure fencing to prevent this from happening. This underscores how important true management is - as in, managing the allotments, communicating with livestock owners/permitees, and giving more time and attention to the livestock grazing.

Table B-17
Recreation

They also negatively impact the visitor experience, in that no one wants to see cattle, cow pies, or the damage/erosion cattle cause.

As a recreational user, I would like to see grazing removed from the high recreation use areas. Cattle are a public safety issue with grazing along heavily traveled roads both day and night.

With the climate changing in the southwest has affected soils and sensitive plant communities and causing erosion and destruction of monument resources. I would rather see a group of low impact recreational users than a herd of cows.

Livestock has historically been grazing on what is now the monument and were there long before a 4 wheel drive vehicle was available and very few hikers or bikers were there either. I know that livestock and recreation can exist together and in many instances livestock actually enhances recreation.

One can also argue that livestock grazing will greatly reduce the value of a landscape for recreation. With polluted water, degraded wildlife habitat, hundreds of thousands of miles of barbed wire fence, predator killing to protect livestock, and many other impacts, livestock grazing eliminates or detracts from the value of the landscapes that would otherwise support much more wildlife and unhindered recreation.

Recreation is also an important aspect to our custom and culture. Not only do our citizens recreate in the monument, but we house visitors from all over the world. Each visitor has his/her own preferences and idiosyncrasies. Many visitors come to experience the American West and find nothing more interesting and enjoyable than observing real cowboys and grazing related activities. Others may object to those very same conditions.

We further declare the two activities are mutually beneficial and can coexist in productive harmony.

Grazing impacts on recreation should be considered positive, and the LGPA- EIS should document recreational opportunities where grazing is not allowed. If this view is not accepted, we request that the LGPA- EIS perform a comparative and detailed analysis of all available recreational opportunities within the area of comparison. Garfield County has established an area of comparison in their County Resource Management Plan. In accordance with FLPMA consistency requirements, the County's area of comparison should be used to identify recreational opportunities unless federal law dictates otherwise.

The Yellow Creek backcountry group campsite is also located within .75mi of the Monument boundary and unauthorized cattle in this area can have negative effects on visitor experience in the park's recommended wilderness, in addition to resource damage resulting from cattle trespass.

Secondary roads which receive no maintenance and provide access to almost all trailheads can sustain such heavy damage that only high clearance four wheel drive vehicles can successfully reach these areas. This potentially denies access to many people in visiting the area.

My experience exploring and hiking in the Monument is one of manure-littered riparian areas and springs, deer flies and smells from cattle, not to mention a dead, rotten cow carcass in the only available water source on one occasion. The Gulch Outstanding Natural Area exemplifies these conditions, which I encounter throughout the Monument, wherever water sources occur. Areas of recreation conflict such as this should be made unavailable for livestock grazing, along with SRMAs and ACECs.

Areas with significant archeological or recreational resources should be made unavailable for livestock grazing. In the Comb Wash case, canyons with important recreational and archeological resources were closed to grazing under the multiple use sustained yield principles of FLPMA[5]. The author concluded:

The decision in the Comb Wash case was a vindication of the principle of multiple use and an indictment of the BLM's range management policies and practices. The case gave meaning to multiple use by revealing a pattern of management that is so irrational and so oblivious to values other than livestock production that it cannot be reconciled with even such a broad and vague concept. This pattern is not an aberration; it reflects BLM policies and practices in effect throughout the West. It simply stood out in bolder relief in the Comb Wash canyons than in some other places because of the gross imbalance there between enormous scenic, ecological, and archaeological resources and a paltry amount of livestock forage.

[5] Feller, J.M. 1996. The Comb Wash case: the rule of law comes to the public rangelands. Public Land & Resources Law Review. 27 p. Available at: <https://app.box.com/s/2cyjtpkax32n2505bsu9>

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Recreational uses are new and are often very damaging to wildlife, plants, and soils.

Conflicts between recreation and grazing - There are a lot of conflicts between grazing and recreation use. Both uses are legitimate on the National Monument, and particularly in a NCL unit. In the southern portion of the monument, the areas with conflict include Lick Wash, Bull Valley Gorge, Willis Creek, Hackberry Canyon, Paria Canyon, Toadstools, Wahweap Hoodoos, Grosvenor Arch, Cottonwood Narrows, etc. Up north the various trailheads leading into the Escalante Canyons, slot canyons and popular recreation sites are problem areas. Here is a list of some conflict areas in the Escalante Canyons:

- The Gulch
- Little Death Hollow
- Wolverine
- Horse Canyon
- Hurricane Wash
- Dry Fork Coyote
- Harris Wash
- Red Well
- Twenty Mile Wash
- Dinosaur Track Site (Left and Right Hand Collet)
- Devils Garden
- Hurricane Wash
- Zebra/Tunnel

Allotment closures and Grass Banks have eliminated and reduced recreation and grazing conflicts in several areas of the Monument. Environmental Assessment and Decision Record UT-049-98-043 dated 3/15/99 has effectively analyzed the beneficial impacts to Recreation, Wilderness and Wild and Scenic River values in the Escalante Canyons. There were literally hundreds and thousands of visitor complaints at the trailhead registers on the Escalante River allotment prior to the grazing closure. Calf Creek Recreation Area is another prime example of how the recreation experience, wildlife and ecosystems have benefited from a no grazing alternative in these special places of the Monument.

Another concern that is repeatedly brought to the table is conflict between cattle and recreation. I have two observations to make regarding this issue. First, cattle, grazing, and ranching were utilizing the area far before any recreation occurred. At least six or seven decades of seniority exists. Secondly, human/recreational use causes far, far more damage than cattle or grazing ever has. Anyone who has known this land for the past 30 years or more as I have will certainly agree with me. Just make a trip into the monument and look for signs of off road vehicle abuse on closed areas, trash blowing in the wind, and toilet paper on the ground in every semi hidden corner and you will agree with me. Certainly recreation has a rightful place on GSENM, but I believe that regardless of how much money it brings to our fair monument we should not prostitute these canyons, nor the culture that has lived and existed here for the past 120 years, for that money. It should not prove too difficult to adjust schedules of use in the high profile areas, where grazing and recreating repeatedly conflict, to allow both their own season of use.

Grazing on the monument benefits the other objectives of the monument. It helps to keep open roads and trails thus enabling tourism, recreation, and scientific research on the monument. In many of the canyons on the monument where cattle have been removed, the trails have become so overgrown with vegetation that access is very difficult for hikers and in some places, impossible!

The other thing is that these animals are on the desert for winter grazing. The area is uninhabitable to humans, during this time, the weather is just too cold for hiking, and other recreational activities.

As we hiked more extensively on the monument, we were unpleasantly surprised by the damage we saw due to grazing.

Staircase/Escalante NM; on top of Fifty Mile Mountain, Monday Canyon, Rogers, Reece, Navajo and Last Chance over Four Mile Bench, Cottonwood Canyon, Hackberry and the Paria corridor, Sheep Creek, Kitchen Corral, Horse Canyon, Buckskin, Deer Range Creek, etc.

Every single place in the GSENM has been horribly degraded as a result of cattle grazing--there's no wildlife, the

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riparian areas are decimated and virtually unusable, the vegetation trampled with an inordinate amount of invasive species as the living soil crusts have been decimated. Even finding a camp without feeling like we were in a barnyard toilet was difficult.

It should also be noted the word "recreation" is not even mentioned in the proclamation. We assert grazing is a protected interest and recreation is not, although we value recreational interests where they are compatible with existing laws, regulations and plans.

Recreation is also an important aspect to our custom and culture. Not only do our citizens recreate in the monument, but we house visitors from all over the world. Each visitor has his/her own preferences and idiosyncrasies. Many visitors come to experience the American West and find nothing more interesting and enjoyable than observing real cowboys and grazing related activities. Others may object to those very same conditions. We assert, as duly elected officials in the area, that adequate opportunities for solitude, primitive recreation, opportunities with nature, and recreation in areas free from grazing abound outside the Grand Staircase Escalante National Monument. We further assert that individuals who desire to recreate without any grazing related evidence have abundant opportunities to do so at their own free will. We therefore declare that there is no conflict between grazing and recreation. We further declare the two activities are mutually beneficial and can coexist in productive harmony. Grazing impacts on recreation should be considered positive, and the LGPA - EIS should document recreational opportunities where grazing is not allowed. If this view is not accepted, we request that the LGPA - EIS perform a comparative and detailed analysis of all available recreational opportunities within the area of comparison. Garfield County has established an area of comparison in their County Resource Management Plan. In accordance with FLPMA consistency requirements, the County's area of comparison should be used to identify recreational opportunities unless federal law dictates otherwise.

It should also be noted recreation is not a protected value identified in the Proclamation. In fact, the word "recreation" is not even mentioned. However, President Clinton specifically protected grazing. Therefore, where recreation has a conflict with grazing, the Monument Proclamation requires that grazing be given the deference and protected.

In years past, grazing in the Escalante River bottom provided an appropriate path for human hikers. Since the exclusion of grazing in that area, willows and undesirable vegetation has grown so thick that it has become impossible for a normal individual to have an enjoyable hiking experience.

The areas grazed by cattle are not at all inviting to outdoor recreational users. Even camping in an area full of cow pies is a real turn-off.

I understand that grazing and recreation are sometimes in conflict on the Monument. I feel that solutions other than eliminating or reducing cattle grazing are available to make things pleasant for all. Indeed when called into question I feel that cattle should have precedence to recreation as it has been an important part of the culture and economy since this area has been settled. Some say cattle droppings are offensive and spoil their experience in nature. I have never felt offended by such when I have been out on a hike or camping out, any more than if I come upon elk or deer droppings, but view it as part of the ranching way of life. I feel that the impact careless humans have on the monument is more damaging and offensive. I feel that there is a place for recreation and cattle on the GSENM. And that by thoughtful planning solutions may be reached to facilitate both.

As far as recreational use and grazing there is no reason that they aren't compatible in all areas, the cattle don't bother people and for the most part stay clear out of there way, if there are people that have problems with them it is the peoples fault not the cows!

3. Impacts of grazing on recreational values and experiences. Specifically, are there areas of high public recreation use (such as The Gulch or Escalante Canyon) where grazing should be removed to reduce conflicts with visitors?

Last spring when I returned to Deer Creek after the winter the land was so severely disturbed from cattle that I couldn't continue on my walk. In speaking to other locals they expressed the same thing. I've also encountered dead cows in the stream over the years of visiting there.

Recreation is the future of the economy in southern Utah, not cattle grazing (and the future is now!).

a. The most popular hiking areas in the Monument and NRA are those that do NOT have cattle grazing. These include Coyote Gulch and Harris Wash. The areas that do have cattle grazing are not as popular, even though in many cases they are just as beautiful. These include The Gulch as per 1b above.

As an aside: The Needles District in Canyonlands National Park is certainly the most popular hiking area in southern Utah. It is heavily used by outdoor and university groups. Its campsites are booked far in advance and hikers by the

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score are turned away. When leaders of those groups are asked why they go there instead of places like the Escalante, the answer is that they don't want to take people into areas where they'll be camping in cow dung. Can't blame them.

b. The recent growth of towns like Escalante are based on tourism, not on cattle grazing. It might behoove the BLM folks to knock on the doors of people staying in motels and hotels in Kanab, Page, and Escalante. Ask why they are there. I'd bet no one would say they are visiting the Monument-NRA to view the grazing cattle.

c. With frontcountry use skyrocketing, we need more areas for people to recreate. As it is now, people concentrate in areas where there is no cattle crap. Removing cattle from many areas will open areas to recreation and will help spread the load of recreationists.

Another aside: There is an argument that people (here I mean the quiet recreation folks, not the ORV folks) are more harmful to the backcountry environment than are cattle. Often-used examples are Coyote Gulch and Harris Wash. Indeed they are heavily used by hikers and backpackers. And, indeed, there are impacts, some pretty ugly (like the burned outhouse near Jacob Hamblin Arch in Coyote Gulch). But, I hiked in Coyote Gulch and Harris Wash in the 1960s before the areas were closed to cattle. And, those canyons were totally cattle trashed. There was no riparian habitat as there is now. The streambanks were collapsed and there were only short stretches of channelized stream. The hillsides were barren. There was very little vegetation and cattle crap was everywhere. One couldn't camp under overhangs because they were deep in crap. There were no sedges and scouring rushes and young cottonwood trees. People now complain about human crap in the canyons. But, as per the new rules this year in Coyote Gulch, people can be controlled and they can carry out their crap. I'm glad we'll be carry out our effluent, but the amount of human manure in a canyon is tiny as compared to the amount that cattle leave in a canyon. It seems amazing to me that we do make people carry out their crap while at the same time thinking it is okay to have streams flowing with cattle crap (hike The Gulch if you don't believe me about cattle crap in the water).

Conflicts between recreation and grazing: I am an avid hiker and have been hiking different parts of what is now the monument since about 1970. The GSENM is a first rate place to hike, but there are some serious issues in a number of the most popular and beautiful areas.

The Gulch, Hackberry Canyon, and upper Buckskin are among the jewels of the monument and are areas that sustain considerable damage every year as a result of cattle grazing. Banks are trampled down and cow feces is in the water and all about the benches.

When my wife and I show these places to friends, we always get the same reactions. People say something like "This is a nice place, but it has been trashed by cattle". The Gulch and Hackberry Canyon are really beat up by spring.

Buckskin Gulch is considered by many to be one of the 10 best hikes in the U.S. Cows have been getting down below the confluence of Buckskin and Wire Pass Wash. I have seen cow tracks and feces for a mile or so below the confluence.

These places make up a rather small part of the Monument and need to be protected. I think the best use of these areas is recreation and it would be wise to keep the cattle out.

Given that the Monument was meant to provide recreational opportunities as well as livestock forage, I believe it is incumbent upon management to exclude cattle from some substantial riparian areas and water sources so that they are welcoming and safe for recreating humans. Recreation, after all, is a much larger economic driver in communities surrounding the monument than are the relatively few livestock permittees.

A disproportionate share of all backcountry use is in Coyote Gulch, Harris Wash, and a few other canyons that combine scenic values and a riparian corridor. These canyon bottom corridors are also heavily used by cows, both from current permittee operations and feral cattle. The canyons that have been historically most popular are primarily in the GCNRA but within the current planning unit.

I would like to call special attention to the interaction between grazing and backcountry travel. Wandering in the backcountry I frequently encounter spots where blasting or just moving rocks with a pry bar has created an easy walking path through an otherwise challenging or impassable cliff. Backcountry users need to appreciate the value of these historic cowboy trails. The canyon bottoms have shown increased vegetation over the past few decades, and paths created by cows are often the best way to get through both the invasive Russian Olive and the native willows.

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When traveling cross-country on the flats and mesas if frequently find that the easiest travel route has been to follow cow trails. I see tourists photographing cattle drives, and I personally have never avoided visiting an area because of the number of cows. However, some are offended by trampled stream banks and piles of manure under shade trees. Grazing and recreation travel are linked, and changes in grazing will affect human recreational use in sometimes unexpected ways. Specific Scoping Issue: Interaction between grazing and backcountry recreational travel.

In 2012 and 2013 i backpacked down The Gulch. It was disgusting. It was like being in a barnyard that just happened to have beautiful walls to it. The entire place stunk of cow piss and dung. It was not possible to sit or set up a tent without moving cow pies. This was not multiple use - this was traveling in an area clearly given over to cows, where any other use - human, animal, ecological, was not only subservient, but completely absent. It was so disgusting that if I return to tha are, I will walk on the rim above the canyon rather than walk down it.

This is our National Monument? Monument to what? Cows?

In other places in the monument, I have more and more chosen where I go by assessing whether cows can get there. It takes out place with water, with easy walking, with now non-existant beautiful riparian zones.

And for what? a few cows. I have to admit I don't get it. why is the monument so willing to give away it's most precious places to a very few cows. If I did what they do, you would saddle me with hefty fines and possible jail time. Quite the double standard.

Use cattle in areas like the Escalante canyon to help re-build and rehabilitate trail systems that are overgrown and hard for hikers to get through, rather than using trail crews and chainsaws to do the job.

The recreational experiences for visitors of the Cottonwood road, nationally and internationally are commonly ones of awe struck beauty at the spectacular cockscomb and other geologic features. I f this plan can help separate conflicts between user groups it would be beneficial.

Wilderness study areas should not be impaired for their suitability as wilderness. Nor should the special recreation management areas be impaired i.e. Escalante Canyons, Paria/Hackberry, Paria Canyons and Plateau, the Highway 12 Corridor with the highest scenic byway designation nationally, Highway 89 corridor and Fifty Mile mountain. These are key areas for recreationalists of all types and special consideration needs to be considered to limit grazing times and effects so there are minimal or no conflicts with the recreating public who spend their money and time.

However, the effects of overgrazing on poorly managed grazing allotments has a very negative impact on recreationists' experiences in the GSENM. For example, notes in the trailhead register at The Gulch Outstanding Natural Area commonly complain about the poor condition of this riparian corridor due cattle overgrazing, dead cattle lying in the streams polluting the water, and other associated problems. These tourists probably won't return to our area and won't recommend the GSENM to their friends. In contrast, since the acquisition of grazing allotments along the Escalante Canyon corridor, this popular tourist destination has shown an amazing recovery of native grasses, especially on benches located above the floodplain. If we want tourists to continue to come to our area, we need to show them that we are proper stewards of these incredible landscapes – this means using sustainable livestock grazing practices.

Place a priority on recreation over grazing when the presence of cattle in riparian areas and hiking areas degrades the experience of travelers who come here from all over the world. Cattle need to be completely removed at all times of the year from such places such as Hackberry Canyon, Deer Creek, the Gulch, and similar areas where recreation occurs year round. An assessment of these areas of conflict needs to be included in the EIS. Policies that limit and remove cattle to support travel and tourism on the Monument need to be implemented.

The Monument receives regular reports from tourists whose experiences are negatively impacted by cattle ranching. Tourists have reported the decimation of landscapes, the pollution of water sources, and the poor condition of cows that have little to eat on the Monument. The EIS should assess these written and verbal reports and identify what can be done to mitigate the problems that are being reported.

Resource conflicts have become ever more apparent and important fro GSENM to take into consideration especially when recreation has become so important to the economic vitality of Garfield and Kane Counties. More money and jobs are provided and will be provided in the future of this plan with tourism and recreation than probably will ever be produced by cattle grazing and where tourism conflicts with grazing needs to be determined. My experience is

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that the water pollution and destruction of water sources and riparian areas is a major concern of recreation and tourism use as well as the environmental degradation that is inherent with grazing.

NPCA is especially concerned about impacts to park cultural and paleontological resources, which may not be adequately inventoried inside the NRA and where impairment from livestock grazing may be irreversible, as well as critical water resources including seeps and springs, sensitive soils and vegetation, and recreational use of the NRA's extensive backcountry.

Livestock grazing helps maintain and keep trails open, which without grazing become overgrown, infested and impassable, both for wildlife and human traffic.

Park Service reports that grazing in the Glen Canyon National Recreation Area significantly impacts recreation in some of the most internationally important backcountry recreation areas.

Additional planning issues: Recreation impacted by livestock grazing

In the Monument, streams and springs safe to drink 200 years ago are now unsafe for human consumption primarily due to livestock grazing. Today, hikers and campers are required to carry specialized equipment to purify drinking water. Recreation needs, even ones as fundamental as safe drinking water, have rarely been considered in grazing management decisions in the past.

Livestock operations have affected recreation in some of the most popular backcountry areas on the monument. For example, on-going conflicts between hikers and livestock in Buckskin Gulch in the Paria Wilderness have been documented for over 20 years. Since there is very little water in the area, cattle often wander down Buckskin Gulch as much as five miles from the trailhead hoping to find ephemeral pools. Cattle also seek out a small seep trickling out of the canyon wall in a narrow part of Buckskin Gulch, where they lick the wall because it's often the only water that they can find. This creates a safety hazard for hikers meeting cattle in the narrow confines of the Gulch. In addition, the wilderness recreation experience is affected by trampling and livestock waste. According to one hiker, it "smells like a stockyard in there". Most disturbing are the cattle that die in the Gulch looking for water and food, forcing hikers to climb over their dead bodies. The public, some of whom travel from other countries, is paying for this experience in the Paria Wilderness. Conflicts with recreation, lack of forage, and lack of water clearly render Buckskin Gulch incapable and unsuitable for grazing.

Resource conflict is manageable! Multiple use is desirable. Recreation should have no legal priority over grazing on the custom and culture of the area. By the way, what is the carbon footprint of recreation?

Since ranges have been cut I have seen the changes. For example: I love hiking. So many trails, rivers, etc. are now completely non-accessible because they are so overgrown. Cows are great pruners they keep the overgrowth minimal. Cattle keep trails clear. People are more apt to stay on trails verses walking on and through anything and everything.

Grazing allowed where people hike and camp leaves disgusting reminders behind - I know, I have stepped in them!

But in southern Utah, especially Escalante area, the land is so degraded in places that we have turned back from even going on a walk, let alone pitch a tent. (An area near Deer Creek comes to mind.)

My wife and I have spend may days each year hiking and photographing in the Grand Staircase-Escalante National Monument. We try very hard to take only pictures and leave only footprints, yet when we return to our vehicle, a fully capable 4WD Jeep Grand Cherokee that never strays beyond the officially marked trails, we spend way too much time picking "cattle leavings" from our boots.

I would also encounter recreationists who would express their dismay that otherwise beautiful and scenic areas were often rendered unfit for recreational use due to the presence of livestock themselves, their physical impacts (trampled vegetation, derelict infrastructure, or acres upon acres of manure in quality camping areas or in and near springs, seeps and riparian areas).

Eliminate lands with important recreational values and SRMA's from available lands

Table B-18
Riparian and Wetland Vegetation

Cattle aren't native to the landscape and thus cause significant damage to riparian areas, which are rare and precious in the GSENM.

keep cows out of riparian areas as they do extensive damage and destroy habitat for wild animals

Effects to Wetlands and Riparian Areas

EPA recommends that the MMPA/EIS include a summary description of the types of impacts that may result from grazing to wetlands and associated springs. Such impacts may include functional conversion of wetlands (e.g., forested to shrub-scrub); changes to supporting wetland hydrology (e.g., snow melt patterns, sheet flow, and groundwater hydrology); and wetland disturbance. We also recommend that the MMPA/EIS describe how the BLM intends "to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands" as described in Executive Order (EO) 11990, Protection of Wetlands.

While hiking through "The Gulch" and Horse Canyon several years ago on a backpacking trip I was appalled at how much damage was done by cattle to the sensitive riparian areas in these canyons. There were many instances where soil had sloughed and eroded into said streams where cattle had trampled the banks and denuded vegetation.

The park contains very few riparian resources and management efforts are directed toward protection of these exceptional habitats, especially for the benefit of migratory bird species and other resident wildlife, as well as backcountry camping recreational opportunities. Yellow Creek, a seasonally important riparian habitat within the park, exits the park adjacent to the Bulldog Bench and Upper Jim Hollow pastures and has repeatedly experienced boundary trespass from cattle attracted to forage and water within the park.

Aside from the contamination issue, streamside or wetland associated vegetation is frequently severely degraded by livestock that tend to congregate in the vicinity of water sources and shade trees that are commonly found nearby. This degradation can adversely affect plants and wildlife, including numerous threatened, endangered, and sensitive species that depend on healthy wetland habitat for their survival.

I. An assessment of all wetlands within the study area should be conducted to determine where livestock should be completely excluded, or where their numbers should be reduced or restricted during certain months or seasons.

Livestock should be excluded from seeps, springs and fragile riparian zones. These are critical places for native plants and animals.

N37 23'58.2" W 111 21 '00.6" (Rogers)

N37 23'02.7 W 111 42.07.8" (Four Mile)

N37 24'09.2" W 111 44'30. 7" (Tommy Water)

N37 40'33.3" W 111 28'22.6" (Ten Mile)

The National Wildlife Federation reports that upwards to 80% of the streams in the arid West have been degraded by livestock.

In the above cited canyons those findings are very much in evidence:

--Streams, springs and small riparian areas on the western slope of the Kaiparowits along with the drainages of the Escalante are reduced to muddy wallows, filled with cattle waste, greatly reducing the ability of native flora and fauna to survive;

--The existing system of grazing is not equitable or administered fairly, and as a result these canyons and their water resources have been severely damaged.

As for the springs and riparian areas, most wildlife species live there or visit these areas for water and food.

Trampling diminishes or completely destroys the biodiversity, and impacts the water quality and quantity. Cattle should simply be kept out of most riparian areas. Access to water can be arranged without allowing them full run of these areas.

Areas such as Wolverine Creek, Harris Wash and others which are subject to flash flood events due to removal of ground covering vegetation in their watersheds and destruction of vegetation that stabilizes stream banks should be made unavailable to livestock grazing. These are in desperate need of restoration, which will take a long period of time even in the absence of livestock.

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Riparian and Wetland Vegetation

Finally, livestock grazing should not be allowed to destroy or despoil natural stream corridors, ponds, springs, and seeps, and the associated critically important wetland and riparian vegetation.

Exclude cattle grazing from sensitive riparian areas or riparian areas that people will be drinking from.

Where GSEM objects and values have been or are likely to be harmed but livestock grazing, those lands should be designated as "Not Available" in the Record of Decision. For example, important riparian and wetland habitats, special status species habitats, and biological soil crust areas should be so designated.

In the kitchen corral area the riparian zone along the drainage is totally destroyed. We were in the area doing site checks for the monument when I had a chance to observe this.

Protection of sensitive riparian areas needs to be a priority. Because the health of these areas have such a huge impact to the health of the entire ecosystem, the indicators and threshold tolerance must be more restrictive and closely monitored. Often these areas are also a high recreation area and should be considered non-use for grazing.

One area is the obvious damage being done to riparian areas and springs by heavy cattle trampling. Within the last 5 years I have visited numerous spring and riparian areas in GSENM. The amount of habitat degradation in these systems has been alarming, and particularly disappointing in a National Monument. I have noticed that visitor comments on forums and trailhead registers about many of these sites reflect a similar disbelief that the land is being managed in this way.

Grazing also valuable destroys riparian areas that are vital for the native flora and fauna that depend on that resource. If domestic animals are allowed in these areas, the resource is forever changed and is eventually not useful to anyone.

Where there are still remnant cottonwoods it is clear that they will be gone soon because the watercourses upon which they originated have long ago been cut off from their original flood plains and there are no young cottonwoods or willows to be seen, having been eaten by livestock. Upland plants such as sage have colonized former riparian areas, and springs have dried up.

Riparian areas of live water that are so rare in this desert climate and terrain should be protected at all costs from destructive uses, grazing and off road vehicles being the most obvious causes of this problem. Any canyon that has running water, both stream and seeps, should naturally be off limits to the trampling hooves and bovine appetite for riparian vegetation. There are many bad examples especially most evident by observations made in person on the ground whenever cows are present or have been repeatedly present over the years. There is much evidence for the BLM from written comments in BLM register boxes where hikers sign in for the more popular areas to hike into and find first-hand the degree of health or lack of in the landscape that they have been drawn to. And strictly from an economic point of view recreation at the present time is overwhelmingly the creator of more monetary energy than grazing on public land ever has been or ever will be.

Riparian areas that need closure from grazing:

1.) Paria River watershed, the main riverbed, and various side canyons from the Paria Wilderness boundary upstream to Sheep Creek, Willis Creek, Bull Valley Gorge, Rock Springs Canyon, on the north end, and Cottonwood Creek/Canyon, Kitchen Canyon, Deer Creek Canyon, Snake Creek Canyon, Hogeys Canyon in between. All these canyons and associated streams show signs of grazing and overuse from that source, leading to degradation of the whole riparian area. It is another self-evident truth and it does not take a range person to notice the problems associated. In fact most people hiking into any of these canyons seem to find more evidence of intolerable conditions because of a different aspect and point of view when experiencing these landscapes. They, like me had hoped for a more protected natural landscape instead of one that has been overused by exotic animals.

2.) Hackberry Canyon in its' entirety, from its mouth at Cottonwood Creek to its head near Round Valley Draw. In the late 1980's a large rock fall occurred about 6 miles upstream in the canyon (from Cottonwood) and blocked the canyon from cows. When I first came to Kanab the lower part of Hackberry was in a mostly natural condition with no grazing going on, the upper section still had sparse grazing but the cows had not been able to pass over the obstruction of the rock avalanche. Eventually they did, and after the declaration of the Monument there seemed to be a more active interest on pushing cows into the lower part of the canyon that had been blocked, leading to a more negative impact on the whole riparian system that was a severe contrast between natural and degraded by grazing. The canyon has always attracted hikers, but more so in the past 10 years, especially returning

Table B-18
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hikers that saw it after the rock avalanche and before cows were re-inserted. Comments on the BLM registers indicate the disappointment.

3.) Buckskin Gulch within the Paria Wilderness (in the Kanab Field Office, but the allotment within is part of the larger mostly on the surrounding Monument). Every winter cows come into the Wilderness from the west in the Monument and concentrate within the canyon due to the presence of a seep in the canyon wall just above the Buckskin slot, 3.5 miles in, and then inevitably walk down into the slot looking for pools of water left over from summer/fall floods. The Buckskin itself above the slot has been so thoroughly degraded that all that grows on the denuded terraces are mainly exotic species, with Russian Thistle being predominant. Most winters one or more cows perishes and is found by hikers dead in the wash or nearby. Hiking within the slot hikers are confronted with cows in narrow spaces, along with their waste products underfoot and a thick putrid odor in the air. This has been happening for over 25 years, and despite attempts to correct it by myself and others nothing has ever been done to try and correct the situation. It is a safety and health issue for people using the canyon, and definitely a health issue for the land involved. The simplest solution would be a fence along the House Rock rd. , for about 3 miles from north of Wire Pass to the north side of Buckskin Gulch, just adjacent to the trailhead there. This has fallen on deaf ears of BLM people who are completely aware of the situation. It has been amazing to see hundred thousand dollar projects on thousands of acres nearby (n or s of US 89) for "watershed enhancement" while the actual waterway that is supposedly being "enhanced" remains destroyed by livestock. People come from all over the world to experience the slot canyon that is Buckskin---they are not always prepared for the reality they encounter. It is especially egregious that individual hikers are charged \$6 for a day hike into land so impacted, by animals that the ranchers are charged \$1.35 per month (currently) to be there, per animal. An allotment fence that is in disrepair (for the past 10 or more years) divides the southwest portion of the canyon from the northeast---from above the wash to West Clark Bench. This had been reported numerous times but trespass continues every winter when the Mollies Nipple Allotment cows wander back in. It was amazing to see cows so desperate for feed that they were eating bark off junipers, and yuccas, and prickly pear cactus. Basically Buckskin Gulch acts as a cow storage area each winter, and some survive, some do not. Again plenty of hiker comments on trailhead registers over the years complaining of the negative impact of cows and grazing.

4.) Wahweap Creek cutting through the middle of the Monument along with several side canyons such as Nipple Creek, Four Mile Canyon, Tommy Canyon, and assorted others. There is water flowing off and on throughout the year in these canyons, and even though they flow through severely arid landscapes livestock grazing takes place with the problem being concentrations of impact where-ever water is found. Cows will always gather at any place with possible water in the desert. This is the impact of something that does not necessarily have to be.

5.) Last Chance/Paradise Canyons watershed. This is one of the larger watersheds draining the Kaiparowits Plateau in the middle of the Monument. There are many smaller side canyons draining into Last Chance, some that have their own springs and seeps.

There are numerous cottonwoods growing within Last Chance and the side canyons, which is an obvious sign of water, though it may be underground. One very lush side canyon, Drip Tank, has a beautiful natural spring coming out of the rock that has been thoroughly trampled below its source, due to it being developed for one use only, livestock. Humans would not normally want to use it due to its impacted character and the possibility of dead cows in the wash in either direction, as well as overwhelming cow detritus.

6.) Rogers Canyon flows south to what used to be the Colorado River, parallel to 50 Mile Mt. on its west side. There are many drainages with springs and seeps flowing as tributaries to this canyon from 50 Mile Mt. such as Basin, Sunday, and Monday Canyons, and on the west side Willow and Navajo Canyons. They are all with portions of riparian vegetation, though much of it has been altered by grazing for over 100 years. They are isolated and little visited places within the Kaiparowits Plateau, but all the more reason one would expect them to be little disturbed. There is then the whole other side, north of the Kaiparowits where the Escalante River flows along with all the many side tributary canyons feeding into it. I know that much of the actual Escalante Canyon has had grazing removed for the riparian and recreational values, but many side canyons still incur grazing despite their riparian and recreational values, such as Boulder Creek, Deer Creek, Steep Creek, The Gulch and the Moody Canyons

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Riparian and Wetland Vegetation

along with numerous smaller canyons being part of the complete watershed. A rare resource, water, is having its value degraded by the lowest common denominator, livestock grazing. The health of these places has always been in peril but it has never been addressed by the BLM, even at what people would think is a higher level of protection by being declared a National Monument.

Hackberry Canyon riparian system gets trampled by cattle as does the seep on upper Buckskin before you enter the slots. These spectacular riparian areas where water is the key feature should be left for the natural foraging of the desert bighorn, mountain lion, birds and insects and other wildlife. Cattle should/could be out of these areas and be dependent on catchment sources of water instead of destroying these oasis seeps and streams.

Solutions include excluding livestock from these specific riparian areas and establishing 80% threshold triggers when compared to reference areas.

Erosion and degraded riparian areas are of special concern environmentally as well as for grazing use. 150 years of abuse requires a lot of effort to regain what was once there and should be present now when it comes to plants and halting further erosion. If it requires complete removal of cattle grazing then the GSENM must consider this fully.

Additional planning issues: Riparian-wetland habitat

Most of the miles of streams and rivers as well as most of the springs found in the Monument fail to meet Rangeland Health Standards and livestock grazing is a factor. Part of this problem concerns grazing in riparian areas in conflict with grazing decisions. The NLCS GSENM Plan Implementation Review 2010 further documented this concern, stating "There are still incidents of unauthorized livestock use which cause resource damage and user conflicts." In 1990 BLM established a riparian-wetland initiative that called for 75% of BLM's stream miles to reach the minimum of PFC by 1997. Here we are fifteen years past this deadline and this goal unfulfilled. These riparian-wetland values are some of the most important values in the Monument.

Hormay and Talbot (1961) studied the order in which cattle grazed particular areas. "Ravine bottoms were usually grazed first. Next in order were openings in timber stands on gentle slopes, areas near water, areas along fences and ridgetops, salt grounds, accessible openings in timber stands on steeper slopes, areas under large trees, and finally areas covered by tree thickets." Pinchak et al (1999) found that "cattle dispersion was constrained by the spatial distribution of water and slope. Across 3 seasons, 77% of observed use was within 366 meters of water. Approximately 65% of the land area was beyond 723 meters from water and sustained only 12% of observed use. Cattle concentrated use (79%) on slopes less than 7%. Consequently 35% of the area, on or surrounded by slopes > 10%, received only 7% of observed use. Loamy, grazable woodland and wetland sub-irrigated range sites were most preferred and accounted for over 65% of observed use while occupying less than 35% of the land area. Overall, coarse upland, very shallow and shallow loamy sites were not preferred..."[65]

Clary and Webster (1989) also found that vigorous woody plant growth and at least 6 inches of residual herbaceous plant growth at the end of the growing/grazing season typified riparian areas in excellent, good, or rapidly improving condition. This corresponds to a riparian utilization rate of 24 - 32%. "Most riparian grazing results suggest that the specific grazing system used is not of dominant importance but good management is - with control of use in the riparian area a key item." Degraded riparian areas may require complete rest to initiate the recovery process.[66]

Gillen et al (1984) monitored cattle distribution patterns and plant utilization in riparian meadows and forested habitats during 3 summer grazing seasons to compare continuous and deferred-rotation grazing systems in NE Oregon's Blue Mountains[67]. Small riparian meadows were the preferred sites with open forested areas next in preference and heavily forested sites least preferred. "Deferred grazing equalized cattle use between logged areas and P. ponderosa-P. menziesii forests and increased cattle use of riparian meadows." In a companion study, Gillen et al (1985) monitored vegetative production and cattle presence in small riparian meadows[68]. Their study showed that standing crop of herbaceous vegetation "at the end of the grazing season was similar under continuous grazing and the early and late grazing periods of a two pasture deferred rotation grazing system. Early grazing tended to decrease the total cattle occupation and the frequency of cattle occupation of riparian meadows when compared to continuous grazing. Late grazing tended to increase the frequency of cattle occupation but did not change the total cattle occupation of riparian meadows when compared to continuous grazing." They also found that "Slope gradient was the only physical factor consistently associated with cattle grazing distribution.

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Water distribution was not correlated with grazing patterns in upland plant communities."

W. S. Platts reviewed grazing systems and found that none were compatible with healthy aquatic ecosystems[69]. Schulz and Leininger (1990) [70] studied long-term riparian exclosures. They found that, after 30 years of livestock exclusion, willow canopy cover was 8.5 times greater in livestock exclosures than in adjacent grazed riparian areas. Grasses were 4 to 6 times greater in cover within the exclosure than outside. Mean peak standing crop of grasses within the exclosure was 2,410 Kg/Ha (1950 lb/acre), while outside in caged plots, mean peak standing crop was 1,217 Kg/Ha (1083 lb/acre), or about half that of the ungrazed exclosure. Grazing utilization in the riparian area was 65%.

Another study of upland and wet meadow communities that had livestock excluded for 9 - 18 years found major differences between the ungrazed communities and those continuing to be grazed. In each case, the area without grazing had greater belowground plant biomass, lower soil bulk density and higher soil pore space. In dry meadows the infiltration rate was 13 times greater than those continuing to be grazed and in wet meadows, infiltration of rested areas was 2.33 times greater[71].

[65] Pinchak, W.E., Michael A. Smith, Richard H. Hart, and James W. Waggoner. 1991. Beef cattle distribution patterns on foothill range. *Journal of Range Management*. 44(3):267-275.

[66] Clary, Warren P and Bert F. Webster. 1989. Managing Grazing of Riparian Areas in the Intermountain Region. USDA Forest Service GTR-INT-263.

[67] Gillen, R.L., W.C. Krueger and R.F. Miller. 1984. Cattle distribution on mountain rangeland in Northeast Oregon. *J Range Management* 37(6):549 - 553.

[68] Gillen, R.L., W.C. Krueger and R.F. Miller. 1985. Cattle use of riparian meadows in the Blue Mountains of Northeastern Oregon. 38(3):205-209.

[69] Platts, W.S. 1991. Livestock Grazing. In *Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats*. American Fisheries Society Special Publication 19:389-423.

[70] Schulz, Terri T and Wayne C. Leininger. 1990. Differences in riparian vegetation structure between grazed areas and exclosures. *Journal of Range Management* 43(4):295-299.

[71] Kauffman, J. Boone, Andrea S. Thorpe, and E. N. Jack Brookshire. 2004. Livestock exclusion and belowground ecosystem responses in riparian meadows of eastern Oregon. *Ecological Applications* 14(6):1671-1679.

Eliminate watersheds subject to flash flood events due to livestock degradation of watersheds and riparian areas from available lands

This is an arid area and cattle tend to congregate in what riparian areas exist. This needs to be restricted.

Cattle are especially harmful to riparian areas due to their need for water.

Table B-19
Social/Heritage Resources (Customs and Culture)

I believe I am correct in saying that when the monument was formed, there was a commitment made to the people in this area to preserve heritage. I know families that have used these exact allotments in question for six generations or more. Selling those allotments to environmental groups who hope to keep cattle off the Monument would destroy the legacy our area is steeped in.

The social and economic benefits of livestock grazing are important to healthy and vibrant local economies and schools.

My ancestors settled in cotton Wood Canyon and have lived in this area for over a hundred years. IT's my heritage and way of life and love of the land that I have inherited from them. Me and my family love ranching and the land we ranch on. It is also vital and neccasary for us to provide and making a living to support our family's.

The GSENM lands were grazed naturally long before European descendants settled the area. Grazing on public land is a long standing practice and is consistent with the mission of the BLM.

Another key aspect of the land in Kane County is the unique heritage that is tied to the multiple generational ranches. Some of the Ranches go back six or seven generations. Some are like mine. First year generation looking to the future of making a ranching heritage stable for seven generations to come. But in order to accomplish this the land needs to remain multiple use with grazing a key component.

Grazing is a significant cultural and historic activity in our area. It has shaped the morals, values and work ethic in our communities for generations. We assert President Clinton identified grazing when he stated "The cultural resources discovered so far in the monument are outstanding in their variety of cultural affiliation, type and distribution." And "The monument is rich in human history". In addition, President Clinton proclaimed under 34 Stat. 225, 16 U.S.C. 431 "Nothing in [the monument] proclamation shall be deemed to affect existing grazing permits or leases for levels of livestock grazing on federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws regulations other than this proclamation". We assert this means grazing within the monument is protected by the proclamation and at a minimum should be preserved.

The socioeconomic analysis needs to go well beyond the repetition of demographics and published economic statistics. Grazing is a historic and cultural activity. It constitutes a long-standing lifestyle in our communities. It forms the very fabric from which our culture is sewn and provides the basis for that which the rural West is known. What greater icon is there for the American West and in these rural towns than the American cowboy? No one would dare ask the Native Americans to abandon their custom, culture and activities that have existed since before white men settled this desert country. We should receive no less respect. We therefore request a detailed social analysis be considered including impacts of grazing on family lifestyles, job creation in the area, juvenile delinquency, domestic violence, and other social aspects that are impacted by the work ethic developed as part of the grazing industry.

An example may be helpful. Since 1996 when the monument was created the population of Escalante has declined approximately 15% to 20%. High School enrollment has dropped from more than 130 to less than 80. More than a dozen fathers now commute out of state for employment, while their families are left in Escalante to carry on their normal lives. During the same time frame statistics indicate an increase in illegal drug use, domestic violence and delinquency. We do not believe these coinciding statistics are unrelated. We assert the restrictive policies implemented through the monument planning process have had a direct causal effect on social difficulties in the community of Escalante. Reduction in grazing and hampering the values taught by the industry can only exacerbate already difficult conditions. Although not as extensive, we believe that similar patterns are exhibited in each of our communities. We officially inform you that social problems we are encountering are a direct result of lifestyle changes that occurred from creating the monument, particularly removal of local residents' day-to-day involvement on the land. We further inform you that additional erosion of lifestyle activities - especially historically and culturally significant activities like grazing - have a negative impact on our custom culture and welfare and need to be properly identified, evaluated, analyzed, and disclosed within the LGPA- EIS.

We assert that increases in grazing in accordance with rangeland health and other applicable standards are beneficial to our communities, our custom, our culture, our heritage and our lifestyle. We further assert that any declines in grazing activity is detrimental to those same aspects of our communities.

We continue to feel pride in maintaining a standard of living we can pass down to our children, a love of country and county, and a wise stewardship of the land.

Grazing on the GSENM is important resource that should be preserved because it is part my culture and heritage.

Table B-19
Social/Heritage Resources (Customs and Culture)

I Have lived in Southern Utah for 40 years and have been working on the Family ranch all of my life. This ranch has been in the family for well over a hundred years and I know it is an important part of the heritage of this area. I plan on passing this ranch on, to my kids and without the grazing aspect, I am sure it will be the end, because it will not be sustainable

Ranching is the main historic use of the lands of the GSENM and a foundation of our area's heritage!! Ranchers are our friends and neighbors and we would all like them to succeed.

We need to carry on these traditions that was brought here in the 1800s by our ancestors, it is our heritage and right to contune with this way of life if nothing else other than to preserve and protect or culture in this area.

If grazing was eliminated or reduced substantially there would be many historic families who have been here for as many as five generations or more that would be forced to leave the area in search of a new livelihood. This would be very regrettable - these families add a rich element of history and culture to the area.

There are not many places left in the world where a true western cattle culture still exists. The GSENM is one of them. Lets not loose this asset.

Historical and cultural values should also be a priority in the planning process. Grazing livestock has long been an important aspect of the western way of life, it should be preserved and allowed to continue. It is very similar to the Fisherman of Chesapeake Bay, it is a way of life that needs to continue.

Ranching is a part of the heritage here.

Grazing is a significant cultural and historic activity in our area. It has shaped the morals, values and work ethic in our communities for generations. We assert President Clinton identified grazing when he stated "The cultural resources discovered so far in the monument are outstanding in their variety of cultural affiliation, type and distribution." And "The monument is rich in human history".

The socioeconomic analysis needs to go well beyond the repetition of demographics and published economic statistics. Grazing is a historic and cultural activity. It constitutes a long-standing lifestyle in our communities. It forms the very fabric from which our culture is sewn and provides the basis for that which the rural West is known. What greater icon is there for the American West and in these rural towns than the American cowboy? No one would dare ask the Native Americans to abandon their custom, culture and activities that have existed since before white men settled this desert country. We should receive no less respect for those of our current generation. We therefore request a detailed social analysis be considered including impacts of grazing on family lifestyles, job creation in the area, juvenile delinquency, domestic violence, and other social aspects that are impacted by the work ethic developed as part of the grazing industry.

Since 1996 when the monument was created the population of Escalante has declined approximately 15% to 20%. High School enrollment has dropped from more than 130 to less than 80. More than a dozen fathers now commute out of state for employment, while their families are left in Escalante to carry on their normal lives. During the same time frame statistics indicate an increase in illegal drug use, domestic violence and delinquency. We do not believe these coinciding statistics are unrelated. We assert the restrictive policies implemented through the monument planning process have had a direct causal effect on social difficulties in the community of Escalante. Reduction in grazing is hampering the values taught by the industry and can only exacerbate already difficult conditions. Although not as extensive, we believe that similar patterns are exhibited in many communities of the west. We officially inform you that social problems Garfield County is encountering are a direct result of lifestyle changes that occurred partially from creating the monument - particularly removal of local residents' day-to-day involvement on the land. We further inform you that additional erosion of lifestyle activities - especially historically and culturally significant activities like grazing - have a negative impact on our custom culture and welfare and need to be properly identified, evaluated, analyzed, and disclosed within the LGPA - EIS.

We assert that increases in grazing in accordance with rangeland health and other applicable standards are beneficial to our communities, our custom, our culture, our heritage and our lifestyle. We further assert that any decline in grazing activity is detrimental to those same aspects of our area.

We also ask that you analyze all social and economic aspects very carefully.

grazing in the Utah lands should continue and not be lessened. It keeps the culture of the "cowboy" which sustains many of the people living here. This should never be taken away for the hikers that are afraid of stepping on an occasional pie, or running into cows. The "cowboy" way was here long before it became a national monument and I would strongly encourage the freedoms we have left not be taken away.

Table B-19
Social/Heritage Resources (Customs and Culture)

I moved to Boulder Utah in 1994 when the economic culture was still primarily cattle ranching. I quickly fell in love with this area and the way of life that ranching brings. I feel that grazing on public lands is a very important part of the history and culture of Southern Utah and that to reduce or remove it would be taking away an important part of the culture intrinsic to this area.

Livestock grazing has been apart of our family for generations, we have built our lives around it, we raise our kids in it and teach them good values and hard work! There is a lot of history on our ranges, places that our fathers, grandfathers, and great grandfathers have spent there lives and it is all a part of us and who we are! We run cattle because it is what makes us the people we are, good, honest, hard working people that want to live the way we want to! We want to have a legacy to pass on to the generations of family to come so they can have the same kind of lives that we are proud of!

The idea that cattle grazing is an important cultural resource that is worth heavily subsidizing as it is now is just silly.

a. Very few ranchers make a living from cattle grazing.

b. We do not subsidize other trades that have outlived their usefulness; ie, felters, milk maids, cobblers, etc. Why do we subsidize cattle grazing? If there were no subsidies, I suspect there would be little or no cattle grazing on public lands.

c. John Wayne movies will have a lot more to do with saving cowboy culture than some ranchers who pay attention to their cattle on the weekends and only every now and then and mostly drive around in pickup trucks. I highly doubt that tourists get a warm fuzzy feeling about cowboys when they round a corner on the road and cows are in the middle of it.

The ranching custom has declined, and this planning effort creates the opportunity to keep what is remaining alive and improve it. Some visitors come to the area to see cowboys in action, and without continued grazing, this historical activity will die. Local communities have a rich history of livestock grazing, and this custom must continue. Consideration to open grazing in areas recently closed must be included in this EIS and Plan Amendment. Grazing is a historic tradition in the GSENM area, and this must continue before the area becomes nothing more than resorts.

Livestock grazing has been an important activity within the GSENM planning area. Livestock grazing has already been significantly reduced since the creation of the GSENM. Please use this opportunity to objectively consider continuing livestock grazing on the monument. Local traditions and economy rely on livestock grazing within the monument for survival. Ranching is a lifelong historic tradition for which the GSENM area was established, and continuing grazing is essential. Local citizens will be affected more by this planning effort than any other, so please consider allowing this important use and tradition to continue as a priority use on the GSENM.

Grazing on these areas have become a very large important part of my family and i's lives.

Running our cattle out on the kaparowits platue effects many people.

One criteria that has been mentioned as a potential preliminary planning issue is to recognize and retain the traditional culture of the communities adjacent to the GSEM.

The historic/traditional uses were pertinent when the area was settled by the pioneers. Today, the notion of managing a sustainable grazing operation in a desert environment is dubious and short sighted. Compare the average cattle operation in the Great Plains vs. the viability of an operation in the GSNM. The number of cattle raised in Nebraska alone in 2013 was 6,300,000. Utah's production number is a paltry 770,000. This discrepancy underscores the importance that environment plays in determining the optimum use of land.

Thirty years ago, after an extensive search for a wonderful place to live and raise our children we settled in Boulder Utah. We built a home and a farm in this area because of the history and culture of farming and ranching. We are both artists and have international clientele, who in coming to visit us remark on the presence of cowboys and cattle in the area and how exciting it is that there is a place on earth where that way of life is still preserved. For forty years I was a professor at Brigham Young University and chose to commute the 200 miles because of the lifestyle this area afforded our family. I immigrated to the United States of America from Germany in 1965 the reason for this immigration was the enormous attraction of the western United States and it's ranching culture.

What a travesty it would be if this culture of stock grazing and the life of the cowboy and rancher would be endangered.

Table B-19
Social/Heritage Resources (Customs and Culture)

In order to justify any decisions, a socio-economic analysis will have to include in its modeling the amount of historic use by livestock compared with local income. To establish a credible time frame for a model, the AUM use and income numbers prior to designation of the Glen Canyon National Recreation Area in 1972 to the present could be considered as a starting point to provide the public with a scope of information for comparison. Using past and present with tax roll income information to demonstrate an actual economic trend would help in showing local impacts to many of the federal actions. Wildlife trends from the same dates should also be used to establish comparative data as one way to show both ecosystem health and recreation values. Social impacts experienced by towns adjacent to the monument should also be presented. Trends in Escalante specifically depict impacts from the monuments creation since 1996. The EIS should display and explain the monument impacts on nearby towns. Please note that recent studies which incorporate socio-economic data from Cedar City, St. George and other large communities that are not impacted to the same level as the communities in Kane and Garfield Counties are scientifically flawed and dilute actual monument impacts on the residents most affected.

Another factor which emphasizes the impact to local residents and families is school enrollment. This demographic information is vital for developing justification for any action the plan would take.

May you take into consideration the heritage of this area and what means the most to my family and me concerning these permits.

Ranching is a historic use in this area; it has allowed families to earn a living from a rugged and isolated landscape for generations. This land and its appearances have been modified and influenced by the effects of large herbivores for over 150 years. Plant communities, road locations, town character and development have all been shaped by grazing and ranching as a way of life.

With ranching in the area having shaped and defined both the monument and surrounding towns, I believe that grazing should be encouraged and facilitated in the GSENM.

I am the fourth generation and we are raising our children on the ranch they are the fifth generation, we have permits down Hole in the rock and my children have been involved in every single thing that goes on with the permits, actually when it is time to gather cows it is more exciting than Christmas for my children. I cannot imagine not being able to pass this on to them. It is our way of life and we count on it. My family respects and loves it, it's our way of life. This country would not be the same without the farmers and ranchers that take care of it. We take pride in what we do and are proud to say we graze out cattle on such a great permit, many and most people do not get such an opportunity we are grateful and would and will continue our operation.

These grazing permits have been passed down for generations and are very important historic and cultural activities to Kane and Garfield Counties and their people.

The "human environment" is essential. This includes the physical, social, and economic environments of the residents of both counties.

Ranching is very important to the economies of Kane and Garfield Counties because it is a great tradition of the west and needs to be preserved. The monument should be planned around the ranching culture and heritage and should highlight the ranching traditions.

Ranching is also very important to tourism because people from all over the country and world come to see "real cowboys" and the traditions of the west. Every summer we have tourists stop to take pictures as we trail cows and work the cattle and to visit with us about our way of life. It is also important to these people that the cowboy/western traditions continue. This important American tradition cannot continue if grazing is taken from public lands/the monument. We should all be proud of this way of life, and monument should be planned around this culture and heritage and should highlight these traditions.

I believe that livestock grazing should not be eliminated, or reduced, but rather embraced as one of the characteristics which makes this area unique.

To draw from the message of the Presidential Proclamation and also quote the Fact Sheet of GSENM Objects and Values:

Ranching and livestock management remain at the core of the traditional uses of this region's public lands, and have created a cultural landscape rich in both tangible objects... and the intangible forces which have shaped essential values of hard work, self-reliance, strong ties to the land and strong ties to family.

The Proclamation "allowed for the continuation of valid existing rights" which would include ranching and the

Table B-19
Social/Heritage Resources (Customs and Culture)

grazing of livestock.

According to the Livestock Grazing Fact Sheet there are 91 permittees authorized to graze within the GSENM. I am one permittee with grazing rights which lie within the GSENM and other monument designations. I may be counted as only "one" but I also stand for my family in which there are 92 living individuals with deep ties to the land and our heritage which is strongly based on cattle ranching. Our family's cultural heritage includes the Mormon Hole-in-the-Rock settlers, and many others of 5 generations who called this land home.

I am concerned that areas with a "monument" designation will eventually evolve into a National Park-like status. This is a beautiful and rugged area that does draw visitors, as well as residents, as they seek to have experiences which bring meaning and peace into their lives. These visitors come to enjoy an array of activities--exploring, hunting, fishing, geologic/paleontologic/archeologic wonders--but recreation is based on disposable income and must have a foundation of someone's productivity. Each citizen of the United States must feel a degree of uneasiness in some aspect of his personal life about the welfare of our future economy. I add to the local and national economy because I ranch. I am creating a product that is valued both nationally and internationally. Each rancher, large or small, contributes to a productive society. The fabric of our nation and this area is strengthened by values of honesty, hard work, self-reliance and family. One cannot cheat Mother Nature and succeed. It is imperative to be good stewards.

Children who learn to work hard, think and reason, do scary things and accept responsibility grow in confidence and wisdom and become conscientious and productive citizens. This is an asset to the health and wealth of our nation. These values are here and are fostered and developed by those who depend upon the land and their livestock to do this.

Government agencies with growing budget restraints would do well to not overlook the asset that ranchers are in caring for the land in which they have a vested interest. Ranchers give labor, time and equipment to build/develop and maintain habitat and water that help support both cattle and a wildlife population. (This in turn enhances various recreational pursuits.) My family and I have personally "donated" assets, resources and hundreds of man-hours which have benefited many others. Conscientious ranchers are highly motivated to improve the range. Forage is manageable, improvable, and used wisely, is also renewable. There are notable examples of rangeland management by cattle operators that demonstrate the benefit and potential that such management offers to rangeland health, scientific study, and recreational enjoyment which include, for example, Deseret Land and Livestock and the Ray and Karl Heaton Family, winners of the Leopold Conservation Award.

I must ask the question, "What are the benefits of eliminating grazing?"

(As a side question - ample evidence exists to document the spread of noxious weeds from roadways. Since visitor use is increasing in this area, should all roads with a noxious weed invasion be closed to the public? Should all roads free from noxious weeds be closed to prevent a problem from occurring?)

Going back to the definition of a "national monument", the authorities having jurisdiction have a responsibility to maintain the Monument so as to preserve its historical heritage. This heritage is livestock grazing. Those whose shrill cries demand an end to grazing do not understand the purpose of the National Monument program.

Ranching is the main historic use of the lands of the GSENM and a foundation of our area's heritage!! Ranchers are our friends and neighbors and we would all like them to succeed.

"Ranching and livestock management remain at the core of the traditional uses of this region's public lands, and have created a cultural landscape rich in both tangible objects...and the intangible forces which have shaped essential values of hard work, self-reliance, strong ties to the land, and strong ties to family" (FACT SHEET: GSENM's Objects & Values, BLM). We firmly believe in this statement. Ranching is at the heart and core of this area and has woven values and morals into the fabric of our families.

The heritage and culture of ranching is very worth preserving.

Ranching on the GSENM and in Southern Utah is a historic and cultural activity and should be treated as such.

Table B-19
Social/Heritage Resources (Customs and Culture)

Another critical component for horse recreation is the human resource which livestock grazing on the GSENM strengthens this resource. If a young man or woman hopes to develop horsemanship skills, where is a better place to learn than by checking or gathering cows horse back on the GSENM? This type of training often goes unnoticed, but is essential to the customs and local culture of the area. In turn, youngsters after spending many hours in the saddle, develop enough confidence to seek employment at one of the horse related tourist attractions.

Cowboys and Grazing is a living history museum of the custom and culture of the area and along with agriculture in general is a moral imperative! Grazing is an allowed use by presidential proclamation and this custom and culture is a part of the monuments NATURAL history just like the geology, paleontology, and archaeology of the area.

For about 150 years, it has been the custom and culture of the people of Kane County to use the area now designated as the Grand Staircase-Escalante National Monument for multiple use activities. My recommendation would be to continue our custom, culture and rights on the land. Livestock grazing, recreation, hunting, mining, wood gathering, etc. are compatible activities and should be continued as the monument proclamation states.

Livestock grazing is my custom, culture and heritage. It is my feeling that in losing our custom and culture, we lose our ability to be productive and self reliant. In other words, the result would be loss of jobs. If we lose our custom, culture and livelihood as a nation, we lose our nation/

Cattle and ranges have been a part of our culture in Boulder since the beginning. Tourists live cows. People come from all over the world to see the old west cowboys, horses and cows.

People who choose to live here do so because they love the landscape and the way of life. Cows have always been crucial and part of life in Boulder and other surrounding areas. Cows need the range lands and we need the cows.

As an owner of a Motel for 15 years I have experienced first hand what our customers love. They love seeing the cows, the farmers, the green pastures, the hay stacks, the barns, the horses herding the cows, the tractors, the cowboys and cowgirls. These are all connected to cows.

If the ranchers would stop ranching, all existing communities would change significantly: the wide open spaces, green pastures within the towns would disappear and turn into small tumbleweed ranchettes. And none of us would like to see this.

Grazing on the monument is important to me. Because my family does it for a living. I have a lot of fun moving cows. Its what I am going to do when I grow up.

My name is Norris Brown from Kanab Utah and I am a rancher on the monument. My great great grandfather settled in southern Utah in the late 1800's. They were grazing cattle at that time. My father, grandfather and great grandfather all made a living grazing cattle and farming. Also on my mother's side my ancestors ranched on the Arizona strip and around Hurricane Utah. This land has a historical use of supporting cattle and families. The value of ranching and the importance of the life style for raising children and teaching them to work hard and learning to care for animals is very important.

Please take into consideration the economic, historical and cultural values of livestock use on the monument.

I feel there is a heritage that needs to be preserved with the grazing. Keep the cows on the monument!

I strongly request that you honor our heritage as cattlemen and ranchers. We are the ones that built and have maintained this land we love and depend on for our lively hood.

The desire to maintain the ranching lifestyle from me to my children, grandchildren and beyond runs deep in my heart and mind. Any planning that the Monument does should support and sustain this important use of public lands as specifically protected by the monument proclamation.

We also feel like grazing is an important part of our culture and part of our heritage.

Grazing is a very big part of our cattle business. We would like to continue to keep this ranch and raise our families here and pass this onto our children. Without grazing it would make it next to impossible to do so. We want to preserve our heritage and our culture.

Before and since the Monument Proclamation- grazing has been both a historic and current value and land use in Kane County since Mormon pioneers settled the area beginning in the late 1800's. Livestock grazing remains a significant staple and contributor to Kane County and the area's economy, heritage, traditions and culture.

Grazing has been a lifestyle of the West for Hundreds of years. It has been a part of my family and is currently part of our livelihood.

Table B-19
Social/Heritage Resources (Customs and Culture)

Tourists that have come through our communities and stay at our hotels have always commented on how they like to see the "Cowboys" herding their cows from one range to the other. In fact some of them get to participate enhancing their "Western" experience.
Also as I have grew up in this community, I have watched it grow and become more tourist attraction. The camp grounds or spots and also the trails that a lot of people like to take are made from the cattle throughout the years.
As a wife of a cattle rancher, I would like to address on my point, I have 4 children with ranges of age from 14-5. My children love to go down to the Pariah and enjoy the time riding their horses and herding the cattle, this is what our ancestors have brought to our family. I cannot tell you how many times riding up there that country people stop to take pictures of one of my children on their horsesm tourists love to see western heritage stay alive.
I think you need to understand this is not just a cattle operation, it is our heritage, my grandchildren are the 8th generation to run cattle down Cottonwood, I remember as a small child running cattle down there.
It also has brought a closeness to our family and have gave us things we can enjoy together. I enjoy going with my sons and their sons to gather cattle, fix fences, checking feed, and checking cattle. As part of this heritage I hope you take into consideration this is our ancestry. I want this to be passed onto many generations to come, as it was passed onto me.
We assert maintaining sustainable grazing in accordance with healthy productive rangelands and allotments are beneficial to our local communities, our custom, our culture, our heritage and our rural lifestyle. We further assert that any declines in grazing activity are detrimental to those same aspects of our communities.
We also ask that you analyze all social and economic aspects very carefully.
Raising cattle is a beloved tradition and livelihood for some, and I appreciate the efforts the BLM makes to balance this heritage with the responsibility we have for those who will inherit this land in the future.
Throughout the history of Kane and Garfield Counties, livestock grazing has been and continues to be a very important part of our economy, heritage and culture.
Likewise, the great importance of local traditions and the historic culture of ranching and grazing should not only be considered, but should be highlighted and take precedence in the grazing EIS/Plan.

Table B-20
Soils

We would like to see BLM give high priority to restoring the biological soil crusts that stabilize the land under natural conditions. Trampling by livestock ruins this value, exposing the soil to accelerated erosion by water and wind.

They should also work harder to maintain the living soil crusts (cryptobiotic soils) that keep the land surface from blowing away and that provide microniches for other organisms to live in the area.

N37 33'08.0" W111 25'58.6" (Right Hand Collet)

N37 26'40.7" W111 14'04.4" (Batty Pass)

N37 50'41.9" W111 18'38.9" (The Gulch)

N37 25'54.9" W111 08'13.6" (Big Hollow Wash)

--Soil conditions in many areas are being over compacted with animal usage and as a result the ability to retain water is decreasing;

--As a result, native grasses are not replenishing themselves between seasons and the increase or infestation of noxious weeds are out pining and replacing local species;

--Cattle trails that erode into small arroyos then evolve into washes.

N37 22'57.3" W111 20'02.6" (Rogers)

N37 30'45.4" W111 29'56.5" (Willard)

--In these canyons the cattle are climbing steep slopes to forage and in the process dislodging rocks and debris, as well as disturbing the underlying soil;

--Cattle pull out scarce edible plants between the rocks which destabilize the slopes causing erosion to accelerate;

--I believe there are feral cattle in these canyons contributing to the erosion and plant deterioration;

Our big spring winds blow the soil away once it has been trampled, but if the soil crusts are intact, the soils won't move under the fiercest of winds. The dust created lands on snowcapped peaks to the east, and the dark color on the snow makes the snow melt faster, changing the season of spring runoff on our big rivers. That's serious stuff, and it is all linked.

