



Capitol Reef National Park Livestock Grazing and Trailing Management Plan Environmental Impact Statement:

Public Scoping Correspondence Received
March 10 to May 15, 2015
PEPC Project ID: 50181, DocumentID: 64612

Correspondence: 1

Received: 03/16/2015

Correspondence Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text :

As those in opposition to grazing and other high impact uses to local public lands have been threatened and harassed before, I am submitting this comment anonymously.

I am a frequent recreational user of trails in Capitol Reef, including areas that are of ecological and historic value and that are highly damaged by grazing, such as Pleasant Creek Canyon. Many studies had shown that grazing on the Colorado Plateau is not commercially viable and only made possible by way of public subsidies - both direct subsidies to ranchers, and not charging them the true cost of the impact they cause to public resources. As this use is mostly funded by taxpayers, most of whom value these lands for recreational and conservation uses, grazing harms the public interest and experience in the park while offering no offsetting benefit other than sustaining a tradition for a few locals. There is no reason why a public resources owned by American citizens is used to benefit a few individuals at a cost to everyone else, let alone when those individuals maintain the right for traditional reasons, and not as an economic dependency. Please eliminate all grazing from these lands and allow them to heal and to serve the same scenic, historic and ecologic purpose for the majority of their owners/users, as any other National Park resource.

Correspondence: 2

Date Received: 03/18/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

I see no reason for allowing endless years of these robber baron cattle grtazers to continue to demand the killing of all wildlife and birds that exist on our national land. they never had the right to do that and we want their ability to do that stopped now. the fact is their use is extremely detmiental to climate change and they pay low low low cheap rates for their destruction of our national land, if you allow them to continue, their sites should be made smaller, closely monitored for infractions and fined for infractions, provide no services for use of the land, demand reconstruction of damaged land when they are off, and increase the fees they pay. the way that national taxpayers are gouged so that this privileged class continues to benefit from use of our national land, and it has always been national land bought with taxpayer dollrs, is

egresious. these robber baron cattle ranchers are getting away with an egregious taking of what belongs to all americans. that land is ours. if we have to allow use, that does not mean we allow abuse. these robber baron cattle ranchers are among the worse people on earth in demanding all other species of wildlife, birds/ reptiles are killed so they can maraud on our national land. this needs to stop. the eis should clamp down on these robber baron cattle ranchers for sure and immediately. no special water giving to them. that is their responsibility to feed and water their cattle. we are responsible for th ewildlife and birds that may share that livestock land. cut the acres they have. look into the claims. many are probably bogus, completely bogus and need to be stopped. profiteers will lie to you for their financial advantage. check out what is ogin gon instead of just accepting what is going on. we need investigations here of this egregious conduct by this so far privileged class.

Correspondence: 3

Date Received: 03/27/2015

Type: Web Form

Organization: State of New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division

Correspondence Text:

Thank you for providing me with the opportunity to comment on the Livestock Grazing and Trailing Management Plan EIS for Capitol Reef National Park. The Capitol Reef area is well known for its unique geology which supports a diverse flora and more than 40 rare and endemic plant species, including 6 federally listed plant species. This makes Capitol Reef unique in the National Park system and responsibility for the continued existence for most of these species lies with the Park.

Unless there is evidence supporting that grazing and associated grazing management activities, including trailing, do not harm these sensitive plant species, grazing permits should not be considered in habitats and areas of known occupation of rare and endangered plants. Current data indicates that grazing is significantly impacting at least 3 federally listed plant species. Considering the rarity of these species and their documented decline combined with the mounting evidence that grazing and trailing is detrimental to these plants, no grazing or trailing should be allowed in the habitat of these species, or any federally listed plant.

For all other sensitive and endemic plants occurring in active grazing allotments and trailing areas the precautionary principle should be applied and no livestock activity should be permitted in sensitive habitats until proven to not harm them. The paucity of data on the distribution and abundance of these species or the lack of data on the impacts of grazing on these species is not an excuse to continue with the status quo and allow grazing in the habitat of these species. If grazing is mandated to be permitted in the habitats of sensitive species, rangewide surveys to document their locations and close monitoring on grazing impacts is essential for proper management of livestock in the Capitol Reef area. However, until these baseline studies can be carried out, no grazing or trailing should be allowed in the habitat of sensitive species. Once a baseline is established, a variety of conservation oriented management actions should be considered, including ferrying animals via trucks instead of trailing, fencing, and seasonal restrictions.

Correspondence: 4

Date Received: 04/03/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

I heard of this website after myself & other members of our backpacking group were speaking with [REDACTED] @ Park headquarters on March 25, 2015.

We knew that water might be scarce when we backpacked into the Bull Berry Creek area in the South Desert region. We each, all 11 of us, carried 1 extra gallon of water figuring that Ring Spring would be a good source of water.

Imagine our disappointment when we discovered that:

- 1) cattle were seen in South Desert
- 2) Ring Spring was as close to trashed and unusable for drinking water as you can imagine

Regarding cattle in National Parks I and others in our group believed that only Great Basin allowed grazing, we obviously were wrong. We were encouraged to hear from Ranger Fisk that 17 allotments have been purchased and would encourage more generous attempts at closing the remaining two.

We were all shocked at the condition of Ring Spring. The stock cows are basically allowed to use it with very little management or regard on behalf of the owner of this allotment for the degrading condition this produces for the spring, the surrounding vegetation, or soil. The water color was grey, odorous, with manure & tracks visible everywhere near it. It reminded me of the heavily used barn yard on my fathers' farm in Eastern Nebraska.

Barn yards on personal property are one thing, but are unacceptable in a National Park. We strongly encourage a change in the way this site is managed. Fencing, troughs, or some piping of water away from the spring needs to be considered to protect a delicate area in what once was a beautiful site.

Thank you,
[REDACTED]

Correspondence: 5

Date Received: 04/01/2015

Type: Park form received during public comment meeting

Organization: Unaffiliated Individual

Correspondence Text:

There has been grazing on these places since the white man came to this country and things have not changed very much. If you take the cattle away there will not be anything. It will go downhill in a big hurry. The grazing is keeping a balance of the way it should be.. The grazing is maintained by cows and the grazing will continue. It is not hurting anything to have the cattle there in the winter and the tourist in the summer. That is somewhat of a balance. There are a lot of places that most people cant get to unless they walk. That place it too hot for walking.

Correspondence: 6

Date Received: 04/01/2015

Type: Letter received during public comment meeting

Organization: Unaffiliated Individual

Correspondence Text:

As a former cattleman and permittee, I want to comment on the proposed Capitol Reef National Park Grazing elimination. My ancestors, the Meeks, Morrells, Gardners, and Duncans, were some of the first settlers in Wayne County. They worked very hard to establish settlements, waterways, trail-ways, and lifestyles that continue to this day. Part of that was grazing on the mountains and deserts. Also, trail-ways were established then. Those need to be preserved and protected.

The economic impact of ceasing grazing wold be detrimental to the families and their lifestyle.

As a former commissioner, please note that every phase of agriculture keeps our communities going!

The park is 100 miles long and only a few places to travel through it. Our trail-ways need to be preserved.

Please continue to allow grazing in Capitol Reef National Park.

Correspondence: 7

Date Received: 04/01/2015

Type: Letter received during public comment meeting

Organization: Unaffiliated Individual

Correspondence Text:

We understand there is a never-ending group who wish to rob the rights of the citizens who have cared for this part of the land.

Before the Park was established, William Chapman Morrell, Chapman Meeks Morrell, and now their heritage is here to be heard. We would like to see Capitol Reef National Park continue to let the rancher run cattle on the park land.

We have trailed cattle from Upper Wayne County to Notom to get to the lower permits. We gave up the permits we once had, have had permits taken, or reduced. We have been careful not to trespass. Yet there is a non-stop group that is unreasonable; they are controlling people who wish to take more and more. It is time to stop this! Let the people who live here have rights also. Let the ranchers have their rights preserved. It's time to stop the groups that are putting their agenda above the local ranchers.

Many travelers coming to Wayne County love to see the country way of life as well as the beautiful scenery. Cattle grazing helps the environment.

Let's keep our heads about us and work together for the good of all ways of life in America. We strongly ask those who would manage this public park land to stand up to the pressures of the non-governing people, along with clubs and groups who wish to rob the citizens and people of common sense.

Correspondence: 8

Date Received: 04/01/2015

Type: Letter received during public comment meeting

Organization: Unaffiliated Individual

Correspondence Text:

My name is [REDACTED] and I am one of the two families that will be affected by the cessation of grazing in the Capitol Reef National Park.

I grew up in Teasdale, Utah a fifth generation Farmer/Rancher. Both my parents' ancestors settled communities in Wayne County and built dams, started farms out of sage brush, and tilled fresh soil just to barely survive. As you look at names on Boulder Mountain, Thousand Lake Mountain, Capitol Reef, etc., you will see names like Guy's Pond, Billings Pass, etc. These are names from my ancestors who established and settled this County.

Our family has been grazing in Capitol Reef National Park since 1946, before Capitol Reef National Park was even established. The Trail rights have been in Capitol Reef National Park since Pioneer times in the 1880s. By cutting off grazing and Trail rights. special interest groups are choosing to cut Wayne County in half by trying to stop access. These rights need to be preserved and protected to ensure access to and through the Park.

Now a special interest group of people are trying to "make up" a cause of a tiny, insignificant cactus. There has been no evidence at all of cattle hurting the cactus. In fact, I have seen the cactus flourish where cattle graze. If a cow steps on a cactus, which seldom happens (would you want to step on a cactus?) it goes into the ground then comes up again, only 2-3 times as many as before. Cattle actually help spread this cactus. I have seen it with my own eyes.

My parents worked hard to keep the Farm/Ranch going. Pace Ranches has had grazing in the park for over 80 years. We all know Family Farms and Family Ranches are getting to be a thing of the past. Why would these special interest groups want to eliminate what few farm/ranches left? Do they want everyone to move to Urban America and walk on concrete

and fill up elevators? We have enough of that.

Help us now preserve our heritage and traditions. Help us keep our family economically sound. Eliminating grazing would be devastating to our Ranching business. We would have to sell our cows and basically go out of business. How many of these special interest individuals want that on their conscience? Would they be willing to send us a \$1000 check each month just to keep our Ranching operations going? I highly doubt it. We don't bother them so why do they keep tormenting us and our way of life?

Please keep our grazing rights intact.

Correspondence: 9

Date Received: 04/01/2015

Type: Letter received during public comment meeting

Organization: Unaffiliated Individual

Correspondence Text:

My name is [REDACTED] and I am a fifth generation Farmer/Rancher. I grew up in Bicknell, Utah and my father and mother's ancestors both settled Wayne County from the very beginning. If you look at the names of the ponds, lakes, flats, hills of this County, you will see names like Meeks, Morrell, Duncan, Gardner, Chapman etc. These are names of my ancestors that first settled the ranges and deserts of this great County. Let us not forget these great pioneers who sacrificed every thing they had just to eek out a living and settle this wonderful Valley.

I grew up in Bicknell, Utah and helped my father with ALL of the farm work and rode horses to take the cows to the pasture every day. We also rode the ranges to gather and move the cattle on the ranges. I left Wayne County when I was eighteen years of age after graduating from Wayne High School and started school at Utah State University in Logan, Utah. I attended the four years and graduated in 1971 with a Bachelor's of Science Degree in Business Education/Office Administration. I then obtained a teaching job at Bountiful High School in the fall of 1971. I taught one year there and then married [REDACTED], also a fifth generation Farmer/Rancher from Teasdale, Utah. We built a home in Teasdale on the family farm and have lived here for 43 years. During this time, I taught school at Wayne Schools for 10 years, took a small break to have four children, then for the State of Utah for 29 years. My husband was able to be a full-time farmer/rancher and I provided income and benefits to our family for 39 years. I basically was required to work since the farming/ranching business had hard times. Interest rates were in the 20 percents and of course the farm debt escalated with this high interest rate. Times were tough. We raised our four children, and one bonus child which came eight years later, very frugally with our meager income. We "toughed it out"! Our grazing permits made it possible to keep cattle on the range and in the desert which kept us in business.

Now, we are looking at our grazing rights being threatened by a special interest group which doesn't seem to care about tradition, local right of individuals, nor economic impact of our community. Most of these people in these groups seem to have high incomes and seem to enjoy suing over minor, trivial things to benefit their own self-interest. How many of them enjoy eating steak at Texas Road House, a Big Mac from McDonalds or Burger King, or a taco from Taco Bell. Probably most of them. I often wonder where they think this beef comes from. For their information, it takes huge amounts of time, energy, and expense to raise a beef from a calf to the slaughter. Yes, it is inexpensive and great to enjoy this. For their information, there is a Rancher in the background working hard to make this happen for them.

All of our children are grown now, all five of them have Bachelor Degrees, two have Master's Degrees, and one daughter earned her MD in Obstetrics/Gynecology. They are all hard working and contributing to society. The Farm/Ranch gave them a good start as they all helped and contributed to our family by changing sprinklers, riding horses on the ranges, deserts, etc. They learned how to WORK HARD. Our family motto was "WE CAN DO HARD THINGS." They are all successful, contributing citizens. Now their children, our grandchildren, are helping on the farm and now riding the ranges and deserts gathering cattle with their grandfather. Can you put a price on this? Can you put a price on raising children and grandchildren that are carrying on the tradition of farming/ranching? Children who grow up in the country and learn how to work hard become the "salt of the earth" citizens. We need this to continue. Our grazing rights in Capitol Reef National Park helps make all of this possible.

Please allow the grazing to continue. Our heritage and traditions are being threatened and let's hope that level-headed leaders will hear our cry and protect our way of life over radicals who have shallow backgrounds and narrow perspectives.

Correspondence: 10

Date Received: 04/01/2015

Type: Park form received during public comment meeting

Organization: Unaffiliated Individual

Correspondence Text:

Don't bend to radical environmental groups. That are anti-grazing no matter what you guys come up with. We will continue to graze and trail cattle the way we and our family has for generations, No matter what the outcome of the EIS is. Sandy 3 allotment has several ponds that could be fixed and cleaned, to properly distribute cattle. I own AUMs in the lower waterpocket and would like to be able to trail them. We are able to work with the Park Service if they are willing to get along with Ranchers. We have heard talk of some park employees who would like to shoot our cows. That talk is not in the Spirit of working together.

Correspondence: 11

Date Received: 04/01/2015

Type: Park form received during public comment meeting

Organization: Unaffiliated Individual

Correspondence Text:

What documentation or research studies are there that show actual damage or negative impacts to the four threatened or endangered species in the Park?

The EIS that is proposed mentions the word "may" impact. What information exists showing number of cacti that have been trampled or research that shows a reduction of spotted owl that can be attributed to grazing impacts? Are the impacts or damage actual or perceived? Have studies been done on each threatened or endangered species? If so, who did the research and how was it done?

What collaboration is intended as this issue and EIS move forward?

Correspondence: 12

Date Received: 04/07/2015

Type: Letter

Organization: Unaffiliated Individual

Correspondence Text:

As citizens of Teasdale, Wayne County, and the state of Utah we are opposed to livestock grazing and trailing in Capitol Reef. Any active allotments within (and around) park boundaries should be abolished by any mean necessary.

As we all know, Capitol Reef belongs to U.S. citizens in California and Alaska and Hawaii and Florida and New Jersey and Maine and every state in between. National Parks were established in part to preserve and protect our rapidly vanishing natural heritage. They were not established for personal gain for any individual or clan. Capitol Reef is the Nation's Park not the cattleman's park. Cattle grazing is destructive. Cows crush animal burrows. They destroy soil crusts, endemic vegetation, and rare and endangered flora and fauna. They foul waterways, ponds, and seeps. Cows spread noxious invasive weeds, and leave stinking piles of feces. One can smell cows before one can see them.

We do not enter public buildings and indiscriminately destroy objects in our way or abscond with items we might gain from. We'd be arrested. We do not take from a National Park for personal gain or destroy precious biological diversity out

of indifference, ignorance, or sense of entitlement. No one has the right to profit from vandalizing the Public Trust, intentionally or unintentionally.

Long past due is the time to bury 19th century outdated, antiquated, environmentally insensitive, destructive, selfish mind sets and practices.

Please, no more cows in Capitol Reef National Park.

Correspondence: 13

Date Received: 04/13/2015

Type: Letter

Organization: Utah Farm Bureau Federation

Correspondence Text:

We recently attended the two open houses in Bicknell and Hanksville regarding the proposed Capitol Reef National Park Livestock Grazing and Trailing Management Plan/EIS. We talked to you and some of your associates at those locations. The Farm Bureau is vitally interested in this process and as you are aware we were instrumental along with our Congressional Delegation in renewing and extending grazing authorization in the park in 1988. We have some concerns as this EIS process proceeds.

First is the question of the science surrounding grazing and its impacts to the three endangered/threatened plant species and one threatened owl. In your handout at the open houses titled, "Frequently Asked Questions", two of the questions state, "How do livestock and trailing affect cacti and other listed plants?" and "How do livestock grazing and trailing affect Mexican Spotted Owls?". Then in the answers to the first question there are phrases like...Livestock can trample...which can result, and roots may be damaged. In the second question there are answers such as...improper livestock management can indirectly impact and too much disturbance of vegetation can decrease structural diversity of herbaceous plants and grazing can also remove or reduce the availability of plant seeds and these conditions can contribute to reproduction declines in some owl populations. Our question is "which is it?" - Livestock do or livestock can. Science based research (that is peer reviewed and repeatable) should show that livestock grazing and/or trailing either causes damage or it doesn't. Can cause is speculative and does not represent any measure of degree of the impacts and suggests the studies done are not conclusive or some studies have not been done or are inadequate. Our comment on this matter is, if there is substantiated damage as demonstrated by science based research then it should be discussed and addressed. If there is not significant damage that can be demonstrated then it should not be a prominent part of the management plan.

Another concern is pressure coming to bear on the Capitol Reef National Park to remove or restrict livestock grazing and/or livestock trailing because there are so few livestock permittees left in the Park. We do appreciate the information in the "Frequently Asked Questions" document that helps to explain the law that allows livestock permittees and their direct heirs to continue their grazing operations in the park for their lifetimes.

We would encourage you to utilize all resources at your disposal to facilitate grazing and trailing of livestock within the park including but not limited to fencing, grazing strategy, time and timing; rerouting of trails, etc. We also encourage you to work closely with the permittees and adjacent BLM lands to accomplish your goals of protecting the park's resources while accommodating livestock grazing and trailing. We did talk to you specifically on a potential re-routing of part of a livestock trail on the Chocolate Dugway/Rock Springs Bench area for you to consider.

If we can be of assistance to you as you proceed with the EIS/plan and as you implement a plan, please let us know. Thank you for the opportunity to provide comments.

Correspondence: 14

Date Received: 04/02/2015

Type: Letter

Organization: The Hopi Tribed

Correspondence Text:

Thank you for your correspondence dated March 10, 2015, regarding Capitol Reef National Park preparing an Environmental Impact Statement evaluating alternatives for managing the effects of cattle grazing and trailing on resources. The Hopi Tribe claims cultural affiliation to the Archaic, Ancestral Pueblo, and Fremont cultural groups in the Park, known to Hopi people, Hopisimom, as Motisinom and Hisatsinom, First People and People of Long Ago. The Hopi Cultural Preservation Office supports the identification and avoidance of our ancestral sites, and we consider the prehistoric archaeological sites of our ancestors to be "footprints" and Traditional Cultural Properties. Therefore, we appreciate the Park's continuing solicitation of our input and your efforts to address our concerns.

In the enclosed letter dated July 31, 2014, the Hopi Cultural Preservation Office stated we understood there are two cattle grazing allotments totaling 85,760 acres and 11 cattle trailing permits within Park boundaries, and that cattle grazing historically has adversely affected natural and cultural resources.

We understand that when Congress established the Park in 1971, 44 years ago, there was a phase out of grazing. Therefore, we reiterate our support the elimination of cattle grazing within the Park after the current generation of permit holders ceases operations. In the meantime, we support the most restrictive alternative being developed for the proposed draft Environmental Impact Statement.

And therefore we request continuing consultation on this proposal including being provided with copies of any cultural resources reports and the draft Environmental Impact Statement for review and comment. Please contact Terry Morgart at tmorgart@hopi.nsn.us or 928-734-3619 or me at lkuwanwisiwma@hopi.nsn.us or 928-734-3611 if you have any questions or need additional information. Thank you for your consideration.

Correspondence: 15

Date Received: 04/28/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

Dear Capitol Reef National Park Superintendent;

We are writing this letter in response to your request for information about issues of concern and other information regarding the development of an EIS for livestock grazing at Capitol Reef National Park. We have lived, worked, and played outdoors in the Torrey area since 1995 and are concerned about protection of the resources that are present here. During the many hours spent in the field within Capitol Reef National Park, we have noticed impacts from livestock to overall vegetation conditions and causing the destruction of archeological sites. We have also seen a decline in numbers of three federally listed plant species occurring in one of the grazing allotments.

The following statements are from National Park Service legal and policy guidance that have direct bearing on the grazing EIS:

The 1916 Organic Act for the NPS directs Parks "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."

The 2006 NPS Management Policies, section 1.4.4 states "The impairment of Park resources and values may not be allowed by the Service unless directly and specifically provided for by legislation or by the proclamation establishing the Park. The relevant legislation or proclamation must provide explicitly (not by implication or inference) for the activity, in terms that keep the Service from having the authority to manage the activity so as to avoid the impairment."

The NPS Policies 1.4.7.1 states "The impact threshold at which impairment occurs is not always readily apparent. Therefore, the Service will apply a standard that offers greater assurance that impairment will not occur. The Service will do this by avoiding impacts that it determines to be unacceptable. These are impacts that fall short of impairment, but are still not acceptable within a particular Parks environment. Park managers must not allow uses that would cause unacceptable impacts; they must evaluate existing or proposed uses and determine whether the associated impacts on Park resources and values are acceptable."

The NPS Policies 8.6.8.2 states, "The Park Service will only allow agricultural grazing in Parks where it
" does not cause unacceptable impacts on Park resources and values.

The National Park Service must manage its resources in a manner that conserves them for future generations. Parks with agricultural livestock use, including Parks where such use is administered by another agency, must address this use in an appropriate planning document. Agricultural livestock grazing will use best management practices to protect Park resources, with particular attention being given to protecting wetland and riparian areas, sensitive species and their habitats, water quality, and cultural resources. Managers must regulate livestock so that (1) ecosystem dynamics and the composition, condition, and distribution of native plants and animal communities are not significantly altered or otherwise threatened; and (2) cultural values are protected. A comprehensive monitoring program must be implemented, and adaptive management practices must be used to protect Park resources."

Public Law 100-446, 1988 provided for grazing to continue on Capitol Reef National Park lands "....under such terms and conditions as the Secretary of the Interior may prescribe.... Such grazing activities shall be subject to the following conditions:....

(f) Grazing will be managed to encourage the protection of the Parks natural and cultural resources values."

The 1998 Capitol Reef General Management Plan states in several locations that grazing causes "significant" impacts to vegetation, wildlife, and archeological resources.

The following specific issues are ones that we would like to see addressed in the Grazing EIS.

Invasive Weeds

The NPS Policies 8.6.8.2 states "Managers must regulate livestock so that (1) ecosystem dynamics and the composition, condition, and distribution of native plants and animal communities are not significantly altered or otherwise threatened... A comprehensive monitoring program must be implemented, and adaptive management practices must be used to protect Park resources."

In the published article Alternative states of a semiarid grassland ecosystem: implications for ecosystem services Miller et al. 2011, results from plots data in and outside of Canyonlands NP "...reflect persistent changes in ecosystem structure and function triggered by interactions of livestock grazing (reduction of perennial grasses and palatable shrubs through selective herbivory), associated soil disturbances (depletion of soil resources through trampling, loss of biological crust, soil destabilization, and accelerated erosion), and climate (drought-induced reduction in grazing tolerance of preferred forage species) (Fig. 2). The fact that grass-bare and annualized-bare plots in CNP have been protected from livestock impacts for more than 30 years strongly suggests that the striking among-cluster differences in structure (Fig. 3) and function (Fig. 4) can be persistent for at least multiple decades and are effectively irreversible at a time scale relevant to current management without costly investments in ecological restoration."

In the Phase 1 Report for the Northern Colorado Plateau Inventory and Monitoring Network, it states "Effects of trampling are numerous and can strongly affect the capacity of arid-land ecosystems to capture and retain soil resources directly and/or indirectly through a large number of interacting mechanisms (described in Table 26). If trampling of soils and damage to biological soil crusts exceeds capacity for recovery, a T1.3 transition can occur. In arid-semiarid systems

where biological soil crusts play important roles in soil stabilization and nutrient cycling, the irreversible loss of this key functional group is likely to inevitably trigger a T3.4 transition associated with an irreversible change in soil-resource conditions.

Examples of some of the transitions described in Figure 19a and Table 26 can be found in NCPN units. As a consequence of past livestock grazing, trampling, and vehicular activities, several native grasslands and shrubsteppe ecosystems at CANY have been irreversibly converted to systems dominated by *Bromus tectorum* (cheatgrass). At GOSP, land-use activities that preceded NPS management resulted in vast alterations of ecosystem structure and function. Like the impacted grasslands at CANY, many GOSP ecosystems are in states S3 or S4 due to dominance by invasive exotic annuals. Similar examples can be found at CARE and probably other NCPN units."

Since 1995, we have observed three large areas (two in the South Desert and one in the Hartnet Draw) degrade from native Alkali Sacaton grassland vegetation into non-native weed (primarily Russian thistle and halogeton) associations. Vegetation type changes such as this cannot easily be recovered and brought back to a native vegetation association as stated in Miller et al. Many areas within the South Desert and Hartnet Draw are also becoming invaded by these non-native weeds, due to grazing by livestock.

