

<b>Comparison of Key Differences Between Alternative C (plus key missing parts) and Alternative E</b>		<b>Draft EIS analysis</b>	
<p style="text-align: center;"><b>ACRONYMS</b></p> <p style="text-align: center;">EIS      Environmental Impact Statement  GSENM      Grand Staircase-Escalante Nat'l Mon.  GCNRA      Glen Canyon National Recreation Area  MMP      1999 Monument Management Plan  Monument      GSENM  SGA      Sustainable Grazing Alternative, the source of Alternative C</p>			
	<b>Alternative C</b> Plus "key pieces" of Sustainable Grazing Alternative missing from the current Alternative C (missing pieces in blue)	<b>Alternative E</b>	
<b>Overall theme</b>	<p>Emphasize restoring native species diversity. Livestock grazing managed to ensure less impact to resources. Changes in grazing systems (e.g. season of use, intensity, rest) considered before implementing mechanical treatments, or more fencing. Areas currently not grazed ("unavailable" and "unallotted") remain free of cattle. Additional areas identified as unavailable for cattle using voluntary retirements and criteria.</p>	<p>Emphasize current livestock management Cattle grazing would be returned to three currently "unavailable" allotments and one unallotted area in GSENM. Unallotted areas in GCNRA would not be available to cattle.</p>	<ol style="list-style-type: none"> <li>Analyze impacts of returning cattle impacts to previously "unavailable" or "unallotted" (i.e., potentially "reference") allotments. Consider the multiple impacts associated with livestock grazing on western public lands (e.g., Beschta, et al. 2012; SGA Annotated Bibliography; provided to GSENM during 2014 scoping period.)</li> </ol>
<b>Proportion of the Monument open to cattle grazing</b>	<p>Designation of allotments as available or unavailable for livestock grazing is <u>provisional</u>. Areas that are deemed "available" at one time may become "unavailable" depending on site conditions and certain criteria listed in the SGA. 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.</p> <p>Areas currently grazed and meeting or moving toward objectives would remain available for grazing; Areas determined by an EA or EIS to be unavailable for cattle would remain unavailable.</p> <p>~70%-100% (1.5-2.1 million acres) of current</p>	<p>All allotments that will be grazed or not grazed ("available" or "unavailable") by cattle are decided upon in the EIS and Decision</p> <p>98% (2.1 million acres) of current livestock acreage will be grazed, which would mean 92% of total Monument acres</p>	<ol style="list-style-type: none"> <li>Compare C and E for incentives if permittees could lose "availability" if do not meet/move toward desired conditions vs. having assurance of ten more years of permit. If BLM indicates they can make an available allotment "unavailable" due to poor grazing management, provide track record of doing so (i.e., allotments whose permit was revoked for poor management)</li> <li>Compare 34% ungrazed with 8% ungrazed for livestock impacts commonly seen within the Monument. Compare for biological soil crust outcomes.</li> <li>BLM could do two or three runs with random allotments becoming "unavailable", and learn which plant communities would gain ungrazed areas</li> </ol>