During these years, I have observed the extreme erosion occurring throughout the Monument in the form of gullies, rills, soil pedestals, surface erosion flow paths, braided and washed out stream channels, wind erosion and dune formation. I note that Rangeland Health Determinations by Monument staff have documented some of these same conditions of erosion[1]. I met with Juan Palma, BLM Utah State Director and his senior staff in the winter of 2011 to discuss this issue and the causes, particularly livestock grazing, which accelerate natural rates of erosion through removal of plant and biological crust cover, and destabilizing of riparian areas. During that meeting, BLM was reluctant to address this issue, particularly avoiding the role of livestock in accelerating erosion. This past April, along with representatives from various interested organizations, we toured areas of the Monument and met with BLM staff to view conditions prior to meeting at your headquarters in Kanab. I was particularly disappointed that upon bringing up the issue of soil erosion and livestock, BLM staff quickly and vigorously denied any role of livestock in accelerating erosion. This occurred while we stood in an area of sagebrush, denuded soil and Russian thistle. The refusal to acknowledge that livestock can cause accelerated erosion is serious, given the Monument environment and BLM's role in preventing degradation. Therefore, I believe that the Grazing Plan Amendment and EIS will be a biased process, avoiding dealing with the inherent problems of grazing livestock in this sensitive area, in order to perpetuate the status quo.

[1] BLM. 2006. Rangeland Health Determinations dated July 18, 2006.

NRCS recognizes that "Steep sloped areas will be avoided or underused by livestock if more level terrain is available with adequate forage reserves[6]." A study of cattle distribution in varied topography in Wyoming found that "Cattle concentrated use (79%) on slopes less than 7%. Consequently 35% of the area, on or surrounded by slopes >10%, received only 7% of observed use"[7]. Another study in mountain rangeland, using direct observations, found that cattle avoided areas greater than 20% slope and had the greatest preference for areas <10% slope[8]. Both studies recognized high use rates in meadows and areas close to water. Current recommendations for establishing stocking rates recognize the constraints of topography by reducing grazing capacity on steeper slopes[9, 10, 11]. Table 1 presents factors that are applied to align stocking rates for cattle with capacity and reduce the risk of excessive grazing. However, to avoid excessive use in these areas of lower slope

Table B-20
Soils

angle, it is advisable to only calculate grazing forage capacity for lands <10% slope and monitor use in those locations. This approach is protective of the erodible lands on these steeper slopes, which is discussed in a later section of these comments. Based on the science, we recommend lands with slopes greater than 10% be determined as unavailable for livestock grazing.

- [6] NRCS. 2003. National Range and Pasture Handbook. US Department of Agriculture, Natural Resources Conservation Service. P 5.2-18.
- [7] Pinchak, W.E., M.A. Smith, R.H. Hart, and J.W. Waggoner, Jr. 1991. Beef cattle distribution patterns on foothill range. *Journal of Range Management* 44:267-275.
- [8] Gillen, R.I., W.C. Krueger, and R.F. Miller. 1984. Cattle distribution on mountain rangeland in northeastern Oregon. *Journal of Range Management* 37:549-553.
- [9] Galt, D., F. Molinar, J. Navarro, J. Joseph, J. Holechek. 2000. Grazing capacity and stocking rate. *Rangelands* 22(6): 7-11.
- [10] Holechek, J.L., R.D. Pieper and C. Herbel. 2004. *Range Management Principles and Practices – Fifth Edition*. Pearson- Prentice-Hall, New Jersey. 607 p.
- [11] NRCS. 2003. National Range and Pasture Handbook. US Department of Agriculture, Natural Resources Conservation Service. Table 3-12. P. 5.3-1.

The soils and plant communities of the Monument are not adapted to herds of large, hooved animals [12]. Livestock grazing in the sensitive soils of the Monument destroys soil crusts and removes soil stabilizing vegetation, thus accelerating erosion and impairing soil and microbiotic function. Such functions as nutrient cycling, water infiltration and storage are drastically altered. By grazing livestock on the sensitive and erodible soils found in the Monument, BLM is impairing watershed function, creating sediment and salinity problems in the Colorado River drainage, in violation of the Colorado River Salinity Control Act.

- [12] Mack, R. N., and J. N. Thompson. 1982. Evolution in steppe with few large, hooved mammals. *The American Naturalist* 119:757-773.

Soils in arid and semi-arid ecosystems have significant areas covered by biological crusts. These are made up of bacteria, cyanobacteria, algae, mosses, and lichens. Biological crusts stabilize soils, increase soil organic matter and nutrient content, absorb dew during dry periods, and fix nitrogen [13, 14]. Crusts enhance soil stability and reduce water runoff by producing more micro-catchments on soil surfaces. They increase water absorbing organic matter, improve nutrient flow, germination and establishment for some plants while dark crusts may stimulate plant growth by producing warmer soil temperatures and water uptake in cold deserts [15]. Biological soil crusts are fragile, highly susceptible to trampling [16, 17], and are slow to recover from trampling impacts [18].

- [13] Ladyman, J.A.R., and E. Muldavin. 1996. Terrestrial cryptogams of pinyon-juniper woodlands in the southwestern US: a review. Fort Collins, CO, USA: US Department of Agriculture, Forest Service, RM-GTR-280. 33 p.
- [14] Belnap, J., D. Eldridge, J.H. Kaltenecker, S. Leonard, R. Rosentreter, J. Williams. 2001. Biological soil crusts ecology and management. Denver, CO, USA: US Department of Interior. Bureau of Land Management. TR-1730-2. 118p.
- [15] Belnap, J. 1994. Potential role of cryptobiotic soil crust in semi-arid rangelands. In: S. B. Monsen and S. G. Kitchen [ed.]. *Proceedings-ecology and management of annual rangelands: 18-20 May 1992*; Boise, ID, USA. Ogden, UT, USA: US Department of Agriculture. Forest Service, INT-GTR-313. p. 179-185.
- [16] Kleiner, E.F., and Harper, K.T. 1972. Environment and community organization in grasslands of Canyonlands National Park. *Ecology* 53:299-309.
- [17] Floyd, M. Lisa, Thomas L. Fleischner, David Hanna, Paul Whitefield. 2003. Effects of historic livestock grazing on vegetation at Chaco Culture National Historic Park, New Mexico. *Conservation Biology* 17:1703-1711.
- [18] Ponzetti, Jeanne M. and Bruce McCune. 2001. Biotic soil crusts of Oregon's shrub steppe: community composition in relation to soil chemistry, climate, and livestock activity. *The Bryologist* 104: 212-225.

Sediment load and turbidity increase from watershed inputs, instream trampling, disturbance and erosion from damaged streambanks, reduced sediment trapping by riparian and instream vegetation, loss of bank stability and increased peak flows from compaction. Fine sediments increase in depositional environments (pools, quiet water

Table B-20
Soils

areas) from the increased erosion and spawning gravels are made unusable due to high sediment content[19]. EPA[20] found sediment yield 20-fold higher in a grazed watershed when compared to an ungrazed watershed. Peak storm runoff from a 120 ha basin in Arizona was estimated to be 2 to 3 times greater when heavily grazed than when lightly grazed[21]. Even under moderate stocking rates, grazing contributes to the deterioration of soil stability in deserts thus leading to increased soil erosion[22]. Soil erosion is further exacerbated by increased surface runoff triggered by loss of vegetative cover and litter[23], both of which have been shown by numerous studies to be reduced by livestock grazing. Severe erosion occurs in the western United States when comparing heavily grazed areas to ungrazed areas[24, 25, 26, 27]. Furthermore, there are a number of extensive literature reviews on this topic that describe the indisputable impact of livestock grazing on soil stability and erosion[28, 29, 30]. The Lusby study cited here was conducted on tributaries of the Colorado River and demonstrated the significant reduction in sediment delivery and runoff in a watershed that was closed to livestock grazing when compared to its paired watershed that continued to be grazed.

[19] Belsky, A.J., A. Matzke and S. Uselman. 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *Journal of Soil and Water Conservation* (419- 431).

[20] White, Richard K., Robert W. VanKeuren, Lloyd B. Owens, William M. Edwards and Robert H. Miller. 1983. Effects of livestock pasturing on non-point surface runoff. Project Summary, Robert S. Kerr Environmental Research Laboratory, Ada, Oklahoma. EPA-600/S2-83-011. 6p.

[21] Trimble, S.W. and A. C. Mendel. 1995. The cow as a geomorphic agent, a critical review. *Geomorphology* 13:233-253.

[22] Warren, S.D.; M.B. Merrill; W.H. Blackburn and N.E. Garza. 1985. Soil response to trampling under intensive rotation grazing. *Soil Sci. Soc. Of Amer. Journal*, 50: 1336-1341.

[23] Ellison, L. 1960. Influence of grazing on plant succession of rangelands. *Botanical Review* 26: 1-78.

[24] Cottam, W.P., and F.R. Evans. 1945. A comparative study of the vegetation of grazed and ungrazed canyons of the Wasatch Range, Utah. *Ecology* 26:171-181.

[25] Gardner, J.L. 1950. The effects of thirty years of protection from grazing in desert grassland. *Ecology* 31:44-50.

[26] Lusby, Gregg C. 1979. Effects of Grazing on Runoff and Sediment Yield from Desert Rangeland at Badger Wash in Western Colorado, 1953-1973. Geological Survey Water Supply Paper 1532-1 prepared in cooperation with BLM.

[27] Kauffman, J.B., Krueger, W.C. and M. Vavra. 1983. Effects of late season cattle grazing on riparian plant communities. *J Range Manage* 36:685-691.

[28] Gifford, G.F. and R.H. Hawkins. 1978. Hydrologic impact of grazing on infiltration: a critical review. *Water Resources Research* 14: 305-313.

[29] Fleischner, T. L. 1994. Ecological costs of livestock grazing in western North America. *Conservation Biology* 8: 629-644

[30] Jones, A.L. 2000. Effects of cattle grazing on North American arid ecosystems: a quantitative review. *Western North American Naturalist* 60: 155-164.

There are eight capability classes described in the Soil Survey with higher numbered classes generally indicating greater limitations for croplands. These are shown in Table 3. Some classes are inherently unsuitable for livestock grazing as the ability to re-establish plants by seeding may be poor or soil erosion risk high. BLM should evaluate each of these classes to determine whether they can support livestock grazing without the risk of irreversible or undue degradation, particularly loss of native plant community and biological crust components that cannot be restored by seeding, or by erosion greater than the tolerable soil loss (Soil Survey Table 7). We have indicated the classes we believe should not be available for grazing livestock, which are those with severe limitations regardless of whether or not the Soil Survey indicates they may be rangeland or pasture.

[Table 3. Soil Capability Classes from the Soil Survey]

The Capability Classes also have subclasses that indicate particular limitations. These are e, w, s or c. Subclasses with the "e" designation are limited due to erosion. The "w" subclass indicates soils that are subject to water being on the surface or wetness that interferes with plant growth or cultivation. The "s" subclass indicates shallow, droughty or stony soils. These should be mapped and excluded from lands available for livestock grazing. Soil

Table B-20
Soils

subclass "c" means a climatic limitation of very cold or dry. Land capability class and subclasses are delineated in the Survey descriptions of "Detailed Soil Map Units" (Survey p. 19 -169) and tabulated in the Soil Survey (Table 7). Wind erodibility groups are described in Table 4. Soil Survey (Table 7) delineates wind erodibility groups as well as the wind erodibility index, which is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. We have indicated sandy soils as not suitable for grazing due to wind erosion hazard. Other groups may be susceptible to wind erosion and suffer excessive wind erosion when soil covering vegetation and crusts are below potential cover. Others may be subject to puddling and compaction by livestock for the finer grained soils such as silts and clays. A detailed analysis or modeling of wind erosion should be undertaken and presented in the EIS, including an evaluation of current and potential soil cover and the effects on wind erosion in tons per acre per year. Based on this, values exceeding the wind erodibility index in the Soil Survey (Table 7) should result in those soils being classified as not available for livestock grazing. We have indicated that the sandy soils in Groups 1, 2 and 3 should be unavailable to livestock grazing due to wind erosion hazard. Others such as the finer grained soils, if lacking adequate soil cover can suffer excessive wind erosion and this should be ascertained and those identified in the modeling analysis.

[Table 4. Wind Erodibility Descriptions from the Soil Survey]

The Soil Survey (Table 5) describes the dominant plant species and their production at potential during above normal, normal and below normal precipitation years. Soils not supporting vegetation suitable for grazing either are not listed in Table 5 or have no production values associated with the listed soil. All soil map units not included in Soil Survey (Table 5) with production data are, therefore, considered not suitable for livestock grazing. These soil map units should be delineated and excluded from lands available for grazing.

The Soil Survey (p. 176) discusses sheet and rill erosion and presents factors to be used in the Universal Soil Loss Equation (USLE) or Revised Universal Soil Loss Equation (RUSLE) for determining erosion by water. The K factor, which is based on the percentage of sand, silt and clay, ranges from 0.02 to 0.69. The higher the K factor, the more susceptible the soil is to erosion by water. A "T" factor is also provided. This is an "estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period." Values of K and T are provided in Soil Survey (Table 7).

USLE and RUSLE are the most widely used models for calculating soil erosion. Factors included in the equations are empirically determined for different regions and soil types[33]. In order to evaluate rates of erosion, use of RUSLE2 is the currently accepted tool of NRCS. RUSLE2 is available at the Agriculture Research Service website for review and downloading[34]. This model should be applied to soil, topography, vegetation and soil cover conditions in the Monument to evaluate the current rates of erosion. Those rates of erosion should then be compared to the "T" values in Table 7 of the Soil Survey and all land areas with rates of erosion determined greater than the "T" values should be excluded from lands available for livestock grazing.

[33] Renard, K.G., G.R. Foster, G.A. Weesies, D.K. McCool, and D.D. Yoder. 1997. Predicting soil erosion by water: a guide to conservation planning with the revised universal soil loss equation (RUSLE). US Department of Agriculture, Agriculture Handbook No. 703. 404 p.

[34] <http://www.ars.usda.gov/Research/docs.htm?docid=6014>

Nearly everywhere I go, I notice cattle grazing takes place there. Because of the dryness of this ecosystem, soil conditions and vegetation appear to be adversely impacted by grazing and never seem to fully recover from these impacts.

BLM should prioritize the health of the biological soil crusts that keep soils from blowing away. These are essential to the Monument as it faces climate change, and biological soil crusts are one of the values listed in the Proclamation, yet too often the biological soil crusts are heavily trampled and eliminated by cattle.

BLM should NOT prioritize the health of the biological soil crusts that keep soils from blowing away. These are NOT essential to the Monument. Biological soil crusts are a symptom of biodiversity LOSS and deterioration of land health. Measures to restore diversity will have greater positive impact than simply protecting these rapid growing crusts.

In your grazing management plan please include provisions for the protection of cryptobiotic soil crust.

Table B-20
Soils

The BLM should prioritize the health of the biological soil crusts that keep soils from blowing away. These are essential to the Monument as it faces climate change, and biological soil crusts are one of the values listed in the Proclamation, yet too often the biological soil crusts are heavily trampled and eliminated by cattle.

Every aspect of grazing has an impact on water and all issues of desert health are interrelated. The health of the biological soil crusts is essential. Untrampled seeps and springs are essential. Water and other issues don't just effect livestock permittees; they effect everyone, and input should be accepted from all interested parties, not restricted as it is now.

BLM should prioritize the health of the biological soil crusts that keep soils from blowing or washing away. These crusts are essential to the Monument as it faces climate change, and biological soil crusts are one of the values listed in the Proclamation. Nevertheless, too often the biological soil crusts are heavily trampled and eliminated by cattle. Seeps and springs are often similarly heavily trampled.

Keeping soil crust intact is critical, and the BLM should make this a priority. I am sad to see so many barren, lifeless soils in the monument that are not productive. Biological soil crust plays such a huge role in desert grasslands. It breaks down organic matter, and fix atmospheric nitrogen, which then makes nutrients available for plants. They make arid desert soils incredibly fertile places and help promote seedling germination. They retain soil moisture and prevent erosion. Biological soil crust is vulnerable to disturbances like grazing and warming temperatures associated with climate change.

BLM must prioritize the health of the native vegetation and biological soil crusts that keep soils from blowing away. These are essential to the Monument as it faces climate change, and biological soil crusts are one of the values listed in the Proclamation, yet too often the biological soil crusts are heavily trampled and eliminated by cattle.

Some people will say that in the absence of cattle, biological soil crusts will form, and given time (200 years) rebuild and replenish the soil on the GSENM. The information that is conveniently left out is that with correctly managed grazing the same effect can be accomplished in approx. one hundredth of the time. Soil Crust takes an average of 200 years to accomplish its purpose. Correct grazing can and will produce the same benefits and results in just a few months or at most a couple years - I refer you back to Allan Savory and his proven research. Lets follow good scientific management and proven techniques - not emotional and uninformed outcry.

I am suggesting that some range improvement projects such as installing earthen dams across gullies and select drainages could be beneficial to prevent erosion and soil stabilization.

With prolonged drought, increased cheatgrass and other invasives, the loss of crucial biological soil crusts, and other problems, it is clear that BLM "status quo" or "stay the course" GSEM grazing management is no longer appropriate or tolerable. Changes are necessary and BLM must use the best science and follow relevant laws and policies to adopt strong decisions and then effectively implement them.

Where GSEM objects and values have been or are likely to be harmed but livestock grazing, those lands should be designated as "Not Available" in the Record of Decision. For example, important riparian and wetland habitats, special status species habitats, and biological soil crust areas should be so designated.

As a biologist working on the Colorado Plateau, I see first hand the effects of losing biological soil crusts. It's amazing how something so innocuous can have an effect on so many things. Prioritizing protection of this key resource can help protect water in the Southwest. Loess from the Plateau winds up on the snowpacks of the Rockies and increases the speed at which they melt. Protecting our soil is protecting our future.

Significantly, even organizations dedicated to sustainable grazing in the West (e.g., The Quivira Coalition) have acknowledged that in those places where biological crust offers the primary protection of the soil against transport by water and wind, livestock grazing may be an incompatible use of the land (Ref. 8). Numerous grazed areas within the Monument might well fit this description. Dust mitigation is just one example in which forward looking plans for grazing management must incorporate modern realities that have so far been largely ignored. The future of grazing on the public lands, the Monument included, will hinge on how the agencies respond to new challenges such as this.

I have personally observed areas around Swapp Canyon, Nephi pasture, Cottonwood Canyon and Kitchen Corral where the protective covering on the soil is pretty much gone except in small protective patches. I have also noticed that the sagebrush and small shrubs are dying back in some areas where the erosion is worst.

The basic problem is this land is sensitive due to the nature of being a desert and having a harsh climate and cattle, being as big as they are, really penetrate the soil or sand setting things up for wind and water erosion.

Table B-20
Soils

There are many scientific studies that show how beneficial grazing is for the land and soil when done properly,

Traveling slowly, on foot, through GSENM has given me ample time to observe some alarming trends in soil and vegetation conditions. I am not a trained scientist, but it's not rocket science to observe the continuous head-cutting and down-cutting of arroyos and gullies, severe wind erosion and increasing sand dune formation, elimination of native plant and animal species and impairment or destruction of water sources.

Soil crusts, so important for soil surface stability, now exist almost entirely in places inaccessible to cattle or under thick, low growing shrubs and trees. The increased sedimentation, driven by wind and water, severely impacts the few perennial water sources in the Monument, smothering spawning habitat and filling shallow basins. Wind driven dust from all over southern Utah and northern Arizona are accelerating spring runoff in the mountains to the east where I live. This, in turn, affects downstream water supplies relied upon by millions of humans and other creatures.

Biological soil crust communities are an important component of Colorado Plateau desert ecosystems, including those ecosystems found within the GSENM boundaries. They provide basic ecological services such as soil stabilization, nitrogen and carbon fixation, moisture retention, and the storage of plantessential nutrients (Belnap and Gardner, 1993; Belnap et al., 2001; Pellant et al., 2005; Bowker et al., 2008; Miller, 2008). They function as a living mulch (Belnap et al., 2001). The Plan Amendment/EIS must recognize that biological soil crust communities are a key component of many of the vegetation communities within the Monument and that they are very sensitive to domestic livestock trampling.

The Plan Amendment/EIS must specifically address the management of grazing allotments containing biological soil crust (BSC) communities, which are very sensitive to livestock grazing. First, the BLM must know where these BSC communities are found and then rangeland health assessments must be able to ascertain the condition of these communities. Rangeland health is a measure of how well the integrity of the soil and ecological processes of rangeland ecosystems are being sustained (BLM, 2014). The Plan Amendment must ensure that rangeland health will be a primary management goal. Research has shown that GIS layers could be created that will predict the likely occurrence of BSC communities in the GSENM (Bowker et al., 2006; Bowker et al., 2008a; Bowker et al., 2008b; Miller, 2008; Chaudhary et al., 2009).

the vegetation and soils, in such a dry and fragile landscape really do need to be protected.

Because it is so arid, attention to the soil is critical. Simply put, grazing cattle trample soil - soil that otherwise would have formed a biological crust that keeps soil from blowing away and retain rainwater to nurture plants. The biological crust can take years for nature to create but only days for grazing cattle to destroy. Stable soil is a cornerstone for native plants and animals to thrive, so if an area is to be considered for an allotment (and not all should be) rotating the use/non-use of the allotment is critical.

Changes in management that I would like to see include: Addressing erosion concerns

Visitors and locals get confused as they watch their step and find the cattle tracking all over the cryptobiotic crusts. Why have this conflict with the users? It is as much a privilege for me to visit these areas as it is for the permittees and their cattle. The increased wind erosion from the disturbed biotic crust causes more sand to blow, which creates more dunes that reflect the sunlight and increase the albedo effect causing increasing climate change. If and when natural forces of landslides close canyons to livestock, these areas should remain closed to cattle grazing.

Biological soil crusts play a particularly crucial role in the development of a GSENM grazing management plan. They are a key component of ecological integrity due to their stabilization of a variety of arid-area soils prone to erosion and water runoff, and their support of important ecological processes (e.g., nutrient cycling) They are an object identified by the Proclamation to be protected. They are highly vulnerable to being broken and diminished through trampling by cattle.

Thus the question of what proportion and where biological soil crusts should be protected arises for both ecological integrity under BLM policies and conformance with the Proclamation.

Protection for biological soil crusts in ungrazed areas may provide protection for additional objects and values within the Monument. For instance, endemic plant species, hotspots of biodiversity, and unique plant assemblages are scattered throughout the Monument rather than being located in particular "hotspots" that contain all of them

Table B-20
Soils

(Stohlgren, et al. 2005). In fact, Stohlgren and others write, "Preserving primary and secondary hotspots of richness, endemism, and uniqueness, with greater effective population sizes of more species and greater connectedness among them, would require actively protecting 74% or more of the Monument, and possibly adjacent lands."

Tracking, mapping, and understanding trends among so many plant species is difficult. However, if 60% of the suitable habitat for biological soil crusts is protected from trampling, then associated or adjacent areas that may contain endemic plant species, hotspots of richness, and unique plant assemblages may often be protected as well.

Thus, biological soil crust should be considered a particularly relevant indicator of ecosystem function within GSENM (Bowker et al. 2008).

Erosion and degraded riparian areas are of special concern environmentally as well as for grazing use. 150 years of abuse requires a lot of effort to regain what was once there and should be present now when it comes to plants and halting further erosion. If it requires complete removal of cattle grazing then the GSENM must consider this fully.

NPCA is especially concerned about impacts to park cultural and paleontological resources, which may not be adequately inventoried inside the NRA and where impairment from livestock grazing may be irreversible, as well as critical water resources including seeps and springs, sensitive soils and vegetation, and recreational use of the NRA's extensive backcountry.

BLM should prioritize the health of the biological soil crusts that keep soils from blowing away. These are essential to the Monument as it faces climate change, and biological soil crusts are one of the values listed in the Proclamation, yet too often the biological soil crusts are heavily trampled and eliminated by cattle.

I have serious questions about the appropriateness of grazing in the Escalante-Grand Staircase National Monument. There is limited forage for cattle. They must range widely in search of adequate forage and in the process, trample delicate soils.

Additional planning issues: Restoration of biological crusts.

The Monument Plan and Proclamation explicitly state that biological soil crust is a value that must be protected and restored. Crust cover has been reduced below expected on many areas on the Monument, especially in seedings and sagebrush grassland range site types where soil surfaces have been greatly impacted by mechanical treatments and grazing (71% of the sagebrush grassland sites rated as degraded, i.e., achieving a score of 3 or less.). A model of potential biological soil crust distribution on the Monument corroborates that decline (Bowker 2001). This reduction compromises soil, hydrological, and biological functions, which impacts the Monument's ability to meet Utah State Standards and Guidelines for Range Management.

In the past decade BLM has not adhered to the direction in the MMP. Large-scale, ongoing surface-disturbing vegetation treatment projects have removed biological soil crust. Unfortunately, inadequate pre-treatment crust inventories or salvage for post-treatment restoration has delayed recovery significantly. Livestock grazing also contributes to reduction of biological soil crust in the absence of needed mitigating or corrective management procedures. This disregard for restoration and protection of biological soil crust has been documented by the NLCS. Page 22 of the NLCS Plan Implementation Review report (2010) noted that "Several interviewees expressed concerns about the lack of research and staff doing work on biological soil crusts... Some also feel that management actions and allowed uses often disregard soil crust health." In the accompanying Action Plan, the NLCS directed the Monument to "...expand scientific understanding and protection [of biological soil crusts]" and "increase staff awareness of Plan requirements and management options for protection of biological soil crusts" (NLCS 2010).

As a first step in rectifying the problems identified by the NLCS, we suggest that the Monument engage the services of Dr. Roger Rosentretter (BLM-Retired), who has years of experience teaching biological soil crust classes to BLM staff.

Additional planning issues: Highly erodible soils:

In the past, grazing management has not taken into consideration measures to ensure undue erosion does not occur in highly erodible soils. Such degradation negatively impacts values BLM is asked to protect in the

Table B-20
Soils

Proclamation. Areas that have soils that are highly erodible should be classified as unsuitable of supporting livestock grazing. Similarly, soils that lack sufficient ground cover to remain below the tolerable soil lost defined in the soil survey should be considered unsuitable until they have recovered. Grazing where soils lack sufficient ground cover prevents their recovery. The NRCS range manual notes that soil stability is one indicator used in assessing carrying capacity.[28]

[28] Natural Resources Conservation Service. 2006. National Range and Pasture Handbook. Washington, D.C. pg 4-25

Cattle graze predominantly on slopes <10%, therefore exclude slopes greater than 10% from available lands due to erosion risks

Soils and Watersheds - The Monument consists of sensitive soils and biological crusts that are not adapted to herds of large, hooved animals, which thru removal of ground covering vegetation, biological crusts and litter, promote accelerated erosion, and impair the nutrient cycle and the productivity of the land.

Capability Classes - The Soil Survey rates soils in the Monument based on whether they are suitable for crop production, with some inherently unable to support restoration by seeding. Eliminate soil capability classes that are rated as severe or very severe in their limitations from lands available for livestock grazing

Wind Erosion and Wind Erodibility Groups - The Soil Survey describes wind erodibility groups. We have delineated the sandy soils as unsuitable for livestock grazing due to wind erosion hazard. In addition, an air quality model should be used to evaluate whether a particular soil exceeds the soil loss tabulated in the wind erodibility index. Eliminate Wind Erodibility Group soils that exceed the wind erodibility index based on current soil cover from lands available for livestock grazing.

Soils Not Supporting Vegetation Suitable for Grazing - Soil Survey Table 5 lists soils with vegetation production values. All soils not included in Table 5 as well as soils in Table 5 that lack production values should be deemed not available for livestock grazing.

Sheet and Rill Erosion - The Soil Survey provides K and T factors that can be used in RUSLE2 to determine whether, at current soil cover and slope for a particular soil map unit, erosion by water exceeds the listed tolerable soil loss for that soil. Soils that exceed that "T" value should be deemed not available for livestock grazing.

Determining Stocking Rates for Lands Available for Livestock Grazing - Cattle graze lands with slope <10% about 80% of the time, therefore lands with slope >10% should not be included in forage capacity determinations. Forage capacity should be determined only for available lands, using current vegetation production and preferred species for cattle or sheep, depending on which occupy a particular allotment. If no current production values are available, then use 25% of the Soil Survey values for a below normal year until surveys can document actual production.

A. Forage Consumption Rates for Livestock - Current weights for a cow/calf pair are 1,680 pounds, ewe/lamb pairs are 275 lbs. Forage consumption is 3% of body weight, thus an AUM for a cow/calf pair should be 1532 lbs air dry forage. An AUM for five ewe/lamb pairs should be 1,380 lbs. These data constitute the best available data from USDA, NRCS and range science literature and should be used in determining stocking rates.

B. Utilization Rate for Livestock - Heavy grazing use reduces forage production and range condition, the science is consistent in showing that a utilization rate of 25% for livestock is appropriate and allows for watershed protection and wildlife needs with the residual.

Grazing should never be allowed on fragile desert-like soils. However, if it cannot be totally eliminated, then it should be greatly reduced.

I have hiked in areas such as Canyonlands NP with healthy soil crusts and totally destroyed areas in Escalante due to cattle. These crusts are essential for a healthy SW ecology.

Table B-20
Soils

The fragile cryptobiotic soils are the mechanism by which soils have been kept in place. Now, with increased grazing and oil and gas exploration and development in places like the Grand Staircase, these delicate soils are now more available for transport, and are aiding water shortages across the west.

As a former member of the Arizona Strip Rangeland Resource Team I have observed the almost complete absence of biological soils in all of the grazing allotments I have visited.

We are careful not to damage the cryptobiotic soil because once that crust is broken, it can no longer hold the fine desert soils in place and erosion results.

I've seen the damage unregulated grazing has caused. Those desert soils with cryptobiotic crusts are extremely vulnerable. In other parks and monuments, identical soil types are featured extensively as the subject of interpretive signage explaining their importance and fragility.

I should also comment that biological soil crusts (which keep the very soils that livestock grazing relies upon from blowing away) are one of the values listed in the GSENM Proclamation. However, I have seen with my own eyes that these biological soil crusts are often heavily trampled and destroyed by cattle. The same goes for the seeps and springs that provide water in arid regions of GSENM. Often, when attempting to document a particular campsite or recreational area as part of my work with Northern Arizona University, I would be frustrated and unable to determine recreation impacts due to the sheer extent of cattle grazing impacts.

Eliminate from grazing the following lands: ...lands with absent or significantly reduced soil crusts where applicable...

Table B-21
Special Designation Areas

Several resource issues that are of particular importance in relation to management activities along the park borders include boundary protection, resource damage from unauthorized access (e.g., damage to fencing, trespass grazing, poaching, etc.), potential noxious weed introductions to the park via livestock and OHVs, protection of wilderness characteristics within the park, park soundscape and viewshed integrity, air quality, and threatened, endangered and sensitive species particularly where populations or key habitat transcend park/Monument boundaries.

Many beautiful wilderness areas such as the Upper Paria, Buckskin Gulch, and Hackberry Canyon are trampled and soiled by cattle.

Eliminate from grazing the following lands: Important recreational and ecological areas such as ACECs

Overall, in my experience, grazing has very little impact on historical objects but adds a great deal of support to historical values. Perhaps greater impact is created by recreationists. Every human impacts this earth. I have seen negative impacts by visitors and recreationists such as human litter and waste, groups breaking geologic structures, the beginning of roads by ATV use, theft and disrespect of structures, both historical and economic. These actions can only be corrected by the moral values within each person.

Wilderness study areas should not be impaired for their suitability as wilderness. Nor should the special recreation management areas be impaired i.e. Escalante Canyons, Paria/Hackberry, Paria Canyons and Plateau, the Highway 12 Corridor with the highest scenic byway designation nationally, Highway 89 corridor and Fifty Mile mountain. These are key areas for recreationalists of all types and special consideration needs to be considered to limit grazing times and effects so there are minimal or no conflicts with the recreating public who spend their money and time.

I will simply emphasize my hope that the WSAs and Wild and Scenic River eligible segments receive their due attention.

Additional planning issues: ACEC designation.

According to the MMP, grazing management on the monument was supposed to be congruent with ACEC designation (see ACEC-I of the MMP). This is assumed to be a higher standard than lands that are not within ACECs. Grazing management on the Monument, however, has continued unchanged from when these lands were under field office management. Grazing permit renewals and management in the DEIS needs to be consistent with ACEC designation.

Eliminate ACEC's from available lands

Table B-22
Special Status Species (Plants and Wildlife)

Several resource issues that are of particular importance in relation to management activities along the park borders include boundary protection, resource damage from unauthorized access (e.g., damage to fencing, trespass grazing, poaching, etc.), potential noxious weed introductions to the park via livestock and OHVs, protection of wilderness characteristics within the park, park soundscape and viewshed integrity, air quality, and threatened, endangered and sensitive species particularly where populations or key habitat transcend park/Monument boundaries.

Areas of endemic, sensitive, threatened or endangered plant species should be protected by making their watersheds unavailable to livestock grazing by closing pastures or allotments. Habitat of sensitive, threatened or endangered species, should be made unavailable to livestock grazing by closing pastures or allotments.

This activity also results in the impairment of habitat for aquatic life, including native, sensitive, threatened and endangered fish.

Careful consideration must be given to the concept of restricting or relinquishing grazing to "protect" special status species or special recreation management areas. One example of this consideration is that 4,000 year old tools believed to have been used by the Fremont Indians were discovered in the meadows where cattle grazed since the 1880's on the Wilcox property in the West Tavaputs region of Utah just after it was purchased by the State of Utah. It wasn't until it was opened to recreation use and archeological studies that reports of vandalism and theft began

Where GSEM objects and values have been or are likely to be harmed but livestock grazing, those lands should be designated as "Not Available" in the Record of Decision. For example, important riparian and wetland habitats, special status species habitats, and biological soil crust areas should be so designated.

Additional planning issues: Effects on endemic, Special Status, and TES species Current range management does not consider or act on the needs of endemic, special status, or for TES species. This gap in current management means that grazing management has failed to protect all the values of this Monument Range management needs to provide for the recovery of sage grouse to their historic range within the Monument. As part of BLM's commitment to restore sage grouse to its historic range, this plan should analyze how such recovery will be influenced by proposed livestock grazing use within the Monument.

Eliminate lands containing habitat for endemic, sensitive, threatened or endangered species from available lands

They trample & eat rare plants.

Eliminate from grazing the following lands: ...lands containing habitat for endemic, sensitive, threatened or endangered species...

As for endangered species, valid scientific studies instead of emotional justification would most likely validate a calmer approach to show little to no impact on areas of concern. (Although not within the GSENM, an example of this would be the pin cushion cactus. See Lee Hughes, retired BLM ecologist.)

Table B-23
Tribal Interests and Native American Religious Concerns

After reviewing your consultation documents, the HPD-TCP has concluded the proposed undertaking/project area will not impact Navajo traditional cultural properties/resources. The HPD-TCP, on behalf of the Navajo Nation, has no concerns at this time.

The notice states, "BLM and NPS will coordinate and communicate with state, local and tribal governments ... "

This statement indicates the agencies will invite government-to-government consultation with the traditionally associated tribes. IAAC will be happy to provide any technical assistance in the consultation endeavor.

In addition, IAAC requests the agencies to consider identifying and addressing sacred sites, ethnographic resources, and Traditional Ecological Knowledge (TEK) with the tribes during these consultations. There could potentially be sacred sites and ethnographic resources within the project area that may need protection or targeted management strategies. If the tribes are interested, TEK could provide information and process for better management of the ecology of the project area.

Table B-24
Vegetation (General)

reduce the intensity of grazing as the vegetation is getting hammered

The current livestock free range grazing makes little sense to me. I see livestock put in places that cannot support and sustain grazing. I live on the UT/AZ border and see cows strip an area bare and the plants, animals and soil never really recover leaving "scars" in the landscape for years.

Most recently I drove and hiked in the area east of Escalante that lies south of the Escalante River. While driving to the trail head I noticed that everywhere cattle could get to easily, grass species I expected to see were entirely missing and the number of species was limited. In these areas I noticed physical evidence of livestock grazing (cow pies, tracks, etc). Most interesting though was that as I left my vehicle and hiked I approached a few areas that cattle couldn't easily get to and of course there the vegetative situation changed dramatically. I found greater species diversity and I found grass species one would expect to find. In short, I found vegetative communities that hadn't been dramatically altered by years and years of livestock grazing. There was no reason except for grazing that the changes should have been observed. Same soils, same rainfall, etc.

Likewise, certain plant and animal species and communities that are important components of our world-class laboratory are also being affected by grazing.

N37 33'08.0" W111 25'58.6" (Right Hand Collet)

N37 26'40.7" W111 14'04.4" (Batty Pass)

N37 50'41.9" W111 18'38.9" (The Gulch)

N37 25'54.9" W111 08'13.6" (Big Hollow Wash)

--Soil conditions in many areas are being over compacted with animal usage and as a result the ability to retain water is decreasing;

--As a result, native grasses are not replenishing themselves between seasons and the increase or infestation of noxious weeds are out pacing and replacing local species;

The soils and plant communities of the Monument are not adapted to herds of large, hooved animals[12].

Livestock grazing in the sensitive soils of the Monument destroys soil crusts and removes soil stabilizing vegetation, thus accelerating erosion and impairing soil and microbiotic function. Such functions as nutrient cycling, water infiltration and storage are drastically altered. By grazing livestock on the sensitive and erodible soils found in the Monument, BLM is impairing watershed function, creating sediment and salinity problems in the Colorado River drainage, in violation of the Colorado River Salinity Control Act.

[12] Mack, R. N., and J. N. Thompson. 1982. Evolution in steppe with few large, hooved mammals. The American Naturalist 119:757-773.

It is important to describe the current ground cover and forage production in order to determine the rates of erosion and forage availability for setting stocking rates. Areas that have not been grazed by livestock for long time frames on the order of several decades, should be identified to determine vegetation, litter and biological crust potential cover.

For example, cover under reference (ungrazed) conditions was compared to grazed conditions in Canyonlands National Park[32]. Virginia Park was isolated by rock formations and inaccessible to livestock, while Chesler Park was lightly grazed during winter each year. Soils were sand with silt and clay fractions with grass species including *Hilaria jamesii*, *Oryzopsis hymenoides*, and *Stipa comata*. Total soil cover in ungrazed Virginia Park was 67%, while in grazed Chesler Park it was 32%, or less than half. Biological crust (cryptogam) cover was 38% in the ungrazed park, over 7 times greater than in the grazed park, which had 5% crust cover. Data from the study are provided in Table 2, also showing greater species richness of vascular plants and cryptogams under ungrazed conditions.

[Table 2. Cover Characteristics from Virginia and Chesler Parks]

[32] Kleiner, E.F. and K.T. Harper. 1972. Environment and community organization in grasslands of Canyonlands National Park. Ecology 53:299-309.

Nearly everywhere I go, I notice cattle grazing takes place there. Because of the dryness of this ecosystem, soil conditions and vegetation appear to be adversely impacted by grazing and never seem to fully recover from these impacts.

Table B-24
Vegetation (General)

Specific areas that I can immediately recall are along the Escalante River south of Hwy 12. There are hardly any grasses left in the area adjacent to the river. Another specific area is Coyote Cr. Off the Hole in the Rock Road. Clearly, livestock grazing has huge impacts on plant communities, which reduce the ability of these habitats to respond to climate change.
The next point that I'd like to bring up is the fact that in the absence of grazing of some kind - whether it be from domestic livestock or native wildlife - the land and it's vegetation suffers. In fact noted and awarded scientist Allan Savory has done extensive research indicating – indeed proving - that a lack of grazing promotes and causes desertification to accelerate in an alarming fashion. I know of places on GSENM where the native grasses have died back considerable because of overshadowing. After a productive year without grazing, the grass leaves, stems, and matter shade the roots and base of the plant, making it impossible for the plant to gain adequate sunshine. This causes the plant roots to reduce in size. Subsequent years cause the plant to dwindle even further.
Livestock grazing controls the growth of non-native plants and helps reduce fire hazards due to overgrowth.
Cattle are beneficial in all aspects of the monument. Not only will the grazing fee generate income, it provides benefits to the plants that would not be able to generate through methods of its own, Cattle transport the seeds, plant the seeds, as well as provide nutrients for seeds to grow.
The animals are only removing the grasses from last season, they are not hurting the new spring growth.
The effects of cattle grazing on various plant communities is obvious to even a casual visitor, and recovery of the land is extremely slow if at all possible given our climatic conditions.
Grass species are slowly coming back in non-grazed areas but it takes time.
Back a few years ago I came across an old fenced test site in the monument where the cattle could not get in. The amount of growth inside the fenced area was amazing compared to the undergrowth outside of it. It showed me very clearly what impact cattle have.
While I'm a proponent of such practices and wise-use, what I have witnessed in the five years my husband and I have lived here are areas within GSENM which have been severely damaged by overgrazing, as well as leaving cattle to starve. Two places in particular are Deer Creek and The Gulch. Two years ago I hiked 3 miles into the Gulch and before I noticed starving cows, I noticed that the sagebrush was devastated from grazing. It was apparent that the cattle resorted to eating the sagebrush because there was no other vegetation.
I have observed what grazing does to the native plant species and I feel that any grazing on land that is supposed to be restoring native vegetation should not be permitted. Even if time given for recovery, as soon as the domestic animals are allowed back the native vegetation is destroyed. Native vegetation and grazing cannot coexist.
Serious consideration should be given to improve grass and forb components in sagebrush and pinyon-juniper sites. Much of the pinyon and juniper areas depicted on the "Existing Vegetation" map provided during scoping lack understory components. Soil analysis should be completed to determine if these areas are sagebrush ecological sites converted to pinyon-juniper. If these are sagebrush ecological sites, treatments should be implemented to achieve the site potential and reduce tree cover. Vegetation treatments should be implemented to improve the understory component of these areas to improve water infiltration, ecological function, response to disturbance, and reduce erosion potential.
The EIS should analyze such treatments, not only of purposes of livestock grazing, but also to improve the ecological function of vegetation communities within the GSENM. Improving vegetation diversity also improves vegetation response to disturbances.
the vegetation and soils, in such a dry and fragile landscape really do need to be protected.
Often times when I am hiking out in GSENM near Wirepass, the sagebrush ecosystem is missing its herbaceous partners. This degraded understory needs to have its full complement of native species.
The proposed EIS should disclose the current condition and trend of the vegetation in all grazed veg types. Failing to have this data should result in no grazing allowed until it is in-hand.
NPCA is especially concerned about impacts to park cultural and paleontological resources, which may not be adequately inventoried inside the NRA and where impairment from livestock grazing may be irreversible, as well as critical water resources including seeps and springs, sensitive soils and vegetation, and recreational use of the NRA's extensive backcountry.

Table B-24
Vegetation (General)

Grazing is a sustainable resource that can be used as a scientific tool to manage landscapes and vegetation.

Additional planning issues: Piñon Juniper, recovery or encroachment

Mechanical, chemical, and prescribed fire treatments are often recommended for piñon and juniper forests on public lands including in the Monument. Encroachment of these arid forests into shrub lands is often used as a justification. A study conducted for the Cedar City BLM Planning Area found that while these forests increased in range since the early 20th century most of this growth constituted recovery of deforestation that occurred in the late 19th century.[30] New information on expected fire frequency[31] conflicts suggests that removal of these forests to replicate historic fire intervals is not justified. In keeping with the Proclamation's requirement to protect biological values, the Monument should assess the presettlement range for these forests and promote recovery where deforestation had occurred. Livestock grazing has contributed to the loss of understory in these forest communities. Reversing this impact should be considered in grazing decisions.

[30] Catlin, J, E. Vesquez, A. Jones. 2012. Piñon-juniper forest and sagebrush steppe, Cedar City Resource Management Plan

[31] Baker, W.L. and D.J. Shinneman. 2004. Fire and restoration of piñon-juniper woodlands in the western United States: a review. *Forest Ecology and Management* 189:1-21

Grazing improves the rangeland by trimming, replanting and fertilizing plants.

If it wasn't for grazing this ground would be worthless. A plant needs to be grazed off so it can start its life cycle over with new growth. If it is not grazed off then the plant goes threw its cycle and dies. The cow or sheep will also spread the plants seed so that another new plant can start.

Grasses become old growth and die.

Grazing is important because if cows couldn't graze the grass would be too tall and the ground would not be very fertile for plants to grow in.

Many plants including several endangered species require grazing to maintain viable populations.

Please look into how Pinyon and Juniper can be managed on the forest using similar techniques that the adjacent Kanab Field office is using to keep the P&J from taking over all the sage brush areas and native grasses.

GROW MORE GRASS IN HARMONY WITH INTELLIGENT GRAING!!!!

Table B-25
Visual Resources

Several resource issues that are of particular importance in relation to management activities along the park borders include boundary protection, resource damage from unauthorized access (e.g., damage to fencing, trespass grazing, poaching, etc.), potential noxious weed introductions to the park via livestock and OHVs, protection of wilderness characteristics within the park, park soundscape and viewshed integrity, air quality, and threatened, endangered and sensitive species particularly where populations or key habitat transcend park/Monument boundaries.

Table B-26
Water Resources

water ways and water quality

a. these are particularly vulnerable and valuable, and should not be degraded

Please let me know what action you are taking to resolve this matter, THIS CANNOT CONTINUE. It is not only an aesthetic issue. There was NOWHERE to purify water when we got low as I had planned. We had to leave Wire Pass prematurely as all water sources were contaminated and unsafe to filter water. These are terrible "management" practices. I have seen similar issues all across the West on BLM lands in sensitive riparian habitat. This is bad for water quality, bad for people wanting to hike, fish and enjoy our public lands and bad business practice.

Removal of cow paddies in all effected drainages to improve water quality.

Existing resource conditions provide the basis for an effective analysis of potential impacts. Therefore, we recommend the MMPA/EIS include the following baseline aquatic resource information (see additional information in sections below):

- A map and summary of planning area waters, including streams, lakes, springs and wetlands. It would be helpful if the summary identified high ~resource value water bodies and their designated beneficial uses (e.g., agriculture, fisheries, drinking water, recreation);
- Watershed conditions, including vegetation cover and composition, soil conditions, and areas not meeting desired future conditions;
- Surface water information, including available water quality data in relation to current standards, stream functional assessments, stream channel/stream bank stability conditions, sediment loads and aquatic life;
- Types, functions and acreage of wetlands, riparian areas, and springs;
- Available groundwater information, including quality and location of aquifers; and
- A map and list of Clean Water Act (CWA) impaired or threatened water body segments within, or downstream of, the planning area, including the designated uses of the water bodies and the specific pollutants of concern. The Utah Department of Environmental Quality (UDEQ) and the Arizona Department of Environmental Quality (ADEQ) can identify/validate any such CWA Section 303(d) listed water bodies potentially affected by the MMP A.

Water Quality Data: Water quality data for the streams and lakes of the planning area provide important information to guide management under this plan, as well as a baseline for future monitoring of impacts and evaluation of potential influence on downstream water quality. We recommend the MMPA/EIS provide a summary of available information and monitoring data on water quality for the planning area, including parameters such as total phosphorus, total nitrogen, Escherichia coli (E. coli), total suspended solids, turbidity, and temperature.

It will also be important to include water quality data for parameters listed for impaired water bodies within or downstream of the planning area. Identifying any significant gaps in available data may be helpful in developing the monitoring plan.

Groundwater: Groundwater is an important resource that supplies water for livestock at springs and well-fed watering stations, and it also may provide domestic and public water supply. Groundwater quality is also important because groundwater may discharge to lakes and streams or be recharged by these water bodies. Shallow aquifers are more susceptible to contamination because a contaminant introduced at the surface may more rapidly enter the system, and there is less intervening soil to adsorb the contaminants before they reach the groundwater. We recommend that the MMPA/EIS identify and briefly describe the shallow aquifers, including alluvial aquifers along streams and rivers, in the planning area. Please include available groundwater quality information, and identify which shallow aquifers are sources for public water systems, domestic wells or stock wells. We also recommend identifying any public water systems in the planning area with water quality violations or with requirements for increased frequency of monitoring for nitrate or E. coli, contaminants to which livestock grazing may contribute. The Utah Geological Survey, the Arizona Department of Water Resources, and the Arizona Geological Survey are good sources of information concerning aquifers.

In addition, UDEQ and ADEQ have conducted source water assessments for groundwater and surface water sources of public water supplies, and UDEQ also requires that utilities develop source water protection plans. If the planning area contains any source water protection areas, then the EPA recommends that the MMP A/EIS

Table B-26
Water Resources

include information regarding the protection areas, along with a summary discussion of potential project-level impacts to them and a menu of project-level design criteria and mitigation options for protecting these high value drinking water resources from grazing impacts. It would be helpful to include a map that overlays the planning area with the critical zone(s) identified in the source water assessments and protection plans. The UDEQ and ADEQ or the public water systems themselves are primary sources for this information.

Effects to Impaired Water Bodies

We recommend that the MMPA/EIS describe potential effects on the CW A Section 303(d) listed water bodies within, or downstream of, the planning area. Impaired water bodies that may be within or downstream of the planning area include Paria River (in both Utah and Arizona segments), Upper Escalante River, Calf Creek, Chance Creek, Kanab Creek, Johnson Wash, and Wide Hollow Reservoir. Some of these CWA Section 303(d) listed water bodies have been identified by UDEQ and/or ADEQ as impaired for coldwater aquatic life, warm water aquatic life, full body contact (recreation) and/or agriculture due to temperature, total dissolved solids, E. coli and/or dissolved oxygen.

If Total Maximum Daily Load analyses for any impaired water bodies within, or downstream of, the planning area need to be developed by the UDEQ or ADEQ, we recommend that proposed activities in the drainages of CW A impaired or threatened water bodies be either carefully limited to prevent any worsening of the impairment or avoided where such impacts cannot be prevented.

Water Quality Impacts of Soil Disturbance and Vegetation Changes

The potential environmental impacts of grazing may stem from vegetation loss, accelerated soil loss, bank erosion, soil compaction, increased surface storm flow, reduced stream base flows from decreased infiltration to groundwater, and changes in water temperature associated with shade loss or channel widening. Based on BLM's experience with grazing in the planning area, we recommend the MMPA/EIS include an assessment of each alternative's potential impacts and benefits to aquatic resources that may stem from the drivers listed above, including impacts to water quality, stream and wetland processes, and fish populations/habitat.

During our hike in the gulch we were dependent on the water from the canyon for our drinking water. On several instances we could smell cow excrement and urine from our water sources. On our return to "Gulch Trailhead" off the Burr Trail road we encountered a dead and very bloated cow in the stream. It had clearly been dead for some time and was decaying into the stream-- our source of drinking water.

Issue #1 Livestock damage to sensitive streambeds, riparian areas, springs, seeps, other wetlands and diminishment of visitor experience.

Background

In my experience, this appears to be a major issue on the monument and in other allotments covered by the proposed Grazing Plan Amendment. During the spring of 2012, I participated in an organized hike up Hackberry Canyon. There was flowing water in the streambed, through which we had to wade, and one of the participants asked about the origin of the abundant brown scum and bubbles on the stream surface, which was very familiar to me. I responded that it was most likely contamination resulting from cattle urinating and defecating upstream, much to the dismay of the questioner. Another source of contamination of streams is rotting carcasses of cattle that have been trapped in the canyons, or have sought shade and water for relief because they are injured or terminally ill. Having grown up on a ranch and farm, participating in ranching and farming, I observed this many times growing up on a farm and ranch, and later during backcountry hikes and learned not to drink, bath, or swim in such contaminated streams. Thus, the people who recreate in these wetland areas of our monument have a much diminished experience of wilderness and the outdoors when subjected to such sights, odors, and health hazards.

Cattle are also severely impacting the limited water resources in the Monument. Both permanent springs and ephemeral water sources need to be protected from the impact of cattle.

N37 23'58.2" W 111 21 '00.6" (Rogers)

N37 23'02.7 W 111 42.07.8" (Four Mile)

N37 24'09.2" W 111 44'30. 7" (Tommy Water)

Table B-26
Water Resources

N37 40'33.3" W111 28'22.6" (Ten Mile)

The National Wildlife Federation reports that upwards to 80% of the streams in the arid West have been degraded by livestock.

In the above cited canyons those findings are very much in evidence:

--Streams, springs and small riparian areas on the western slope of the Kaiparowits along with the drainages of the Escalante are reduced to muddy wallows, filled with cattle waste, greatly reducing the ability of native flora and fauna to survive;

--The existing system of grazing is not equitable or administered fairly, and as a result these canyons and their water resources have been severely damaged.

Seeps and springs are often similarly heavily trampled.

Every aspect of grazing has an impact on water and all issues of desert health are interrelated. The health of the biological soil crusts is essential. Untrampled seeps and springs are essential. Water and other issues don't just effect livestock permittees; they effect everyone, and input should be accepted from all interested parties, not restricted as it is now.

Finally, livestock grazing should not be allowed to destroy or despoil natural stream corridors, ponds, springs, and seeps, and the associated critically important wetland and riparian vegetation.

Take care of your precious seeps and springs! They are critical to preserving biodiversity and right now with cattle everywhere, there is no way to protect and restore these fragile ecosystems.

An important consideration dealing with changes of land use is the beneficial use of water in the monument. At this time the vast percentage of water rights are for livestock watering. The loss or reduction of grazing use will affect the BLM's ability to continue to hold water rights under Utah State Law.

BLM must prioritize the health of the native vegetation and biological soil crusts that keep soils from blowing away. These are essential to the Monument as it faces climate change, and biological soil crusts are one of the values listed in the Proclamation, yet too often the biological soil crusts are heavily trampled and eliminated by cattle. Seeps and springs are often similarly heavily trampled.

Water resources throughout the Monument and NRA have been heavily impacted by cattle grazing, making large areas unusable by backcountry travelers.

a. Many of the archaeological sites on the southeast end of the Kaiparowits Plateau are near good water sources. All of those sources (including but not limited to Pocket Hollow Spring, Mudhole Spring, Moqui Window Spring, Lake Canyon Spring) have been heavily trampled by cattle. Several years ago we met cowboys coming off of the Middle Trail. They had been repairing it and were up at Mudholes shooting feral cattle. They left the heads of the cattle on posts near the spring, making it almost unusable by backcountry hikers (us).

b. Many of the water resources on the southern part of the Kaiparowits Plateau have been heavily impacted by cattle, making much of the area unusable by backcountry travelers. These include stretches of Rogers Canyon, lower Basin Canyon, areas of Last Chance Canyon, lower DripTank Canyon, Willow Canyon, among many.

c. Cave Spring, which is on the NRA-Monument border on Grand Neck flows from an overhang. In the past this spring was boxed and piped to troughs and was fenced to keep cattle out. The fence has been down for years and cattle have mucked the spring up to the point that only cattle can use the water. It is the only water available on Grand Neck for both wildlife and backcountry users. There are many many similar situations with trashed springs.

The limited water resources of the area are used by wildlife, cows, and humans. Fencing of springs, pipes to troughs, and similar measures are important to protecting and enhancing this essential resource. Specific scoping issue: water source management that considers wildlife and recreation use.

Cattle often graze near water. They often stand in streams and springs defecating and urinating rendering it unfit for human consumption.

An important consideration dealing with changes of land use is the beneficial use of water in the monument. At this time the vast percentage of water rights are for stockwatering. The loss or reduction of grazing use will affect the BLM's ability to continue to hold water rights under Utah State Law.

Please limit or restrict grazing directly in watershed and headwater areas. There may be some guidelines toward this end, but it should be examined to see if the actual management of the water resources is truly being monitored per the GSENM Monument Management Plan. We need to protect our water resources. We support

Table B-26
Water Resources

grazing on the Monument but not to the detriment of our precious watersheds. Cows need water too, though, so this speaks to better management of the water resources altogether. Water resources include wetlands, watersheds, headwaters, stream, creeks, and rivers. Specifically Upper Valley Creek, Birch Creek, and North Creek areas need better management.

NPCA is especially concerned about impacts to park cultural and paleontological resources, which may not be adequately inventoried inside the NRA and where impairment from livestock grazing may be irreversible, as well as critical water resources including seeps and springs, sensitive soils and vegetation, and recreational use of the NRA's extensive backcountry.

Impacts on livestock grazing to water quality. Livestock grazing is adversely affecting certain sensitive wetland/riparian areas on the Monument. Water quality is being degraded in streams and wetlands due to the present of cattle and increasing the loads of the retention ponds. See the fifth bullet for design ideas to consider during the development of the Grazing Management Plan.

An important consideration dealing with changes of land use is the beneficial use of water in the monument. At this time the vast percentage of water rights are for stockwatering. The loss or reduction of grazing use will affect the BLM's ability to continue to hold water rights under Utah State Law. No decision shall be made which impedes water rights and the ability of livestock producers to continue putting that water to beneficial use. Beyond reserved water rights the federal government has no claim to water.

Seeps and springs are often similarly heavily trampled.

Additional planning issues: Water quality monitoring.

Claims based on the absence of streams from 303d lists or absence of monitoring data are not sufficient for BLM to determine that that water quality is not impaired within the Monument. Research has shown that when livestock are present, fecal coliform bacteria increase, temperature increases due to removal of shading vegetation and streams become silt-laden, destroying their native aquatic life[29].

In the past BLM has assumed that surface water sources in the Monument have met state and Rangeland Health water quality standards in the absence of monitoring data. For streams and springs that show a moderate or more departure from their ecological potential, the opposite is most likely to occur based on our field data collection and analysis. Those sites are most likely not to meet state water quality standards and, thus, the site not meet BLM Rangeland Health standards. Any determination that standards are met should be verified with adequate monitoring data.

[29] Carter. 2001. Grazing and water quality, Western Watersheds Project report, (unpublished)

It is highly disappointing to discover cattle, their waste & severe impact in almost every corner of the park. As a consequence, the water is unsafe to drink & there are often biting flies.

These water systems are important and essential to maintaining wild life connectivity, biological diversity, and resilience of both ecosystems and species facing a quickly changing climate. As we all know, water is life here in the desert Southwest.

Rare seeps and springs in the Monument are also destroyed by cattle. These rich oases provide unique habitat for myriad plants and animals. I myself have witnessed such destruction on several backpacking trips in the area.

Eliminate from grazing the following lands: ...watersheds prone to flash flooding...

Table B-27
Wildlife (General)

If it wasn't for livestock on the range management for wildlife wouldn't exist so wildlife wouldn't either.
Likewise, certain plant and animal species and communities that are important components of our world-class laboratory are also being affected by grazing.
Predator control and trapping of animals should be prohibited within the Monument. Permits for livestock grazing should contain specific language requiring Predator Friendly Management such as the methods described by Defenders of Wildlife ⁴ while also prohibiting killing of predators. Those grazing livestock on public lands should be responsible for using predator-friendly management methods to reduce predation, not relying on trapping and killing. Trapping is a risk to people and their pets that come to the Monument for recreation and nature study.
Range improvements and upgrades on habitat and water also benefit other wildlife within the area.
thanks to the range improvements, wildlife now have a place to drink. Hikers are safer because roads are maintained by ranchers.
There have been many improvements by the permittees such as clearing overgrown areas and water development. These improvements have been a big help to wildlife on the allotments.
Eliminate predator control and require predator-friendly management by grazing permittees.
One example of this is the issue of water management. Riparian areas are always at risk for abuse and over-use. Because of my involvement in the ranching workshops, I have become involved in constructing several water harvesting and storage sites. These are far from riparian areas. Because I now have spread my water locations, my cattle graze my pastures better. My cattle do not trample fragile and scarce riparian sites. Also, the benefit to wildlife is immense and immeasurable.
All areas where wildlife live should be graded because when the country is used we all benefit.
Eliminate predator control in the Monument and require predator-friendly management that does not kill predators or endanger people and their pets from traps and poisons
Cattle grazing is both good for the environment as well as the animals.
I can also say a lot of wildlife animals is drink from water tanks that are there for the cattle.
I checked with the literature and find that there are several species of toads as well as the canyon treefrog, gartersnakes, and lizards (especially the Western Skink) that are associated with riparian areas. The impact of increased grazing on riparian areas and these species should be studied for the EIS. There are 13 other species of lizards and 9 other species of snakes that occur in the area of concern. Grazing can impact the microhabitat of such small reptiles as night lizards, tree lizards, short-tailed horned lizards, black-headed snakes, and night snakes. These impacts should be addressed.
In addition, big snakes like Gopher Snakes and Western Rattlesnakes help keep rodent populations down, hence better grasses and fewer holes for cattle to fall in.

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Comments That Propose an Alternative or Support a Proposed Alternative for Consideration

We further assert that enhancement and expansion of grazing is within the federal authority and enhances the purposes for which the monument was created. We therefore request an alternative that expands opportunities for grazing to the maximum extent allowed by law.

We therefore request that an alternative be considered which restores vegetation regimes and ecological site conditions to pre-settlement conditions. There may also be alternatives that consider greater production, increased forage, and removal of invasive species like pinyon or juniper beyond pre-settlement conditions. We assert such alternatives exist; and we specifically request they be included in the reasonable range of alternatives. Please consider all stakeholders to the Monument. I recommend adopting the Sustainable Grazing Alternative that is being proposed. It is time to protect this fragile area from additional damage.

I am writing to strongly support the Sustainable Grazing Alternative created by the Grand Canyon Trust and The Wilderness Society. The Alternative's stated goals, objectives, and recommendations are excellent guidelines for creating a grazing management plan that conserves the outstanding ecological functions and values of Grand Staircase Escalante National Monument.

I have just finished studying the Sustainable Grazing Alternative produced by The Wilderness Society and Grand Canyon Trust. I find myself quite in agreement with their proposals, particularly the big picture six fundamental assumptions and supporting goals that they have laid out.

2. I have reviewed the Grand Canyon Trust-Wilderness Society sustainable grazing plan and in general support it. This plan is not anti-grazing. Rather, it provides a common-sense approach to balance utilization of forage resources without damaging the ability of rangelands to provide other services.

3. I have the following specific comments on the Grand Canyon Trust-Wilderness Society sustainable grazing plan.

3.1. B. Objectives- Section 3.2 recommends protecting biological crusts within at least 60% of predicted available habitat I note that the large majority of soils in GSENM are in fact biological soil crust habitat to some degree. I am uniquely qualified to make this statement as I prepared the best existing estimate of quantitative biological crust potential in GSENM, and have field surveyed biological crusts throughout the Colorado Plateau. Although I don't think it is the intended meaning, the statement in the GCT-WVS sustainable grazing plan could be interpreted as meaning that 60% of crust habitats retain crusts. This would mean that 40% could have no crusts. For any site with substantial crust potential to be degraded to this extent is unacceptable. I suggest that a more useful approach would be to maintain crusts at some percentage of their potential cover at a given site. Ideally, research would be undertaken to determine ecological site-specific critical values of crust loss signifying unacceptable degradation (i.e. a lower limit), but as an initial value, retaining at least half of the potential crust cover seems sensible.

3.2 C. Management Actions- Section 3 stresses collaborative grazing experiments I strongly support the selection of grazing practices based upon well-designed science. To this end I support the creation of a system of exclosures (minimum of 1 ha), retired pastures or allotments, and ungrazed reference areas that are monitored. This system should be comprehensive enough to encompass climatic gradients, and different soil types, and consequently different vegetation communities. These would be used as reference areas to simulate cessation of grazing for comparison back to various active grazing rotations.