Non-native and invasive weeds are dominant plants in the area around the stock corral and trailer along the Lower South Desert road in the Park. This area is both an eyesore to the public and a source for non-native weeds to invade and spread throughout the adjacent native vegetation.

In the Sandy 3 allotment near Cedar Mesa Campground, a large area has been converted to a cheatgrass dominated vegetation community. As was found at Canyonlands NP 30 years after grazing stopped, vegetation type changes we are seeing at Capitol Reef are irreversible.

In the NPS Policies section 1.4, it states that Park managers must not allow uses that cause impairment of resources or unacceptable impacts. Using the rationale and decision tree in the NPS Policies in section 1.4, the vegetation type changes described above represent impairment of the Park's resources. The GMP states as one of its significance factors that "The Park preserves a variety of habitat types that support diverse plant and animal life". The NPS Policies 1.4.5 states "An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is.....

" identified in the Parks general management plan or other relevant NPS planning documents as being of significance".

When a habitat, which is identified as significant, is being type converted to a non-native plant community with little chance of recovery, it represents impairment of the Parks resources.

The EIS should address how the Park intends to reduce livestock impacts in authorized allotments to ensure that no more Park acreage is converted into invasive weed associations and to reduce the spread of non-native weeds around the Lower South Desert stock corral and trailer. The EIS should address how the Park intends to monitor its resources to ensure that they are not being degraded by livestock. The EIS should discuss how the Park will eliminate impairment of its resources to meet obligations under NPS Policies. The EIS should describe how the Park will recover the already altered plant associations so they do not increase in acreage. The EIS should also describe how the Park will implement a comprehensive monitoring program to learn what effects are happening from grazing as required by NPS Policies 8.6.8.2.

Visitor Use

While working in the northern portion of the Park, we would occasionally be stopped by visitors who ask why cows are allowed in the National Park. Most of these visitors were dismayed and disappointed to see livestock and their droppings along the roads and trails in the Park. Ackland Springs is a perennial water source that is heavily used by cattle throughout the grazing season. For six months of the year, visitors passing through it on the Cathedral Valley loop find an area that looks and smells like a feedlot. In addition, the area around the stock corral and trailer along the Lower South Desert road in the Park resembles a feedlot during and long after cattle round-ups. These areas are both eyesores to the public and sources for non-native weeds to invade and spread throughout the adjacent native vegetation.

Visitors often backpack through the Park in the allotments. The Park has received complaints that water sources needed by backpackers for filtering drinking water are fouled by cattle to the point they are unusable. This can be a serious safety

issue due to the lack of alternative water sources in the area.

The EIS should address how the Park intends to educate the public about livestock grazing in the Park, address potential safety issues about water for hikers, and reduce impacts to visual resources. Possible best management practices would be to fence the heads of spring sources so they cannot be fouled by cattle for hiker water and to fence off certain viewsheds along roads for visual and olfactory resources.

Archeology

The NPS Policies 8.6.8.2 states "Managers must regulate livestock so that (2) cultural values are protected. A comprehensive monitoring program must be implemented, and adaptive management practices must be used to protect Park resources."

The GMP states as one of its significance factors that "The Park protects significant archeological resources, in particular, those of the Fremont culture...."

In the report Impacts of Domestic Livestock Grazing on Archeological Resources of Capitol Reef National Park by Osborn et al. 1987, they found that 5.6% of archeological artifacts in six plots were broken and 16.5% were buried from trampling by cattle in a single season of grazing. They describe that such breakage destroys diagnostic features and ruins the scientific value of the artifacts. This is especially important here because Capitol Reef artifacts were used to first describe the Fremont Indian culture. The document also describes areas where cattle congregate and form dense mats of dung over archeological sites. They discuss that this impact destroys perishable and diagnostic artifacts made from organic materials such as basketry, other woven goods, human remains, etc. Because archeological resources here are key to understanding the Fremont culture, they were identified as a significance factor in the GMP. The level of unacceptable impacts to them described above constitutes impairment according to NPS Policies.

Less than 10% of the Park has been surveyed for archeological resources. In addition to the many cultural resources currently known, there are undoubtedly many more undiscovered sites found throughout areas that are grazed by cattle. All of these sites are being subjected to the damage described in the Osborn report. Without surveys of grazed areas to find these sites, the Park may be allowing the destruction of cultural resources, some of which may be nationally significant.

All parks are required to perform a condition survey of a portion of their archeological resources each year to ensure the sites are not degrading. Sites with high potential for impacts should receive increased frequency of survey. The Park is not performing these surveys and does not even have any cultural resource personnel familiar with the Park's resources on staff. The Park is blind with regards to its cultural resources being damaged by livestock trampling and, although sometimes "ignorance is bliss"; in this case it is impairment.

The EIS should address how the Park intends to reduce livestock impacts in authorized allotments to ensure that Park archeological resources are not impacted by grazing. The EIS should discuss how the Park will eliminate impairment of its archeological resources to meet obligations under NPS Policies. The EIS should discuss how the Park will meet requirements for monitoring the condition of known and currently unknown cultural resources within the allotments as required by NPS Policies 8.6.8.2.

Federally Listed Plant Species

The Endangered Species Act of 1973 (ESA) states "It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this chapter."

The NPS Policies 4.4.2.3 states "The Service will survey for, protect, and strive to recover all species native to national Park system units that are listed under the Endangered Species Act. The Service will fully meet its obligations under the NPS Organic Act and the ESA to both proactively conserve listed species and prevent detrimental effects on these species."

Some of the tasks stated in the NPS Policy to accomplish these obligations include;

" undertake active management programs to inventory, monitor, restore, and maintain listed species habitats;

" control detrimental nonnative species;

" manage detrimental visitor access;

" reestablish extirpated populations as necessary to maintain the species and the habitats upon which they depend;
" manage designated critical habitat, essential habitat, and recovery areas to maintain and enhance their value for the recovery of threatened and endangered species."

The 2001 GMP states as one of its significance factors that the Park "... supports a great diversity of flora and fauna, including one of the largest collections of rare, threatened, and endangered plant species within the National Park System."

Townsendia aprica: This is a federally threatened plant species that is currently declining in numbers throughout its range, including locations within the Park. The US Fish and Wildlife Service asked the Park to complete repeat visits to known locations and survey for additional sites within the Park. The majority of known Park locations occur within the Hartnet grazing allotment; many of these sites are unacceptably impacted by livestock.

The EIS should address how the Park intends to reduce livestock impacts in the Hartnet allotment to ensure that this threatened species is no longer impacted by livestock. The EIS should also describe how the Park will accomplish meeting its protection obligations for this species as stated in their NPS Policies and in the ESA.

Pediocactus winkleri: This is a very rare, federally threatened cactus species. The majority of known Park locations occur in the Hartnet grazing allotment; many of these localities are heavily impacted by livestock. The Park has documented evidence of cattle trampling and killing cacti. A 20-year life history study was completed and a report compiled in 2014 describing the effect of livestock trampling on this species. This report found that livestock trampling reduces both the ability of this cactus to successfully flower and set seed and its longevity. A recent article in the *Natural Areas Journal* (Still et al. Vol 35(1) 2015) reported that this species is highly vulnerable to climate change, which would exacerbate these affects. Because listed species are identified as a significance factor in the GMP, documented unacceptable impacts to this cactus constitute impairment.

The EIS should address how the Park, in the light of climate change, intends to reduce livestock impacts in authorized allotments to ensure that this threatened species is no longer impacted by livestock. The EIS should discuss how the Park will eliminate impairment of its resources to meet obligations under NPS Policies, including long term monitoring to ensure impacts are acceptable. The EIS should also describe how the Park will accomplish meeting its protection obligations for this species as stated in their NPS Policies and in the ESA.

Sclerocactus wrightiae: This is a federally endangered cactus species that occurs in the northern portion of the Park; primarily within the Hartnet grazing allotment. The Park has documented evidence of cattle trampling and killing cacti. A 20-year livestock impact study was completed in 2007 and reported that numbers of individual cacti and number of flowers are significantly reduced in locations subjected to livestock. A recent article in the *Natural Areas Journal* (Still et al. Vol 35(1) 2015) reported that this species is extremely vulnerable to climate change, which would exacerbate these affects. One location in the South Desert contains the largest known concentration of *Sclerocactus wrightiae*. A small enclosure protects a portion of this cactus population; however a spring improvement and water trough are adjacent to the enclosure. Encouraging livestock to water and stay within a mile of this locality is directly impacting this population.

Because listed species are identified as a significance factor in the GMP, documented unacceptable impacts to this cactus constitute impairment.

In addition to impacts from livestock grazing within the authorized allotment (Hartnet), substantial impacts to this cactus species occur in the Cathedral area from both trespass and trailing livestock. For the past several years, trespass cattle have been allowed to stay in the Cathedral area of the Park throughout the winter months, considerably impacting both this federally listed species and its habitat. NPS Policies 8.6.8.3 states that "livestock trespassing on Park lands may be impounded and disposed of pursuant to the provisions of 36 CFR 2.60, with the owner charged for expenses incurred" but this has not been done.

The EIS should address how the Park intends to reduce livestock impacts in authorized allotments to ensure that this endangered species is no longer impacted by livestock grazing and trailing. The EIS should discuss how the Park will ensure that trespass livestock will be managed such that impacts to this cactus species and its habitat no longer occurs in the Cathedral area of the Park. The EIS should discuss how the Park will eliminate impairment of its resources to meet

obligations under NPS Policies, including long term monitoring to ensure impacts are acceptable. The EIS should also describe how the Park will accomplish meeting its protection obligations for this species as stated in their NPS Policies and in the ESA.

Overall rangeland and riparian systems health

NPS Policies 4.6.6 states "The Service will manage streams to protect stream processes that create habitat features such as floodplains, riparian systems, woody debris accumulations, terraces, gravel bars, riffles, and pools. Stream processes include flooding, stream migration, and associated erosion and deposition. The Service will protect watershed and stream features primarily by avoiding impacts on watershed and riparian vegetation and by allowing natural fluvial processes to proceed unimpeded."

NPS Policies section 4.6.5 states, "The Service will (1) provide leadership and take action to prevent the destruction, loss, or degradation of wetlands; (2) preserve and enhance the natural and beneficial values of wetlands; and (3) avoid direct and indirect support of new construction in wetlands unless there are no practicable alternatives and the proposed action includes all practicable measures to minimize harm to wetlands."

As mentioned above, we have seen Russian thistle and Halogeton (non-native weeds) increase substantially in the Hartnet Draw and South Desert areas. During days in the South Desert, we've hiked up several of the riparian drainages coming off the Waterpocket Fold. All those that contain seasonal or perennial water are used by livestock and are much degraded. Non-native tamarisk trees have also invaded most of these drainages. South Desert is a maze of livestock droppings and cattle go west up the drainages for a long distance trampling and eating the riparian vegetation. Stream banks and channels in small drainages are collapsed and trampled. In larger drainages, channels are down cutting which eliminates riparian vegetation and reduces soil water availability to adjacent terraces. As groundwater drops due to down cutting, soils dry out on adjacent terraces and the plant community types change to species adapted to drier conditions. Deep down cutting is especially apparent in the Sandy 3 allotment.

Oak Creek is twice annually subjected to livestock trailing. This riparian drainage has been degraded to such intensity that no seedling trees can survive the trampling and munching as cattle are allowed to slowly move between the USFS and BLM managed lands.

Ackland Springs in the Hartnet allotment is a noteworthy wetland area in the Park. Lands adjacent to the springs contain significant archaeological resources and populations of all three federally listed plant species. Livestock are allowed to congregate for months along the wash at, above, and below the springs. This area is being unacceptably impacted by livestock which is destroying archaeological resources, killing listed plant species, degrading a wetland, and fouling a perennial water source in the Park. Cattle typically don't travel far from a water source; therefore all lands within a mile of the springs are excessively trampled.

The EIS should discuss how the Park will eliminate unacceptable impacts of its resources around perennial waters and stream courses to meet obligations under the NPS Policies and the ESA, including long term monitoring to ensure impacts are acceptable. The EIS should also describe how the Park will recover the already altered wetland and upland plant associations at Ackland Springs so that non-native weeds do not increase in acreage.

Water quality

NPS Policies section 4.6.3 states the Park shall, "...take all necessary actions to maintain or restore the quality of surface waters and groundwaters within the Parks consistent with the Clean Water Act and all other applicable federal, state, and local laws and regulations..."

In the 2005 USGS report The Structure and Functioning of Dryland Ecosystems-Conceptual Models to Inform Long-Term Ecological Monitoring by Mark E. Miller it states "Some workers have hypothesized that trampling by large herbivores has beneficial impacts on infiltration (Savory and Parsons, 1980; Savory, 1988). However, an extensive amount of hydrologic research has failed to support this hypothesis (Spaeth and others, 1996; Holechek and others, 2000), indicating instead that trampling tends to result in lower infiltration rates where it destroys stable soil aggregates and leads to a deterioration of soil structure (Thurow, 1991)."

As stated previously, many of the water sources in the allotments are being fouled by cattle. Vegetation impacts described

earlier result in an increase in bare soil and lower water infiltration, which causes faster water runoff coupled with increased erosion. Because to cattle the world is a bathroom, runoff water from the allotments to streams and lakes contains high concentrations of coliform bacteria. The Fremont River is on the 303(d) list of impaired waters in part due to high coliform counts. The waters from both allotments flow into Lake Powell, which has occasional beach closures due to coliform.

The Park used to employ a hydrologist to monitor water quality and quantity but decided to eliminate that position despite its policy requirements. Again, not knowing what is happening to its resources is not a defense for allowing impacts. Allowing livestock to congregate at spring sources and along perennial and intermittent surface waters results in unacceptable impacts to these resources.

The EIS should discuss how the Park will eliminate unacceptable impacts of its water resources to meet obligations under NPS Policies, including long term monitoring to ensure impacts are acceptable to waters inside and outside the Park. The EIS should also describe how the Park will meet coliform standards in all water sources.

Defining levels of impacts

As stated in the NPS Policies, defining impairment of a resource is not always readily apparent, therefore, unacceptable impacts from Park uses will not be allowed. Unfortunately, the determination of "unacceptable" is also subjective and, for each opinion, there is an equal and opposite opinion. To help with this analysis, I would suggest you ask whether the impact found at Capitol Reef would be unacceptable if it occurred at another Park in the system. For example, if archeological artifacts at Effigy Mounds National Monument were being destroyed at the rate documented in Capitol Reef, would that be considered acceptable. If endangered plants at Everglades National Park were being trampled and killed as documented at Capitol Reef, would that be acceptable. That Capitol Reef has legislation which provides for grazing should not be used to justify an impact as acceptable and the fact that law and policy are in conflict is not your battle to defend in that way. The NPS Policies do not allow such information to be used as criteria for determining acceptability of uses. The determination of impairment and unacceptable impact should be made on its own merits and stated factually to the public, regardless of the final decision of the EIS. An EIS document is above all a truthful disclosure document that lets the public know what is happening on and to their lands as a result of management actions. If this is not done, the public will see through obvious collusion or manipulation of facts and lose trust in its NPS managers.

There are many other requirements in the NPS Mgmt Policies that pertain to this EIS. This document should identify these policies and describe how the Park will meet those obligations. If the Park will not meet those requirements, the EIS should describe why and what justification they are using to disregard them.

Thank you very much for embarking on this controversial but very important process. It is not easy to take on a project like this when you know that your name will be taken in vain on numerous occasions because of your decisions. Keep fighting the good fights because they are for the benefit of the Park.

Correspondence: 16

Date Received: 05/02/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

Honesty, integrity, and credibility require a respect for facts. It is a fact that the primary water sources in the Hartnett allotment in Capitol Reef National Park are putrid stews of cow-churned muck, excrement, and urine (no exaggeration here - I have lots of photos). Whether one man's cows should have all the water in a huge swath of a national park, leaving none for wildlife or recreationists is debatable, but the fact of widespread contamination is not.

Another fact: soil protected in exclosures in that allotment have a micro-biotic crust to protect against erosion and to fix nitrogen in the soil and adjacent cow grazed land is loose dust (again, I have lots of photos). Photos I took showing the interface of exclosed land and grazed land show a dramatic contrast in the quality, quantity, and diversity of ground

covering vegetation. Again whether soil and botanical health is more important than traditional land use is debatable, but the fact of widespread damage to soil and plants from cows is not.

Fact: unlike any other trail I have walked in the park over forty years of hiking, the overlooks and other trails in that allotment within the national park are studded with piles of cow excrement. I once backpacked for a week in that area and contaminated water and flies from excrement were so unpleasant I vowed never to do that again. Cows have effectively eliminated competition by campers and hikers in most of the national park north of Route 24. There is a self-affirming logic that it is okay for cows to take priority over other uses because, after all, nobody goes there. But the fact that tax-paying citizen-stakeholders visit the area infrequently and briefly is because cow excrement and erosion dominate the landscape. Much of the Hartnett allotment is more like a private feedlot than a wild national park. The 1916 Organic Act that established the National Park Service and to the 2006 NPS Management Policies require the park to manage the land "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." I believe this has been ignored in the northern part of the park.

There are economic facts that indicate that tourism and recreational use contribute more to the local economy than raising cattle. For better or worse, tourism and recreation are the drivers of our local economy today.

I believe grazing in the park has introduced invasive species of weeds and that there are cultural resources that have been damaged by cows but I do not have firsthand experiences or observations that would confirm this.

I understand there are also legal facts that must be acknowledged. The Pace family has grazing and trailing privileges that were established in Capitol Reef's enabling language. I am not a lawyer and cannot offer an informed opinion on that aspect but I suspect they have a strong case. As a citizen who respects the law, I do not take that fact lightly.

Finally, there are political facts. Currently, if the Park Service tried to eliminate or seriously curtail grazing, one or all of our congressional reps would attach a rider to a bill to freeze conditions in place. It would not be the first time that Utah's political leaders undermined a cooperative effort by diverse stakeholders to find common ground.

Not all facts are equal. In Utah the political facts consistently trump the science facts. Questions about whether use by citizens from across America should be limited by one Utah resident are easily answered: Utah first. So, given that cows will continue to be present on the land, what can be done to mitigate their impact that is reasonable and fair? I would suggest the following:

- 1) Protect a fresh water source so that other park users have access to cow-free water (not counting the pervasive presence of cow-generated giardia in all water sources in the park).
- 2) I suggest that cows be removed from their winter range by April 1st to give sensitive plants a chance to recover and spread.
- 3) I would encourage a closer relationship be established between the ranchers, NPS scientists, and other stakeholders. I believe ranchers have a sincere interest in the health of the land they use and that when stakeholders understand one another cooperation is likely.
- 4) I believe that the administration of grazing in the park has been lax for many years and I would recommend much more attention be directed at the permitting process. There is a double standard applied to traditional grazing users. A visitor with an unleashed dog, for example, can expect to be ticketed but an unleashed (unfenced) cow is acceptable. Fairness dictates that all users and not just some should be expected to comply with park regulations and respect the purpose of the park and the values it expresses.
- 5) Best management practices are required. This is not only a reasonable expectation, it is a legal obligation. Considering the condition of the range within allotments, it is difficult to believe best practices are even attempted.
- 6) To understand the impact of cows grazing within the park, more exclosures and a large reference area should be established so that factual data about soil integrity, biodiversity, and other ecological metrics can be collected.

I believe these are modest and reasonable suggestions given the restricted choices the NPS faces. I no doubt missed other means of mitigating the impact and imbalance described above.

Eventually, history will run its course and the Pace's will either grow old or decide to move on. I would rather see them ranching than subdividing their land because there are some developments that are harder on the land than cows. The Paces are a fine and respected family practicing a tradition that may soon be lost. I accept that they will continue to pass through and graze in the park. Hopefully, the damage cows do in the Park is not irreversible and when their time has run out, the water and land in the allotment will slowly heal. I only hope that my grandchildren's experience of that place will be much better than my own.

I request that my personal information not be published.

Correspondence: 17

Date Received: 05/02/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

As a frequent visitor to Capitol Reef NP, I urge a livestock management plan with emphasis on preserving the natural beauty, flora and fauna of the area. It appears, with only two grazing allotments remaining, the NPS is determined not to issue new ones, which I support.

Correspondence: 18

Date Received: 05/02/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

The 1916 Organic Act that established the National Park Service and to the 2006 NPS Management Policies require the park to manage the land "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."

I believe this has been largely ignored in the northern part of the park. Much of the Hartnett allotment looks and smells more like a private feedlot than a wild national park.

While the enabling language of the establishment of the CRNP gave the Pace family grazing and trailing privileges, it does not seem as though the Pace Family nor does the 2010 management takeover of the Park from the BLM has lived up to the requirements and conditions of those privileges. The Cathedral Valley land where the Hartnett allotment is shows substantial degradation to the land, and populations of plants and wildlife.

For all the strong "anti Federal Government" rhetoric that is part of the political makeup of Wayne county, the Pace Ranches have received over \$238,000 in federal subsidies between 2005 and 2012 (<http://farm.ewg.org/persondetail.php?custnumber=A09404532>).

Beef prices are up. The quality of the CRNP in the Hartnett allotment area continues to go down. Enough is enough.

Suggestions:

1. Protect a fresh water source so that other park users have access to cow-free water.

1 Encourage a closer relationship be established between the ranchers, NPS scientists, and other stakeholders.

3. The Park's administration of grazing in the park has been lax for many years and I would recommend much more attention be directed at the permitting, and enforcing the standards that are on the books.

Correspondence: 19

Date Received: 05/05/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

After attending the April 1, 2015 scoping meeting sponsored by Capitol Reef National Park on rangeland conditions I decided to look at current conditions. Understanding those conditions required looking into the parameters that the Park uses to assess the state of the allotments. These include:

The 1916 Organic Act for the NPS directs Parks "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."

The 2006 NPS Management Policies, section 1.4.4 states "The impairment of Park resources and values may not be allowed by the Service unless directly and specifically provided for by legislation or by the proclamation establishing the Park. The relevant legislation or proclamation must provide explicitly (not by implication or inference) for the activity, in terms that keep the Service from having the authority to manage the activity so as to avoid the impairment."

The NPS Policies 1.4.7.1 states "The impact threshold at which impairment occurs is not always readily apparent. Therefore, the Service will apply a standard that offers greater assurance that impairment will not occur. The Service will do this by avoiding impacts that it determines to be unacceptable. These are impacts that fall short of impairment, but are still not acceptable within a particular Park's environment. Park managers must not allow uses that would cause unacceptable impacts; they must evaluate existing or proposed uses and determine whether the associated impacts on Park resources and values are acceptable."

The NPS Policies 8.6.8.2 states, "The Park Service will only allow agricultural grazing in Parks where it

- does not cause unacceptable impacts on Park resources and values.

The National Park Service must manage its resources in a manner that conserves them for future generations. Parks with agricultural livestock use, including Parks where such use is administered by another agency, must address this use in an appropriate planning document. Agricultural livestock grazing will use best management practices to protect Park resources, with particular attention being given to protecting wetland and riparian areas, sensitive species and their habitats, water quality, and cultural resources. Managers must regulate livestock so that (1) ecosystem dynamics and the composition, condition, and distribution of native plants and animal communities are not significantly altered or otherwise threatened; and (2) cultural values are protected. A comprehensive monitoring program must be implemented, and adaptive management practices must be used to protect Park resources."

Public Law 100-446, 1988 provided for grazing to continue on Capitol Reef National Park lands "....under such terms and conditions as the Secretary of the Interior may prescribe.... Such grazing activities shall be subject to the following conditions:....

- (f) Grazing will be managed to encourage the protection of the Park's natural and cultural resources values."

The 1998 Capitol Reef General Management Plan states in several locations that grazing causes significant impacts to vegetation, wildlife, and archeological resources.

Overall rangeland and riparian systems health

NPS Policies 4.6.6 states "The Service will manage streams to protect stream processes that create habitat features such as floodplains, riparian systems, woody debris accumulations, terraces, gravel bars, riffles, and pools. Stream processes include flooding, stream migration, and associated erosion and deposition. The Service will protect watershed and stream features primarily by avoiding impacts on watershed and riparian vegetation and by allowing natural fluvial processes to

proceed unimpeded."

NPS Policies section 4.6.5 states, "The Service will (1) provide leadership and take action to prevent the destruction, loss, or degradation of wetlands; (2) preserve and enhance the natural and beneficial values of wetlands; and (3) avoid direct and indirect support of new construction in wetlands unless there are no practicable alternatives and the proposed action includes all practicable measures to minimize harm to wetlands."

Water quality

NPS Policies section 4.6.3 states the Park shall, "...take all necessary actions to maintain or restore the quality of surface waters and groundwaters within the Parks consistent with the Clean Water Act and all other applicable federal, state, and local laws and regulations..."

The Park is instructed to accomplish these items by:

- "undertake active management programs to inventory, monitor, restore, and maintain listed species' habitats;
- control detrimental nonnative species;
- manage detrimental visitor access;
- reestablish extirpated populations as necessary to maintain the species and the habitats upon which they depend;
- manage designated critical habitat, essential habitat, and recovery areas to maintain and enhance their value for the recovery of threatened and endangered species."

My next step was to make a visit to the Hartnet Draw in mid April to see what the conditions look like and how the Park is implementing its directives.

What I found was a very damaged landscape. All the water sources have been trampled, fouled with manure, and grazed to virtually nothing where there should be healthy riparian areas. I saw no wildlife other than flies. Back country camping would not be compatible what I witnessed. See submitted photos.

I visited three exclosures in the area and found them to contain healthy cryptosols and grasses while outside the soils were trampled to dust or heavily populated with cactus. The accompanying photos graphically show the damage and the difference in conditions.

It is obvious that revisiting the grazing program is long overdue. CRNP has not had a grazing specialist that I know of. Healing of the landscape, especially near water will take years. Archaeological sites around the springs have surely been destroyed. The area is nothing more than a publically subsidized feedlot at the expense of other park users.