	cattle-grazed allotments will be grazed, which would mean 66%-94% of total Monument acres		as reference (compared to current plant community representation in ungrazed – see Trust 2013 report to GSENM, “Vegetation Representations in Grazed and Ungrazed Lands” within Grand Staircase-Escalante National Monument
<b>Proportion of BLM-managed portions of GCNRA available to cattle grazing</b>	~70%-100% (161,210-230,300 acres) of current cattle-permitted acres which would mean (51%-72%) of total BLM-managed portions of GCNRA acres	91% (209,000 acres) of currently cattle-grazed GCNRA allotments will be grazed by cattle which would mean 66% of total BLM-managed portions of GCNRA acres	Do two or three runs with random allotments becoming “unavailable”, and learn which plant communities would gain ungrazed areas as reference (compared to current plant community representation in ungrazed) – BLM could do an analysis similar to the Trust 2013 report noted above (i.e., “Vegetation Representations..”).
<b>What constitutes “meeting Objectives”?</b>	Objectives generally will be considered to have been met when monitoring documents the Indicators are at least 80% (e.g., of soil cover, willow density, native plant species richness) of those in reference areas of the same ecological site (e.g., soil type, precipitation, elevation, slope as relevant). Such reference areas may consist of exclosures, ungrazed pastures/allotments, permanent range cages, or ungrazed recovery reference areas. Conditions below 80% of the reference site(s) are appropriate subjects for problem-solving among the BLM, permittees and interested public.	[No particular degree of departure from Objectives is described as unacceptable.]	It will be important for the BLM to estimate what percent departure from various conditions (e.g., soil cover, willow density, native plant species richness) is considered unacceptable by the BLM in Alternative E. Without that, there is no public transparency to what the BLM considers acceptable/unacceptable.
<b>Diversity of grazing arrangements</b>	Encourage a diversity of grazing arrangements, including such arrangements as: <ol style="list-style-type: none"> <li>1. Rest-rotation systems</li> <li>2. Deferred rotation systems</li> <li>3. On-off systems</li> <li>4. Forage reserve areas</li> <li>5. Collaborative grazing experiments</li> <li>6. Multiple allotments combined into a single system</li> <li>7. Reduced use areas</li> <li>8. Non-use areas</li> <li>9. Closed areas</li> </ol>	Use a variety of grazing systems, such as: <ol style="list-style-type: none"> <li>1. Rest-rotation</li> <li>2. Deferred rotation</li> <li>3. On-off</li> <li>4. Forage reserves</li> </ol> <p><i>[Note: #5-9 of Alternative C are not mentioned]</i></p>	Compare C and E in terms of range of options for adaptive management if #5-9 are not employed in Alternative E
<b>Forage reserves</b>	Currently 14,600 acres are used as forage reserves; additional acres would be determined through a public process	20,700 acres of allotments will be used as forage reserves, including to rest allotments that are not meeting standards.	Again, it will be important for BLM to indicate some publicly-transparent estimate of what is considered “not meeting standards” – i.e., what would constitute use

		[No limit of how often a forage reserve can be grazed by cattle is given.]	of a forage reserve based on past ratings?  Indicate how often a “forage reserve” can be used.  Probably C and E cannot be compared for numbers of acres of forage reserve allotments, as that is unknown until proposed with public input (NEPA). Alternative C does not prevent use of currently-grazed cattle allotments as “forage reserves,” but would not re-start cattle grazing for forage reserves in any allotments currently closed via an EA or EIS. If Alternative E proposes to re-stock currently closed allotments with cattle for forage reserves, indicate which allotments.
<b>Voluntary relinquishment</b>	When voluntarily relinquished or otherwise retired, allotments or pastures with Monument objects or values that are not compatible with or are impacted by livestock grazing (e.g., biological soil crust, riparian areas, declining native plant or wildlife species) would be considered for non-use.	Continue current policy of preferring to re-stock a relinquished permit with cattle. Change the MMP (e.g., to allow for seeding exotic cattle forage plants) and then manage according to it	Analysis would be the same as for “Proportion of the Allotment Open for Cattle Grazing,” above.
<b>Science</b>	Use science to understand cattle impacts; the potential to move cattle-grazed areas toward conditions observed in ungrazed areas; and to distinguish global warming impacts from cattle impacts.	Use science to research grazing techniques	Compare C and E for the types of science information that will be available, e.g., in ten years.
<b>Public Transparency and Engagement</b>	<ol style="list-style-type: none"> <li>1. Offer public tours prior to allotment permit renewal, allotment management plan development, or vegetation projects for conditions impacted by livestock grazing.</li> <li>2. All Environmental Assessments (EAs) will provide for public comment on the alternatives and their analyses.</li> <li>3. A map and annual plan of use for each allotment (with pastures) will be posted prior to livestock seasonal entry on the allotment.</li> <li>4. When requested by a member of the public, BLM will participate in a pre-annual permit meeting to discuss</li> </ol>	[No provisions for public transparency/engagement are described.]	Compare C and E public engagement. E would apparently be the same as Alternative A – No Action, with an analysis of what types of diverse stakeholder input has been received via what channels in the past five years vs. what types of diverse stakeholder input would be received under Alternative C (if public transparency and engagement is included).