3.3 C. Management actions- Section 8 address active and passive vegetation treatments I strongly recommend including in the plan a stipulation that no large-scale soil disturbing activities (e.g harrowing, disking) be undertaken without first demonstrating their ability to meet management goals at sub-hectare scales.

3.4 E. Monitoring - Section 1 addresses protocols for monitoring indicators of objectives I strongly recommend protocols which are broader than trend studies in forage production, such as those developed in the Jornada experimental range. A sound range monitoring program must also monitor possible impacts of grazing. Biological soil crust abundance and level of development, and soil aggregate stability are two information rich indicators which should be part of the monitoring protocols chosen. Use existing data resources for monitoring purposes including the extensive Rangeland Health Survey, and models of potential biological soil crust cover. Work with NRCS to establish state-and-transition models for GSENM ecological sites, so that it is known what possible ecosystem changes should be detected in a monitoring program.

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Comments That Propose an Alternative or Support a Proposed Alternative for Consideration

I am writing to express my wholehearted support for a sustainable multiple use grazing alternative for Grand Staircase Escalante National Monument.

To comply with NEPA standards to review and disclose to the public a full scope of alternatives; if grazing reductions are contemplated in any plan alternative, an increase in grazing AUM's by activation of any suspended AUM's should also be studied on an allotment by allotment basis.

The consideration of soil moisture and precipitation dynamics in the study areas are mandatory to consider in an impact analysis. Higher moisture levels correlate to an increase of invasive grasses and weeds. With flexibility on given years, the ability to implement higher grazing AUM levels will not only spike the local economy, but invasive grasses can be mitigated by the allowance of increased grazing on a temporary basis. Other vegetative improvements and practices that reduce encroaching conifers should also be added as an alternative so it too can be analyzed.

I support and have endorsed a Sustainable Grazing alternative and plan that provides for:

1. Increasing ungrazed areas within the Monument;
2. Setting triggers (limits) for damage by livestock;
3. Using citizen documentation of on-ground grazing damage for problem-solving; and expecting protection for fragile biological soil crusts, pollinators, spring seeps and other often-ignored special values of the Monument.

In my opinion the BLM should be looking for ways to re-open old areas, and make grazing more affordable for the small rancher who is not looking to get rich but is holding on to a way of life that is near to his heart.

I'd like to make a proposal: Reopen some of the areas of the monument that have been closed to grazing. Then allow me and/or another good cattleman to do some scientific grazing there and analyze and assess the results. I believe that the benefit to the land and vegetation would be substantial and measurable. For example, I'll use the area that may have caused the most contention in the history of the Monument - the Escalante River. I spent time working cattle there as a boy. It was even more beautiful then than it is now. The reason? Cattle grazed there. Vegetation abounded, grass was everywhere. Sure, there was the occasional cow pie in the trail. But there was a trail! As those of you know who have tried hiking the river during late years the trails are badly overgrown with brush and thorn - Tamerisk, Russian Olive, Willow and more. The banks of the river are now very steep and high, making it difficult and even dangerous to cross. Sure its been rested, and the grasses and vegetation in some areas look great. But in other areas they have shaded themselves out. If cattle were re-introduced and scientifically managed by a good cattleman the trails would reopen, cloven hooves would rebuild the trails up and down the banks, and the native grasses would once again thrive.

I support the "sustainable grazing alternative" submitted by the Grand Canyon Trust and the Wilderness Society. I believe that this is a reasonable, responsible, and necessary alternative. As such, please fully analyze it in the DEIS.

I have reviewed and strongly support the Sustainable Grazing Alternative drafted and submitted by the Grand Canyon Trust and The Wilderness Society as part of their scoping comments (as such draft appeared on the Grand Canyon Trust's website as of January 8, 2014).

I am writing to encourage you to not only consider the sustainable grazing alternative but to accept and fully enact it. It is beyond reprehensible that over 95% of the Monument is grazed without some serious plan in force to protect the fragile environment that the Monument was created to protect in the first place.

We further assert that enhancement and expansion of grazing is within the federal authority and enhances the purposes for which the monument was created. We therefore request an alternative that expands opportunities for grazing to the maximum extent allowed by law.

We recognize the value of the land and of rangeland health. We assert rangeland health conditions impact wildlife, erosion patterns, sediment transport, economics, health, safety, welfare, potential for wildfires and numerous other aspects which affect communities adjacent and near the monument. Even the town of Antimony can be significantly impacted from air pollution associated with natural dust transport and wildfires within the monument. We therefore request that an alternative be considered which restores vegetation regimes and ecological site conditions to pre-settlement conditions. There may also be alternatives that consider greater production, increased forage, and removal of invasive species like pinyon or juniper beyond pre-settlement conditions. We assert such alternatives exist; and we specifically request they be included in the reasonable range of alternatives. The nature of vegetation patterns and the general ecology has changed since settlement of the west. It is impossible to completely return the land to conditions of the early 1800s. We therefore assert at least one

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alternative must consider the most productive mix of native and non-native plants/seed mixtures. This effort is a plan amendment, so if only native seeds are required in the existing monument plan, that provision can be evaluated. Failure to examine the most productive mix fails to consider a full range of alternatives.

I understand the tradition of using our public land for grazing but I am really in support of managing it more carefully for the benefit of all parties. The Grand Canyon Trust and the wilderness Society have a program I would support. Diverse stakeholders and utilization levels that don't cause such severe impacts could really help the land to recovery.

I have read and am in support of the Grand Canyon Trust Sustainable Grazing Alternative. I believe this plan is in the best interest of all concerned. Creating a sustainable plan ensures that the lands remain healthy for recreation, scientific research, wildlife, plants AND grazing for generations to come. If the lands of the monument are healthy everyone wins.

Key concepts:

- The Sustainable Grazing Plan is reasonable plan that meets both BLM regulations and policy as well as protects the Monument values and objects identified within GSENM Proclamation.
- Create indicators to determine if and when lands are available to livestock grazing. This should be based on sustaining healthy ecosystems, including soil crust, native plants, wildlife and riparian areas.
- Indicators to be used should be based on the best available science and include input from a diversity of all who have a vested interest in the health of the lands.
- Create a number of "reference" areas that represent the different ecosystems of the monument. These areas should include land that has either never been grazed or has not been grazed for many years, so as to create a baseline for healthy ecosystems which the health indicators can be based.
- Determine non-grazing areas where grazing and recreation conflict, especially in areas that are published hikes or high recreation areas. I personally have spent much time hiking in the monument and have had unpleasant experiences in overgrazed areas. Areas to be considered as non-use should include:
 - Buckskin Gulch
 - Hackberry Canyon
 - Upper Paria
 - The Gulch
 - West Clark Bench
 - Coyote Gulch
 - 50 Mile Mt.
 - Lon Canyon
 - Any area that is an entrance to a slot canyon (many cows are trapped and die each year in such circumstance.).
- Protection of archeological areas is critical. As a site steward, I have seen first hand the damage caused to these sites. Archeology sites in particular should be non-use areas or action taken to protect from damage caused by grazing
- Protection of sensitive riparian areas needs to be a priority. Because the health of these areas have such a huge impact to the health of the entire ecosystem, the indicators and threshold tolerance must be more restrictive and closely monitored. Often these areas are also a high recreation area and should be considered non-use for grazing.
- Do not allow development or improvements to artificially create an environment suitable for grazing, such as water development and vegetation treatments, especially when it compromises the overall health of the lands.

I would like to suggest the GSENM look at the Grand Canyon Trust-Wilderness Society Grazing Plan Amendment [EIS] Alternative.

As a scientist and concerned citizen of the desert southwest, I implore the BLM to take the Grand Canyon Trust's Sustainable Grazing Alternative very seriously as they author this EIS. I have seen so much destruction to the desert ecosystem due to overgrazed landscapes, it is heartbreaking as an ecologist and lover of the land to see this go on. I have seen the reduction in wildlife in an area that is filled with monospecific unpalatable plants like

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snakeweed and rabbitbrush, and grasslands reduced to stubble and rock piles. I have experienced the dangers of being in an overgrazed landscape during a typical southwestern monsoon rainstorm and was afraid for my life because of the lack of vegetation and soil cover that would have reduced the effects of the flooding that ensued. I have witnessed the destruction of sensitive wetlands that so much wildlife depends on being trampled by thirsty cows and reduced to mud pits.

Who's responsibility is it to prevent such ecological disasters? It is yours, the Bureau of Land Management, to hold grazing allotments responsible for their animals. Do not let the Grand Staircase Escalante National Monument be reduced to overgrazing. Please do all you can to implement sustainable grazing practices, permanently. How do you put a price on ecological significance?

Some of the significant issues that they (GCTrust, Wilderness Soc.) have observed and comment on, that I agree with (and will follow with my own observations from specific locations) are: Destruction of biological soil crusts, increased erosion, and plant pedestalling; Differing degrees of degraded riparian areas throughout. Their solutions are to establish 60% threshold triggers between grazed and ungrazed areas (reference areas should be ungrazed), exclude livestock from specific riparian areas and establish 80% threshold triggers when compared with ungrazed reference areas. The essential point being that large (100 to over 1,000 acre) reference areas are needed in each allotment for comparisons between grazed and ungrazed (reference area) landscapes.

I support the Sustainable Grazing Alternative developed by the Grand Canyon Trust and The Wilderness Society for the GSENM for the following reasons.

The health and sustainability of the land must be assured for future generations.

Uses by diverse stakeholders should be considered and encouraged, in addition to cattle ranchers.

Decision-making should be transparent to the public. Many diverse stakeholders should have input, not must permittees. Decisions should be based on scientific data not on outdated procedures and practices. It is inappropriate to graze all areas. Some allotments should be closed entirely.

Permits should set limits on livestock damage, which would result in reduced or no further grazing.

All native plant, insect, and wildlife species, cryptobiotic soils, and riparian areas must be given more consideration in deciding the best use of each allotment. All are necessary values for the health of the Monument.

Citizen scientists, including me, are eager to participate in data gathering, so decisions can be made in the best long-term interests of the Monument.

Lastly, I support the Grand Canyon Trust in its efforts toward a Sustainable Grazing Alternative for the Monument. The plan provides for 1) increasing the ungrazed areas within the Monument, 2) setting triggers/limits for damage by livestock, 3) using citizen documentation of on-ground grazing damage for problem solving, 4) expecting protection for fragile biological soil crusts, pollinators, spring seeps on other often ignored special values of the Monument, and 5) consideration of others besides BLM staff and permittees in the development of the livestock grazing plan. I believe these aspects are consistent with my comments.

As the Monument has obviously been recognized as a special place worthy of the best protections and management practices available, I encourage the Monument managers to choose the Sustainable Grazing Alternative proposed by the Grand Canyon Trust and The Wilderness Society. This proposal provides for better management of both renewable and non-renewable resources (such as archaeological sites) for present and future generations. Considering the magnitude of impacts to natural resources that have occurred over just the past few generations, it is critical to take steps as quickly as possible that reflect better stewardship practices.

The Sustainable Grazing Alternative offers a multi-faceted balanced approach to management and research that provides a critical step towards a healthier ecosystem. The Monument has an opportunity to become a leader in stewardship of the fragile and diverse resources of this unique area of the Colorado Plateau, and I urge the

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Comments That Propose an Alternative or Support a Proposed Alternative for Consideration

decision-makers to take the bold but necessary step to seize upon this opportunity.

If this grazing plan is to comply with NEPA standards to review and disclose to the public a full scope of alternatives; then if grazing reductions are contemplated in any plan alternative, an increase in grazing AUM's by activation of any suspended AUM's on an allotment by allotment basis or vegetative improvements that reduce encroaching conifers should also be added as an alternative so it too can be analyzed.

Having reviewed the Grand Canyon Trust/Wilderness Society plan for grazing in the GSENM, I am generally in agreement with what they are recommending. Collaboration is very important as the BLM and stakeholders work to solve problems and prevent future problems for the health of this pristine and incredibly special area that belongs to all Americans. The health of the biological soils crusts in the monument and management of the indigenous plants and wildlife are critical parts of a management plan. Their recommendation for a diversity of grazing arrangements to support healthy use of the GSENM seems more than reasonable.

B. 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.
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III. 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
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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.
7. 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,

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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.
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/documented 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:

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- 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.
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- 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. Enclosures 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

- I. Availability and Unavailability for Livestock Use. Designation of allotments as available or unavailable for
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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.

I.1. Criteria used to identify GSENM areas that will be grazed by livestock

- I.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
- I.1.2. the permittee(s) wish to continue livestock grazing on the allotment/pasture; or
- I.1.3. another permittee obtains the permit and continues to meet or move toward Objectives.

I.2. Criteria that identify GSENM areas that will not be grazed by livestock

- I.2.1. Areas closed to livestock grazing via a Record of Decision supported by NEPA analysis and documentation.
- I.2.2. Areas in suspended use.
- I.2.3. Areas that are not meeting or significantly and measurably moving toward Objectives in relation to ungrazed reference areas.

I.3. Criteria that identify GSENM areas that may be set aside for other uses

- I.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.
- I.3.2. Areas voluntarily relinquished or otherwise available for retirement and containing any of the following or combinations of the following:
 - I.3.2.1. Areas that would serve as valuable reference areas
 - I.3.2.2. Vegetation types that are either not represented or are underrepresented in currently ungrazed GSENM areas.
 - I.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)
 - I.3.2.4. Significant cultural resources.
 - I.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.
 - I.3.2.6. Riparian areas, springs and hanging gardens that have potential to be impacted or are currently impacted by livestock grazing.
 - I.3.2.7. Moderate to high recreation values that are compromised by livestock grazing
 - I.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

- I. 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
 - I.1. BLM monitoring methods will be posted on the GSENM website, including methods used to measure
 - I.1.1. Meeting or moving toward Objectives
 - I.1.2. Existing long-term trend transects GSENM/GCNRA

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<p>1.1.3. IIRH points or transects, PFC assessment points or stream reaches, AIM points</p> <p>1.1.4. Effectiveness of treatments at reaching both individual project and Monument- wide Desired Outcomes</p> <p>1.1.5. Any other methods used systematically by the BLM within GSENM/GCNRA</p>	
<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>2.4. Recovery reference areas are areas where livestock grazing has ceased, but which have not been ungrazed for ten years. Enclosures 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.</p>	
<p>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.</p>	
<p>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 enclosures, 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.</p>	
<p>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).</p> <p>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.</p>	
<p>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.</p> <p>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):</p> <p>6.1.1. 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</p>	

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<p>changes on GSENM- GCNRA/ allotment by:</p> <p>6.1.1.1. Permittees,</p> <p>6.1.1.2. BLM, and</p> <p>6.1.1.3. Other entities</p> <p>6.1.2. Total pounds of meat production/acre/allotment (5-10 year average)</p> <p>6.1.3. Opportunities to participate in livestock grazing programs within GSENM</p> <p>6.1.3.1. For permittees: Number of individual permits and Animal Unit Months (AUMs) per permittee</p> <p>6.1.3.1.1. Permitted AUMs by month</p> <p>6.1.3.1.2. Grazing use reported by month</p> <p>6.1.3.2. For other entities: Identification of programs and partners engaged in grazing management arrangements, e.g.:</p> <p>6.1.3.2.1. Utah Division of Wildlife Resources (UDWR)</p> <p>6.1.3.2.2. Conservation organizations</p> <p>6.1.3.2.3. Utah Dept. of Agriculture's Grazing Improvement Program (GIP)</p> <p>6.1.3.2.4. Watershed Restoration Initiative (WRI)</p> <p>6.1.3.2.5. Natural Resources Conservation Service(NRCS)</p> <p>6.1.4. Diversity of grazing management arrangements</p> <p>6.1.4.1. Number and acreage by year of diverse grazing management arrangements, including but not limited to:</p> <p>6.1.4.1.1. Multiple allotments combined into a single system</p> <p>6.1.4.1.2. Range improvements</p> <p>6.1.4.1.3. Changing kind and class of livestock</p> <p>6.1.4.1.4. Rest-rotation systems</p> <p>6.1.4.1.5. Deferred rotation systems</p> <p>6.1.4.1.6. On-off systems</p> <p>6.1.4.1.7. Reduced use</p> <p>6.1.4.1.8. Suspended use</p> <p>6.1.4.1.9. Non-use</p> <p>6.1.4.1.10. Closed areas</p> <p>6.1.4.1.11. Grass banks</p> <p>6.1.5. Public involvement that reflects a broad range of societal values:</p> <p>6.1.5.1. Basis of (NEPA) administrative appeals or formal objections of GSENM grazing management decisions.</p> <p>6.1.5.2. 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:</p> <p>6.1.5.3. National Environmental Policy Act (NEPA) analysis leading to decisions on grazing systems</p> <p>6.1.5.4. Allotment Management Plan (AMP) revisions</p> <p>6.1.5.5. Permit revisions</p> <p>6.1.5.6. Annual monitoring (collection of data, report out of the findings, and discussions about the results and implications for future management)</p> <p>6.1.6. Community/County-level economic impact of public lands grazing</p> <p>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</p>	
IV. Ecological and Social Rationale for the Sustainable Grazing Alternative	
A. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: ASSUMPTIONS	
I.	Native species diversity should not be depleted and ecosystem functions should not be degraded due to

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domestic livestock grazing.

See, Secretarial Order 3308, 4(b) ("The NLCS components shall be managed... to maintain biodiversity, and promote ecological connectivity and resilience in the face of climate change"); 15-Year Strategy for the National Conservation Lands, Goal 2A(2) ("Maintain or increase habitat connectivity with other important habitat areas to provide for sustainable populations of native species"); see generally, MMP, "Vegetation" at 22-23 (expressing a priority for the use of native species in the GSENM as well as for the control of noxious and invasive species).

2. Livestock grazing simultaneously meets Bureau of Land Management (BLM) regulations and policies and protects Monument values and objects identified within GSENM Proclamation.

See, Proclamation 6920 (the purpose of the Monument is to protect the objects of interest laid out in the Proclamation); FLPMA (BLM lands must be managed "without permanent impairment of the productivity of the land and the quality of the environment," *id.* At § 1702©, and "to prevent unnecessary or undue degradation of the lands," *id.* At § 1732(b). FLPMA also mandates that the BLM adhere to its land use plans, "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." *Id.* At §§1701(8), 1712); Secretarial Order 3308, 4(a) ("The BLM shall ensure that the components of the NLCS are managed to protect the values for which they were designated, including, where appropriate, prohibiting uses that are in conflict with those values."); BLM Manuals 6100 and 6220 (providing direction for the management of the National Conservation Lands and National Monuments); MMP (BLM's land use plan that guides the management of the Monument); 15-Year Strategy for the National Conservation Lands (provides long-term direction for the National Conservation Lands).

3. Best available science is used to inform management of grazed and non-grazed areas

See, Data Quality Act, Pub.L.No. 106-554, § 515 (federal agencies are required to use information that is of high quality and that is objective, useful, and verifiable by others, and "sound statistical and research" methods must be used."); Presidential Memorandum on Scientific Integrity (March 9, 2009) (federal agencies must ensure "the highest level of integrity in all aspects of the executive branch's involvement with scientific and technological processes."); Office of Science and Technology Policy 2010 guidance memorandum on scientific integrity and the resulting Department of Interior Manual 305 DM 3 (providing direction for the highest level of scientific integrity in the Department of Interior as well as for redress for scientific or scholarly misconduct). See also, Secretarial Order 3308, § 4(d) ("Science shall be integrated into management decisions concerning NLCS components in order to enhance land and resource stewardship and promote greater understanding of lands and resources through research and education."); 15-Year Strategy for the National Conservation Lands, Goals 1C and 1E(2) (BLM must "provide a scientific foundation for decision making" and "Use the best available science to conduct capacity studies, establish specific, measurable, attainable, relevant, and time-specific (SMART) objectives (or similar), and develop monitoring plans for compatible uses to ensure the NLCS values are protected, consistent with the designating legislation or presidential proclamation. Use the monitoring results to adaptively manage the NLCS values."); National Landscape Conservation System Science Strategy (generally guides the study and use of science in National Conservation Lands); MMP, "Science and Research" at 44-46 (discussing the priority for research and applied science in the Monument).

4. A diversity of interested publics are encouraged to discuss options for grazing management where native biodiversity and/or ecosystem functions have been degraded.

Secretarial Order 3308, 4(f) ("The NLCS shall recognize the importance of a diversity of viewpoints when considering management options"); Department of Interior Manual 305 DM 3 (providing rules for interacting and communicating scientific findings and research to the public); 15-Year Strategy for the National Conservation Lands, Goals 1B(4), 1C(4), 1D(1), 1E(1) and 2B (engaging partners on assessment, inventorying and monitoring, promoting a better understanding of the importance and value of science, and engaging stakeholders in planning to

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“identify existing and potential uses that are compatible with the designating legislation or presidential proclamation”).

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 an ecosystem functions, and resilience in the face of climate change.

See, Secretarial Order 3308, 4(b) (“The NLCS components shall be managed as an integral part of the larger landscape, in collaboration with the neighboring land owners and surrounding communities, to maintain biodiversity, and promote ecological connectivity and resilience in the face of climate change.”); BLM Manual 6100, 1.6(K)(3) and BLM Manual 6220, 1.6(I)(3) (“The BLM will use Monuments and NCAs as a laboratory for innovative grazing techniques designed to better conserve, protect, and restore NLCS values, where consistent with the designating legislation or proclamation.”); MMP, GRAZ-I at 40-42 (describing the process for assessing and developing allotment management plans and allowing for a variety of arrangements including grass banks and further scientific study); 15-Year Strategy for the National Conservation Lands, Goal 1D (“Use the NLCS as an outdoor laboratory and demonstration center for new and innovative management and business processes that aid in the conservation, protection, and restoration of NLCS areas”).

6. A number and variety of sizes of ungrazed areas are 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 and/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.

The BLM defines ecological reference areas as “lands that best represent the potential of a specific ecological site in both physical function and biological health” (BLM 2001). Given the myriad impacts that have been documented to occur with certain livestock management practices in arid and semi-arid lands in western U.S., it is not possible to know the ecological potential of GSENM/GCNRA ecosystems or plant communities without areas that are not being grazed by livestock. The BLM relies on Ecological Site Descriptions [ESDs] for an estimate of potential vegetation on a site, but the reference site used for a particular ESD can be distant and differ, e.g., in precipitation. This was an issue in a 2013 Department of Interior Hearings Order regarding the Duck Creek allotment in the BLM Salt Lake Field Office (WWP v. BLM 2013). There, two ecological sites from Wyoming were selected to represent site potential of two soil types in the Duck Creek allotment in Rich County UT, though one of the Wyoming sites was in a lower precipitation zone, thereby perhaps underestimating vegetation that could be on the Utah site if it were healthy (WWP v. BLM 2013, at pp. 75-80).

While ESDs may be a helpful indicator of vegetation that once could be expected on a particular soil type, greater accuracy and relevancy will likely best be obtained by local ungrazed areas. For instance, drought may be more severe locally than that experienced when vegetation was characterized at the ESD reference site, and yet drought impacts can be hard to separate from livestock impacts. This makes a local site, subject to precisely the same drought without livestock grazing, the most relevant comparator.

Similarly, if the potential rate of recovery from degraded conditions is at issue, it is best to exclude a local, similarly-degraded area from grazing and compare rates of recovery. It is hard to argue, for instance, with the comparative composition and density of vegetation inside and outside are visible from Google Earth at the Lower

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Cattle Allotment enclosure (i.e., a small, local “reference”; Fig. 7).

[Fig. 7 Lower Cattle Enclosure; NAD83 469931E 4153820N. 3/06/2013.]

Depending on the particular question, different sizes of non-grazed areas will be needed or will suffice (see Rationale F.4)

IV. Ecological and Social Rationale for the Sustainable Grazing Alternative

B. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: GOALS

The six Goals of the Sustainable Grazing Alternative are based on the BLM Fundamentals of Rangeland Health (43CFR §4180.1)

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.

Goal 1 is the BLM Fundamentals of Rangeland Health Goal for Watersheds except for addition of the word “measurable,” because the public needs to be able to know that claims of progress toward watershed health, can be reviewed or documented by them.

This goal also meets Guideline 1(b) of BLM Utah’s Guidelines for Grazing Management as well as the Riparian Objective of the GSENM Management Plan.

2. GOAL 2 Native plant communities are healthy, diverse, and productive, or are making significant, measurable progress toward such conditions.

Goal 2 is the means by which, as stated in the Monument Management Plan, “...the Monument will be managed to achieve a natural range of native plant associations” (MMP at p. 22) and that vegetation restoration will be used to “...restore and promote a natural range of native plant associations” (MMP at p. 26).

The intent of Goal 2 is to meet Standard 3 of BLM’s Utah Rangeland Health Standards:

Standard 3. Desired species, including native, threatened, endangered, and special status-species, are maintained at a level appropriate for the site and species involved. As indicated by:

- a) Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival. . .
- C) Native species reoccupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of normative species.

As noted above, the Monument Management Plan calls for the maintenance of native species.

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.

Goal 3 is the BLM Fundamentals of Rangeland Health goal for Ecological processes except for addition of the word “measurable,” as in Goal 1.

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

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and functions are appropriate to soil type, climate and landform.

Goal 4 meets the Riparian Objective of the GSENM Management Plan whereby riparian areas will be managed “to maintain or restore them to properly functioning conditions and to ensure that stream channel morphology and functions are appropriate to the local soil type, climate, and landform (MMP at p. 20).

Goal 4 also meets Standard 2 of BLM’s Utah Rangeland Health Standards:

Standard 2. Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform. As indicated by:

- a) Streambank vegetation consisting of, or showing a trend toward, species with root masses capable of withstanding high streamflow events. Vegetative 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.
- B) Vegetation reflecting: Desired Plant Community, maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, large woody debris when site potential allows, and providing food, cover and other habitat needs for dependent animal species.
- C) Revegetating point bars; lateral stream movement associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position.
- D) Active floodplain.

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.

Goal 5 fulfills Standard 1 of BLM’s Utah Rangeland Health Standards:

Standard 1. Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform. As indicated by:

- a) Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation.
- B) The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies.
- C) The appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the Desired Plant Community (DPC), where identified in a land use plan, or (2) where the DPC is not identified, a community that equally sustains the desired level of productivity and properly functioning ecological conditions

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.

Goal 6 expands the BLM Fundamentals of Rangeland Health goal for Habitat by adding:

- a) the word “measurable,” as in Goals 1 and 3; and
- b) supporting the “full complement of GSENM/GCNRA native species”

IV. Ecological and Social Rationale for the Sustainable Grazing Alternative

C. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: OBJECTIVES

I. Grazed areas at 80% of ungrazed areas

There is no way to know how closely the six Goals are being met without a comparison to ungrazed areas. The GSENM needs ungrazed areas of sufficient size, number, and ecological site diversity such that the comparisons are local and directly comparable (see F.2-4. below). However, “making significant, measurable progress,” can be

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compared to recently-established ungrazed sites (e.g., exclosures) within areas for which such progress is needed (see F.5. below).

The intent of the 80% threshold is to trigger discussions and problem-solving, not to replace other measures BLM may wish to use for standards (see Management Action C2.1 above, and D.8 in Rationale)

Why 80%? The choice of a yardstick, or trigger, is necessarily a social as well as scientific choice, as is the selection of Goals. However, BLM has set the six Goals above and thus a trigger needs to be selected for acceptable proximity to or progress toward those goals.

To set the trigger lower than 80%, for instance 75%, would simply amount to an admission that livestock grazing cannot be managed without impacting various conditions (e.g., native plant diversity, bare soil, biological soil crust cover) by more than 20%. For instance, that livestock grazing necessarily reduces infiltration of soils by more than 20% compared to ungrazed soils. Or that the diversity of native plant communities is necessarily reduced by more than 20% simply by having livestock graze the area.

How would 80% be measured? There are myriad elements that comprise healthy watersheds, permeable soils, habitat for diverse native species, etc. Not everything can be monitored, but certain indicators can be selected for particular settings and to answer particular questions. The simplest objective measures of 80% can be selected and used.

In some cases 80% will be approximated qualitatively; in others, quantitative measures will be used. It will be important, however, to engage interested publics, including permittees, in which ecological elements will be monitored, and by what methods. To the degree that qualitative ("ocular") measurements are made, regular, documented quality-checking with a quantitative measure would be important.

If triggers are not set, what is considered "diverse," or "healthy," or "permeable," or "significant progress" enters the world of diverse opinion (e.g. "Looks good enough to me") rather than an objective determination. No business would set goals without measuring whether those business goals are being met or not. The commercial use of GSENM (public lands) is a business and necessarily must be objectively accountable to GSENM Goals and the public.

2. Habitat for pollinator diversity. Objective 1.4.1 Native plant communities support the following, at levels of at least 80% of relevant ungrazed reference areas: Pollinator diversity, with pollinators often dependent on a particular species ,genus, or plant family.

Why is support for pollinator diversity included? Pollinators, wildlife that include bees, bumblebees, wasps, butterflies, moths, hummingbirds, and bats, are the sole means by which particular plant species reproduce. (Some plants e.g., grasses are wind-pollinated, some, e.g., dandelions, can self-pollinate). Some plant species or genera are pollinated by only particular pollinator species; others are pollinated by more than one pollinator species. If the flowers of flowering plants dependent upon pollinators for pollination are not present on the plants (e.g., have been consumed by ungulates) at the time the plant's pollinator (or pollinators) is available, that plant cannot reproduce that year. Similarly, if the plants that a particular pollinator depends upon for nesting, larval stages, or pollen/nectar are not present, that pollinator cannot reproduce in the area. Some pollinators are able to travel large distances searching for plants; but some specialized pollinators will not cross relatively small patches of unsuitable habitat. Thus, the conservation of native pollinators is not easily achieved by small areas of suitable habitat.

For instance, a two-year study in northwestern Utah (Wilson, et al. 2009) found low similarity between bee species in various plots, indicating that "dune conservation strategies that preserve 'representative' portions of dune systems may be insufficient to protect bees and the pollination services they provide." This has implications

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for size of ungrazed areas when used to understand the protection of pollinator diversity.

However, the potential diversity of bees and other pollinators is extremely high on the Colorado Plateau. In a 1997 Science Symposium regarding, Griswold, et al. (1997) reported on a 15-year study of bee species in Utah's San Rafael Desert. More species (333) were recorded than in all of New England. They found one-third of the species specialized on a particular plant family or genus. They reported, "Limited sampling in the Grand Staircase-Escalante National Monument suggests it to be equally diverse, but distinctive; nearly have of the Monument's bees are not present in the San Rafael Desert."

There are methods of sampling for abundance and diversity of pollinators and these methods can range from individual species identification (requiring identification by specialists) to simpler methods of recording groups of pollinators, e.g., bumblebee, honeybee, native bee, butterfly) along a transect. A study (O'Brien, et al. 2011) in California via the mentored citizen science Fourth of July Butterfly Count, censused all butterfly species for 32 years at Willow Slough in Yolo County. The number of species observed declined by 39% during the 32 years, but statistically, the decline was not detected until year 13. This illustrates two points: (1) once-a-year sampling, if rigorously done is a useful monitoring tool for pollinators; and (2) declines can happen silently, unnoticed, in the absence of monitoring. The authors attribute the decline to broad patterns of land use and habitat continuity.

In the absence of tracking pollinators in some systematic manner, GSENM has no idea of the degree to which pollinator diversity is being lost through livestock consumption of forbs or loss of native plant diversity. Pollinators, however, are a wildlife group that can be key to retention of native plant diversity and vice-versa.

The Xerces Society for invertebrate conservation, for instance, notes at their site, www.xerces.org/pollinator-conservation-managing-habitat/

Consider timing, duration and intensity

A diverse pollinator population requires adequate nectar and pollen sources from early spring to early fall, which makes seasonal timing a key consideration for an effective grazing plan. Management should be adjusted to maintain the majority of the floral resources throughout the seasons. Also, grazing should be avoided when butterfly larvae or adults are active, as it can result in direct mortality. Grazing periods should be short to allow for adequate recovery of the habitat. Herd sizes should be moderate to light

3. Habitat for declining animals. Objective 1.4.2. Native plant communities support the following, at levels of at least 80% of relevant ungrazed reference areas: Cover, nesting, calving, and/or food habitat for native declining vertebrate animals.

Why is support of "declining" species and not just Threatened, Endangered, and Sensitive Species included? If native wildlife species are declining in abundance due directly or indirectly to livestock grazing, and particularly if they are uncommon already, they can eventually become sensitive, threatened or endangered species.

4. Connectivity to enhance native species. Objective 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.

A study of state wildlife action plans' consideration of connectivity and linkages for wildlife movement (Lacher and Wilkerson 2013) suggests the following best practices:

...collect ecologically meaningful background data, foster broad collaboration, increase specificity of data and goals, include adaptive management, account for climate change, and incorporate socio-related information.

While GSENM does not have resources to establish connectivity requirements for all species, collaboration with Utah Division of Wildlife Resources and other wildlife biologists, and use of best available science can contribute to

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consideration of connectivity as livestock grazing is adaptively managed for time, timing, and intensity; and when considering particular areas for uses other than livestock.

5. Biological crust protected on at least 60% predicted habitat in GSENM; 80% in GCNRA. Objective 3.2. Biological soil crusts 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.

It is important to have a measurable desired condition for retention and recovery of biological soil crusts (BSC) within GSENM and GCNRA. The Sustainable Grazing Alternative selects the Objective of 60% of GSENM and 80% of GCNRA suitable habitat for BSC to be areas in which dispersed disruption/trampling will not be reducing biological soil crusts or preventing their regeneration. The difference in the two goals is a socio-political-legal one, not a scientific one.

The Organic Act for the National Park Service has an explicit direction to leave natural objects “unimpaired.” Section 1.4.5 i.e., (“What Constitutes Impairment of Park Resources and Values”) of the National Park Service Management Policies (2006) says the impairment that is prohibited:

[I]s an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources and values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.

...An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park,
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- Identified in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated. [Emphases added.]

As livestock grazing will continue within the GCNRA, at least in some places, for the near future, a goal of 80% of predicted available habitat for BSC should be protected from the dispersed trampling that is characteristic of cattle grazing.

Livestock grazing will continue within GSENM, at least in some places. However, the Monument Management Plan explicitly mandates the protection of crusts in that management activities are to prevent or minimize negative impacts on their function, health, and distribution (USDI 1999a). Further, in light of the key ecological role that BSC plays for ecological integrity of GSENM (see below); its Proclamation identification as an object/value to be protected; the BLM Fundamentals of Rangeland Health Goal for Watersheds; and the UT BLM Standard for Soils, the Sustainable Grazing Alternative identifies a need for protection of BSC from trampling in at least 60% of its predicted suitable habitat within the GSENM. It does not currently have that protection, and opportunities to move toward that Goal should be welcomed (see e.g., C3 and D1-3 in the Alternative).

Biological soil crusts (BSCs), primarily composed of moss, lichen, cyanobacteria, and/or green and brown algae, are an indicator of ecosystem function in arid systems (Bowker et al., 2008). BSCs support and conduct important ecological processes. They:

- I. fix carbon and nitrogen in soils;

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-
2. reduce erosion, stabilize soils and trap sediment in erosive environments;
 3. reduce water runoff and overland flows while increasing water retention and infiltration; and
 4. contribute to nutrient cycling through consumption and contribution while also containing key decomposers (fungi, bacteria, archaea and microfauna).

BSCs are key to prevention of soil erosion in GSENM/GCNRA, and the importance is well- stated by Bowker, et al. (2008):

Soil erosion and subsequent degradation has been a contributor to societal collapse in the past and is one of the major expressions of desertification in arid regions. . . . Our results [referring to research results in the paper] suggest that, holding the intensity of erosive forces constant, the acceleration or reduction of soil erosion in arid landscapes will primarily be an outcome of management practices. This is because the factor which is most influential to soil erosion, BSC development, is also among the most manageable, implying that water erosion in drylands has a solution.

An Introduction to Biological Soil Crusts at [www. soilcrust.org](http://www.soilcrust.org) (sponsored by U.S. Geological Survey) describes the challenge biological soil crusts face in GSENM/GCNRA from livestock grazing and recreation:

Crusts are well adapted to severe growing conditions, but poorly adapted to compressional disturbances. Domestic livestock grazing, and more recently, recreational activities (hiking, biking, and off-road driving) and military activities place a heavy toll on the integrity of the crusts. Disruption of the crusts brings decreased organism diversity, soil nutrients, stability, and organic matter.

There are certain conditions under which biological crusts are more or less vulnerable, e.g., as NRCS notes:

Biological crusts that are in areas of low rainfall, are on coarse textured soils with low stability, and are in areas with a large amount of bare ground are most susceptible to frequent disturbances and have the longest recovery times. Biological crusts of all types are least susceptible to disturbance when the soil is frozen or is covered with snow. Biological crusts on sandy soils are less susceptible to disturbance when the soils are wet or moist, and the ones on clayey soils are less susceptible when the soils are dry. Trampling or grazing when the soil surface is very wet or ponded should be avoided because it can displace and bury the biological crust. [Emphasis added.]

GSENM is an area of low rainfall, includes coarse textured soils with low stability, and contains a large amount of bare ground – those conditions in which biological crusts “are most susceptible to frequent disturbances and have the longest recovery times.” In GSENM, crusts are most likely to be found on gypsiferous soils, limestone-derived soils, non- calcareous sandy soils, and siliceous sandy soils (Bowker, et al. 2006; and personal communication, Matthew Bowker with David deRoulhac, 2013).

Loss of BSCs has long-term impacts. Neff and others (2005) found that grazed areas that had been rested 30 years contained significantly less silt (38-43%) and up to 51% less Magnesium, Sodium, Potassium, Phosphorous and Manganese compared with never before grazed areas. The authors concluded this was likely due to wind erosion that had followed disturbances caused by livestock grazing. The grazed sites also experienced a 60-70% Carbon and Nitrogen reduction in surface soils, elements critical to nutrient cycling and ecological processes.

Given the easily-observed cattle grazing impacts to BSCs in GSENM (see, e.g., the photographic essay of GSENM biological crusts in grazed and less- or non-grazed areas at www.vanishingdesert.com) the importance of BSCs to arid ecosystem health and processes, the scientific literature surrounding the critical roles BSCs play for ecological integrity and soil retention within arid areas such as the GSENM, and the GSENM Proclamation’s listing of “fragile cryptobiotic crusts” as a GSENM object/value to be protected, we would suggest that large areas of suitable BSC habitat must remain ungrazed by cattle.

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IV. Ecological and Social Rationale for the Sustainable Grazing Alternative

D. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: MANAGEMENT ACTIONS

1. Public Tours. Mgt Action 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.

There is no better way to approach significant management decisions than by on-ground tours of the area with interested publics. That is where BLM can hear the various perspectives and information diverse entities bring, people with diverse perspectives can look at the same piece of ground together and share with each other what they're seeing, and creative problem-solving takes place. If additional conversations take place at locations away from the site, the participants can remind each other about what they were seeing. It's a means by which the BLM can convey and learn scientific information in a concrete, visual way. It is such an efficient way of communicating and solving problems.

Public tours provide an efficient means by which Secretarial Order 3308, 4(f) can be fulfilled: "The NLCS shall recognize the importance of a diversity of viewpoints when considering management options."

2. EA Alternatives Public Comment. Mgt. Action 1.2 Prior to a Decision Notice, all Environmental Assessments (EAs) will provide for public comment on the alternatives and their analyses.

As with Environmental Impact Statements (EISs), EAs should consider all reasonable alternatives, and generally, only 3 or 4 alternatives are likely to have been developed. During the scoping period, an interested public may suggest an alternative that is reasonable, distinct from alternatives the agency is proposing, and provides for environmental benefits. Unless the BLM provides for public comment on the EA prior to its Decision, including all the alternatives and comparative assessment of the environmental consequences of the alternatives, the public is unable to indicate their thoughts on the alternatives and/or the scientific integrity of the comparative analyses of the alternatives.

Moreover, even if the agency wishes to adopt all or part of the alternative that was submitted during the scoping period, it is prevented from doing so if the adoption of that alternative or parts of the alternative has not been presented to the public for comment. Thus, a comment period on an EA (or a Draft EA) prior to a Decision is essential for providing a clear basis for choice among options by the decisionmaker and the public" (40CFR 1502.14).

3. The posting of annual plans of use helps the public understand whether the grazing they are seeing on the Monument is that which has been planned and approved by the BLM.

The posting of annual plans of use for two years, as, e.g., the Dixie and Fishlake National Forests do, helps the public understand whether livestock grazing is changing time, timing, and/or intensity in different years; and allows the public to see whether maintenance requirements one year were completed.

This is an effective means by which the 15-Year Strategy for the National Conservation Lands, Goals 1B(4), 1C(4), 1D(1), 1E(1) and 2B can be met, i.e., engaging partners on assessment, inventorying and monitoring.

4. Posting of Mid-season Adjustments Mgt. Action 1.4 of the annual plan of use will be posted as a revised annual permit.

Posting of mid-season adjustments in annual plans of use avoids mis-communications with the public regarding BLM approved uses for the season.

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5. Pre-annual Plans of Use Meetings. Mgt. Action 1.5 When requested by a member of the public, BLM will participate in a pre-annual permit meeting to discuss problems observed/documented 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.

During the winters of 2012 and 2013, Grand Canyon Trust has requested (and been granted) meetings with Forest Service District Rangers and Range Specialists regarding problematic conditions (or improvements) the Trust had observed, documented, and reported the previous season. The Trust has left the decision up to the District Ranger as to whether they will invite the relevant permittees to participate or not; some do and others don't. (The Trust and other interested publics are not permitted at the Annual Operating Instruction meetings between the FS and permittees, which is why the Trust initiated these "pre-AOI" meetings.) These meetings have been productive, and most of the AOIs (the FS equivalent of BLM annual use plans) that have been the subject of discussion have been improved as a result.

In several cases, the results have been a plan to follow up with a field visits the following season, or joint monitoring.

6. Collaborations. Mgt. Action 1.6 GSENM will encourage the establishment of independent, multi-stakeholder, consensus collaborations that include representatives of all relevant stakeholders, for purposes of making recommendations to BLM regarding 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.

As we are all aware, the process of developing a consensus collaboration among diverse stakeholders regarding the development of the GSENM grazing management plan was cut short mid-2013 when the exodus of a Garfield County Commission representative precipitated the dissolution of the collaboration before its first meeting. The Trust (and many others within the BLM and the public) will continue to encourage the formation of consensus collaborations convened by non-agency entities, for the purpose of problem-solving, mutual understanding, and support of the BLM.

Since 2007, successful consensus collaborations have been problem-solving and making recommendations to the National Forests in Utah relating to livestock and wild ungulate grazing (i.e., Tushar Allotments Collaboration, Utah Forests Restoration Working Group, Collaboration on Sustainable Livestock Grazing, and Monroe Mountain Working Group). While the BLM would not be leading such collaborations, signals from the BLM that they would welcome initiation of such collaborations regarding grazing management within GSENM and GCNRA would be helpful.

7. Public Participation in Monitoring of Experiments. Mgt. Action 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.

BLM regulations at 43 CFR 4100.0-5 define an "Interested Public" as "An individual, group or organization that has submitted a written request to the authorized officer to be provided an opportunity to be involved in the decision making process for the management of livestock grazing on specific allotments or has submitted written comments to the authorized officer regarding the management of livestock grazing on a specific allotment."

8. Public Participation in Proposing Management Options Mgt. Action 2. when grazed conditions are <80% ungrazed conditions.

The Sustainable Grazing Alternative establishes the general threshold of acceptable livestock impairment or

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depletion of ecosystem processes or native species to be 80%. While the BLM would continue to use particular standards and guidelines to insure livestock grazing meets or moves toward such a threshold, the threshold would help interested publics engage with the BLM regarding more severe impacts of livestock grazing at particular sites. As will be noted in many scoping comments for this EIS, many in the public feel that there are unacceptable impacts on the Monument by livestock grazing. This threshold will help guide the public in knowing what impacts the BLM is accepting within this Monument.

9. A Diversity of Grazing Arrangements. Mgt. Action 3. A diversity of grazing arrangements will be encouraged within GSENM.

One of the consensus agreements of the Collaboration on Sustainable Grazing was that a diversity of grazing arrangements, including areas for reference, collaborative grazing experiments, conventional grazing, grass banks, non-use and closed allotments, provides for both ecological and social stability of livestock grazing. See IV.A.5 above for support for this Management Action within BLM, GSENM, and NLCS direction.

10. Time, Timing and Intensity. Mgt. Action 4. Time, timing, and intensity of livestock grazing will be adaptively managed to insure that Goals and Objectives are met.

Altering timing, time, and/or intensity is the fundamental means by which livestock grazing can be managed. See pp. 12-13 of (Collaboration 2012).

11. 30% Utilization standard. Mgt. Action 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.

The unpublished review of published literature by John Carter (2013) provides evidence for 30% utilization. The literature cited in the review reveals not only ecological benefits and benefits post-drought, but also economic feasibility for the rancher.

The Tushar Allotments Collaboration Final Report (Straube 2009) described the process whereby the two allotments that were the subject of the two-year, multi-stakeholder, multi-agency collaboration on the Fishlake National Forest, would move from 60% to 30% utilization, one pasture a year, until all pastures were at 30% utilization (with one pasture being rested each year). Long-term trend transects read in 2008 were read again in 2013. While the final report has not yet been compiled, every transect is slightly up in cover and plant diversity (personal communication Reggie Swenson, Beaver Ranger District Range Specialist, Fishlake NF). The Trust re-read two aspen browse transects inside and outside a permanent range cage, and aspen in the outside transect was increasing in height, including above browse height, and decreasing in browse percent. Aspen in this area was not experiencing recruitment prior to the percent utilization reduction.

Anyone who has observed sites where graminoids have been grazed to 50% or 60% is aware that only ground-hugging flowers (if any) remain; nearly all seedheads are gone; there is inadequate hiding cover for small wildlife and birds; sagebrush understory is depleted; bare ground is increased within sagebrush communities; riparian banks are trampled; and aspen, cottonwood, and willow sprouts are nearly all browsed. Conversely, personal observations (e.g., by Mary O'Brien, one of the authors of these scoping comments) of sites where utilization has been 30% result in at least scattered palatable ("forage") plants ungrazed; some seedheads; and less browse of aspen.

12. 25% Utilization During Drought. Mgt. Action 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.

Drought stresses every species within the low-elevation, arid Monument. While cattle graze after or during a season of drought, they are subsidized by troughs of water, but the plants are not, setting up the ability for livestock to exacerbate the drought for the plant species.

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For instance, the USDA U.S. Drought Monitor for January 7, 2014 shows GSENM as being in a region of “D0 - Abnormally Dry,” just east of southwestern Utah which is “D1 – Moderate Drought.”

A reduction of utilization to 25% reduces the exacerbation of drought by livestock grazing.

13. Allotment Action Plans. Mgt. Action 6. 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. If movement toward Objectives is not being observed/measured, further conversations will be in order, and adjustments to the action plan will be made.

Allotment Action Plans are in order for allotments that are failing to meet or move toward Objectives. They offer the opportunity to the permittee(s) to indicate what actions they believe they could take to improve conditions, based on evidence that such management has resulted in improvement elsewhere.

Interested publics may be interested in offering suggestions and support for the plan, including monitoring with and for the permittee(s).

14. Annual Use Plans. Mgt. Action 7. 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.

When the BLM prepares an Annual Use Plan (and posts it on the GSENM website), it should represent the Range Specialist’s best understanding of the time, timing, intensity, and distribution of cattle that will result in Objectives being met or moved toward. It is unreasonable to approve a Use Plan which relies solely on the permittee to judge when and where over-use is occurring.

15. Staggered Seasonal Use. Mgt. Action 7.1. 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.

When a pasture is grazed at or nearly the same time every year, any species growing at that time, or maturing seeds, or scattering seeds, will likely be under particular pressure and may be extirpated from the site over time. As noted by the Sustainable Grazing Collaboration in its Consensus Report and Recommendations (at p. 12):

The TIMING of grazing is also a key grazing management principle. This refers to when (what stage of plant growth) livestock graze in a specific area. . . Timing is important for both ecological and social/economic reasons. Managing the timing of grazing so pastures and individual plants have ample time to re-grow can improve plant health and plant community health. In addition, the date that livestock arrive at a pasture can influence what plants the animals eat and may impact recreation or other resource uses in certain areas at specific times.

16. Pasture Movement within Annual Use Plans. 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.

If livestock time and timing have been planned, the plan should be carried out, unless the time is shortened due to over-use.

18. Passive and Active Vegetation Treatments. Mgt. Action 8.

The Federal Land Policy and Management Act of October 21, 1976 (“FLPMA”, 43 USC 1701) declares that the

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public land be managed in a manner that would: a) protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water, and archaeological values; b) preserve and protect certain public lands in their natural condition; c) provide food and habitat for fish and wildlife and domestic animals.

Many native communities throughout the GSENM and GCNRA are in a condition, structure and composition that deviate from their potential “natural” state. Restoration of landscape succession/disturbance regimes is the foundation of the strategy to manage long-term climate change and drought risk to terrestrial, aquatic, and riparian ecosystems. Restoration will help conserve scarce habitats in the short term, while expanding these habitats in the long-term.

Restoration need not be active; it may simply involve relief from the stress of livestock grazing. Perhaps the most dramatic example of passive restoration is the 160-acre land (“South Hollow”) of Dennis Bramble, a retired U of Utah Biology professor. The land is not far from GSENM. It is in the Escalante River Watershed, north of Canaan Peak, south of Hwy 12, w. of Escalante, surrounded by grazed Dixie NF land. In 29 years of passive restoration only, the 160 acres, which had previously been grazed, planted to crested wheatgrass, subjected to sagebrush removal (which then became rabbitbrush) and partly burned, has now become a highly diverse, productive site, with extraordinary contrast between it and the surrounding Dixie NF grazed land.

19. Objective of Veg Treatments. Mgt. Action 8.1. Vegetation treatments will have the objective of restoring or supporting potential native vegetation and ecosystem processes.

As directed within the Monument Management Plan, GSENM vegetation treatments should be directed toward restoration and recovery of native plants. At p. 22, the MMP notes, “...the Monument will be managed to achieve a natural range of native plant associations.”

Methods of native vegetation restoration need to be selected carefully. For instance, Evangelista, et al. (2004) note that mechanical seeding of native species post-fire in GSENM not only further reduces biological soil crust, but prevents regeneration of the crusts.

20. Veg Treatments Address Underlying Causes. Mgt. Action 8.2. Vegetation treatments will address underlying causes of the problematic conditions prompting vegetation treatments 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.

The multi-stakeholder, multi-agency Utah Forest Restoration Working Group (UFRWG 2010) described four steps in the decision process for restoration of aspen. The same steps are applicable for restoration treatments within GSENM:

- Step 1. Assess the condition of aspen [or any other vegetation type] in the landscape/area
- Step 2. Rely on site-specific data to target the underlying cause(s) of the problematic condition(s)
- Step 3. Select Response Option(s) relevant to the particular stand type, underlying causes of the problematic condition(s), and landscape context
- Step 4. Monitor [Emphases added.]

If a vegetation treatment is being undertaken to “restore” sagebrush understory, for instance, the first question that must be asked is what has caused or contributed to depletion of the sagebrush understory. Local sagebrush areas not grazed by livestock are key to being able to answer this question, but the Monument at this time appears to have almost no sagebrush landscapes that are not being heavily grazed. It is extremely important to establish, as soon as possible, a series of ungrazed sagebrush areas for understanding the potential of sagebrush understory to recover in the absence of grazing. It is certainly recovering native grass and forb understory on the South Hollow property of Dennis Bramble, mentioned above at D.18.

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Comments That Propose an Alternative or Support a Proposed Alternative for Consideration

21. Native Seedlings/seedlings Only. Mgt. Actions 8.3 and 10. Utilize native seeds or seedlings only, of local genetic stock whenever possible. Revegetation (including maintenance) of sites formerly seeded

The Monument Management Plan (USDI 199a) directs that native seeds be used in revegetation projects and if non-native seeds are necessary to restore native plants (e.g., in an emergency or where non-native invasive species would prevent the native species recovery) the non-native seeds will be only those of short-lived, nurse crop species. This is essential.

22. Measurable Desired Outcomes for Veg Treatments. Mgt. Action 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.

This should need no explanation. Restoration projects throughout the nation suffer from lack of (1) measurable Desired Outcomes; and (2) monitoring to determine if Desired Outcomes have been met.

23. Veg Treatments under NEPA. Mgt. Action 8.5. Be detailed in project-level plans and NEPA analyses, which provide for public comment on a full range of reasonable alternatives.

See D.2 above.

24. Riders. Mgt. Action 11.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

In the absence of active riding, livestock will preferentially and excessively use preferred (e.g., mesic, flat) portions of the allotment; may exceed utilization limits; may trespass into neighboring allotments; and may otherwise violate the annual plan of use. Broken fences and other livestock infrastructure may become non-functional.

25. Fencing to Meet Objectives. Mgt. Action 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.

It is difficult to reason that fences exclusively required for a private business be constructed and maintained with public funds.

26. Fencing Maintenance Prior to Livestock Entry. Mgt. Action 12.2 All fences and other annual permit infrastructure must be maintained and functional prior to livestock entry for the season.

This needs no explanation.

27. Passive Restoration of Native Species. Mgt. Action 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.

Passive restoration (i.e., removal of stressors and surface-disturbing activities) may not be sufficient at a given site in order to restore native species, but it should be the first priority.

28. Least Use of Herbicides. Mgt. Action 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.

Again, this needs no explanation. The use of toxic chemicals should not be used to mitigate for livestock facilitation of the introduction, establishment, and/or spread of exotic, invasive plant species.

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29. Water Trough/ Watering Pond Non-native, invasive plant species . Mgt. Action 14. 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.

The heavy use by livestock within 100 feet of watering troughs or watering ponds often (if not always) facilitates the introduction and establishment of invasive, exotic plant species. It is reasonable that the livestock permittee(s) must maintain the area free of exotic and invasive plant species and must do so without mechanical disturbance or the use of chemical herbicides.

30. Enclosure Gates Locked. Mgt. Action 15.1 Enclosures 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.

Management Action 15.1 ensures that gates are not inadvertently left open by visitors.

31. Management Action 15.2 helps the public assist the permittee(s) with maintaining their annual use plan and avoiding unauthorized or trespass use by their cattle.

32. Fire. Mgt. Action 16. 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.

There is extensive scientific literature regarding the likelihood that fire will increase the spread of cheatgrass or other invasive, exotic species, and that biological crusts are adversely impacted by fire.

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

This needs no explanation

IV. Ecological and Social Rationale for the Sustainable Grazing Alternative

E. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: ALLOWABLE USES

I. Availability and Unavailability for Livestock Use. Allowable Uses I. 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.

BLM determines whether lands are available for livestock grazing in land use plans. 43 C.F.R. § 4310.2(a). The regulations do not provide any additional guidance on how BLM will allocate lands as available. However, the regulations leave room for BLM to determine how lands will be made available or unavailable for grazing. The BLM Land Use Planning Handbook H-1601-1 states that BLM will fulfill this obligation by considering the following factors (Appendix C-II, p. 14):

1. Other uses for the land;
 2. terrain characteristics;
 3. soil, vegetation, and watershed characteristics;
 4. the presence of undesirable vegetation, including significant invasive weed infestations; and
 5. the presence of other resources that may require special management or protection, such as special status species, special recreation management areas (SRMAs), or ACECs.
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By considering these factors, BLM can come to the conclusion that lands should be available for grazing, available with certain conditions attached or unavailable for grazing. However, rather than just determining that lands will be “available” or “unavailable” in the land use plan, BLM has the discretion to allocate lands as available for grazing but with varying degrees of availability or even unavailable for grazing depending on the factors set out in the Handbook as well as other factors that may be present.

One example of BLM taking a broader approach to livestock grazing in an RMP than just the available/unavailable dichotomy is found in the 2005 Upper Deschutes RMP in eastern Oregon, which allows for grazing permit retirement via a “grazing matrix” (at page 80) The matrix is further discussed in the appendices and the full document is available online (BLM 2005b). The Clarno Allotment and the Lynch Allotment have been retired in recent years using the matrix (personal communication, Oregon Natural Desert Association).

A second example is the 2010 Carrizo Plain National Monument RMP in California. In the Carrizo Plain RMP, BLM set out the following three categories: (1) “Available for livestock grazing,” (2) “Available for livestock grazing, but only for the purpose of vegetation management,” and (3) “Unavailable for any livestock grazing.” Carrizo RMP at II-56. This approach shows that BLM can and should utilize a range of options for livestock grazing when planning at the landscape level in order to achieve the most appropriate management regime for the planning area.

2. Reduced Use or Non-use. Allowable Uses 2. 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.

All efforts by permittees to conserve and restore native species, protect archaeological or other cultural resources, or allow ecosystem functions to regain integrity should be welcomed by the BLM and GSENM. Conservation or recovery outcomes should be predicted, and monitoring should be required for determining whether predicted outcomes are met.

3. Voluntary Relinquishment. Allowable Uses 3. 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 [at III.D.1] and consider amending the MMP to allocate forage for a different purpose pursuant to Instruction Memorandum No. 2013-184.

Voluntary relinquishment is the most promising means by which large ungrazed areas can be obtained within the Monument for a balance between grazing and protection of Monument values and objects; for reference areas; for recovery of depleted native communities; for recovery of biological soil crusts; or any other ecological or social benefits

IV. Ecological and Social Rationale for the Sustainable Grazing Alternative

F. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: MONITORING

I. Protocols for Measuring Indicators of Objectives. Monitoring 1. 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. BLM monitoring methods will be posted on the GSENM website, including methods being used to measure Indicators that Objectives are being met.

It is important that the BLM be transparent about the methods it is using to determine whether Objectives are being met or moved toward. The public and scientists can then more easily build off the BLM methods and data to ask other questions, e.g., about pollinators, or habitat for ground-nesting birds. It is a simple step to post a link to the methods being used.

2. Reference Areas for Objectives. Monitoring 2. Reference areas exist or are established for all Objectives in

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order to demonstrate potential for Objectives to be met, and/or potential rate of movement 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 III.E. 2.4) consists of a site that has not been grazed or accessible to livestock for at least ten years

With such a large percentage of the major vegetation types and native plant communities in grazed areas (deRoulhac 2013b), there is almost no opportunity for observing and documenting land health conditions in comparable, ungrazed GSENM lands. The great percentage of native ecosystems existing primarily within grazed lands highlights the need to establish reference areas against which the attainment or movement toward Objectives can be measured or observed. Such reference sites can be extraordinarily valuable for people with diverse perceptions and perspectives to gain a shared sense of what is and what is possible.

Reference areas do not need to be "pristine", or "never grazed," In fact for certain questions, e.g., "How quickly can this area regain plant cover while being grazed?", a reference site may be needed that is similarly lacking in plant cover from recent grazing, so that comparative rates of plant cover can be compared.

Of course, careful grazing management may result in better conditions for certain species or ecosystem functions or sites than in the associated ungrazed reference area. They may result in moving toward the relevant Objectives more quickly than the ungrazed reference area. The important point is to compare livestock grazing management with ungrazed areas.

3. Establishment of Reference Areas. Monitoring 2.1. 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.

The more distant the reference site, the more skepticism will be expressed if the distant, ungrazed site is compared to a GSENM grazed site. However, the Monument currently sorely lacks ungrazed areas at all (deRoulhac 2013b) or even local exclosures (deRoulhac 2013a). Therefore, more distant sites (e.g., ESD reference sites, ungrazed private inholdings, largely inaccessible areas) can be used while newly-established ungrazed areas become ten years older or more.

4. Reference Area Size. Monitoring 2.2. 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.

Depending on the question(s) being asked, smaller or larger reference areas will suffice or be needed, and shorter or longer times since being last grazed will be needed. For instance, if questions are being asked about recovery of potential biodiversity, a reference area of pasture, allotment, or subwatershed size may be needed, as a small site will not support diverse soils, microhabitats, aspects, pollinators, ecosystem functions, or other elements that would contribute to biodiversity recovery. On the other hand, if an Objective at a particular site is to reduce bare ground through changed grazing management, a smaller, ungrazed reference site may suffice. A large reference area can contain many small reference sites useful for a particular question, but the reverse is not true.

In a detailed study comparing a grazed GSENM mesa top (Guenther, et al. 2004) with the relict, non-grazed No Man's Mesa, the researchers found that at a square meter scale grazing microsite disturbance increased species (exotic plus native) richness in this pinyon-juniper habitats, but "...there is a homogenization of species richness at the landscape (6000 sq m and 1 ha) scale, which is the scale with which managers are most concerned."

5. Permanent range cages. Monitoring 2.3. At least two permanent range cages (at least 16' X 16') are maintained in each grazed pasture, in representative areas frequently used by livestock.

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Utilization cages are annually or frequently moved, precluding understanding of production that takes place not only during the first year post-grazing, but the second, or fifth, or tenth. (An interesting analogy is what happens 2 minutes, 24 hours, 2 weeks, 1 year, 5 years, etc. after quitting smoking: Google "What Happens When You Quit Smoking Timeline."

Given that 77 allotments currently are administered by BLM on GSENM and GCNRA, the size of permanent range cages may be small (at least 16' X 16'). However, their number (at least two in each grazed pasture) gains in providing direct, local comparability, particularly for such elements as ground cover, potential production, or which plants are selectively grazed. Range cages provide a comparison with the annually-moved utilization cages, which generally record only the production that is possible the first growing season after having been grazed.

Small, permanent range cages cannot indicate the potential for any feature that requires large-scale conditions (e.g., ground nesting bird habitat/use; sheet erosion.

If a larger, representative reference area exists within the pasture, additional small permanent range cages might not be needed.

6. Recovery reference areas. Monitoring 2.4. Recovery reference areas are areas where livestock grazing is not occurring, but which have not been ungrazed for ten years. Enclosures 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.

Recovery reference areas will most effectively be established within the area where livestock are being managed for recovery toward particular Objectives, and at the approximate time when the changed management for recovery is being undertaken. This facilitates direct comparison of the rate and nature of recovery between the grazed area and the reference area.

7. Utilization Cages. Monitoring 3. 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.

The plant production that occurs the first year after grazing (e.g., if root reserves have been depleted; if little photosynthetic material was available during growing season) does not necessarily represent what is sustainable. It is important to at least see what plants produce a second growing season after having been grazed perhaps for many years in a row and perhaps heavily.

If half of the utilization cages are moved each year, that will, after the first two years, allow for comparing utilization to two-year ungrazed plants.

8. Public Engagement: Grazed Conditions Below 80%. Monitoring 4. Conditions below 80% of the reference site(s) are appropriate subjects for problem-solving among the BLM, permittees and interested public.

While the BLM may use its standard monitoring for purposes of annual grazing, the threshold of 80% is useful for conversations about degradation, and what grazing management changes might bring a pasture or riparian reach or allotment closer to BLM Fundamentals of Rangeland Health and Utah BLM Guidelines for Grazing Management, and the Monument Management Plan mandates.

9. Independent Monitoring. Monitoring 5. 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

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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). 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.

There are myriad scientific and monitoring questions and objective methods for attempting to answer those questions and BLM should welcome all objective assessments and monitoring of grazed and ungrazed lands within GSENM/GCNRA. Nothing is to be gained by limiting attention to monitoring only those elements of grazing management BLM is coordinating across Field Offices or states. Thus the Collaborative Group on Sustainable Grazing identified over 80 methods that can be used by permittees, interested publics, and/or the Forest Service to objectively identify problems or progress within grazing management.