I applaud CRNP for taking on this issue. With climate change taking its toll on our public lands, we cannot afford to do business as usual.

Associated photos are on a CD labelled Hartnet Conditions.

Correspondence: 20

Date Received: 05/05/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

I support any and all efforts to remove cattle from Capitol Reef or any other national park because they do too much damage to the environment of the park and this is a violation of the 1916 Organics Act and the 2006 National Park Service Management Policies.

Correspondence: 21

Date Received: 05/09/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

I have spent more than 450 days hiking and backpacking in CRNP over 40 years, and now live within 1 mile of the park in Notom. The impact of cattle is surprisingly wide spread. I have seen cattle or their tracks, droppings, and even their bones

in some of the most remote and inaccessible parts of the park. It appears to be very difficult to keep cattle in the areas where they are allowed. This creates problems for water access for wildlife and campers, and foliage damage issues for wildlife. While the park may put up fences around CRNP, once cattle are in the park, they are difficult to control. In the 40 years I have been visiting CRNP there appears to have been improvement in decreasing the impact of cattle on the park. I hope that this present process will help mitigate cattle damage until cattle permits in the park are retired permanently. I look forward to the time when the only non-human tracks I see in the park are those of wild animals!

Correspondence: 22

Date Received: 05/10/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

Dear Superintendent McGinnis:

Thank you for the opportunity to comment on Capitol Reef National Park's (CRNP) grazing plan and environmental impact statement. Please consider the following comments when developing your grazing plan for CRNP.

It appears there is already a plan in place to eliminate grazing on CRNP according to your scoping newsletter. The newsletter indicates that once the current generation of permit holders no longer graze in the very limited open grazing areas, the allotments will be closed. I question the need for this huge planning effort if the decision has already been made to eliminate grazing on the park in the near future. I am hopeful that this plan will not accelerate the closing of grazing in the park as it is a very important cultural activity, and is a major activity responsible for finding and designation of the park area.

I will attempt to structure my comments based on the objectives, management practices and tools, and impact topics listed in your scoping newsletter.

Objectives relating to vegetation conditions, reduction of invasive species, promoting diversity of native vegetation associations, supporting wildlife, etc.

Since most of the grazing within CRNP is winter use, grazing impacts on native species should be limited. In the Hartnet Allotment where grazing occurs during the spring, I suggest implementation of a rotation system that will allow rest every other year for at least half of the allotment. This may require CRNP's support and approval of fencing and water development. Please utilize these tools to the maximum extent possible prior to any other alternative.

Consider grazing use in the spring in areas throughout CRNP where invasive species are present. This will reduce invasive species such as cheatgrass, mustard and other invasive annuals. Studies have shown that grazing can reduce fuel loads and prevent large fires as well as improve native species function by utilizing invasive annuals early in the growing period.

Providing fencing and water developments such as pipelines would improve livestock distribution and reduce impacts to spring sources and riparian areas while improving vegetation diversity in the areas. Consider grazing in some riparian and upland areas where vegetation is so dense that native species (shrubs, willows, trees) are becoming decadent or so dense that understory forbs and grasses are being reduced.

Objective- -Create conditions which allow for geomorphic processes to occur and properly functioning soil types and structures to be represented, including biological soil crusts

In order to create conditions that allow properly functioning soil types and structures to be represented, you must consider an active vegetation management program. This includes treating vegetation types by mowing, seeding, burning, thinning and using herbicide to combat invasive species. Many ecological sites are not functioning or allowing geomorphic processes to occur, because vegetation diversity has been reduced by eliminating grazing. Grasses and shrubs become dense with old growth that eventually prevents new growth, resulting in death of the plant. The plant then is replaced by bare ground or in some cases soil crust. Please consider vegetation treatments and strategic grazing to reduce decadent

build-up of vegetation species to allow soil to function as it should (with diversity of vegetation species, and minimal soil crust).

Biological soil crust should not be considered a priority objective. Many areas where biological soil crust is present also exhibit minimal plant diversity. The crusts usually form in areas where little vegetation management has occurred, and native vegetative species have become decadent and eventually die. The crust then replaces the plant and once the crust becomes established, it is nearly impossible for any plant (native or non-native) to germinate. This reduces plant diversity, and would also limit your objective to promote diversity of native vegetation associations. Rather than manage for biological soil crust, consider managing for diverse plant species and creating soil structure that will allow seeds to penetrate the soil to allow for germination. Simply grazing an area or allowing cattle trailing through an area will create soil conditions that would allow seedlings to germinate. Biological soil crusts do not allow seeds to penetrate the soil, something that is needed for seedling germination. Consider active vegetation treatments and strategic grazing to improve vegetation conditions across the entire park area.

Objective- -Improve visitor understanding of the history and status of livestock grazing and trailing in the park

This is a very important objective, and as I mentioned above, this should be a major focus of the visitor experience in the park. Livestock grazing and ranching was responsible for the settlement of CRNP and surrounding communities. It is still a very important activity in the area. Grazing should be allowed to continue within the park without limiting it to the current generation. Current grazing activities will assist the visitor in understanding the history of the area when they visit. They will be able to see the historic structures, fields and other activities from the past while also seeing the activities still in action. Seeing grazing on the park will create a perspective for the visitor regarding ranching's historical significance to the area. The visitor will be able to fully understand the great contribution ranching has made to the CRNP area. Continuation of grazing on CRNP will carry the tradition forward for greater understanding and the significance will not be lost. Continuation of grazing in the park must be a major focus of the grazing plan.

Tool- -Collaboration and Communication

When making decisions regarding grazing permits, I urge you to consider collaborating and communicating mostly with the local permit holders and communities. The local entities are most affected by decisions, they understand the history, and will bear the impact of any decision. It is very important to consider the local communities more than someone who may not be immediately affected or is far removed from the reality of the area. Consider making an effort to educate visitors on the importance of ranching and help them understand that if it weren't for ranching, the area would not be what it is today. Work and management by ranching and livestock grazing were important historically, and are still important today, and collaboration and communication should reflect this importance by allowing local communities more opportunities to assist with management of grazing in the park.

Consider implementing range improvements suggested by permittees to improve livestock distribution and reduce impacts to plants from spring grazing. Be considerate and open to suggestions other than grazing elimination.

Tool- -Adaptive Management and Phased Implementation of Actions

Adaptive management must be considered throughout the park area. Consideration of grazing throughout the park should be used to assist with meeting objectives. Consider using other areas of the park to implement a rotation system for grazing on the two allotments. This type of unconventional thinking needs to dominate the adaptive management strategy for the grazing plan. Rather than focusing on elimination or reduction of grazing, consider how you can maintain or increase grazing to improve vegetation conditions and visitor education and experience.

Trailing Management

Trailing should be considered in combination with the grazing permittee's adjacent agency (Forest Service and Bureau of Land Management) administered grazing permits. Consider working collaboratively with the permittee and the agencies to rotate use of the trails in coordination with use on the adjacent allotments. Allow these trails to be open and utilized beyond the current generation of permit holders (i.e., do not close after the current permit holders move on).

Impact Topic- -Cultural Resources

Ranching is a significant cultural resource that is slowly dwindling away in small communities of Utah. The adjacent Bureau of Land Management Grand Staircase-Escalante National Monument (monument) has closed several grazing allotments or reduced grazing which has caused several ranching families to leave the area and discontinue ranching. The monument is currently working on a grazing plan that may reduce or eliminate grazing even further. They are often working behind the scenes with non-local environmental groups to discontinue grazing throughout the monument area. According to your scoping newsletter, it appears you too are considering grazing closure in the near future. CRNP must consider the historical significance ranching has had in creation of the park as well as the importance current ranching has on the setting and visual aspects of the area. The scoping newsletter mentions protecting cultural resources is an objective. This should include allowing ranching activities to continue as they have historically. Protection of historic resources should not be limited to physical structures/artifacts only. The activities that continue the tradition and carry on the historical cultural activity that settled the area are just as important.

Impact Topic- -Visitor use and experience

As mentioned above, consider making ranching and grazing an important aspect for helping the visitor understand the history of the area. Provide opportunities to explain how important livestock grazing is in the park and the role ranching plays in the local communities. The area is popular because of its rural appeal, and that is due to the ranching and grazing activities and hard working ranchers who find it more difficult to make a living in the area. Consider this important aspect to improve the visitor experience- -allow them to understand the importance of allowing grazing and ranching to continue on the park.

Impact Topic- -Socioeconomics

Consider the socioeconomics of grazing and the importance it plays in the livelihood of local families. Tourism is important to the local community also. Tourism and ranching are the major factors in socioeconomics, and should be allowed to continue together to support local communities. Do not limit grazing to the current generation only. Allow grazing to continue to allow more families to carry on the tradition and contribute to the local economy. Their contribution goes beyond ranching- -they help others, share history of their ancestors, and improve the community through their work. Please consider impacts to individual families and the hardship it will create if you do not allow grazing to continue on the park. While it may sound insignificant, it is very significant when considering the great impact it has had on shaping the park and what we have today.

CRNP would not be what it is today without the actions and activities associated with livestock grazing. The ranchers settled the area and are responsible for many of the historical sites and major visitation areas of the park. For this reason, I urge you to allow livestock grazing to continue on the park, and to use grazing in other areas to assist with fuel reduction, improve ecological processes, and to improve visitor understanding of the historical significance grazing has had in the area.

If you have any questions regarding these comments or would like clarification on anything, please feel free to contact me.

Thank you,



Correspondence: 23

Date Received: 05/10/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

Lacking recent hiking experience in the allotment areas of the Park, I wish to emphasize in my comments the legal and philosophical need for an effective grazing management plan.

Livestock Grazing and Trailing Management Plan
Environmental Impact Statement

Public Scoping Correspondence

The various governing documents for the National Park Service and Capitol Reef National Park all state that Park lands are to be managed so that the land, wildlife and historic artifacts are to be left "unimpaired for the enjoyment of future generations." And yet grazing allotments that existed before this public land became a national park were 'grandfathered in.' Observation, documentation and scientific studies all show that the effects of cattle grazing in this part of the country are incompatible with these National Park Service objectives. The long-term goals for the Park are at odds with the current short-term-based grazing practices, to the detriment of the Park. This is our current situation.

Land-use law is an attempt to balance competing interests, particularly the balancing of public and private interests. In this case the public includes every citizen of the United States. Together we own this National Park land, and our interests, by law (the 2006 Plan for one), must be considered, along with the interests of the permit holders. To date these private interests have gone unchecked, with the land and its legal owners suffering the unfortunate results. It appears that there has been no prior attempt to balance these interests, so it is indeed time to do so.

For legal, moral and political reasons the grazing privileges cannot or will not be revoked. It is still incumbent upon the Park Management that these competing interests be balanced through a grazing management plan that will protect the land from further degradation and allow for rejuvenation. Though I have been unable to hike these areas for some years, friends who come to visit do hike extensively in the Park and without fail they report discouraging conditions wherever the cattle have been, particularly regarding water supplies, lack of biotic soil crusts and the presence of weeds like Cheatgrass, instead of native grasses.

It is reasonable and fair that permit holders be required to employ "best management practices" to minimize and reverse these damages caused by unregulated herds. Considering that the permit holders have not done this to date, I assume that they are unaware of what currently constitutes "best management practices." (A best management practice certainly would not allow what water there is to be muddied and polluted.) Therefore the Park needs to spell out these practices, very clearly, with suspension of grazing privileges to follow on infractions, which requires that adequate monitoring be part of the plan.

Controlled grazing- --timing, frequency and intensity of grazing specific and appropriate to the Park environs- --would be part of a best practices plan. This could entail some fencing, which apparently can be as little as one wire strung between posts, possibly a shorter grazing season to ensure adequate height of stubble and re-growth of native grasses, buffer zones near streams, probably the importation of water by the ranchers. Exclosures must be maintained and monitored and perhaps increased in number or size, so that it is apparent to all eyes the differences between grazed and ungrazed lands.

The National Park Service is tasked with being good stewards of this land. Please do what is necessary to ensure that the permit holders act in like fashion. They are guests on lands belonging to all of us. In the words of Theodore Roosevelt to whom we owe the existence of our public lands: "I believe that the natural resources must be used for the benefit of all the people, and not monopolized for the benefit of a few" ... of "all the questions which can come before this nation there is none which compares in importance with the central task of leaving this land even a better land for our descendents than it is for us."

Correspondence: 24

Date Received: 05/12/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

CRNP Grazing EIS Comment

Wayne County and environs east has had over a century and a half of livestock grazing history. That history has been marked by several periods of overgrazing. During such episodes, economic collapse of the local economy has been well documented but also associated with severe increases in waterborne disease and human mortality that result from loss of soil integrity and subsequent watershed alteration. For example, Wayne County settlements of Aldridge, Caineville, Mesa, Giles and Clifton were wiped out from flooding of the Fremont River as a direct result of overgrazing.

Livestock Grazing and Trailing Management Plan
Environmental Impact Statement

Public Scoping Correspondence

A recent trip through the Hartnet Draw reminded me of those years past though on a less extensive piece of public land established as Capitol Reef National Park by the authority of the 1916 Organic Act. It is clear to even the least observant individual that the soil, watershed and wildlife habitat has been severely altered by the cattle grazing thereupon. Near and about water sources, it stinks, flies abound to infinity and the trails or paths are pocked with poop and the watershed is, in high probability, contaminated thereby eliminating human potability. Beyond the Bentonite Hills a clear distinction exists to the naked and untrained eye that the land is far less damaged.

It is also starkly apparent that there has been little education, study or dialogue between the caretakers of this land (you folks at CRNP) and those who use the grazing allotment as a publically subsidized feed lot. For otherwise how could the land there be so pillaged by a ranching family and their cattle?

If the 2006 National Park Service Management Policies clearly mandate active responsibility as stated in several sections such as 1.4.4, 4.4.2.3, 1.4.7.1, 4.6.3, 4.6.5, 4.6.6 and 8.6.8.2, why then has Hartnet Draw not been more closely monitored beyond a few ex-closures?

Furthermore, Public Law 100-449 (1988) and CRNP Management Plan (1998) also seem to have been loosely applied. In essence, this segment of public land on a National Park is unfit for visitors whether from Wayne County, Utah, the USA or foreign countries. I believe both the Park Service and the cattleman share responsibility as one does not or cannot fully enforce the laws and regulations under which it is guided while the other allows cows to run amuck with seemingly little regard for the land.

In fact, it is interesting to note that the Pace Ranches, the legal entity, has never received a USDA subsidy for Conservation though it has received Disaster and Commodity (crop) subsidies dating back to 1995. It strikes one that conservation subsidies are not of interest to the cattlemen who, if they were to receive a sum, might just have to do something for conservation. The obvious seems the opposite.

It just seems so disproportionate to have a ranch family comprising approximately 2-3% of Wayne County residents having such control of public land usage. And, that by virtue of fouling it for the purpose of income, excludes other citizens of the County, not to mention tourists from the world over, for joyous outdoor adventures in the Hartnet Draw area.

While one recognizes there are specific legalities that hold sway in this particular matter, it might be in the best interest of the land if all stakeholders participated in compromise.

One would propose the following:

The CRNP should enforce its rules and regulations more exactly. Perhaps requesting an inclusion in its budget for additional personnel to study the impact of grazing or a temporary duty scientist or naturalist could be garnered to meet this end.

Open, frank and honest dialogue should begin, and especially with recent, substantive data on land changes extant, with ranchers, Park Service and other stakeholders participating cooperatively.

Lessen the number of cattle per grazing cycle as well as shortening the cycle. For example, allow a gradual reduction, by a percentage of each cycle of cattle allowed to graze but with a maximum allowed AND take the herd off of the land earlier to allow for spring weather to get plants to seed, germinate or sprout thereby regenerating plant life.

Determine to what extent the watershed has been harmed and actively seek solutions for the reversal of damage.

Thank you for reading and considering this comment.

Correspondence: 25

Date Received: 05/14/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

Thank you for the opportunity to comment regarding CRNP's cattle grazing management plan. Below is a list of my concerns, considerations, and questions. I have also included suggestions when and where I could.

Water Sources and Riparian Areas

On recent visits to Hartnet Draw I was discouraged to find Ackland Spring fouled by cow excrement, floral communities degraded, rice grass overgrazed or missing from the landscape, and riparian species like willow were absent (photos available). Because water is so scarce in the area, most of the damage from overgrazing seems to be concentrated near the water sources. Cattle need to be excluded from springs and riparian areas. If spring water needs to be piped to troughs to mitigate cattle damage to native riparian areas, it should be shared equitably with native flora, fauna, and recreationalists. For example, 50% of what comes out of a spring can be diverted for cattle and the other 50% can be shared by wildlife and

recreationalists. Cattle gravitate to scarce water sources and stay near them, causing greater damage to the water sources and land adjacent to them. Because of this, management should address ways to distribute cattle more evenly across an allotment. This may require the permittee to import water and move that water source every few weeks or so. A water truck with a trough?

Archeological

Archeological sites and other cultural sites should be fenced off so cattle cannot trample artifacts and disturb sensitive resources.

Invasive Species

Does management currently address ways to mitigate the spread of invasive species like cheat grass and halogeton? Again, moving cattle through the allotment and deterring them from lingering too long at water sources may result in less soil damage and give native species a better chance of recovering. Removing cattle earlier in the spring (March or April) would give grasses a chance to recover at the start of the growing season and give them a competitive edge against exotic species. This might also increase forage in subsequent years, since seed heads will reach greater reproductive maturity.

Grazing Enclosures (Many photos available)

Grazing enclosures on the Hartnet show a dramatic difference in floral and soil communities. Grasses are bigger, taller, and much more abundant within enclosures. Microbiotic soils are better developed within grazing enclosures. Also, the biotic community is more diverse and the land better able to absorb water and resist erosion. In contrast, heavily grazed areas, especially surrounding water sources, are dusty, prone to erosion, lacking in species richness and composition, and generally degraded. Grazing enclosures should be established in every ecotype in each allotment. There should be more of them and they should be bigger. They are our best example of what the land is capable of producing when it is not being overgrazed. Conditions in the enclosures should also help guide management practices and strategies each grazing season.

Threatened and Endangered Species

How are threats like hoof trampling and soil compaction being mitigated to protect CRNP's T and E species? How can T and E monitoring efforts guide better grazing management practices?

Thank you again for the opportunity to comment regarding grazing management within the Park. Finding a healthy and sustainable balance for grazing will require creative solutions, cooperation among stakeholders, patience, and an open dialogue with surrounding communities. All the best!

Sincerely,

A Wayne County Resident

Correspondence: 26

Date Received: 05/14/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

CRNP Grazing Plan Talking Points May 14, 2015

Thank you for the opportunity to comment on this important topic.

• Capitol Reef, being a National Park, is held to higher management standards than any other land status in the country. Activities that are allowed to occur in parks are subject to the 1916 Organic Act that established the National Park Service and to the 2006 NPS Management Policies. These legal documents require the park to manage the land "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."

- While livestock grazing has been "grandfathered into" the Park's management by Congress, the plan has always been that grazing will be phased out of the park by the end of the current permittees' lifetimes. Given that grazing is currently causing direct negative impacts that may be irreversible, especially to several threatened or endangered species and archeological resources, best management practices must be employed to reverse these impacts and restore biodiversity and soil and water integrity at a landscape level.
- Livestock trailing through the park has also been grandfathered in and the intent was to allow it to occur forever. Unfortunately, trailing in some areas is causing impacts to endangered species, archeological resources, and riparian vegetation. Trailing could be rerouted or controlled to reduce impacts.
- Establish large enough reference areas to evaluate potential productivity and restoration efforts. Cathedral Valley is one such area. At least one reference area should be established on both the Hartnet allotment and the Sandy 3 allotment. Reference area fencing should be regularly monitored to ensure their effectiveness. This could be a volunteer activity.
- The NPS Policies state "The Park Service will only allow agricultural grazing in Parks where it...does not cause unacceptable impacts on Park resource." This has clearly not been the case in CRNP for many years and directly contradicts NPS Policies. This must be corrected by whatever means necessary including reducing AUMs, duration and intensity of grazing and/or use of fencing and herding to regulate grazing access.
- Riparian and wetland resources have been all but destroyed on the Hartnet allotment in particular. Immediate and radical steps must be taken to restrict livestock access from naturally occurring springs, streams and wetlands. This may require importation of water if grazing is to continue.
- Some of the negative conditions observed on the Hartnet allotment include large areas of bare soil, absence of biotic soil crusts, heavily grazed/browsed native species, invasive and exotic plant species, fouled springs and streams and degraded riparian areas. Again, these effects directly contradict what is allowed in parks by the NPS Policies.
- Continued livestock grazing in the current mode will further endanger the two listed cactus species. Unfortunately, there are other pressures on these cacti that make the identification of their locations inadvisable. Consider enlisting volunteer "cactus stewards" who can monitor individual plants or groups.
- Consider removing cattle from both allotments 30 to 60 days before the June 1 "off date" to allow plant communities sufficient recovery time. If this does not produce desired recovery, consider resting specific pastures for longer periods of time.
- Establish monitoring of water quality and biological soil crust. There are several qualified "citizen science" projects that may be able to provide volunteer assistance with this.
- I have been hiking and horseback riding in CRNP since the mid 1980s. On numerous occasions I have been dismayed by the conditions I observed, especially around water sources. In the early 2000s my hiking group, which depended entirely on natural water sources, was confronted with riparian conditions on the Middle Desert that caused us to cut our trip short. While ours was a small group of recreational "users" we were nevertheless astonished that the Park would allow a single use/user to degrade a public resource to that degree. We all wrote letters to the Park, and were assured that this allotment would be retired at the end of that permittee's lifetime, and that steps were being taken to improve conditions. During a recent visit to the Middle Desert I can attest that this has not happened yet. I certainly hope that management will improve during the final years the Park is required to continue this impactful use of the public's resources.

Correspondence: 27

Date Received: 05/14/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

As a resident of Wayne County I am writing to voice my concerns about public grazing in Capitol Reef National Park.

Livestock Grazing and Trailing Management Plan
Environmental Impact Statement

Public Scoping Correspondence

As a frequent visitor to the park, I see the enormous damage the cattle do. They disturb cryptobiotic soils, stand in steams and defecate, and they congregate in areas for long periods of time and trample them into nothing more than dust.

When I am hiking by myself or with friends, I make a point of avoiding cryptobiotic soil, and I practice and teach LNT. It is rather disheartening to see cow manure and tracks in the middle of delicate areas I myself go to great lengths to avoid. It is also disturbing to see all of the cactus that they have spread, cheat grass, and mounds of manure under nearly every tree and shade area. I was once on a backpacking trip in the park when water was in short supply and the only known spring had cattle standing in it. Our trip had to be cut short because we had no viable water for ourselves to drink.

In order to help protect our public lands and make permittees be more accountable for the privilege of using our public lands, I would encourage them to 1) Provide water for cattle in troughs or tanks to prevent them from standing in steams to drink 2) routinely rotate cattle around to prevent them from completely trampling areas and allow some possible regeneration of areas. I would also recommend having water troughs in several areas so the cattle don't have to walk to just one and leave deep trails to only one source.

If the mission of the park is to preserve natural and cultural resources for the enjoyment of future generations, I respectfully request you consider my recommendations.

Thank you for your consideration.

Correspondence: 28

Date Received: 05/14/2015

Type: Web Form

Organization: National Parks Conservation Association

Correspondence Text:

May 14, 2015

Leah McGinnis
Capitol Reef National Park
HC 70 Box 15
Torrey, UT 84775

Re: Capitol Reef National Park Livestock Grazing and Trailing Management Plan EIS Scoping

Dear Ms. McGinnis,

The National Parks Conservation Association appreciates the opportunity to provide the following scoping comments regarding the Livestock Grazing and Trailing Management Plan EIS for Capitol Reef National Park.

The National Parks Conservation Association (NPCA) is America's leading advocate for national parks. Founded in 1919, NPCA's mission is to protect and enhance America's National Park System for present and future generations. As an independent, nonpartisan voice working to address major threats facing the National Park System, NPCA has over a million members and supporters who care deeply about America's shared natural and cultural heritage preserved by the National Park System. NPCA plays a crucial role in protecting America's treasured national parks.

Purpose and need for action:

Up front we want to recognize the challenge the park faces in managing livestock grazing and trailing, uses mandated in the park's enabling legislation that are in direct conflict with its overarching conservation mission.

The National Park Service Organic Act of 1916 directs "....the fundamental 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

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means as will leave them unimpaired for the enjoyment of future generations."

Even with responsible management of livestock, the continuation of grazing and trailing inside the boundaries of Capitol Reef National Park will have adverse impacts on the park's natural and cultural resources and the visitor experience as acknowledged in the park's 1998 General Management Plan.

Under these constraints, we commend park managers for assuming responsibility for livestock management in 2010 from the Bureau of Land Management and for their commitment to working collaboratively to identify management tools and solutions to minimize impacts. We also support the park's decision to do a full environmental impact statement rather than an environmental assessment in recognition of the significant impacts to park resources that are at issue in the plan.

Environmental issues and desired conditions:

The park provided a comprehensive list of environmental issues to be addressed in the EIS in their public meetings, scoping newsletter and website. We emphasize the critical importance of protecting threatened and endangered species, native cold desert plant and animal communities, streams and riparian areas, biological soil crusts and archaeological and historic resources. We are particularly concerned about the concentration of livestock in fragile perennial streams, wetlands and riparian areas consistently during grazing and more intensely, but for shorter duration, while trailing.

In 2014, nearly 800,000 people traveled from around the world to experience the extraordinary landscape and fragile desert ecosystem of Capitol Reef National Park, and that number is growing each year. Because Capitol Reef is a national park, visitors expect and should be able to experience natural quiet and scenic vistas and intact native communities, without the impact of livestock foraging, footprints and waste.