	<p>problems observed/documentated on a specific allotment the previous year, and proposed solutions to those problems. Such meetings will be available to the permittee and other members of the public.</p> <p>5. 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. The collaborations would be convened or co-convened by non-BLM entities.</p> <p>6. Interested members of the public 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.</p>		
<p><b>Problem-solving with the public (including permittees)</b></p>	<p>Interested publics, including permittees, are encouraged to engage with the BLM to discuss and propose management options where conditions in grazed areas are more than 20% reduced from those exhibited in areas not grazed by cattle or 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</p>	<p>[No provisions for problem solving with the public are described.]</p>	<p>Compare the outcomes of C and E (apparently the same as Alternative A)</p>
<p><b>Reference Areas</b></p>	<p>Use large and small ungrazed areas as reference sites to (1) compare with cattle grazing; (2) monitor recovery when a grazed area is no longer grazed; (3) separate climate change impacts from cattle impacts.</p> <p>Reference areas are established across GSENM/GCNRA that represent the full range of ecosystem and plant community types (both riparian and upland) including sites that have</p>	<p>Use grazed areas to experiment with cattle grazing. Use reference areas (no mention of size) to separate climate change impacts from cattle impacts.</p> <p>[No commitment to establish a series of reference areas across plant community types.]</p> <p>[No mention of establishing range cages to</p>	<p>Prepare maps of estimated number of ungrazed reference areas, range cages, and cattle grazing experiments under Alternatives C and E.</p>

	<p>received exotic vegetation treatments. A reference area, with the exception of reference areas established to determine rates of recovery without cattle grazing, consists of a site that has not been grazed or accessible to livestock for at least ten years.</p> <p>At least 2 permanent range cages (16' X 16') are maintained in each grazed pasture, in representative areas frequently used by livestock.</p>	<p>understand differences between grazed and ungrazed conditions.]</p>	
<b>Utilization cages</b>	<p>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>Utilization cages are moved every year, allowing for cattle utilization of 60% to be compared to what has grown up from a site grazed the past year.</p>	<p>Use scientific literature to compare what would be learned with range cages that allowed for protection from grazing for two years vs. one grazing season.</p>
<b>Biological soil crusts</b>	<p>Biological soil crusts protected from trampling and other physical disturbance within at least 60 percent of their predicted available habitat within GSENM; and 80 percent within Glen Canyon NRA.</p>	<p>Continue current policy of allowing cattle grazing throughout biological soil crust</p>	<p>Estimate the proportion of thin cyanobacterial crust vs. pinnacled cyanobacteria, lichen, and moss under Alternative C and E, Two or three runs of randomly selecting which allotments would constitute the 60% of potential crust habitat in C. Use data that have been gathered in the early 2000's and 2014-2015 for estimating different percents of biocrusts types under C and E.</p>
<b>Native, threatened, endangered, and other special status species</b>	<p>"Significant progress toward restoration of habitat" for threatened, endangered, proposed, candidate or other special status species is demonstrated by maintaining progress at a rate that is 80% that of relevant ungrazed recovery reference areas.</p>	<p>Native, threatened, endangered, and special status species are maintained at a level "appropriate for the site and species involved."</p> <p><i>[Note: What a "level appropriate for the site" means is not defined]</i></p>	
<b>Vegetation treatments</b>	<p>Vegetation treatments will (1) have the objective of restoring or supporting potential native vegetation and ecosystem processes; or (2) addressing underlying causes of the problematic conditions prompting vegetation treatments.</p>	<p>Change the MMP to allow for vegetation treatments with the purpose of increasing cattle forage.</p> <p><i>[Note, in recent years, the Monument has been undertaking such treatments on tens of thousands of acres in violation of the current MMP]</i></p>	
<b>Seedings</b>	<p>Seed only native species. Provide measureable Desired Conditions for post-treatment; protect seedings from livestock until a majority have seeded.</p>	<p>Change MMP to allow seeding of exotic plants for cattle forage (i.e., not only emergency situations). "Modify" cattle grazing until seedings have "established."</p>	