For instance, aerial imagery is not being currently used extensively within the Monument, but Harris and Asner (2003) used remotely sensed hyperspectral imagery to detect long-term rangeland deterioration (grazing gradients) related to proximity to a water source in Mollies Nipple Allotment. Similarly, the Trust (Hoglander and Rivas 2014) used the Normalized Difference Vegetation Index (NDVI) and LANDSAT aerial data which resulted in detecting a decrease in vegetation productivity in Mollies Nipple (and in 80% of GSENM acres) between 1986 and 2011. Such independent research and observations can signal interest in discussing and problem-solving around conditions within GSENM.

It is important that within the grazing management plan the BLM explicitly welcome objective, independent information and conversations with interested publics (including permittees) regarding grazing management on this national monument. All members of the GSENM community (visitors, hikers, plant and wildlife advocates and aficionados, photographers, permittees) are adversely affected when livestock grazing is not managed in a sustainable manner. All interested publics must be encouraged to positively contribute to the attainment of the Fundamentals of Rangeland Health, the Monument Management Plan mandates, protections envisioned within the Proclamation, and Utah Guidelines for Range Management.

10. Social/Economic Indicators. Monitoring 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.

The Report and Consensus Recommendations of the Collaborative on Sustainable Grazing for National Forests in Southern Utah (2012) lists a variety of social and economic indicators of sustainable grazing. These were agreed upon, with consensus, by a diverse group of participants. This is important, because too often social and economic indicators focus almost exclusively on the culture of ranching and input/output measures of cost and profit for the permittees and whatever role their purchases are playing in the local community, as if other purchases and multipliers would not be present with a balance of grazed and ungrazed areas within the Monument.

It is important to emphasize that social values related to grazing management extend far beyond the "custom and culture" of private permittees and communities immediately surrounding GSENM/GCNRA. The values of all users of GSENM/GCNRA, all interested publics, all researchers need to be considered. As noted within the Headwaters Economics Reports (2013a and 2013b), economic interests other than the local ranching culture are invested in GSENM/GCNRA. As well, these are national public lands, and undue attention to "local custom and culture" could undermine provisions for other values elsewhere in the nation.

11. Social Indicator: Public involvement Monitoring 6.1.5. Public involvement that reflects a broad range of societal values: Basis and number of (NEPA) administrative appeals or formal objections of GSENM grazing

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management decisions, including National Environmental Policy Act (NEPA) analysis leading to decisions on grazing systems' Allotment Management Plan (AMP) revisions; Permit revisions; and Annual monitoring (collection of data, report out of the findings, and discussions about the results and implications for future management)

It is notable that the Collaborative on Sustainable Grazing (Collaborative 2012) recommended, by consensus, that monitoring should include monitoring of the Forest, by District and year, the degree to which public involvement is present in grazing management decisionmaking processes, given that agency grazing management decisions affect their uses of and the values they find in their public lands. Again, this is a visible, objective means of extending beyond exclusive consideration of a "local custom and culture."

If this grazing plan is to comply with NEPA standards to review and disclose to the public a full scope of alternatives; and if grazing reductions are contemplated in any plan alternative, an increase in grazing AUM's by activation of any suspended AUM's on an allotment by allotment basis must be considered. The consideration of soil, moisture and precipitation dynamics in the study areas are mandatory to consider in an impact analysis. Some years the ability to implement higher AUM's levels will not only spike the local economy but higher moisture levels correlate to an increase of cheat grass and other invasive species that the allowance of increased grazing on a temporary basis could mitigate. Other vegetative improvements that reduce encroaching conifers should also be added as an alternative so it too can be analyzed.

If this grazing plan is to comply with NEPA standards to review and disclose to the public a full scope of alternatives; then If grazing reductions are contemplated in any plan alternative, an increase in grazing AUM's by activation of any suspended AUM's should be included on an allotment by allotment basis. The moisture and precipitation dynamics in the study areas are mandatory to consider in an impact analysis. Some years the ability to implement higher AUM's levels will benefit the local economy but higher moisture levels correlate to an increase of cheat grass and this could be managed by the allowance of increased grazing on a temporary basis. An important consideration dealing with changes of land use is the beneficial use of water in the monument. At this time the vast percentage of water rights are for stock watering. The loss or reduction of grazing use will affect the BLM's ability to continue to hold water rights under Utah State Law. Other vegetative improvements and practices that reduce encroaching Pinion Junipers and conifers should also be added as an alternative tool, so it too can be analyzed.

I sincerely support this initiative as I have seen first hand the devastation that occurs when the land is overgrazed. I participated in some volunteer opportunities with the GCT on the Kane Ranch in monitoring projects testing the re-growth of native grasses and it was very clear that this was not a successful project and the project was a failure even in areas that were fenced off for protection from grazing. It appears that the most successful way of regenerating the land is to let it rest and replant, and stop the constant over grazing that has gone on for years.

Cut the Crap!!! Get off your duffs and adopt the Sustainable Grazing Alternative. It takes care of all concerns and NO ONE gets to take it all!!!

I fully support the "Sustainable Grazing Alternative" developed by the Grand Canyon Trust and the Wilderness Society.

I agree with the actions that the Sustainable Grazing Alternative put forth by the Grand Canyon Trust calls for, including:

"Increasing ungrazed areas within the Monument;
 Setting triggers (limits) for damage by livestock;
 Using citizen documentation of on-ground grazing damage for problem-solving; and
 Expecting protection for fragile biological soil crusts, pollinators, spring seeps and other often-ignored special values of the Monument."

Please consider these as serious options when adopting a Grazing Management Plan for the Grand Staircase-Escalante National Monument. This is an important area to me and it deserves to be protected for generations. Once grazing allotments cross ecological thresholds, it will be very difficult if not impossible to return them to historically functioning condition, therefore a sustainable approach should be implemented immediately.

As a seasonal resident and guide, I strongly urge you to implement a sustainable grazing alternative.

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I support a Sustainable Grazing Alternative or no Grazing.

The Conservation Science Alternative proposes methods for designing an enduring grazing program that restores lands needing help and sustains those lands now in good condition. This alternative meets BLM's planning criteria, as well as the additional planning criteria we recommend. We advocate increased public involvement in the management of the Monument and this alternative has recommendations for meeting BLM's obligation for collaboration and coordination. Our alternative asks the BLM to devise a process for collaborative decision making in permit renewal and annual grazing decisions that involves all of the wide variety of voices in the Monument. This alternative advocates a transparent process to integrate science in Monument range management, while addressing significant scientific questions central to management. This alternative advocates for BLM to make information on the livestock grazing program more easily available to the public creating a more transparent process.

Specifically, this alternative focuses on addressing the issues that grazing brings to ecosystems. Protection of biological soil crusts is one of the issues missing from current range management and at the forefront of concern in the Monument. Our alternative promotes management for healthy ecosystem functions, including biological soil crusts. The current Monument Management Plan (MMP) specifically guides decisions about the restoration, protection, and research needs for biological soil crust. This reflects the understanding that biological soil crusts are a critical part of desert landscapes that need more attention in land use plans.

The conservation science alternative also addresses a major issue identified by recent research. New research shows that wind erosion and dust production has far reaching effects on climate change, regional water production, air quality, snow melt, nutrient cycling, and vegetation.

Wind erosion is directly correlated with amount of bare ground, which is excessively high on the Monument according to Rangeland Health data and National Resource Conservation Service site descriptions. See Appendices G and H for the details. Soil erosion is one of the most important resource degradation problems the Monument faces, and protection of biological soil crust and vegetation is one of the best (and least expensive) ways to solve it. A diverse set of studies relating to biological soil crusts supports the conclusions that the Monument should continue to endorse and implement the direction currently in the MMP on biological soil crust.

The conservation science alternative takes a different direction from current BLM management of vegetation treatments in order to address the lingering ecological problems and conflicts with the Monuments obligation to protect values including natural ecosystem values. Continued surface disturbance and the use of exotic species in these treatments is an activity that is directly contraindicated with maintenance of biological soil crusts and promoting many other ecological values. Appendix D details the ecological issues posed by vegetation treatments. In keeping with the current MMP, The Conservation Science Alternative advocates that over time, BLM manage these past treatments for recovery to their Potential Natural Community.

The Conservation Science Alternative provides criteria for BLM to use in assessing grazing permit relinquishments and, based on past BLM analysis of allotments recommends that grazing not be allowed in two additional allotments. For allotments where grazing will continue, Best Management Practices are included in this alternative for the renewal of grazing permits and for annual grazing decisions.

Planning criteria- Analyzing a full range of alternatives

NEPA requires that a true range of alternatives be considered in the RMP and accompanying EIS, such that it would "preclude agencies from defining the objectives of their actions in terms too unreasonably narrow that they can be accomplished by only one alternative." Accordingly, we expect to see an adequate range of alternatives proposed and fully analyzed. Alternatives that qualify for analysis include a no grazing alternative which would assess the impacts/benefits from eliminating livestock grazing in the Monument.

Planning criteria- Analyzing a full range of alternatives

In order to capture the unique management issues for the Glen Canyon NRA, BLM should consider in one alternative excludes grazing from canyons in the NRA with streams, from habitat in the NRA that is impaired, and

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from cultural sites in the NRA.

Planning criteria- Analyzing a full range of alternatives

The BLM must also fully analyze the conservation alternative which is reasonable and meets the purpose and need. Since this conservation alternative is a set of integrated issues, planning criteria, and planning decisions supported by best management practices, it should be considered in its entirety.

Conservation Alternative

General description

The goal of this alternative is to meet Rangeland Health standards in a way that satisfies the Proclamation's requirement to protect values, provides for transparent decisions based on verifiable evidence, involves a diverse community in range management on an ongoing basis, and promotes science to answer management problems. The GSENM Plan Implementation report found that "GSENM offers unparalleled opportunities to show case new, innovative, best practices for multiple uses consistent with the protection of Monument objects..." p11. The report goes on to say that "This focus on sciences has not been the driving management priority in recent years" and recommends that "projects have a clear tie to science and [be] reviewed for sound science practices." Our proposed alternative meets those recommendations.

In our alternative, grazing management would be modified with priority on restoring ecosystem health while providing research opportunities in restoration and monitoring success. Emphasis will be placed on modifying livestock management on allotments which fail multiple Standards and where habitat monitoring shows no indication of positive improvement over earlier assessments. Site-specific measures to correct identified problems would be implemented in allotments which did not meet the riparian Standard, or which show declining conditions. Research opportunities concerning vegetation treatments would be vigorously pursued, with emphasis on ecological restoration to protect Monument values and restore riparian areas. Coincident with this will be scientific studies involving monitoring techniques. Grazing permit renewals will follow protocols to meet Rangeland Health standards. This protocol will involve BLM working with permit holders, scientists, interested publics, and others in monitoring, analysis, and making decisions and implementing decisions."

This alternative is designed to meet the purposes and needs for this planning amendment. If implemented, the conservation alternative would:

- integrate decisions for livestock and rangeland management into the GSENM MMP through a plan amendment.
 - provide the management direction necessary to ensure that public lands are achieving or making progress towards achieving Rangeland Health Standards.
 - in deference to the requirements of the Proclamation and Rangeland Health Standards and Guidelines, provide livestock grazing for the local agricultural community.
 - provide a protocol for the renewal of livestock grazing permits.
 - update or, where absent, create allotment management plans.
 - allocate multiple resources to resolve conflicts.
 - incorporate current resource condition inventories into land use decisions.
 - fulfill the mandates of the GSENM Proclamation, and the GSENM Monument Management Plan.
 - support research in range management that supports the science component of this Monument.
 - emphasize consultation, cooperation and coordination in making grazing decisions.[33]
 - be limited to making land use planning decisions specific to livestock grazing.
 - consider public lands managed by the BLM and the NPS.
 - Ensure that grazing within the GCNRA will be administered in a manner that protects GCNRA values and purposes pursuant to relevant laws.[34]
 - utilize The Utah Standards for Rangeland Health and Guidelines for Livestock Grazing Management.
 - comply with other applicable laws and policies and guidance. IBLA rulings in Comb Wash, Nickel Creek, and Duck Creek appeals have specific direction applicable to range management in the Monument.
 - be consistent with the purpose and objectives outlined in the presidential Proclamation for the GSENM and the
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enabling legislation for GCNRA, as applicable.

- include socio-economic analysis using approved methods in a transparent process involving all interested parties.
- be based on the principles of ecologically based adaptive management.

[33] BLM Manual 4400 provides the following definition:

"Consultation: seeking the advice and views of other Federal, State, and local officials, and others, including persons using the public lands. The act of consultation is intended to facilitate coordination and cooperation and result in acceptable inventory, monitoring, and evaluation activities.

Coordination: to work together harmoniously, including all actions intended to cause rangeland inventory, monitoring, and evaluation activities to be in harmony and accord with relevant activities of other Federal, State, and local agencies, and public land users.

Cooperation: the act of working together in an attitude of helpfulness with other Federal, State, and local agencies and persons who use the public lands to successfully implement inventory, monitoring, and evaluation."

[34] GC NRA management requires that all activities not result in impairment of objects and values.

Conservation Alternative

Specific Management Recommendations:

The following objectives and decisions are modification and additions to the section of the MMP titled "Management of Resources"

GRAZ-1 Grazing Management Process (MMP Pages 40-43)

Replace the following sentence: "Should an allotment or a portion of an allotment become available through a voluntary relinquishment or operation of law, it will be considered for grass banking" with the following: "Grass banks are pastures where cattle producers move their cattle in someone else's pasture while they give their own pastures needed rest and renovation. The ability to use some pastures as grass banks within the Monument and maintain habitat at its Potential Natural Community (while meeting Rangeland Health standards) remains unproven. Until proven by independent scientific studies that grass banking can meet ecological goals in the Monument, BLM will not use ungrazed pastures and allotments as grass banks.

GRAZ-2 Collaboration in grazing management:[35]

Under guidance from BLM and the Monument Advisory Committee, the Monument will establish a collaborative working group representing diverse interests to implement the grazing and range management decisions in this plan. This group would make recommendations on monitoring protocols, ecological assessment methods, grazing permit renewals, Allotment Management Plans, and other range management actions in a manner that provides for ecological sustainability and while ensuring ecological needs are met and Monument objects and values protect, economic viability.

Members of this working group can include BLM staff, independent scientists, conservation organizations, local government representatives, permit holders, and experts from other agencies. This working group shall be guided by a mutually agreed to facilitator paid for by BLM. Over time, if successful, facilitation may no longer be required once good collaborative practices are established. The collaborative working group shall:

1. Produce a guiding document that describes the governance of the group (methods of operation) including how members are selected, expectations of members, terms of service, etc.
 2. Each year, develop a list of priority issues and activities for the working group.
 3. Produce a work plan for collaboration on one or more grazing permits undergoing renewal.
 4. Within the decision constraints of the Monument, agree on measures for ecological sustainability, social goals, and economic objectives.
 5. For allotments that include the NRA, agree on measures for ecological sustainability, social goals, and economic objectives that comply with the NPS requirement for non impairment of NRA values and resources.
 6. In keeping with the Proclamation, determine approaches in grazing management that contribute to ecological, social and economic goals.
 7. Determine monitoring and assessment methods to assess attainment of ecological, social, and economic goals.
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With BLM, integrate these methods into the process of assessing Rangeland Health standards. Establish measureable indicators or thresholds in the monitoring program that relate to attainment of Rangeland Health Standards.

8. Advise BLM on the use of adaptive management to meet ecological, social, and economic goals.

9. With BLM, integrate these methods into remedies to design grazing practices and other range management needed for allotments not meeting standards and to sustain or enhance conditions for allotments meeting standards.

10. Work with the Monument staff and scientists to share relevant knowledge and help BLM integrate this into base line information about the monument.

11. Assist BLM in applying the results of the collaboration in renewing grazing permits.

GRAZ-3 Grazing Permit Renewal Process:

Include in the land use plan amendment decision a protocol that describes the steps that will be taken in the renewal of a grazing permit in the Monument. Steps to take prior to beginning the permit renewal process include:

1. For each major habitat type of suitable lands in the allotment, identify a representative reference area. If needed, construct new exclosures and identify related reference areas. .

2. Perform ecological inventories of key areas, riparian areas, and reference areas.

3. Conduct monitoring at intervals necessary to adequately represent habitat conditions in a statistically valid manner. Include in monitoring: plant community composition (including exotic species), annual herbaceous species production (grass and forb species), bare ground, biological soil crust cover, and other key ecological indicators identified by BLM and the working group.

4. Assemble and where necessary update or created Ecological Site Descriptions for major habitat types in upland and riparian areas.

Steps to take in the renewal of a grazing permit.

1. Involve the working group, permit holders, and other interested public in each part of the permit renewal process.

2. Use reference areas to create reference sheets through assessments of Rangeland Health for upland and riparian areas.

3. Conduct Rangeland Health assessments in upland and riparian areas. Update earlier assessments when they are ten years old or older.

4. Conduct carrying capacity analysis for the allotment. Such analysis will establish a baseline stocking rate and a permitted number of AUMs. The final permitted number may be less than this base line stocking rate depending on Rangeland Health assessments and other factors See Appendix C for details on capability, suitability and carrying capacity.

5. Determine the appropriate grazing practices for the stocking number determined above.

For allotments not meeting Rangeland Health standards:

a. Identify the specific standards not met and design a recovery plan based on measurable objectives specific to the involved standards.

b. Conduct base line monitoring to gather data on the standards not met. Rangeland Health assessments that are qualitative are inadequate.

c. Design a grazing system for the allotment within its carrying capacity that will generate a positive score of two or more using the Grazing Response Index.[36] Such a GRI score recognizes the need for habitat recovery. For Riparian areas (lentic and lotic) that don't meet standards, reduce the grazing period to less than one week.

For allotments that meet Rangeland Health standards:

a. For allotments at PNC, design grazing practices that produce a positive GRI score.

b. For allotments where the native plant community is less than PNC, design reduced grazing program that leads to the habitat reaching PNC in the near future.

GRAZ-4 Implementation, Best Management Practices

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This section describes the implementation of the grazing permit (i.e., actions normally taken each year) and provides guidelines for involvement of the working group, interested public, and permit holders with BLM.

Prior to turnout for an allotment, or once annually for allotments grazed all year:

- Develop annual monitoring program that can be trusted by all involved parties.
- Determine if drought is expected in the next grazing season. If drought is expected, follow the actions described in GRAZ-6.
- Based on expected forage and habitat goals, design the stocking level and timing for the next grazing season. This will be a transparent process prior to grazing bills being sent to permit holders.
- Conduct scheduled trend and other monitoring.

During the grazing season

- After turnout, monitor the allotment at frequencies no less than once every two weeks in order to determine if utilization and other monitoring thresholds are reached. When reached, have livestock taken off the pasture/allotment.
- Monitor the allotment at a frequency of no less than once every two weeks in order to determine if utilization and other monitoring thresholds are reached. When reached, have livestock taken off the pasture/allotment.

At the end of the grazing season

- Conduct end of the season monitoring to determine post grazing habitat conditions.
- Produce an annual report of roughly two or three pages with the following information:
 1. Present the years goals and objectives for habitat condition, equipment maintenance, and grazing use.
 2. Describe the grazing use that occurred including the number of livestock, the timing of use, and any deviations from the planned grazing program for the year. Describe any trespass that occurred.
 3. Summarize the results of monitoring conducted during the year.
 4. Describe the goals met and those that were not.
 5. Identify challenges for next year's grazing program for this allotment. Describe actions and goals for the next year in response to these challenges.
- Incorporate into the report summary habitat and use information from the permit holder, from interested public, and others involved in this allotment.
- Where grazing exceeded monitoring thresholds, reducing stocking levels to ensure compliance in the upcoming year.

GRAZ-5 Grazing management within lands in the Glen Canyon National Recreation Area

The Glen Canyon National Recreation Area's (NRA) enabling legislation states: "The secretary shall administer, protect, and develop the recreation area in accordance with the provision of the [Organic Act] . . . and with any other statutory authority available to him for the conservation and management of natural resources (16 United States Code , Section 459f-5(a))."

Public law Public Law 92-593 further requires BLM deference to National Park Service on grazing management within the NRA. Grazing management decisions on lands within the NRA shall require joint approval of BLM and the Park Service for any decision affecting grazing use with the Glen Canyon NRA. For the purposes of this plan for areas within the NRA, decisions on the timing and amount of grazing made annually shall also require Park Service approval.

In collaboration with the Park Service and interested publics, BLM shall establish habitat standards and assessment methods consistent with the management requirements for the NRA. For those lands in the NRA, Rangeland Health standards shall be modified to meet the nonimpairment requirements for the NRA.

For NRA areas in allotments don't meet either BLM's rangeland health Standards or the Park Service's standards, BLM with Park Service Approval shall prepare a determination that standards are not met and, within one year of

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this determination, prepare a plan to remedy the situation.

GRAZ-6 Drought, range management actions[37]

Because most years have precipitation in amounts less than the average precipitation, stocking levels should be based on forage production during below average years. Depending on site potential, a minimum of 50 - 150 lbs of residual herbage levels will be left on site prior and during a drought. Post drought restocking should only occur after plant vigor and production have recovered to conditions prior to the drought.

Preparing for drought

- a. Monitor monthly trends in environmental variables (precipitation, soil moisture, plant growth, and air temperature) in several locations around the monument to try to detect drought conditions.
- b. Monitor and maintain plant vigor and range condition.
- c. Monitor utilization of key forage species more frequently to prevent damaging over- utilization.
- d. Stocking rates (permitted AUMs) should be kept to the capacity of the driest year in the last ten years.
- e. Based on monitoring data and drought forecasts, assess prior to the grazing period for any allotment if a drought is likely. Where on the ground data are not available, rely on the national drought monitor. Where North American Drought Monitor drought conditions are D1 or greater[38] or where the SPI is -0.5 or more, declare a drought.[39]
- f. If drought is predicted, notify permit holders and interested public of an upcoming drought and cancel any grazing during the growing season.
- g. Change post growing season grazing practices to ensure minimum residual forage goals are met in advance of turnout.
- h. Work with permit holder to find alternate forage outside the Monument during a drought.

During drought

- a. Grazing should not occur during the first three months of the growing season.
- b. Monitor frequently during grazing season.
- c. Remove livestock prior to utilization standards being reached.
- d. During drought, pastures will be rested for longer periods of time than nondrought periods to allow vegetation to recover from combined grazing and drought stress. Stocking rates will be calculated to leave enough standing residual vegetation after the grazing season to protect soil.

Post-drought recovery

- a. Use pastures only when forage species are dormant and/or less palatable species are green to shift grazing pressure away from key forage plants.
- b. Notify the permit holders and interested public of the schedule and plan for drought recovery.
- c. Defer grazing until after key forage species have produced mature seed.
- d. Only graze after perennial grasses have reached the 4 to 5 leaf stage.
- e. Don't return grazing to previous levels until the productivity of the range has returned to its potential.
- f. Following a drought, pastures will be rested until monitoring data indicate that the range has recovered to productivity levels at or above prior drought conditions.

GRAZ-7 Process for voluntary grazing retirement and Grazing allotments allowable uses

In assessing which allotments are allowed to have grazing the following criteria will be used to identify those allotments where grazing is not allowed:

- a. Allotments where the permit holder(s) wish to relinquish grazing use.
 - b. Determine that lands where grazing "is not in the public interest." BLM should consider each of the uses under Multiple Use. Multiple use " BLM must make a 'reasoned and informed' determination of whether grazing in those canyons is in the public interest.[40] Part of this analysis includes making a reasoned and informed decision that the benefits of grazing outweigh the costs. In addition to the costs to recreation, some of the other costs outline in Feller v. BLM (1993) include soil erosion, reduced water infiltration, loss of vegetation cover, trampling of streambanks, degradation of stream channels, trampling & contamination of archaeological sites, and degradation of wildlife habitat. Significant recreation use that would be impaired by grazing should also be considered in
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determining the public interest.

c. Identify special use sites where livestock grazing is determined to be incompatible with the purpose of the use. These areas should be unsuitable for livestock grazing. For example, this includes areas where scientific analysis is considered more in the public interest than continued grazing.

d. Identify lands (all or parts of allotments) within the NRA where grazing cannot occur without impairing the values, uses, or objects of the NRA.

e. Allotments or pastures where grazing cannot be conducted without causing excessive erosion. Determine those allotments or pastures where soil erosion risk is high and grazing cannot occur without undue degradation. Assess the soil capability classes used to assess erosion risk.[41] Areas that are classified as 3 or more are unsuitable for livestock grazing. Identify highly erodible areas from wind.[42] Areas with wind erodibility groups classed as 4 or higher are unsuitable for livestock grazing.

f. Allotments or pastures where if grazed by livestock, Monument values and objects will be irreparably damaged or habitat cannot be restore to its Potential Natural Community.

These allotments and pastures will continue as closed to grazing in the Monument: Cottonwood Pasture, Deer Creek, Dry Hollow, Dry Rock Creek Pasture, Escalante River, Harvey's Fear, Lower Calf Creek, McGath Point, Middle Rock Creek Pasture, Muley Twist, Navajo Bench, Rattlesnake Bench, River and Horse Canyon Pastures, Big Bowns Bench, River Pasture, Deer Creek, Saltwater Creek, Spencer Bench, Steep Creek, and Varney Griffin

In 2008 BLM recommended not allowing grazing in that plan amendment for the following allotments and pastures: Antone Flat and Wolverine Pasture on Deer Creek Allotment.

In support of the extensive analysis BLM conducted in assessing where grazing allowed, this plan should be amended to not allow grazing for the following allotments:

Clark Bench Allotment, BLM EA UT-030-02-001

Willow Gulch Allotment, BLM EA UT-030-02-002

RM-8 Management and ecological recovery of existing seedings

The priority for existing seedings should be to restore native communities as defined by the Ecological Site Descriptions and Potential Natural Community for the appropriate sagebrush grassland/soil type from the GSENM monument soil map. Treatments that focus on forage production and non-natives species are inconsistent with the Monument plan and Proclamation.

NAT-2 Non-native plant species (modify as described)

Non-native plants may be used in limited, emergency situations to protect Monument resources by stabilizing soils, displacing noxious weeds, and safeguarding site productivity but only when it can be proven that native species are inadequate to respond to this situation. An emergency is a condition in which negative impacts to natural resources would result in the immediate, catastrophic degradation of soil, hydrology, or biotic conditions (e.g., drought or fire). These impacts would hinder re-establishment of native communities, and remedial action must be taken as soon as possible to prevent further resource degradation. In these situations, the restoration plants selected will be short-lived nurse crop species that are not competitive with natives, will not persist longer than a few years, and are unlikely to spread from the project site. In addition, they will be combined with native species to facilitate the ultimate establishment of native communities

SOIL-3 Recovery Prescription for Crust

These management prescriptions are adapted from Belnap et al. (2001) and Rossentretter et al. (2007) .[43]

The Monument has rare biological crust communities that under the Proclamation require special monitoring and protection. Details about these rare biologic crust communities can be found in Appendix G.

When planning road and trail construction, areas with high percentage cover of biological soil crust or high

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biodiversity conservation value (such as gypsiferous soils) will be avoided whenever possible. Enforcement of off-road vehicle regulations will be prioritized in these areas.

Because several soil crust species and some vascular plant species are rare gypsum endemics, and gypsum soils cover very little area, a system of small fenced reserves will be constructed to conserve habitat of the endemic biota.

The Monument will not conduct soil surface disturbing projects in habitats of rare biological soil crust species, where biological soil crust diversity is high, or where removal of biological soil crust will degrade soil, hydrology, or biology ecosystem functions.

The Monument will use management techniques to stabilize or protect crusts, including:

- a. Reducing unnaturally frequent and intense fires, such as those resulting from annual grass invasions.
- b. Concentrating recreational use by hikers and OHVs to reduce trampling and prevent disturbance.
- c. Gathering information on the distribution of biological soil crusts, particularly rare species and where species diversity is concentrated, is important to define habitat characteristics and identify threats. Plant monitoring and inventory projects will include a moss and lichen species component. Specimens of biological soil crust will be collected and identified.
- d. Reducing grazing impacts to crust. In general, light to moderate stocking in early- to mid-wet season is recommended on biological soil crust. Grazing strategies that minimize the frequency of surface disturbance during dry seasons and maximize periods between disturbances will reduce impacts to biological soil crusts. Relocate existing water development and nutrient block location to sites with low potential for biological soil crust development, such as rocky areas. Using brush barriers to divert trailing from sites with biological soil crust also helps prevent trampling damage.

SSP-26 Grazing and Special Status plants

"Disturbance, injury, or mortality of special status plants resulting from grazing by livestock will be minimized or eliminated. Where grazing by livestock is leading to adverse effects, conservation measures will be implemented to reduce or mitigate loss of the plant species. Measures can include fencing, seasonal restrictions, or relocation of livestock developments. The need for implementation of conservation measures will be assessed on a case-by-case basis, typically at the time of the Rangeland Health assessment." [44]

SSP-22 Southwest Willow Flycatcher

"Livestock will be excluded from suitable SW flycatcher habitat (whether occupied or unoccupied) during the growing season (bud break to leaf drop). Unsurveyed suitable habitat should be considered occupied. If livestock are excluded using fencing, fencing should be inspected and maintained annually." [45]

VEG-4 Desired Plant Community

Following the direction of VEG-00 in the MMP, the desired plant community (DPC) shall be defined by the Potential Natural Community (PNC). PNC is "(t)he stable biotic community that would become established on an ecological site if all successional stages were completed without human interference under present environmental conditions." [46]

The PNC for each community on the Monument will be defined by the best available science. Sources of information include: NRCS GSENM ecological site vegetation descriptions for specific soil types; Rangeland Health assessments for reference areas; relict areas; and other relevant field data and scientific studies. PNC descriptions will contain information on state-and-transition models. Ecological Site Descriptions will be updated to reflect current knowledge on biological crusts and soil surface cover. BLM will document any departure from potential natural communities and adjust management to allow sites to move toward PNC. See Appendix F for more details.

Construct a network of large grazing exclosures representing major habitat types and ecological sites throughout

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the Monument to provide reference conditions required during Rangeland Health assessments.

- [35] Adopted from the Collaborative Group on Sustainable Grazing for the U.S. Forest Service Lands in Southern Utah, <http://www.law.utah.edu/wp-content/uploads/Sustainable-Grazing-So-UT-FS-Final-Report.1231121.pdf>
- [36] Wyman, S., D. Bailey, M. Borman, S. Cote, J. Eisner, W. Elmore, B. Leinard, S. Leonard, F. Reed, S. Swanson, L. Van Riper, T. Westfall, R. Wiley, and A. Winward. 2006. Riparian area management: Grazing management processes and strategies for riparian-wetland areas. Technical Reference 1737-20. BLM/ST/ST-06/002+1737. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. Appendix F
- [37] Bartlett, E.T., W.C. Leininger, and L.R. Roath. No date. Planning for drought on Colorado rangeland. Service in Action. Colorado State University Cooperative Extension, No. 6.103.
- Howery, L. 1999. Rangeland management before, during, and after drought. University of Arizona Cooperative Extension, AZ1136.
- Molinar, F., D. Galt, and J. Holechek. 2001. Managing for mulch. Rangelands 23(4):3-7..
- [38] National Climatic Data Center, National Oceanic and Atmospheric Administration. 2014. North American Drought Monitor, <http://www.ncdc.noaa.gov/temp-and-precip/drought/nadm/nadm-maps.php>
- [39] Agnew, C. T., "Using the SPI to Identify Drought" (2000). Drought Network News (1994-2001).Paper 1. <http://digitalcommons.unl.edu/droughtnetnews/>
- [40] Feller, J. 1996. The Comb Wash case: the rule of law comes to the public rangelands. 17 Pub. Land & Resources L. Rev 25..
- [41] Soil Conservation Service, U.S. Department of Agriculture. 1973. Land-capability classification, Agricultural Handbook.
- [42] Carter, J. 2014. GSENM livestock grazing plan amendment scoping comments. Yellowstone to Uintas Connection.
- [43] (Belnap, J., R Rosentreter, S. Leonard, J. Hilty Kaltenecker, J. Williams, and D. Eldridge. 2001c. Biological Soil Crusts: Ecology and Management. BLM Technical Reference 1730-2)
- Rosentreter, R, M. Bowker, and J. Belnap. 2007. A field guide to biological soil crusts and western U.S. drylands. U.S. Government Printing Office, Denver, CO.)
- [44] Grand Canyon Parashant MMP regarding species status plants (MA-TE-20)
- [45] IBID MMP MA-TE-75
- [46] http://www.blm.gov/ut/st/en/prog/grazing/range_program_glossary.print.html, 2014

Grazing is a significant cultural and historic activity and use in our area. It has shaped the morals, values and work ethic in our local communities for generations. We assert President Clinton also identified grazing in this monument when he stated; "The cultural resources discovered so far in the monument are outstanding in their variety of cultural affiliation, type and distribution." And "The monument is rich in human history". In addition, President Clinton proclaimed under 34 Stat. 225, 16 U.S.C. 431 "Nothing in the [the monument] proclamation shall be deemed to affect existing grazing permits or leases for levels of livestock grazing on federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws and regulations other than this proclamation." We assert this means grazing within the monument is protected by the proclamation and at a minimum should be preserved. We further assert that enhancement and expansion of grazing is within federal authority and enhances the purposes for which the monument was created. We therefore request an alternative that expands opportunities for grazing to the maximum extent allowed by law.

BLM should select an alternative or draw from alternatives elements that best protect the resources that make the monument special and protect the natural processes that keep the ecosystem of the monument functioning and healthy.

I strongly support the Sustainable Grazing Alternative presented by Grand Canyon Trust and the Wilderness Society. The need for control areas that illuminate the effects of grazing is apparent and any scientific approach should include exclosures and ungrazed reference areas. I encourage the BLM to support and carefully regard science based studies by groups such as Grand Canyon Trust in its management scenarios.

I fully support the Grand Canyon Trust plan.

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I do heartily agree with the following message prepared by Grand Canyon Trust partners:

As a member of Grand Canyon Trust, I support the alternative they recommend.

Please support sustainable grazing alternatives and start the cycle of recovery for this incredible area.

Please prioritize preservation of this spectacular public wilderness quality area over the private cattle industry and give serious consideration to the Sustainable Alternative as presented by The Wilderness Society and The Grand Canyon Trust. We should all have the best interests of the land in mind. Stand up!

I support the sustainable grazing alternative and agree with the 6 assumptions included therein.

The Sustainable Grazing Alternative should be the preferred alternative the Grand Staircase-Escalante National Monument Grazing Plan.

I am writing to encourage you to support the Sustainable Grazing Alternative for Grand Staircase-Escalante National Monument (GSENM), as proposed by Grand Canyon Trust and the Wilderness Society. This proposal is both scientifically sound and inclusive of diverse stakeholders, which is in the spirit of BLM's multiple-use, sustained yield mandate.

The Sustainable Grazing Alternative will help ensure that native species diversity will not be depleted and that ecosystem functions (such as water quality and flow, soil stability, and plant pollination) will not be unduly degraded due to domestic livestock grazing. Since National Monument lands belong to EVERY American, this is a common-sense approach that has both legal and ethical ramifications.

The Sustainable Grazing Alternative will allow you, the BLM, to simultaneously meet and fulfill your own regulations and policies, while protecting the Monument values and objects identified within the GSENM Proclamation. These values and objects are truly unique and outstanding, and deserve indeed, require all the protections and preservation we can possibly and practically provide them.

The Sustainable Grazing Alternative will assure that the best available science is used to inform grazing management on the Monument. Of critical importance, the Sustainable Grazing Alternative will provide the opportunity for diverse stakeholders and interested publics (including permittees) to discuss options for grazing within GSENM.

This collaborative approach is long overdue, and has already been shown to work in other areas, such as the National Forest lands of southern Utah. (e.g., the Monroe Mountain Working Group). The Sustainable Grazing Alternative will provide a critical missing piece to grazing management in the southwestern U.S.: a diversity of grazing arrangements. These include a mixture of conventional grazing, collaborative grazing experiments, areas that receive badly-needed temporary rest from grazing, areas of long-term non-grazing, and some non-grazed areas. This arrangement will provide opportunities for badly-needed reference areas, grazing management improvements, ecological restoration, protection of native biodiversity (as mandated by law), and resilience to climate change. It will also allow permittees to continue to pursue their traditional lifestyles and make a living off the land.

The Sustainable Grazing Alternative will allow for a variety of ungrazed areas. Ungrazed areas are critical in order to show the ecological potential of GSENM ecosystems and plant communities, understand the true impacts of livestock grazing, and to distinguish climate impacts (e.g., drought) from livestock grazing impacts. Ungrazed areas also help protect particular values, species, or Monument objects that are adversely affected by or incompatible with livestock grazing, and allow for possible restoration of species and/or ecological processes that have been compromised by livestock grazing.

The Sustainable Grazing Plan will allow for public transparency, a diversity of grazing arrangements, critical ongoing monitoring, badly-needed reference areas, and social/economic (in addition to ecological) indicators to finally be included in grazing management on GSENM.

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The time for sustainable livestock management in GSENM has arrived, at long last. Again, I strongly urge BLM to support The Sustainable Grazing Alternative.

I urge you to consider adopting a science-based, citizen-supported grazing plan for this area. Such a plan, the Sustainable Grazing Alternative, has already been created by the Grand Canyon Trust and the Wilderness Society. These two groups possess critical knowledge and background necessary in making such recommendations.

The BLM should consider the following examples when developing alternatives:

038a_Grazing Matrix Memo.doc

038b_Grazing Matrix Table.pdf

045a_Prineville BLM - Alternatives Grazing Comparison Chart.pdf

045b_Prineville BLM - Grazing Guidelines - Allotment Evaluations.pdf

054a_Drought Policy Tonto NF 2.pdf

054b_Drought Policy Tonto NF.pdf

090_Range Management - Exhibit 14 - Range Managment - Principles and Practice Holechek Excerpts.pdf

092_A Science-Based Tool for Assessing Grazing Capacity Catlin et al.pdf

103_Guidelines for Managing Cattle In Riparian - BMP Effectiveness .pdf

134_Final TR 1737-20.pdf

Table B-29
General Comments Related to this Planning Effort

SITLA supports the BLM in allowing continued livestock grazing within the Grand Staircase-Escalante National Monument. Proper grazing is an ecologically sustainable use of public lands and the associated trust lands.

Cattle damage to the riparian areas surrounding several small creeks and the Escalante River have many environmentalists, including the Grand Canyon Trust, questioning the BLM's grazing policies and the monument's multiple use mandate.

There are several important issues associated with livestock grazing that we recommend for discussion in the MMP A/EIS, including the following:

- As part of the assessment of existing conditions, a summary of management history in the planning area, including grazing, vegetative treatments, wildfire and prescribed burns;
- Short- and long-term objectives for livestock grazing management and resource conditions;
- An analysis of each alternative's ability to meet objectives and desired future conditions;
- How BLM's standards and guidelines identified in The Utah Standards for Rangeland Health and Guidelines for Livestock Grazing Management will be implemented under each alternative; and
- How monitoring will be implemented to assess the effectiveness of the selected alternative in addressing concerns associated with each resource category determined to be significant through scoping.

We recommend the MMP A/EIS disclose the direct, indirect and cumulative impacts of all reasonably foreseeable actions on environmental resources to enable the decision-maker to effectively monitor and reduce impacts to the greatest extent possible.

Adaptive Management and Monitoring

The NOI indicates that the MMPA will be based on the principles of adaptive management. We recommend the MMPA/EIS identify the features of an effective adaptive management plan, including the following:

- Achievable and measurable objectives to provide accountability and guide future decisions;
- Specific decision thresholds with identified indicators for each impacted resource;
- Targets that specify a desired future condition;
- Commitment to implement a monitoring plan with protocols to assess whether thresholds are being met;
- Commitment to use monitoring results to modify management strategies as necessary; and
- Designated timeframes for completion of necessary management modifications.

We support the BLM's efforts to reduce grazing impacts through the use of BMPs and adaptive management strategies to protect sensitive soils, wetlands, riparian areas, meadows, stream crossings, and critical habitat. In addition, we support consideration of BMPs, such as exclusions and upland water developments, whenever necessary to protect streams, wetlands, riparian corridors, and fishery spawning areas. Adaptive management tools for consideration include pasture rotation based on minimum stubble height, modification of allotment boundaries and controlled timing of grazing to prevent damage to stream banks and riparian areas when they are most vulnerable to trampling damage. In addition, since the planning area is susceptible to periods of drought, we recommend the MMPA/EIS include a list of potential grazing strategies for use during periodic droughts that will maintain vegetation and aquatic resources in their desired conditions.

So once again we urge you to support and push for multiple use on public lands.

Livestock grazing on the Monument is an important part of the local history and economy for the last 150 years. It can be an important tool in managing vegetation and other resources. However, on Federal lands, grazing must not be promoted to the detriment of other important resources. Where that is occurring on our Monument, it must be adequately addressed and prevented.

We ask BLM to set up a continuing process of public participation by the whole range of affected stakeholders in decisions about grazing management. The problems you have inherited are the result of decades in which BLM focused too narrowly on the opinions of grazing permittees. The time has come to recognize the broader public whose interests in GSENM are affected by the decisions.

Please consider these potential grazing impacts in the EIS. Please define ecological objectives, such as those defined in the Grand Canyon Trust proposed grazing EIS. Define clear triggers for alternative management, including reducing or eliminating grazing from areas, if goals are not met.

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As a member of the public concerned about Monument values other than livestock grazing, and which livestock grazing degrades or destroys, I am convinced that the exercise of developing this Plan Amendment and EIS will be filled with biased explanations of problems caused by livestock and a justification for its continuation in spite of the science and knowledge of its impacts on Monument resources, relying on language in the Proclamation that says:

Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock grazing on Federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws and regulations other than this proclamation.

2) provide a for diversity of grazing arrangements to reflect a diversity of values of people who own this area (in other words, the general public). Because the area is so fragile, and such a poor area for grazing, I feel that much of the monument should be managed for uses other than grazing.

The Monument is a place not only for plants and wildlife, but for all of us, and how cattle are grazed affects multiple Monument values. Therefore BLM should explicitly encourage and facilitate diverse stakeholders to participate, on an on-going basis, in grazing management decisions. Grazing management should not involve just the BLM grazing staff and livestock permittees.

Because of the far-reaching impacts of cattle grazing on a broad spectrum of monument stakeholders, it's essential that the BLM include representatives of that broad spectrum of stakeholders in grazing management decisions--not just range management staff and livestock ranchers.

BLM should explicitly encourage and facilitate diverse stakeholders to participate, on an on-going basis, in grazing management decisions. ALL stake holders must be educated in the importance of grazing animals in maintaining and restoring land health to the land and work closely with wildlife managers, ranchers and rangeland conservationists to implement holistic planned grazing.

At the same time I was struck by the beauty of the monument and was appalled at the degradation caused by cattle. Please don't let the monument dry up and blow away, it is worth so much more than the rock formations that most people associate with it.

The Monument is a place not only for plants and wildlife, but for all of us, and how cattle are grazed affects multiple Monument values. Therefore BLM should explicitly encourage and facilitate diverse stakeholders to participate, on an on-going basis, in grazing management decisions. Grazing management should not involve just the BLM grazing staff and livestock permittees

The Monument is a place not only for plants and wildlife, but for all of us, and how cattle are grazed affects multiple Monument values. Therefore BLM should explicitly encourage and facilitate diverse stakeholders to participate, on an on-going basis, in grazing management decisions. Grazing management should not involve just the BLM grazing staff and livestock permittees, but rather diverse stakeholders and interests.

BLM should provide for a diversity of grazing arrangements to reflect a diversity of values, and to use objective science to evaluate different grazing methods to determine which cause the least adverse environmental impacts.

The direct involvement of our local affected county representatives, or their agents, is also necessary to justify any management or land use changes in their county.

It is important that any analysis be based on objective science rather than a collection of the loudest voices. Processes that forgo science in the name of consensus building or collaboration fail to meet objective evaluation as required by NEPA. We therefore support current public involvement practices and cooperating agency and coordination requirements.

It is paramount in NEPA planning that the impacts of any changes in land use on the local populations and the instability that such changes can make are analyzed in the DEIS prior to the final decision. This information should be reported to Congress, the State and the local government.

GSENM has great opportunity to incorporate science into grazing management. A balanced result for the final EIS using science to bring about management objectives would bring greater certainty for both conservationists and ranchers for the coming decades.

This would be a big mistake to remove what is a benefit to the land, as well as improve the lives of those who have lived in the area ranching for generations. I can't imagine moving from the current win/win, to a loose/loose situation damaging the land and the people that live in this rich area of Utah.

Grazing management SHOULD involve just the BLM grazing staff and livestock permittee. People who are uneducated that just wants to save something, needs to get their facts right. The people who take care of the

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cattle, are the ones have the best interests of the land. They are the ones that need to keep the monument in top shape so it can keep their cattle productive. They are the ones that have the best interested of the land in mind. BLM should provide for a diversity of grazing arrangements to reflect a diversity of values. Everyone including the rancher should have a say in how the land is used, not just the environmentalist that is backed by the billions of dollars. This country was formed by the cattleman, sheepmen, and miners. The land was developed and made profitable by these men. They have purchased the rights to graze cattle, from generation to generation of cattlemen. These rights were established before the Taylor Grazing Act.

Now you have a few people who live in cities that have never been to the country, who has never even seen a cow that makes the majority of the decisions. I don't make the laws for the people of New York, and they shouldn't here either. The grazing rights should be they way there were, not decided by a president that would not enter in Utah to declare the staircase a national monument.

In the remaining lands designated as "available" for grazing, collaborative public involvement should be actively sought so that allotments specific decisions are made in an open, diverse, and science-based format. The days of making these decisions largely with only BLM range staff and the affected permittees should end. And there should be no conflicts of interest where BLM range staff administer permits or monitor range resources on allotments with permits held by family members, relatives by blood or marriage, friends, or business associates. I am concerned by rumors that such conflicts exist.

BLM may hope for the best, but a realistic Record of Decision should plan for the worst.

Further, I believe there needs to be a credible collaboration between government range managers, livestock grazers, conservation groups, and interested private citizens. All aspects of the assessment should be included within the decision-making process. That includes measurements and photographs from all parties in order to achieve an accurate, less biased assessment. I encourage you to include not only a range assessment, but include the repercussions of over a century of use and abuse to all native species found within the area. The focus should be to stop the damage, repair the damage, and return the area to a more natural, sustainable ecosystem.

Last year we had visitors from Europe who wanted to hike in the monument. They commented on the poor condition of the cattle and wondered why people keep cattle in such a barren environment. Our friends are used to the healthy cows of Switzerland and Germany and were appalled at the condition of the animals in our area.

In addition, some comments may request a consensus or collaboration based process. Although everyone should have the opportunity to comment and be involved through the public process, consensus and collaboration are centered on accepting opinions and creating a majority. They do not meet the objective and scientific standards required by NEPA actions. Christopher Columbus proved in 1492 that one correct view is more valuable than a strong public consensus. We demand that the process meet the highest standards of scientific objectivity. We also assert the study should not use collaboratively developed plans created by special interest groups. Laws, rules and regulations of appropriate governmental entities should be the scientific basis of the plan.

Utilization standards should not be altered to meet the desires of special interest groups that oppose grazing. There may be some value in some site specific analysis, but generally utilization standards should be based on best management practices in cooperation with impacted permittees. They should not be developed by the public or special interest groups.

We assert the requirements of the Escalante Grazing Region Act adopted by the Garfield County Commission and the Escalante Grazing Region Zone created by the Utah State Legislature establish a minimum baseline for consistency required by FLPMA. The Acts are applicable in our County; and our communities will be negatively impacted if they are not followed.

We assert LGPA - EIS consistency with local plans, programs and policies - to the maximum extent allowed by law - is required and is necessary for the health and welfare of our communities. We therefore request that you are consistent with local plans, programs and policies to the absolute maximum extent.

The current grazing plan by the BLM does not support the values of good stewardship of the land, and heavily favors grazing over other uses of the land by the American public.

Grazing policies should be determined by latest scientific findings on grazing, and by public input of ALL user groups, not just the livestock permittees

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In amending the grazing plan, Monument staff has an opportunity to renew its commitment to leading the way, both in science and in practice, in finding better ways to assure that livestock grazing is both sustainable and consistent with the goals of resource conservation and ecological health that are central to the Monument's mission. Hopefully, a combination of professionalism and political determination will allow the GSENM to embrace this opportunity.

One of the most frustrating aspects of visiting the GSENM backcountry is the existence of numerous rules regarding group size, campsites, water sources, human waste, dogs, archaeological site etiquette, and "don't bust the crust" hiking protocols. Alas, the cows and their keepers do not seem to have read the rules, nor are they subject to citations or fines.

Engage diverse stakeholders in grazing decisions other than just the BLM range staff and grazing permittees.

Consequently, BLM should explicitly encourage and facilitate diverse stakeholders to participate, on an on-going basis, in grazing management decisions. Grazing management should involve others beyond just the BLM grazing staff and cattle ranchers to garner an accurate and comprehensive view of the uses of the Monument - and consider all of them appropriately when determining the rangeland plan.

The fact that the monument boundaries encompass a vast extent of land believed by some to supersede the intent of Antiquities Act when passed by Congress, which calls for, "specific identification of values using the smallest area compatible with the proper care and management of the objects to be protected." In the years after designation BLM's ability to protect these objects in this vast area have also been questioned.

The grazing EIS/Plan process must be coordinated with and be consistent with Kane County and Garfield County and all other local and state land use plans, rules and regulations

The government needs to be responsive to local interests. The people who live closest to and depend on these public lands, and the culture and heritage derived from them, should be considered first and foremost and take precedence in the grazing EIS/Plan.

It is also important that the grazing EIS/Plan not have so many rules, regulations and restrictions that grazing becomes unviable. Any restrictions and reductions in grazing will show direct impacts to the local communities, the local tourism industry and the ranching community and must not be tolerated.

I hope the new grazing plan will prioritize reducing grazing impacts, and studying a diversity of management alternatives to find a balance between grazing and other uses of this incredible landscape.

At a recent MAC meeting in Kanab in 2012, BLM State Director, Juan Palma, proposed a hosting a workshop to bring together all stakeholders who might be concerned about the Livestock Grazing EIS. Such dialog sessions have been successful in helping disparate groups find consensus in other western communities. Unfortunately, this meeting has not yet been organized, but perhaps it remains on the table. One option would be for the Monument Advisory Committee to establish a Grazing Subcommittee that could help pull together the different stakeholders to attempt collaborative dialog and move toward consensus. All stakeholders should be invited to participate in the discussion. Community leaders should come to the table and show maturity in working with people to come up with the best fact-based solutions. At a minimum, face-to-face discussions would help to define areas of broad agreement that are not sticking points. Hopefully, areas of disagreement can be resolved by seeking rational compromises. Every effort should be made to avoid later litigation by stakeholders whose concerns were not properly considered. Scientific data on range condition and amount of grazing allowed on different allotments should be provided. Peer-reviewed scientific papers are preferred in establishing assessment and monitoring protocols.

One of the most important factors of a successful implementation of the new Grazing Management Plan will be education! The GSENM range staff will need to be taught to collect and analyze credible data using new protocols. Ranchers should also be taught to understand and utilize use these protocols themselves in order to become better stewards of the range. With declining federal budgets, developing a cadre of citizen scientists would help the BLM/GSENM to have eyes on the ground making valid assessments of range conditions. Ranchers would also benefit from participating in a workshop on economics of ranching - the health of the range and resulting health of their livestock is a major factor in their profitability (the number of AMUs/allotment is secondary to the number of pounds of beef taken to market; healthy cattle are literally beefy and healthy cows have higher fertility and longer lifespans). A shared understanding of why rangeland health is so important will certainly reduce conflicts between ranchers and BLM range managers.

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This EIS is an opportunity to deal with the issue now and make changes that should and can bring the conditions upward effectively so that within twenty years, the use of cattle grazing can be justified environmentally and economically. It is the responsibility of the employees of BLM to address forthrightly the environmental degradation inherent from cattle grazing.

BLM should come up with ways in the EIS to alleviate the damage from cattle grazing and also to allow for the proper use in the right areas when there is science to prove that the use is not detrimental to the environment and the public.

To accomplish this, cooperation between land managers (BLM) and land stewards (ranchers) is paramount. The essential link between wise land management and cooperation is education. It is in educating minds (on both sides) that attainable goals can be achieved and distrust eliminated.

With greater trust between ranchers and the GSENM managers, a higher level of cooperation can exist. Keep ranchers in the loop by sharing information and working cooperatively.

This higher level of cooperation can be pursued through mutually educating and enlightening interchange.

Ranchers are a highly beneficial public contact and public service group.

Use wise scientific improvements to better manage the land.

Wise cattle grazing on the GSENM is good for the land.

Please consider the broadest public outreach possible in your planning process.

Many groups and entities in this region already have plans in place that they use for strategic guidelines. Best practices would dictate reviewing all existing plans to try to align your planning efforts with existing regional plans.

2. BLM and NPS Communication & Coordination

We are pleased that the National Park Service (NPS) is a cooperating agency on the EIS and urge the BLM to communicate and coordinate closely with them throughout the process. From the existing public materials provided by the BLM, it is not entirely clear what role the NPS will play during plan development. The BLM should clarify the role of NPS and how their issues and concerns will be incorporated into the final decision. It is important that the NPS is an active partner and that the BLM communicates frequently with them throughout the EIS process. It is also important that the public, including national park supporters, understand the NPS role and implications for park resources.

The direct involvement of our local affected county representatives or their agents is also necessary to justify any management or land use changes in their county.

It is important that any analysis be based on objective science rather than a collection of the loudest voices. Processes that forgo science in the name of consensus building or collaboration fail to meet objective evaluation as required by NEPA. We therefore support current public involvement practices and cooperating agency and coordination requirements.

For some context on the TGA, the following information is from the transcripts of the Congressional Committee Hearings during the creation of the Taylor Grazing Act;

Secretary of the Interior, Harold Ickes, during the Taylor Grazing Act Senate Hearings had stated: "We have no intention to...drive stockmen off their ranges or deprive them of rights to which they are entitled either under State laws or by customary usage.

(Report No. 1182; Calendar No. 1258; published May 26, 1934.) However, sometime before June 12, the Administration intervened with rejection of the language by Secretary Ickes and a threatened veto by President Franklin D. Roosevelt.

Senator Patrick McCarran of Nevada offered replacement language with intentional ambiguity to replace Section 3: "[N]o permittee complying with the rules and regulations laid down by the Secretary of the Interior shall be denied the renewal of such permit, if such denial will impair the value of the grazing unit of the permittee, when such unit is security for any bona fide loan."

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The new wording effectively meant that grazing preferences and authorized use would exist in perpetuity as long as the ranch unit as a whole was pledged security on a loan. In a colloquy on the Senate floor to clarify the intent of the McCarran provision on June 12, 1934, it was stated:

Mr. McCarran: "[O]ne holding a farm or a homestead who has heretofore depended upon the public range as a part of an integral unit of which his homestead may have been a minor part, shall have the privilege of going to a loaning agency and asking permission to borrow, and having recognition of the fact that he has certain rights* upon the public domain which shall not be interfered with during the term of the loan."

Mr. Mahoney: "If I understand the Senator correctly, his purpose is merely to guarantee that the rights to grazing privileges which are conveyed by the bill shall be so definite that they may be recognized as security when the holder seeks a loan."

Mr. McCarran: "That is exactly correct."

Regulation will require full disclosure and should be supplied and placed into the DEIS to explain the purpose of the taking.

It is paramount in NEPA planning that the impacts of any changes in land use on the local populations and the instability that such changes can make are analyzed in the DEIS, for public review and prior to the final decision. This information should be reported to Congress, the State and the local government.

Any analysis should be based on objective science rather than a collection of limited numbers and loudest voices. Processes that forgo science in the name of consensus building or collaboration fail to meet objective evaluation as required by NEPA. I support current public involvement practices and cooperating agency and coordination requirements.

Regulations will require full disclosure and should be supplied and placed into the DEIS to explain the purpose of the taking as well as a plan for compensation for loss.

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participate, on an on-going basis, in grazing management decisions. Grazing management should not involve just the BLM grazing staff and livestock permittees

Our national park lands belong to US, THE PEOPLE, and would be managed for the benefit or present and future generations. Our taxes pay for the management of that land. That means maintaining a healthy ecology and not sacrificing any part of those lands for the benefit of a small and specialized interest group.

New rules and requirements now define grazing management. Decisions made in past decades were not designed with ecological goals in mind, and, in many cases, are in conflict with BLM's ecological goals today. Now, BLM is bound to consider if grazing is the best use among many multiple uses and must manage grazing in order to prevent impairment of Glen Canyon NRA values. New decisions that follow today's requirements are needed.

Property rights, mineral rights, grazing rights and water rights are all rights. If these ranchers want to continue grazing livestock on their range it is nobody's business but their own.

This is not a Democracy where our rights can be stolen from us by a majority. This is a Republic where rights are protected.

We pledge allegiance to the flag of the United States of America and to the Republic for which it stands, one Nation under God, indivisible, with liberty and justice for all.

It is time ranchers stood up for their rights. It is time Utahns stand up for their rights and put you federal people and your environmentalist HIPPIE friends out of here.

This land belongs to Utah if it is a state, and by so being it owns the land within it's borders.

We need to turn decision over to the local people and leaders in our area, and not people who know nothing about our area and the way we live here.

What is the amendment?

Is the amendment necessary? Why?

Where is this all coming from? Special interest groups? Pending law suits? Etc?

If there is no current plan, how could allotments be closed?

Why are private contractors being used to do the work? Do they represent evidentiary bias?

Are there activist groups patrolling and policing the public domain?

Is the science valid?

What is the difference between substantive and opinion?

Environmental groups have purchased grazing rights with the intent of retiring permits. Is this legal? Should it be allowed? Is it fraud? Deception?

First of all I strongly recommend that the National Park Service be a co-lead on this EIS rather than a cooperating agency. The legal mandates and resource protection requirements in the Glen Canyon National Recreation Area portion of the allotments within the planning area warrant this since they are so vastly different from those of the Bureau of Land Management.

Further, on reading the Monument Proclamation, I can discern little resource protection difference with respect to grazing between typical Public Lands and the lands within the Monument, let alone a National Park System area. Granted the Proclamation does grant direction to the BLM to develop regulations for Monument resource protection but, to date, I am unaware of any such effort or recognition of need.

Could you please make the next comment period a little longer than the last one

With that being said it should not be up to public comment. It has nothing to do with the public. Consult the rancher that owns the right.

These environmental groups shouldn't have any say over my grazing rights. The BLM shouldn't allow them any say at all.

I am a rancher. I don't have grazing rights on the grand staircase. I know a few of the ranchers who have grazing right on the Grand Staircase. I know you will not take their grazing rights away from them. They will do what ever they have to do to protect them rights. I am willing to help them protect their rights. So if you want to prevent problems back off and don't push them. Because a guy fighting for his livelihood and way of life is going to fight

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harder than a person who don't have any personal investment than a lunch box and some clean cloths.
You the federal government should not stick your nose in where it don't belong. These ranchers have a right that they have bought and paid for. So no one should have any input on what goes on with grazing other than the rancher. Grazing is a constitutional right just the same as packing a gun or religious freedom ect.
My Dad always said if it isn't broke don't try fixen it. Smart man!!
Don't let someone who knows nothing about grazing make the decisions.
The question that I ask is... "What was the 'original intent' of the president for grazing in the monument- another question is... How does government employees wrest that original intent away from a public servant is what I question- Not... "What land can we exclude"
I believe it to be wrong when certain gov't employees do not honor 'Original Intent' and manipulate and take advantage of the ignorant masses and try to reduce grazing. Honor 'Original Intent' not personal agendas.
It is the men and women that have an active interest in the land that help police and look after it. We assist lost and stranded tourists, maintain waterlines and protect springs for wildlife as well as our livestock. It is men such as my great grandfather that build fences around historic sites to protect them for generations to come. We feel it an obligation to protect all aspects of multiple use on our public land. Kane County has a strong WESTERN history, both on the land and in film. When tourists come here they love to see the working cowboy. Just try and herd your cattle along a road or highway. Tourists stop to take pictures and ask questions about this land. Look and at the National Parks and the cowboys that work there. Kanab's Western Legends Round-up, nothing is more American than the Cowboy and his work.
Water rights, access, and adjudicated grazing rights are primary concerns to those of us who make a livelihood on public lands. The ability to use private property only is limited for those of us who live in this area where private land is extremely scarce and tie to use of public lands. Those who try to use their private lands find that effective use is totally dependent upon the management style of the GSENM leadership. Leadership that reduces grazing to private land only, seriously impacts the health of the ranges and is directly related to closing all grazing off the monument area by making it economically impossible.
I believe that this big environmental push is purely political and has nothing to do with conditions on the ground. The BLM needs to let the range guys do their jobs. They were educated in range management and are paid to do that job. The monument management needs to listen the these guys, not the special interest groups who want to put an end to public land grazing regardless of the conditions on the ground. We feel like we have a right to graze. These rights have been handed down from rancher to rancher since this area was settled. These are rights that we are willing to do whatever it takes to defend. I feele like the BLM is so over run with requests and F.O.I.A.s that nobody can do the job that they were hired to do. You have range people that are stuck in the office copying papers for some environmental group when they should be out on the ground doing what they went to school to do, Manage Range!
Finally I would just like to say that I hope you will make good decisions throughout this process, based on data from your range staff, not from political pressure or threats from environmental groups to sue if grazing is not reduced.
The overgrazing that occurred when the Pioneers came to this area was really a result of people new to this area making wrong decisions about grazing here and failing to be able to see the consequences of their decisions ahead of time. This Grazing EIS seems like management is opening up decisions about grazing to people who know very little about it and, in my opinion is repeating history in a bad way.
What I have observed is people who come to the Monument for vacation and are interacting with the environment only on vacation, the rest of the year they are in an office or condo and from my experience, they care deeply for the environment, they are good leave no trace campers, but, they simply don't understand the complexities of grass management like the Monument's range staff does. When I have talked with them, they don't know if they are looking at a winter pasture or a summer pasture, they don't know if they are looking at a pasture at the beginning of the grazing season or at the end of the grazing season but they seem to think, sometimes strongly, that there should be less cows. For what they know and understand, I think they are right but from from my own experience I have learned that the correct number of cows per pasture and the correct season of the year is better determined by long term observations and science like your range staff uses.

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If you as the Monument Manager turn over all these decisions to interested parties and make them all "stakeholders", I don't understand how it will turn out that great for the Monument if we decide to ignore the long term observation and science that we have been using to manage grazing on the Monument. I think the longterm benefits of using history and science instead of emotions to produce the grazing EIS should be obvious.

I hope the future of grazing on the Monument is determined by those who are knowledgeable about grazing.

The land should be multiple use, it has been given to mankind for the purpose of improving and preserving for future generations. We have a love for the land and environment that has been developed throughout the generations of using it. The cattle ranchers along with the BLM are the best managers of this resource. We are on the land year after year and see what is needed and how to make these improvements and preservations. The tourists and recreationalists that visit come and go then move on to other areas to explore. BLM employee's come and go also, very few stay in this area for the duration of their career. We, as ranchers have a vested interest in these resources and will continue to protect what we have. I would like to continue improving and utilizing the permits and the private lands in order for future generations to enjoy.

The existing Management Framework Plans (MFPs) identify these allotments as being open for livestock grazing and within the authority of the 1934 Taylor Grazing Act, the Federal Land Policy and Management Act and the Grazing Administration regulations under Title 43 CFR 4100. This is the same quote from the many EAs completed by the Kanab Field Office that referenced the same MFPs that apply to the Monument. As such, the Secretary of the Interior has determined these allotments to be "chiefly valuable for grazing."