On a personal note, I recently backpacked along Pleasant Creek with my family and experienced firsthand the impacts of livestock trailing on one of the few sources of consistent water in the park. As we hiked through the canyon, my family, including my young sons, deliberately stayed on the trail to preserve the cryptobiotic soils only to encounter widespread trampling of those same soils by cattle. Even though the livestock were there for only a short time, their impact on the soils and plants, as well as their waste, remained long after the animals were gone.

Management tools and solutions:

We urge park managers to consider the full suite of tools available, including the reduction of AUMs, adjusting the timing of trailing and grazing, and exploration of alternatives to trailing along traditional routes that can still meet the needs of ranchers to move their cattle (i.e. trucking livestock as they do through Arches National Park).

Building in adaptive management is important for testing management tools to ensure they help park managers meet their conservation goals without unintended consequences, especially in a fragile desert ecosystem subject to drought and climate warming with the potential to alter the forage and water regimes.

Conclusion:

NPCA appreciates the opportunity to provide scoping comments on the Livestock Grazing and Trailing Management Plan EIS for Capitol Reef National Park. We look forward to participating in the process and helping to inform a final plan which will thoughtfully address livestock management in order to protect park values and resources for future generations. We look forward to engaging with you further as the plan progresses.

Sincerely,

Cory MacNulty
Southwest Program Manager
National Parks Conservation Association

Correspondence: 29

Date Received: 05/14/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

Dear Capitol Reef,

Thanks for the opportunity to comment on the important issue of cattle grazing, and grazing management, in Capitol Reef National Park.

[] I have been an avid backcountry user, and park-related business partner, of Capitol Reef for more than 25 years. I spend at least 140 days or more in Capitol Reef guiding, photographing, scouting, exploring, and enjoying this matchless setting. I have long and direct experience with livestock, and grazing permittees, in the Capitol Reef region.

[] Cows are a serious impact on this country, which is thoroughly unsuited to livestock agribusiness. I raised cattle, and sheep, on our family farm in Iowa. The idea of using this poorly vegetated, easily eroded, very remote and topographically complex landscape for cattle grazing is, frankly, ludicrous. Desert cattle ranching is an extremely inefficient industry that would long ago have vanished from the Southwest were it not for federal grazing subsidies and under-market leasing rates.

[] The biggest issue is water, and water sources. When seasonally abandoned and ignored, as most cowboy cattle are, cows will take the opportunity to stand knee-deep in water, defecating round the clock, and punching both stream bed and stock pond alike into dune sand. Cattle not only foul any water source they access, they actually make it less able to hold surface water, and create desert where before there was oases. This process is clearly visible in the 'trailing' corridors of Pleasant Creek and Oak Creek, and throughout the South Desert.

These impacts are unacceptably severe at critical water sources such as the Polk Creek/Deep Creek spring in the Jailhouse Rock region of the South Desert, where every square foot of wet sand and shallow water is fouled with cow pies. It is absolutely disgusting. And it's the only water for miles. It is literally the ONLY reliable water source along the entire Deep Creek drainage. And thanks to cows and their talent for spreading e. Coli, it's useless for humans and most wildlife.

[] Most visitors I lead on hikes, photo tours, canyoneering trips, and backpack are absolutely astonished that cattle are allowed in CARE, and the surrounding BLM wildlands. To most thinking individuals, the foolishness of running welfare cows on arid land is clear and obvious. It reflects poorly on all land managers, and CARE.

[] While the Park may not have legal standing to eliminate grazing currently (as should be done) livestock management - by the ranchers who benefit from their subsidized 'traditional' lifestyle - needs to be more active.

[] Springs and water sources need to be fenced off to prevent cattle from fouling, dessicating, and destroying them.

[] Grazing permit numbers need to be checked regularly. It is my studied belief that most grazing permittees are running more cattle than they're leasing for...and that enforcement of permits by BLM, USFS - and the NPS - is lackluster at best.

[] The Park should aggressively pursue reduction in grazing AUMs to protect endangered plants and species of special concern, such as cacti in Cathedral Valley. The Endangered Species Act needs to be enforced. Firmly.

[] Desert bighorn sheep are currently undergoing a disease-related die-off in and around CARE. Many of these pathogens are related to domestic sheep grazing in the Bicknell and Parker Mountain areas, spread via pioneering travels from young bighorn rams. However, cattle also aid the spread of Pasturella sp., and diseases such as BSVD (bovine sinusoidal respiratory virus), both of which directly affect bighorn sheep. Cattle should not be allowed anywhere near documented bighorn range. This includes most of the Waterpocket Fold's eastern slope, as well as the lower Deep Creek drainages.

[] Lastly, CARE, and the NPS in general, needs land managers with backbone, not personnel pursuing a 'go along, get along' policy with local ranching interests...like our local state DWR representatives. This can be an unpleasant and unenviable, but very necessary, task.

[] Capitol Reef is a truly magnificent wilderness resource, and the only southern Utah national park still left in a remotely wilderness state. Legacy cattle ranching is one of the major threats to its scenic and ecological integrity.

Thank you again for the opportunity to comment.

Correspondence: 30

Date Received: 05/14/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

Dear Capitol Reef National Park Superintendent,

Thank you for the opportunity to provide comments to the scoping proposal for the Park's Livestock Grazing and Trailing Plan. I worked at the Park from 2002-2005 as a Biological Technician and had the opportunity to visit many of the current grazing allotments to monitor rare plants. I have seen first-hand the impacts of livestock use on multiple resources, and I recommend the Park analyze the following impacts in its Environmental Impact Statement.

1. Threatened and Endangered Species

I personally collected data on the impacts of livestock trampling on threatened and endangered plant species including *Townsendia aprica*, *Pediocactus winkleri*, and *Sclerocactus wrightiae*. Extensive multi-year data has been collected showing the direct significant impacts of livestock trampling causing plant mortalities.

2. Archeological/Cultural Resources

Wandering livestock have negative impacts on many cultural resources. The Park should include impacts observed through regular cultural resource monitoring in the analysis.

3. Invasive Plants

The National Park Service has an active Invasive Species eradication program. I have observed grazed areas in the South Desert and the Hartnet Draw that are dominated by invasive plants, primarily Russian thistle and halogeton. Native vegetation is scarce and the trampling by livestock creates a barren landscape.

4. Biological Soil Crust

Biological soil crusts provide numerous benefits to soils and associated native plant communities through increasing soil stability, nitrogen fixation, and water storage. Unattended livestock can irreversibly destroy biological soil crusts through trampling and promote erosion.

5. Riparian Areas/Wetlands

Riparian areas and wetlands are rare habitats in the arid West and support a large proportion of native vegetation and wildlife species. Soil erosion due to livestock trailing could cause increased sedimentation near riparian areas and wetlands. Water quality would also be negatively impacted.

Please consider the impairment to multiple resources that occurs through the permitting of livestock grazing and trailing at Capitol Reef National Park. I encourage the Park to limit the grazing permits so that significant impacts do not have to occur. Also consider that while livestock grazing is scheduled for a future "phase-out", the Park has the current responsibility to ensure that resources are not negatively impacted so severely that they pass the threshold of being able to recover after grazing ceases. I also recommend the Park do a thorough analysis of the cumulative impacts of livestock grazing for all the above topics and that it includes the potential of irreversible negative impacts over time, which are unacceptable. Finally, through climate change, resources have a greater potential for negative impacts and the above topics should be considered in this context.

Sincerely,

[REDACTED]

Livestock Grazing and Trailing Management Plan
Environmental Impact Statement

Public Scoping Correspondence

Correspondence: 31

Date Received: 05/15/2015

Type: Web Form

Organization: Yellowstone to Uintas Connection

Correspondence Text:

I have prepared written comments on the Grazing and Trailing Management Plan, but have not been successful in contacting you by phone to get an email address to submit those. They won't fit in your comment page.

Those comments may be downloaded from: <https://app.box.com/s/37fupxcjyze26akzbd4lo661zd7eqywc>

Thank you,

John Carter, Manager

Correspondence: 32

Date Received: 05/15/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

Hartnet Draw and the South Desert area are heavily degraded from grazing. It is obvious from the exclosures in the area that grasses and microbiotic soil are missing from the grazed areas. The springs, like Ackland, are fouled and unfit to drink.

Please address overgrazing and damaged springs. The current conditions are unacceptable.

Thanks for the opportunity to comment regarding CRNP's grazing management plan.

Correspondence: 33

Date Received: 05/15/2015

Type: Web Form

Organization: Unaffiliated Individual

Correspondence Text:

As a resident of Wayne county for 22 years I have been hiking in Capital Reef National Park for many years. Your mission in the park is to protect the land and wildlife. Do you feel your are doing this by letting cattle graze ? I have seen first hand what cattle do to land and water supply's. Cattle stand in one place and destroy the soil and water supply's. Streams, springs and any standing water gets so full of there crap that no wildlife will drink from it. I feel ranchers need to be more responsible for the damage that there cattle do to our federal public land. Ranchers need to develop water sources for there own cattle and keep the cattle from springs, and streams. Also they need to move the cattle in to areas that are more suitable for them and not let them destroy sensitive areas.

The park service needs to make sure this beautiful land is preserved for future generations to enjoy. Ranchers need to be responsible for there cattle and do there part in preserving the land.

Sincerely, [REDACTED]

Correspondence: 34 to 38

Date Received: 05/15/2015

Type: Web Form

Organization: Grand Canyon Trust and Great Old Broads for Wilderness

Correspondence Text:

SCOPING COMMENTS

INCLUDING A SUSTAINABLE MULTIPLE USE GRAZING ALTERNATIVE

for

Livestock Grazing and Trailing Plan
and Environmental Impact Statement
for Capitol Reef National Park, Utah
May 15, 2015

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I. Introduction to Policies and Status of Livestock Grazing within Capitol Reef National Park

A. Introduction

Capitol Reef National Park (CARE) was established by Public Law 92-207 on December 18, 1971 to fulfill the requirements

Livestock Grazing and Trailing Management Plan
Environmental Impact Statement

Public Scoping Correspondence

mandated by the Organic Act (1916) and to conserve objects of historical and natural value while providing enjoyment to the public in a way that prevents impairment to natural, cultural and historic resources. The establishment legislation also provided for the continuance of livestock grazing within CARE for the duration of the existing permit and one renewal and for the continuation of traditional livestock trailing routes. Subsequent legislation has extended livestock grazing (on two allotments and trailing within several other areas) within CARE to present. See Pub.L.No. 100-446, 16 273b.

CARE received management responsibility for livestock grazing management of Sandy 3 and Hartnet allotment in 2000 and 2010 respectively (Borthwick 2014). CARE currently has not addressed broader guidance, goals and objectives for livestock grazing in CARE and a livestock grazing amendment, plan and EIS are necessary to help guide the management of livestock grazing in the face of modern challenges including continued protection of CARE ecological, historical and cultural values as well as threats such as invasive species and global warming (climate change).

The following scoping comments constitute a proposal for how grazing may be best managed within CARE to accomplish a scientifically, legally, and socially defensible balance between this private, extractive use of CARE and protection of CARE's multiple biological, ecological, historic, and archaeological objects and values.

In this introduction we examine the applicable authorities governing and guiding livestock grazing within CARE; conditions of livestock grazing within CARE; and the legal context for and social value of fully analyzing and publishing, alongside national park service alternatives, our Sustainable Multiple Use proposal for managing grazing within CARE.

B. Grazing within CARE: Applicable Authorities

The Organic Act, passed in 1916 provides the overarching framework for the direction of management within Capitol Reef National Park. The act charged the park service with dual responsibilities: to promote the use of national parks by the public while protecting park service resources from impacts to point of impairment. 16 U.S.C. 1. The Organic Act directs the park service to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.

The General Authorities Act, 1970, amended the Organic Act to unite all national parks under a single mission and as a cumulative expression of a single national heritage. See, Pub. L. 91-383, 16 U.S.C. 1a-1-7.

The Redwoods National Park Expansion Act (1978) also amended the Organic Act stating that the management of national parks should be

[C]onducted in light of the high public value and integrity of the National Park System and not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.

The National Park Service has discretion in how impairment is established and evaluated, but it should be considered in relevance to values for which the park was established.

The establishment legislation that dissolved Capitol Reef National Monument and created CARE specifically addresses livestock grazing within the park. See, Pub.L.No. 92-907, Section 4. The legislation states:

Where any Federal lands included within the park are legally occupied or utilized on the date of approval of this Act for grazing purposes, pursuant to a lease, permit, or license for a fixed term of years issued or authorized by any department, establishment, or agency of the United States, the Secretary of the Interior shall permit. Provided, That the Secretary may promulgate reasonable regulations providing for the use of such driveways.

The establishment act allows for continued livestock grazing and trailing permits but authorizes CARE to establish reasonable regulations to manage such uses. In September of 1988, Congress amended PL 92-207, extending the issuance of livestock grazing permits to any direct descendants (sons or daughters) born on or before the enactment of Public Law 92-207 (December 18, 1971). The law is clear in its intent that grazing will be managed to encourage the protection of the Parks natural and cultural resource values. The language emphasizes the protection of cultural and natural values with which management of livestock grazing must be balanced. See, Pub.L.No. 100-446, 16 U.S.C. 273b. Some of those values that exist in CARE include endemic plant species and communities and three species listed under the Endangered Species Act that exist within the boundaries of CARE: Last Chance Townsendia (threatened); Winklers cactus (threatened); and the Wright fishhook cactus (endangered).

The Capitol Reef National Park Record of Decision Final Environmental Impact Statement and General Management Plan (GMP) provides guidance on the management of CARE resources and values. The management plan does not address the specifics of livestock grazing management. The GMP does give management emphasis on invasive species stating that exotic species, other than features of the historic orchards and pastures, will be controlled to prevent disruption of natural processes. GMP at 2, emphasis added.

The National Park Service Management Policies 2006 (NPS Policies) outline specific mandatory policies that apply to Capitol Reef National Park. The NPS policies provide clear direction to the national parks for the conservation of ecological resources found within park boundaries.

Natural resources will be managed to preserve fundamental physical and biological processes, as well as individual species, features, and plant and animal communities. The Service will not attempt to solely preserve individual species (except threatened or endangered species) or individual natural processes; rather, it will try to maintain all the components and processes of naturally evolving park ecosystems, including the natural abundance, diversity, and genetic and ecological integrity of the plant and animal species native to those ecosystems. Just as all components of a natural system will be recognized as important, natural change will also be recognized as an integral part of the functioning of natural systems. By preserving these components and processes in their natural condition, the Service will prevent resource degradation and therefore avoid any subsequent need for resource restoration. NPS Policies at 36.

The guidance includes important clarification on impairment of park resources. The NPS Policies define impairment of park resources as an impairment if the impact, direct, indirect or cumulative, is to a resource value

&[W]hose conservation is

- " Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- " Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- " Identified in the parks general management plan or other relevant NPS planning documents as being of significance. NPS Policies at 11, Sec. 1.4.4.

The NPS Policies require managers to keep ecosystems functional and intact where livestock grazing occurs stating, . . . regulate livestock so that (1) ecosystem dynamics and the composition, condition, and distribution of native plants and animal communities are not significantly altered or otherwise threatened; and (2) cultural values are protected. A comprehensive monitoring program must be implemented, and adaptive management practices must be used to protect park resources. NPS Policies at 116.

The NPS Policies direct that native ecosystems must not be altered or threatened. This direction should be applied to both native and endemic plant communities unique to the Colorado Plateau and/or CARE and endangered or threatened species that exist within CARE boundaries. The NPS Policies emphasize the need for active monitoring and the use of adaptive management to protect park resources. NPS Policies at 116.

The NPS Policies describe unacceptable impacts to park resources, including those that diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values. NPS Policies at 12.

The Directors Order Handbook gives the national park service guidance on the compliance and implementation of the NEPA process and states writing that the NEPA and the National Park Service share common goals of conservation and protection of our nations resources for the benefit of future generations.(DO-12 Handbook 2011) The Directors Order # 12: Conservation Planning, Environmental Impact Analysis, and Decision-Making (2011) issues guidance to the National Park Service on compliance with NEPA. The order states

Planning, environmental evaluation, and public involvement in management actions that may affect national park system resources are essential in carrying out the trust responsibilities of the National Park Service. Particularly in this era of heightened environmental concern, it is essential that NPS management decisions (1) be scientifically informed, and (2) insist on resource preservation as the highest of many worthy priorities [Emphases added].

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.

The National Historic Preservation Act (NHPA), states that [t]he 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 NPS 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 NPS to assume responsibility for the preservation of historic properties which are owned or controlled by the agency. *Id.* at 470h-2.

The provision for grazing by Congress, 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. *S. Utah Wilderness Alliance v. Burke*, Case No. 2:12CV257DAK (D. Utah Nov. 4, 2013)

C. Threatened and Endangered Plant Species within CARE

1. Wright Fishhook Cactus (*Sclerocactus wrightiae*)

Wright fishhook cactus has key populations within CARE, and has been listed as an endangered species since 1979. The U.S. Fish and Wildlife Service stated that the cactus has low potential for recovery given the number and level of threats that exist across its range. Wright fishhook populations have been assessed within Capitol Reef over the last several decades. Researchers have concluded that livestock grazing has had negative impacts on the populations of Wright fishhook cactus and can cause significant damage to older cacti.

Throughout the range of the cactus, researchers have found cacti that had been kicked out of the ground by cattle (Figure 3). Cattle lift their feet just enough to clear the ground when walking and kick out cacti. The larger the cactus, the farther it sticks up above the ground and the more likely it will be impacted by cattle walking through an area. Between 2000 and 2005, 178 new population locations were documented for this species by an interagency rare plant team; 149 on BLM, 19 on CARE, 10 on state lands. Cattle trampling that resulted in cacti mortality was recorded at nine of these sites on BLM lands, 4 sites on Park lands, and 1 site on state of Utah lands. The majority of cacti found kicked out of the ground ranged from 4 cm and upwards in diameter. These observations support the data collected from the plots and suggest that livestock may affect the survival of cacti over 4cm tall (Clark and Clark 2007).

Clark and Clark also concluded that the number of flowering cacti and density of cacti increased inside a fenced plot when compared with cacti in the grazed and unfenced plot. The researchers stated that the increase in flowering cacti between 1987 and 2007 suggests that the change is due to the elimination of grazing (Clark and Clark 2007). The entire Wright fishhook range within Capitol Reef National Park is within actively grazed (52, 112 acres) and partially grazed (11, 688) lands which means that the entire population of Wrights fishhook cactus within CARE, except for the portions of those populations fenced for research are at risk of damage or extinction due to livestock grazing and trampling (U.S. FWS 2011, pg 12). Clark describes the danger due to livestock grazing as critical:

If grazed plots have lower survival rates and reproductive potential, this information becomes more critical when it is coupled with the fact that the majority of known sites for this species contain fewer than 10 cacti. If most of these plants do not survive or mature to larger size classes with higher reproductive potential, these small site localities may be at risk from extinction, especially during drought periods. Revisits to sites first documented in the late 1980s showed a 31% decline in numbers of plants and extirpation of 16.5% of the occurrences. During this same timeframe, cacti in the CARE study increased over 200% both inside the enclosure, where grazing had been eliminated, and outside, where grazing had been reduced by 50%. The revisit sites are much smaller sites than the CARE plots and may not have been able to survive or reproduce as well because of the low numbers of cacti coupled with mortality caused by drought, grazing, off-road vehicles, and illegal collecting (Clark and Clark 2007).

2. Winklers Cactus (*Pediocactus winkleri*)

Winklers cactus is found within the boundaries of CARE and has been listed as a threatened species by the U.S. Fish and Wildlife Service. Winklers cactus has been shown to be highly susceptible to drought and to impacts associated with livestock grazing and trampling (Clark and Clark 2008). Clark and Clark found that between 1998 and 2008, cacti decreased at 76 percent of sites visited. One site decreased from 730 to 261 cacti and reported extensive livestock trampling throughout the area, including direct impact by cattle on cacti. The study also reported that of the 93 total sites visited, 56

of the sites reported livestock activity. Of the 68 localities found within CARE, 67 occur within the Hartnet grazing allotment. Due to threats posed by livestock grazing, Clark and Clark found that within four years 60 percent of Winkler cactus stepped on by livestock perished (USFWS 2013). Coupled with impacts from livestock grazing, impacts from drought further reduce the chance of Winklers cactus survival.

3. Last Chance Townsendia (Townsendia aprica)

Capitol Reef National Park holds approximately 25 percent of known habitat for Last Chance Townsendia, listed as a threatened under the Endangered Species Act. Most (95%) of Last Chance Townsends range within CARE occurs in grazed lands on Hartnet allotment. The USFWS assigned a high threat level of livestock grazing to Last Chance Townsendia citing impacts such as trampling, destruction of biocrusts and subsequent increased erosion, soil compaction that affects water infiltration, invasive species, and changes in the timing and availability of pollinator food plants.(U.S. FWS 2013) . This plant is inch in width, making its presence difficult to determine.

D. Grazed and Ungrazed Vegetation Communities within CARE

Within CARE, approximately 87,797 acres are allocated to livestock grazing and approximately 156,316 acres are ungrazed lands. Ungrazed portions of CARE offer demonstrations of ecosystem recovery and potential in the absence of livestock grazing stressors. These lands can provide the greatest possible habitat conditions for wildlife, serve as reference areas to understand the impacts of the cattle grazing, separate global warming impacts from grazing impacts, set goals and standards for the cattle grazing, and provide for recovery (i.e., conservation) of the three federally-listed plant species. Some of the major existing vegetation types (as opposed to potential vegetation) and their representations in both grazed and ungrazed lands within CARE are listed in Table 2.

Those vegetation types for which a majority of CARE acreage is grazed by cattle, (i.e., in the Hartnet and Sandy 3) allotments (but not counting the approximately 48 miles of linear cattle trails through the park).

- " Low sagebrush shrubland and steppe (82.1% grazed);
- " Great Basin semi-desert chaparral (72.2% grazed)
- " Inter-mountain basin salt desert scrub (68.7 % grazed
- " Southern Colorado Plateau sand shrubland (66.9 % grazed)
- " Inter-Mountain basin semi desert shrub steppe (65.8 % grazed)
- " Greasewood shrubland (75.3 % grazed)

Due to the large proportion of acres grazed versus ungrazed acres in each of the above vegetation communities, these vegetation types would be good candidates for establishing reference areas on ungrazed lands where they exist. The Grand Canyon Trust (Trust) documented degraded conditions in basin salt desert scrub communities and semi desert shrub steppe communities on both Hartnet and Sandy 3 allotments. The Trust documented excessive bare and disturbed soil cover, exotic annual establishment, pedestalling of native plants, denuded riparian zones, absence of biological soil crusts, and lack of native plant diversity and cover. Conversely, the Trust documented increased native plant diversity and cover, intact biological soil crusts and stable soils, presence of forbs and native grasses in shrub interspaces on ungrazed lands and within exclosures. See Capitol Reef National Park Conditions Report 2015, submitted by mail May 15, 2015). The ungrazed and lightly grazed lands within Capitol Reef provide good demonstrations for both majority grazed vegetation types and vegetation types of which there are small representations in Capitol Reef.

Table 1. Percent Vegetation Type
in Ungrazed and Grazed CARE Allotments

Vegetation Type	Total Acres of Vegetation Types in CARE	Acres of Vegetation Types in Ungrazed Lands	Percent (%)
Vegetation Types in Ungrazed Allotments	Percent (%)	Vegetation Types in Grazed Allotments	
Barren	65,553	44,271	67.6 32.4
Pinyon-Juniper Woodland	48,728	41,775	85.7 14.3
Big Sagebrush Shrubland and Steppe	20,607	12,288	59.6 40.4
Blackbrush Shrubland	16,446	11,408	69.4 30.6
Inter-Mountain Basin Salt Desert Scrub	23,080	7,233	31.3 68.7
Inter-Mountain Basins Semi-Desert Grassland	8,455	4,634	54.8 45.2
Southern Colorado Plateau Sand Shrubland	3,949	1,306	33.1 66.9
Inter mountain Basin Semi-desert shrub steppe	3,171	1,085	34.2 65.8
Introduced Riparian Vegetation	2,599	1,681	64.6 35.4
Riparian Woodland and Shrubland	2,218	369	83.4 16.6
Introduced annual grassland	2,056	1,045	50.8 49.2

Greasewood Shrubland 1,084 268 24.7 75.3
 Western Herbaceous Wetland 758 546 72 28
 Low Sagebrush Shrubland and Steppe 726 130 17.9 82.1
 Great Basin Semi-Desert Chaparral 622 173 27.8 72.2
 Southern Rocky Mountain Ponderosa Pine Woodland 277 277 100.0 0
 Warm Desert Sparsely Vegetated Systems 238 146 61 39
 Mogollon Chaparral 150 1.5 99 1

E. Assessments of CARE Lands

Biological Soil Crusts. Biological soil crusts pose a particular challenge for grazing management within the CARE, as they can easily be destroyed by trampling, e.g., by cattle, and yet they provide essential ecosystem services, including stabilizing soils in arid ecosystems, increasing water infiltration and storage, and fixing carbon and nitrogen for native plants (see Part IV. Rationale).

The status of biological soil crusts (BSC) in CARE as a whole has not been systematically assessed, but Matthew Bowker and others (2006), developed models that predict for biocrust potential cover for Grand Staircase-Escalante National Monument. Bowker and others (2006) identify specific soil types that support high cover levels of biocrust. Consulting this work and making inferences for management of biocrusts within CARE would be useful and relevant given the proximity and similarity of ecosystems to CARE.

These models are likely applicable to CARE as well, and would provide a sense of the degree to which erodible soils capable of supporting crust are exposed to annual trampling by cattle.

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 BLMs 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 within CARE boundaries. The REA for the Colorado Plateau 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. For example, the Inter-Mountain basin salt desert scrub is a conservation element described by the REAs (Table 2) and represents just 5.4% of the Colorado Plateau ecoregion, yet 68.7 % of the 23,080 acres of the vegetation type within CARE boundaries are grazed by livestock.