		[No commitment to establish measureable Desired Conditions for seedings or post-treatment monitoring of seedings is indicated.]	
<b>Noxious weeds/invasive species</b>	Non-chemical methods and removal of stressors are the first priority for preventing the introduction, establishment, and/or spread of noxious weeds and/or non-native, invasive species.	No prioritization of non-chemical methods or removal of stressors (e.g., cattle) that are causing introduction, establishment or spread of noxious/invasive species; allows ground and aerial spraying of herbicides	
<b>Structures for cattle management</b>	Evaluate structures (fences, water developments) associated with livestock grazing for utility, historical significance, or other purposes and remove unless needed to meet objectives for natural and cultural resources. Cabins for permittees are not appropriate in GCNRA.  Fencing necessary to meet Objectives will be built by permittees; and fencing must be functional prior to cattle entry in the season.	Authorize additional structures for cattle. Allow new water developments and permittee cabins to be built in GCNRA.  [No mention of permittee responsibility to construct fences necessary for the cattle grazing to meet Objectives; or to maintain fencing prior to cattle entry.]	
<b>Water for cattle</b>	Where water developments are necessary for livestock grazing and protection of Monument values, such developments will be fenced and will protect associated wetland/riparian resources. On/off valves will ensure that water remains in its natural course/site at all times livestock are not present in the allotment/pasture.  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.	Streams and springs can be temporarily dewatered to fill troughs and water tanks. No requirement for on/off valves.  [No indication of permittee responsibility for removing noxious or invasive weeds around cattle watering troughs or ponds.]	
<b>Cattle use timing/rest</b>	During winter grazing [i.e., most of the Monument], use rest rotation and do not graze an area more than 2 out of 3 years. When grazing occurs during the growing season (e.g., Spring, Summer, Fall) there will be at least 6 weeks between the beginning of seasonal use of a particular area 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.	Adaptively manage cattle to meet standards.  [No mention of scheduling rest on otherwise annually grazed areas.]	

<b>Limits to utilization of plants by cattle</b>	Utilization of plants will be no more than 30%; and in drought years no more than 25%	60% utilization	
<b>Allotment Action Plans</b>	When monitoring shows an allotment/pasture is failing to meet or move towards Objectives, allotment action 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.	<i>[No specific plans offered for when allotments are not meeting or moving toward Objectives.]</i>	
<b>Riders</b>	Where allotments are not meeting or moving toward objectives, a rider will be present 5 out of every 7 days throughout the season of use.	No expectation of riders when allotments are not meeting or moving toward objectives.	
<b>Recreation</b>	Reduce some cattle conflicts with recreation in the Monument and GCNRA through reduced grazing as relinquishment or other opportunities arise.. <i>[Here BLM inaccurately represents the SGA as proposing to remove cattle in particular areas near the Gulch, Buckskin Gulch, and Paria-Hackberry, though the areas have not been voluntarily relinquished and the BLM is not proposing to close them]</i>	Emphasize fencing to reduce cattle conflicts in some small recreational areas.	
<b>Social and Economic Indicators</b>	The social and economic sustainability of GSENM/GCNRA livestock grazing will be monitored according to several indicators, including both the economic and cultural values of livestock grazing, and the social value of participation in grazing management decisionmaking by diverse stakeholders. Social/economic indicators are best developed via consensus among BLM, GSENM, GCNRA personnel; permittees; and interested publics.	<i>[No mention of establishing indicators of public participation, economic or social values of livestock grazing.]</i>	
<b>Goal for wildlife and wildlife habitat</b>	Native plant communities support the following, at levels of at least 80% of relevant ungrazed reference areas: 1. Pollinator diversity 2. Cover, nesting, calving, and/or food habitat for native declining, uncommon, and endemic vertebrate animals.	<i>[No goal for wildlife or their habitat, though cattle grazing can degrade wildlife habitat is mentioned]</i>	

	<ul style="list-style-type: none"><li>3. Diversity of native aquatic biota.</li><li>4. Diversity of soil invertebrates.</li></ul> <p>Habitats are connected at a level to enhance populations of native species, including pollinators, based on estimated connectivity requirements using best available science.</p>		
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