In the Taylor Grazing Act, Congress gave the BLM, at the local, state and national levels, the obligation and responsibility to protect and safeguard livestock grazing rights. Any decision by the agency that would impact the economic contribution, jobs, culture and historic use must be consistent with Congressional mandates.

Utah Farm Bureau is concerned where federal agencies use the planning process to reduce or eliminate livestock grazing in specific instances like the Grand Staircase-Escalante National Monument. This process is clearly in violation of federal law (Taylor Grazing Act) and the historic agency position on livestock grazing. Farm Bureau opposes the use of the planning process for the purpose of circumventing the longstanding principle "chiefly valuable for grazing" mandated in Taylor Grazing. The BLM land use planning process only provides authority to regional offices to make minor changes and temporary adjustments related to rangeland health.

Even the agency's technical guides and policies for the use of rangeland health restrict it from being used by itself for decision making because it is a qualitative not quantitative method.

Furthermore, Solicitor Myers' found that the Secretary of Interior (BLM) cannot "establish, eliminate or modify the boundaries of a grazing district without determining that the affected ground displaced from grazing is no longer chiefly valuable for grazing." The GSENM considering a no grazing option in the proposed Monument grazing EIS would clearly violate the "chiefly valuable" doctrine based in part upon the existence of BLM planning documents that have already analyzed it and determined that the allotments are open to grazing.

The Federal Land Policy and Management Act (FLPMA) did not set aside or adversely impact the foundation principles of the Taylor Grazing Act and the grazing preference. In fact, it preserved them. FLPMA 43 U.S.C.~1701(b) cites: "shall be construed to and not in derogation of the purposes for which public lands are administered under other provisions of law."

Utah Farm Bureau is concerned that the current evaluation of livestock grazing in the Grand Staircase-Escalante National Monument is about politics and not science. There seems to be those groups still trying to use force to get their way by attacking grazing on public lands across the West and the Monument appears to be part of that game plan.

We support the Escalante Grazing Region Act adopted by the Garfield County Commission and the Escalante Grazing Region Zone created by the Utah State Legislature.

We assert LGPA- EIS consistency with local plans, programs and policies to the maximum extent allowed by law is required and is necessary for the health and welfare of our communities. We therefore request that you are consistent with local plans, programs and policies to the absolute maximum extent.

Table B-29
General Comments Related to this Planning Effort

I urge you to look beyond stereotyped divisions to see that most stakeholders desire similar results. Agricultural users require healthy grasses and clean water; out of town visitors require beautiful views, birds, game, and fresh air; everyone wants these lands to continue to generate a diverse selection of plants, nurtured by biological crusts as necessary and bringing forth a bounty of wildlife. Plan for the children of today's permittees as well as the children of today's hunters, hikers, and canyoneers - there are many who will need this land to be healthy in the future.

Land use has impacts far beyond one species in one area. What the winds blow from Utah has a huge impact in Colorado and because it impacts the entire Colorado River Basin, it has a huge impact of the whole nation,

I've seen articles from the Sierra Club that indicate that because these are small operations and contribute a small percentage on the national scale that these operations and people are irrelevant. The people on the ground should have the loudest voice, not the people who visit or have never seen the area.

When grazing management only involves the BLM grazing staff and livestock permittees it ignores these other valuable and important voices. These are PUBLIC lands and need to be treated as such, allowing for a diverse array of voices in how the Monument is used and managed.

The Nature Conservancy in Oregon has had spectacular results on the Zumwalt Prairie Reserve both protecting the grasslands AND grazing cattle in a responsible way. I suggest a consultation with Nature Conservancy re a workable plan for the Monument.

Grazing management should solicit the diverse viewpoints and bring all stakeholders together to help in the decision making. The BLM should explicitly encourage and facilitate stakeholder participation, on an on-going basis, in all grazing management decisions.

Because GSENM is a place but for all of us every American citizen, and even people from around the world BLM must explicitly allow diverse stakeholders to participate grazing decisions on this land. Grazing management can no longer involve only the BLM and livestock permittees. This land belongs to everyone, and livestock grazing affects multiple Monument values. As such, we all must have a voice in how this land is used and in its very future.

Ranchers and permittees can continue to live off the land and practice their traditional lifeways in harmony with multiple other users and values; there is no credible or documented reason to fear otherwise.

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Information to Consider

Attached is the article I promised to send. I think it is a good example of rangeland studies at the leading edge of the science-management interface. It is the sort of work that was to distinguish the GSEMN when it was first established, but which has failed (so far) to materialize as many had hoped. Anyway, take a look when you have an opportunity, because something like its approach might make sense on the Monument in terms of exploring new ways to evaluate and manage grazed landscapes, given the new realities with which we will have to live going forward. As I suggested, the whole issue of dust generation and transport to distant watersheds deserves special attention. The authors list some of the recent literature on this topic.

[Attachment: Bowker, Matthew A., Mark E. Miller, and R. Travis Belote. 2012. Assessment of rangeland ecosystem conditions, Salt Creek watershed and Dugout Ranch, southeastern Utah: U.S. Geological Survey Open-File Report 2012-1061, 56 p.]

I've attached the vegetation report on GSENM that I have recently completed. I've also attached the Sustainable Grazing Report for Forest Service Lands of Southern Utah, as some of you had indicated that you haven't seen it at the scoping meetings.

[Attachment: deRoulhac, David. 2013. Vegetation Representations in Grazed and Ungrazed Lands within Grand Staircase-Escalante National Monument. Grand Canyon Trust. November 25, 2013.]

[Attachment: Straube, M. and L. Belton, ed. 2012. Collaborative Group on Sustainable Grazing for US Forest Service Lands in Southern Utah: Final Report and Consensus Recommendations. December 2012. 118pp.]

We support the Escalante Grazing Region Act adopted by the Garfield County Commission and the Escalante Grazing Region Zone created by the Utah State Legislature. Although technically covering lands outside our municipal boundaries, the principles contained in the Acts are applicable in our municipalities, and our communities will be negatively impacted if they are not followed.

I understand that there is a possibility that grazing rights may disappear from the Monument. When I grew up in Boulder, there was grazing on the lands and some of that has disappeared, like Calf Creek and the Escalante River. We used to go hiking up the creek and river beds. A few years ago I tried that and the creeks and river are almost choked down to nothing. I know that people think the cattle are causing damage, but I think you have probably seen the TED talk by Allan Savory that I have linked below, which shows his research and evidence that the deterioration of the land into dusty desert, being washed away by the rain, is caused by the disappearance of the animals from the range. Maybe you could get his advice on what to do about the grazing on the land. After watching his talk, it just seems like a step backwards or a step away from being green.

[Http://www.youtube.com/watch?v=vpTHi7O66pl](http://www.youtube.com/watch?v=vpTHi7O66pl)

As workshops are being prepared to discuss economics, here is a growing story about this Monument. The challenge is to be objective and look at all aspects of the economic picture equally.

How the West Was Reinvented

Nudged by Bill Clinton, an economy based more on recreation than extraction is transforming the rural West.

By Ryan Cooper, Washington Monthly

January/ February 2014

http://www.washingtonmonthly.com/magazine/january_february_2014/features/how_the_west_was_reinvented048358.php

A strange thing happened in Escalante, Utah, during the government shutdown last fall. The town, a remote community of fewer than 800 souls perched on a high desert plain around a trickle of water called the Escalante River, is surrounded on all sides by the Grand Staircase-Escalante National Monument, two million federally protected acres of rugged, visually breathtaking sandstone wilderness larger than the state of Delaware. Because

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the monument is so vast, pierced by several highways and county roads, it was virtually uncloseable during the shutdown. So when thousands of tourists were turned away from the more famous national parks in the region—Zion, Arches, Grand Canyon—they made their way to Escalante to salvage their vacations. And Escalante had its best October on record, its small business owners making out like mule dealers in a gold rush. “Hotels were chock-a-block with tourists,” says Brent Cottam, a gas station and Subway owner in town.

Escalante’s boomlet during the shutdown was only the latest episode in a longer tale of the town’s unexpected economic growth due to decisions in far-off Washington, D.C. And its story is itself part of a much larger transformation that has been creeping across the American West for decades, as a new recreation economy centered around tourism edges out an older extractive economy that relied on mining, timber, drilling, and ranching. It’s a shift not just in the type of jobs available, but in the political landscape of the entire region.

In Escalante’s case, the story starts in September 1996, when President Bill Clinton was faced with a dilemma. It was high campaign season, and for most of his first term he and environmentalists had been fighting a rearguard action to prevent the development of the massive coal deposits on the Kaiparowitz Plateau, a high bench in southern Utah notable for its Cretaceous fossils. Fed up with the squabbling and eager to lock up the environmentalist vote, Clinton decided to end the debate in one bold stroke: using the authority vested in the executive branch under the Antiquities Act, he declared the Kaiparowitz, as well as a huge swath of the surrounding region, a national monument. Unlike a national park, some grazing and timber sales would still be allowed, but the coal would be off-limits forever. Clinton’s decision was bitterly opposed by most of the citizens of Escalante, who were eager for the extra jobs and wage growth that many hoped would come with a giant new coal-mining operation. And in Washington, Republicans reacted to what they saw not only as a classically liberal decision to sacrifice jobs on the altar of the environment but also as an underhanded abuse of executive power. They complained that the White House had prepared the monument plans in secret. Even the Utah congressional delegation wasn’t notified until twenty-four hours beforehand. To add insult to injury, Clinton held the dedication ceremony on the South Rim of the Grand Canyon, which is in Arizona and dozens of miles from any part of the new monument. Representative Duncan Hunter, a California Republican, said it was “something that I think would happen in the former Soviet Union or some Third World dictatorship.” Brent Griffin, who owns a grocery store in Escalante, still remembers the move today. “The way they did it was awful sneaky,” he says.

But much to the surprise of many, it wasn’t long before the recreational industry in Escalante began to take off. Grant Johnson, who ran an outfitting business in the area from 1991 to 2012, says that after the land was designated there was a dramatic and sustained increase in bookings. Before the monument “it was hard to fill trips,” he said. “But after, we had waiting lists.”

Overall, things have worked out fairly well around the monument. Headwaters Economics, a nonprofit consulting firm, estimates that in surrounding communities, from the designation in 1996 to 2008, “population increased by 8.3 percent, jobs by 37.6 percent, real personal income by 40.3 percent, and real per capita income by 29.6 percent.”

This is at odds with the axis of debate back in 1996, which turned on the virtue of environmental preservation versus the economic benefits of coal development. The Kaiparowitz contains an estimated sixty-two billion tons of coal, up to 20 percent of which might have been economically recovered. Before the national monument designation, a Dutch firm called Andalex had been drawing up plans for a large mine on these deposits, while environmentalists argued that jobs thus obtained were not worth despoiling beautiful countryside and the smog created by burned coal.

It is true that there are many jobs to be had in the extractive industry. According to the oil and gas industry’s largest trade group, the American Petroleum Institute, the industry supported 2.6 million direct jobs and \$203.6 billion in labor income in 2011, while according to the Bureau of Labor Statistics the coal industry supports about 90,000 jobs. And it should be noted that these jobs are of a kind that is vanishingly rare these days: they require a high school education or less, and though they are often dangerous, they pay well enough to support a family.

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But the economic benefits of an extraction economy are not as one-sided as the extractive industries and their allies would have you believe. There is a lot of money in the recreation economy as well—and it's much more sustainable over a long period of time. While the extractive industries tend to follow a boom-and-bust cycle, the recreation industry is more consistently reliable. Its booms aren't as dramatic, but neither are its busts.

A study commissioned by the Outdoor Industry Association estimated that the recreation economy drives \$646 billion in consumer spending and creates 6.1 million jobs directly. A 2011 National Park Service study concluded that spending by park visitors supported 251,600 jobs, \$30.1 billion in sales, \$9.34 billion in labor income, and \$16.5 billion in value added. From another angle, a Headwaters study found that western non-metro counties have a per capita income that is \$436 greater for every 10,000 acres of protected public lands within their boundaries.

While there's always reason to be skeptical of self-justifying research, there are other factors that indicate that the recreation economy is doing well. In 2012, the National Parks saw almost 283 million visitors, and the National Forests saw about 160 million. There are no system-wide visitor statistics for Bureau of Land Management (BLM) land—indeed, it is probably not possible to rigorously survey their nearly 250 million acres—but the number of annual visitors is undoubtedly quite large as well. And that number of visitors is bound to bring in a fair amount of cash.

The strengths and pitfalls of each model of rural development are well illustrated by two other small Utah towns: Vernal and Moab.

Vernal, a town of about 9,000 in Uintah County, in the northeast corner of the state, has gone all-in on extractive industry, sinking oil wells by the score, and the benefits are evident in job growth and quick prosperity. Vernal has the stretched, just-unwrapped feel of new wealth. Traveling there recently, I saw streets congested with brand-new trucks, gas stations recently renovated to service large industrial equipment, and a brand-new vocational school, the Uintah Basin Applied Technology College. In this grim economy, the benefits of decent, working-class jobs should not be understated.

But the situation is not without downsides. The drillers have bid the price of unskilled labor so high that other businesses in Vernal are struggling to afford help, thereby introducing a structural distortion that will hurt the area when the oil runs out (as it must). And all the oil activity has crimped what was once a small but vibrant recreation economy. On the BLM land near Vernal, there has been “a tremendous decline in recreation activity,” says Bill Stevens, a recreation planner for the agency in Utah.

Worse, many of the drillers have no intention of staying in town. Like many workers in the extractive industry, they follow the oil from place to place. They don't buy homes, invest in real estate, or become permanent members of a community. As evidence of the transience of the population, many locals told me that the recently built Holiday Inn in town was booked solid by Halliburton for an entire year before the construction was even complete. Vernal has already suffered two crushing oil busts, the first in the early 1980s and the second in the 2000s. Another one is coming at some point.

Moab, on the opposite side of the economic spectrum, lies a few hours south of Vernal in neighboring Grand County. It used to be a mining town, but when the local uranium industry slowly collapsed in the 1970s and '80s the town suffered a terrible bust. For the past several decades, local agencies, businesses, and individuals have slowly restructured their economy around attracting visitors instead.

Building a reputation as a tourist hub and increasing a town's service base is a complex, selfreinforcing process that takes years. To advertise, Moab levied a tax on hotel beds and returned half of the money to a local agency, the Moab Area Travel Council, which advertises all over the world. Their success can be measured by the visitation at nearby Arches National Park, which climbed from 236,000 in 1975 to over a million in 2012—and that's only one of Moab's many attractions.

Meanwhile, they deepened their service portfolio. More visitors and a longer busy season allowed the community

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to support a greater number and diversity of hotels and restaurants, which itself increases the attractiveness of the destination. Where there used to be a few burger joints there is now sushi and Thai food, and most restaurants stay open all year long. Where there were once a couple of bargain motels there are now luxury resorts, B&Bs, and even luxury camping (or “glamping”—glamour camping—in which camping is combined with high-end amenities like hot tubs), for hundreds of dollars per night.

Finally, Moab cultivated as many different types of recreation as possible. Aside from the classics—hiking and camping—the community now offers river rafting, rock-climbing, four-wheeling, and skydiving. Moab locals, credited for developing mountain biking back in the 1980s, have helped make the town a world-famous mecca for the now widely popular sport. Part of the result of Moab’s development is that it now caters not only to the wealthy but also to visitors in every other socioeconomic category. As a Headwaters report on Grand County put it, “One of the unusual aspects of Grand County is the wide range of recreational opportunities and activities it supports. In effect, the county’s economic diversity lies within its amenity and recreation economy.” The end result of this long process is that Moab can now boast a robust service-based economy. Jobs that require complex skills, like river rafting, pay better than baseline service jobs, like housekeeping or cashiering, and the same holds true for luxury hotels and resorts.

The upshot of all this is that Vernal is currently somewhat richer than Moab, with a per capita income about 15 percent greater. But while the extractive economy is undeniably good for a fast, easy buck, it is vulnerable to busts that can come just as quickly. The recreation economy may be less lucrative initially and much harder to establish, but it is far more stable in the long run.

This raises the question of just where this might lead in the long term. Already the Mountain West is undergoing a dramatic demographic, cultural, and political shift (ably documented in a 2012 book edited by Ruy Teixeira, *America’s New Swing Region*). What used to be solidly Republican territory—not one state voted Democratic in a presidential election between 1968 and 1988—now contains several of America’s few remaining swing states, and will likely contain more as the years pass. New Mexico and Colorado, once solidly red states, both went to Barack Obama in 2008 and 2012. And given the growth of the Latino population, Arizona is likely to be contested soon, too.

This evolution is not completely driven by the recreation economy, of course. Bigger factors at play include the rapid growth of cities and minority populations, rising liberalism among the young, and large-scale in-migration of educated whites—though much of that migration is not unrelated to the Mountain West’s magnificent recreational opportunities. Noel Poe, who worked for the National Park Service for forty years, moved to Escalante in 2007. “I wanted to retire in redrock country,” he said. Steve Roberts, who owns Escalante Outfitters, moved for the monument, too. But the interesting point is that recreation-based communities can change the voting behavior of rural counties, which are typically the strongest of the Republican fortresses. The political consequences could be enormous. Just consider the fact that Mitt Romney won all of Utah by 48 points, but in Grand County, he barely broke 50 percent.

Eroding the last remaining Republican strongholds would be quite a development, but it could also change the ideological valence of protected lands. If rural communities across the Mountain West start leaning Democratic, Republicans might be forced to reconfigure their “drill, baby, drill” approach to all environmental policy.

These changes have only just started to percolate—Garfield and Kane Counties, the home of Grand Staircase, are still heavily Republican. But for starters, folks in Escalante have largely come to terms with the monument, especially given that, thanks to Clinton, the town has few other options. These days they’re looking for ways to take advantage of Grand Staircase even if they aren’t terribly happy with how it came to be. In 2011, Escalante mayor Jerry Taylor testified before Congress in support of a bill that would have required that any new monuments get congressional approval first, but in an interview with me he spoke mostly about trying to take advantage of the place. “We have this asset now, and we need to capitalize on it,” he said. “I call it America’s Outback.”

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But taking advantage of a latent recreation economy takes work. Creating museums or launching advertising campaigns can be a heavy lift for a town of fewer than 800 people. Environmentalist organizations, which have spent a lot of money buying and retiring grazing leases in the monument, might consider helping these small communities develop their recreation potential and, in the process, create new stakeholders with an interest in protected lands.

Ultimately, it is much easier to picture a western economy centered largely around tourism than around coal, oil, and gas. The Mountain West has a nearly inexhaustible supply of coal, but America's coal industry is being hammered by cheap natural gas, Environmental Protection Agency rules banning new coal-fired plants, and the prospect of additional EPA rules that will phase out existing plants. The formation of a national-level climate policy may be hard to imagine, but it is certainly not impossible, and every major climate-related disaster increases the likelihood that such a policy will be enacted. Carbon mining of any kind is likely doomed over the long term.

The potential for a recreation-based economy, on the other hand, is as vast as the West itself. Americans have long loved their national parks. But because we aren't creating many new ones, and we are creating more Americans, the crowds at the most famous parks, like Yellowstone and Grand Canyon, get bigger every year. And as developing countries in Asia and Latin America grow richer, their expanding middle classes will increasingly have the means to satisfy the abiding human desire to travel and see great natural beauty—and nowhere is more beautiful than the American West. In the future, there will be more people eager not only to visit the West for its natural beauty but to live there as well, if the swelling populations of places like Denver, Boise, Albuquerque, and Salt Lake City are any guide.

It's highly likely that western towns in close proximity to our national parks, and especially off-the-beaten-path places like Escalante, will increasingly "get discovered" and experience significant growth. Presuming, that is, we preserve the pristine air and stunning landscapes that draw us to these places to begin with.

The use of science based grazing management actions to sustain or improve the health of the lands is a worthy goal provided that any grazing or land use stipulations or decisions made for that purpose are supported by credible, peer reviewed scientific information; and supported by state range conservationists, such as those in the Grazing Improvement Program with the Utah Department of Agriculture and Food.

It is also important that information on the ground from past and present grazing permittees be collected and placed into the record for the analysis.

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I have reviewed the December, 2012 Final Report and Consensus Recommendations prepared by the Collaborative Group on Sustainable Grazing for U.S. Forest Service Lands in Southern Utah. After reviewing a wealth of data and receiving detailed input from all participants and outside sources, the collaborative group reached consensus on ways to revise and improve grazing practices on forest service lands in a manner that participants hope will permit the forest service to achieve and maintain the twin goals of ecological sustainability and economic viability for ranchers and communities.

I believe that the identified goals and the methods for measuring and monitoring progress toward those goals as set forth in the Collaborative Group's report could, in most respects, be applied to the lands within the monument, which lands are, if anything, more fragile and more vulnerable to damage from grazing, over grazing or mis-timed grazing than Utah forest service lands. The success of the Collaborative Group's efforts re: forest service lands in southern Utah may ultimately be attributed to the broad based participation in the process by representatives from the ranching community, county, state and federal agency professionals, conservation groups and academics. The group's insistence that the participants reach consensus agreement on their recommendations and the bases for their recommendations is, in my judgment, the key to obtaining and maintaining public support for the reformed grazing practices and principles recommended by the group. I would urge the BLM to seek the participation of as many stakeholders as is reasonably feasible in the development and implementation of its grazing

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<p>plan.</p> <p>Planned Grazing for Increased Profit, Drought-Resilience, and Peak Performance</p> <p>Please join us for an evening talk focusing on low-cost, high-performance management of animals, forage, landscapes, finances, and people.</p> <p>Instructor Owen Hablutzet will introduce the planning process used internationally on 75 million acres that enables both large ranchers and small lot land owners to manage land use and grazing based on their particular needs.</p> <p>Creating resilience to drought and establishing effective goals will also be a focus, along with use of stock density and herd effect to increase production. Discover the keys to generating more profit, while consistently improving your own efficiency using tools and practices introduced here.</p> <p>The framework of Holistic Management® is the backdrop that integrates these approaches.</p> <ul style="list-style-type: none"> • Discover the power of planning for what you DO want, rather than for what you don't want. • Learn why failure to plan is a plan to fail! • Witness the power of stock density and herd effect to increase production and land values <p>You will see examples from the Western U.S. and many other dry areas of the world using grazing planning to effectively increase stocking rates, often by 400%, while healing landscapes and increasing the effectiveness of precipitation.</p> <p>Please consider the results of the oral history completed several years ago by the GSENM. The transcripts and results of that project prove the importance livestock grazing has been and will continue to be for the local traditions and customs in the small communities. The local communities are rooted in tradition, and tourists are attracted by the traditions exhibited by local citizens. Please consider the past historical use of the area, and allow grazing to continue as it has shaped the landscape and communities that eventually led to the creation of the monument. Continuing the same activities that created the uniqueness of the area will only make it better.</p> <p>It is important that the analysis be based on objective science rather than a collection of the loudest voices. Processes that forgo science in the name of consensus building or collaboration fail to meet objective evaluation required by NEPA.</p> <p>As part of your scoping process I would like to include this episode of the County Seat Television Program Episode 2 of Season 4. Here is a link to its posting on Youtube https://www.youtube.com/watch?v=iEJFx05PXIc</p> <p>or it can also be found on our website www.thecountyseat.tv. I've also included a copy of the transcript to this email.</p> <p>Here is a transcript from the County Seat Television Program that has some great comments about the planning. And some points worth considering.</p> <p>http://youtu.be/iEJFx05PXIc</p> <p>Attachment includes video.</p> <p>The Department of Interior Fiscal Year 2012 Economic Report shows that grazing on public lands accounts for only 0.41% of the nation's livestock receipts and only 17,000 jobs. In contrast, recreation contributes \$45 billion to the economy accounts for 372,000 jobs.</p> <p>Farm employment is dropping steadily in Kane County, as noted in An Analysis of Long-Term Economic Growth in Southwestern Utah: Past and Future Conditions. http://www.dixie.edu/ir/File/Kane%20Profile.pdf</p> <p>Cattle ranching is declining in Kane County, as noted in the 2013 Kane County General Plan: "According to the 2007 Census of Agriculture, Kane County contained 91 cattle/calf operations running over 6,786 head of cattle. This represents a 28.6% reduction in total head of cattle and a 14.2% reduction in cattle/calf operations in Kane County since the 1992 Census of Agriculture."</p>
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Economic studies by the Headwaters Economics reveal the positive impact that federal lands have on the rural towns of the West. Tourism and visitors to the Monument are major economic drivers in Kane & Garfield Counties with high levels of private employment in the travel and tourism sector. The income generated by travel and tourism related businesses far surpasses the revenue currently being generating by ranching.
[Http://headwaterseconomics.org/wphw/wp-content/uploads/ProtectedPublicLands_Manuscript_2012.pdf](http://headwaterseconomics.org/wphw/wp-content/uploads/ProtectedPublicLands_Manuscript_2012.pdf)
<http://headwaterseconomics.org/wphw/wp-content/uploads/Escalante.pdf>

While rangeland health standards are an important tool, they do not specifically address impacts to all Monument objects and values from livestock grazing. In conducting an evaluation of the compatibility of grazing with protecting monument objects in the Cascade-Siskiyou National Monument, BLM contrasted the findings using rangeland health standards and using a test of compatibility with protection. See, Determination of Compatibility of Current Livestock Grazing Practices with Protecting the Objects of Biological Interest in the Cascade-Siskiyou National Monument, Table I, p. 5 (available on-line at: <http://www.blm.gov/or/resources/recreation/csnm/csnm-grazing.php>). An examination of the approach used in the Cascade-Siskiyou National Monument will demonstrate the contrast between attaining rangeland health standards and a more detailed examination of impacts to Monument objects and values.

Most of the Monument and GCNRA exist within the Canyonlands ecological zone of the Colorado Plateau which contains the "highest concentration of endemic plant species of any region of the Intermountain West and the highest species richness of any ecoregion in Utah" (Fertig 2009). Approximately 18% of the Monument's flora is endemic to the Colorado Plateau. The Monument includes parts of the "Dixie Corridor" (the Chocolate and Vermilion Cliffs, the Cockscomb north of Buckskin Mountains and areas near Lake Powell) which are a mixing ground for Colorado Plateau and Mojave desert floras that result in a high concentration of endemic species some of which are sensitive, threatened or endangered species and do not occur elsewhere within the Monument such as Welsh's Milkweed (Fertig, 2009).

Major existing vegetation types (as opposed to potential vegetation) and their representations in both grazed and ungrazed lands within the Monument are listed below (see Vegetation Representations in Grazed and Ungrazed Lands within Grand Staircase-Escalante National Monument for a more comprehensive discussion of this).

[Table 2. Percent Vegetation Type in Ungrazed and Grazed Allotments

Source: SGS National Gap Analysis Program. 2005. Southwest Regional GAP Analysis Project-Land Cover Descriptions. RS/GIS Laboratory, College of Natural Resources, Utah State University. The Southwest Regional GAP Analysis Project used land cover classes that were developed by NatureServe and represent actual land cover vegetation rather than potential vegetation cover.]

Approximately 64,000 acres of land are officially not grazed within the Monument. Of those 64,000 acres, approximately 52% (32,641 acres) are mixed bedrock and tableland (aka "slickrock"; Fig. 7), largely incapable of producing any livestock forage. Pinyon-juniper woodland and pinyon-juniper shrubland, which generally support little livestock forage, compose another 38% of allotment areas officially ungrazed.

[Fig. 2: Major vegetation types of ungrazed lands within GSENM]

The three top vegetation types in ungrazed areas (mixed bedrock and tableland, pinyonjuniper woodland and pinyon-juniper shrubland), each of them supporting minimal understory vegetation, constitute 90% of ungrazed lands.⁷ This leaves only 6,400 Monument acres of land not grazed (mostly riparian vegetation along the Escalante River) that contain understory vegetation, despite a broad suite of vegetation types distributed throughout the Monument, many of which host plant species endemic to the Monument and identified by the Proclamation and researchers as being ecologically significant. Eight vegetation types are located only (i.e., 100%) in grazed allotments (Table 2) and over 99 percent of six other vegetation types are in grazed allotments. These vegetation types may support endemic or uncommon species, but they are wholly within grazed allotments.

[Fig. 3: Percent of major vegetation types within ungrazed allotments.]

"Riparian woodland" is the vegetation type with the highest percent (29%) of acres not grazed due to the 1999

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NEPA decisions to close allotments in the Escalante River corridor. Pinyonjuniper shrubland and sagebrush steppe rank second and third for vegetation representation on ungrazed lands at 3.4 percent and 2.6 percent, respectively. Only four vegetation types other than riparian woodland and shrubland have more than 1% of their occurrence on the Monument in ungrazed lands: pinyon-juniper shrubland (3.4%); sagebrush steppe (2.6%); pinyon-juniper woodland (2.3%); and big sagebrush shrubland (1.3%).

3. Springs and Seeps. The 2008 Draft EIS indicated that 32 of 140 GSENM springs and seeps (22.9%) were Functioning at Risk with a downward trend or were Non- Functioning. Functioning at Risk is described as a hydrologic system that "will possess some or even most of the elements in the definition, but have at least one attribute/process... that gives it a "high probability of degradation with wind action, wave action, and overland flow event(s)"

"Properly functioning" conditions of springs and creeks:

- Dissipate energies associated with wind action, wave action, and overland flow from adjacent sites, thereby, reducing erosion and improving water quality
- Filter sediment and aid floodplain development
- Improve flood-water retention and ground-water recharge
- Develop root masses that stabilize islands and shoreline features against cutting action
- Restrict water percolation (NRST 2003)

[Table 4. Properly Functioning Condition Assessments]

The 2008 Draft Rangeland Health EIS cited "lack of water" and a "lack of vegetative cover to protect and armor soils" as the primary reasons for why sites failed to meet PFC standards (BLM, 2008).

4. Biological Soil Crusts. Biological soil crusts pose a particular challenge for grazing management within the Monument, as they can easily be destroyed by trampling, e.g., by cattle, and yet they (1) provide essential ecosystem services, including holding soil in place in arid areas (see Part IV. Rationale); and (2) are listed as a Monument value to be protected in the Proclamation.

The status of biological soil crusts (BSC) in the Monument as a whole has not been systematically assessed, but Matthew Bowker and others (2008), developed models that predict where conservation values for BSCs are high in the Monument based on BSC biodiversity, BSC function and on a combination of those two descriptors. The study found higher levels of potential biodiversity and function as well as higher probability of degradation and thus higher conservation priority in areas of Kaiparowits Plateau, the lower benches in the vicinity of Lake Powell, lands in the area of Hole-in-the-Rock Road, and near the Paria River.

These conservation value models incorporated a variety of data sets including validated models developed by Bowker and others (2006), which predicted the percent of available habitat for different cover types of BSC (moss, lichen and dark and light cyanobacteria) across the Monument. The biological soil crust models were successful at predicting moss, lichen and dark cyanobacteria cover types, but were less successful at predicting available habitat for light cyanobacteria types (due to susceptibility to drought and occurrence of drought at the time of the study).

BLM IIRH assessments (Pellant, et al. 2000) undertaken primarily between 2000 and 2006 in the Monument, often noted the presence or absence of BSC, and the Trust is undertaking an effort to link these data with predicted available habitat (Bowker et al., 2006).

5. Colorado Plateau Rapid Ecoregional Assessment (REA). A Rapid Ecoregional Assessment was completed for the Colorado Plateau in May of 2012. REAs are meant to be a decision support tool to managers in the BLM's effort to move towards landscape- level management. The BLM identified livestock grazing as a change agent but did not include it in the analysis due to a lack of consistent data. Nonetheless, they include a variety of datasets that can be utilized for land-use planning decisions in the Monument.

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The REA identified change agents stressors and associated threats to conservation elements other than grazing. Native plant communities identified as conservation elements in the Colorado Plateau REA, are listed in Table 5 and have a high potential for being impacted by livestock grazing within the Monument.

[Table 5. Native Plant Communities Identified as Conservation Elements in the Colorado Plateau Rapid Ecoregional Assessment
 Source: USDI 2012]

Some of the most useful data sets pertaining to livestock grazing management are those that describe terrestrial ecosystem intactness, concentration of conservation elements, and concentration of imperiled and special status species. Figure 5 identifies potential cover of late successional biological soil crusts across GSENM.

[Fig. 5: Potential late successional biological soil crust within GSENM-administered allotments]

Due to the fact that the Colorado Plateau REA did not assess livestock grazing as a stressor in the analysis, the new Monument grazing plan amendment process is a critical opportunity to integrate livestock grazing data with REA analysis to help guide and inform the grazing plan amendment. REA datasets can be useful when applying criteria for developing diverse grazing arrangements, protecting riparian systems, biological soil crusts, and reducing erosion. For instance, a large percentage of areas with high potential for late successional biological soil crusts are within grazed GSENM/GCNRA lands (Fig. 5).

6. Initial Analysis of Change in Vegetation Productivity for the Grand Staircase Escalante National Monument, 1986-2011. The Trust recently completed a study of vegetation production change within GSENM using data averages of two ten year periods: 1986-1995 and 2002-2011 (Hoglander and Rivas 2014). The study utilized LANDSAT Thematic data that measured net primary vegetation productivity and represented the data through the Normalized Difference Vegetation Index (NDVI). The study found that 80 of 103 GSENM-administered allotments showed a decrease in vegetation productivity. Sagebrush dominated, riparian vegetation, pinyon-juniper woodland vegetation, grassland dominated, desert scrub, deciduous shrubland and areas currently characterized as sparsely vegetated decreased, with pinyon-juniper woodlands and grasslands showing the greatest decreases. Vegetation productivity increases were for riparian woodland vegetation (which may reflect Russian Olive invasion), mixed conifer vegetation, introduced vegetation, developed areas, and aspen or maple dominated areas.

[Fig. 6: Net change in vegetation productivity within GSENM between 1986-2011 (Hoglander and Rivas 2014).]

It will be important for the BLM to consider all relevant scientific information that is provided by commenters. While the Trust is sending a complete copy of each reference cited, some commenters may not. Just as the BLM does not print all studies cited in its Draft or Final EIS, so a commenter need not send a complete copy of each reference cited for it to be considered in analysis of alternatives and in the Environmental Consequences section of the Draft and Final EIS.

If a scientific literature review is cited (e.g., Beschta, et al., 2012; Fleischner 1994), that literature review itself cites numerous scientific studies. While the BLM certainly is not under the obligation to read each reference cited in a literature review, the information that is in the literature review should be considered scientific information to be considered in the EIS, unless the BLM finds that the cited references do not support a commenter's conclusion.

Similarly, an unpublished literature review, such as Carter (2013), may extensively reference published, peer-reviewed scientific literature, which are to be judged for the scientific support they offer for the commenter's conclusions.

It will be important to consider the overall balance of scientific evidence. For instance, for every 99 or so climate scientists who report on global warming due to anthropogenic increases in greenhouse gases, there may be one who is a "climate skeptic" scientist. It is important to avoid giving undue credence to the one piece of literature you find that doubts the predicted increased temperatures and precipitation variability within the region of GSENM/GCNRA.

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Similarly, there is overwhelming evidence in the scientific literature documenting the vulnerability of biological soil crust to compression, e.g., by cattle or ORVs or walkers. The fact that there are certain conditions in which biological crusts are less vulnerable (e.g., under snow when frozen), does not offset the reality that throughout most of GSENM, over most of the year, crusts are vulnerable to being broken wherever they are accessible to cattle.

Incorporating all of the data already collected by the BLM and GSENM over the past many years needs to be done in this EIS so there can be a satisfactory result when determining the appropriate management of grazing.

The good news is that there already is a working model operating locally. This example is the annual Ranching/Range Management Workshop that brings together diverse minds to become better land stewards and to break down mistrust barriers. These workshops are organized and planned by committees made up of ranchers, BLM staff, NRCS personnel, and Country Extension people. This is a functioning system that really is working.

The GSENM should base grazing management on science. Since one purpose for the Monument is scientific activities, Management should capitalize on this mandate and incorporate science into restoration and livestock management research and practice. Studies should be conducted on the length, timing, and intensity of grazing. If current, peer-reviewed science has already been completed for this area of the Colorado Plateau, it should be incorporated in the grazing strategies. This research data could then guide managers and permittees to adaptively manage the landscape. Instead of arguing over 60% or 30% utilization, grazing studies could identify what is best for the native plants. Additionally, the design and findings of the scientific studies must be peerreviewed and published.

GSENM grazing management strategies should also take advantage of quantified studies completed by non-federal researchers. One example might be the work done by the Grand Canyon Trust with their "Sustainable Multiple Use Grazing Alternatives."

The use of peer reviewed sound-science based grazing management actions to sustain or improve the health of the lands is a worthy goal provided that any grazing or land use stipulations or decisions made for that purpose are supported by credible, peer reviewed scientific information; and supported by both State range conservationists, such as those in the Grazing Improvement Program with the Utah Department of Agriculture and Food.

According to research by Utah State University and Southern Utah University, percapita income in counties within the GSENM in 2011 were \$1,799 below that of comparable counties (Politics, Economics, and Federal Land Designation: Assessing the Economic Impact Land Protection- Grand Staircase -Escalante National Monument). The monument's impact on livestock grazing serves as a case study to explain this disparity.

The use of science based grazing management plans which are currently in place, and any actions to sustain or improve the health of the lands for grazing or land use stipulations or decisions made for that purpose, should be supported by credible, peer reviewed scientific information. These types of programs are supported by both Utah State University range conservationists, and also the Grazing Improvement Program within the Utah Department of Agriculture and Food.

The monument was created for scientific study. The declaration of the monument states that grazing will continue under the applicable laws and regulations. However, the science is not being used to implement grazing. The GSENM should be utilizing the best applications of science to improve grazing management. This scientific approach includes utilizing best management practices and application of science.

Economic analysis of livestock grazing on the Arizona Strip concluded that one AUM generates between \$35.96 to \$42.08 value of production and through the multiplier effect grazing contributes \$89.70 to the overall economy (Fletcher, 2006). Due to the close proximity and similar grazing management of the Arizona Strip, this economic data provides a good estimate of the livestock grazing economic impact to the GSENM. Over 75,000 AUMs on the monument equate to \$6.7 million in economic activity to Kane and Garfield Counties.

Baseline data required for range management is either incomplete or out of date. For example, BLM lacks comprehensive information on how much forage is produced and the amount of grazing now occurring. Evidence based grazing decisions are hampered by the current lack of adequate baseline data.

Planning criteria: Standards for Scientific Accuracy and Integrity.

The scoping newsletter says that the government will "review and use as appropriate current scientific information...". The quality and integrity of the information that BLM uses to inform its decisions on the

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contentious issue of grazing is critical to the success of this EIS effort. BLM should describe any supporting science that they rely on for analysis and recommended actions. It is equally important that BLM note decisions that are made without the support of science but reflect expert opinion or agency policy and direction. As much as is possible, the monument staff should use the published, peerreviewed information conducted in the Monument that concerns management methods, practices and decisions. The DOI Scientific and Scholarly Integrity Policy supports this approach:

"Scientific and scholarly information considered in Departmental decision making must be robust, of the highest quality, and the result of as rigorous scientific and scholarly processes as can be achieved. Most importantly, it must be trustworthy." DOI, Department Manual 305 DM 3 pg 1.

It's clear from many discussions we've had with Monument staff over the years that they routinely depend on their own observations in making resource decisions. In some cases these opinions are at odds with peer reviewed relevant scientific publications. There is no substitute for on-the-ground local knowledge, but it must be verified with objective, unbiased data and analysis. Where BLM relies on expert opinion for decisions, BLM should validate these opinions with verifiable and objective field data. This criteria requires that BLM and its contractors document the scientific and scholarly findings that were considered in decision making, and supply supporting information for decisions based on agency expertise and experience (i.e., "professional judgment").

Ensure that "in no circumstance may the public affairs officers ask or direct Federal scientists to alter scientific findings.[6]" Employees and consultants who engage in scientific and scholarly activities shall follow the conflict of interest policy and report interests that may impair the objectivity or create an unfair advantage to an interest. Other federal guidance supporting data integrity include:

- BLM Land Use Planning handbook (2005) which calls for increasing the use of quantitative data in all phases of management.
- 40 CFR 1502.24 Subsection 1.19 Methodology and Scientific Accuracy, which states that "conclusions about environmental effects will be preceded by an analysis that supports that conclusion unless explicit reference by footnote is made to other supporting documentation that is readily available to the public. Bureaus will also follow Departmental procedures for information quality as required under Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001(Pub.>106-554, 114 Stat. 2763."
- NLCS GSENM Management Plan Implementation Review (2010) page 3: "Renew the GSENM's commitment to a focus on science and science-based decision making, especially where natural and cultural resources are concerned."

[6] Department of the Interior. 2011. Department Manual, Integrity of Scientific and Scholarly Activities. 305 DM 3, page 3

Transparency is critical. All information should be readily available.

Livestock production is the backbone of Utah's agriculture industry, contributing more than 70 percent of our state's \$1.5 billion in farm gate sales. Food and agriculture contributes more than \$17 billion to Utah's economy, or more than 14 percent of the state's economic activity or GDP. This contribution is of greater significance to rural Utah. In recent years, Utah has become one of the most urban states in the nation. Our rural communities continue to struggle as economic investment is focused along the Wasatch Front.

Legitimate, locally based ranching interests are critical to rural communities. Agriculture, food production and processing along with other related industries are the catalyst for more than 80,000 Utah jobs and \$2.7 billion in wages.

From a micro economic standpoint important to Kane and Garfield Counties, it is important to recognize the impact of displacing even one single average sized cattle or sheep operation. Consider the following:

- Utah is a cow-calf cattle production state with cattle and calves contributing more than one-third of the state's farm gate sales. An average cow-calf operation with 500 mother cows creates a direct impact on the local economy of over \$400,000 based only on farm gate sales. This is based on a ninety-five percent calf crop, 550-600 pound feeder calves marketed at Producers Livestock Auction in the fall of 2013 at \$1.35 - \$1.50 per pound.

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- Livestock grazing in Southeast Utah is critical to the economic health of our rural communities. For each dollar through the sale of livestock, the multiplier effect in rural Utah communities is three to four times creating jobs and generating tax revenue.

- There are currently approximately 11,000 Animal Unit Months (AUMs) authorized by the BLM for livestock grazing on the Monument - or about 11,000 cow/calf pairs.

- The current price for feeder calves coming off Utah rangelands is around \$1.40-\$1.50 per pound. Assuming 10,000 feeder calves averaging 500-600 pounds per head are marketed from cattle grazing the GSENM, local cattle ranchers produce and market five million pounds of beef on the hoof with a farm sales value of \$7,000,000. In addition, economists estimate the cattle industry's ripple effect on the economy including fuel, equipment, vehicles, trucking and so on is two times the farm gates sales. Beef cattle raised on the Grand Staircase-Escalante National Monument are contributing more than \$14,000,000 to Kane & Garfield Counties as well as the state economy every year!

We assert the rangeland conditions within the monument be evaluated by properly trained staff such as professional BLM Area Rangeland Conservationists, with input conservation partners such as the local conservation district, USU Extension, and the Natural Resources Conservation Service (NRCS).

BLM should consider the benefits to the landscape offered by rotational grazing. Deseret Land and Livestock has successfully been managing under these guidelines for about 3 decades. There is currently work taking place on public lands in the 3 creeks area in Rich County.

Visit this link for more info. https://www.youtube.com/watch?v=_FEG2Q256yg

Attachment includes video.

I hope you are aware of the Grand Canyon Trust and its successful work at Kane and Two Mile Ranches with cattle and grazing, along with its other environmental experiences. The GCT seems to be making good sense with this issue. BLM has had time to make a positive impact in this area and has not done so.

All new and relevant information and data the BLM and NPS have gathered relating to impacts on the NRA's natural, cultural and recreational resources needs to be effectively integrated into the EIS and the final Livestock Grazing Plan Amendment.

References to Consider

* 2009 conservation community comments on BLM's 2008 GSENM grazing DEIS.

GrandStair_DEIS_conservation_comment_2009.pdf

ConservationGrazingAlternativeGSENM2003.pdf

* Catlin, J. J. Carter and A. Jones. 2011. Range management in the face of climate change. pp 207-248 in Monaco, Thomas et al. comps. 2011. Proceedings – Threats to Shrubland Ecosystem Integrity; 2010 May 18-20; Logan, UT. Natural Resources and Environmental Issues, Volume XVII. S.J. and Jessie E. Quinney Natural Resources Research Library, Logan Utah, USA.

Catlineal2011RangeManClimate20Sept2011layout.pdf

* Carter, J. 2009. Utilization, rest and grazing systems. Western Watersheds Project (unpublished).

Carter2009Utilization_regiew_I_09wwwp.pdf

* Carter, J. 2008. Updating the Animal Unit Month, Western Watersheds Project, (unpublished).

Carter2008updatingAUM.pdf

* Office of Hearings and Appeals 2013 ruling on the Duck Creek Appeal, UT -020-09-01.

OHA2013Decision.pdf

* WUP 2014 Duck Creek utilization monitoring, a comparison of key species and paired plot monitoring.

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

WUPBLMutilizationV4.pdf

WUP2013utilizatoin-fieldphotosDuckCreekv3r.pdf

* WWP 2013 review comments on revising TR 1737-15, lotic PFC assessments

Welp_wwp-PFD-TRcommenformlVB2013-023_att2_LWelp.pdf

* WUP 2013 review comments on revising TR 1736-15.

WUP2-13-blmcommentformlB2013-023_att2.xls

* Catlin, J. 2012. Comments on revising TR 1734-6, Interpreting Indicators for Rangeland Health.

WUP-IIRHcommentsFeb2012

* Carter. 2001. Grazing and water quality, Western Watersheds Project report, (unpublished)

Carter2001Water_quality_grazing.doc

References Cited

1. Final report available at: www.law.edu/wp-content/uploads/Sustainable--Grazing--So--UT--Final--Report.1231121.pdf

2. Bowker, M. A., M. E. Miller, and R. T. Belote. 2012. Assessment of rangeland ecosystem conditions, Salt Creek Watershed and Dugout Ranch, Southeastern Utah. USGS Open File Report 2012-1061. 56p.

3. Havstad, K. M., D. P. C. Peters, R. Skaggs, J. Brown, B. Bestelmeyer, E. Fredrickson, J. Herrick, and J. Wright. 2007. Ecological services to and from rangelands of the United States. *Ecological Economics* 64: 261--268.

4. Brown, J. and N. MacLeod. 2011. A site-based approach to delivering rangeland ecosystem services. *The Rangeland Journal* 33: 99--108.

5. Miller, M. E. 2008. Broad-scale assessment of rangeland health, Grand Staircase--Escalante National Monument, USA. *Rangeland Ecology and Management* 61(3): 249--262.

6. Painter, T. H., A. P. Barrett, C. C. Landry, J. C. Neff, M. P. Cassidy, C. R. Lawrence, K. E. McBride, and G. L. Farmer. 2007. Impact of disturbed desert soils on duration of mountain snow cover. *Geophysical Research Letters* 34: L12502, doi: 10.1029/2007GL030284.

7. Painter, T. H., S. M. Skiles, J. S. Deems, A. C. Bryant, and C. C. Landry. 2012. Dust radiative forcing in snow of the Upper Colorado River Basin. Part I. A 6-year record of energy balance, radiation, and dust concentrations. *Water Resources Research* 48: W07521, doi: 10.1029/2012WR011985.

8. Sayre, N. F. 2001. *The New Ranch Handbook: A Guide to Restoring Western Rangelands*. The Quivira Coalition, Santa Fe, NM. 102p.

9. Pellant, M., P. L. Shaver, D. A. Pyke, and J. E. Herrick. 2000. Interpreting indicators of rangeland health. Version 3. Denver, CO, USA. US Department of Interior, Bureau of Land Management, Interagency Technical Reference TR-1734-6. 118p.

10. Howell, E. A., J. A. Harrington, and S. B. Glass. 2012. *Introduction to Restoration Ecology*; Island Press. 418p.

11. Bramble, D. M. and J. C. Bramble. 2

11. Bramble, D. M. and J. C. Bramble. 2009. Vole-driven restoration of a riparian meadow complex on the Colorado Plateau, south-central Utah. In: Kitchen SG, Pendleton RL, Monaco TA and Vernon J, comps.

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Proceedings- Shrublands under fire: disturbance and recovery in a changing world; 2006 June 6--8; Cedar City, UT. Proc. RMRS--P--52. Fort Collins, CO: USDA, Forest Service, Rocky Mountain Forest and Range Experiment Station: 107--114.

12. West, N. E. 1999. Juniper--pinyon savannahs and woodlands of western North America. Pp. 288--308. In Savannahs, barrens, and rock outcrop communities of North America, ed. R.C. Anderson, J. S. Fralish, and J. M. Baskin. Cambridge, England: Cambridge University Press.

13. Floyd, M. L., W. H. Romme, and D. Hanna. 2000. Fire history and vegetation pattern in Mesa Verde National Park, Colorado, USA. *Ecological Applications* 10(6): 1666--1680.

14. Romme, W. H., C. Allen, J. Bailey, W. Baker, B. Bestelmeyer, P. Brown, K. Eisenhart, L. Floyd--Hanna, D. W. Kaufman, B. Jacobs, R. Miller, E. Muldavin, T. Swetnam, R. Tausch, and P. Weisberg. 2008. Historical and modern disturbance regimes, stand structures, and landscape dynamics in pinyon--juniper vegetation of the western U. S. Unpublished report. Fort Collins, Colorado. Forest Restoration Institute and Colorado State University.

15. Floyd, M. L., W. H. Romme, D. D. Hanna, M. Winterowd, and J. Spence. 2008. Fire history of pinyon--juniper woodlands on Navajo Point, Glen Canyon National Recreation Area. *Natural Areas Journal* 28: 26--36.

16. Floyd, M. L., W. H. Romme, and D. D. Hanna. 2003. Fire history. In, *Ancient Pinyon-Juniper Woodlands*, M. L. Floyd, ed. University of Colorado Press, pp. 261--277.

17. Baker, W. L. and D. J. Shinneman. 2004. Fire and restoration of pinyon--juniper woodland in the western United States: A review. *Forest Ecology and Management* 189: 1--21.

18. Shinneman, D. J., W. L. Baker, and P. Lyon. 2008. Ecological restoration needs derived from reference conditions for a semi--arid landscape in western Colorado, USA. *Journal of Arid Environments* 72: 207--227.

19. Pyke, D. A. and J. E. Herrick. 2003. Transitions in rangeland evaluations during the past 25 years and speculations about future evaluations. *Rangelands* 25: 22--30.

20. Briske, D. D., S. D. Fuhlendorf, and F. E. Smeins. 2005. State--and--transition models, thresholds, and rangeland health: a synthesis of ecological concepts and perspectives. *Rangeland Ecology and Management* 58: 1--10

Belnap, J. and Gardner, J. S. 1993. Soil microstructure in soils of the Colorado Plateau -The role of the cyanobacterium *Microcoleus vaginatus*. *Great Basin Naturalist* 53(1):40-47.

Belnap, Jayne, Rosentreter, Roger, Leonard, Steve, Kaltenecker, Julie Hilty, Williams, John and Eldridge, David. 2001. *Biological Soil Crusts: Ecology and Management*. BLM Technical Reference 1730-2 Denver, Colorado: U. S. Bureau of Land Management. 110p.

Bowker, M. A., Belnap, J., Chaudhary, V. B. and Johnson, N. C. 2008. Revisiting classic water erosion models in drylands: The strong impact of biological soil crusts. *Soil Biology & Biochemistry* 40(9):2309-2316.

Bowker, M. A., Belnap, J. and Miller, M. E. 2006. Spatial modeling of biological soil crusts to support rangeland assessment and monitoring. *Rangeland Ecology & Management* 59(5):519-529.

Bowker, M. A., Miller, M. E., Belnap, J., Sisk, T. D. and Johnson, N. C. 2008 . Prioritizing conservation effort through the use of biological soil crusts as ecosystem function indicators in an arid region. *Conservation Biology* 22(6):1533-1543.

Chaudhary, V. B., Bowker, M. A., O'dell, T. E., Grace, J. B., Redman, A. E., Rillig, M. C. and Johnson, N. C. 2009. Untangling the biological contributions to soil stability in semiarid shrublands. *Ecological Applications* 19(1):110-122.

Mack, R. N. and Thompson, J. N. 1982. Evolution in steppe with few large, hoofed mammals. *American Naturalist* 119(6):757-773.

Miller, M. E. 2008. Broad-scale assessment of rangeland health, Grand Staircase-Escalante National Monument, USA. *Rangeland Ecology & Management* 61(3):249-262.

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Pellant, Mike, Shaver, Patrick, Pyke, David A. and Herrick, Jeffrey E. 2005. Interpreting Indicators of Rangeland Health. BLM Technical Reference 1734-6. Version 4. Denver, Colorado: U. S. Bureau of Land Management. 122p .

Shinneman, D. J., Baker, W. L. and Lyon, P. 2008. Ecological restoration needs derived from reference conditions for a semi-arid landscape in western Colorado, USA. *Journal of Arid Environments* 72(3):207-227.

Van Haveren, B. P., Jackson, W. L. and Lusby, G. C. 1987. Sediment deposition behind Sheep Creek Barrier Dam, southern Utah. *Journal of Hydrology (N.Z.)* 26(2):185-196.

Van Haveren, B. P. Revisiting the Sheep Creek Barrier Dam, southern Utah. Publication in progress.

U. S. Bureau of Land Management. Grand Staircase-Escalante National Monument. 2014. Fact Sheet: Rangeland and Rangeland Management. URL: http://www.blm.gov/pgdata/etc/medialib/blm/ut/grand_staircase-escalante/planning/livestock_eis0.Par.89261.File.dat/20131206_LandHealth_508.pdf. Accessed January 10, 2014.

Appendix9_SustainableGrazingCollab_Final Report_2012.docx

BLM_DuckCreek_Decision_2013_05.pdf

Bowker_etal_2008_SoilStability.pdf

Bowker_etal_SpatialBSC_GSENM2006.pdf

ECONorthwest_Economic-Value-Beaver-Ecosystem-Services_2011-revised.pdf

Evangelista_etal_FireandBSC_2004.pdf

FinalSGAAnnotatedBibliography2013_01_13.pdf

Grazing_Economic_Analysis_Final_2008_05_24.pdf

Griswold_et_al_Bees_GSENM_1997.pdf

GSENM_NDVISummaryDocument_JAN132014.pdf

GSENMVegetationReport2013_11_25.pdf

Guenther_etal_Comparison_GrazedUn_PJ_2004.pdf

Harris_Asner_Spectroscopy_GrazingGradients_2003-1.pdf

Headwaters_GSENM_AllCounties_5-14-13.pdf

Headwaters_GSENM_UtahCounties_5-14-13.pdf

LacherSWAPBestPractices.pdf

Miller_2008_BroadscaleAssessmt_GSENM.pdf

NRCS_BSC_Rangeland_2001.pdf

Sustainable-Grazing-So-UT-FS-Final-Report.1231121-2.pdf

One example of assessing vulnerability to climate change was recently done for the planning process for BLM Alaska's NPR-A. See, Final NPR-A Integrated Activity Plan/EIS, Appendix C: https://www.blm.gov/epl-frontoffice/projects/nepa/5251/41008/43158/Vol6_NPR-A_Final_IAP_FEIS.pdf.

In addition, as part of BLM's "Landscape Approach to Managing the Public Lands," the agency has committed to completing Rapid Ecoregional Assessments (REA). See, Information Bulletin No. 2012-058. The Colorado Plateau REA should be used to assess baseline conditions and projections for climate change as it relates to livestock grazing.

Alvarez L, H Epstein, J Li, GS Okin. 2012. Aeolian process effects on vegetation communities in an arid grassland ecosystem. *Ecology and Evolution*: 1-13

Bagstad, K.J., Semmens, Darius, Winthrop, Rob, Jaworski, Delilah, and Larson, Joel, 2012, Ecosystem services valuation to support decisionmaking on public lands-A case study of the San Pedro River watershed, Arizona: U.S. Geological Survey Scientific Investigations Report 2012-5251, 93 p.
<http://pubs.usgs.gov/sir/2012/5251/sir2012-5251.pdf>

Belnap, J, MA Bowker, ME Miller, TD Sisk, and NC Johnson. 2008. Prioritizing conservation effort through the use of biological soil crusts as ecosystem function indicators in an arid region. *Conservation Biology* 12(3):45-53.

Belsky AJ, A Matzke, S Uselman. 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *Journal of Soil and Water Conservation* 54: 419-431.

Belsky AJ, JL Gelbard. 2000. Livestock Grazing and Weed Invasions in the Arid West. Unpublished. Bend, OR: Oregon Natural Desert Association.

Belnap, J, MA Bowker, ME Miller, TD Sisk, and NC Johnson. 2008. Prioritizing conservation through the use of

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

biological soil crusts as ecosystem function indicators in an arid region. <i>Conservation Biology</i> 12(3):45-53.
Beschta RL, DL Donahue, DA DellaSala, JJ Rhodes, JR Karr, MH O'Brien, TL Fleischner, C Deacon. 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. <i>Environmental Management</i> 51:474-491.
[BLM] Bureau of Land Management. 1999. Escalante Management Framework Plan and Approved Amendment.
[BLM] U.S. Bureau of Land Management. 2001. Rangeland Health Standards. H-4180-01. [BLM] U.S. Bureau of Land Management 2005a. Land Use Planning Handbook. H-1601-1.
[BLM] U.S. Bureau of Land Management, Prineville District Office. 2005b. Upper Deschutes Record of Decision and Resource Management Plan. Prineville, OR.
Bowker, MA, C Escolar, and FT Maestre. 2010. Biological crusts as a model system for examining the biodiversity ecosystem function relationship in soils. <i>Soil Biology & Biochemistry</i> : 42:405-417.
Bowker, MA, and J Belnap, VB Chaudhary, and NC Johnson. Revisiting classic water erosion models in drylands: The strong impact of biological soil crusts. <i>Soil Biology & Biochemistry</i> 40: 2309-2316.
Bowker, MA, J Belnap, and ME Miller. 2006. Spatial modeling of biological soil crusts to support rangeland assessment and monitoring. <i>Rangeland Ecological Management</i> 59:519-529.
Bowker, MA, ME Miller, and TR Belote. 2012. Assessment of rangeland ecosystem conditions, Salt Creek watershed and Dugout Ranch, southeastern Utah. U.S. Geological Survey. Open File Report 2012-1061: 56.
Bowker, MA, ME Miller, J Belnap, TD Sisk, and NC Johnson. 2008. Prioritizing conservation effort through the use of biological soil crusts as ecosystem function indicators in an arid region. <i>Conservation Biology</i> 22(6):1533-43.
Briske, DD, JD Derner, JR Brown, SD Fuhlendorf, WR Teague, KM Havstad, RL Gillen, AJ Ash, and WD Williams. 2008. Rotational Grazing on Rangelands: Reconciliation of Perception and Experimental Evidence. <i>Rangeland Ecology & Management</i> 61(1):3-17.
Buckley, M. 2011. The Economic Value of Beaver Ecosystem Services: Escalante River Basin, Utah. Portland, OR: ECONorthwest.
Carter J. 2013. Utilization, Rest And Grazing Systems - A Review. Unpublished literature revue. Yellowstone to Uintas Connection.
Castellano MJ, TJ Valone. 2007. Livestock, soil compaction and water infiltration rate: Evaluating a potential desertification recovery mechanism. <i>Journal of Arid Environments</i> 71 : 97-108.
[CEQ] Council on Environmental Quality. 1978 40 Code of Federal Regulations Parts 1500 to 1508.
[Collaborative] Collaborative Group on Sustainable Grazing for U.S. Forest Service Lands in Southern Utah. 2012. Final Report and Consensus Recommendations. http://www.law.utah.edu/wp-content/uploads/Sustainable-Grazing-So-UT-FS-Final-Report.123112.pdf
Deems JS, TH Painter, JJ Barsugli, J Belnap, and B Udall. 2013. Combined impacts of current and future dust deposition and regional warming on Colorado River Basin snow dynamics and Hydrology. <i>Hydrology and Earth System. Science</i> 10: 6237-6275.
deRoulhac, D. 2013(a). Grand Staircase-Escalante National Monument (GSENM) Exclosure Report. Flagstaff, AZ: Grand Canyon Trust. Accessed January 12, 2014 [http://www.grandcanyontrust.org/documents/ut_gsenm-FinalGSENMExclosureReport2013_12_23_.pdf]
deRoulhac D. 2013(b). Vegetation Representations in Grazed and Ungrazed Lands within Grand Staircase-Escalante National Monument. Flagstaff, AZ: Grand Canyon Trust. Accessed January 12, 2014 [http://www.grandcanyontrust.org/documents/ut_gsenm_vegetationReport2013.pdf]
Evangelista, P, D Guenther, T Stohlgren, and S Stewart. 2004. Fire effects on cryptobiotic soil crusts in the Grand Staircase-Escalante National Monument, Utah : 121-128 in van Riper III, C., and K. L. Cole (Eds.) <i>The Colorado Plateau: cultural, biological, and physical research</i> . Tucson, AZ: The University of Arizona Press.
Fleischner, T. 1994. Ecological costs of livestock grazing in western North America. <i>Conservation Biology</i> 8(3): 629-644.
Fernandez, DP, JC Neff, RL Reynolds. 2008. Biogeochemical and ecological impacts of livestock grazing in semi-arid southeastern Utah, USA. <i>Journal of Arid Environments</i> 72:777-791.
Fertig, W. 2009. Overview of the vegetation of Grand Staircase-Escalante National Monument. [Unpublished]
Fleischner, T. 1994. Ecological costs of livestock grazing in western North America. <i>Conservation Biology</i>

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

8(3):629-644
Gay, C, S Green, C Horman, M O'Brien [Ecological Indicators Subgroup"]. 2012. Simple Methods for Measuring Indicators of Ecologically Sustainable Grazing. Appendix 9 of Collaborative Group on Sustainable Grazing for U.S. Forest Service Lands in Southern Utah. Final Report and Consensus Recommendations.
Grand Staircase Escalante National Monument, Utah, Proclamation No. 6920. Federal Register Vol. 61(186):50223-50227.
Griswold, T, Parker, FD and VJ. Tepedino. 1997. The bees of the San Rafael desert: implications for the bee fauna of the Grand Staircase Escalante National Monument. Pp. 175 to 186, In: Learning From the Land: GSENM Science Symposium Proceedings. Cedar City, UT.
Guenther, DA, TJ Stohlgren, and P Evangelista. 2004. A comparison of a near-relict site and a grazed site in a pinyon-juniper community in the Grand Staircase - Escalante National Monument, Utah. Pages 153-162 in van Riper III, C., and K. L. Cole (Eds) The Colorado Plateau: Cultural, Biological, and Physical Research. Tucson AZ: The University of Arizona Press.
Harris, AT, and GP Asner. 2003. Grazing gradient detection with airborne imaging spectroscopy on a semi-arid rangeland Journal of Arid Environments 55: 391-40.
Headwaters Economics. 2012. Grand Staircase-Escalante National Monument, A Summary of Economic Performance in the Surrounding Communities. Accessed January 11, 2014 [http://headwaterseconomics.org/apps-public/national-monuments/2011-03/pdf/escalante.pdf]
Headwaters Economics. 2013a. A Profile of Agriculture: Grand Staircase-Escalante National Monument Counties; Coconino County AZ, Garfield County UT, Kane County UT. Bozeman MT.
Headwaters Economics. 2013b. A Profile of Agriculture: The Utah Counties Adjoining Grand Staircase-Escalante National Monument; Garfield County UT, Kane County UT. Bozeman MT.
Hoglander, C, and C Rivas. 2014. Initial Analysis of Change in Vegetation Productivity for the Grand Staircase Escalante National Monument, 1986-2011. Unpublished report. Flagstaff AZ: Grand Canyon Trust.
Holechek JL, H Gomez, F Molinar, and D Galt. 1999. Grazing studies: what we've learned. Rangelands 21(2):12-16.
Pellant, M, P Shaver, DA Pyke, and JE Herrick. 2000. Interpreting Indicators of Rangeland Health. Version 3. Technical Reference 1734-6. Produced by Information and Communications Group, National Science and Technology Center, Bureau of Land Management, United States Department of the Interior
Krueper D, J Bart, and Terrell D. Rich. 2003. Response of vegetation and breeding birds to the removal of cattle on the San Pedro River, Arizona (U.S.A.). Conservation Biology 17:607-615.
Lacher, I and ML Wilkerson. 2013. Wildlife connectivity approaches and best practices in U.S. State wildlife action plans. Conservation Biology. DOI: 10.1111/cobi.12204
Miller, ME, MA. Bowker, RL Reynolds, RL, and Goldstein, HL. 2012. Post-fire land treatments and wind erosion - Lessons from the Milford Flat Fire, UT, USA. Aeolian Research 7:29-44.
Miller, ME, TR Belote, MA Bowker, and SL Garman. 2011. Alternative states of a semiarid grassland ecosystem: implications for ecosystem services. Ecosphere 2(5):article 55.
Neff, JC, RL Reynolds, J Belnap, and P Lamothe. 2005. Multi-decadal impacts of grazing on soil physical and biogeochemical properties in southeast Utah. Ecological Applications 15(1): 87-95.
[NPS] National Park Service, U.S. Department of the Interior. 2006. Management Policies: The Guide to Managing the National Park System.
[NRCS] Natural Resources Conservation Service. 2001. Rangeland Soil Quality-Physical and Biological Soil Crusts. Rangeland Sheet 7.
[NRST] National Riparian Service Team. 2003. A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lentic Areas. U.S. Department of Interior, Bureau of Land Management. TR 1737-16.
O'Brien, JM, JH Thorne, ML Rosenzweig, and A Shapiro. 2011. Once-yearly sampling for the detection of trends in biodiversity: The case of Willow Slough, California. Biological Conservation 144:2012-2019.
Okin, G. S. (2008), A new model of wind erosion in the presence of vegetation, J. Geophys. Res., 113, F02S10, doi:10.1029/2007JF000758.
Peterson, EB. 2013. Regional-scale relationship among biological soil crusts, invasive annual grasses, and disturbance. Ecological Processes 2:2. Accessed January 2, 2014. [http://www.ecologicalprocesses.com/content/2/1/2]

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Reisner MD, JB Grace, DA Pyke and PS Doescher. 2013. Conditions favoring <i>Bromus tectorum</i> dominance of endangered sagebrush steppe ecosystems. <i>Journal of Applied Ecology</i> 50(4): 1039-1049
Rodrigo G, M Pol, C Sagario, L Marone. 2014. Grazing impact on desert plants and soil seed banks: Implications for seed-eating animals. <i>Acta Oecologica</i> 55: 58-65.
Schwinning, S, J Belnap, DR Bowling, and JR Ehleringer. 2008. Sensitivity of the Colorado Plateau to change: climate, ecosystems, and society. <i>Ecology and Society</i> . [online] http://www.ecologyandsociety.org/volXX/issYY/artZZ/
Stohlgren, TJ, DA Guenther, PH Evangelista, and N Alley. 2005. Patterns of plant species richness, rarity, endemism, and uniqueness in an arid landscape. <i>Ecological Applications</i> 15(2): 715-725.
Straube, M. 2009. Tushar Allotments Collaboration Final Report. http://projects.ecr.gov/tushar/pdf/FINALREPORT050209.pdf
[Trust] Grand Canyon Trust. 2008. Economic Analysis of Alternatives in Grazing EISs for the Beaver Ranger District. Unpublished.
[USDI] U.S. Department of the Interior. 1999a. Grand Staircase-Escalante National Monument Management Plan. Bureau of Land Management, Cedar City UT.).
[USDI] U.S. Department of Interior, Bureau of Land Management. 1999b. Escalante Management Framework Plan Approved Amendment.
U.S. Department of Interior, Bureau of Land Management Manual 43 CFR § H-4180-1 (2001) http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.61484.File.dat/h4180-1.pdf [Accessed on October 22, 2013]
[USDI] U.S. Department of Interior. Bureau of Land Management. 43 CFR 4100, Final Rule. 2005. http://www.blm.gov/grazing/final/AD42FinalClean062106.pdf
[USDI] U.S. Department of Interior, Grand Staircase-Escalante National Monument. 2008. Draft Rangeland Health Environmental Impact Statement (EIS)
[USDI] U.S. Department of Interior. Bureau of Land Management. Toews GR, JJ Taylor, CS Spurrier, WC MacKinnon, and MR Bobo. 2011. Assessment, Inventory, and Monitoring Strategy: For integrated renewable resources management.
[USDI] U.S. Department of Interior, Bureau of Land Management. 2012. Colorado Plateau Rapid Ecological Assessment Report. Accessed January 3, 2014 [http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach/reas/coloplateau.html#mem_o]
Wilson, JS, OJ Messenger, and T. Griswold. 2009. Variation between bee communities on a sand dune complex in the Great Basin Desert, North America: Implications for sand dune conservation. <i>Journal of Arid Environments</i> 73:666-671.
Wolf D. 2006. Rangeland Health Determination. Grand Staircase Escalante National Monument, BLM.
[WWP v. ELM 2013] Western Watersheds Project and Wild Utah Project v. BIM. May 16, 2013. Order. UT-20_09_01

Burritt, B. (2009). BEHAVE -- Behavior Education for Human, Animal, Vegetation and Ecosystem Management. Retrieved Jan 13, 2014, from http://extension.usu.edu/behave/htm/principles .
Fletcher, R. B. (2006). Economic Impacts of Livestock Grazing and Recreation on the Arizona Strip. St. George, Utah: Arizona Strip Steering Committee.
Heaton, K. G. (2000). The dependency of livestock operators on the Grand Staircase Escalante National Monument. Panguitch, UT: Utah State University Extension Garfield County.
Krueger, W. S. (2002). Environmental impacts of livestock grazing on U.S. Grazing Lands. Council for Agricultural Science and Technology, 1-15.
Miller, L. (2012). Garfield County School District Enrollment Numbers. Panguitch: Garfield County School District.