Due to the fact that the Colorado Plateau REA did not assess livestock grazing as a stressor in the analysis, the new CARE grazing plan amendment process is a critical opportunity to integrate livestock grazing data with REA analysis to help guide and inform the grazing plan. REA datasets can be useful when applying criteria for developing diverse grazing arrangements, protecting riparian systems, biological soil crusts, and reducing erosion.

Table 2. Native Plant Communities Identified as Conservation Elements in the Colorado Plateau Rapid Ecoregional Assessment

ECOLOGICAL SYSTEM % OF ECOREGION SPECIES

(Common Name) SCIENTIFIC NAME

Colorado Plateau Pinyon-Juniper Woodland	20.4%	inyon Pine	<i>Pinus edulis</i>
Inter-Mountain Basins Big Sagebrush Shrubland	9.1%	yoming Big Sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>
Inter-Mountain Basins Montane Sagebrush Steppe	3.9%	ountain Sagebrush	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>
Colorado Plateau Mixed Bedrock Canyon and Tableland	10.6%	ittleleaf Mountain Mahogany	<i>Cercocarpus intricatus</i>
Rocky Mountain Gambel Oak-Mixed Montane Shrubland	4.5%	ambel Oak	<i>Quercus gambelii</i>
Colorado Plateau Pinyon-Juniper Shrubland	6.3%	tah Juniper	<i>Juniperus osteosperma</i>
Colorado Plateau Blackbrush-Mormon-Tea Shrubland	6.3%	lackbrush	<i>Coleogyne ramosissima</i>
Inter-Mountain Basins Mixed Salt Desert Scrub	5.4%	hadscale	<i>Atriplex confertifolia</i>
TOTAL AREA 66.5% (Source: USDI 2012)			

1. 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 Grand Staircase Escalante National Monument(CARE) using data averages of two ten year periods: 1986-1995 and 2002-2011 (Hoglander, et al. 2014). The study utilized LANDSAT Thematic data that measured net primary vegetation productivity and represented the data through the Normalized Difference Vegetation Index (NDVI). 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 the few aspen or maple-dominated areas (Fig. 1).

Though this study was not conducted for CARE, the region, climate, precipitation and ecological sites are similar to those found in adjacent CARE, and similar NDVI results were found for all three national forests in southern Utah (Hoglander and Williamson, 2014). We encourage CARE to examine these two studies and ecological types within the study for comparison and interpretation for similar sites found in CARE. It is probable that there are some similarities in changes in vegetation within CARE as were found within GSENM. For instance, decreases in grassland, shrubland and sagebrush vegetation productivity may be something that has occurred throughout CARE as well. These vegetation communities are also heavily utilized by livestock grazing on the Hartnet and Sandy 3 allotments.

Fig. 1: Net change in vegetation productivity within Grand Staircase-Escalante National Monument between 1986-2011 (Hoglander, et al. 2014).

II. The Sustainable Grazing Alternative: Background

A. NEPA and Consideration of Alternatives

The National Park Service is developing this CARE 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 CARE vis-a-vis protection of cultural and natural values as described by the Organic Act. 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 CARE Draft and Final EIS for grazing management within CARE. 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 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 CARE 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 :

Contrary to the BLMs 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 Earths 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 CARE 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 organizations challenge to AECs 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 CARE, would reduce environmental damage associated with current grazing management.

As yet, we are unable to place the Sustainable Grazing Alternative in the precise format that CARE 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 CARE Alternatives once we see the format CARE is using.

Just as the CARE 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 CARE 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 CARE finds particular phrases or elements in the Sustainable Grazing Alternative unclear or, for reasons currently unknown to us, not legally possible, we request that CARE notify us and give us the opportunity to clarify the wording, or alter an element so as to bring it into legal possibility.

B. Six Fundamental Assumptions of the Sustainable Grazing Alternative

The Sustainable Grazing Alternative is based on six assumptions that are rooted in national park service 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 CARE regulations and policies and protects national park service values identified within CARE boundaries.
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 CARE 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 national park service values 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.

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 potential native vegetation diversity, density, age structure composition, and cover. Stream channel morphology and functions are appropriate to soil type, climate and landform.
5. GOAL 5 Soils exhibit, or are making significant, measurable progress toward permeability and infiltration rates that sustain potential site productivity or improve site productivity, considering the soil type, climate, and landform.
6. GOAL 6 Habitats are supporting, or are making significant, measurable progress toward supporting their full complement of CARE 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., CARE 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) CARE specific values including:
 - 1.3. 1.2.1. Plant species endemic to the Colorado Plateau
 - 1.4. 1.2.2. Rock crevice and canyon bottom native vegetation
 - 1.5. 1.2.3. Dunal pockets that hold unique plant species adapted to shifting sands
 - 1.6. 1.2.4. Plants highly adapted to saline areas
 - 1.7. 1.2.5. Relict plant communities
 - 1.8. 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.
 - 1.9. Native plant communities support the following, at levels of at least 80% of relevant ungrazed reference areas:
 - 1.9.1. Pollinator diversity, with pollinators often dependent on a particular species, genus, or plant family.
 - 1.9.2. Cover, nesting, calving, and/or food habitat for native declining, uncommon, and endemic vertebrate animals.
 - 1.9.3. Diversity of native aquatic biota.
 - 1.9.4. Diversity of soil invertebrates.

1.10. Habitats are connected at a level to enhance populations of native species, including pollinators, based on estimated connectivity requirements using best available science.

2. Objective 2. Riparian and Wetland Areas.

2.1. Streambank vegetation, at 80% of reference riparian areas,;

2.1.1. consists of, or shows an independently measurable trend toward, native species with root masses capable of withstanding high streamflow events;

2.1.2. maintains cover adequate to protect stream banks and dissipate streamflow energy associated with high water flows, protect against accelerated erosion, capture sediment, and provide for groundwater recharge.

2.2. Riparian vegetation reflects, at 80% of reference riparian areas, maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, and large woody debris when site potential allows; and provides food, cover and other habitat needs for dependent animal species.

2.3. At 80% of reference riparian areas, point bars are revegetating and lateral stream movement is associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position.

2.4. An active floodplain is present.

3. Objective 3. Soils

3.1. Ground cover (including litter) is maintained at 80% of a relevant (e.g., similar soil, vegetation type, precipitation) CARE 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 80% of their predicted available habitat within CARE;

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 CARE 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 CARE 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, CARE 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. CARE will encourage the establishment of independent, multi-stakeholder, consensus collaborations that include representatives of all relevant stakeholders, for purposes of advising CARE on increasing the sustainability of grazing and diverse grazing arrangements on CARE. CARE staff may participate as resources for these consensus collaborations, which would be convened or co-convened by non-CARE 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 CARE personnel.

2. Interested publics, including permittees, are encouraged to engage with the national park service to discuss and propose management options:

2.1. Where native diversity, density, age class structure, and/or productivity are less than 80% of the potential native diversity of relevant ungrazed reference sites, or do not support values identified within the CARE 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 national park service 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 70% of CARE 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 CARE, including such arrangements as:

3.1. Collaborative grazing experiments

3.2. Multiple allotments combined into a single system

3.3. Range improvements

3.4. Changing kind and class of livestock (within existing limitations)

3.5. Rest-rotation systems

3.6. Deferred rotation systems

3.7. On-off systems

3.8. Grass banks/forage reserve areas

3.9. Reduced use areas

3.10. Suspended use areas

3.11. Non-use areas

3.12. Closed areas

4. Time, Timing and Intensity of livestock grazing will be adaptively managed to insure that Goals and Objectives are met.

5. Utilization.

5.1. A 30% utilization standard, both for riparian and upland areas will be instituted, one pasture a year for each allotment until all pastures in each allotment have a 30% utilization limit.

5.2. Utilization limits of 25% will be operative within all pastures during a drought year using the Standardized Precipitation Index of the National Drought Mitigation Center.

6. Allotment Action Plans. When monitoring of indicators shows an allotment or pasture is failing to meet or move towards Objectives, plans will be drawn up for meeting or moving towards Objectives. The plans must be based on evidence that the proposed activities or management have resulted in movement toward the particular Objectives in other settings and

must include methods for measuring whether conditions are improving under the action plan.

6.1. If movement toward Objectives is not being observed/measured, further conversations will be in order, and adjustments to the action plan will be made.

7. Annual Use Plans. Each annual use plan will reflect the best estimate that the number of days authorized and other instructions will result in Objectives being met or moved toward.

7.1. Staggered seasonal use. At a minimum, there will be six weeks between the beginning of seasonal use of a particular allotment or pasture one year and when the season of use begins the following year. If this is not possible in a particular area, the area will be rested every other year.

7.2. Pasture movement within annual permits. Gathering of livestock will commence prior to the end date of the use of a pasture or area such that all livestock will have been moved and stragglers found by the off date.

8. Revegetation (including maintenance) of sites formerly seeded to exotic species will utilize native species only.

9. Riders. A pre-season plan and daily log will be filled for documentation of physical presence of a rider with the riders livestock 5 out of every 7 days throughout the season of use of the allotment

10. Fencing to Meet Objectives.

10.1. If fencing is necessary to meet any Objective the permittee will construct and maintain the fencing unless NPS is required to do so by an existing authorization.

10.2. All fences and other annual permit infrastructure must be maintained and functional prior to livestock entry for the season

11. Non-native and/or Invasive Plant Species

11.1. Passive restoration and non-chemical methods will be the first priority for preventing the introduction, establishment and spread of exotic, invasive plant species.

11.2. If herbicides are deemed essential at some site, 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.

12. 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.

13. Gates

13.1. Enclosures with gated openings accessible to livestock will be locked, with CARE 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.

13.2. 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.

14. 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.

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

D. ALLOWABLE USES

1. Availability and Unavailability for Livestock Trailing Use.

No trailing will take place within 100 feet of any area occupied by any threatened or endangered plant species in any year since 2000.

2. Designation of traditional trails as available or unavailable for livestock grazing is otherwise provisional. Areas that are deemed available to livestock trailing currently may become unavailable depending on site conditions.

- 2.1. Criteria used to identify CARE traditional trails that will be used by livestock
 - 2.1.1. Trails currently used that meet Objectives or are measurably moving toward such Objectives in relation to ungrazed reference areas, using independently verifiable methods; and
 - 2.1.2. the permittee(s) wish to continue livestock trailing on the allotment/pasture; or
 - 2.1.3. another permittee obtains the trailing permit and continues to meet or move toward Objectives.
- 2.2. Criteria that identify CARE areas that will not be used for trailing by livestock
 - 2.2.1. Areas closed to livestock grazing via a Record of Decision supported by NEPA analysis and documentation.
 - 2.2.2. Trails that are not meeting or significantly and measurably moving toward Objectives in relation to ungrazed reference areas.
 - 2.2.3. Trails that result in damage to endangered or threatened species
 - 2.2.4. Areas voluntarily relinquished or otherwise available for retirement and containing any of the following or combinations of the following:
 - 2.2.4.1. Areas that would serve as valuable reference areas
 - 2.2.4.2. Vegetation types that are either not represented or are underrepresented in currently ungrazed CARE areas.
 - 2.2.4.3. National park service objects or values 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)
 - 2.2.4.4. Significant cultural resources.
 - 2.2.4.5. Significant opportunities to conserve or restore historical, cultural, soil health, biological soil crust, fish, wildlife, riparian, vegetation and/or water quality objectives of the Capitol Reef General Management Plan..
 - 2.2.4.6. Riparian areas, springs and hanging gardens that have potential to be impacted or are currently impacted by livestock grazing.
 - 2.2.4.7. Moderate to high recreation values that are compromised by livestock grazing
 - 2.2.4.8. Populations or habitat for threatened, endangered species; candidate or proposed threatened or endangered species; and special status species, or their habitat (e.g.,).
3. 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.
4. Voluntary Relinquishment. Upon receiving any request for voluntary relinquishment of a livestock grazing permit, the Authorized Officer will re-evaluate whether livestock grazing is in the best interest of managing National Park Service values, and consider amending the livestock grazing plan and retiring the permit.

E. MONITORING

1. Protocols for Measuring Indicators of Objectives. Within one year of the Record of Decision, CARE will designate, with interested public/permittee input, the methods CARE will use to measure Indicators that Objectives are being met
 - 1.1. National Park Service monitoring methods will be posted on the CARE website, including methods used to measure
 - 1.1.1. Meeting or moving toward Objectives
 - 1.1.2. Existing long-term trend transects CARE
 - 1.1.3. Assessment points or stream reaches,
 - 1.1.4. Effectiveness of treatments at reaching both individual project and CARE-wide desired outcomes
 - 1.1.5. Any other methods used systematically within CARE
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 CARE that represent the full range of ecosystem and plant community types (both riparian and upland) including sites that have received exotic vegetation treatments. A reference area, with the exception of recovery reference areas (see 2.4 below) consists of a site that has not been grazed or accessible to livestock for at least ten years.
 - 2.1. Establishment of reference areas. Where local reference areas are preferable but do not exist, designate local areas to attain future reference area status (i.e., at least ten years of non-use by livestock). In the interim, use a more distant, reference site that has not been grazed for at least ten years.
 - 2.2. Reference area size. Prioritize establishment or use of larger, landscape-scale reference areas whenever feasible, in order to allow for recovery and/or protection of ecosystem functions, a patchwork of habitats, species diversity, and other elements not easily documented within small reference areas.
 - 2.3. Permanent range cages. At least two permanent range cages (at least 16 X 16) are maintained in each grazed pasture, in

representative areas frequently used by livestock.

2.4. Recovery reference areas are areas where livestock grazing has ceased, but which have not been ungrazed for ten years. 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.

3. Utilization Cages. For purposes of quantitatively measuring utilization, utilization cages must have been in place for two years (rather than one) in order to more accurately depict expected production.

4. 80%. Objectives generally will be considered to have been met when monitoring documents that 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 CARE, permittees and interested public.

5. Independent Monitoring. Upon objective documentation of on-ground indications that Objectives are not being met, any member of the public can arrange for a meeting with CARE staff to discuss and propose solutions to the problem(s). A written record of evidence of the problem(s), solutions considered, and commitments by CARE, interested public, and/or permittees will be retained in the file(s) of the relevant allotment(s).

5.1. Objective, repeatable data gathered independently (e.g., use of CARE 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; Collaborative 2012) is required in problem-solving meetings. All such meetings are open to the permittees and other interested publics.

6. Social/Economic Indicators will be used to monitor the social and economic sustainability of CARE grazing, including both the economic and cultural values of livestock grazing, and the social value of participation in public lands grazing management decision-making by publics interested in public lands grazing and/or ecosystem services provided by public lands. Social/economic Indicators are best developed via consensus among CARE personnel; permittees; and interested publics.

6.1. Social/economic Indicators may include the following, which were published in the Report and Consensus Recommendations of the Collaborative on Sustainable Grazing for National Forests in Southern Utah (Collaboration, 2012):

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 changes on CARE allotment by:

6.1.1.1. Permittees,

6.1.1.2. CARE, and

6.1.1.3. Other entities

6.1.2. Total pounds of meat production/acre/allotment (5-10 year average)

6.1.3. Opportunities to participate in livestock grazing programs within CARE

6.1.3.1. For permittees: Number of individual permits and Animal Unit Months (AUMs) per permittee

6.1.3.1.1. Permitted AUMs by month

6.1.3.1.2. Grazing use reported by month

6.1.3.2. For other entities: Identification of programs and partners engaged in grazing management arrangements, e.g.:

6.1.3.2.1. Utah Division of Wildlife Resources (UDWR)

6.1.3.2.2. Conservation organizations

6.1.3.2.3. Utah Dept. of Agriculture's Grazing Improvement Program (GIP)

6.1.3.2.4. Watershed Restoration Initiative (WRI)

6.1.3.2.5. Natural Resources Conservation Service (NRCS)

6.1.4. Diversity of grazing management arrangements

6.1.4.1. Number and acreage by year of diverse grazing management arrangements, including but not limited to:

6.1.4.1.1. Multiple allotments combined into a single system

6.1.4.1.2. Range improvements

6.1.4.1.3. Changing kind and class of livestock

- 6.1.4.1.4. Rest-rotation systems
 - 6.1.4.1.5. Deferred rotation systems
 - 6.1.4.1.6. On-off systems
 - 6.1.4.1.7. Reduced use
 - 6.1.4.1.8. Suspended use
 - 6.1.4.1.9. Non-use
 - 6.1.4.1.10. Closed areas
 - 6.1.4.1.11. Grass banks
 - 6.1.5. Public involvement that reflects a broad range of societal values:
 - 6.1.5.1. Basis of (NEPA) administrative appeals or formal objections of CARE grazing management decisions.
 - 6.1.5.2. The number of CARE grazing decisions made annually that have participation from multiple interests (CARE, permittee and others). Count to be broken down by these four decision types:
 - 6.1.5.3. National Environmental Policy Act (NEPA) analysis leading to decisions on grazing systems
 - 6.1.5.4. Allotment Management Plan (AMP) revisions
 - 6.1.5.5. Permit revisions
 - 6.1.5.6. Annual monitoring (collection of data, report out of the findings, and discussions about the results and implications for future management)
 - 6.1.6. Community/County-level economic impact of public lands grazing
 - 6.1.6.1. Average expenditures per cow unit (1 cow/year) per county by ranchers who use public land. [This indicator would likely respond only to large-scale changes in grazing management on CARE.]
- IV. Ecological and Social Rationale for the Sustainable Grazing Alternative

A. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: ASSUMPTIONS

Native species diversity should not be depleted and ecosystem functions should not be degraded due to domestic livestock grazing.

See, National Park Service Management Policies (2006) (regulate livestock so that (1) ecosystem dynamics and the composition, condition, and distribution of native plants and animal communities are not significantly altered or otherwise threatened

Livestock grazing simultaneously meets National Park Service regulations and policies and protects CARE values identified in governing legislation.

See, Pub.L.No. 92-907 grazing will be managed to encourage the protection of the Parks natural and cultural resource values. See, also Capitol Reef National Park General Management Plan (1998) to reserve in the public interest in the Water pocketfold and other features and objects of scientific interest. Resources of particular concern include&biologically productive riparian areas; water quality in park streams and&endangered, sensitive, protected candidate plant and animal species; the parks biological diversity.

1. 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

2. A diversity of interested publics are encouraged to discuss options for grazing management where native biodiversity and/or ecosystem functions have been degraded.

The Directors Order # 12: Conservation Planning, Environmental Impact Analysis, and Decision-Making (2011) emphasizes public involvement:

Planning, environmental evaluation, and public involvement in management actions that may affect national park system resources are essential in carrying out the trust responsibilities of the National Park Service. (Emphasis added.)

3. 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.

In light of drought and other impacts of global warming, endangered and threatened species, and invasive species, adaptive management must include diverse grazing arrangements, comparison with comparable ungrazed areas, and accountability to independently measured desired conditions.

4. A number and variety of sizes of ungrazed areas are essential to

(a) demonstrate the ecological potential of CARE 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 National Park Service values and 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;

(g) provide for restoration of threatened and endangered species.

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. (Beschta, et al 2013), it is not possible to know the ecological potential of CARE ecosystems or plant communities without areas that are not being grazed by livestock.

B. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: 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.

Watersheds are the foundation for adaptation to climate change.

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 Capitol Reef National Park General Management Plan to reserve in the public interest&.biologically productive riparian areas; water quality in park streams and&endangered, sensitive, protected candidate plant and animal species; the parks biological diversity. (GMP at i),.

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.

The rationale is given in the Goal: in order to support healthy biotic populations and communities.

4. GOAL 4 Riparian and wetland areas exhibit, or are making significant, measurable progress toward exhibiting potential native vegetation diversity, density, age structure composition, and cover. Stream channel morphology and functions are appropriate to soil type, climate and landform.

Goal 4 meets the Riparian Objective of the CARE Management Plan whereby riparian areas will be set aside(Presidential Proclamations 2246, 3249, and 3888): to reserve biologically productive riparian areas; water quality in park streams.(GMP at i)

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.

Biological soil crusts are essential in applicable CARE soils for assisting with permeability and infiltration and sustaining potential site productivity.

6. GOAL 6 Habitats are supporting, or are making significant, measurable progress toward supporting their full complement of CARE 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.

It is not only federally-listed plants and animals, or candidate or special status species, but all native species that deserve protection throughout CARE.

C. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: OBJECTIVES

1. 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 CARE 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 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 the National Park Service 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. To set the trigger lower than 80%, or 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%. or 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 or Its better than it was [X] decades ago) rather than an objective determination. No business would set goals without measuring whether those business goals are being met or not. An extractive, commercial use of CARE (public lands) is a business and necessarily must be objectively accountable to CARE 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 plants 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 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 half of the Monuments 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 (OBrien, 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, CARE 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 CARE 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 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 70% predicted habitat in CARE. 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 70% of their predicted available habitat within CARE.

It is important to have a measurable desired condition for retention and recovery of biological soil crusts (BSC) within CARE. The Sustainable Grazing Alternative selects the Objective of 70% of CARE suitable habitat for BSC to be areas in which dispersed disruption/trampling will not be reducing biological soil crusts or preventing their regeneration.

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 CARE, at least in some places, for the near future, a goal of 70% of predicted available habitat for BSC should be protected from the dispersed trampling that is characteristic of cattle grazing.

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:

1. fix carbon and nitrogen in soils;
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 CARE 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 (sponsored by U.S. Geological Survey) describes the challenge biological soil crusts face in CARE 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.]

CARE 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. Biocrusts 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 CARE 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 CARE.

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 the National Park Service 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 CARE can convey and learn scientific information in a concrete, visual way. It is such an efficient way of communicating and solving problems.

As well, including public tours in relation to grazing decisionmaking or adaptive management is a means by which interested stakeholders become more familiar with the knowledge and skills of CARE staff, and more invested in CARE itself.

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 CARE 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. Posting of Annual Plans of Use and Maps. Mgt. Action 1.3.1 and 1.3.2 A map and annual plan of use for each allotment (with pastures) will be posted prior to livestock seasonal entry on the allotment. Annual plans of use for the previous two years will be displayed on the website.

The posting of annual plans of use helps the public understand whether the grazing they are seeing on CARE is that which has been planned and approved by the National Park Service.

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.

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 CARE approved uses for the season.

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 in the three national forests of Southern Utah 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 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 CARE will encourage the establishment of independent, multi-stakeholder, consensus collaborations that include representatives of all relevant stakeholders, for purposes of making recommendations to CARE regarding increasing the sustainability of grazing and diverse grazing arrangements on CARE. CARE staff may participate as resources for these consensus collaborations, which would be convened or co-convened by non-CARE entities.

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 National Park Service would not be leading such collaborations, signals from the National Park Service that they would welcome initiation of such collaborations regarding grazing management within CARE 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 CARE personnel.

The National Park Service actively engages citizens and partners in Parks throughout the United States in many types of science and monitoring, and monitoring of ungulate grazing experiments certainly falls within the realm of citizen science and partnering with the public.

8. Public Participation in Proposing Management Options Mgt. Action 2. when grazed conditions are <80% grazed conditions.

The Sustainable Grazing Alternative establishes the general threshold of acceptable livestock impairment or depletion of ecosystem processes or native species to be 80%. While CARE 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 CARE regarding more severe impacts of livestock grazing at particular sites. This threshold will help guide the public in knowing what impacts CARE is accepting within CARE boundaries.

9. A Diversity of Grazing Arrangements. Mgt Action 3. A diversity of grazing arrangements will be encouraged within CARE.

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.

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 research 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 OBrien, 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 CARE. 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. For instance, the USDA U.S. Drought Monitor for May 12, 2015 shows CARE as being in 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.

The public 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 National Park Service prepares an Annual Use Plan (and posts it on the CARE website), it should represent the Grazing Specialists 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.

16. Passive and Active Vegetation Treatments. Mgt. Action 8.

Many native communities throughout the CARE 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 CARE. 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.

17. Objective of Veg Treatments. Mgt. Action 8.1. Vegetation treatments will have the objective of restoring or supporting potential native vegetation and ecosystem processes.

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 Grand Staircase-Escalante National Monument not only further reduces biological soil crust, but prevents regeneration of the crusts.

18. 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 CARE:

- 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. Given that a majority of the sagebrush communities within CARE are being grazed by cattle, it is extremely important to use ungrazed sagebrush areas within CARE 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.

19. Native Seedlings/seedlings Only. Mgt. Actions 8.3 and 10. Utilize native seeds or seedlings only, of local genetic stock whenever possible.

Given that the CARE General Management Plan states that exotic species, other than features of the historic orchards and pastures, will be controlled to prevent disruption of natural processes, seeding of exotic species has no role in CARE.

20. 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.

21. 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.

22. Riders. Mgt. Action 11. A pre-season plan and daily log will be filled for documentation of physical presence of a rider with the riders 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.

23. 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 CARE 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.

24. 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.

25. 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.

26. 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.

27. 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.

28. Exclosure Gates Locked. Mgt. Action 15.1 Exclosures with gated openings accessible to livestock will be locked, with CARE 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.

29. Allotment/Pasture Gate Signs. Mgt. Action 15.2 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.

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.

30. 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. T

31. 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.

E. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: ALLOWABLE USES

1. 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 CARE. Conservation or recovery outcomes should be predicted, and monitoring should be required for determining whether predicted outcomes are met.

2. 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 .

Voluntary relinquishment is the most promising means by which large ungrazed areas can be obtained within CARE for a balance between grazing and protection of CARE 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.

F. RATIONALE: SUSTAINABLE GRAZING ALTERNATIVE: MONITORING

1. 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 CARE website, including methods being used to measure Indicators that Objectives are being met.

It is important that the National Park Service 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 Park Service 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 order to demonstrate potential for Objectives to be met, and/or potential rate of movement toward meeting Objectives. Reference areas are established across CARE 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

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 CARE grazed site.

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.

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.

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.

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. Exclosures of various sizes can begin to provide immediate benefits for comparison with sites on which livestock are being adaptively or experimentally managed for recovery toward particular Objectives. Recovery on the grazed sites (particularly for such physical features as ground cover, sheet erosion, and streambank protection; or for seedhead production) can be compared with the recently-ungrazed sites for comparative rates and types of recovery.

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 one reference site(s) are appropriate subjects for problem-solving among the BLM, permittees and interested public.

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 stated Desired Conditions;

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 CARE staff to discuss and propose solutions to the problem(s). A written record of evidence of the problem(s), solutions considered, and commitments by CARE, 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 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; Collaborative 2012) 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 CARE should welcome all objective assessments and monitoring of grazed and ungrazed lands within CARE. 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, Harris and Asner (2003) used remotely sensed hyperspectral imagery to detect long-term grazed lands deterioration (grazing gradients) related to proximity to a water source in Mollies Nipple Allotment on Grand Staircase-Escalante National Monument. Similarly, the Trust (Hoglander, et al.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% oonument acres) between 1986 and 2011. Such independent research and observations can signal interest in discussing and problem-solving around conditions within CARE.

It is important that within the grazing management plan the NPS explicitly welcome objective, independent information and conversations with interested publics (including permittees) regarding grazing management on this national monument. All members of the CARE community (visitors, hikers, plant and wildlife advocates and aficionados, photographers, permittees) are adversely affected when livestock grazing is not managed in a sustainable manner.

10. Social/Economic Indicators. Monitoring 6. Social/economic indicators will be used to monitor the social and economic sustainability of CARE 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 CARE 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 CARE. The values of all users of CARE, 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 CARE. 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 CARE grazing management decisions, including National Environmental Policy Act (NEPA) analysis leading to decisions on grazing systemsAllotment 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. This would be a useful indicator within CARE. Again, this is a visible, objective means of extending beyond exclusive consideration of a local custom and culture.

V. Particularly Significant Issues and Public Process Considerations

A. Climate Change

Climate change is of extraordinary significance for CARE. 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 CARE 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 December 2014 Council on Environmental Quality Draft Guidance on Greenhouse Gases and Climate Change is an excellent guide to assessment not only of generation of greenhouse gases, but also assessment of the impacts of climate change on CARE lands and potential enhancement of climate change impacts by permitted activities on CARE lands

B. Biological Soil Crust

Biological soil crusts play a particularly crucial role in the development of a CARE 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 ecological integrity under National Park Service policies.

Protection for biological soil crusts in ungrazed areas may provide protection for additional values within CARE. For instance, endemic plant species, hotspots of biodiversity, and unique plant assemblages are scattered throughout CARE rather than being located in particular hotspots that contain all of them (Stohlgren, et al. 2005).

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 CARE (Bowker et al. 2008).

C. Scientific integrity of conclusions/statements

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 CARE grazing management plan. In particular, as NEPA regulation 1502.24 states:

They [in this case CARE] 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., CARE field monitoring), and/or scientific studies available for review by the public, greater trust will be garnered. Also, it's legally required!

D. Consideration of scientific evidence submitted by commenters

It will be important for CARE 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 CARE 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 CARE finds that the cited references do not support a commenters 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 commenters 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 CARE. 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 CARE, over most of the year, crusts are vulnerable to being broken wherever they are accessible to cattle.

E. Economic Comparison of Alternatives

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 CARE? What are public benefits? What are public costs?

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.

Data and information from the 2013 Headwaters Economics report on the economics of the Utah counties surrounding Grand Staircase-Escalante National Monument, 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 consider in the CARE EIS (Headwaters 2013). 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 generates reports from publicly accessible and referenced information. This is what Headwaters Economics has used to generate the reports noted above.

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% f 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%, ., 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 crusts 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. CARE could quantify gains or losses of various ecosystem services under the various alternatives being assessed in the EIS.

VI. Conclusion

We thank you for consideration of these scoping comments for a Capitol Reef National Park EIS. We look forward to participating throughout the EIS process and to continue to observe conditions throughout CARE, and offer suggestions for how livestock grazing can best be balanced with the protection of all living communities and the values of all people who visit and love Capitol Reef National Park. Please let us know if you have any questions.

Again, we request that the Sustainable Grazing Alternative, Section III within these comments, be retained as a cohesive proposal for consideration by National Park Service and all interested publics, alongside other alternatives.

Sincerely,

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VII. References

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 biological soil crusts as ecosystem function indicators in an arid region. *Conservation Biology* 12(3):45-53.

Beschta RL, DL Donahue, DA DellaSala, JJ Rhodes, JR Karr, MH OBrien, TL Fleischner, C Deacon. 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. *Environmental Management* 51:474-491.

[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. *Soil Biology & Biochemistry*: 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. *Soil Biology & Biochemistry* 40: 2309-2316.
- Bowker, MA, J Belnap, and ME Miller. 2006. Spatial modeling of biological soil crusts to support rangeland assessment and monitoring. *Rangeland Ecological Management* 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. *Conservation Biology* 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. *Rangeland Ecology & Management* 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. *Journal of Arid Environments* 71 : 97-108.
- [CEQ] Council on Environmental Quality. 1978 40 Code of Federal Regulations Parts 1500 to 1508.
- Clark DJ and TO Clark. 2008. Summary and Conclusions on Effects of Livestock Trampling on *Sclerocactus wrightiae*, *Pediocactus despanii* and *Pediocactus winkleri*. Capitol Reef National Park. Unpublished. 14 pp.
- Clark, TO and DJ Clark. 2007. *Sclerocactus wrightiae* monitoring in Capitol Reef National Park. Capitol Reef National Park. Unpublished.
- [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. *Hydrology and Earth System. Science* 10: 6237-6275.
- -644mber 1994
- 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.) *The Colorado Plateau: cultural, biological, and physical research*. Tucson, AZ:The University of Arizona Press.
- Fleischner, T. 1994. Ecological costs of livestock grazing in western North America. *Conservation Biology* 8(3): 629-644.
- Fernandez, DP, JC Neff, RL Reynolds. 2008. Biogeochemical and ecological impacts of livestock grazing in semi-arid southeastern Utah, USA. *Journal of Arid Environments* 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. *Conservation Biology* 8(3):629-644

Gay, C, S Green, C Horman, M OBrien [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.

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: CARE 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.

Hoglander, C, and M. Williamson. 2014. Initial Analysis of Change in Vegetation Productivity for Three National Forests in Utah, 1986-2014: Dixie, Fishlake, and Manti-La Sal National Forests. Unpublished report, Flagstaff, AZ. http://www.grandcanyontrust.org/sites/default/files/ut_3F_NDVI_FINALCOMBINED_11NOV2014.pdf

Hoglander, C, M Williamson, 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. http://www.grandcanyontrust.org/sites/default/files/ut_gsenm_ndvi_summary_document_jan272014.pdf

Holechek JL, H Gomez, F Molinar, and D Galt. 1999. Grazing studies: what weve 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.

OBrien, 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>]

Reisner MD, JB Grace, DA Pyke and PS Doescher. 2013. Conditions favoring *Bromus tectorum* dominance of endangered sagebrush steppe ecosystems. *Journal of Applied Ecology* 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. *Acta Oecologica* 55: 58-65.

Schwinning, S, J Belnap, DR Bowling, and JR Ehleringer. 2008. Sensitivity of the Colorado Plateau to change: climate, ecosystems, and society. *Ecology and Society*. [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. *Ecological Applications* 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 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#memo]

[USDI] 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/InformationResources_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. Toevs GR, JJ Taylor, CS Spurrier, WC MacKinnon, and MR Bobo. 2011. Assessment, Inventory, and Monitoring Strategy: For integrated renewable resources management.

[USFWS] Department of Interior, U.S. Fish and Wildlife Service. 2013. Impacts to federally listed cacti species from livestock on the Colorado Plateau in Utah: A Review and Summary.

[USFWSa] Department of Interior, U.S. Fish and Wildlife Service. Fahey B, S Willey, L Crist, L Romin, B Hotze, J Lewinsohn. 2013. Five Year Review of *Townsendia aprica*. Accessed May 15, 2015
[https://ecos.fws.gov/docs/five_year_review/doc4267.pdf]

Wilson, JS, OJ Messinger, 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. *Journal of Arid Environments* 73:666-671.

[WWP v. BLM 2013] Western Watersheds Project and Wild Utah Project v. BLM. May 16, 2013. Order. UT-20_09_01.

Correspondence: 39

Date Received: 04/21/2015

Type: Letter

Organization: Unaffiliated Individual

Correspondence Text:

In response to the Scoping Letter for the Livestock Grazing and Trailing Management Plan and Associated Environmental Impact Statement For Capitol Reef National Park, Utah, please accept the Following comments and place my name on the mailing list for this project.

With regard to threatened and endangered species, the Park Service should map the locations of the threatened and endangered species to determine potential conflicts with the grazing allotments and stock trails. Livestock should be restricted from these areas with fencing or other means.

With regard to the economic impact of grazing, the Park Service should recognize that if grazing fees undercut the free market grazing fee rate, then NPS grazing will have a broad economic impact on the region. The grazing fees should be set at the prevailing private grazing fee rate to avoid skewing the private market. If there are no private grazing ranges offered, a regional survey should be taken to determine if the NPS grazing fees are stifling that potential market. Enforcement of payment of grazing fees should be firm. No one needs another "Cliven Bundy".

Thank you for the opportunity to comment,

Correspondence: 40

Date Received: 05/01/2015

Type: Letter

Organization: Unaffiliated Individual

Correspondence Text:

Cattle have been grazing in the area known as Capital Reef National Park since the 1870's. Sheep also grazed there in the late 1800's. There used to be twice the number of cattle grazing in the Har net than there is now. There is only half the number of cattle there now than there was just 20 years ago. Cathedral used to have 1000's of cows and now there is only one permittee left. Over the course of time there is far less grazing and trailing than in the past. There should be far less impact on anything in the Park than in the past. Why would the cactus and other species become more endangered now when there is less trailing and grazing than ever before? If in fact it can be proven that trailing and grazing contribute to the causes of endangerment.

Our concern is where is information is coming from that there are endangered species in the Park? What studies have been done and what are the qualifications of those individuals that are conducting them? Were all of the pictures of endangered species in the pamphlet taken in CRNP? There are local individuals, cattlemen and others who have spent nearly their whole lives working in the Park and there have not been any dramatic noticeable changes with in the CRNP. Some years are drought and others are not. Water makes the biggest difference within the environment of the park boundaries and that is uncontrollable by any of us.

With regard to the endangered cactus, cows will not eat them or step on them. They avoid them just like a man does. There is an enclosure that fences in the Hook cactus and I have personally observed that there are more cacti growing outside the fence than inside the enclosure.

Cattle are only in CRNP during seven months of the year, October 15 to June 1. It is winter range, not summer range. Plants are not growing during this time of the year. We do not ever trail on the upper end of our allotment. The cows pass from Forest Service land to CRNP land through a fence. We have to trail when we move from our CRNP allotment to the BLM. Cows do trail and they HAVE to go get a drink of water but they do not disturb anything. Tourism is highest in the months when there is no grazing. It has been my observation that tourists do more damage, make more tracks, and leave

more trash than cows. If people are out looking for endangered species, they could be walking on just as many or more cacti than a cow within a six inch area. If livestock are removed from the Park, the cactus may still be endangered because other plants that cows eat may crowd them out.

Since the CRNP boundaries were increased to include BLM lands, no improvements have been made. The BLM discontinued the ir work and permit holders are not allowed to make any improvements. Existing ponds have never been cleaned out and they have filled up with sand and silt. Now cows have to trail to limited watering holes instead of having more ponds to drink from. Fences have not been maintained or have been torn down so cows do not rotate through areas. We used to have different rotations to manage the pastures which helped with the growth renewal of plants as well as provide adequate grazing. The management practices of maintenance of the ponds and the installation and repair of fences may help to reduce any potential harmful effects perceived by others.

We as livestock ranchers are becoming extinct. There are already limitations on our family operation that was homesteaded by our ancestors four generations ago. Our family has been trailing and grazing since the beginning of Wayne County. Anything more 50 years old is considered historical in the CRNP except for the trailing and grazing. Those of us who depend on the resource of grazing in the CRNP are the best stewards or caretakers of the resources because our livelihood depends on an optimum environment. We would like to see grazing and trailing given the opportunity to continue past the current legislative deadlines if evidence shows these activities do not have the negative impact that is the current perception. We appreciate the interest and concern of the current Park Superintendent and will continue to work closely with her as we work through this process.

Correspondence: 41

Date Received: 05/11/2015

Type: Letter

Organization: Unaffiliated Individual

Correspondence Text:

In writing your EIS of grazing within Capitol Reef National Park please consider the following.

1. Grazing south of "THE POST" in the Halls Creek drainage ended years ago. Please thoroughly address the changes that have occurred in that now "ungrazed area" . (some illegal grazing has taken place). Please address ground cover changes, species changes, species density changes, erosion changes, spring and stream flow changes, eye appeal and other visitor appeal changes that have taken place.

2. Examine, study and evaluate the cattle impact on springs, seeps and streams within the Park and address correct ion methods for any damage found . Include the Upper South Desert water sources, Ackland Springs, Polk Creek, Bullberry Creek, Deep Creek, Ringwater and others north of the highway. Do the same for all water sources south of the highway including Pleasant Creek, Oak Creek, Spring Creek, Bitter Creek, Swap Canyon, and others.

3. Monitor and evaluate cattle impacts on vegetation communities, species and species distribution on all allotments in the Park.

4. Follow all NPS regulations and policies related to grazing including monitoring of vegetation and archaeological resources for damage by grazing.

5. Economic impact or effect on permittees should NOT be a considered a negative effect of the end of grazing with in the Park. The Park enabling act calls for an end to grazing at the end of the grazing season in 1973 ! The "intent of congress" would have phased out grazing between the spring of 1977 and the spring of 1991 . The permittees have had between 24 and 47 extra years already. It is time to end it.

6. Cattle "Trailing" through or within the Park should not be allowed. It is a resource damage in tensive practice that should be phased out. There are trucks made for hauling cattle . Give the resource a break.

Thank you for your consideration of these comments.

Correspondence: 42 and 43

Date Received: 05/13/2015

Type: Letter

Organization: Western Watersheds Projects

Correspondence Text:

WWP is, of course, very interested in bringing livestock grazing that does occur on National Park Service (NPS) lands finally into compliance with NEPA, which was enacted nearly half a century ago, as well as finally bringing this permitted activity into compliance with NPS Policy and other NPS and DOI specific requirements, including the Endangered Species Act. These comments are on behalf of WWP and Cottonwood Environmental Law Center. Cottonwood Environmental Law Center is a nonprofit law firm and conservation organization dedicated to protecting the people, forests, water and wildlife of the West.

THE NO GRAZING ALTERNATIVE

In the webinar, the person leading the presentation stated that the EIS will not analyze the no action alternative, which is the no grazing alternative. He stated that the NPS determined that grazing is a mandatory use, not a discretionary use.

This issue sits at the very foundation of the planning process.

Lets examine this issue first from the perspective of NEPA and then from the perspective of mandatory versus discretionary use. As you will see from the analysis from both these perspectives, the NPS logic for not analyzing the real no action (no grazing) alternative is specious and unsupportable.

NEPA: NEPA Section 1502.14 c requires agencies to Include reasonable alternatives not within the jurisdiction of the lead agency. And subsection d. requires the NPS to Include the alternative of no action.

The CEQ 40 Questions document clarifies the above two requirements, stating:

2b. Must the EIS analyze alternatives outside the jurisdiction or capability of the agency or beyond what Congress has authorized?

A. An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable. A potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered. Section 1506.2(d). Alternatives that are outside the scope of what Congress has approved or funded must still be evaluated in the EIS if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies. Section 1500.1(a).

3. No-Action Alternative. What does the "no action" alternative include? If an agency is under a court order or legislative command to act, must the EIS address the "no action" alternative?

A. Section 1502.14(d) requires the alternatives analysis in the EIS to "include the alternative of no action." There are two distinct interpretations of "no action" that must be considered, depending on the nature of the proposal being evaluated. The first situation might involve an action such as updating a land management plan where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases "no action" is "no change" from current management direction or level of management intensity. To construct an alternative that is based on no management at all would be a useless academic exercise. Therefore, the "no action" alternative may be thought of in terms of continuing with the present course of action until that action is changed. Consequently, projected impacts of alternative management schemes would be compared in the EIS to those impacts projected for the existing plan. In this case, alternatives would include management plans of both greater and lesser intensity, especially greater and lesser levels of resource development.

The second interpretation of "no action" is illustrated in instances involving federal decisions on proposals for projects.

"No action" in such cases would mean the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward.

Where a choice of "no action" by the agency would result in predictable actions by others, this consequence of the "no action" alternative should be included in the analysis. For example, if denial of permission to build a railroad to a facility would lead to construction of a road and increased truck traffic, the EIS should analyze this consequence of the "no action" alternative.

In light of the above, it is difficult to think of a situation where it would not be appropriate to address a "no action" alternative. Accordingly, the regulations require the analysis of the no action alternative even if the agency is under a court order or legislative command to act. This analysis provides a benchmark, enabling decision makers to compare the magnitude of environmental effects of the action alternatives. It is also an example of a reasonable alternative outside the jurisdiction of the agency which must be analyzed. Section 1502.14(c). See Question 2 above. Inclusion of such an analysis in the EIS is necessary to inform the Congress, the public, and the President as intended by NEPA. Section 1500.1(a).

So obviously, from a NEPA perspective a no action alternative would be required in this process. But if the clear and unambiguous requirements laid out in the regulations implementing NEPA and the explanation of the regulations by the agency tasked with implementing NEPA were not enough to destroy the argument that a no action alternative is required, let's examine what the NPS, itself, says in the matter of NEPA compliance. Directors Order 12 provides NPS staff direction on fulfilling the NPS's NEPA requirements. Why the NPS didn't review these basic requirements prior to its incorrect determination that the no action alternative would not be fully analyzed is a mystery.

In Section 2.7, the Order states:

A. Range of alternatives

You must examine a full range of alternatives in the analysis documented in either an EIS or an EA. Those alternatives carried forward for analysis must meet project objectives to a large degree, although not necessarily completely. For instance, in the example in section 2.5, you may choose to add an alternative that analyzes using hotels in the town nearest the north rim of the Grand Canyon, even if your project objective was to provide an extended experience for visitors right at the rim. The alternatives must also be developed with environmental resources (rather than cost, e.g.) as the primary determinant. In other words, they propose different means of accomplishing your parks goals, while at the same time protecting or minimizing impacts to some or all resources. Keep in mind that at this stage, the range of options you consider may not ultimately be fully analyzed as reasonable alternatives, as explained below.

B. Reasonable alternatives

CEQ has defined reasonable alternatives as those that are economically and technically feasible, and that show evidence of common sense (Q2a). Alternatives that could not be implemented if they were chosen, or that do not resolve the need for action and fulfill the stated purpose in taking action to a large degree, should be eliminated as unreasonable before impact analysis begins. Unreasonable alternatives may be those that are unreasonably expensive; that cannot be implemented for technical or logistic reasons; that do not meet park mandates; that are inconsistent with carefully considered, up-to-date park statements of purpose and significance or management objectives; or that have severe environmental impacts - although none of these factors automatically renders an alternative unreasonable. CEQ is also clear that agencies should not pare the list down to only those alternatives that are cheap, easy, or your parks favorite approach. Rather, feasibility is an initial measure of whether the alternative makes sense and is achievable.

In fact, CEQ has added language cautioning against using even what may seem clear criteria for routinely dismissing alternatives as unreasonable. For instance, if an alternative is any of the following, but otherwise feasible, it must be included in the range of alternatives (Q2b):

- outside the scope of what Congress has approved or funded.
- outside the legal jurisdiction of your park.
- undesirable to an outside applicant but reasonable to the park.
- in conflict with a law.

- outside those alternatives provided for by a GMP or other park planning document (particularly if the plan or policy is older or no longer applicable to the issues the park is now facing (1500.1 (a))).

These conditions often are obstacles to implementing an action, because a law may need to be changed, an applicant may

need to modify a proposal, or Congress may need to rethink approval or funding. However, CEQ notes that the EA or the EIS analyzing such alternatives may serve as the vehicle for such change.

Alternatives may also be eliminated as unreasonable as the NEPA process progresses. For instance, if initial impact analysis shows that a technically or economically feasible alternative would have profound adverse environmental impacts, it should be eliminated as environmentally infeasible.

EAs and EISs should include a section discussing those alternatives that were considered but rejected and briefly explain the reasons for their elimination.

C. No action

The no action alternative is developed for two reasons. It is almost always a viable choice in the range of reasonable alternatives, and it sets a baseline of existing impact continued into the future against which to compare impacts of action alternatives. This is important context information in determining the relative magnitude and intensity of impacts (see also, section 4.2(a)). If choosing the true no action alternative (i.e., continuing as is) would violate laws or your parks own policies, you may want to add a minimum management alternative to your range. This should not substitute for the no action alternative, because you may lose valuable information on existing impacts by not evaluating the impacts of ongoing activities.

No action for a project - This would mean the proposed activity would not take place (Q3). Therefore, no action is the continuation of existing conditions and activities without a particular planning context.

Impacts of no action - The impacts of no action are the impacts of existing activities or conditions (man-made or natural) projected into the future. If the proposal is to modify a plan, the impacts are the impacts of the unmodified plan. The impacts of no action help readers understand whether the project would degrade or improve conditions in an already degraded environment, or in a relatively pristine one. Analysis of no action must also include the cumulative impacts of all past, present, and reasonably foreseeable actions.

If the proposal is to improve existing conditions, the impacts of no action are particularly important to describe, because they help to define the need for NPS action. If implementing the no action alternative would result in predictable actions by others, this impact should be part of the effects of no action (Q3).

Impacts of no action help decision-makers understand the comparative impacts of proposals, as well as the absolute impact. For instance, if your park is analyzing the impact to wildlife of a proposal to add a trail in an area already covered with trails,

The impacts to wildlife of no action (e.g., from hikers using the trails) are distinctly different from the impacts if this were the first trail into a wilderness area. Compared with the existing impacts, a new trail in the first case may have less of an impact than in the second.

Impacts of no action also provide an assessment of absolute, or total, impact to a resource. In the example above, the impacts of the proposed trail, when added to those of existing trails (no action), may impose greater impacts on wildlife than a single trail in a wilderness would.

Accurately and completely describing the impacts of existing sources - that is, of continuing actions - is critical to understanding the context, duration and intensity of new impacts. For this reason, a full analysis of no action is required in all NPS EISs and EAs. This is true even when your park is under legislative or other command to take action (Q3). (emphasis added)

Here again it is clear that the NPSs determination that the no action (no grazing) alternative is specious and unsupported by policy, direction and regulation.

The above requirements can be read to include either if the grazing permits are considered mandatory or discretionary. So in either of those cases the NPSs determination is clearly wrong.

Now lets examine whether there is support for the NPSs determination that livestock grazing in CARE is mandatory or discretionary.

When the Park was originally created BLM continued to administer grazing permits within the Park. The Supreme Court, on a number of occasions, has ruled that grazing permits on public lands are revocable licenses and do not convey and right or title. So the permits issued at the creation of the Park and those in place now are revocable permits and do not

create and right or title.

PL 100 446 in no way changed the use from the previous permits, nor created a right or title in those instruments.

That where any Federal lands included within the boundary of the Park created by the Act of December 18, note. 1971 (Public Law 92-207), were legally occupied or utilized on the date of approval of that Act for grazing purposes pursuant to a lease, permit, or license issued or authorized by any department, establishment, or agency of the United States, the person or persons so occupying or utilizing such lands and the heirs of such person or persons shall at that time be entitled to renew said leases, permits, or licenses under such terms and conditions as the Secretary of the Interior may prescribe, for the lifetime of the permittee or any direct descendants (sons or daughters) born on or before the enactment of Public Law 92-207 (December 18, 1971). Such grazing activities shall be subject to the following conditions:

(a) Grazing will be based on active preference that exists on the date of this Act and no increase in animal unit months will be allowed on Park lands.

(b) No physical improvements for stock use will be established on National Park Service lands without the written concurrence of the Park Superintendent.

(c) Nothing in this section shall apply to any lease, permit, or license for mining purposes or for public accommodations and services or to any occupancy or utilization of lands for purely temporary purposes.

(d) Nothing contained in this Act shall be construed as creating any vested right, title interest, or estate in or to any Federal lands.

(e) The provisions of Public Law 97-341 are hereby repealed.

(f) Grazing will be managed to encourage the protection of the Park's natural and cultural resources values. (emphasis added)

Just subsection d. above is enough vitiate NPSs determination, but lets go further. We see in the first underlined section the continuance of the same revocable permits that had been in place both before the Parks creation as well as after. The second underlined section merely grants the right that those persons named in the previous section shall be entitled to renew those permits. No one else is allowed to renew those permits. For instance, if the base property were to be sold, the permits could not be transferred to the new owner.

Further, without getting into the rules of statutory construction, the NPSs interpretation that the permits grant a non-revocable right is destroyed by subsection d. There is no way for the first section to grant a right (the NPSs only rationale for not analyzing a true no grazing alternative) in light of the clear and unambiguous language in subsection d.

For the above reasons, an EIS without a no grazing alternative will be legally deficient.

Could you please let me know whether the NPS plans to continue down the road that will result in a deficient EIS, so that I can raise the issue in other channels, in the hopes of avoiding having to raise the question in litigation.

NPS POLICY AND REQUIREMENTS

NPS Management Policy 2006 forms the foundation on which all activities on NPS lands must conform. The document states:

This volume is the basic Service-wide policy document of the National Park Service. Adherence to policy is mandatory unless specifically waived or modified by the Secretary, the Assistant Secretary, or the Director.