A detail of these key principles and other grazing management strategies are outlined at <http://www.ag.utah.gov/documents/GIPgrazingprinciples.pdf>

Appendices to Letter:

Appendix A Collaboration consultation cooperation and interested public
Assembled by Jonathan Ratner, Western Watersheds Project, 2010

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Appendix B Carter, John. 2008. Updating the Animal Unit Month.

Appendix C Best Management Practices, lands capable and suitable for livestock grazing, livestock grazing carrying capacity analysis methods.

Appendix D Vegetation treatments

Appendix E. Vegetation Decisions in the Monument Management Plan

Appendix F Desired Plant Community and Potential Natural Community

Appendix G Biological Soil Crust Biology and Management

Appendix H Minimizing Dust Production

[1] BLM. 2006. Rangeland Health Determinations dated July 18, 2006.

[2] Proclamation 6920—Establishment of the Grand Staircase-Escalante National Monument September 18, 1996 By the President of the United States of America

[3] US Department of Interior, Bureau of Land Management Land Use Planning Handbook: BLM Handbook H-1601-I, Appendix CIIB. Livestock Grazing. P 14.

[4] http://www.defenders.org/sites/default/files/publications/protecting_people_property_and_predators.pdf

[5] Feller, J.M. 1996. The Comb Wash case: the rule of law comes to the public rangelands. Public Land & Resources Law Review. 27 p. Available at: <https://app.box.com/s/2cyjtpkax32n2505bsu9>

[6] NRCS. 2003. National Range and Pasture Handbook. US Department of Agriculture, Natural Resources Conservation Service. P 5.2-18.

[7] Pinchak, W.E., M.A. Smith, R.H. Hart, and J.W. Waggoner, Jr. 1991. Beef cattle distribution patterns on foothill range. Journal of Range Management 44:267-275.

[8] Gillen, R.I., W.C. Krueger, and R.F. Miller. 1984. Cattle distribution on mountain rangeland in northeastern Oregon. Journal of Range Management 37:549-553.

[9] Galt, D., F. Molinar, J. Navarro, J. Joseph, J. Holechek. 2000. Grazing capacity and stocking rate. Rangelands 22(6): 7-11.

[10] Holechek, J.L., R.D. Pieper and C. Herbel. 2004. Range Management Principles and Practices – Fifth Edition. Pearson-Prentice-Hall, New Jersey. 607 p.

[11] NRCS. 2003. National Range and Pasture Handbook. US Department of Agriculture, Natural Resources Conservation Service. Table 3-12. P. 5.3-1.

[12] Mack, R. N., and J. N. Thompson. 1982. Evolution in steppe with few large, hooved mammals. The American Naturalist 119:757-773.

[13] Ladyman, J.A.R., and E. Muldavin. 1996. Terrestrial cryptogams of pinyon-juniper woodlands in the southwestern US: a review. Fort Collins, CO, USA: US Department of Agriculture, Forest Service, RM-GTR-280. 33 p.

[14] Belnap, J., D. Eldridge, J.H. Kaltenecker, S. Leonard, R. Rosentreter, J. Williams. 2001. Biological soil crusts ecology and management. Denver, CO, USA: US Department of Interior. Bureau of Land Management. TR-1730-2.

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

118p.

[15] Belnap, J. 1994. Potential role of cryptobiotic soil crust in semi-arid rangelands. In: S. B. Monsen and S. G. Kitchen [ed.]. Proceedings-ecology and management of annual rangelands: 18-20 May 1992; Boise, ID, USA. Ogden, UT, USA: US Department of Agriculture. Forest Service, INT-GTR-313. p. 179-185.

[16] Kleiner, E.F., and Harper, K.T. 1972. Environment and community organization in grasslands of Canyonlands National Park. *Ecology* 53:299-309.

[17] Floyd, M. Lisa, Thomas L. Fleischner, David Hanna, Paul Whitefield. 2003. Effects of historic livestock grazing on vegetation at Chaco Culture National Historic Park, New Mexico. *Conservation Biology* 17:1703–1711.

[18] Ponzetti, Jeanne M. and Bruce McCune. 2001. Biotic soil crusts of Oregon's shrub steppe: community composition in relation to soil chemistry, climate, and livestock activity. *The Bryologist* 104: 212-225.

[19] Belsky, A.J., A. Matzke and S. Uselman. 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *Journal of Soil and Water Conservation* (419- 431).

[20] White, Richard K., Robert W. VanKeuren, Lloyd B. Owens, William M. Edwards and Robert H. Miller. 1983. Effects of livestock pasturing on non-point surface runoff. Project Summary, Robert S. Kerr Environmental Research Laboratory, Ada, Oklahoma. EPA-600/S2-83-011. 6p.

[21] Trimble, S.W. and A. C. Mendel. 1995. The cow as a geomorphic agent, a critical review. *Geomorphology* 13:233-253.

[22] Warren, S.D.; M.B. Merrill; W.H. Blackburn and N.E. Garza. 1985. Soil response to trampling under intensive rotation grazing. *Soil Sci. Soc. of Amer. Journal*, 50: 1336-1341.

[23] Ellison, L. 1960. Influence of grazing on plant succession of rangelands. *Botanical Review* 26: 1-78.

[24] Cottam, W.P., and F.R. Evans. 1945. A comparative study of the vegetation of grazed and ungrazed canyons of the Wasatch Range, Utah. *Ecology* 26:171-181.

[25] Gardner, J.L. 1950. The effects of thirty years of protection from grazing in desert grassland. *Ecology* 31:44-50.

[26] Lusby, Gregg C. 1979. Effects of Grazing on Runoff and Sediment Yield from Desert Rangeland at Badger Wash in Western Colorado, 1953-1973. Geological Survey Water Supply Paper 1532-1 prepared in cooperation with BLM.

[27] Kauffman, J.B., Krueger, W.C. and M. Vavra. 1983. Effects of late season cattle grazing on riparian plant communities. *J Range Manage* 36:685-691.

[28] Gifford, G.F. and R.H. Hawkins. 1978. Hydrologic impact of grazing on infiltration: a critical review. *Water Resources Research* 14: 305-313.

[29] Fleischner, T. L. 1994. Ecological costs of livestock grazing in western North America. *Conservation Biology* 8: 629-644.

[30] Jones, A.L. 2000. Effects of cattle grazing on North American arid ecosystems: a quantitative review. *Western North American Naturalist* 60: 155-164.

[31] Sutcliffe, K. 2005. Soil Survey of Grand Staircase-Escalante National Monument Area, Parts of Kane and

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Garfield Counties, Utah. US Department of Agriculture, Natural Resources Conservation Service in cooperation with US Department of the Interior, US Bureau of Land Management, Utah Agricultural Experiment Station, Utah Soil Conservation Commission, and Utah Association of Conservation Districts. 578 p.

[32] Kleiner, E.F. and K.T. Harper. 1972. Environment and community organization in grasslands of Canyonlands National Park. *Ecology* 53:299-309.

[33] Renard, K.G., G.R. Foster, G.A. Weesies, D.K. McCool, and D.D. Yoder. 1997. Predicting soil erosion by water: a guide to conservation planning with the revised universal soil loss equation (RUSLE). US Department of Agriculture, Agriculture Handbook No. 703. 404 p.

[34] <http://www.ars.usda.gov/Research/docs.htm?docid=6014>

[35] Belsky, A. J. and J. L. Gelbard. 2000. Livestock grazing and weed invasions in the arid west. Oregon Natural Desert Association. Bend, OR. 34p.
http://www.publiclandsranching.org/htmlres/PDF/BelskyGelbard_2000_Grazing_Weed_Invasions.pdf.

[36] Reisner, Michael D., James B. Grace, David A. Pyke and Paul S. Doescher. 2013. Conditions favoring *Bromus tectorum* dominance of endangered sagebrush steppe ecosystems. *Journal of Applied Ecology* p1-11.

[37] Western Regional Climate Center, 2215 Raggio Parkway, Reno, NV 89512-1095. <http://www.wrcc.dri.edu>

[38] Blaisdell, James P. and Ralph C. Holmgren. 1984. Managing Intermountain Rangelands – Salt-Desert Shrub Ranges. USDA Forest Service, Intermountain Forest and Range Experiment Station, Ogden, Utah. General Technical Report INT-163. 52p.

[39] Hutchings, S.S. and G. Stewart. 1953. Increasing forage yields and sheep production on Intermountain winter ranges. U.S. Department of Agriculture Circular 925. 63p.

[40] Holechek, Jerry L., Rex D. Pieper and Carlton H. Herbel. 2001. Range Management: Principles and Practices, Fourth Edition. Prentice-Hall, New Jersey. 587p.

[41] Sharp, Lee A., Ken Sanders and Neil Rimbey. 1992. Variability of crested wheatgrass production over 35 years. *Rangelands* 14(3):153-168.

[42] USDA. 2004. Site number 035XY212UT. Available at:
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ut/technical/?cid=nrcs141p2_034190

[43] Carter, J. 2008. Updating the Animal Unit Month. Available for download at:
<https://app.box.com/s/95f2ff0a89104d164ab5>

[44] USDA Natural Resources Conservation Service. 2003. National Range and Pasture Handbook Revision 1, Chapter 6. Grazing Lands Technology Institute.

[45] Schwan, H.E., Donald J. Hodges and Clayton N. Weaver. 1949. Influence of grazing and mulch on forage growth. *Journal of Range Management* 2(3):142-148.

[46] Dyksterhuis, E. J. 1949. Condition and management of range land based on quantitative ecology. *Journal of Range Management* 2:104-115.

[47] Hutchings, S.S. and G. Stewart. 1953. Increasing forage yields and sheep production on Intermountain winter ranges. U.S. Department of Agriculture Circular 925. 63p.

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

-
- [48] Crider, Franklin J. 1955. Root-growth stoppage resulting from defoliation of grass. Technical Bulletin No. 1102. USDA Soil Conservation Service. 23p
- [49] Galt, Dee, Greg Mendez, Jerry Holechek and Jamus Joseph. 1999. Heavy winter grazing reduces forage production: an observation. *Rangelands* 21(4):18-21.
- [50] Holechek, Jerry L., Milton Thomas, Francisco Molinar and Dee Galt. 1999. Stocking desert rangelands: what we've learned. *Rangelands* 21(6):8-12
- [51] Holechek, Jerry L., Dee Galt, Jamus Joseph, Joseph Navarro, Godfrey Kumalo, Francisco Molinar, and Milt Thomas. 2003. Moderate and light cattle grazing effects on Chihuahuan Desert rangelands. *Journal of Range Management* 56:133-139.
- [52] Holechek, Jerry L., Rex D. Pieper and Carlton H. Herbel. 2004. *Range Management: Principles and Practices*, Fifth Edition. Table 8.8. Prentice-Hall, New Jersey. 607p.
- [53] Reynolds, R.T., R.T. Graham, M.H. Reiser, R.L. Bassett, P.L. Kennedy, D.A. Boyce, Jr., G. Goodwin, R. Smith, and E.L. Fisher. 1992. Management Recommendations for the Northern Goshawk in the Southwestern United States. Gen. Tech. Rep GTR-RM-217, Fort Collins, Colorado. U.S. Department of Agriculture, Rocky Mountain Forest and Range Experiment Station. 90p.
- [54] Carter, J., B. Chard and J. Chard. 2011. Moderating livestock grazing effects on plant productivity, carbon and nitrogen storage. In: Monaco, T.A. et al [eds.]. *Proceedings of the 17th Wildland Shrub Symposium: 18-20 May 2010: Logan, Ut, USA*. P. 191-205.
- [55] McGinty, Allan. 2000. Reference Guide for Texas Ranchers. Agrilife Extension, Texas A&M University.
- [56] White, L.D. and A. McGinty. 1997. Stocking rate decisions: Key to successful ranching. Texas A & M Res. Ext. Serv. Publ. 13-5036. <http://texnat.tamu.edu/library/publications/stocking-rate-decisions/>
- [57] White, L.D. and T.R. Troxel. 1989. Balancing Forage Demand with Forage Supply. Agrilife Extension, Texas A&M University. Publication B-1606.
- [58] USDA Natural Resources Conservation Service. 1997. *National Range and Pasture Handbook*. Chapter 5.
- [59] Holechek, Jerry L., Hilton de Souza Gomes, Francisco Molinar and Dee Galt. 1998. Grazing intensity: critique and approach. *Rangelands* 20(5):15-18.
- [60] Holechek, Jerry L., Hilton Gomez, Francisco Molinar and Dee Galt. 1999. Grazing studies: what we've learned. *Rangelands* 21(2):12-16
- [61] Van Poollen, H.W. and J. R. Lacey. 1979. Herbage response to grazing systems and stocking intensities. *Journal of Range Management* 32:250-253.
- [62] Holechek, Jerry L., Hilton Gomez, Francisco Molinar, Dee Galt and Raul Valdez. 2000. Short-duration grazing: The facts in 1999. *Rangelands* 22(1):18-22.
- [63] Clary, Warren P and Bert F. Webster. 1989. Managing Grazing of Riparian Areas in the Intermountain Region. USDA Forest Service GTR-INT-263.
- [64] D. D. Briske, J. D. Derner, J. R. Brown, S. D. Fuhlendorf, W. R. Teague, K. M. Havstad, R. L. Gillen, A. J. Ash, and W. D. Willms. 2008. Rotational grazing on rangelands: reconciliation of perception and experimental evidence.
-

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Rangeland Ecology and Management 61:3-17.

[65] Pinchak, W.E., Michael A. Smith, Richard H. Hart, and James W. Waggoner. 1991. Beef cattle distribution patterns on foothill range. *Journal of Range Management*. 44(3):267-275.

[66] Clary, Warren P and Bert F. Webster. 1989. Managing Grazing of Riparian Areas in the Intermountain Region. USDA Forest Service GTR-INT-263.

[67] Gillen, R.L., W.C. Krueger and R.F. Miller. 1984. Cattle distribution on mountain rangeland in Northeast Oregon. *J Range Management* 37(6):549 – 553.

[68] Gillen, R.L., W.C. Krueger and R.F. Miller. 1985. Cattle use of riparian meadows in the Blue Mountains of Northeastern Oregon. 38(3):205-209.

[69] Platts, W.S. 1991. Livestock Grazing. In *Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats*. American Fisheries Society Special Publication 19:389-423.

[70] Schulz, Terri T and Wayne C. Leininger. 1990. Differences in riparian vegetation structure between grazed areas and exclosures. *Journal of Range Management* 43(4):295-299.

[71] Kauffman, J. Boone, Andrea S. Thorpe, and E. N. Jack Brookshire. 2004. Livestock exclusion and belowground ecosystem responses in riparian meadows of eastern Oregon. *Ecological Applications* 14(6):1671-1679.

[72] Hormay, A. L. and M. W. Talbot. 1961. Rest-rotation Grazing – A New Management System for Perennial Bunchgrass Ranges. USDA Forest Service Production Research Report No. 51.

[73] Anderson, Loren D. 1991. Bluebunch wheatgrass defoliation, effects and recovery – A Review. BLM Technical Bulletin 91- 2, Bureau of Land Management, Idaho State Office.

[74] Mueggler, W.F. 1975. Rate and pattern of vigor recovery in Idaho fescue and Bluebunch wheatgrass. *Journal of Range Management* 28(3):198-204.

[75] Eckert Jr., Richard E. and John S. Spencer. 1986. Vegetation response on allotments grazed under rest-rotation management. *Journal of Range Management* 39(2):166-174.

[76] Eckert Jr., Richard E. and John S. Spencer. 1987. Growth and reproduction of grasses heavily grazed under rest-rotation management. *Journal of Range Management* 40(2):156-159

[77] Anderson, Jay E. and Karl L. Holte. 1981. Vegetation development over 25 years without grazing on sagebrushdominated rangelands in southeastern Idaho. *Journal of Range Management* 34(1):25-29

[78] Anderson, Jay E. and Richard S. Inouye. 2001. Landscape-scale changes in plant species abundance and biodiversity of a sagebrush steppe over 45 years. *Ecological Monographs* 71(4):531-556.

[79] Holechek, Jerry L., Rex D. Pieper and Carlton H. Herbel. 2001. *Range Management: Principles and Practices*, Fourth Edition. Prentice-Hall, New Jersey. 587p

[80] Holechek, J.L., R.D. Pieper and C. Herbel. 2004. *Range Management Principles and Practices – Fifth Edition*. Pearson- Prentice-Hall, New Jersey. 607p

[81] Rinehart, S.M. and A.F. Zimmerman. 2001. The Bullseye Study: A Quantitative and Qualitative Assessment of Vegetation Community Characteristics Observed as a Function of Distance from Water on the Little Missouri

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

National Grassland, Western North Dakota. 34p. U.S. Forest Service Region I, Missoula, Montana.

References:

[2] Young, J.A., R.A. Evans, P.T. Tueller. 1976. Great Basin Plant Communities-Pristine and Grazed. Nevada Arch Survey Res. Paper #6.

Reveal, J.L. 1979. Biogeography of the Intermountain Region: A speculative appraisal. *Mentzelia* #4.

Mack, R.N., and J.N. Thompson. 1982. Evolution in a Steppe with few large hoofed animals. *American Naturalist* 119:757-773. Daubenmire, R.E 1985. The western limits of the range of American bison. *Ecology* 66:622-629.

Burkhardt, J.W. 1995. Herbivory in the Intermountain West, an overview of evolutionary history, historic cultural impacts, and lessons from the past. Station Bulletin 58, Idaho Forest, Wildlife and Range Experimental Station, University of Idaho.

[3] Power, T. 2002. Measuring the Relative Economic Importance of Grazing on Federal Lands. In: Wuerthner, George and Mollie Matteson. 2002. *Welfare ranching: the subsidized destruction of the west*. Island Press. p. 263-269.

[4] Contact Robert Winthrop, PhD, Senior Social Scientist, Bureau of Land Management.

[5] Power, T. M. 2004. The Fiscal Impacts of Closing Certain Federal Grazing Allotments in the Grand Staircase-Escalante National Monument. Economic Department, University of Montana. (unpublished)

[6] Department of the Interior. 2011. Department Manual, Integrity of Scientific and Scholarly Activities. 305 DM 3, page 3

[7] BLM 2007 Collaboration desk guide, 31 pages

[8] Presidential Executive Order 13352, 26 August 2004

[9] Department of the Interior's Environmental Statement Memorandum (EMS) No. EMS03-4, Procedures for Implementing Public Participation and Community-Based Training.

The Department of the Interior's Environmental Statement Memorandum (EMS) No. EMS03-7, Procedures for Implementing Consensus-Based Management in Agency Planning and Operations.

BLM Instruction Memorandum No. 2005-237, New Department of the Interior Requirements; Use and Further Distribution of A Desk Guide to Cooperating Agency Relationships.

[10] BLM 2005. land use planning manual (public), H1601-1, Appendix F page 1

[11] IBID, Appendix F, Page 6

[12] BLM. 2013. Grand Staircase-Escalante National Monument Livestock Grazing Plan Amendment EIS Scoping Newsletter, November 2013

[13] Trimble, S. W., A. C. Mendel. 1995. The cow as a geomorphic agent- a critical view. *Geomorphology* 13:233-253.

[14] 2009 conservation community comments on BLM's 2008 GSENM grazing DEIS.

[15] Holechek, J. L., R. D. Pieper, and C. H. Herbel. 2000. Range management, principles and practices. Fourth

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

edition. Prentice hall.

[16] Briske, D. D., J. D. Derner, J. R. Brown, S. D. Fuhlendorf, W. R. Teague, K. M. Havstad, R. L. Gillen, A. J. Ash, and W. D. Willms. 2008. Rotational Grazing on Rangelands: Reconciliation of Perception and Experimental Evidence. *Rangeland Ecology and Management* 6:12-17 (January).

[17] BLM. 2008. GSENM grazing planning amendment, DEIS, Appendix A and Monument AMPs

[18] Same as 15.

[19] Lacey, J., E. Williams, J. Roller, and C., Marlow. 1994. A guide for planning, analyzing, and balancing forage supplies with livestock demand. Montana State University Extension Service Publication E13-101.

[20] White, M.F., A. McGinty. 1997. Stocking rate decisions. Texas A&M Agricultural Extension Service Publication B5036.

[21] Johnson, P.W., G. M. McKeon, and K. A. Day. 1996. Objective "safe" grazing capacities for southwest Queensland Australia: Development of a model for individual properties *Rangeland Journal* 18(2):244-258.

[22] United States Department of Agriculture-Natural Resources Conservation Service. 1997 Range and pasture handbook. Washington, D.C.

[23] Office of Hearings and Appeals. 2013. Ruling on Appeal UT-020-09-01, BLM's decision on the Duck Creek Allotment grazing permit renewal.

[24] Department of the Interior, Office of Hearings and Appeals. 2013. Order of appeal UT-020-09-01, Appeal and petition for stay of Currier acting assistant field manager's final decision dated September 12, 2008 involving the Duck Creek Allotment, Salt Lake Field Office, Utah

[25] See comments submitted to BLM during their peer review process for revision of TR 1737-15, lotic PFC assessments, and TR 1734-6 Interpreting Indicators for Rangeland Health.

[26] Miller, M. 2005. Unpublished data.

[27] Catlin, J., J. Carter and A. Jones. 2011. Range management in the face of climate change. Pp 207-248 in Monaco, Thomas et al. comps. 2011. Proceedings – Threats to Shrubland Ecosystem Integrity; 2010 May 18-20; Logan, UT. Natural Resources and Environmental Issues, Volume XVII. S.J. and Jessie E. Quinney Natural Resources Research Library, Logan Utah, USA.

[28] Natural Resources Conservation Service. 2006. National Range and Pasture Handbook. Washington, D.C. pg 4-25

[29] Carter. 2001. Grazing and water quality, Western Watersheds Project report, (unpublished)

[30] Catlin, J., E. Vesquez, A. Jones. 2012. Piñon-juniper forest and sagebrush steppe, Cedar City Resource Management Plan

[31] Baker, W.L. and D.J. Shinneman. 2004. Fire and restoration of piñon-juniper woodlands in the western United States: a review. *Forest Ecology and Management* 189:1-21

[32] BLM. 2005. Handbook 1601-1 - land use planning handbook (public), Appendix F, page 6

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

-
- [35] Adopted from the Collaborative Group on Sustainable Grazing for the U.S. Forest Service Lands in Southern Utah, <http://www.law.utah.edu/wp-content/uploads/Sustainable-Grazing-So-UT-FS-Final-Report.1231121.pdf>
- [36] Wyman, S., D. Bailey, M. Borman, S. Cote, J. Eisner, W. Elmore, B. Leinard, S. Leonard, F. Reed, S. Swanson, L. Van Riper, T. Westfall, R. Wiley, and A. Winward. 2006. Riparian area management: Grazing management processes and strategies for riparian-wetland areas. Technical Reference 1737-20. BLM/ST/ST-06/002+1737. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. Appendix F
- [37] Bartlett, E.T., W.C. Leininger, and L.R. Roath. No date. Planning for drought on Colorado rangeland. Service in Action. Colorado State University Cooperative Extension, No. 6.103.
- Howery, L. 1999. Rangeland management before, during, and after drought. University of Arizona Cooperative Extension, AZ1136.
- Molinar, F., D. Galt, and J. Holechek. 2001. Managing for mulch. *Rangelands* 23(4):3-7.
- [38] National Climatic Data Center, National Oceanic and Atmospheric Administration. 2014. North American Drought Monitor, <http://www.ncdc.noaa.gov/temp-and-precip/drought/nadm/nadm-maps.php>
- [39] Agnew, C. T., "Using the SPI to Identify Drought" (2000). *Drought Network News* (1994-2001). Paper 1. <http://digitalcommons.unl.edu/droughtnetnews/>
- [40] Feller, J. 1996. The Comb Wash case: the rule of law comes to the public rangelands. 17 *Pub. Land & Resources* L. Rev 25.
- [41] Soil Conservation Service, U.S. Department of Agriculture. 1973. Land-capability classification, *Agricultural Handbook*.
- [42] Carter, J. 2014. GSENM livestock grazing plan amendment scoping comments. Yellowstone to Uintas Connection.
- [43] (Belnap, J., R Rosentreter, S. Leonard, J. Hilty Kaltenecker, J. Williams, and D. Eldridge. 2001c. Biological Soil Crusts: Ecology and Management. BLM Technical Reference 1730-2)
- Rosentreter, R, M. Bowker, and J. Belnap. 2007. A field guide to biological soil crusts and western U.S. drylands. U.S. Government Printing Office, Denver, CO.)
- [44] Grand Canyon Parashant MMP regarding species status plants (MA-TE-20)
- [45] IBID MMP MA-TE-75
- [46] http://www.blm.gov/ut/st/en/prog/grazing/range_program_glossary.print.html, 2014
- [47] Carter, J. 2009. Utilization, rest and grazing systems. Western Watersheds Project (unpublished).
- [48] Same as 15.
- [49] Same as 41.
- [50] Same as 42.
- [51] Same as 15.
-

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

[52] Catlin, J. J. Carter. J. Jones 2003. Appendix B: a science based tool for assessing available forage and carrying capacity of GSENM allotments to meet rangeland health standards. Section 2.3.
<http://www.rangenet.org/directory/jonesa/sulrprec/appendixb.html>

[53] Williams, B. K., R. C. Szaro, and C. D. Shapiro. 2007. Adaptive Management: The U.S. Department of the Interior Technical Guide. Adaptive Management Working Group, U.S. Department of the Interior, Washington, DC.

[54] Grant-Hoffman, M. Nikki, Amanda Clements, Anna Lincoln and James Dollerschell. 1989. Crested wheatgrass (*Agropyron cristatum*) seedings in Western Colorado: What can we learn? Management of Biological Invasions (2012) Volume 3, Issue 2: 89–96 doi: <http://dx.doi.org/10.3391/mbi.2012.3.2.03>

Biological Soil Crust: (Appendix G)

Anderson, D.C., and S.R. Rushforth. 1976. The cryptogam flora of desert soil crusts in southern Utah, U.S.A. Dept of Botany and Range Science, Brigham Young University.

Belnap J (1993) Recovery rates of cryptobiotic crusts: inoculant use and assessment methods. Great Basin Nat 53:89–95

Belnap J, Gillette DA (1997) Disturbance of biological soil crusts: impacts on potential wind erodibility of sandy desert soils in southeastern Utah. Land Degrad Dev 8:355–362

Belnap J, Gillette DA (1998) Vulnerability of desert biological soil crusts to wind erosion: the influence of crust development, soil texture, and disturbance. J Arid Environ 39: 133–142.

Belnap, J and O.L. Lange, eds. 2001. Biological soil crusts: structure, function, and management. Springer-Verlag: Berlin.

Belnap, J. 2003. The world at your feet: desert biological soil crusts. Frontiers in Ecology and the Environment 1: 181–189.

Belnap, J. 1993. Recovery rates of cryptobiotic crusts: Inoculant use and assessment methods. Great Basin Naturalist 53(1):89-95.

Belnap, J. 2003. The world at your feet: desert biological soil crusts. Front Ecol Environ 2002; 1(5):181-189.

Belnap, J. and D. Eldridge. 2001. Disturbance and recovery of biological soil crusts. In: Belnap, J and O.L. Lange (eds). Biological soil crusts: structure, function, and management. Springer-Verlag, Berlin. Pp 363-383.

Belnap, J. and D.A. Gillette. 1997. Disturbance of biological soil crusts: impacts on potential wind erodibility of sandy desert soils in southeastern Utah. Land Degrad Dev 8:355-62.

Belnap, J., R. Rosentreter, S. Leonard, J. Hilty Kaltenecker, J. Williams, and D. Eldridge. 2001a. Biological Soil Crusts: Ecology and Management. BLM Technical Reference 1730-2.

Belnap, J., R. L. Reynolds, M. C. Reheis, S. L. Phillips, F. E. Urban, and H. L. Goldstein. 2009. Sediment losses and gains across a gradient of livestock grazing and plant invasion in a cool, semi-arid grassland, Colorado Plateau, USA. Aeolian Research 1:27-43.

Belnap, J., R. Prasse, and K.T. Harper. 2001b. Influence of biological soil crusts on soil environments and vascular plants. IN: Belnap, J and Lange OL (eds). Biological soil crusts: structure, function, and management. Berlin: Springer-Verlag.

Beymer, R.J., and J.M. Klopatek. 1991. Potential contribution of carbon by microphytic crusts in pinyon-juniper woodlands. Arid Soil Res Rehab 5:187-198.

Bowker, M.A., J. Belnap, and M.E. Miller. 2006. Spatial modeling of biological soil crusts to support rangeland assessment and monitoring. Rangeland Ecol Manage 59:519-529.

Bowker, M. 2001. Preliminary Report: Distribution and composition of biological soil crusts in Grand Staircase-Escalante National Monument, Utah. Unpublished report. Grand Staircase- Escalante National Monument, Kanab, UT.

Bowker, M. SC Reed, J Belnap, and S Phillips. 2002. Temporal variation in community composition, pigmentation, and Fv/Fm of desert cyanobacterial soil crusts. Microbial Ecology 43:13-25.

Bowker, M.A., and J. Belnap. 2008. A simple classification of soil types as habitats of biological soil crusts on the Colorado Plateau, USA. Jour. Of Veg Science.

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

-
- Bowker, M.A., J. Belnap, V. B. Chaudhary, and N.C. Johnson. 2008a. Revisiting classic water erosion models in drylands: the strong impact of biological soil crusts. *Soil Biology and Biocemistry* 1-8.
- Bowker, M.A., Miller, M.E., and Belote, R.T., 2012, Assessment of rangeland ecosystem conditions, Salt Creek watershed and Dugout Ranch, southeastern Utah: U.S. Geological Survey Open-File Report 2012-1061, 56 p
- Bureau of Land Management. 2010. Grand Staircase-Escalante National Monument management plan implementation review and action steps identified. Unpublished document, BLM.
- Chaudhary, V. Bala, M.A. Bowker, T.E. O'Dell, J.B. Grace, A. E. Redman, M.C. Rillig, and N.C. Johnson. 2009. Untangling the biological contributions to soil stability in semiarid shrublands. *Ecological Applications* 19(1):110-122.
- Eckert, R.E. Jr., F.F. Peterson, M.S. Meurisse, and J.L. Stephens. 1986. Effects of soil-surface morphology on emergence and survival of seedlings in big sagebrush communities. *Journal of Range Management* 39 (5): 414-420.
- Eldridge, D.J., and R.S.B. Green. 1994. Microbiotic soil crusts: a review of their roles in soil and ecological processes in the rangelands of Australia. *Australian Journal of Soil Research* 32:389-415.
- Evans, R.D., and J.R. Ehleringer. 1993. A break in the nitrogen cycle in aridlands: Evidence from $\delta^{15}N$ of soils. *Oecologia* 94:314-317.
- Harper, K. T., and J.R. Marble. 1988. A role for nonvascular plants in management of arid and semiarid rangelands. *Vegetation science applications for rangeland analysis and management. Handbook of vegetation science* 14: 135-169.
- Herrick, J.E., and M.M. Wander. 1998. Relationships between soil organic carbon and soil quality in cropped and rangeland soils: the importance of distribution, composition and soil biological activity. IN: R. Lal, J. Kimble, R. Follett, and B.A. Stewart (eds). *Advances in soil science: soil processes and the carbon cycle*. Boca Raton, FL: CRC Press. Pp 405-25.
- Kaltenecker, J.H., M. Wicklow-Howard, and M. Pellant. 1999. Biological soil crusts: natural barriers to *Bromus tectorum* L. establishment in the northern Great Basin, USA. In: Eldridge, D., and D. Freudenberger, eds. *Proceedings of the VI International Rangeland Congress, Aitkenvale, Queensland, Australia*. Pp 109 – 111.
- Kleiner, E.F. and K.T. Harper. 1972. Environment and community organization in grasslands of Canyonlands National Park. *Ecology* 53(2):299-309.
- Lesica, P. and J.S. Shelley. 1992. Effects of cryptogamic soil crust on the population dynamics of *Arabis fecunda* (Brassicaceae). *American Midland Naturalist* 128:53-60.
- Loope, W.L. and G.F. Gifford. 1972. Influence of a soil microfloral crust on select property of soils under pinyon-juniper in southeastern Utah. *Journal of Soil and Water conservation* 27(4):164-167.
- McKenna-Neuman, C., C.D. Maxwell, and J.W. Boulton. 1996. Wind transport of sand surfaces crusted with photoautotrophic microorganisms. *Catena* 27:229-247.
- Reynolds, R., J Belnap, M Reheis, et al. 2001. Aeolian dust in Colorado Plateau soils: nutrient unputs and recent change in source P *Natl Acad Sci* 98:7123-27.
- St. Clair, L., B.L. Webb, J.R. Johansen, and G.T. Nebeker. 1984. Cryptogamic soil crusts: enhancement of seedling establishment in disturbed and undisturbed areas. *Reclamation and Revegetation Research* 3.
- Stohlgren, T. J., Belnap, J., Chong, G. W., and Reich, R., 1998, A plan to assess native and exotic plant diversity and cryptobiotic crusts in the Grand Staircase-Escalante National Monument, in Hill, L. M., ed., *Learning from the Land: Grand Staircase-Escalante National Monument Science Symposium Proceedings*, November 4-5, 1997, Southern Utah University, Cedar City, Utah, BLM Technical Report No. BLM/UT/GI-98/006+1220: Salt Lake City, Utah, U.S. Department of the Interior, Bureau of Land Management, p. 269-276.
- Stohlgren, T.J., Y. Otsuki, C.A. Villa, M. Lee, and J. Belnap. 2001. Patterns of plant invasions: a case example in native species hotspots and rare habitats. *Biological Invasions* 3:37-50.
- Verrecchia, E, A Yair, GJ Kidron, and K Verrecchia. 1995. Physical properties of the psammophilic cryptogamic crust and their consequences to the water regime of sandy soils, northwestern Negev, Israel. *J. Arid Environ* 29: 427-37.
- West, N.E. 1983. Great Basin-Colorado Plateau sagebrush semi-deserts. Pp. 331-369 in N.E. West, ed. *Temperate deserts and semi-deserts. Volume 5 in Ecosystems of the world*. Elsevier Science, Amsterdam, The Netherlands.
-

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Minimizing Dust Production (Appendix H)

[55] Neff, J. C., A. P. Ballantyne, G. L. Farmer, N. M. Mahowald, J. L. Conroy, C. C. Landry, J. T. Overpeck, T. H. Painter, C. R. Lawrence, and R. L. Reynolds. 2008. Increasing eolian dust deposition in the western United States linked to human activity. *Nature Geoscience* 1, 189 – 195

Belnap, J. and D.A. Gillette. 1997. Disturbance of biological soil crusts: impacts on potential wind erodibility of sandy desert soils in southeastern Utah. *Land Degrad Dev* 8:355-62.

Belnap, J., R. L. Reynolds, M. C. Reheis, S. L. Phillips, F. E. Urban, and H. L. Goldstein. 2009. Sediment losses and gains across a gradient of livestock grazing and plant invasion in a cool, semi-arid grassland, Colorado Plateau, USA. *Aeolian Research* 1:27-43.

Bowker, M.A., J. Belnap, V. B. Chaudhary, and N.C. Johnson. 2008a. Revisiting classic water erosion models in drylands: the strong impact of biological soil crusts. *Soil Biology and Biocemistry* 1-8.

Bowker, M.A., M.E. Miller, J. Belnap, T.D. Sisk, and N.C. Johnson. 2008b. Prioritizing Conservation Effort through the Use of Biological Soil Crusts as Ecosystem Function Indicators in an Arid Region. *Conservation Biology* 22 (6): 1533-1543.

Field, Jason P, Jayne Belnap, David D Breshears, Jason C Neff, Gregory S Okin, Jeffrey J Whicker, Thomas H Painter, Sujith Ravi, Marith C Reheis, and Richard L Reynolds 2010. The ecology of dust. *Frontiers in Ecology and the Environment* 8: 423–430.

Li, J, GS Okin, LJ Hartman, and HE Epstein. 2007 Quantitative assessment of wind erosion and soil nutrient loss in desert grasslands of southern New Mexico, USA. *Biogeochemistry* 85:317-32.

Li, J., GS Okin, LJ Alvarez, and HE Epstein. 2008. Effects of wind erosion on the spatial heterogeneity of soil nutrients in a desert grassland of southern New Mexico. *Biogeochemistry* 88:73-88.

McConnell, J.R., AJ Aristarain, JR Banta, et al. 2007. 20th century doubling in dust archived in an Antarctic Peninsula ice core parallels climate change and desertification in South America *Proceedings of the National Academy of Sciences USA* 104:5743-48

Account of the settling of Paria River

By Elizabeth J Smith 88

Mrs. James E. Smith

Henrieville, Utah.

The BLM should understand and consider the following scientific information when formulating the MMP-A:

009_Assessment of rangeland condition Dugout Ranch UT.pdf

013_Draft- GLCA Grazing Mgmt 2003 (1 of 7).pdf

014_Draft- GLCA Grazing Mgmt 2003 (2 of 7)a.pdf

015_Draft- GLCA Grazing Mgmt 2003 (3 of 7).pdf

016_Draft- GLCA Grazing Mgmt 2003 (4 of 7).pdf

017_Draft- GLCA Grazing Mgmt 2003 (5 of 7).pdf

018_Draft- GLCA Grazing Mgmt 2003 (6 of 7).pdf

019_Draft- GLCA Grazing Mgmt 2003 (7 of 7).pdf

021_Review of Livestock Grazing Mgmt 1983 (1 of 2).pdf

022_Review of Livestock Grazing Mgmt 1983 (2 of 2).pdf

026_nps cultural attachment.pdf

027_BLM Allotment Specific Reviews.zip

029_Allotment Utilization Actual Use Trend.zip

030_1984 Rangeland Program Summary.pdf

031_1987 RPS.pdf

032_RPS 1981.pdf

033_Salinity Control Report.pdf

034_ESCALMFP.PDF

035_PARIAMFPHighlights.pdf

036_VERMILMFP highlighted.pdf

037_effects-of-grazing.Dixie NF document.combined with lit.pdf

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

037b_Key Scientific Documents Relevant to Dixie Forest Management cites.grazinghighlighted.pdf

Highlighted references:

- Anderson, Jay, and Richard Inouye. 2001. Landscape-scale changes in plant species abundance and biodiversity of a sagebrush steppe over 45 years. *Ecological Monographs* 71(4):531-556.
- Bartos, Dale, and Robert Campbell, Jr. 1998. Decline of quaking aspen in the Interior West - examples from Utah. *Rangelands* 20(1):17-24.
- Belsky, AJ, A Matzke, and S Uselman. 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States
- Belsky, Joy, and Dana Blumenthal. 1997. Effects of livestock grazing on stand dynamics and soils in upland forests of the interior West. *Conservation Biology* 11(2):315-327.
- Brookshire, Jack; Boone Kauffman, Danna Lytjen and Nick Otting. 2002. Cumulative effects of wild ungulate and livestock herbivory on riparian willows. *Oecologia* 132:559-566.
- Bureau of Land Management. 2000. Strategic paper on cultural resources at risk. Bureau of Land Management, Washington, D.C. 18 p. <http://www.blm.gov/heritage/docum/00atriskpaper3.pdf>
- Chong, Geneva, Sara Simonson, Thomas Stohlgren, and Mohammed Kalkhan. 2001. Biodiversity: Aspen stands have the lead, but will nonnative species take over? Pp. 261-266 in Shepperd, Wayne, Dan Binkley, Dale Bartos, Thomas Stohlgren, and Lane Eskey, compilers. 2001. *Sustaining Aspen in Western Landscapes: Symposium Proceedings*. Proceedings RMRS-P-18. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 460 pp.
- Connelly, John, Michael Schroeder, Alan Sands, and Clait Braun. 2000. Guidelines to manage sage grouse populations and their habitats. *Wildlife Society Bulletin* 28(4):967-985.
- Duffus, James III, et al. 1987. *Cultural Resources: Problems Protecting and Preserving Federal Archaeological Resources*. Washington, D.C.: United States General Accounting Office. 131 pp.
- Galt, Dee, Francisco Molinar, Joe Navarro, Jamus Joseph, and Jerry Holecheck, Grazing capacity and stocking rate. *Rangelands*, Dec. 2000, 7-11.
- Guenther, Debra, Thomas Stohlgren, and Paul Envangelista. 2004. A comparison of a near-relict site and a grazed site in a pinyon-juniper community in the Grand Staircase-Escalante National Monument, Utah. In Charles van Riper III and Kenneth Cole. *The Colorado Plateau: Cultural, Biological, and Physical Research*. Tucson: The University of Arizona Press
- Hammerson, Geoffrey. 1994. Beaver (*Castor canadensis*): Ecosystem alterations, management, and monitoring. *Natural Areas Journal* 14(1):44-57
- Kauffman, Boone, Andrea Thorpe, and Jack Brookshire. [in press 2004]. Livestock exclusion and belowground ecosystem responses in riparian meadows of eastern Oregon. *Ecological Applications*.
- Kay, Charles. 2001. The condition and trend of aspen communities on BLM administered lands in central Nevada - with recommendations for management. Final report to Battle Mountain Field Office, Bureau of Land Management, Battle Mountain, NV.
- Kay, Charles, and Dale Bartos. 2000. Ungulate herbivory on Utah aspen: Assessment of long-term exclosures. *Journal of Range Management* 53:145-153.
- Knick, Steven T., David S. Dobkin, John T. Rotenberry, Michael A. Schroeder, W. Matthew Vander Haegen, and Charles Van Riper III. 2003. Teetering on the edge or too late? Conservation and research issues for avifauna of sagebrush habitats. *The Condor* 105:611-635.
- Laliberte, Andrea S. and William J. Ripple. 2004. Range contractions of North American carnivores and ungulates. *BioScience* 54(2):123-138.
- Lisle, Skip. Undated. Building flow devices. Beaver Deceivers, Inc. Grafton, VT. skiplisle@vermontel.net 802/843-1017.
- Maschinski, Joyce. 2001. Impacts of ungulate herbivores on a rare willow at the southern edge of its range. *Biological Conservation* 101(1):119-130.
- McCarty, John P. 2001. "Ecological Consequences of Recent Climate Change." *Conservation Biology* Vol.15, No. 2: 320-331
- Miller, Brian, Barb Dugelby, Dave Foreman, Carlos Martinez del Rio, Reed Noss, Mike Phillips, Rich Reading, Michael E. Soulé, John Terborgh, and Louisa Wilcox. 2001. The importance of large carnivores to healthy

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

ecosystems. Endangered Species Update V. 18, 15:202(9).
Moore, Rick, Roger Clark, Stephanie Achey, and Tomas Robinson. 1994. Preserving Traces of the Past: Protecting the Colorado Plateau's Archaeological Heritage. The Grand Canyon Trust, Flagstaff, AZ. 132 p
Otting, Nick, and Danna Lytjen. December 2003. Steens Mountain Aspen Assessment and Monitoring: Final Report. Submitted to Bureau of Land Management (Burns District Office, Hines, OR) and Steens-Alvord Coalition (Portland, OR).
Power, Thomas Michael. 2004. The Fiscal Impacts of Closing Certain Federal Grazing Allotments in the Grand Staircase-Escalante National Monument. Report prepared for the Grand Canyon Trust. University of Montana. Missoula, MT. September 9.
Seabloom, Eric, Sanley Harpole, OJ Reichman, and David Tilman. 2003. Invasion, competitive dominance, and resource use by exotic and native California grassland species. Proceedings of the National Academy of Sciences 100(23):13384-13389. www.pnas.org/cgi/doi/10.1073/pnas.18357281000 .
Sweanor, Linda L., Kenneth A. Logan, and Maurice G. Hornocker. 2000. Cougar dispersal patterns, metapopulation dynamics, and conservation. Conservation Biology 14(3): 798-808.
Thomas, JA, MG Telfer, DB Roy, CD Preston, JJD Greenwood, J Asher, R Fox, RT Clarke, and JH Lawton. Comparative losses of British butterflies, birds, and plants and the global extinction crisis. Science 303:1879-1881.
U.S. Forest Service. Economic Effects, USDA Forest Service Strategic Plan (2000 Revision). Appendix D. FS-682, October 2000, www.fs.fed.us/plan
U.S. Forest Service, Manti-La Sal National Forest, Ferron-Price Ranger District. 1996 Continuing Education in Ecosystem Management Team (for the Manti-La Sal National Forest). Huntington Analysis Area Landscape Assessment. June.
U.S. Geological Survey. 2002. Precipitation history of the Colorado Plateau Region, 1900-2000. USGS Fact Sheet 119-02.
Welch, Bruce, and Craig Criddle. 2003. Countering Misinformation Concerning Big Sagebrush. Research Paper RMRS-RP-40. Ogden, UT: US Department of Agriculture, Forest Service. Rocky Mountain Research Station.
Wood River Resource Conservation and Development Area. 1993. Using beaver to improve riparian areas. Gooding, Idaho.
048_Biogeochemical and ecological impacts of livestock grazing in semi-arid southeastern Utah USA.pdf
050_Bowker et al 2006 Spatial modeling of biological soil crusts.pdf
051_BowkerEtAl2008_PrioritizingConservationEffortsBioSoilCrusts.pdf
052_Harris and Asner 2003 Grazing and spectroscopy in GSENM.pdf
053_Drought and Grazing Effects on Quantity - Heitschmidt JRM 99.pdf
055_Effects of Drought on Rangelands.pdf
056_AgEconomy_PublicLands_SouthernUtah.pdf
057_Appendix B - Tom Power economic review ofTushar Grazing Decision[1].doc
058_Assessing_the_full_cost.pdf
059_BLM socioeconomic Report 2012.pdf
060_DOI-Econ-Report-6-21-2011.pdf
061_Loomiset al2000.pdf
062_New Loomis Brown Valuation of Rangeland Ecosystem Services.ppt
063_THE ECONOMIC IMPORTANCE OF GRAZING.pdf
064_Valuing Ecosystem Services 2004.pdf
066_wr_TAKING_STOCKGrazing Economics.pdf
067_2012-11 Beschta et al., Climate & Ungulate Use in the American West.pdf
068_CatlinClimate2009.ppt
069_USGS DeCrappeo Rangeland Climate Change.pdf
071_Donahue_Elephant_in_the_Room_Final.pdf
072_Donahue-Global Warming - Feedlots.pdf
073_Human Induced Changes in Western Hydrology Barnett_et al_Western Hydrology_Science Mar2008.pdf

Table B-30
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074_Is Climate Change Mitigation the Best Use of Desert Shrublands - Meyers 2013.pdf
 075_Livestocks Long Shadow.pdf
 076_Livestock and Climate Change Addition to Long Shadow Report.pdf
 077_Mathane Production from Livestock - Hudak.pdf
 078_Ripple et al 2014 Ruminants climate change.pdf
 079_Species Richness Protects From Climate ChangeMaestreetal2012.pdf
 083_Cow As Geomorphic Agent.pdf
 084_Effects of Grazing on Native and Alien Plants.pdf
 085_EmilyGrazSoilsReview.doc.rtf
 086_Grazing Effects - Water Bib.pdf

References:

- Armour, C., D. Duff, and W. Elmore. 1994. The effects of livestock grazing on western riparian and stream ecosystem. *Fisheries* 19(9):9-12.
- Arnqvist, G., and D. Wooster. 1995. Meta-analysis: synthesizing research findings in ecology and evolution. *Trends in Ecol. and Evol.* 10:236-240.
- Atwill, E.R. 1996. Assessing the link between rangeland cattle and water-borne *Cryptosporidium parvum* infection in humans. *Rangelands* 18:48-51.
- Belsky, A.J., and D.M. Blumenthal. (1996). Effects of livestock grazing on stand dynamics and soils in upland forests of the interior West. *Conservation Biology* (in press).
- Blackburn, W.H. 1984. Impact of grazing intensity and specialized grazing systems on watershed characteristics and responses. p. 927-983. In: *Developing strategies for range management*. Westview Press, Boulder, CO.
- Bock, C.E., V.A. Saab, T.D. Rich, and D.S. Dobkin. 1993. Effects of livestock grazing on neotropical migratory landbirds in western North America. p. 296-309. In: D.M. Finch, P. W. Stangel (eds.), *Status and management of neotropical migratory birds*. USDA Forest Serv. Gen. Tech. Rep. RM-229.
- Boggs, K., and T. Weaver. 1992. Response of riparian shrubs to declining water availability. p. 48-51. In: W.P. Clary, E.D. McArthur, D. Bedunah, and C.L. Wambolt (compilers), *Proceedings-Symposium on ecology and management of riparian shrub communities*. USDA Forest Serv. Gen. Tech. Rep. INT-289.
- Bohn, C.C., and J.C. Buckhouse. 1985a. Some responses of riparian soils to grazing management in northeastern Oregon. *J. Range Manage.* 38:378-381.
- Bohn, C.C., and J.C. Buckhouse. 1985b. Coliforms as an indicator of water quality in wildland streams. *J. Soil and Water Cons.* 40:95-97.
- Bryan, K. 1925. Date of channel trenching in the arid Southwest. *Science* 62:338-344.
- Buckhouse, J.C., and G.F. Gifford. 1976. Water quality implications of cattle grazing on a semiarid watershed in southeastern Utah. *J. Range Manage.* 29:109-113.
- Burton, T.A., and S.J. Kozel. 1996. Livestock grazing relationships with fisheries. p. 140-145. In: W.D. Edge, S.L. Olson-Edge (eds.), *Sustaining rangeland ecosystems*. Oregon State Univ. Extension Service, Special Rep. 953, Corvallis, OR.
- Carothers, S.W. 1977. Importance, preservation, and management of riparian habitats: an overview. p. 2-4. In: R.R. Johnson, D.A. Jones, (tech. coords.), *Importance, preservation and management of riparian habitat: A symposium*. USDA Forest Serv. Gen. Tech. Rep. RM-43.
- Chaney, E., W. Elmore, and W.S. Platts. 1990. Livestock grazing on western riparian areas. Northwest Resource Information Center, Inc. Eagle, Idaho.
- Chaney, E., W. Elmore, and W.S. Platts. 1993. *Managing Change: livestock grazing on western riparian areas*. Northwest Resource Information Center, Inc. Eagle, Idaho.
- Claire, E.W., and R.L. Storch. 1977. Streamside management and livestock grazing in the Blue Mountains of Oregon: a case study. p. 111-128. In: *Proc. of the workshop on livestock and wildlife-fisheries relationships in the Great Basin*. Univ. California, Agric. Station, Sci. Spec. Publ. 3301, Berkeley, CA.
- Clary, W.P. 1995. Vegetation and soil responses to grazing simulation on riparian meadows. *J. Range Manage.* 48:18-25.
- Clary, W.P., E.D. McArthur, D. Bedunah, and C.L. Wambolt (compilers). 1992. *Proceedings-Symposium on ecology and management of riparian shrub communities*. USDA Forest Serv. Gen. Tech. Rep. INT-289.

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Clary, W.P., and D.E. Medin. 1990. Differences in vegetation biomass and structure due to cattle grazing in a northern Nevada riparian ecosystem. USDA Forest Serv. Re. Pap. INT-427.
Clary, W.P., and D.E. Medin. 1992. Vegetation, breeding bird, and small mammal biomass in two high-elevation sagebrush riparian habitats. p. 100-110. In: W.P. Clary, E. D. McArthur, D. Bedunah, and C.L. Wambolt (compilers), Proceedings-Symposium on ecology and management of riparian shrub communities. USDA Forest Serv. Gen. Tech. Rep. INT-289.
Clary, W.P., and B.F. Webster. 1989. Managing grazing of riparian areas in the intermountain region. USDA Forest Serv. Gen. Tech. Rep. INT-263.
Davis, L., M. Brittingham, L. Garber, and D. Rourke. 1991. Stream bank fencing. Penn State College of Ag. Sci., Extension Circular 397. University Park, PA.
Dudley, T., and M. Embury. 1995. Non-indigenous species in wilderness areas: the status and impacts of livestock and game species in designated wilderness in California. Pacific Insti. for SIDES, Oakland, CA.
Dudley, T.L., D.C. Odion, R.K. Knapp, and others. (in prep). Livestock grazing impacts and the potential for riparian meadow and recovery in the Golden Troup Wilderness Area, California.
Duff, D.A. 1977. Livestock grazing impacts on aquatic habitat in Big Creek, Utah. p. 129-142. In: Proc. of the workshop on wildlife-fisheries relationships in the Great Basin. Univ. California, Agric. Station, Sci. Spec. Publ. 3301, Berkeley, CA.
Duce, J.T. 1918. The effect of cattle on the erosion of canyon bottoms. Science 47:450-452.
Dunaway, D., S. Swanson, J. Wendel, and W. Clary. 1994. The effect of herbaceous vegetation and soil texture on particle erosion of alluvial streambanks. Geomorphology 9:47-57.
Elmore, W. 1992. Riparian responses to grazing practices. p. 442-457. In: R.J. Naiman (ed.). Watershed management: balancing sustainability and environmental change. Springer Verlag, New York, NY.
Elmore, W. 1996. Riparian areas: perceptions in management. USDA Forest Serv., Pacific Northwest Research Station, Natural Resource News 6(3):9.
Elmore, W., and R.L. Beschta. 1987. Riparian areas: perceptions in management. Rangelands 9:260-265.
Elmore, W., and B. Kauffman. 1994. Riparian and watershed systems: degradation and restoration. p. 212-231. In: M. Vavra, W.A. Laycock, and R.D. Pieper (eds.), Ecological implications of livestock herbivory in the West. Soc. Range Management, Denver, CO.
Flather, C.H., L.A. Joyce, and C.A. Bloomgarden. 1994. Species endangerment patterns in the United States. USDA Forest Serv. Gen. Tech. Rep. RM-241.
Fleischner, T.L. 1994. Ecological costs of livestock grazing in western North America. Cons. Biol. 8:629-644.
George, M.R. 1996. Creating awareness of clean water issues among private landowners. p. 96-100. In: W.D. Edge, S.L. Olson-Edge (eds.), Sustaining rangeland ecosystems. Oregon State Univ. Extension Service, Special Rep. 953, Corvallis, OR.
Green, D.M., and J.B. Kauffman. 1995. Succession and livestock grazing in a northeast Oregon riparian ecosystem. J. Range Manage. 48:307-313.
Gresswell, R.E., B.A. Barton, J.L. Kershner (eds.). 1989. Practical approaches to riparian resource management. U.S. Bureau of Land Management, P.O. Box 36800, Billings, Montana.
Gunderson, D.R. 1968. Floodplain use related to stream morphology and fish populations. J. Wildl. Manage. 32:507-514.
Haveren, B.P., E.B. Janes, and W.L. Jackson. 1985. Nonpoint pollution control on public lands. J. Soil and Water Cons. 40(1):92-94.
Hofmann and R.E. Ries. 1991. Relationship of soil and plant characteristics to erosion and runoff on pasture and range. J. Soil and Water Cons. 46(2):143-147.
Horning, J. 1994. Grazing to extinction: endangered, threatened and candidate species imperiled by livestock grazing on western public lands. National Wildlife Federation, Washington, D.C.
Hubbard, J.P. 1977. Importance of riparian ecosystems: biotic considerations. p. 14-18. In: R.R. Johnson, D.A. Jones, (tech. coords.), Importance, preservation and management of riparian habitat: A symposium. USDA Forest Serv. Gen. Tech. Rep. RM-43.
Hubert, W.A., R.P. Lanka, T.A. Wesche, and F. Stabler. 1985. Grazing management influences on two brook trout streams in Wyoming. p. 290-293. In: R.R. Johnson, C.D. Ziebell, D.R. Patton, and others (tech. coords.), Riparian ecosystems and their management: reconciling conflicting uses. USDA Forest Serv. Gen. Tech.