The Policy document further states: Congress, recognizing that the enjoyment by future generations of the national parks can be ensured only if the superb quality of park resources and values is left unimpaired, has provided that when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant. This is how courts have consistently interpreted the Organic Act. At 11

While commercial livestock grazing is, fortunately, rare in NPS units, the above clearly applies to other uses, including the

livestock grazing and trailing under analysis here. In the Management Policies 2006 at 1.4.3.1, the NPS states: Park purposes are found in the general laws pertaining to the national park system, as well as the enabling legislation or proclamation establishing each unit. In addition to park purposes, in many cases the enabling legislation or proclamation for a park unit may also identify uses that are either mandated or authorized. In the administration of mandated uses, park managers must allow the use; however, they do have the authority to and must manage and regulate the use to ensure, to the extent possible, that impacts on park resources from that use are acceptable. In the administration of authorized uses, park managers have the discretionary authority to allow and manage the use, provided that the use will not cause impairment or unacceptable impacts.

A plain reading of the legislative history clearly shows that livestock grazing on CARE is not a mandatory use but an authorized use which the NPS may allow or disallow, but you are only permitted to allow the use of livestock grazing provided that the use will not cause impairment or unacceptable impacts. Regarding trailing, while there was no phase-out as there was with grazing, it was permitted in the same fashion as a revocable privilege before the creation of the Park as after. In fact, in 1993, the NPS requested a legal opinion on trailing within the Park, which stated:

It provides the NPS with the discretion whether to grant subsequent trailing privileges across the park. Generally, the NPS may grant trailing privileges unless it finds that they would be incompatible with the park or cause a significant adverse effect upon it. Such a finding would need to be specifically documented.

It is not the intention of section 4 to foreclose or prohibit the NPS from granting necessary trailing crossing permits. On the contrary, the legislative history shows that such permits would be granted so long as they do not unduly interfere with the purposes for which the park was established. (emphasis added) Opinion at 9.

The opinion quoted the applicable Section of the statute, Section 4:

Nothing in sections 273 to 273d and 273f of this title shall be construed as affecting in any way rights of owners and operators of cattle and sheep herds, existing on the date immediately prior to December 18, 1971, to trail their herds on traditional courses used by them prior to December 18, 1971, and to water their stock, notwithstanding the fact that the lands involving such trails and watering are situated within the park: provided, That the Secretary may promulgate reasonable regulations providing for the use of such driveways.

It must be noted here that the above applies to rights. No users of livestock trails had any rights to use those trails either before 1971 or after. The privilege to use those trails are the same as grazing permits which provide the privilege to graze livestock. These privileges are not rights and are revocable.

In summary, in establishing Capitol Reef National Park Congress recognized that stock driveways do exist across what was to become the park and acknowledged them. Congress also grandfathered the use of such driveways by those who had been using them when the park was established, subject to appropriate regulation. The use of the existing stock driveways by other ranchers must be by permission from the National Park Service.

Thus, for example, if another entity purchased a grazing operation which had been trailing cattle across Capitol Reef National Park when it was established the new owners would have to apply to the National Park Service through the Superintendent of Capitol Reef National Park for permission to use the appropriate stock driveway. The Superintendent would then have to analyze the application to determine whether the proposed use of the stock driveway was among other things consistent with the enabling legislation and in so doing the Superintendent would be required to comply with the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 et seq. and consider such things as alternatives to the proposed action and accumulative impacts of the proposed action. If after review of an application and the performance of NEPA compliance the Superintendent determined that the use of the existing stock driveway by the applicant would not be inconsistent with the purposes of the park the Superintendent could issue a permit for such activity subject to appropriate stipulations. On the other hand, if the examination of such an application showed that the granting of it would cause unacceptable environmental impacts on the Park, such as accumulative impacts because of the number of cattle involved, then the Superintendent could deny the application and the applicants only remedy would be to file a lawsuit and attempt to have a court determine that the Superintendent's decision was arbitrary and capricious.

So the EIS needs to provide a clear analysis as to which persons currently trail through the Park that trailed in 1971 and apply appropriate stipulations and those who trail through the Park who did not trail in 1971 who clearly are not a

mandatory use on the NPS lands.

In the Management Policies 2006 at 1.4.7, the NPS states:

When an NPS decision-maker becomes aware that an ongoing activity might have led or might be leading to an impairment of park resources or values, he or she must investigate and determine if there is or will be an impairment. This investigation and determination may be made independent of, or as part of, a park planning process undertaken for other purposes. If it is determined that there is, or will be, an impairment, the decision-maker must take appropriate action, to the extent possible within the Services authorities and available resources, to eliminate the impairment. The action must eliminate the impairment as soon as reasonably possible, taking into consideration the nature, duration, magnitude, and other characteristics of the impacts on park resources and values, as well as the requirements of the National Environmental Policy Act, National Historic Preservation Act, the Administrative Procedure Act, and other applicable laws. (emphasis added) Again, the NPS policies require you to investigate and determine if an activity might have lead or might be leading to an impairment yet this has not been done despite years and even decades of data coming in showing that impairment is occurring. Obvious areas where impairment is likely to be occurring would include:

- 1) Impacts to ESA listed species
- 2) Impacts to Biological Soil Crust (BSC)
- 3) Impacts to soils and soil erosion
- 4) Impacts to vegetation and wildlife
- 5) Impacts to water resources
- 6) Impacts to cultural resources
- 7) Impacts to visitor enjoyment

We will discuss each of these issues in relation to current livestock impacts in a later section.

Lets examine what the NPSs Management Policies 2006 has to say in regard to the management of biological resources:

4.4.1 General Principles for Managing Biological Resources

The National Park Service will maintain as parts of the natural ecosystems of parks all plants and animals native to park ecosystems. The term plants and animals refers to all five of the commonly recognized kingdoms of living things and includes such groups as flowering plants, ferns, mosses, lichens, algae, fungi, bacteria, mammals, birds, reptiles, amphibians, fishes, insects, worms, crustaceans, and microscopic plants or animals. The Service will successfully maintain native plants and animals by preserving and restoring the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur; restoring native plant and animal populations in parks when they have been extirpated by past human-caused actions; and minimizing human impacts on native plants, animals, populations, communities, and ecosystems, and the processes that sustain them. (emphasis added).

The two critical issues within the above requirement are the definition of plants and animals and the definition of how these plants and animals are to be managed, which is by 1) by preserving and restoring the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur; and 2) minimizing human impacts on native plants, animals, populations, communities, and ecosystems, and the processes that sustain them.

From a biological resources perspective this is the purpose and need for the EIS, and must be at the fore of the purpose and need and at the fore of the alternatives. The preferred alternative must fully comply with the above direction.

Before moving on, lets examine just one of these biological resource issues, that of BSC. We provide as attachments two photos 2011_04_0045.jpg and 2011_04_0053.jpg. These two photos were taken within 30 feet of each other. 0053 shows BSC development after about 25 years of exclusion of livestock grazing in a postage stamp sized livestock enclosure. BSC coverage is approximately 80% of available habitat. Soils are very stable, with very little wind or water erosion. Carbon and nitrogen storage is very high for the system. 0045 is the other 99.9% of the grazed areas within the Park. BSC has been functionally eliminated. Soils are subject to wind and water erosion. The foundation on which this ecosystem is based, BSC, is not functioning. Clearly, livestock grazing is not resulting in the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations.

It must be noted here that much of the arid west, particularly the CARE area did not evolve with large herbivores. So the systems here are not capable of withstanding the massive soil disturbance and resultant loss of BSC that these large, non-native livestock cause. Further, the vegetation did not evolve with significant herbivory as well, so a grazed area will have species that are not tolerant of grazing reduced or eliminated. The requirement to maintain the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant&populations can not be met with livestock grazing.

Clearly, the above policy requires the preservation and restoration of BSC to its natural abundances, diversities, dynamics, [and] distributions yet livestock have functionally eliminated BSC from all grazed areas in the Park.

Again, turning back to the NPSs Management Policies 2006:

1.4.4 The Prohibition on Impairment of Park Resources and Values

While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service.

In this case, discretionary livestock grazing are causing a wide range of impacts to Park resources, a number of them clearly fitting the NPSs definition of impairment, yet the discretionary uses continue and nothing in the materials provided by the NPS during scoping would indicate that the NPS is going to correct these impacts under any alternative. Again, the NPS specious determination that livestock grazing is a mandatory use has vitiated the process from its very inception.

The NPS may argue that the permanent degradation of cultural resources or severe impacts to vegetation communities and BSC are not impairment. If so I look forward to critiquing your rationale, in light of the above policies. But even if you can construct some tenuous rationale as to why these impacts are not impairment, your duties go beyond just preventing impairment.

Lets look at other examples of severe degradation of NPS values and resources caused by livestock grazing. Riparian areas within the CARE are extremely rare and extremely critical resources yet nearly all the riparian areas accessible to livestock are severely degraded such as the system, just rated by the NPS as 'non-functional the lowest possible category, in photo P7290103.jpg. Or the open sewer in the Hartnet allotment shown in photo 2011_04-25_0087 and 0088.jpg.

The NPSs Management Policies 2006 provide further requirements you must meet:

1.4.7.1 Unacceptable Impacts

The impact threshold at which impairment occurs is not always readily apparent. Therefore, the Service will apply a standard that offers greater assurance that impairment will not occur. The Service will do this by avoiding impacts that it determines to be unacceptable. These are impacts that fall short of impairment, but are still not acceptable within a particular parks environment. Park managers must not allow uses that would cause unacceptable impacts; they must evaluate existing or proposed uses and determine whether the associated impacts on park resources and values are acceptable.

For the purposes of these policies, unacceptable impacts are impacts that, individually or cumulatively, would be inconsistent with a parks purposes or values, or impede the attainment of a parks desired future conditions for natural and cultural resources as identified through the parks planning process, or create an unsafe or unhealthful environment for visitors or employees, or diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values, or unreasonably interfere with park programs or activities, or an appropriate use, or the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park.

The EIS and its proposed action must fully implement these requirements:

- 1) Unacceptable impacts must be avoided
- 2) The NPS must not allow uses that would cause unacceptable impacts
- 3) The EIS must evaluate livestock grazing and trailing and determine whether the associated impacts on park resources and values are acceptable. The EIS must provide the full rationale as to how it came to its conclusions.

4) The EIS must specify each of the parks purposes and values and analyze and determine that individually and cumulatively whether each of those values and purposes would be impacted by the proposed action and whether the attainment of desired future conditions (see 4.4.1) for natural and cultural resources would be impeded (see definition of impede in Merriam Webster dictionary to interfere with or slow the progress of)

5) The EIS must analyze whether continued permitting of livestock grazing and trailing would create unsafe or unhealthful environment for visitors or employees. Note again previous photos of essentially open sewers of cow feces and urine.

6) The EIS must fully analyze whether continued livestock grazing would diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values (see definition of diminish in Merriam Webster dictionary to make less or cause to appear less)

7) The EIS must fully and honestly analyze whether continued livestock grazing and trailing would diminish the atmosphere of peace and tranquility of the Park

If any aspect of livestock grazing and trailing results in the above impacts, then they are unacceptable impacts and therefore the NPS must not allow the uses that would cause unacceptable impacts.

Regarding archeological resources, the NPSs Management Policies 2006 states:

5.3.5.1.1 Preservation

Archeological resources will be maintained and preserved in a stable condition to prevent degradation and loss. The condition of archeological resources will be documented, regularly monitored, and evaluated against initial baseline data. Parks are encouraged to enlist concerned local citizens in site stewardship programs to patrol and monitor the condition of archeological resources.

5.3.5.1.4 Protection

Archeological resources will be protected against human agents of destruction and deterioration whenever practicable.

The definition of practicable is capable of being put into practice or of being done or accomplished. Note that the definition does not include political considerations, but is a physical consideration.

Turning back to the fundamental issue that the EIS must address:

8.1.1

In exercising its discretionary authority, the Service will allow only uses that are (1) appropriate to the purpose for which the park was established, and (2) can be sustained without causing unacceptable impacts. Recreational activities and other uses that would impair a parks resources, values, or purposes cannot be allowed. The only exception is when an activity that would cause impairment is directly and specifically mandated by Congress.

The fact that a park use may have an impact does not necessarily mean it will be unacceptable or impair park resources or values for the enjoyment of future generations.

Impacts may affect park resources or values and still be within the limits of the discretionary authority conferred by the Organic Act. In these situations, the Service will ensure that the impacts are unavoidable and cannot be further mitigated. Even when they fall far short of impairment, unacceptable impacts can rapidly lead to impairment and must be avoided. For this reason, the Service will not knowingly authorize a park use that would cause unacceptable impacts.

When a use is authorized by law but not mandated, and when the use may cause unacceptable impacts on park resources or values, the Service will avoid or mitigate the impacts to the point where there will be no unacceptable impacts; or, if necessary, the Service will deny a proposed activity or eliminate an existing activity. (emphasis added)

The EIS and final decision must fully comply with each of the above requirements.

8.1.2 Process for Determining Appropriate Uses

All proposals for park uses will be evaluated for consistency with applicable laws, executive orders, regulations, and policies; consistency with existing plans for public use and resource management; actual and potential effects on park resources and values; total costs to the Service; and whether the public interest will be served. Superintendents must continually monitor and examine all park uses to ensure that unanticipated and unacceptable impacts do not occur. Superintendents should also be attentive to existing and emerging technologies that might further reduce or eliminate impacts from existing uses allowed in parks. Unless otherwise mandated by statute, only uses that meet the criteria listed

in section 8.2 may be allowed.

If, in monitoring a park use, unanticipated impacts become apparent, the superintendent must further manage or constrain the use to minimize the impacts, or discontinue the use if the impacts are unacceptable. (emphasis added)

Lets go through each of these critical requirements individually.

- 1) The EIS must fully analyze the consistence of the proposed actions with all applicable laws, executive orders, regulations, policy and plans.
- 2) The EIS must also fully analyze all actual and potential effects on park resources and values.
- 3) The EIS must disclose total costs of the proposed actions to the Service
- 4) The EIS must fully and honestly analyze whether the larger public interest will be served by the proposed action in comparison with the no grazing alternative
- 5) The EIS and ROD must provide a fully funded and staffed monitoring plan to continually monitor and examine all park uses to ensure that unanticipated and unacceptable impacts do not occur
- 6) The EIS must fully analyze whether the proposed actions fully comply with the criteria in the Policies at Section 8.2. If any use proposed does not comply with Section 8.2 they can not be permitted in the ROD
- 7) The EIS and ROD must implement the requirement that if unanticipated impacts become apparent, the superintendent must further manage or constrain the use to minimize the impacts, or discontinue the use if the impacts are unacceptable

The NPSs Management Policies 2006 contain specific direction for agricultural activities within NPS lands:

8.6.8.2

Agricultural livestock grazing will use best management practices to protect park resources, with particular attention being given to protecting wetland and riparian areas, sensitive species and their habitats, water quality, and cultural resources. Managers must regulate livestock so that (1) ecosystem dynamics and the composition, condition, and distribution of native plants and animal communities are not significantly altered or otherwise threatened; and (2) cultural values are protected. A comprehensive monitoring program must be implemented, and adaptive management practices must be used to protect park resources.

Again, the EIS must analyze and the ROD must implement actions needed to:

- 1) Protect all park resources and values
- 2) Protect wetland and riparian areas
- 3) Protect Sensitive Species
- 4) Protect water quality
- 5) Protect cultural resources
- 6) Protect ecosystem dynamics and the composition, condition, and distribution of native plants and animal communities are not significantly altered or otherwise threatened
- 7) Implement a comprehensive monitoring program and adaptive management to protect park resources.

I will not take the time to provide a primer on adaptive management but frequently, the federal agencies use 'adaptive management as an excuse to know nothing and do nothing. Adaptive management is not 'trial and error. It requires properly designed and implemented monitoring, properly defined objectives and clearly defined triggers and actions to be taken if those triggers are exceeded. I have attached two documents on the implementation of adaptive management. While both of these are useful, they are far from a complete practical understanding of adaptive management.

The scoping notice proposes a wide range of actions, nearly Rube Goldbergian, to prop up the unsustainable use of livestock grazing and trailing

8.6.8.2.2 Structures for Agricultural Grazing

Appropriate structures may be approved by the National Park Service and may be allowed in parks when the structures are consistent with a livestock management plan or another appropriate management plan; are consistent with park purposes and other applicable laws, regulations, or policies; and will not cause unacceptable impacts on park resources and values.

4.6.2

Park surface waters or groundwater will be withdrawn for consumptive use only when such withdrawal is absolutely

necessary for the use and management of the park.

Current livestock grazing and trailing does not comply with Section 4.6.2.

4.6.3 Water Quality

The pollution of surface waters and groundwaters by both point and nonpoint sources can impair the natural functioning of aquatic and terrestrial ecosystems and diminish the utility of park waters for visitor use and enjoyment. The Service will determine the quality of park surface and groundwater resources and avoid, whenever possible, the pollution of park waters by human activities occurring within and outside the parks. The Service will work with appropriate governmental bodies to obtain the highest possible standards available under the Clean Water Act for the protection for park waters; take all necessary actions to maintain or restore the quality of surface waters and groundwaters within the parks consistent with the Clean Water Act and all other applicable federal, state, and local laws and regulations; (emphasis added)

Most of the livestock accessible surface waters within CARE are in a degraded condition based on the NPSs own data, yet no monitoring of water quality or avoidance of pollution has been done by the NPS. The NPS has not taken all necessary actions to maintain and restore water quality and the scoping notice does not propose them.

DO-12 requires that in all NEPA processes it is essential that NPS management decisions (1) be scientifically informed, and (2) insist on resource preservation as the highest of many worthy priorities. (emphasis added)

The NPS will abide by all CEQ NEPA regulations (40 CFR 1500-1508) and any other procedures and requirements imposed by other higher authorities, such as the Department of the Interior (DOI). This Order is not intended, however, to document all those procedures and requirements; for a comprehensive compilation, employees must refer to Handbook 12. (DO-12 at Section 2)

4.1 Sources of NEPA Guidance. The NPS will comply with the substantive and procedural requirements of NEPA, 40 CFR Parts 1500-1508, 43 CFR Part 46, 516 DM, and any additional NPS procedures or instructions regarding NEPA.

4.3 Full and Open Evaluation. The procedures contained in Handbook 12 will ensure that both adverse and beneficial impacts of NPS proposed actions are fully and openly evaluated before actions are taken that may impact the human environment. This evaluation must include provisions for:

- " Meaningful participation by the public and other stakeholders;
- " Development and critical evaluation of alternative courses of action;
- " Rigorous application of scientific and technical information in the planning, evaluation and decision-making processes;
- " Use of NPS knowledge and expertise through interdisciplinary teams and processes; and
- " Aggressive incorporation of mitigation measures, pollution prevention techniques, and other principles of sustainable park management in all actions.

4.5 NPS management decisions will be based on technical and scientific studies properly considered and appropriate to the decisions made. In making decisions, the NPS will articulate a reasoned connection between the technical and scientific information considered and the final agency action. Technical and scientific information that is essential in making a well-reasoned decision will be obtained even though such information may not be readily available. If such information cannot be obtained due to excessive cost or technical impossibility, the proposed alternative should be modified to eliminate the action causing the unknown or uncertain impact or another alternative may be selected. (emphasis added)

Moving to the related DO-12 Handbook, we wish to highlight the following critical components of the Handbook: Section B - The processes described in this handbook are binding on all NPS personnel. Under the terms of the National Parks Omnibus Management Act of 1998, the Secretary shall take such measures as are necessary to assure the full and proper utilization of the results of scientific study for park management decisions. In each case in which an action undertaken by the National Park Service may cause a significant adverse effect on a park resource, the administrative record shall reflect the manner in which unit resource studies have been considered. The development of alternatives, analysis of impacts, and incorporation of the best available information, coupled with identification of environmentally preferable courses of action as called for in this handbook, are one set of steps required in meeting this obligation to the public.

Section 1.2 D - The detailed and scientifically valid study of impacts and alternatives, and appropriate input from the public, must be available before a federal agency makes any commitment of resources. Unfortunately, the NPS has already made the commitment of resources, but the rest of this requirement must be complied with in the EIS process.

Section 1.4 B - NEPA process must be based on evidence and on sound, repeatable thought processes. Of course, these repeatable thought processes must be fully provided in the NEPA document in order for the public to examine them.

Section 1.6 - Always include data on impacts to the parks natural and cultural resources and values that have been specifically recognized in the parks enabling legislation; to interpretive, educational, and recreational opportunities; to resources protected by federal, state, or local laws; and to other relevant resources in your park or region.

Section 2.7 E - As required under CEQ regulations 40 CFR 1502.2(d), NEPA documents must include a section stating how each alternative analyzed in detail would or would not achieve the requirements of sections 101 and 102(1) of NEPA and other environmental laws and policies. In the park service, this requirement is met by 1) disclosing how each alternative, one of which is identified as the environmentally preferred, meets the criteria set forth in section 101(b) of NEPA (see above); and 2) any inconsistencies between the alternatives analyzed in detail and other environmental laws and policies.

Section 2.13 C - Endangered Species Act (ESA)-Section 7 of the ESA requires that a federal agency consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service on any action that may affect endangered or threatened species or candidate species, or that may result in adverse modification of critical habitat. An EA or an EIS may provide sufficient information to serve as a biological assessment for section 7 purposes.

If a separate biological assessment is prepared, it must be part of any NEPA document.

Executive Orders 11988 and 11990, Floodplain Management and Wetland Protection-These executive orders direct NPS to avoid, to the extent possible, the long- and short-term adverse impacts associated with modifying or occupying floodplains and wetlands. They also require NPS to avoid direct or indirect support of floodplain or wetland development whenever there is a practical alternative. If implementing your parks proposal would result in an adverse impact to a regulated floodplain or wetland, you must include a statement of findings with the finding of no significant impact (FONSI) or the record of decision (ROD). National Historic Preservation Act (NHPA) section 106-Section 106 of NHPA requires federal agencies to consider the effects of their proposals on historic properties, and to provide state historic preservation officers, tribal historic preservation officers, and, as necessary, the Advisory Council on Historic Preservation a reasonable opportunity to review and comment on these actions. Section 106 review and NEPA are two separate, distinct processes. They can and should occur simultaneously, and documents can be combined, but one is not a substitute for the other. They should, however, be coordinated to avoid duplication of public involvement or other requirements. The information and mitigation gathered as part of the 106 review must be included in the NEPA document, and the 106 process must be completed before a FONSI or an ROD can be signed on a proposal that affects historic properties.

Frequently NEPA documents are more like advertising brochures than analyses. Courts have repeatedly remanded NEPA documents as merely collections of unsupported conclusory statements.

In disregarding its own policies and failing to measure the potential significance of the effect of grazing, the Forest Service entirely failed to consider an important aspect of the problem. *Motor Vehicle Mfrs. Assn v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). Its conclusory statements declaring that no significant effect on resources would occur, and therefore that no extraordinary circumstance was present, lack underlying analysis or justification and consequently are insufficient. *Sierra Club v. Bosworth*, 510 F.3d 1016, 1023, 1028-29 (9th Cir. 2007). Conclusions untethered to any analysis do not merit deference. *Id.* (Emphasis added) (CV-11-08128-PCT-NVW, D. of AZ).

Because NPS's EA fails to include the requisite cumulative impacts analysis, it cannot be sustained. See *Grand Canyon Trust*, 290 F.3d at 345; see also *Friends of the Earth, Inc. v. United States Army Corps of Engineers*, 109 F.Supp.2d 30, 42 (D.D.C.2000) (rejecting EAs containing no actual analysis, but only a conclusory statement that cumulative impacts had

been 'minimal '); *Defenders of Wildlife v. Babbitt*, 130 F.Supp.2d 121, 138 (D.D.C.2001) (remanding an EIS [b]ecause the discussion of cumulative impacts consists only of 'conclusory remarks [and] statements that do not equip a decisionmaker to make an informed decision about alternative courses of action, or a court to review the Secretary's reasoning) (quoting *Natural Res. Def. Council, Inc. v. Hodel*, 865 F.2d 288, 298 (D.C.Cir.1988)). *Great Old Broads V. Kemthorne* D.D.C.,2006.

These requirements are not satisfied by general statements about possible effects or risks; the agency must take a hard look at cumulative impacts or explain why it cannot. *Id.* [S]ome quantified or detailed information is required. Without such information, neither the courts nor the public . . . can be assured that the [agency] provided the hard look that it is required to provide. *Id.* *Western Watersheds Project v. Jewell*, D. Idaho 2014
We also request that you carefully review the ruling in *Northern Plains Resource Council*, which we attach to our comments.

Moving back to DO-12 Handbook:

Section 4.5 G 1 - You must support qualitative and quantitative impact analyses with the scientific literature and/or other experts testimony. Such references should be cited liberally in the impact section. CEQ requires that impacts be quantified as much as possible and described in terms of their context, duration, and intensity

Section 4.5 G 4 - The measurement of impact must be accurate, scientifically credible, and understandable to a lay readership. This is why it is helpful to include a methodology section preceding the impact analysis for each topic. That section can lay out the criteria or thresholds used to draw a conclusion on the context, intensity, and duration of impact. Defining thresholds and impact indicators requires consultation with resource experts, literature searches in some cases, and best professional judgment. In the case of the suspended solids in the river, an impact topic might be the effect of the muddy water on visitor experience. This impact is more difficult to measure than turbidity itself, but not impossible. Impacts must be quantified as much as possible and interpreted in terms of their context, duration, and intensity. For instance, in the example in section 4.5 (g), the impact is quantified as suspended solids in the river would increase from its present 10-15 ppm to 1000 ppm for 2-3 weeks during construction. This is adequate for intensity and duration. However, the reader needs a context to understand the full extent and relative importance of the impact. This can be provided by comparing the impact to a relevant standard, such as the states water quality standards for suspended solids. The methodology section would define the threshold as any increases in suspended solids that violate the states water quality standard for this parameter would be considered a 'major impact. The analysis would follow with the increase in suspended solids from 10-15 ppm to 1000 ppm is well below the states water quality standard for this river (3000 ppm). The analyst should also interpret the quantitative information for a lay audience. In this example, the specialist might conclude, Because the impact would last only 2-3 weeks and be well below the standard, it would be a minor, short-term adverse impact to water quality. Notice that criteria were cited (state standards) in the determination of the intensity (in this case, minor) of the impact. Criteria, or thresholds, help to establish the sideboards for understanding the severity and magnitude of the impact. If the analysis simply stated that the suspended solids would increase from 10-15 ppm to 1000 ppm for 2-3 weeks, the public and the decision-maker would be unable to fully understand the extent of the impact. Mitigation-In an EIS, you must develop and analyze mitigation even for impacts that by themselves would not be considered significant (Q19a). All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency (Q19b). You must also analyze the effectiveness of mitigation measures proposed, and the impacts if the project were to proceed without mitigation. For instance, it should be clear whether mitigation is integral to the project and therefore included as part of the alternative, or dependent on factors such as funding or permission from another agency.