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Rep. RM-120.
Hupp, C.R., and A. Simon. 1991. Bank accretion and the development of vegetated depositional surfaces along modified alluvial channels. <i>Geomorphology</i> 4:1-14.
Johnson, R.R., C.D. Ziebell, D.R. Patton, and others (tech. coords.). 1985. Riparian ecosystems and their management: reconciling conflicting uses. USDA Forest Serv. Gen. Tech. Rep. RM-120.
Johnson, S.R., H.L. Gary, and S.L. Ponce. 1978. Range cattle impacts on stream water quality in the Colorado Front Range. USDA Forest. Serv. Research Note, RM-359.
Jones, K.B. 1981. Effects of grazing on lizard abundance and diversity in western Arizona. <i>Southw. Naturalist</i> 26:107-115.
Kauffman, J.B., and W.C. Krueger. 1984. Livestock impacts on riparian ecosystems and streamside management implications...a review. <i>J. Range Manage.</i> 37:430-437.
Kauffman, J.B., W.C. Krueger, and M. Vavra. 1983a. Effects of late season cattle grazing on riparian plant communities. <i>J. Range Manage.</i> 36:685-691.
Kauffman, J.B., W.C. Krueger, and M. Vavra. 1983b. Impacts of cattle on streambanks in northeastern Oregon. <i>J. Range Manage.</i> 36:683-685.
Kleinfelder, D., S. Swanson, G. Norris, and W. Clary. 1992. Unconfined compressive strength of some streambank soils with herbaceous roots. <i>Soil Science Soc. of America Journal</i> 56:1920-1925.
Knight, A.W., and R.L. Bottorff. 1984. The importance of riparian vegetation to stream ecosystems. p. 160-167. In: R.E. Warner, K.M. Hendrix (eds), <i>California riparian systems, ecology, conservation, and productive management</i> . Univ. of California Press, Berkeley, CA.
Knopf, F.L., J.A. Sedgwick, and R.W. Cannon. 1988. Guild structure of a riparian avifauna relative to seasonal cattle grazing. <i>J. Wildl. Manage.</i> 52:280-290.
Kondolf, G.M. 1993. Lag in stream channel adjustment to livestock enclosure, White Mountains, California. <i>Restoration Ecology</i> Dec:226-230.
Kovalchik, B.L., and W. Elmore. 1992. Effects of cattle grazing systems on willow- dominated plant associations in central Oregon. p. 111-119. In: W.P. Clary, E.D. McArthur, D. Bedunah, and C.L. Wambolt (compilers), <i>Proceedings-Symposium on ecology and management of riparian shrub communities</i> . USDA Forest Serv. Gen. Tech. Rep. INT-289.
Krueper, D.J. 1993. Effects of land use practices on western riparian ecosystems. p. 321-329. In: D.M. Finch, P.W. Stangel (eds.), <i>Status and management of neotropical migratory birds</i> . USDA Forest Serv. Gen. Tech. Rep. RM-229.
Lee, L.C., T.A. Muir, and R.R. Johnson. 1989. Riparian ecosystems as essential habitat for raptors in the American West. p. 15-26. In: B.G. Pendleton (ed.), <i>Western raptor management symposium and workshop</i> . Nat. Wildl. Fed., Washington D.C.
Leopold, A. 1946. Erosion as a menace to the social and economic future of the Southwest. <i>Journal of Forestry</i> 44:627-633.
Loft, E.R., J.W. Menke, and J.G. Kie. 1991. Habitat shifts by mule deer: the influence of cattle grazing. <i>J. Wildl. Manage.</i> 55:16-26.
Mack, R.N., and J.N. Thompson. 1982. Evolution in steppe with few large, hooved mammals. <i>American Naturalist</i> 119:757-772.
Marcuson, P.E. 1977. Overgrazed streambanks depress fishery production in Rock Creek, Montana. p. 143-156. In: <i>Proc. of the workshop on livestock and wildlife-fisheries relationships in the Great Basin</i> . Univ. California, Agric. Station, Sci. Spec. Publ. 3301, Berkeley, CA.
Marlow, C.B., and T.M. Pogacnik. 1985. Time of grazing and cattle-induced damage to streambanks. In: R.R. Johnson, C.D. Ziebell, D.R. Patton, and others (tech. coords.), <i>Riparian ecosystems and their management: reconciling conflicting uses</i> . USDA Forest Serv. Gen. Tech. Rep. RM-120.
McInnis, M.L. 1996. Principles of successful livestock grazing in riparian ecosystems. USDA Forest Serv., Pacific Northwest Research Station, <i>Natural Resource News</i> 6(3):1.
Medin, D.E., and W.P. Clary. 1989. Small mammal populations in a grazed and ungrazed riparian habitat in Nevada. <i>USDA Forest Serv. Res. Pap.</i> INT-413.
Meehan, W.R. (ed.). 1991. Influences of forest and rangeland management on salmonid fishes and their habitats. <i>American Fisheries Society Special Publ.</i> 19, Bethesda, Maryland.

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Meehan, W.R., and W.S. Platts. 1978. Livestock grazing and the aquatic environment. <i>J. Soil and Water Cons.</i> 33:274-278.
Meehan, W.R., R.J. Swanson, and J.R. Sedell. 1977. Influences of riparian vegetation on aquatic ecosystems with particular reference to salmonid fishes and their food supply. p. 137-145. In: R.R. Johnson, D.A. Jones, (tech. coords.), Importance, preservation and management of riparian habitat: A symposium. USDA Forest Serv. Gen. Tech. Rep. RM-43.
Myers, T.J., and S. Swanson. 1991. Aquatic habitat condition index, stream type, and livestock bank damage in northern Nevada. <i>Water Resources Bulletin</i> 27:667-677.
Myers, T.J., and S. Swanson. 1992. Variation of stream stability with stream type and livestock bank damage in northern Nevada. <i>Water Resources Bulletin</i> 28:743-754.
Myers, T.J., and S. Swanson. 1994. Grazing effects on pool forming features in central Nevada. p. 235-244. In: R.A. Marston and V.R. Hasfurther (eds), Effects of human- induced changes on hydrologic systems. Proceedings, Annual Summer Symposium of the American Water Resources Association, Jackson Hole, Wyoming.
Myers, T.J., and S. Swanson. 1995. Impact of deferred rotation grazing on stream characteristics in Central Nevada: a case study. <i>North American Journal of Fisheries Management</i> 15:428-439.
Myers, T.J., and S. Swanson. 1996a. Long-term aquatic habitat restoration: Mahogany Creek, Nevada, as a case study. <i>Journal of the American Water Resources Association</i> 32:241-252.
Myers, T.J., and S. Swanson. 1996b. Temporal and geomorphic variations of stream stability and morphology: Mahogany Creek, Nevada. <i>Journal of the American Water Resources Association</i> 32:253-265.
Ohmart, R.D. 1996. Historical and present impacts of livestock grazing on fish and wildlife resources in western riparian habitats. p. 245-279. In: P.R. Krausman (ed.), <i>Rangeland wildlife</i> . Soc. for Range Manage., Denver CO.
Ongerth, J.E., and H.H. Stibbs. 1987. Identification of <i>Cryptosporidium</i> oocysts in river water. <i>Appl. and Environ. Microb.</i> 53:672-676.
ODEQ. 1995a. Temperature, 1992-1994 Water Quality Standards Review. Oregon Department of Environmental Quality, 811 Sixth Avenue, Portland OR.
ODEQ. 1995b. Dissolved Oxygen, 1992-1994 Water Quality Standards Review. Oregon Department of Environmental Quality, 811 Sixth Avenue, Portland OR.
Orr, H.K. 1975. Recovery from soil compaction on bluegrass range in the Black Hills. <i>Transactions of the ASAE</i> : 1076-1081.
Owens, L.B., W.M. Edwards, and R.W. Van Keuren. 1989. Sediment and nutrient losses from an unimproved, all-year grazed watershed. <i>J. Environ. Qual.</i> 18:232-238.
Owens, L.B., W.M. Edwards, and R.W. Van Keuren. 1996. Sediment losses from a pastured watershed before and after stream fencing. <i>J. Soil and Water Cons.</i> 51:90-94.
Platts, W.S. 1981a. Sheep and streams. <i>Rangelands</i> 3:158-160.
Platts, W.S. 1981b. Influence of forest and rangeland management on anadromous fish habitat in western North America: 7. Effects of livestock grazing. USDA Forest Serv. Gen. Tech. Rep. PNW-124.
Platts, W.S. 1982. Livestock and riparian-fishery interactions: what are the facts? <i>Trans. North Amer. Wildl. and Nat. Res. Conf.</i> 47:507-515.
Platts, W.S. 1989. Compatibility of livestock grazing strategies with fisheries. p. 103-110. In: R.E. Gresswell, B.A. Barton, J.L. Kershner (eds.), Practical approaches to riparian resource management. U.S. Bureau of Land Management, P.O. Box 36800, Billings, Montana.
Platts, W.S. 1991. Livestock grazing. p. 389-424. In: W.R. Meehan (ed.), Influences of forest and rangeland management on salmonid fishes and their habitats. <i>Amer. Fisheries Soc. Sp. Publ</i> 19:389-423.
Popolizio, C.A., H. Goetz, and P.L. Chapman. 1994. Short-term response of riparian vegetation to 4 grazing treatments. <i>J. Range Manage.</i> 47:48-53.
Rees, E. 1996. Threatened, endangered, and sensitive species affected by livestock production. p. 154. In: W.D. Edge, S.L. Olson-Edge (eds.), Sustaining rangeland ecosystems. Oregon State Univ. Extension Service, Special Rep. 953, Corvallis, OR.
Reiser, D.W., and T.C. Bjornn. 1979. Influence of forest and rangeland management on anadromous fish habitat in the western United States and Canada, 1. Habitat requirements of anadromous salmonids. USDA Forest

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

Serv. Gen. Tech. Rep. PNW-96.
Rinne, J.N. 1985. Livestock grazing effects on southwestern streams: a complex research problem. p. 295-300. In: R.R. Johnson, C.D. Ziebell, D.R. Patton, and others (tech. coords.), Riparian ecosystems and their management: reconciling conflicting uses. USDA Forest Serv. Gen. Tech. Rep. RM-120.
Rinne, J.N. 1988. Effects of livestock grazing enclosure on aquatic macroinvertebrates in a montane stream, New Mexico. Great Basin Nat. 48:146-153.
Roath, L.R., and W.C. Krueger. 1982. Cattle grazing and influence on a forested range. Journal of Range Management 35:332-338.
Rostagno, C.M. 1989. Infiltration and sediment production as affected by soil surface conditions in a shrubland of Patagonia, Argentina. J. Range Manage. 42:382-385.
Schepers, J.S., and D.D. Francis. 1982. Chemical water quality of runoff from grazing land in Nebraska: I. Influence of grazing livestock. J. Environ. Qual. 11:351-354.
Schepers, J.S., B.L. Hackes, and D.D. Francis. 1982. Chemical water quality of runoff from grazing land in Nebraska: II. Contributing factors. J. Environ. Qual., 11:355-359.
Schulz, T.T., and W.C. Leininger. 1990. Differences in riparian vegetation structure between grazed areas and exclosures. J. Range Manage. 43:295-299.
Schulz, T.T., and W.C. Leininger. 1991. Nongame wildlife communities in grazed and ungrazed riparian sites. Great Basin Natur. 51:286-292.
Sedgwick, J.A., and F.L. Knopf. 1987. Breeding bird response to cattle grazing of a cottonwood bottomland. J. Wildl. Manage. 51:230-237.
Sedgwick, J.A., and F.L. Knopf. 1991. Prescribed grazing as a secondary impact in a western riparian floodplain. J. Range Manage. 44:369-373.
Shaw, N.L. 1992. Recruitment and growth of Pacific willow and sandbar willow seedlings in response to season and intensity of cattle grazing. p. 130-137. In: W.P. Clary, E.D. McArthur, D. Bedunah, and C.L. Wambolt (compilers), Proceedings-Symposium on ecology and management of riparian shrub communities. USDA Forest Serv. Gen. Tech. Rep. INT-289.
Skovlin, J.M. 1984. Impacts of grazing on wetlands and riparian habitat: a review of our knowledge. p. 1001-1103. In: Developing strategies for range management. Westview Press, Boulder, CO.
Smith, D.G. 1976. Effect of vegetation on lateral migration of anastomosed channel of a glacier meltwater river. Geological Society of America Bulletin 87:857-860.
Stacey, P.B. 1995. Diversity of rangeland bird populations. p.33-41. In: N.E. West (ed.), Biodiversity on rangelands. College of Natural Resources, Utah State University, Logan, UT.
Stephenson, G.R., and R.C. Rychert. 1982. Bottom sediment: a reservoir of Escherichia coli in rangeland streams. J. Range Manage. 35:119-123.
Stephenson, G.R., and L.V. Street. 1978. Bacterial variations in streams from a southwest Idaho rangeland watershed. J. Environ. Qual. 7:150-157.
Stevens, R., E.D. McArthur, and J.N. Davis. 1992. Reevaluation of vegetative cover changes, erosion, and sedimentation on two watersheds--1912-1983. p. 123-128. In: W. P. Clary, E.D. McArthur, D. Bedunah, and C.L. Wambolt (compilers), Proceedings- Symposium on ecology and management of riparian shrub communities. USDA Forest Serv. Gen. Tech. Rep. INT-289.
Stoddart, L.A., and A. Smith. 1955. Range management, 2nd edition. McGraw-Hill, New York, NY.
Stuber, R.J. 1985. Trout habitat, abundance, and fishing opportunities in fenced vs. unfenced riparian habitat along sheep creek, Colorado. p. 310-314. In: R.R. Johnson, C. D. Ziebell, D.R. Patton, and others (tech. coords.), Riparian ecosystems and their management: reconciling conflicting uses. USDA Forest Serv. Gen. Tech. Rep. RM-120.
Szaro, R.C. 1989. Riparian forest and scrubland community types of Arizona and New Mexico. Desert Plants 9(3-4):72-138.
Szaro, R.C., S.C. Belfit, J.K. Aitkin, and J.N. Rinne. 1985. Impacts of grazing on a riparian garter snake. p. 359-363. In: R.R. Johnson, C.D. Ziebell, D.R. Patton, and others (tech. coords.), Riparian ecosystems and their management: reconciling conflicting uses. USDA Forest Serv. Gen. Tech. Rep. RM-120.
Taylor, D.M. 1986. Effects of cattle grazing on passerine birds nesting in riparian habitat. J. Range Manage. 39:254-258.

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

-
- Taylor, F.R., L.A. Gillman, and J.W. Pedretti. 1989. Impact of cattle on two isolated fish populations in Pahrangat Valley, Nevada. *Great Basin Nat.* 49:491-495.
- Thurrow, T.L. 1991. Hydrology and erosion. p.141-159. In: R.K. Heitschmidt, and J.W. Stuth (eds.), *Grazing management: an ecological perspective*. Timber Press, Portland OR.
- Thomas, J.W., C. Maser, and J.E. Rodiek. 1979. Wildlife habitats in managed rangelands--The Great Basin of southeastern Oregon: riparian zones. USDA Forest Serv. Gen. Tech. Rep. PNW-80.
- Tiedemann, A.R., and D.A. Higgins. 1989. Effects of management strategies on water resources. p.56-91. In: T.M. Quigley, H.R. Sanderson, and A.R. Tiedemann, *Managing interior Northwest rangelands: The Oregon Range Evaluation Project*. USDA Forest Serv. Gen. Tech. Rep. PNW-GTR-238.
- Tiedemann, A.R., D.A. Higgins, T.M. Quigley, H.R. Sanderson, and D.B. Marx. 1987. Responses of fecal coliform in streamwater to four grazing strategies. *J. Range Manage.* 40:322-329.
- Trimble, S.W., and A.C. Mendel. 1995. The cow as a geomorphic agent -- a critical review. *Geomorphology* 13:233-253.
- U.S. Department of Interior. 1993. Riparian area management, process for assessing proper functioning condition. TR 1737-9 1993, Bureau of Land Management, Box 25047, Denver, CO.
- U.S. Department of Interior. 1994a. Rangeland reform '94, Draft environmental impact statement. Bureau of Land Management, Washington, D.C.
- U.S. Department of Interior. 1994b. Western riparian wetlands (Chapter 12). p. 213-238. In: *The impact of federal programs on wetlands, Vol. II, A report to Congress by the Secretary of the Interior*, Washington D.C., U.S. Fish and Wildlife Service, Arlington, VA.
- U.S. Environmental Protection Agency. 1995. National Water Quality Inventory, 1994 Report to Congress Executive Summary. Office of Water, Washington DC 20460.
- U.S. General Accounting Office. 1988. Public rangelands: some riparian areas restored by widespread improvement will be slow. GAO/RCED-88-105.
- Warner, R.E., and K.M. Hendrix (eds). 1984. *California riparian systems, ecology, conservation, and productive management*. Univ. of California Press, Berkeley, CA.
- Weller, M.W. 1996. Birds of rangeland wetlands. p. 71-82. In: P.R. Krausman (ed.), *Rangeland wildlife*. The Society of Range Management, Denver CO.
- Winegar, H.H. 1977. Camp Creek channel fencing -- plant, wildlife, soil, and water response. *Rangeman's J.* 4:10-12.
- Zimmerman, R.C., J.C. Goodlett, and G.H. Comer. 1967. The influence of vegetation on channel form of small streams. *International Assoc. of Sci. Hydrology, Symposium of River Morphology*, 75:255-275.
- Zonge, K.L., S. Swanson, and T. Myers. 1996. Drought year changes in streambank profiles on incised streams in the Sierra Nevada mountains. *Geomorphology* 15:47-56.

- 087_GrazingWeedReport.pdf
- 088_Herbivory Review grazing.pdf
- 091_Riparian Grazing Belsky.pdf
- 094_Distribution - Water - Slope PinchakJRM_91.pdf
- 096_Herbage Response to Grazing Systems and Stocking Intensities JRM.pdf
- 097_Cheatgrass and grazing - Reisner et al. (2013).pdf
- 098_Cheatgrass and Native systems rmrs_2008_mazzola_m002.pdf
- 104_Livestock-WaterQuality - Carter.doc
- 105_1997 Rangeland Water SymposiumPartialSM.pdf
- 106_Sandy ES - Water Developments Not Effective.pdf
- 107_Utilization and Grazing Systems Riparian Review - Carter 2012.pdf
- 108_Water Development Impacts on Vegetation - Rinehart and Zimmerman 2001.pdf
- 110_Harris_etal_2003grazingpjRemoteSensing.pdf
- 111_Bowker 2007 Biological soil crust rehabilitation in theory and practice.pdf
- 112_(Kleiner Harper 1972) Environment community organization in grasslands of Canyonlands National Park.pdf
- 113_Warren Eldridge livestock crusts.doc
- 114_Neff et al 2005.pdf
- 115_Neff et al 2008.pdf
-

Table B-30
Comments Recommending Studies or Reports to Review or Requesting Data

I16_Packrat Middens and Pregrazing Vegetation of CARE_1991.pdf
I17_Removal of Grazing Increases Nesting Success - Hartway-Mills 2012.pdf
I18_Shrubsteppe_Landscapessm.pdf
I19_MechTrt_LitReview_Draft.March2013pdf.pdf
I20_Synthesis_on_P-J_Woodlands.pdf
I21_Bartuszevige_&_Endress_(2008)_Do_ungulates_facilitate_native_&_exotic_plant_spread.pdf
I22_Cattle Stress and Cheatgrass 055Reisner_2010.pdf
I23_Clements_Young_Harmon_(2008)_Cheatgrass_response_to_simulated_grazing.doc
I24_AndersonBLM Bluebunch Defoliation Impacts Review.pdf
I25_Bluebunch Wheatgrass - Effects of Removal of standing dead.pdf
I26_Crested Wheatgrass - Grant-Hoffman_etal.pdf
I27_Mueggler Blue Bunch and Idaho Fescue Recovery.pdf
I28_Clary - Managing Grazing of Riparian Areas int_gtr263 HIGHLIGHTED.pdf
I29_Clary Leininger Stubble Ht_JRM_2000.pdf
I30_Compatibility of Grazing Systems with Fisheries - Platts1989.pdf
I31_Dobkin et. al 1998 grazing and birds Recovery processes in Riparian Areas.pdf
I32_DuffBigCreek.pdf
I33_Effects of Grazing Systems on Willow Dominated Riparian Areas - Kovalchik and Elmore 1994.pdf
I35_Final TR 1737-17 - copyright free version.pdf
I36_Grazing and Riparian Management - Myers Undated - Page 118 Missing.pdf
I37_Impacts of Livestock Grazing on Fish and Wildlife in Riparian - Ohmart 1996.pdf
I38_Salt and Upland Water Do Not Improve Riparian Use - Bryant .pdf
I39_Bunkhouse et al.pdf
I40_Valone_Timescale_Perennial_Grass.pdf
I41_Fleischner_EcologicalCosts.pdf
I42_1982_Mack and Thompson_Evolution in steppe with few large, hooved mammals.pdf
I43_Beck et al (2012) Consequences of Treating Sagebrush.pdf
I44_Bluebunch Wheatgrass - Effects of Removal of standing dead.pdf
I45_Comparing Grazed and Ungraded - Carter Chard_2011.pdf
I46_Effects of Cattle on Arid Ecosystems - Jones 2000SM.pdf
I47_EFFECTS OF GRAZING EXCLUSION ON RANGELAND VEGETATION AND SOILS.pdf
I48_Effects of Grazing on Runoff and Erosion.pdf
I49_Grazing Impacts on Sage Grouse Literature Synthesis.doc
I50_Grazing in Blackbrush Sites.pdf
I51_Floyd et al_NAJ_2008.pdf

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Other Issues

Since the planning area may contain numerous special status species, including the Endangered Species Act-listed endangered Kodachrome Bladderpod and Peregrine Falcon, threatened Ute Ladies' -tresses and Ione's Cycladenia, and candidate Greater Sage-Grouse, early coordination with the U.S. Fish and Wildlife Service (USFWS) on this MMPA/EIS will be very important. Documentation of USFWS's consultation and recommendations for design criteria, mitigation, monitoring, and adaptive management strategies will be a valuable addition to the MMPA/EIS.

We assert LGPA-EIS consistency with local plans, programs and policies - to the maximum extent allowed by law- is required and is necessary for the health and welfare of our communities. We therefore request that you are consistent with local plans, programs and policies to the absolute maximum extent.

We understand that under this plan the director will also consider determining which lands are and are not available for livestock grazing by considering;

- other uses for the land,
- terrain characteristics,
- soil, vegetation, and watershed characteristics,
- the presence of undesirable vegetation, such as invasive weed infestations, and
- the presence of other resources that may require special management or protection, such as special status species or special recreation management areas.

The Statutory and legal responsibilities relative to the use of the lands under the Taylor Grazing Act (TGA), sets forth the terms and mandates of this use. Under FLPMA and the monument proclamation, grazing was grandfathered in. Therefore, it is important to remember the first reservation on these monument lands happened under executive order 6910, reserving these lands as, "Chiefly Valuable for Grazing." Under the TGA these lands were placed into the present grazing districts.

The Grazing Districts were protected with the intent that they be utilized. § 701(a), L. 94-579 (1976) "All withdrawals, reservations, classifications, and designations in effect as of the date of approval of this Act [Oct. 21, 1976] shall remain in full force and effect until modified under the provisions of this Act or other applicable law."

Significant natural resource impacts to ecosystems were considered by the U.S. Congress when the TGA was passed. The TGA was the first Act of Congress to address resource depletion and loss of natural habitat after decades of rangeland deterioration. The Act provided for the orderly use, improvement, and development to stabilize the livestock industry dependent on the public range. Utah was the first state to adopt the Act into their state statute. The TGA, the Monument proclamation and FLPMA recognize the importance of grazing and improving the range by construction of range improvements that lead to substantial betterment of forage conditions with resulting benefits to wildlife, watershed protection and livestock production. Therefore, Congress gave the Secretary the duty to adequately safeguard grazing privileges.

The Data Quality Act (sometimes known as the Information Quality Act) requires federal agencies to maximize the quality, objectivity, utility, and integrity of information. We assert this includes the use of qualified personnel in evaluations and analysis..

Please also ensure adherence to current grazing regulations as to the qualifications to hold a grazing permit, taking non-use, and making grazing permits available to qualified permittees.

The Statutory and legal responsibilities relative to the use of the lands under the Taylor Grazing Act (TGA), sets forth the terms and mandates of this use since grazing were grandfathered in. Many federal regulations and policies might also apply but it is important to understand the first reservation on these monument lands happened under executive order 6910 making these lands, "Chiefly Valuable for Grazing." Under the TGA these lands were placed into the present grazing districts. Even though the Secretary has the discretion to discontinue grazing, careful consideration must be given to its detrimental effects. Eliminating grazing in part or totally in a grazing district may:

- Disrupt the orderly use of the range.
- breach the Secretary's duty to adequately safeguard grazing privileges,
- disrupt or impair the fiduciary responsibilities of States under the provisions of their Enabling Act
- be contrary to the protection, administration, regulation and improvement of public lands within grazing districts,

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-
- hamper the government's responsibility to account for grazing receipts,
 - impede construction and maintenance of range improvements as foreseen by the TGA and FLPMA, or
 - contradict provisions of the Monument's proclamation.
-

These historic acts and policies should be considered and placed in the planning documents for public review.

The State of Utah has plans in place that addresses impacts to historic uses and occupations by federal actions. There is also Statute that calls for recognizing local plans and policies prior to implementing an action that could have any negative impacts on cultural and historic uses placing additional negative impacts from federal decisions that reduce by attrition local occupations and historic uses lands. There is also a statue designating the Monument for grazing purposes. These statutes should be considered and placed in the planning documents for public review.

Many counties have grazing management plans as a part of their county master plans and other policies that should be considered and placed in the planning documents for public review. Any such plans in existence for Garfield or Kane Counties need to be disclosed and evaluated in the plan.

Clinton's "Proclamation" establishing the Monument in 1996 clearly spells out his intent that "Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock grazing on Federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws and regulations other than this proclamation."

The proclamation clearly states that grazing within the monument shall remain and be governed, as previously governed and as all grazing on public lands surrounding the monument are governed, pursuant to the terms of existing permits and leases, and not by stricter rules and regulations and not by environmental groups who clearly want to discontinue grazing altogether on public lands.

Pursuant to Section 202(c) (9) of the Federal Land Policy and Management Act (FLPMA), et seq. the Bureau of Land Management (BLM) is required to "... to coordinate the land use inventory, planning, and management activities of public lands with land use planning and management programs of other Federal departments, agencies, state and local governments, as well as the policies of approved Tribal and state land resource management programs. The BLM must, to the extent practical, assure that consideration is given to that Tribal, state, and local plans that are germane in the development of land use plans for public lands. Land use plans must be consistent with State and local plans to the maximum extent consistent with Federal law."

Likewise, 43 United States Code Section 1712 orders that the BLM coordinate its "land use inventory, planning and management actions with ... any local government. . . "

Thus, the grazing EIS/Plan must be coordinated with and be consistent with Kane County and Garfield County Resource Management Plans, Kane County and Garfield County General Plans and all other local, county and state land use plans, rules and regulations.

The Monument Proclamation outlines the "extraordinary" vegetation within the Monument and then goes on to state that "[m]ost of the ecological communities contained in the monument have low resistance to, and slow recovery from, disturbance." 61 Fed. Reg. 50225. In areas of the Monument where grazing is consistent with the values identified in the Proclamation, it should be done in a manner that conserves, protects, and restores the Monument's "spectacular array of scientific and historic resources," 61 Fed. Reg. 50225.

The Proclamation addressed livestock grazing with the following statement: "Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock grazing on Federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws and regulations other than this proclamation." Id. The "applicable laws and regulations" that the Proclamation refers to include but are not limited to the Taylor Grazing Act, 43 U.S.C. §§ 315-315r; Federal Land Policy and Management Act, 43 U.S.C. §§1701-84; National Historic Preservation Act, 16 U.S.C. §§ 470-470w-6; Fundamentals of Rangeland Health and Standards, 43 C.F.R. § 4180.1; and the Omnibus Public Lands Management Act of 2009, 16 U.S.C. 7202.

The Taylor Grazing Act ("TGA") governs grazing activities within the Monument. Under the TGA, a grazing permit

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is not a constitutionally protected property interest. *U. S. v. Fuller*, 409 U.S. 488 (1973). The BLM may regulate stocking levels, designate foraging locations, establish seasonal timing restraints, and impose related restrictions to protect range resources. The grazing privileges are subject to reasonable regulation to accomplish the Monument's protective purposes. The Proclamation's grazing provision viewed against the broader context of the TGA leads to the understanding that grazing is not a protected right but a privilege that may be regulated within the Monument in order to protect Monument resources.

The Federal Land Policy and Management Act ("FLPMA"), contains several provisions that are relevant to livestock grazing on the Monument. FLPMA's multiple use provision requires the BLM to balance competing resource values to ensure that the public lands are managed in a manner "that will best meet the present and future needs of the American people," 43 U.S.C. § 1702(c). See, *National Wildlife Federation v. BLM*, 140 IBLA 85 (1997). Because the Monument was created for the conservation of the Monument's resources, the multiple use provision should be interpreted in light of the Monument's conservation purpose. Furthermore, FLPMA contains an exception to the multiple use provision, stating that public lands are to be managed under the principles of multiple use except where "public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law." *Id.* at § 1732. In the Monument Management Plan, BLM acknowledges that the Monument was created "to protect a spectacular array of scientific, historic, biological, paleontological, and archaeological objects." MMP at 3. Because the GSENM was created for the specific purpose of protecting the Monument's resources, the Monument should be managed according to that purpose.

Additionally, FLPMA directs the BLM to manage resources "without permanent impairment of the productivity of the land and the quality of the environment," *id.* at § 1702(c), and "to prevent unnecessary or undue degradation of the lands," *id.* at § 1732(b). FLPMA also mandates that the BLM adhere to its land use plans, "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." *Id.* at §§ 1701(8), 1712. The proclamation, viewed in light of FLPMA's mandates, encourages prioritizing preservation in managing the Monument.

The Omnibus Public Land Management Act of 2009 (16 U.S.C. § 7202), established the National Landscape Conservation System ("National Conservation Lands") to "conserve, protect, and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations..." 16 U.S.C. § 7202(a). The Act requires that the National Conservation Lands be managed "in a manner that protects the values for which the components of the system were designated." *Id.* at § 7202(c)(2).

Secretarial Order 3308 speaks to the management of the National Conservation Lands. The Order states in pertinent part that "[T]he BLM shall ensure that the components of the [National Conservation Lands] are managed to protect the values for which they were designated, including, where appropriate, prohibiting uses that are in conflict with those values." The 15-Year Strategy for the Conservation Lands reinforces this by stating the "conservation, protection, and restoration of the [National Conservation Lands] values is the highest priority in [National Conservation Lands] planning and management, consistent with the designating legislation or presidential proclamation." National Conservation Lands Strategy at 8.

The Order also requires that the National Conservation Lands "be managed as an integral part of the larger landscape, in collaboration with the neighboring land owner and surrounding communities, to maintain biodiversity, and promote ecological connectivity and resilience in the face of climate change." The Order goes on to require the incorporation of science into the decision-making process for the National Conservation Lands, stating, "[s]cience shall be integrated into management decisions concerning [National Conservation Lands] components in order to enhance land and resource stewardship and promote greater understanding of lands and resources through research and education."

BLM recently issued manuals to implement policies for the National Conservation Lands. BLM Manual 6220 addresses management of grazing within National Monuments and states:

I. Where consistent with the designating legislation or proclamation, livestock grazing may occur within

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Monuments and NCAs.

2. Grazing management practices will be implemented in a manner that protects Monument and NCA objects and values unless otherwise provided for in law.

3. The BLM will use Monuments and NCAs as a laboratory for innovative grazing techniques designed to better conserve, protect, and restore NLCS values, where consistent with the designating legislation or proclamation.

BLM Manual 6220, National Monuments, National Conservation Areas, and Similar Designations (July, 13 2012).

The National Historic Preservation Act ("NHPA"), states that "the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people." 16 U.S.C. § 470. The BLM must "administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations." *Id.* at § 470-1. NHPA requires the BLM to assume "responsibility for the preservation of historic properties which are owned or controlled by" the agency. *Id.* at § 470h-2. The Proclamation recognized the importance of the cultural resources in the Monument, stating that "[t]he cultural resources discovered so far in the monument are outstanding in their variety of cultural affiliation, type and distribution." 61 Fed. Reg. 50225. Livestock grazing has the potential to impact archaeological and historic resources directly by trampling artifacts, pushing over standing structures, rubbing on rock art panels, and surface disturbance from construction of range facilities. The Proclamation's grazing provision viewed against the backdrop of the NHPA leads to an interpretation favoring the preservation of cultural resources and limiting impacts to those resources from livestock grazing. See, *Great Old Broads for Wilderness v. Kempthorne*, 452 F. Supp. 2d 71, 87 (D.D.C. 2006) (remanding the Grazing Management Plan for Glen Canyon NRA in part because of the lack of analysis of impacts to cultural resources under the NHPA). In addition, any routes authorized for use for grazing or other purposes must have intensive (Class III) surveys completed pursuant to the NHPA, BLM policy (Instruction Memorandum No. 2012-067). *S. Utah Wilderness Alliance v. Burke*, Case No. 2:12CV257DAK (D. Utah Nov. 4, 2013)

The Fundamentals of Rangeland Health and Standards and Guidelines, 43 C.F.R. §4180.1, also guide grazing management. These regulations established fundamentals of rangeland health and directed each state BLM director to develop state specific grazing standards. Overall, the BLM is required to "promote healthy sustainable rangeland ecosystems," and ensure these ecosystem components are "properly functioning." *Id.* at § 4100.0-2. Consequently, the BLM's own regulations require the agency to balance grazing levels with the need to maintain functioning ecosystems.

The BLM Utah Standards for Rangeland Health and Guidelines for Grazing Management provide further guidance on implementing the Fundamentals of Rangeland Health. The standards provide measures and indicators of land health such as soil permeability and infiltration, properly functioning riparian areas, and maintenance of desired species. The guidelines provide methods for improving land health and achieving desired conditions on the ground. Standards and guidelines must be used in order to ultimately achieve the Fundamentals of Rangeland Health under BLM regulations. Decisions in this plan amendment should be made to facilitate the restoration of healthy sustainable rangeland ecosystems.

While rangeland health standards are an important tool, they do not specifically address impacts to all Monument objects and values from livestock grazing. In conducting an evaluation of the compatibility of grazing with protecting monument objects in the Cascade-Siskiyou National Monument, BLM contrasted the findings using rangeland health standards and using a test of compatibility with protection. See, *Determination of Compatibility of Current Livestock Grazing Practices with Protecting the Objects of Biological Interest in the Cascade-Siskiyou National Monument*, Table 1, p. 5 (available on-line at: <http://www.blm.gov/or/resources/recreation/csnm/csnm-grazing.php>). An examination of the approach used in the Cascade-Siskiyou National Monument will demonstrate the contrast between attaining rangeland health standards and a more detailed examination of impacts to Monument objects and values.

In making land use decisions, federal agencies have an obligation under NEPA to take a "hard look" at the

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environmental consequences of a proposed action, and the requisite analysis "must be appropriate to the action in question." 42 U.S.C. § 4321 et seq.; *Metcalf v. Daley*, 214 F.3d 1135, 1151 (9th Cir. 2000); *Robertson v. Methow Valley Citizens Council*, supra. The impacts and effects of a proposed action, such as livestock grazing, that federal agencies are required to assess include: "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." 40 C.F.R. § 1508.8.

Under the Data Quality Act, federal agencies are required to use information that is of high quality and that is objective, useful, and verifiable by others. See, Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub.L.No. 106-554, § 515.

Agencies must also use "sound statistical and research" methods. Presidential Memorandum on Scientific Integrity (March 9, 2009) states that federal agencies must ensure "the highest level of integrity in all aspects of the executive branch's involvement with scientific and technological processes." Following this mandate, the Office of Science and Technology Policy released a guidance memorandum on scientific integrity (2010) and the Department of Interior issued Manual 305 DM 3.

These documents provide directives for ensuring the highest level of scientific integrity in the Department of Interior as well as for redress for scientific or scholarly misconduct. BLM must guarantee that it will abide by the highest scientific and scholarly conduct in its preparation of the grazing EIS and plan amendment. See also, Secretarial Order 3308, § 4(d) ("Science shall be integrated into management decisions concerning NLCS components in order to enhance land and resource stewardship and promote greater understanding of lands and resources through research and education."); 15-Year Strategy for the National Conservation Lands, Goals IC and IE(2) [BLM must "provide a scientific foundation for decision making" and "Use the best available science to conduct capacity studies, establish specific, measurable, attainable, relevant, and time-specific (SMART) objectives (or similar), and develop monitoring plans for compatible uses to ensure the NLCS values are protected, consistent with the designating legislation or presidential proclamation. Use the monitoring results to adaptively manage the NLCS values."]; National Landscape Conservation System Science Strategy (generally guides the study and use of science in National Conservation Lands); MMP, "Science and Research" at 44-46 (discussing the priority for research and applied science in the Monument).

Under Secretarial Order 3289, BLM is required to "consider and analyze potential climate change impacts when undertaking long range planning exercises... (and) developing multi-year management plans." Secretarial Order 3289 also provides authority for Landscape Conservation Cooperatives (LCC). These LCCs were established to bring together a variety of stakeholders to "develop landscape-level strategies for understanding and responding to climate change impacts." BLM should call on the expertise of the Colorado Plateau LCC to come up with strategies to respond to climate change in the planning area. Specifically, BLM should request that the Colorado Plateau LCC help analyze vulnerability and provide scenario planning models to help the agency respond to the threats associated with global climate change from livestock grazing. One example of assessing vulnerability to climate change was recently done for the planning process for BLM Alaska's NPR-A. See, Final NPR-A Integrated Activity Plan/EIS, Appendix C: https://www.blm.gov/epl-frontoffice/projects/nepa/5251/41008/43158/Vol6_NPR-A_Final_IAP_FEIS.pdf.

Finally, the National Landscape Conservation System is particularly well-suited for leading the way in demonstrating landscape-level management. Secretarial Order 3308, which provides direction on the management of the National Landscape Conservation System, states that "[t]he NLCS components shall be managed as an integral part of the larger landscape, in collaboration with the neighboring land owners and surrounding communities, to maintain biodiversity, and promote ecological connectivity and resilience in the face of climate change." In addition, the 15-Year Strategy for the National Landscape Conservation System provides further details on managing units within the context of the broader landscape, integrating science into decision-making and monitoring management to adapt to respond to additional stressors, such as climate change. The BLM's Land Use Planning Handbook (BLM 2005a) sets out certain factors for the agency to consider when

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making a determination of whether to make lands available to livestock grazing in land use plans pursuant to its regulations. 43 C.F.R. § 4310.2(a). These factors include:

1. Other uses for the land;
2. terrain characteristics;
3. soil, vegetation, and watershed characteristics;
4. the presence of undesirable vegetation, including significant invasive weed infestations; and
5. the presence of other resources that may require special management or protection, such as special status species, special recreation management areas (SRMAs), or ACECs.

BLM Land Use Planning Handbook H-1601-I, Appendix C at II(B), p. 14.

In the Monument Management Plan, BLM acknowledges that the Monument was created by the president "to protect a spectacular array of scientific, historic, biological, paleontological, and archaeological objects." MMP at 3. Indeed, "[a]ll other considerations are secondary to that edict." *Id.* Under FLPMA and BLM regulations, all management authorizations and actions must conform to the approved resource management plan for a resource area. 43 U.S.C. § 1732(a); 43 C.F.R. § 1610.5-3.

The Proclamation viewed against the backdrop of the Monument Management Plan presumes that BLM will manage grazing in such a manner that Monument values and objects will receive protection and will persist intact and healthy throughout the Monument.

The grazing EIS is being prepared to amend the Monument Management Plan (MMP) to incorporate livestock grazing management into the MMP. As recognized by BLM, the Monument Framework Plans developed in the 1970s and early 1980s are inadequate to address today's land management challenges in the area, which include a heightened conservation mandate for the Monument as set forth in the Proclamation and in the establishment of and policies for the National Landscape Conservation System.

In 1999, BLM amended, following NEPA review, several parts of the Escalante MFP related to livestock grazing in order to improve protection of riparian areas and wildlife habitat and to reduce or eliminate recreation conflicts with grazing (USDI 1999b). Through this amendment, BLM closed four allotments (Escalante River, McGath Point, Saltwater Creek, and Steep Creek) and closed portions of other allotments that were located on the Escalante River (Big Bowns Bench, Deer Creek, and Phipps). The amendment also created grass banks for the remaining AUMs on the Phipps allotment that weren't canceled due to the partial closure as well as the Little Bowns Bench allotment and the Wolverine pasture of the Deer Creek allotment. Reductions were also made for three other allotments (Moody, Wagon Box Mesa, and Big Horn). Other restrictions include:

- Authorized 750 AUMs on the Big Bowns Bench allotment with a season of November 1 to March 31.
- Horse Canyon to the part of the trail going onto Big Bowns Bench to the trail leaving Horse Canyon going onto King Bench would only be used as a holding pasture to gather livestock at the end of the grazing season.
- Grazing facilities that are no longer needed would be evaluated for historic or interpretive value and will be removed if they are found not to have those values.

Thus, there are a number of laws and regulations that govern livestock grazing other than the Proclamation itself, including guidance from the broader National Landscape Conservation System. BLM is required take into account all of these applicable authorities, along with the Proclamation, and govern livestock grazing within the Monument accordingly.

The Glen Canyon National Recreation Area (GCNRA) was established in 1972 "[i]n order to provide for public outdoor recreation use and enjoyment of Lake Powell and lands adjacent thereto . . . And to preserve scenic, scientific, and historic features contributing to public enjoyment of the area[.]" Glen Canyon Enabling Act, 16 U.S.C. § 460dd(a). The GCNRA Enabling Act authorized BLM to administer grazing leases in GCNRA in accordance with "[t]he same policies [it] followed . . . In issuing and administering . . . Grazing leases on other lands under its jurisdiction[.]" 16 U.S.C. § 460dd-5. However, the BLM's authority to manage grazing in GCNRA was

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limited by the Secretary of the Interior's obligation to "administer, protect, and develop the recreation area" as provided in the National Park Service's Organic Act. *Id.* This obligation includes managing units of the National Park System "by such means and measures as conform to [their] fundamental purpose. . . , which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." 16 U.S.C. § 1. See also, *Great Old Broads for Wilderness v. Kempthorne*, 452 F. Supp. 2d 71, 73-74 (D.D.C. 2006).

The General Management Plan (GMP) for GCNRA was completed in 1979. The GMP did not include specific management for livestock grazing but instead proposed that a separate plan be developed with detailed descriptions of the existing range conditions and "[r]ecommendations for specific range improvement practices and devices, management activities, and maximum grazing intensities compatible with the purpose of the recreation area." GMP at 180, emphasis added..

In 1999, a Grazing Management Plan for the GCNRA was adopted. The grazing plan was subsequently challenged on the sufficiency of its environmental analysis. *Great Old Broads for Wilderness v. Kempthorne*, 452 F. Supp. 2d 71 (D.D.C. 2006). The court in this case found that NPS, in its EA for the grazing plan, had not adequately evaluated cumulative and other impacts such as impacts from recreation and impacts to cultural resources and remanded the plan for further analysis. *Id.* At 83-87. BLM and NPS must comply with this order in completing the grazing EIS/plan amendment.

In addition, NPS and BLM have a Memorandum of Understanding ("MOU") from 1984 regarding the management of grazing within the GCNRA. This MOU sets up the working relationship between the agencies for grazing management in the GCNRA. Under the MOU, BLM is responsible for grazing administration and NPS is responsible for ensuring that proposed grazing activities are consistent with the purposes for which the area was established. More specifically, BLM must receive, in writing, a "Values and Purposes Determination" from the NPS Regional Director before it may authorize grazing or related activities stating that the proposed action will not lead to an impairment of GCNRA resources and values. NPS must provide BLM with terms and conditions to ensure compatibility with GCNRA's values and purposes. This process was reiterated in interagency agreements entered into in 1993 and 1998 *Id.* At 74-75.

A. NEPA and Consideration of Alternatives

The BLM is developing this GSENM grazing EIS in accordance with National Environmental Policy Act (NEPA) regulations. Section 1507.2(d) of these regulations requires federal agencies to "Study, develop, and describe alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."

Perceived and/or real conflicts are unresolved concerning current livestock grazing management within GSENM and protection of "...a spectacular array of scientific, historic, biological, paleontological, and archaeological objects" described in the GSENM Proclamation. Hence the need to study, develop, and describe alternatives for resolving such conflicts.

The Sustainable Grazing Alternative (Part III of these scoping comments) is submitted for publication and detailed analysis in the GSENM Draft and Final EIS for grazing management within the GSENM and GCNRA. As noted in Section 1502.14 ("Alternatives including the proposed action") of NEPA regulations, an Environmental Impact Statement (EIS) should "Rigorously explore and objectively evaluate all reasonable alternatives," and "Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits." In fact, the regulations require the inclusion of "reasonable alternatives not within the jurisdiction of the lead agency."

As noted in Section 1502.14, the EIS: "should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among

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options by the decisionmaker and the public."

This analysis and public review of alternatives is described in Section 1502.14 as "the heart of the environmental impact statement."

The Sustainable Grazing Alternative we offer in these scoping comments is reasonable, within the scope of the purpose and need, based in science, and within the jurisdiction of the BLM to implement. In Section IV of our scoping comments, we provide the legal, social, and scientific rationale for the various elements of the Sustainable Grazing Alternative.

Nothing in the NEPA regulations prevents detailed analysis or adoption of parts or all of an alternative submitted early in a NEPA process by a non-agency entity. The 2003 EIS for a new Hells Canyon National Recreation Area Comprehensive Management Plan fully considered (and eventually adopted major elements of) a Native Ecosystem Alternative (Alternative N) submitted by the Hells Canyon CMP Task Force, a coalition of non- governmental organizations, individuals, and two Tribes. The EIS also fully analyzed an alternative (Alternative W) that had been submitted by the Wallowa County Commission. While the Wallowa-Whitman National Forest did not alter either alternative in any manner, the agency did contact the Task Force to ask for clarification of certain phrases and allowed the Task Force to alter the wording of two elements to render them legal within Forest Service regulations.

Similarly, the 2007 Final Environmental Impact Statement for the Reissuance of Term Grazing Permits on Eight Cattle Allotments, Beaver Mountain Tushar Range, Beaver Ranger District, Fishlake National Forest; and Millard, Piute, Garfield, Beaver, and Iron Counties fully analyzed, without altering, an alternative (Sustainable Multiple Use Alternative) submitted by seven non-governmental organizations (Three Forests Coalition). The Fishlake National Forest asked for clarifications of the meaning of certain elements, and allowed the Three Forests Coalition to reword its fire section in standard Forest Service terminology.

In 2012, Judge Marcia Krieger of the U.S. District Court in Colorado set aside a resource management plan for oil and gas development in the Roan Plateau that had been approved by BLM in 2007. Her Opinion was based on failure of the BLM to consider an alternative that had been submitted in a 2005 letter by the non-governmental group, Rock the Earth. Judge Krieger wrote in her Opinion in *Colorado Environmental Coalition, et al v. Salazar* (Civil Action No. 08-cv-01460-MSK-KLM):

"Contrary to the BLM's position at oral argument that the Community Alternative was a 'moving target' that was 'not clearly defined' so as to permit meaningful analysis, the Court finds that the April 8, 2005 letter from Rock the Earth sets forth the general contours of the (or at least 'a') Community Alternative in sufficient detail so as to permit meaningful analysis of that alternative by the BLM. The Court further finds that the Community Alternative, at least as described in Rock the Earth's letter, was indeed a distinct and concrete 'alternative' to the other courses of action being contemplated by the BLM."

This (and other court rulings) indicates that the BLM is able to analyze in detail and present to the public the Sustainable Grazing Alternative.

A 1972 case, *Calvert Cliffs Coordinating Committee, Inc. v. Atomic Energy Commission*, 404 U.S. 942 (1972) was a non-governmental organization's challenge to AEC's NEPA procedures. In its ruling for *Calvert Cliffs Coordinating Committee*, the Court noted: "NEPA requires that [all Federal agencies] must - to the fullest extent possible under its other statutory obligations - consider alternatives to its actions which would reduce environmental damage."

We believe the Sustainable Grazing Alternative, while allowing for continued livestock grazing in portions of the GSENM and GCNRA, would reduce environmental damage associated with current grazing management. Moreover, we expect that the Sustainable Grazing Alternative will be, to quote Judge Krieger, a "distinct and concrete 'alternative' to the other courses of action being contemplated by the BLM."

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As yet, we are unable to place the Sustainable Grazing Alternative in the precise format the BLM will use to present other alternatives because we have only the scoping notice with its purpose and need and general issues to be addressed. However, we have numbered the various elements of the Sustainable Grazing Alternative in such a manner that the elements could be moved around into a format allowing for comparative analysis with BLM Alternatives once we see the format BLM is using.

Just as the BLM will develop alternatives the agency believes are integrated and comprehensive, so we have done. We therefore explicitly request that the Sustainable Grazing Alternative be presented unaltered to the public alongside BLM and any other alternatives. Placing other elements into this alternative, deleting particular elements, or rewording certain elements without our permission could compromise the integrity, reasonableness, feasibility, scientific basis, environmental consequences, and/or social acceptability of the Sustainable Grazing Alternative.

That said, if BLM finds particular phrases or elements in the Sustainable Grazing Alternative unclear or, for reasons currently unknown to us, not legally possible, we request that BLM notify us and give us the opportunity to clarify the wording, or alter an element so as to bring it into legal possibility.

The NEPA regulation on methodology and scientific accuracy (40 CFR 1502.24) will be central for this EIS because trust among many interested publics is low, after the earlier, decade-long, failed effort to develop a GSENM grazing management plan. In particular, as NEPA regulation 1502.24 states:

"They [in this case the BLM] shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement."

"Conclusions" refers to conclusory statements. If language is used carefully and conclusory statements are backed by evidence, data (e.g., GSENM field monitoring), and/or scientific studies available for review by the public, greater trust will be garnered. Also, it's legally required

I. BLM is legally obligated to administer grazing inside Glen Canyon NRA in a manner that does not impair monument resources.

Glen Canyon NRA operates under the same Organic Act as national parks, monuments, and historic sites. The National Park Service Organic Act of 1916 directs "...the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." Although the enabling legislation for Glen Canyon NRA states that the administration of grazing leases within the recreation area shall be by the BLM, the National Park Service is charged with managing the NRA. The enabling legislation is explicit that BLM administration of grazing inside GCNRA is subject to the provisions of the Organic Act i.e. with no resulting impairment to park values and purpose. The BLM needs to ensure that the EIS process explicitly addresses and communicates this obligation and the resulting plan incorporates appropriate guidelines for ensuring non-impairment and protection of GCNRA values and purpose.

In addition to developing separate guidelines for the administration of grazing allotments in GCNRA, the BLM should clarify that the stated underlying goal for completing the EIS - "to enable sustained use of the land through improved land health and science based grazing management" - does not pertain to the NRA. Grazing is "allowed" in the NRA - it is not an existing right - and it may not be appropriate in some areas of the NRA due to impacts on park values and purpose, and on natural, cultural and recreational resources. Therefore, to claim that the goal of the EIS is "to enable sustained use of the land" by livestock grazing does not apply to the NRA. NPCA recommends a separate or revised goal be developed for grazing inside GCNRA.

Several agreements between the BLM and NPS ("Umbrella" Memorandum of Understanding 1984 Between Bureau of Land Management and National Park Service, Interagency Agreement between Bureau of Land Management and National Park Service for Grazing Management on Glen Canyon National Recreation Area) state that before authorizing a grazing activity within GCNRA, the NPS must determine if NRA values and purpose are affected, a process called a "Values and Purposes Determination". The purpose of the recreation area as outlined in the enabling legislation is "to provide for public outdoor recreation use and enjoyment of Lake Powell and lands

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adjacent ...and to preserve scenic, scientific, and historic features contributing to public enjoyment of the area." The values of the recreation area have been defined by the NPS as the vegetation, soil, water quality, wildlife, archaeological, historic, paleontological, scenic and recreation resources that make up the scenic, scientific, and historic features which define the outdoor recreational use and enjoyment of Glen Canyon NRA (P.2 GCNRA Grazing Management Plan 1999).

NPCA asks the BLM to actively and intentionally adhere to the grazing management agreements with the NPS and explicitly reference this language in the Livestock Grazing Plan Amendment EIS. The agreements clearly state that the BLM shall consult and coordinate with the NPS on grazing activities and that the NPS needs to give approval for grazing authorizations and activities as part of a "Values and Purposes Determination".

We understand that under this plan the Director will also consider determining which lands are and are not available for livestock grazing by considering:

- other uses for the land,
- terrain characteristics,
- soil, vegetation, and watershed characteristics,
- the presence of undesirable vegetation, such as invasive weed infestations, and
- the presence of other resources that may require special management or protection, such as special status species or special recreation management areas.

The Statutory and legal responsibilities relative to the use of the lands under the Taylor Grazing Act (TGA), sets forth the terms and mandates of this use since grazing under the Federal Land Policy and Management Act (FLPMA) and the monument proclamation was grandfathered in. It is important to remember the first reservation on these monument lands happened under executive order 6910, reserving these lands as, "Chiefly Valuable for Grazing." Under the TGA these lands were placed into the present grazing districts.

The Grazing Districts were protected with the intent that they be utilized: § 701(a), L.. 94-579 (1976) "All withdrawals, reservations, classifications, and designations in effect as of the date of approval of this Act [Oct. 21, 1976] shall remain in full force and effect until modified under the provisions of this Act or other applicable law."

Under the Taylor Grazing Act, the dominant purpose of grazing districts declared "chiefly valuable" for grazing must be grazing. "Congress intended that once the Secretary established a grazing district under the TGA, the primary use of that land should be grazing." Public Lands Council v. Babbitt, 167 F.3d 1287, 1308 (10th Cir. 1999), aff'd on other grounds, 529 U.S. 728 (2000).

Modifications that threaten to shift the primary use of lands within grazing districts from livestock grazing to other uses should be closely evaluated so as to not violate the law or Supreme Court rulings. To be clear, PLC and NCBA do not believe that livestock grazing and other uses are mutually exclusive purposes. Nevertheless, any proposed amendments that appear to put conservation or other uses on a higher footing than livestock grazing and forage production, would be a violation of the TGA. Amendments to the MMP relating to range management, must be flexible enough to allow BLM to carry out its duties under the TGA.

Significant natural resource impacts to ecosystems were considered by Congress when the TGA was passed. The TGA was the first Act of Congress to address resource depletion and loss of natural habitat after decades of rangeland deterioration. The Act provided for the orderly use, improvement, and development to stabilize the livestock industry dependent on the public range. Utah was the first state to adopt the Act into their Statutes. TGA, the Monument proclamation and FLPMA recognize the importance of grazing and improving the range by construction of range improvements that lead to substantial betterment of forage conditions with resulting benefits to wildlife, watershed protection and livestock production. Therefore, Congress gave the Secretary the duty to adequately safeguard grazing privileges.

I understand that under this plan the Director will consider determining which lands are available for continued livestock grazing, by considering the following:

1. Other uses for the land; including resources that may require special management or protection, such as special status species or special recreation management areas.
2. Soil, vegetation, and watershed characteristics.
3. Terrain characteristics.

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4. The presence of undesirable vegetation, such as invasive weed infestations.

The Statutory and legal responsibilities relative to the use of the lands under the Taylor Grazing Act (TGA), sets forth the terms and mandates of this use since grazing under FLPMA and the monument proclamation were grandfathered in. It is important to remember the first reservation on these monument lands happened under executive order 6910, reserving these lands as, "Chiefly Valuable for Grazing." Under the TGA these lands were placed into the present grazing districts.

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Planning criteria- Collaborative decision making

BLM's planning criteria should include a requirement that promotes collaboration in making decisions on grazing use and management. Collaboration allows people to learn about issues and remedies by working together. Good collaboration serves as models of the types of behavior that fosters trust, honesty, and openness. Successful collaborations soften controversy on issues and reduce legal dispute. As demonstrated by the Escalante River Watershed Partnership, these collaborations can bring resources that otherwise would not be available. BLM recently made a major effort to begin collaboration in developing this land use plan amendment. We commend BLM for that effort. We recommend that BLM incorporate into this plan the seven guiding principles in collaboration described in BLM's Collaboration Desk Guide.[7]. The U.S. Institute for Environmental Conflict Resolution can help the BLM design a collaborative decision process.

Appendix A presents a compilation of BLM commitments found in many manuals and documents for collaboration as part of its policy for consultation, cooperation and coordination. In addition, guidance is found in Presidential Executive Order 13352, which established collaboration as a policy for BLM:

"Facilitation of Cooperative Conservation" (August 26, 2004), "...directs agencies to implement environmental and natural resource laws to promote collaborative activity among Federal, State, local, and Tribal governments, private for-profit and nonprofit institutions, other non-governmental entities and individuals.[8]"

The BLM's land use planning handbook H-1601 describes the legal authorities for public involvement and collaborative work. Additionally, the Department of the Interior has several memos that promote collaboration.[9] Page 18 of the NLCS Plan Implementation Review (2010) recommended that the Monument "Encourage cooperative monitoring by permittees and interested stakeholders."

Appendix A describes in detail BLM's obligations for transparency and inclusion of interests in management.

[7] BLM 2007 Collaboration desk guide, 31 pages

[8] Presidential Executive Order 13352, 26 August 2004/

[9] Department of the Interior's Environmental Statement Memorandum (EMS) No. EMS03-4, Procedures for Implementing Public Participation and Community-Based Training.

The Department of the Interior's Environmental Statement Memorandum (EMS) No. EMS03-7, Procedures for Implementing Consensus-Based Management in Agency Planning and Operations.

BLM Instruction Memorandum No. 2005-237, New Department of the Interior Requirements; Use and Further Distribution of A Desk Guide to Cooperating Agency Relationships.

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Planning criteria- Description of potential management actions

In order to meet the requirements found in the Proclamation and elaborated in detail in the current MMP, the planning amendment needs to develop measurable grazing objectives that lead to adequate management mechanisms.

The general trend in BLM land use planning that we have seen is plans that are published without measurable goals and actions. Rather, they tend to be general, with overly broad direction and guidelines. As a result, such plans offer no clear direction during implementation. It was witnessed at past Monument meetings that BLM management staff counseled employees to write the grazing EIS document with language that was so ambiguous it contained "loopholes you can drive a truck through".

BLM Handbook 1601 (2005) notes that "These land use plan decisions establish goals and objectives for resource management (desired outcomes) and the measures needed to achieve these goals and objectives (management actions and allowable uses)." Plan goals and objectives need to include all the Monument values and BLM habitat obligations. Plan decisions provide remedies for problems identified as issues. Such remedies are a series of actions that, in the past, have been proven to reach the measurable goals and objectives.

Additional planning issues

Management of NPS lands

BLM management of Glen Canyon National Recreation Area (NRA) lands has followed standards and practices used on other BLM lands. The non-impairment requirement for the NRA requires different assessment methods and changes in management specific to the NRA.

Analysis of the Management Situation

Land use planning provides remedies (a preferred alternative) consistent with the planning criteria to address the issues raised in the EIS process. Such remedies need baseline information that adequately describes current conditions related to the planning issues. Analysis of the remedies will then assess whether goals and objectives can be met based on the need for change in baseline condition. The Analysis of the Management Situation (AMS) provides this baseline information:

"The analysis of the management situation (AMS) should describe the current conditions and trends of the resources and the uses/activities in the planning area in sufficient detail to create a framework from which to resolve the planning issues through the development of alternatives. This analysis should be short, concise, and focused on the issues relevant to resource management in the area. It should not be an exhaustive review of everything known about the area."[32]

The AMS for this EIS should assemble data and analysis that assesses measures of issues and provides a baseline to evaluate planning decisions to remedy the issues. These data should be at a resolution that they can provide baseline data for individual allotments and pastures. At a minimum, the AMS should include:

- a. Permitted grazing use
 - b. Current annual forage production by allotment
 - c. Economic contribution to the economy (see the four questions needing to be answered in the socio and economics criteria section).
 - d. Results of Rangeland Health assessments for both upland (IIHR) and riparian (PFC) data relative to standards.
 - e. Location and current condition of each of the values described in the Monument Proclamation
 - f. Identification of highly erodible soils
 - g. Biological crusts, potential and actual
 - h. Current ground cover (including the amount of bare ground)
 - i. For ecological sites, ground cover for the PNC
 - j. Relative amount of nonnative vs. native herbaceous and shrub plant species.
 - k. Precipitation history, spatially presented
 - l. Soils and water quality
 - m. Fuel load (exotic annuals plants relative to grazing)
-

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n. Range Improvement Project locations, and if possible condition they are in
 o. Ecological Site map of the Monument
 p. Ecological Site Descriptions with a correlation key to the soil survey data
 q. Forage production, current annual production by soil map unit.
 r. Predicted (presettlement) extend of lands with biological crusts and current spatial data on occupied areas and their condition.
 s. Presettlement extent of plant communities, especially for the piñon juniper forests
 t. Spatial data on fire in the Monument, current habitat conditions of past fires
 u. Land treatment spatial data.
 v. Historic grazing use by allotment, update the tables produced for each allotment of actual use reports. Include a history of pasture rotation sequence and any deviation from permitted on and off dates.
 w. Range monitoring, assemble a spatial data set that provides data for the past several decades for utilization, trend, and other monitoring.
 x. Range, historic and current, for current and desired wildlife in the Monument. Include exotic wildlife introduced to the Monument.

[32] BLM. 2005. Handbook 1601-I - land use planning handbook (public), Appendix F, page 6

As a matter of guideline development, I would suggest clear guideline description of any differences between the BLMs Executive Order direction to "protect" objects and values subject to valid existing rights and the NPS legal mandate of non-impairment of resources. In the written materials available at the Salt Lake City scoping meeting, BLM appears to place valid existing rights on par with resource protection; NPS, however, clearly places resource protection concerns above consumptive uses in protection priority (as directed by the Glen Canyon National Recreation Area establishment legislation).

Following on the above, grazing is not a "valid existing right". It is not a "right" at all but a permitted activity, the scope, extent and duration of which is determined by the managing agency. The EIS should clearly describe what the "valid existing rights" are within the planning area and develop guidelines that recognize and manage them to the extent that they are potentially affected by grazing activities. The EIS should also directly state the BLM and NPS position regarding grazing and valid existing rights rather than leave the implication of such as mentioned in the Fact Sheet on Objects and Values.

The hand out materials available at the scoping meeting only mentioned the adjacent National Park Service area being included in the planning area in one obscure place. The maps posted on easels around the room clearly showed part of the National Recreation Area as being within the planning area and the Deputy Monument Manager in her opening remarks mentioned that BLM "manages" the grazing for the NPS in the indicated portion of the NRA but she did not expand on what that implied or meant. In truth, BLM "administers" the grazing permits within the NRA but the NPS manages the area. This seems like a small, technical difference but it is and important one the error of which should not be continued into the EIS.

Because there was such poor, incomplete and inaccurate treatment of NPS authorities, relationships and issues, the scoping in this respect may be inadequate and incomplete.

The Fact Sheet on Special Designations focused only on the Monument and did not mention the National Recreation Area. Those special designations listed Wilderness Study Areas, Wild and Scenic Rivers and the Old Spanish Trail. The Fact Sheet went on at some length about how livestock grazing could occur in those specially designated areas. I feel the scoping process was again inadequate and insufficient because BLM did not scope on the special designation and protection mandate of the NRA, some of which is proposed wilderness.

The Fact Sheet on Recreation did mention the NRA and cited its visitation of over 2 million in 2012. It mentioned that "overnight campers often take the opportunity to hike some of the numerous canyons and plateaus located along the shoreline". The Fact Sheet simply states these things but did not elaborate on them. However, the Fact Sheet did mention the six special recreation management areas identified in the Monument Management Plan and did elaborate on them to say, "... recreational uses within an area may need to be closely managed to protect Monument resources or values or to prevent conflicts with other resource uses." Should not a similar but appropriate statement have been made for the NRA? I would hope any guidelines developed on this issue would

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include such consideration.

Archeological resources were barely noted in scoping but not verbally in any presentation that I observed. Desert water source protection was not mentioned in scoping. Endemic plants were mentioned in a Fact Sheet as an outstanding ecological value. Clearly, if one is developing grazing management guidelines for the protection of these special and critical resources, guidelines for such should be developed.

I want to be clear, that right in the monument proclamation in 1996 it was clearly stated and intended by then President William Jefferson Clinton that "Nothing in this proclamation shall be deemed to affect existing permits or leases for, or levels of, livestock grazing on Federal lands within the monument; existing grazing uses shall continue to be governed by applicable laws and regulations other than this proclamation."

As this long postponed Livestock Grazing EIS process is getting underway, it is important to remind that the "Proclamation" establishing the Monument in 1996 placed limits on the types of uses that would be allowed in the Monument. However it was clearly intended and stated by President William Jefferson Clinton that "Nothing in this proclamation shall be deemed to affect existing permits or leases for or levels of livestock grazing on Federal lands within the monument" existing grazing uses shall continue to be applicable laws and regulations other than this proclamation."

Clearly 1996 proclamation and resulting decree meant that Monument values or elements do not govern grazing within the Monument and as such only applicable laws and regulations are to apply. Kane County intends to assert and pursue this principle with full vigor throughout this Grazing EIS process.

Section 202(c)(9) of the Federal Land Policy and Management Act (FLPMA), et seq. states in part, "to the extent consistent with the laws governing the administration of public lands, coordinate the land use inventory, planning, and management activities of public lands with land use planning and management programs of other Federal departments, agencies, state and local governments, as well as the policies of approved Tribal and state land resource management programs. The BLM must, to the extent practical, assure that consideration is given to that Tribal, state, and local plans that are germane in the development of land use plans for public lands. Land use plans must be consistent with State and local plans to the maximum extent consistent with Federal law."

GSENM - Management Plan

"Water-Related Developments (Non-Culinary)"
 (Chapter 2, page 55)

"Water developments can be used as a management tool throughout the Monument for The following purposes: better distribution of livestock when deemed to have overall beneficial effect on Monument resources, including water resources or riparian areas, or to restore or manage native species or populations..."

"Maintenance of existing developments can continue, but may require NEPA analysis and must be consistent with the objectives of the Plan."

ACTS OF CONGRESS

Federal Acquiesce to the States

The rights of the states to govern water have been recognized by generations of federal land management agencies as directed by the United States Congress:

Act of July 26, 1866:

The United States Congress passed the Act of July 26, 1866 [subsequently the Ditch Act of 1866] that became the foundation for what today is referred to "Western Water Law." The Act recognized the common-law practices that were already in place as settlers made their way to the western territories including Utah. Congress declared:

"Whenever, by priority of possession, rights to the use of water for mining, agriculture, manufacturing, or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws and decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the

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same; and the right of way for the construction of ditches and canals for the purposes herein specified is acknowledged and confirmed; but when ever any person, in the construction of any ditch or canal, injures or damages the possession of any settler on the public domain, the party committing such injury or damage shall be liable to the party injured for such injury or damage." (43 USC Section 661)

This Act of Congress obligated the federal government to recognize the rights of the individual possessors of water, but as important, recognized "local customs, laws and decisions of state courts."

Western water law or the "doctrine of prior appropriation" governs the use of water in many of the states in the west. The fundamental principle embodied in the doctrine of prior appropriation is that while no one may own the publicly owned resource, persons, corporations or municipalities have the right to put the water to beneficial use any defined by state law. For purposes of beneficial use, the allocation of right rests in the principle of "first in time, first in right." The first person to use the water is the senior appropriator and later users are junior appropriators. In Utah, and across the west, this principle protects the senior water right priority for this scarce and valuable resource.

Beneficial uses are determined by state legislatures generally including livestock watering, irrigation for crops, domestic and municipal use, mining and industrial uses.

The Desert Land Act of 1877:

"All surplus water over and above such actual appropriation and use....shall remain and be held free for appropriation and use of the public for irrigation, mining and manufacturing..."

The Taylor Grazing Act of 1934:

"nothing in this Act shall be construed or administered in a way to diminish or impair any right to the possession and use of water for mining, agriculture, manufacturing and other purposes..."

The McCarran Amendment of 1952:

"waives the sovereign immunity of the United States for adjudications for all rights to use water."

The 1976 Federal Land Policy Management Act:

"All actions by the Secretary concerned under this act shall be subject to valid existing rights."

CASE LAW

Nevada Federal District Court: United States vs Estate of Wayne Hage and Wayne Hage, Jr.
 Chief Judge Robert C. Jones:

Jones warned the federal agency that livestock utilizing the rancher's livestock water right cannot be found in trespass. The Judge awarded a right of access to put the rancher's water right to beneficial use including a grazing right 1/2 mile around the historic livestock water rights.

Federal Circuit Court of Appeals for Washington D.C.: Hage vs United States
 Three Judge Panel:

In the Hage takings case, the Appeals Court found that the ranching family has an "access right" to their water on federal lands.

Idaho Supreme Court: Joyce Livestock Company vs United States

The Idaho Supreme Court found that the United States cannot put the state's waters to beneficial use, therefore the water rights of the ranchers obtained by watering their livestock on federal lands, therefore the claims made to livestock water rights on federal lands were denied.

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UTAH WATER LAW

State Policy for Livestock Water Rights:

Utah Livestock Water Rights Act introduced in the Utah Legislature in 2008, and amended in the 2013 session, Utah Code 73-3-31 provides:

73-3-31 (1)(c)(i) "Beneficial User" means the person that has the right to use the grazing permit.

73-3-31 (10)(c)(ii) "Beneficial User" does not mean the public land agency issuing the grazing permit.

73-3-31 (5) A livestock watering right is appurtenant to the allotment on which the livestock is watered.

73-3-31 (7) A beneficial user may access or improve an allotment as necessary for the beneficial user to beneficially use, develop, and maintain the beneficial user's water right appurtenant to the allotment.

Livestock Water Rights and State Sovereignty:

The proposed Plan is lacking in Congressional and legal underpinning. The water is the sovereign right expressly granted by Congress to be placed to beneficial use as a matter of the statutes of the State of Utah.

The citations from the proposed Plan do not seem to recognize water and sovereignty, federal acquiesce to state water laws and judicial decisions.

Consistency Requirement

FLPMA requires consistency with state and local governments. BLM must provide consistency with state as well as Kane and Garfield County Land Use Management Plans as they relate to livestock grazing within the Grand Staircase-Escalante National Monument.

Utah House Bill 264 in 2006, passed by both houses of the Utah Legislature and signed into law by the Governor codifies the state's public lands grazing policy. Please reference the following Utah State Statute as it relates to federal agency consistency under FLPMA:

State Policy for Public Lands Grazing

Utah Code 63-38d-401(6)(m)

(iv) the state opposes the transfer of grazing animal unit months to wildlife for supposed reasons of rangeland health;

(v) reductions in domestic livestock animal unit months must be temporary and scientifically based upon rangeland conditions;

(vi) policies, plans, programs, initiatives, resource management plans, and forest plans may not allow the placement of grazing animal unit months in a suspended use category unless there is a rational and scientific determination that the condition of the rangeland allotment or district in question will not sustain the animal unit months sought to be placed in suspended use;

(viii) policies, plans, programs, and initiatives related to vegetation management should recognize and uphold the preference for domestic grazing over alternate forage uses in established grazing districts while upholding management practices that optimize and expand forage for grazing and wildlife in conjunction with state wildlife management plans and programs in order to provide maximum available forage for all uses; and

(ix) in established grazing districts, animal unit months that have been reduced due to rangeland health concerns should be restored to livestock when rangeland conditions improve, and should not be converted to wildlife use.

Many rural Utah counties, including Kane and Garfield, have enacted County General Plans pertaining to public land grazing. These plans must be referenced and considered by the BLM as it relates to the Monument to meet the obligations of federal law previously cited.

We respectfully request that you implement government to government coordination with us to the maximum extent possible regarding progress on the plan.

The BLM should understand and consider the following regulatory requirements when formulating the MMP-A: 001_BLM - Rock Spring - RMP Scope.pdf

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002_ Exhibit A - Pages from BLM RMP Planning Handbook.pdf
003_ Exhibit B - DOI Manual 520 DM I Wetlands and Floodplain.pdf
004_ Exhibit C - BLM Manual 1737 Riparian - Wetland Management.pdf
005_ Exhibit D - BLM Manual 6720 Aquatic Resource Management.pdf
006_ Exhibit E - BLM Manual 7200 Water Resource Management.pdf
007_ Exhibit F- BLM Sens Species Manual6840 (2).pdf
008_ BLM - Rock Springs - IP Direction.pdf
010_ Final Utah BLM SHPO Protocol Agreement.pdf
011_ GCNRA Grazing Managment Plan.pdf
012_ NPS - GCNRA - Values and Purposes Determination 8-23-10 Hilighted Changes from 05.pdf
023_ Manual 6100 - NLCS General requirements.pdf
024_ NLCS 6220.pdf
025_ DoI Order #3308 NLCS_Order.pdf
039_ IM No. UT 2005-091 - Attach I - Utah Riparian Management Policy (15 pps).doc
040_ scientific-integrity-memo-12172010.pdf
041_ BLM Data Quality guidelines.pdf
042_ BLM Monitoring Handbook H-4400-I.pdf
043_ DOI Manual 305 DM 3 - Scientific Integrity DOI Manual.pdf
044_ IM 2012-169, Resource Management Plan Alternative Development for Livestock Grazing.pdf
046_ NPS Wetlands Managment Manual DO_77-I_PROC_MANUAL_2012_Revision_FINAL.pdf
049_ BLM - UT - GSENM - Madril Seeding.pdf
070_ Dept of the Interior - Order on Global Warming.pdf
080_ US Climate Change Science Program Best Practices in Decisionmaking 5-2.pdf
089_ USFS Monica Kerslake Grazing and Global Warming Presentation.ppt

Table B-32
Issues to be Resolved Through Policy or Administrative Action

BLM has assisted these robber barons to rip off the national taxpayers for far too long. These sites are being rented for \$3 a year per acre when private land is renting for minimum of \$20 per acre per year.
They schedule meetings to get public comment only for locals when the land they are renting is national land. What a stupid skewed biased plan that is to get the locals making out while the bills get paid by national taxpayers.
While recognizing the rights of cattle ranchers as defined in the Antiquities Act of 1906, Taylor Grazing Act of 1934, and The Federal Land Policy and Management Act of 1976, it is unimaginable that the American people are still, in the 21st century, subsidizing the cattle industry on public lands with taxpayer money.
I recently learned that some of the allotment holders on the Monument had sublet to ranchers or corporations based in Texas, who were seeking relief from the drought stricken pastures in that state (this came up in a meeting, but I can't recall which one). It seems to me that having outside entities grazing on Monument lands might be detrimental to fostering a sense of good rangeland and resource stewardship, as their interests are mostly short-term and they could seek to gain maximum advantage for the reportedly large sublease fees they are paying to local allotment holders. If this is so profitable for our local lessees, it could become a trend with unintended negative consequences.
Recommendations
1. Explore ways to eliminate or limit this potentially harmful practice, or simply eliminate grazing on the Monument if local bidders do not intend to graze livestock
--Ranchers on public lands should be licensed before receiving permits so they are recognized as the responsible party for the permitted land;
--Permit holders like all other businesses should be required to put up bonds or carry liability insurance to cover the costs of property damage and trash removal;
--Lessees of property should also provide against property damage;
--Ranchers should be required to attend continuing education classes, as do other professionals, to remain current on the best practices;
--Institute a surcharge per head of cattle to create a fund to help in restoration and mitigation efforts;
--Permits should be reviewed and renewed at a much greater frequency than currently done, renewals should emphasize land stewardship;
--Diverse stakeholders should be encouraged to participate in the environmental management of the region together with livestock owners and public lands managers;
I believe the BLM should
1) charge the grazing permit holder a cost that reflects all the costs involved in managing and protecting this resource.
It costs a rancher \$1.35 per month for a permit to graze a cow and her calf on public land. It is the same price they paid in 1962 and 1/10 to 1/20 the going market rate and less than it costs for you to feed your gerbil. It costs the taxpayer more to manage the ranching/permittees than the ranchers make doing it. It's the reason for the pejorative "welfare rancher." These folks couldn't afford to keep doing it with out subsidy ..
BLM should also enforce an ethics policy such that range staff cannot have a conflict of interest in administering grazing permits or monitoring range resources on allotments with the permits held by a family member, relative by blood or marriage, or a business associate. I am very concerned by rumors that such conflicts may occur, and BLM should not tolerate them.
Cattle trespass along the Escalante River corridor and other areas. Reports of feral livestock that roam the GSENM and GCNRA.
BLM should allow oil and gas resources to be utilized in the staircase, this would create jobs.
Fire or promote out of the area all the professional Range Conservationists who obviously can't manage. Do not refill their positions.
Hire the permittees who are physically sound and 50 years of age or younger as seasonal range aids.
For permittees over 50 years of age, the by-out should give them enough to live on – or hire them too. Seniors are a great resource!
6. Accountability: why is BLM subsidizing private ranchers with seedings and below market value grazing permits? Are there consequences for permittees who fail to maintain the ecological health of their permits? Why are we

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subsidizing some economic interests but not others? Is there any accountability among managers or range conservationists at GSENM when they fail to maintain rangeland health? Should there be a cap on the amount of money the taxpayers provide for seedings and treatments? Why has this EIS taken 14 years and cost millions of dollars and yet is starting from scratch again?

If cattle grazing is to continue in the Monument-NRA I would suggest:

a. Cattle ranchers actually be responsible for their cattle. If the BLM does have to intercede (remove dead cattle, remove trespass cattle, fix broken fences, etc.), the rancher, not the taxpayer, should be fined and there should be real repercussions (suspension of grazing privileges, etc.).

If cattle grazing is to continue in the Monument-NRA I would suggest:

All springs used by cattle should be maintained at the expense of the cattle rancher. If a spring isn't maintained, the cattle should be removed. (As it is now, if the spring isn't maintained, backcountry users - by default - are removed.)

If damage is done, the rancher should be fined or jailed. (After all, if someone tears down cliff dwelling walls or otherwise destroys archaeological resources, they are fined or jailed, as they have been in San Juan County). Why is it okay for cows to destroy archaeological or historical sites and yet there are no repercussions?

If cattle grazing is to continue in the Monument-NRA I would suggest:

As per above, ranchers should have to pay to have their cattle fenced out of areas. As it is now, taxpayers have to foot the bill if they don't want cattle in a certain area. At Devils Garden the rancher who has that allotment should pay to fence out their cattle.

If cattle grazing is to continue in the Monument-NRA I would suggest:

The contracts for each allotment should be readily available online (redact the rancher's personal info.). After all, the rancher actually has a contract with all Americans, not just with the BLM.

If cattle grazing is to continue in the Monument-NRA I would suggest:

The written reports by the BLM range managers for each allotment should also be readily available online and in a timely fashion.

I would like to see funding to assist with fence building repairs and maintenance. To better control the distribution of animals and minimize encroachment on private lands.

Ranchers enjoy a 'pennies on the dollar' savings grazing their cattle on public land as opposed to private property.

My personal feeling is we need to revert back to pre-monument status, this way we can see to it that the land is well taken care of.

However, one thought that kept occurring to me during my reading of their proposal pertains to financial resources needed to support the manpower required to manage the plan they propose. With that in mind, the thing I see missing from the recommendations and I think is a very important issue, is the issue of grazing fees.

\$1.35 per AUM seems an extremely low amount for grazing on our public lands when ranchers would be paying anywhere from \$10 to \$12 per AUM on private lands for that privilege. I understand the history of BLM and the fact that the agency personnel came from ranching/farming ranks early on. The fact that the fee cannot fall below \$1.35, at least that's my understanding, is one blessing in the situation ironically ordered by President Reagan. I'm also aware that President Obama, much to his credit, attempted to raise the AUM amount. It's disturbing that the agency that oversees and manages our public lands has had budget cuts over the past years that have severely challenge the agency's ability to do its work, and yet, often the same people who support those budget cuts in an effort to control and restrain government are frequently the same people who benefit from those public lands - often including the ranchers who have such a sweet deal with the grazing privileges. Unfortunately, the grazing fee has actually declined since 2005 when it was \$1.79, and is lower now at a time when the agency actually needs more money not less.

The cost of administering the range program should not swamp revenues, and that does not mean that United States citizens should allow these public lands to be taken by the states to help relieve the federal financial strain. That is not at all what I mean. Ranchers have received many benefits during the history of this nation. Yes, they have a challenging lifestyle, but that is by choice and the public should not have to pay more than is reasonable to support that decision. The livestock grazing they often insist is practically their birthright causes the introduction and spread of nonnative plant species and disease. Yes, these things might occur through indigenous animals and

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their activities, but when individuals are benefiting from the grazing of their stock, their contribution through fees to mitigate is necessary. In addition, their animals compete with native species for habitat. Through good management these issues can be controlled but that requires money for the agency.

Reading BLM's website information on grazing policies still evidences the historical bias of the agency toward supporting the ranchers' grazing rights and makes me wonder how agency personnel balance the needs of the agency to do their work with reduced funding versus this attitude that supports the ranching lobby.

It does appear from my study, however, that permitted grazing on federal lands has declined from a high of >1 million AUMs of cattle in mid-1950s to ~500,000 AUMs in 2006 and that it appears livestock production in Utah is shifting from federal grazing to private grazing for reasons unknown to me. In Utah, as the number of grazing cattle/sheep has declined, revenues from that grazing through AUM fees which have been adjusted down to the minimum of \$1.35 have also diminished, but the amount of land the BLM manages has remained the same I believe. However, with less cattle/sheep grazing and potentially causing less damage to the land, perhaps the management costs are lessened. From 1950-2007 the number of beef cows and ewes in Kane and Garfield Counties has diminished compared to other areas of the state where they have increased significantly. It is hoped that this translates into less pressure on our public lands in these areas that are fragile.

The PPLCO report data clearly show that cattle operations that have permits to graze public land have larger herds than do those who do not have permits to graze public lands. Are the low grazing fees encouraging these larger herds?

The report also shows that Region 5 Garfield/Kane/Wayne permittees have owned the operation for an average of 52 years versus 38 years for non-permittees. 76% of the Garfield/Kane/Wayne county permittees said they expect their livestock operation to be operated by a family member in the future.

The report indicates that many of the non-permittees in Garfield/Kane/Wayne Counties had permits to graze previously but now do not. In fact, 52% of those had BLM permits. Of those responding, problems dealing with agency administrators were cited rather than cost of grazing. However, it appears that non-permittees are finding ways of making their livestock operation work in spite of not having the low AUM cost of public land grazing.

One question in the PPLCO survey related to development or maintenance of range improvements and the affects that will have on public lands use by livestock. Permittees reported that diminished range conditions would have a significant effect on livestock on public lands. The number was almost as high as those concerned with increases in grazing fees. There seems to be somewhat of a dilemma here: they see diminished range as a problem but don't want higher fees to possibly deal with that problem?

I have observed a number of instances where roads or 2-tracks have become wider over time. BLM and range permittees need to jointly ensure that these do not become wider, deeper over time. Permittees and their employees need to have access to information and know what is expected of them so that they are participants in management

The range health sessions were very helpful and would like to see more in the future.

Increase fines and penalties for not complying with the established timeframes associated with each allotment.

I would like to keep seeing range cons that know the area, for example Jared Lyman. We do not need someone that is tree hugging and blind to real issues at hand. We need range cons that do not have an agenda to shut us down, but to assist us in using the area appropriately. We need range cons that are range friendly. That is how we can truly take care of the land.

The public needs to be provided (through the internet) the times and use of all allotments. It would be better if a coherent schedule is made of grazing use so that the public and BLM staff can know when and where cattle are being grazed as well as which allotments and pastures are in what condition.

Prevent Subleasing of Grazing Permits. Partners has been informed that some GSENM allotment holders have sublet their permits to ranchers or corporations based in Texas, who are seeking relief from drought conditions in

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their state. While we have not yet verified these reports, and recognize the information may not be true, the possibility of such a circumstance prompts our request to have the issue addressed in the Grazing Management Plan. Partners believes that grazing by non-local (Utah and Arizona border communities) interests would run counter to the goal of fostering a sense of good rangeland and resource stewardship. With no direct bond or long-term commitment to GSENM lands, their sole objective would be extract whatever benefit they could most expediently gain from the land: their interests would be short-term and they could seek to gain maximum advantage for the reportedly large sublease fees they would pay to local allotment holders. If this subleasing is profitable for our local permittees, it could become a trend with unintended negative consequences.

Is subleasing of permits currently permitted? If so, is the permittee required to get approval from the Monument manager prior to subleasing? Can the permittee charge any rate per AUM that the economy will support? These questions must be addressed in the Grazing Management Plan regardless of whether subleasing is permitted so that the public is informed.

In this case, compensation should be considered.

Additional planning issues: Using the appropriations rider to renew grazing permits.

Legal conflicts have been created by using the 2000 Congressional Appropriations Rider to renew grazing permits. All grazing allotments in the Monument have been renewed once and some more than once using the Appropriations Rider. As a result, grazing management has been unchanged for allotments by renewing the permits in this way, thus perpetuating grazing permits decisions now 30 years old. As a result grazing management in the Monument conflicts with many key legal requirements and have not taken required action to restore habitat for the 21 allotments determined by BLM not to meet Standards. Further, BLM's management of grazing in the Glen Canyon NRA continues to be in conflict with obligations to prevent impairment of NRA values.

Additional planning issues: Accurate record-keeping.

Past records BLM presented on the amount of grazing that occurs in each allotment has been inaccurate. Based on a number of surveys that we conducted, we found that often fewer cattle are grazing than are reported to graze by the permit holder or are billed and paid for [27]. Objective evidence based range management requires an accurate record of grazing use. BLM should update past records where more accurate information is available and ensure future records reflect actual grazing use.

[27] Catlin, J. J. Carter and A. Jones. 2011. Range management in the face of climate change. Pp 207-248 in Monaco, Thomas et al. comps. 2011. Proceedings – Threats to Shrubland Ecosystem Integrity; 2010 May 18-20; Logan, UT. Natural Resources and Environmental Issues, Volume XVII. S.J. and Jessie E. Quinney Natural Resources Research Library, Logan Utah, USA.

Additional planning issues: Allotment Management Plans.

BLM has incorrectly used permit renewals in the place of Allotment Management Plans. This plan revision should design standard practices to create or amend allotment management plans (AMP), meeting the obligations found in the MMP and presented in the Duck Creek ruling. Recent rulings conclude that grazing permit renewals as BLM has been practicing are not an adequate equivalent for either creating or updating AMPs. A procedure that meets the MMP requirements for AMPs should be included in final plan and creates or amends AMPs as allotment permits are renewed.

When the monument was established we were promised grazing would not be affected.

When the monument was created, it was states emphatically that the grazing would not change.

Grazing lease fees should reflect private fees and not be a subsidized grazing fee.

I have experienced some frustration. One was being overlooked or not consulted in changes that directly affected me and my operation on the GSENM. There is also some frustration that simple acts which can lead to great good are often held up in years of study and paperwork which delays the process of increasing land health and viability. The detrimental effects of livestock grazing is often exacerbated by the burden of lawsuits, studies, costs of studies, and rigidity, etc, to perform simple improvements. I have had the privilege of working with many good people employed by the BLM, and recognize the immense amount of paperwork that often hinders them in being effective.

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The park would like to work cooperatively with the BLM and grazing permittees to maintain, repair and reinforce the boundary fence between the Monument and the park and on streamlined, efficient procedures to report and remove livestock that enter the park.

N37 36'02.8" W111 35'03.6" (Carcass)

N37 37'21.2" W111 37'02.1" (Little Valley)

N37 27'14.1" W111 13'27.5" (Coyote Hole)

N37 39'48.3" W111 28'58.0" (Ten Mile Flat)

--In these areas, at the end of an old, non passable roads in the backcountry, there are remnants left by previous cattle operations in the form of concrete pads with rusted water tanks, trash, unused water lines working their way out of the soil made from ABS or PVC plastic;

--Ten Mile Flat has many plastic buckets littering the landscape;

--Many other sites contain old unused barb wire fences, barrels, and other assorted trash;

--BLM fact sheets address livestock grazing in the WSA and capital improvements, but no mention is made that ranching companies be held liable to remove all their old and used equipment and restore the area.

N37 22'43.2" W111 42'36.0" (Fourmile)

N37 22'03.3" W111 44'34.2" (Tommy Water)

N37 33'21.7" W111 29'12.9" (Carcass)

--The abandonment of horses in favor of 4-wheelers has further impacted areas that already incur heavy damage as a result of concentrated cattle usage, and have spread into WSA designations;

-The machines pass fenced areas through gates and travel down canyons previously only used by horses;

--The machines travel up and downstream around obstructions, eroding banks, cutting benches, and traveling miles that result in the connection of adjoining canyons;

--the machines create tracks that will take decades to repair themselves.

Inventory the status of abandoned and non-functional stock developments. There are dozens and maybe even hundreds of abandoned non-functional stock developments and illegal trash dumping within GSENM. Establish a process to inventory, prioritize and remove/mitigate these obtrusive and non-functional stock developments and unauthorized activities.

Remove/Mitigate defunct and unauthorized livestock projects including old pipelines, fences, rat-infested and obtrusive line-shacks (evaluate for historical value), and associated trash. Earthen dams for stock water that never worked or failed repeatedly with resultant abandonment should be restored to original contour of the land. Here is the start of a list of some issues that need to be evaluated and removed/mitigated:

- Big Bowns Bench pipeline T35S R6E S28 SWNW and stock tanks T35S R6E S28 SW
- Horse Canyon line shack (railroad car) T35S R6E S17 SENE
- Horse Canyon ledge line shack T35S R6E S28 NWNW
- Wolverine Creek line shack T34S R6E S26 SENE
- Fifty Mile Bench trash dumps (two locations) T41S R8E S16 NWNE; T40S R7E S22
- Colt Mesa line shack (school bus) T35S R7E S36 SENW and 3 stock tanks T35S R7E S36 SWNE
- East Wolverine Loop cut off semi trailer T34S R7E S23 SESW
- Big Sage line shack trash dump (strewn in Upper Trail Canyon) T38S R4E S31 SESE
- Willard Canyon east trash dump and wash cable fence T38S R4E S21 NWNE

The Grazing Management Plan should address the design of water improvements and retrofit existing systems as appropriate to the best Visual Resource Management guidelines and methods, i.e. low profile retention ponds, semi-subterranean guzzles, or ponds with a low profile or to appear as a more natural wetlands.

There are many other types of improvement that need to be done and should be done such as, reseeded of pastures that was done years ago ,the upper Pariah is scheduled to be done in 2014 .It seems to take years to make some of these improvements happen. We have many times offered ideas and help to make improvements happen to only get put aside or to the back of the list with no explanation, of why these improvements can't be

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made. The improvements on Cottonwood and upper Pariah much need water lines, tanks built to better improve water distribution from well and catchments.

I also have grazing permits on the Upper Paria (Coal Bench Allotment). This is a reseeded area and is grazed May 1 to June 10. Several years ago we had a couple of years of severe drought and because of this, much of the crested wheat grass stands were lost. Although there are some areas that still have some grass left, which is improving, much of the area has no grass at all on it, mainly the lower part of the upper bench. Some of the Coal Bench allotment is on the monument and some is not. Another suggestion that I have is that I feel that this particular allotment needs to be reseeded again.

My cattle graze on the Headwaters allotment from Nov. 1-March 15. During this grazing period the plants are dormant. This allotment has a wide variety of native grasses and forbs. Under the current level of use and management the allotment is maintaining and improving in some areas. The removal of P.J. in select areas would be beneficial for wildlife, livestock, and the watershed. I have observed this practice on land similar to this allotment and it proves to be very beneficial.

Upper Paria- Bulldog Bench- Coal Bench: period of use from May 1- June 10. Railed and seed with cool season wheat grasses with some areas of native pasture. The removal of P.J. regrowth as occurred on portions of the allotment with remarkable results. Increased health and vigor of both grass and forbs. Cliffrose, Bitterbrush, and Mormon Tea has done very well after limiting the P.J. growth in these areas. I see great value in the above mentioned practice.

Have the range aids remove all the fences and other improvements and either recycle the materials or bury it deep.

The BLM has little control over cattle grazing in GSENM and Glen Canyon NRA.

a. On the south side of the Kaiparowits Plateau (as per 2b above), there are many cattle without ear tags. (I know that ear tags do fall off, but when I see a small herd of cattle and none of them have ear tags, I assume they are in trespass.)

b. A couple of years ago hiking down Moody Creek there were a half dozen or so dead cows along the wash. Why didn't the BLM know of them? And why didn't they make the rancher remove them?

c. A couple of years ago we found cattle along the Escalante River near the mouth of Moody Canyon. Knowing they were in trespass, we told the BLM about them. I was later told that the BLM sent a helicopter in to locate the cattle. I have to wonder why they BLM didn't just send the rancher in to get his cattle?

d. When the Monument was proclaimed, one of the first projects the BLM did was to put in a nice parking area and picnic benches at Devils Garden. Seemed like a good idea. The last time I was there, the area had been grazed. I have to wonder how many people want to picnic with cow crap all around? The BLM can't even do a good job of trying to do a good thing.

e. I have NEVER in forty-five years of hiking the lands of the Monument and NRA seen a range con out on the land. Goes to why there are trespass cattle.

Areas such as Circle Cliffs, Home Bench (near Boulder), Wagon Box/Wolverine, and Alvey Wash should be considered for tree reduction treatments.

One of my most recent visits included hikes in The Gulch, Silver Falls Creek and Little Death Hollow. Predictably, The Gulch is still severely impacted by cattle, even though attention has been called to its condition since the 80s by my friend Ginger Harmon. An abandoned pumping station existed in Horse Canyon at the mouth of Little Death Hollow, with aging, abandoned black plastic pipe stretching up and across Big Bown Bench for several miles. I don't know when this "improvement" was installed, but it has clearly been useless for years and should be removed if it hasn't been already. Speaking of Big Bown Bench, I observed thriving areas of Indian Ricegrass, Four Winged Saltbush and Winterfat up there. It would make an excellent exclosure for helping monument management determine what certain upland areas can produce.

BLM managers need to make sure that grace periods for cattle removal do not extend into times when seed heads are maturing. Water and seeds are the essence if we want "belly high grasses" that are a win-win situation for permit holders, cattle that are grass fed and bring higher prices, happy recreationists and millions of acres that can act as a carbon sink for greenhouse gases.

Thank you for the opportunity to address this issue. The area I am most concerned with is not within the Monument boundaries, but is adjacent to the Monument. The acres are administered by the BLM. It is the area at the headwaters of the Escalante River where Upper Valley Creek and Birch Creek merge to form the Escalante

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river. There are several acres of BLM/State Trust land right at the headwaters which are the same acres as the original Russian Olive removal test area (Escalante Watershed project). There are 140 acres of private land immediately adjacent, part of which I have owned for 30 years.

These few acres are leased out for grazing (12 AUMs which translates to 12 cows for a month) but as many as 20 cows were observed for three or more months last summer, and in several seasons prior to the watershed project. I don't know what permit limitations are on that lease, but it looks to me like there are more cows than the area can sustain for a longer period of time and those cows graze the private lands much of the time. For the first 15 or so years I owned the property no one used those permits so there were no long term issues with cows.

It is also my understanding that the cattlemen who have permits on the forest lands have a "pass through" permit in this area, but since the river becomes entrenched into a rocky waterfall at the east end of the acres, the highway is fenced off and there is a cattle guard on Main Canyon rd, it is a convenient "resting area" to leave the cows for an extended period of time, sometimes longer than a week. Observed in this area during "trailing" when there are upwards are 200 cattle on this site.

My private property is located just west of these few acres. The two creeks, highly prone to severe flash flooding and Main Canyon rd make it virtually impossible to fence the cows out of the adjacent private property.

The use of mineral supplements - place by truck - needs to be more closely managed. Can they be effectively placed on foot or by horse? Tire tracks are invitations for more use. Excessive 2-tracks confuse visitors who have enough trouble reading maps and finding the "open" roads. Can supplements be placed away from popular campsites? (ie along Egypt, Allen Dump, Early Weed roads.)

Removal/Mitigation of defunct livestock projects including old pipelines, fences, rat-infested line-shacks (not including those presently in use), and associated trash. Earthen dams for stock tanks that never worked or failed repeatedly with resultant abandonment should be restored to original contour of the land.

Stop cattle trespass along the Escalante River corridor and other areas. Feral cattle that roam the GSENM and GCNRA should be rounded up and removed from the range. All fences should be repaired by the rancher using an allotment before putting their stock on the winter range. If cattle break through fences, they need to be promptly rounded up and fences repaired.

The EIS needs to include a full assessment of the results of past seeding projects, and a disclosure of the costs of these projects to the taxpayer.

Below I have outlined some things that I would like to see happen on our permit:

I would like to see more flexibility on changing the grazing dates on the Lake Allotment from 4 months to 5-6 months, based on responsible use of resources. If we had the opportunity to evaluate the feed and use it if it is there, or come off early if it is not, we could be more efficient. Right now we have very little flexibility in staying where the resources are. There is always lots of untouched feed on top of Fifty Mile Mountain, and still water available when we are forced to pull off and move to the Bench, where there is less feed, but the water situation is more unreliable. We have also tried to address this many times before but it seems to fall on deaf ears. Our permit is currently unbalanced because we can't remedy the water situation on the Bench without lengthy procedures and studies. Extending the use on the mountain would relieve some of the strain put on our water locations on the Bench until we can gain approval to do the necessary water improvements to bring our permit back into balance. It would also allow us to use our pasture rotations more efficiently.

I would like to see more cooperation in doing projects. It has become such a long process to complete anything that at times it feels futile to even try. We need to be able to work in realistic time frames. Proposals that we have submitted 3 years ago have resulted in nothing at this point. In fact, they were lost twice in the process and we had to resubmit them each time. It is frustrating to feel like proposals we submit are not valued enough to get where they need to be, and instead end up in the shred basket. But we will not give up. We will keep submitting proposals, and keep trying to improve our stewardship. Much of the determination I have, has been instilled in me from years of living close to the land. This is my heritage. It is who I am, and I will not stop trying.

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Other times, the BLM/GSENM has said they will do projects, and have had it on the board for years, (for example, burning a specific area on our permit), but it has never happened. Some follow-through would be much appreciated.

On the same note, keep us informed on projects, whether they are proposals, rejections, or on-going projects. We need communication to know where things stand so we can make the appropriate plans.

Some other improvements I would like to see completed are more prescribed burnings on Lake Allotment, and water improvements put in on the Grand Bench to better utilize the range. We have submitted proposals for water catchments, pipelines, storage tanks, and cement water pockets. These things would all help the grazing use on the range, the wildlife populations, and in preserving the riparian areas, as well as maintain a more balanced herd for us.

Transparency should be a real concern for GSENM and the permit holders. Fencing needs to be in good condition with hiker mazes so that no gates are left open and no trespass occurs and BLM staff need to patrol the fences along with the permit holders.

The yellow and blue buckets with molasses feed should be fully analyzed to determine why they are needed for the permit holders--these supplemental feed troughs indicate clearly that the area is not suitable for grazing. The plastic often deteriorates (esp the blue ones) and we find the pieces scattered across the GSENM as litter.

With that said, here is Incident #1. One of my grazing pastures in on GSENM. A Pinyon Juniper removal treatment was done that involved lop/scatter and also grinding. I was not informed that was in the plan I was not informed it was going to be done. I was not informed that it HAD been done. I was not told anything. Yes, it was a needed and beneficial project, but how am I, as a trying-to-be-responsible rancher, supposed to plan my grazing rotation with this pasture of several hundred acres of newly seeded ground? Nobody said anything.

Incident #2: On this same pasture in the GSENM, I have a water harvesting, storage, and drinker facility for my cows. Last spring the trough developed so many rust holes, I turned off the water to prevent loss. At the time I didn't have cows there, so I hadn't replaced the trough yet. The game drinker portion of this water system had become nonfunctional so the deer association people were concerned about water for the deer. That was a valid concern. GSENM employees removed my old trough, replacing it with a temporary trough, and gave my old trough to someone else. I don't begrudge the person who used the trough for a hay feeder - the same as was my plan. Re-purposing is a good idea. The rub I have is that nobody told me anything. I begin to wonder if the Monument mentality is that ranchers really are non-essential players in this game? Is the GSENM merely putting up with ranchers as temporary nonessential nuisances until they can permanently be removed?

Permittees should be required as part of their annual operating plan, to submit accurate, actual use records by allotment, pasture and period of use. No excuses!

I want to know which permittees have been keeping up with their assigned range improvements and those permittees who have a poor record at follow-through. Display un-maintained and non-functional improvements on an allotment map. I caution against playing word games about these categories.

Additionally, if the GSENM staff is to meet the BLM's transparency and accountability standards, the Grazing Management Plan must include a standardized protocol for notifying the public of any planned vegetative manipulation including details such as when; where; the size; purpose; and the specific type(s) of manipulation(s) planned. This information must be disseminated at least one month prior to the planned manipulation through notification in local newspapers and on the home page of the GSENM website.

What Water Developments are appropriate in a NCL Unit, like a National Monument? When Partners members attended the November Land Health Workshop, we were told that today it was impossible to justify a water development on the needs of the grazing interests. Thus, I would think installing a steel stock tank would be hard to justify or extending a pipeline several hundred yards or even miles to access an ungrazed area would be impossible. Does native wildlife whether occupying their native range or having been recently reintroduced need water developments? Is the purpose of wildlife water developments to extend the native range, to have larger big game hunting potential or to extend where cattle are grazed?

If the purpose is truly for native wildlife, then the Grazing Management Plan should address the design of the water

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improvement, i.e. low profile retention ponds, semi-subterranean guzzles, or ponds with a low profile or to appear as a more-natural wetlands. If the purpose is to trap selenium or other salts, the public needs informed why that is important and what the protocol is for salt management.

Develop and Implement a Fencing Plan. Numerous conflicts currently exist between grazing and recreation use. While both uses are legitimate on the GSENM, there exist circumstances where the two uses are needlessly at odds and counter-productive. In the southern portion of the monument, notable areas with conflict include Lick Wash, Bull Valley Gorge, Willis Creek, Hackberry Canyon, Paria Canyon, Toadstools, Wahweap Hoodoos, Grosvenor Arch, Cottonwood Narrows, etc. Up north the various slot canyons, Upper and Lower Grand Gulch and Little Death Hollow are problem areas that need aggressive, active management. Ranchers complain about recreationists driving cattle into the narrow slot canyons, at times to their death. A fencing plan with the GSENM staff, permittees and recreationists working together could solve a lot of these conflicts and prevent others. Fencing selected trailheads, slot canyons, and making improvements to trailheads can all help the situation and ease tensions between users. Primary examples of immediate solutions through fencing are Dead Cow Canyon, and the slot canyons of the Dry Fork of Coyote.

The Grazing Management Plan must also develop a standardized protocol to inform the public when a decision is made to use the Grass Bank. This would help the GSENM staff meet the required accountability and transparency standards. When a Grass Bank is opened for grazing, this information should be put in the local papers, put on the GSENM website or someplace that the public has easy access to find.

Determinations for abandoned and non-functional stock developments. There are dozens and possibly hundreds of abandoned and non-functional stock developments within GSENM. A system should be established to inventory, prioritize and determine what to do with these non-functional stock developments, whether that is removal, improvement or even preservation. Examples of these stock developments include non-functional line shacks, waterlines, metal stock tanks, abandoned fences and stock reservoirs. It is possible that some of these developments could qualify for historic status and should be presented to the State Historic Preservation Office for their concurrence.

Flood fence and drift fence maintenance. We understand that the grazing permit held by a permittee requires him/her to ensure that all flood fences and allotment/pasture fences are in place and functional before turning his/her livestock into the authorized area. We also understand that this aspect of grazing management is not currently enforced by the GSENM staff. If this is true, enforcement must be addressed in the revised Grazing Management Plan. Additionally, any damaged fences should be repaired within two weeks of damage.

This seemed to be the case in Steep Creek in September 2013 when cattle were turned into the pasture and due to damaged fences, they promptly moved up the canyon into an area closed to grazing. Thus the livestock and permittee were in trespass until late in 2013 when the flood fence was finally repaired.

Feral/wild cows in canyons closed to grazing. Whose responsibility is it to remove feral cattle in the canyons closed to grazing - the permittee or the GSENM Staff? This question should be answered in the Grazing Management Plan..

Similarly, when livestock gets trapped in slot canyons, whose responsibility is to remove the rotting carcass and/or bones? Fencing these slot canyons with flood fences and then maintaining the flood fences might prevent a public relations disaster. It is inevitable the someday the right person with sufficient political clout will come across a cow and calf dying in a slot canyon from starvation and dehydration and accusations will start flying. Partners would like to support the GSENM in preventing this situation from happening at all.

GSENM Cultural Clearances must be part of Vegetative Manipulation approvals. Cultural clearances are not sufficiently addressed during the Vegetative Manipulation review and approval process. We understand that the current system involves significantly more reviews and clearances approved by a Cedar City based archeologist than by GSENM staff. Partners believes that local GSENM staff are significantly more familiar with GSENM land than a reviewer based many miles away, and should therefore be first in line to review and approve clearances.

Additional planning issues: Permit renewals terms and conditions.

Permit renewals often lack terms and conditions and as a result are unenforceable: A growing number of grazing permits lack the terms and conditions that clearly document stewardship obligations for permit holders. Language ensuring that terms and conditions necessary to meet Monument obligations are in place should be included in the

Table B-33
Issues Related to Livestock Grazing Implementation

process for renewing grazing permits.. In the Duck Creek Case, BLM's absence of terms and conditions was noted in the ruling as a serious problem[23].

[23] Office of Hearings and Appeals. 2013. Ruling on Appeal UT-020-09-01, BLM's decision on the Duck Creek Allotment grazing permit renewal.

Additional planning issues: Trespass livestock.

Unauthorized trespass is a chronic problem in the Monument. BLM's NLCS Plan Implementation Review (page 18) noted "unauthorized use and range improvement maintenance need more attention from GSENM managers.

[They] should ...address...unauthorized use and the lack of range improvement maintenance, particularly fences."

Cattle grazing in closed areas is occurring in many allotments, and permittees don't adhere to specified off dates. This is especially egregious in the Escalante River where riparian habitat restoration has been placed at risk. Too often reported trespass is not given priority and responses come too late. Because this has occurred on a regular basis, it is clear that the permit holders have not been given the needed incentive to prevent this.

NLCS plan implementation report (section A_40 GSENM_73) recommend that the Monument "proactively and consistently address unauthorized livestock use and resource conflicts with other uses. Use the MAC as a forum to facilitate open dialogue and address a broad range of issues when possible." This report noted "several internal and external interviewees stated that unauthorized use and lack of range improvement maintenance (especially fences) were ongoing issues. Some interviewees believe that the BLM has been reluctant to issue trespass notices when unauthorized use is occurring."

Additional planning issues: Livestock operator compliance with permits.

Past compliance by permit holders to follow appropriate grazing practices has been often lax. For example, the grazing rotation designed to address habitat problems on the 40 Mile Ridge allotment has not been followed for more than a decade. Pasture gates left open for years are now buried in shifting soils and overgrown. In some places pasture fences have been cut. There is a concern that BLM may lack a commitment to require grazers to comply with required practices. To have an accurate baseline for making decisions, BLM should provide records on compliance and any deviation as part of the Analysis of the Management Situation. It makes little sense for this plan to commit to new grazing practices if in the past, grazing practices were not adhered to.

The army cut worm invasion was ignored leaving much of the range and ranchers struggling to renew and regenerate without much support from management. Many other issues, from rabbit population overgrowth to invasive species epidemics have been ignored as well, leaving ranchers concerned about the direction of management that the MMPA/EIS will actually take these important lands.

Despite repeated requests to provide better management of the range with water projects there has been no approval or support for such changes. My desire to fence the summer range has not been supported by the monument yet is part of the lawsuit brought by Western Watersheds.

Lower Cattle is the allotment where I winter my cattle, this is in my opinion the best allotment on the Escalante Desert, due to the fact that we gather cattle April 15th. This allotment has more cool season grasses than any other allotment that I have seen on the desert. My concerns are that we are not allowed to do any new improvements. Although this allotment is in great shape, it could be better if we could put more water on it, using pipelines, stock ponds, or whatever necessary to distribute cattle.

Black Ridge is an allotment that I use lightly in the spring. This allotment could also use more water improvements to better distribute cattle.

Alvey Wash is an allotment that has a lot of potential to greatly increase production. There are thousands of acres of sagebrush that is 6 to 8 feet tall that could be burned or chained and reseeded. This would greatly increase feed for cattle, deer, elk, etc. There is a water system already in place. This allotment has had an increase in elk wintering on it. Which is another reason to increase the feed.

Mud Springs is an allotment that needs a water system. This is a good sized allotment but there is one live water source at the far north end. I have to haul water on this allotment. With more water we could better manage this allotment.

Collett is a place where access is by horse or foot. I have no concern on this allotment. It has live water at the top, middle, and bottom which allows cattle to use the whole allotment.

Table B-33
Issues Related to Livestock Grazing Implementation

Main Canyon and Pet Hollow are small allotments that are used when conditions permit. I have no concern on these two allotments.

Little Desert is part of the Alvey Wash allotment and it has water on one end. It needs a water system on the north end to better distribute livestock.

The improvements on Cottonwood and upper Pariah much need water lines, tanks built to better improve water distribution from well and catchments. Fences fixed and some relocated, are some of the few things as a cattle rancher that my family have made on these allotments to help better the environment and also are cattle feed.

We also encourage efforts from the monument leadership to partner up with these agencies and partners to develop rangeland projects that will enhance and improve the resource base on these grazing allotments within the monument. Sound rangeland health projects and multiple uses not only benefits the livestock grazing in these areas, but improves the wildlife habitat for numerous species, helps prevent the very real threat of catastrophic wildfire, and improves soil health and water quality and quantity.

Although there have been improvements in vegetation treatment in recent years, damage to scientific resources is probably still occurring across the Monument as a result of this practice. While "chaining" has largely been replaced by other mechanical means of vegetation removal, there is still a potential for damage from track or wheel vehicles to damage sensitive resources exposed on the ground surface. There may also be damage caused by controlled burns, chemical treatment, and other methods. Consequently, in order to protect resources, scientific inventories should be performed prior to the actual vegetation treatment.

Recommendations

I. Complete archaeological, paleontological, botanical, zoological, and other resource surveys of proposed vegetation treatment areas, as appropriate, in order to assess potential impacts to same. Some types of surveys may not be necessary, depending on prior knowledge and recommendations of resource specialists.

Table B-34**Issues that have already Been Addressed but Should be Better Communicated to Those Who Raised the Issues****ATV use**

- a. reduce the roads available for ATV use (there are thousands of miles), and there is documented negative effects on wildlife and vegetation up to 1/2 mile from a road. Additionally they bring invasives
- b. enforce rules (such as staying on roads)

All terrain vehicles and/or Off-road vehicles should be restricted in the above sensitive areas. As there is more motorized use there is potential for more conflicts and resources damaged.

As a member of the St. George Color Country Camera Club, I am asking that you reopen the access road to the Wahweap Hoodos and Mesa Cliffs. As a senior citizen, the long hike from the current trailhead is just too far for me and my fellow club members to negotiate. If you don't open the road, would you please give serious consideration to providing permits to use the road.

Please seriously consider the request to open the Wahweap Hoodos access road so we photographers may be able to access the area. As many of us are retired and aging, this is the only way we can gain access to this important photographic site.

As member of Color Country Camera Club I fully support the reopening of the upper road into the Wahweap Wash, thank you for your support.

We have never had the opportunity to view this site and photograph the hoodos. We have lived here for several years, are members of the camera club and would like very much to be able to take a tour with this group to this lovely area.

Please consider an appropriate time when this can be opened to the public. This is a part of our public lands and we would like to use them.

The club goes back to the day of being able to drive up the wash to the hoodos. We made annual pilgrimages to the Wahweap Hoodos to photograph these magnificent features using the 'Upper Road' access off Cottonwood Canyon Road. This made a reasonable sunrise access to the hoodos. With the recent enforcement of the 'Upper Road' closure, we have not been there in several years. We are primarily a seniors group with an average of 65-75 and the recommend access from Big Water is more than most of us can do..

So, with the current review process underway, I thought this would be a great opportunity to request a review of the road closure.

The Wahweap Hoodos and the south facing cliff line along BLM 431 (Extended) provide outstanding photographic opportunities. However, in recent years this road has been closed to the PUBLIC. But it still remains open to ranchers grazing their cattle on the mesa. This exclusive access severely limits the ability of the photographic community to enjoy and photograph the area.

Some years ago this 'upper' road was open to the PUBLIC, at least I saw no signs posted. The termination of this road at Wahweap Wash provided a relatively easy access to the Wahweap Hoodos, especially at sunrise which provides the best light for these features. Stumbling up the wash in the dark from the current trail head outside Big Water is tedious and dangerous, especially for those of us that are senior citizens. A 7.2 mile hike in and out is prohibitive for most of this senior group.

This map clearly shows the road and accesses at issue.

It should also be noted that the southern cliff line along this road also presents great photographic opportunities. Not shown on this map are existing roads leading from this 'upper road' to the cliffs edge. Our photography club from St George, Color Country Camera Club, would make a couple of trips to these sites each year. It has been one of our favorite sites in years past.

My information regarding the access is that BLM 'officials' from Washington DC made the call to designate the road closed to the PUBLIC, but allow ranchers access. The prior administrator for Escalante NM continued to allow PUBLIC access since the road already existed, but the more recent managers have decided to enforce the closure to the PUBLIC. As photographers, we are NOT disturbing the area and it is with great pleasure that we

Table B-34**Issues that have already Been Addressed but Should be Better Communicated to Those Who Raised the Issues**

are allowed to savor and record these natural wonders. Members of CCCC frequently have their images in national publications and web sites. In past years when I used to stop by the BLM office in Kanab and ask about access to the Wahweap Hoodoos, I was told about the trail head in Big Water. If I indicated a knowledge of the 'upper road', they would acknowledge its existence and it was open to the PUBLIC.

During your grazing review plan process, PLEASE reopen this 'upper road' for PUBLIC access!!!! Before 2016 would also be very appreciated....

As an absolute minimum provide a permitting process so we also can enjoy OUR LANDS.

The northern access road to the Wahweap Hoodoos is a road I have traveled several times over the years to visit a very scenic natural beauty: the wahweap hoodoos. There was no restriction and I only walked around to take photographs. I never left the established roadways. Everything seemed fine.

For reasons unknown to me, the road was then closed to the public. Why?

I would ask you to please re-open this road to the public so that citizens of this state can enjoy their lands.

I've become aware that the upper road into said area of what we call the Madonna has been blocked recently. As a member of the Color Country Camera Club I have previously hiked into this pristine one-of-a-kind feature when the road was not blocked. At this juncture, many of our members are seniors who support anything we can to maintain and save the beauty of the State of Utah. The restrictions put upon this area inhibit the use of this area because of the only access we currently have via hiking seven miles round trip.

Some of us in our club have provided BLM with photographic programs that have enhanced the Brown Bag Programs bringing the beauty of Utah into the lives of many people. This beauty is unseen by the majority of people because of access to the back country or inability to hike. It seems to me that mediation of the land should allow ranchers and hikers/photographers to access this area together as they did in the past.

Please look beyond CONTROL as a matter of business and consider SHARING OUR PUBLIC LANDS as it should be.

Scoping Process: Your website states there will be many opportunities to comment however I had to look very closely to find your contact information in order to comment online. Why are you making it so difficult for the citizens of the United States outside of southern Utah to comment?

The hoodoos in Wahweap Creek are one of the crown jewels in GSENM. Now I hear there is a proposal to close the upper access road to this area, thus forcing a much longer hike from Big Water to view the hoodoos. This is a slap in the face for senior citizens and others with various disabilities. I'm 75 and feel I'm effectively being shut off from these *public* lands. Yet cows, who could care less about this beauty, can tromp around in this area. This proposed closure is not in the spirit or intent of a National Monument. The public is also being shut off from the nearby Sidestep Canyon.

Please keep Road 431 open so we can all enjoy the splendor of these hoodoos.

I feel that the new plan should be written so that grazing permittees have access to the allotments by using the existing roads and trails on the monument. Use of these are necessary to enable them to maintain structures, fences, water facilities, spread salt to help cattle distribution and to check conditions of cattle and range land. Most of these roads were constructed primarily for the purpose of enabling permittees and BLM to have access to, and manage and maintain the grazing allotments. As a result of these existing roads, access to the monument for tourism, recreation, and scientific research exist. Closing them limits the access and enjoyment of all entities.

BLM should provide, firewood gathering also. this would greatly help the economics in surrounding areas.

AS a 67 year old photographer I was disappointed to learn I may not be able to visit and photograph this area. I have never been there, but have this on the places I would like to visit in the near future.

Table B-34**Issues that have already Been Addressed but Should be Better Communicated to Those Who Raised the Issues**

Please don't keep us older folks from the areas we have learned about and which to visit. What do we need to do to keep these options open?

The Wahweap Hoodoos and the south facing cliff line along BLM 431 provide outstanding photographic opportunities. However, in recent years, easy access to this area has been closed to the PUBLIC. This closure severely limits the ability of the photographic community to enjoy and photograph the area.

Accessing the Wahweap Hoodoos at sunrise provides the best light for photographing these features. Hiking to the wash in the dark from the existing OPEN trail head outside Big Water is too strenuous and dangerous for the senior members of our local camera club (Color Country Camera Club). In the past, when easier access to this area was available, trips to these sites was one of our favorite outings. As photographers we are always careful NOT to disturb the area as we feel it is a wonderful opportunity to be allowed to savor and record these natural wonders.

During your grazing review plan process, PLEASE reopen the easier and more direct routes to the Wahweap Hoodoos and Mesa Cliffs area for PUBLIC access!!!!

It has come to my attention that the upper road accessing the Wahweap Wash and the Hoodoo area is closed to the general public. This area is an unusual site for photographers and other nature lovers and should be accessible to the public, even if it is on a limited permitted basis.

As you consider the amendment to the GSENM grazing plan please consider the option of making this area available via the "upper road". The current access trail outside Big Water is long and dangerous for many of our senior citizen photographers to hike 7.2 miles round trip, often in the early morning hours.

I would appreciate the northern access road to the Wahweap Hoodoos to be opened to the public please.

I am a member of the color country camera club.

I'm 6 yrs. old and I am no longer able to hike long distances.

I would like to be able to get out to the wahweap hoodoo's via a shorter route.

Would really appreciate the opportunity to access the area from the old road off of cottonwood rd.

so I can once again have the chance to photograph these beautiful areas.

I have been advised that I may no longer be able to access Wahweap Wash via BLM road 431. As this is one of my favorite areas to take some of my visitors to I was greatly disappointed to learn of this closure. As there are also several other interesting areas to be explored and photograph along this road it is even more disappointing. Hiking to and from the Wahweap Hoodos from Big Water is more than my 80 year old body can handle. As this road IS apparently open to ranchers it seems only fair that it should also be open to hikers and photographers. PLEASE allow such usage now and in the future.

I am writing to support the opening of the upper road at Wahweap Wash to the public. Currently, the only access to this area is a 3.5 mile hike from the current trailhead. This severely limits photographic opportunities to those who are unable to hike that distance.

Access via a currently 'authorized use only' dirt road, to particular geological features offering photographers and hikers a true treat, whether by permit or by public access rights across and to public land, would be a great blessing. Why a blessing? Packing photographic and other equipment 1/2 to 1 mile one way, is a different issue than packing it 3.5 miles one way -- particularly when the 'special' moments include sunset and sunrise. Walking out after dark or in before light, has its hazards - particularly for those of us that are in our 'golden' years.

In recent years the road along East Clark Bench from Coyote Creek to Wahweap Wash has been closed to the PUBLIC. But it still remains open to ranchers grazing their cattle on the mesa. This exclusive access severely limits the ability of the community to enjoy and photograph the area.

I see more and more of the access roads being closed which requires longer hiking distances which means the older generation has less and less access to some of these beautiful areas. It has been one of my favorite sites in years past.

I personally hope that the V road can be closed. With so much sand and slickrock, the area appears to have little or, at best, marginal value for cattle forage. There are many sensitive scenic and natural resources in the area. That

Table B-34**Issues that have already Been Addressed but Should be Better Communicated to Those Who Raised the Issues**

old road pierces one of the most wild areas in the Escalante Canyons. Unique slickrock areas may become degraded or compromised if motorized and mechanized uses increase. (ie tire tracks on slickrock, small sandstone features damaged by tires, resource theft, etc.) The natural quiet in the area will certainly be lost if motorized use increases. Tire tracks invite more use. An effective end to the road is at the Harris Wash Trailhead. Without truck tire tracks on the V road, visitors will not be tempted to drive it and the road can be allowed to fade away.

Old routes and some existing roads need to be considered for closure that have been established by use for grazing when there is no real reason now to have them all. For example: the 40 mile Bench and Chimney Rock area has too many of these routes and all of them are not needed to effectively graze the ground there.

Additional planning issues: Travel management plan consistency.

Motor vehicle use in the Monument relating to range management by BLM, the public, and permit holders should be consistent with the approved route designations in the MMP. At the current time, significant problems are occurring due to varying interpretations, often incorrect, on allowed vehicle use in the Monument.

The Comment (scoping) period does not provide adequate time to contemplate and address all the complicated issues. Comments should be received at any time.

As a permittee, I would like to see the old chainings and seedings reviewed and released to where we can use herbicides and mechanical methods to eliminate the brush and replace it with forage for the animals. I would be more than willing to provide labor, equipment and money to assist in this process. If we could apply aerial herbicides to the brush areas and cut or chain the pinion and juniper trees, I re-seed these areas with a variety of plants that would provide a habitat conducive to wild life as well as the cattle. This would improve the watershed areas and control the erosion that is taking place. The land could be healed and restored to what it was 40 years ago.

Kane County further asserts that a major revision of the GSENM Plan is warranted and necessary in order to ensure planning reliability and adequacy as intended under the National Environmental Policy Act (NEPA). A new Grazing EIS by definition must be a stand-alone plan and separate undertaking from the existing 2000 Monument plan. However this dated Monument plan while not governing a grazing plan still is outdated and not in harmony with certain ecological requirements. NEPA requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. A new grazing EIS without an updated and fully revised companion GSENM Plan and EIS will without any doubt fail to deemed adequate under a critical examination utilizing consistent NEPA standards corresponding for companion plans.

Table B-35
Issues Beyond the Scope of This Planning Effort

high impact activities

a. reduce activities (filming, mining) with high impact

These unique and special resources need special designation to protect it.

The Utah School and Institutional Trust Lands should be consolidated outside the Grand Staircase-Escalante NM boundaries.

Only a fraction of the approximately two million acres of Monument lands have been inventoried for archaeological as well as other scientific resources. Undoubtedly, there must be even more damage to the unknown resources than to those that have been mapped and recorded. Funding to complete the necessary inventories is needed to adequately protect and preserve all of the significant resources present here.

1. A multi-year plan should be developed to complete scientific inventories of all allotments in order to identify significant resources that require protection. Phased funding should be programmed for the out years to complete this work.

2. The Monument, given its large size and world-class resources, appears to be woefully understaffed and not sufficiently funded to carry out its mission. Despite the praiseworthy efforts of management and staff, more help is needed to meet its mandate and achieve a high level of compliance with Federal statutes and regulations. This is particularly true in the area of archaeology.

I also find it interesting that you are spending thousands of dollars to remove exotic species from parts of the monument (tamarisk and Russian olive) when you manage for another exotic species, cattle.

I believe our tax dollars and energy would be put to better use by supporting tourism rather than cattle grazing.

Negotiate with all the permittees to purchase their permitted livestock and any base property lying within the allotments. I don't care if it is the government or conservation organizations who pay for the buy-out.

on your website I did read:

You will be notified on the first of the month via e-mail whether your application was successful or not.

I didn't get any email (no mail found in my spams!) and need to know

a) did I win 2 Permits or

b) did I not win 2 Permits for the april 2014 lottery ?

Here is a copy from the email I got after I bought the entry for the lottery:

Dear Sieglinde Bieker,

Your Lottery Application for Coyote Buttes North for 2 people was accepted.

The dates you selected are as follows:

First requested date: Sunday April 20, 2014

Second requested date: Monday April 21, 2014

Third requested date: Tuesday April 22, 2014

The lottery will run on Wednesday January 1, 2014. You will be notified by email of the status of your permit request on or around that date.

Total Paid: \$5.00

Payment Type: Lottery Payment

AppID: 12262013_081853_62713

Order ID : 101133265

Transaction Date: December 26, 2013 8:18:53 AM

Thank you for using the Paria Canyon/Coyote Buttes Backcountry Permits System.

Because recreation is the primary economic driver in our area, complete an assessment of how money and staff is being allocated in the Monument, with the aim of correcting the current imbalance in staff positions and expenditures on cattle grazing versus recreation and science.

Why bring in one more outside group who is distant and removed from both the GSENM staff and ranchers. The local BLM has many good, educated people. Use them. Minds close to the issues should be the ones working on the solutions. To later sweep personal accountability under the rug and hide behind the excuse of "policy changes" established by a faceless, nameless entity has no amnesty from unethical behavior.

Table B-35
Issues Beyond the Scope of This Planning Effort

Additional planning issues: Hunting and livestock.

Hunting is allowed in the Monument. This EIS should assess the effect that livestock grazing has on wildlife habitat and the hunting community.

It was enlightening to review the 2013-2014 Department of Interior Sustainability Plan and REA's. I will be sharing wonderful biodiversity* and grazing improvement strategies from around the world which are establishing positive improvements in carbon fixing, rangeland population increases, biodiversity and expanding species richness. These positive improvements in global landscape management practices are an exciting addendum to the Climate Change and Sustainability conceptual models and arguments raised in the REA for the Colorado Plateau and other REA's as listed in the below link.

[Http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach/reas/dataportal.print.html](http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach/reas/dataportal.print.html)

It is a joy to be able to help the BLM successfully investigate solutions to our ever changing climate change and climate change mitigation strategies.

When I listened to the people that were appointed to the MAC speak against grazing, I realized they had no idea how to live and work in harmony with their environment and therefore they didn't think that anybody else could. The BLM lawyers in Northern Utah defeated some of the exact same people who brought anti grazing lawsuits against the BLM, who now are named as advisory committee members or consultants to the advisory committee to the Monument. I don't see how this can be seen by anybody, as anything other than that the people who appointed these people trying to sway the outcome of the EIS. I think the grazing community deserves better than this.

As the responsible agency for preserving this unique area of the country for future generations, I urge you to first evaluate every use for how it will preserve or degrade the land. Uses that degrade and destroy should not be allowed.

Recreational uses must be carefully monitored and if necessary restricted so they do not interfere with or hinder efforts to restore health of the land.

The following attachments were provided and determined to be not related to the scope of this MMP-A or are duplicative of other attachments provided.

020_L3019 Grazing Grand Bench Env Assess 1991.pdf

045c_Prineville BLM - Grazing Matrix Memo.doc (duplicative of another attachment provided; 038a_Grazing Matrix Memo.doc)

045d_Prineville BLM - Grazing Matrix Table.pdf (duplicative of another attachment provided; 038b_Grazing Matrix Table.pdf)

065_wr_COWS_CONDOS.pdf

081_Bock et al. 20% Exlosures.pdf

082_Carter WyomingBLMRangeRecommendations.pdf

093_Cattle_Weights_on_USDA_Forest_Service_Lands_by_State_With_Cow_and_Calf_Forage_Consumption.pdf

095_Farm Ranch article on Animal Size.pdf

099_Invasional meltdown.pdf

100a_Parker et al SCIENCE 2006.pdf

100b_Parker et al SCIENCE 2006 - Supporting Online Material.pdf

101_Prevey et al EcoApps Galleys.pdf

102_Prevey et al PI Ecol 2010 v207p39-49.pdf

109_Harris and Asner 2003 Grazing and spectroscopy in GSENM.pdf (duplicative of another attachment provided;

052_Harris and Asner 2003 Grazing and spectroscopy in GSENM.pdf)

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