Section 4.5 G 7 - You should begin the discussion of impacts by describing methods used to predict impact. As indicated above, if the methods used are the best available, but they require many assumptions that may not be correct or that have been criticized by other professionals, these assumptions should be explained in the methodology section. This section is also a good place to define or explain how data were interpreted. In other words, you should define terms such as minor or major for a particular impact topic. If relevant, explain the reasoning behind this interpretation-why, say, 100 ppm is a major impact but 50 ppm is a minor impact (i.e., your methodology included relevant state water quality standards). This is a discussion of thresholds of impact. Following the methodology section, you may include a separate section that details relevant laws, regulations, and/or park or other policies for each impact topic. This

section may help clarify why a particular impact topic is important to discuss, or help support the reasoning for the impact threshold discussion in the methodology section. This section may be placed in the alternatives or purpose and need chapter if more appropriate.

DO - 11B also provides important and applicable requirements that the NPS must comply with.

A. Reliable Data. The National Park Service will ensure that information it releases will be developed from reliable data sources and will otherwise ensure information quality at each stage of information development. The NPS's methods for producing quality information will be made transparent, to the maximum extent practicable, through accurate documentation, use of appropriate internal and external review procedures, consultation with experts and users, and verification of the quality of the information disseminated to the public. The NPS will also keep users informed about corrections and revisions.

Information will be developed only from reliable data sources based on accepted practices and policies utilizing accepted methods for information collection and verification. It will be reproducible to the extent possible. Influential information will be produced with a high degree of transparency about data and methods. The information should include all pertinent information to allow the public to understand the park's legislative authorities, mission, activities, organization, strategic plan, performance plan, and performance accomplishments.

D. Third Party Information Under the Guidelines. If NPS relies upon technical, scientific, or economic information submitted or developed by a third party, that information is subject to the appropriate standards of objectivity and utility. These standards of these guidelines apply not only to information that NPS generates, but also to information that other parties provide to NPS, if NPS disseminates or relies upon this information.

IV A. Information Approval. All information disseminated to the public must be approved by the appropriate program and/or regional office prior to its dissemination and must satisfy OMB and Departmental guidelines. The approval process will include documentation of the specific information quality standards used in producing the information in a way to substantiate the quality, utility, objectivity, and integrity of the information in a manner that conforms to OMB and Departmental guidelines.

Please review and apply the requirements provided in Interim Guidance Document Governing Code of Conduct, Peer Review, and Information Quality Correction for National Park Service Cultural and Natural Resource Disciplines.

The National Parks Omnibus Management Act of 1998 specifically requires:

SEC. 206. INTEGRATION OF STUDY RESULTS INTO MANAGEMENT DECISIONS.

The Secretary shall take such measures as are necessary to assure the full and proper utilization of the results of scientific study for park management decisions. In each case in which an action undertaken by the National Park Service may cause a significant adverse effect on a park resource, the administrative record shall reflect the manner in which unit resource studies have been considered.

The trend in the condition of resources of the National Park System shall be a significant factor in the annual performance evaluation of each superintendent of a unit of the National Park System.

The NPS's Management Policies 2006 echo and elaborate on the requirements to base management on best available science:

2.1.2 Scientific, Technical, and Scholarly Analysis

Decision-makers and planners will use the best available scientific and technical information and scholarly analysis to identify appropriate management actions for protection and use of park resources.

2.3.1.4 Science and Scholarship

Decisions documented in general management plans and other planning products, including environmental analyses and documentation, will be based on current scientific and scholarly understanding of park ecosystems and cultural contexts and the socioeconomic environment both internal and external to the park. The collection and analysis of information about park resources will be a continuous process that will help ensure that decisions are consistent with park purposes. Since the Park was created there has been significant problems with trespass livestock, with resultant significant degradation to Park resources and values (note recent PFC forms and reports on Oak Creek as an example). The NPS's approach to dealing with this constant and repeated trespass has been woefully inadequate and ineffective. The EIS needs to address this failure and implement clear and punitive actions to avoid promoting and rewarding trespass as is the case now. In such cases the NPS needs to implement actions under DO - 14 and its handbook as part of all action alternatives.

DO - 41 provides requirements for the management of Wilderness and proposed Wilderness. The majority of the project area is proposed Wilderness. Please review the entire contents of DO - 41 and apply it to the EIS process. We will not reiterate all important requirements here, but only highlight a few:

6.4 Minimum Requirements

Parks must complete a minimum requirements analysis (MRA) in order to document the determination of whether a proposed action (project), which involves a prohibited use, is necessary to meet minimum requirements for the administration of the area for the purpose of wilderness. The Wilderness Act in Section 4

(c) identifies the prohibitions (codified at 16 U.S.C. 1133(c)) and Section 2 describes the purpose of wilderness (codified at 16 U.S.C. 1131).

Parks must first determine if the action (project) is necessary for the administration of the wilderness area, to realize the purpose of wilderness. Once the action (project) is determined necessary, parks must next determine the activity (method or tool) to accomplish the action (project) with the least negative impact to wilderness. This MRA should be undertaken using an interdisciplinary approach that includes the project lead, wilderness manager, resource specialists, and superintendent.

NPS Management Policies provide that a MRA must also be applied to all other administrative actions (projects) within wilderness that could potentially affect wilderness character. Also, whenever an environmental assessment or environmental impact statement is prepared for work projects within wilderness, a MRA should be included as part of the document.

Under no circumstances may a MRA be used to allow permanent roads or commercial enterprise within wilderness. The use of motorized equipment and the establishment of management facilities are specifically prohibited when other reasonable alternatives are available.

Section 6 of Reference Manual 41 also must be implemented in the EIS and ROD.

The EIS and its analyses must also comply with DO - 79 and 305 DM 3. The EIS and its analyses must also comply with DO - 77 - 1. We provide a copy with critical sections that must be fully complied with highlighted. Manual 75 provides direction for the development and implementation of monitoring and assessment. A full monitoring plan must be developed and included in the DEIS. Implementation of it must be fully funded and mandatory.

NPS Manual 75 requires that you maintain a comprehensive monitoring program:

NPS policy requires that park managers know the nature and condition of the natural resources under their stewardship, have the means to detect and document changes in those resources, and understand the forces driving the changes, in order to fulfill the NPS mission of conserving parks unimpaired.

During the previous decades of permitting livestock grazing and trialing on CARE, the NPS has ignored this requirement. The best case on this is regarding the listed cacti species which the NPS has gathered information on over a number of years, yet the data stayed as data and never drove action to protect these resources. This failure needs to be discussed in the EIS and a clear framework and requirements so this failure can not happen again. Again this is the best case scenario. Most of the rest of the resources impacted by livestock grazing and trailing, the NPS has little to no data on and has done nothing those impacts. The NPS is essentially flying blind. Page 6 of this Manual clearly delineates your duties regarding monitoring of GCNRA's resources:

Superintendents are responsible for setting local policy and priorities. They direct and integrate the efforts of research scientists, resource specialists, park rangers, and other park staff to assure perpetuation of unimpaired park resources. They focus the park staff's attention on critical issues, formulate strategic and tactical plans, and set priorities for fiscal resources. They are ultimately responsible both for knowing the condition of park resources and for directing efforts to sustain them.

Again, CARE has failed to implement this direction.

Moving back to the NPS's Management Policies 2006:

The Senate committee report stated that under the Redwood amendment, "The Secretary has an absolute duty, which is not to be compromised, to fulfill the mandate of the 1916 Act to take whatever actions and seek whatever relief as will safeguard the units of the national park system."

Either from the perspective of archeological resources or vegetative or ESA listed species or riparian conditions or other natural resources, CARE's current authorization of livestock grazing, and its failure to require compliance with NPS policies, is a derogation of your duties as well as a violation of the Organic Act and the Redwoods Act. This failure needs to be clearly and effectively corrected in the EIS and ROD.

This is echoed in the Management Policies 2006:

1.4.3 The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. This mandate is independent of the separate prohibition on impairment and applies all the time with respect to all park resources and values, even when there is no risk that any park resources or values may be impaired. NPS managers must always seek ways to avoid, or to minimize to the greatest extent practicable, adverse impacts on park resources and values.(emphasis added)

Of particular note above is the clear mandate separate and independent of the prohibition on impairment, the mandate to conserve park resources and values. The above requires the NPS to "always seek ways to avoid, or to minimize to the greatest extent practicable, adverse impacts on park resources and values." The NPS authorized actions must avoid or minimize to the greatest extent practicable all adverse impacts.

The NPS's Management Policies 2006 clearly state at 2.3.1.1:

2.3.1.1 Statutory Requirements

General management plans will meet all statutory requirements contained in 16 USC 1a-7(b) and will include the types of management actions required for the preservation of park resources;

The current GMP does not contain the actions required for the preservation of park resources from the impacts of livestock grazing and trailing. The GMP needs to be amended to provide specific and enforceable requirements and limitation to deal with the wide range of impacts from these non-native, private livestock within the park.

The GMP provided that:

grazing allotments...would be monitored to establish trends and identify early warning signs of significant deterioration of natural resources. Every effort would be made to restore natural areas once subject to intensive disturbance, outside of the historic district. Special attention would be given to preserving vegetative habitats that contain uncommon species or that are of special interest, such as riparian communities (GMP at 55)

Here again, in the 15 years since the GMP was put in place this has not occurred. This failure must be addressed and corrected in the EIS and ROD.

The GMP ROD stated:

All practical measures to avoid or minimize environmental impacts that could result from implementing the selected action have been identified in the Impacts by Alternative section of the Final EIS, including soil protection; protection of floodplains, wetlands, and water resources; protection of wilderness values including visual resources; protection of threatened, endangered and rare species; protection of properties on or eligible for listing on the National Register of Historic Places; protection of Indian sacred sites; and enhancing visitor education about sensitive park resources. Monitoring natural, cultural and visitor resources will enable the park to determine if impacts are occurring and will guide implementation of mitigation measures to protect the resources.

Yet again there is little evidence that "all practical measures to avoid or minimize environmental impacts" related to livestock grazing and trailing have been implemented in the 15 years since the ROD was signed. In fact, the record is clear that the NPS has failed to take effective actions to protect park resources and certainly has not taken "all practical measures" to protect a wide range of resources and values such as:

- 1) Endangered Species
- 2) Riparian areas
- 3) Visitor impacts
- 4) Biological soil crust
- 5) Restoration of healthy vegetative communities

This longstanding failure must be honestly addressed in the EIS and clear and enforceable measure implemented in the ROD to correct these failures.

The GMP ROD also required:

Planning efforts will include a Resources Management Plan to provide direction for future management of natural and cultural resources in the park and describe how inventory and monitoring of the resources will be accomplished.

A Water Management Plan will be developed to define what information is needed to protect floodplains, wetlands, and other water resources.

A Long-range Interpretive Plan will be developed to define the future direction of interpretive services that will help protect resources through education.

An Exotic Species Control Plan will determine the needs of the park for invasive plant and animal control and will govern wise use of necessary control measures without harming the environment. The park will assist, in cooperation with the U.S. Fish and Wildlife Service and other federal agencies, development of recovery plans and conservation agreements to protect the rare and sensitive plant and animal species found in this area.

It appears again that once the ROD was signed, the NPS has done little to implement it when it comes to the impacts of its permitted livestock grazing and trailing.

Moving back to the NPS's Management Policies 2006:

2.1.4 Goal Orientation

Managers will be held accountable for identifying and accomplishing measurable long-term goals and annual goals that are incremental steps to carrying out the park mission. Such planning is a critical and essential part of the NPS performance management system that is designed to improve the Park Service's performance and results. Park staff will monitor resource conditions and visitor experiences and plan, track, and report performance. If goals are not being met, managers will seek to understand why and take appropriate action. The goals will be periodically reassessed, taking into account new knowledge or previously unforeseen circumstances, and then the planning cycle will be reinitiated at the appropriate point.

While this requirement was not implemented in the GMP, it must be implemented in this EIS and ROD.

In Section 2.1.2:

the Park Service will identify reasonable alternatives and analyze and compare their differences with respect to consistency with the park's purpose,
the quality of visitor experiences,
the impacts on park resources,
short- and long-term costs, and
environmental consequences that may extend beyond park boundaries.

In Section 4.1:

The Service will not intervene in natural biological or physical processes, except

when directed by Congress;
in emergencies in which human life and property are at stake;
to restore natural ecosystem functioning that has been
disrupted by past or ongoing human activities; or
when a park plan has identified the intervention as necessary to protect other park resources, human health and safety, or
facilities.

The permitting of livestock grazing clearly intervenes with natural biological and physical processes. Taking just the example of biological soil crust (BSC), which is a foundational component of the ecosystem. Where livestock grazing takes place BSC is functionally eliminated. None of the exception above apply.

In Section 4.1.1:

4.1.1 Planning for Natural Resource Management

Each park with a significant natural resource base (as exemplified by participation in the Vital Signs component of the Natural Resource Challenge) will prepare and periodically update a long-range (looking at least one to two decades ahead) comprehensive strategy for natural resource management. This long-range strategy will describe the comprehensive program of activities needed to achieve the desired future conditions for the park's natural resources. It will integrate the best available science and prescribe activities such as inventories, research, monitoring, restoration, mitigation, protection, education, and management of resource uses. The strategy will also describe the natural-resource-related activities needed to achieve desired future conditions for cultural resources (such as historic landscapes) and visitor enjoyment. Similarly, planning for park operations, development, and management activities that might affect natural resources will be guided by high-quality, scientifically acceptable information, data, and impact assessment. Where existing information is inadequate, the collection of new information and data may be required before decision-making.

Long-term

research or monitoring may also be necessary to correctly understand the effects of management actions on natural resources whose function and significance are not clearly understood. This Natural Resource Management Plan appears to have never been written, yet it should form the basis of this EIS process. Neither the desired future conditions have been defined nor have actions needed to achieve them been set forth.

4.1.5 Restoration of Natural Systems

The Service will reestablish natural functions and processes in parks unless otherwise directed by Congress. Landscapes disturbed by natural phenomena, such as landslides, earthquakes, floods, hurricanes, tornadoes, and fires, will be allowed to recover naturally unless manipulation is necessary to protect other park resources, developments, or employee and public safety. Impacts on natural systems resulting from human disturbances include the introduction of exotic species; the contamination of air, water, and soil; changes to hydrologic patterns and sediment transport; the acceleration of erosion and sedimentation; and the disruption of natural processes. The Service will seek to return such disturbed areas to the natural conditions and processes characteristic of the ecological zone in which the damaged resources are situated.

The Service will use the best available technology, within available resources, to restore the biological and physical components of these systems, accelerating both their recovery and the recovery of landscape and biological community structure and function. Efforts may include, for example

removal of exotic species

removal of contaminants and nonhistoric structures or
facilities

restoration of abandoned mineral lands, abandoned or unauthorized roads, areas overgrazed by domestic animals, or
disrupted natural waterways and/or shoreline processes

restoration of areas disturbed by NPS administrative, management, or development activities (such as hazard tree
removal, construction, or sand and gravel extraction) or by public use

restoration of natural soundscapes

restoration of native plants and animals

restoration of natural visibility

The EIS and ROD must fully implement this requirement.

4.1.6 Compensation for Injuries to Natural Resources

The Service will use all legal authorities that are available to protect and restore natural resources and the environmental benefits they provide when actions of another party cause the destruction or loss of, or injury to, park resources or values. As a first step, damage assessments provide the basis for determining the restoration and compensation needs that address the public's loss and are a key milestone toward the ultimate goal, which is restoration, replacement, and/or reclamation of resources for the American public.

Pursuant to applicable provisions of the Comprehensive Environmental Response, Compensation and Liability Act of 1980; the Oil Pollution Act of 1990; the Federal Water Pollution Control Act (as amended by the Clean Water Act of 1977); and the National Park System Resource Protection Act, the Service will determine the injury caused to natural resources, assess all appropriate damages, and monitor damages; seek to recover all appropriate costs associated with responses to such actions and the costs of assessing resource damages, including the direct and indirect costs of response, restoration, and monitoring activities; and use all sums recovered in compensation for resource injuries to restore, replace, or acquire the equivalent of the resources that were the subject of the action.

As stated previously, the NPS has failed to comply with this requirement in regards to damages caused by authorized or trespass livestock. These requirements must be implemented as actions common to all alternatives.

4.4.2.1 NPS Actions That Remove Native Plants and Animals

Whenever the Service removes native plants or animals, manages plant or animal populations to reduce their sizes, or allows others to remove plants or animals for an authorized purpose, the Service will seek to ensure that such removals will not cause unacceptable impacts on native resources, natural processes, or other park resources. (emphasis added)

This requirement must be implemented in the EIS and ROD.

4.4.2.3 Management of Threatened or Endangered Plants and Animals

The Service will survey for, protect, and strive to recover all species native to national park system units that are listed under the Endangered Species Act. The Service will fully meet its obligations under the NPS Organic Act and the Endangered Species Act to both proactively conserve listed species and prevent detrimental effects on these species. To meet these obligations, the Service will:

- cooperate with both the U.S. Fish and Wildlife Service and the NOAA Fisheries to ensure that NPS actions comply with both the written requirements and the spirit of the Endangered Species Act. This cooperation should include the full range of activities associated with the Endangered Species Act, including consultation, conferencing, informal discussions, and securing all necessary scientific and/or recovery permits;
- undertake active management programs to inventory, monitor, restore, and maintain listed species habitats;
- control detrimental nonnative species; manage detrimental visitor access; and reestablish extirpated populations as necessary to maintain the species and the habitats upon which they depend;
- manage designated critical habitat, essential habitat, and recovery areas to maintain and enhance their value for the recovery of threatened and endangered species;
- cooperate with other agencies to ensure that the delineation of critical habitat, essential habitat, and/or recovery areas on park-managed lands provides needed conservation benefits to the total recovery efforts being conducted by all the participating agencies;
- participate in the recovery planning process, including the provision of members on recovery teams and recovery implementation teams where appropriate;
- cooperate with other agencies, states, and private entities to promote candidate conservation agreements aimed at precluding the need to list species; and
- conduct actions and allocate funding to address endangered, threatened, proposed, and candidate species.

The National Park Service will inventory, monitor, and manage state and locally listed species in a manner similar to its treatment of federally listed species to the greatest extent possible. In addition, the Service will inventory other native species that are of special management concern to parks (such as rare, declining, sensitive, or unique species and their habitats) and will manage them to maintain their natural distribution and abundance.

This requirement must be implemented in the EIS and ROD.

Section 4.6.6 - The Service will protect watershed and stream features primarily by avoiding impacts on watershed and riparian vegetation and by allowing natural fluvial processes to proceed unimpeded.

Section 5.2 - To gain this understanding, the Service must obtain baseline data on the nature and types of cultural resources, and their (1) distribution; (2) condition; (3) significance; and (4) local, regional, and national contexts.

Superintendents will ensure full consideration of the parks cultural resources and values in all proposals for operations, development, and natural resource programs, including the management of wilderness areas. When proposed undertakings may adversely affect national historic sites, national battlefields, and other predominantly cultural units of the national park system that were established in recognition of their national historical significance, superintendents will provide opportunities for the same level of review and consideration by the Advisory Council on Historic Preservation and the Secretary of the Interior that the Advisory Councils regulations require for undertakings that may adversely affect national historic landmarks (36 CFR 800.10).

Section 5.2.1 - Each superintendent will consult with outside parties having an interest in the parks cultural resources or in proposed NPS actions that might affect those resources, and provide them with opportunities to learn about and comment on those resources and planned actions.

Consultations on proposed NPS actions will take place as soon as practical and in an appropriate forum that ensures, to the maximum extent possible, effective communication and the identification of mutually acceptable alternatives. The Service will establish and maintain continuing relationships with outside parties to facilitate future collaboration, formal consultations, and the ongoing informal exchange of views and information on cultural resource matters.

5.3.5.1.1 Preservation

Archeological resources will be maintained and preserved in a stable condition to prevent degradation and loss. The condition of archeological resources will be documented, regularly monitored, and evaluated against initial baseline data.

In accordance with 8.2.3.1 permittees are not allowed to use motorized vehicles off designated roads. This requirement must be common to all alternatives.

The proposed permitted livestock grazing and trailing falls under the definition of special park uses in 8.6.1.

Further, 8.6.1.1 requires:

A superintendent must deny initial requests or requests for renewal upon finding that the proposed activity would cause unacceptable impacts. The superintendent likewise must terminate previously authorized special park uses based on such a finding. (emphasis added)

Note that the above is non-discretionary and the trigger is not impairment but simply unacceptable impacts which we have discussed in previous sections.

Another requirement that has been conveniently ignored by the NPS is:

8.6.1.2 Fees

Cost recovery and performance bond and liability insurance requirements will be imposed, consistent with applicable statutory authorities and regulations. All costs incurred by the Service in receiving, writing, and issuing the permit, monitoring the permitted use, restoring park areas, or otherwise supporting a special park use may be paid by the permittee. The money will be retained by the park as reimbursement.

When appropriate, the Service will also collect a fee for the use of the land or facility based on a market evaluation. Fees collected for use of the land or facility will be deposited into the U.S. Treasury. (emphasis added)

The NPS has ignored this requirement, but it must be included as common to all alternatives. The Cost of this EIS process must also be included.

8.6.8.2.1 Permitting Agricultural Grazing

Agricultural livestock activities by parties other than the Park Service will be conducted only pursuant to the terms and conditions of a special use permit or lease. The use of a lease is appropriate only when (1) specifically authorized by the parks enabling legislation, or (2) it is part of an historic preservation program authorized by 16 USC 470h-3, or (3) the livestock use is associated with a building that is leased pursuant to 16 USC 1a-2(k).

In addition to any other penalty provisions, violation of the terms and conditions of the permitting instrument may result in revocation of the livestock use privilege.

8.6.8.2.2 Structures for Agricultural Grazing

Appropriate structures may be approved by the National Park Service and may be allowed in parks when the structures

are consistent with a livestock management plan or another appropriate management plan;
are consistent with park purposes and other applicable laws, regulations, or policies; and
will not cause unacceptable impacts on park resources and values.

The Service will not expend funds to construct or maintain livestock structures unless there is a direct benefit to the protection of park resources.

The following requirement must be implemented in all alternatives

8.6.8.3 Trespass and Feral Livestock

Livestock trespassing on park lands may be impounded and disposed of pursuant to the provisions of 36 CFR 2.60, with the owner charged for expenses incurred. Wild living or feral livestock having no known owner may also be disposed of in accordance with 36 CFR 2.60.

A fundamental aspect of NEPA is to take a hard look at current management, conditions, assumptions and implementation. A NEPA document that fails to analyze the following violates the purposes of NEPA:

- 1) Validity of assumptions from previous NEPA processes
- 2) Accuracy of predictions from previous NEPA processes
- 3) Adequacy of NPS implementation of previous decisions
- 4) Permittee compliance with permit terms and conditions, AMP's, AOIs and other requirements
- 5) effectiveness of actions taken in previous decisions

These above items are absolutely critical to be part of this NEPA process. Without this critical link the validity of the current assumptions are baseless. Let's look at each one of these individually. Without analyzing the accuracy and validity of the assumptions used in previous NEPA processes one has no way to judge the accuracy and effectiveness of the current analysis and proposals. This vitiates the NEPA process. For instance, the EIS for the GMP predicted only minor impacts from grazing and trailing and assumed certain actions and planning would take place. Those assumptions were incorrect. The predictions made in previous NEPA processes also need to be disclosed and analyzed because if the accuracy was not there, most likely you are making the same predictions in the current process and thus the current process again will be vitiated.

A review of the adequacy of the NPS's implementation of current permits and NPS Policy and GMP direction is essential to a valid NEPA process. For instance, if in previous processes, the NPS said they were going to do a certain monitoring plan or implement a certain type of management and these were never effectively implemented, that is incredibly important for the reader and the decision maker to know. If there have been problems with the NPS's implementation in the past, it is not logical to assume that implementation will now all of a sudden be compliant.

Another critical component is permittee compliance. If the permittee has failed to properly comply with their permit terms and conditions and Policy requirements, including utilization requirements, rotation requirements and fence maintenance then it is absolutely critical to discuss this in the document and its effects on the proposed action. Permittee failure to comply with permit terms and conditions and other requirements shows two things, firstly that the permittee has failed to implement even the minimal standards that are currently in place and secondly, it shows that the NPS has failed to take decisive permit action to ensure compliance. Both of these are very important aspects that must be discussed for a

valid NEPA process.

Another critical component is an examination of the effectiveness of the current permits and related actions. A classic example of this is fences and water developments. Often, new fences and water developments are proposed to solve riparian issues in spite of the fact that these have been used for many decades without correcting riparian issues. Doing more of the same does not lead to good results is not an effective strategy for public lands management.

With the previous non-exhaustive review of some of the requirements that must be implemented by the NPS in all action alternatives, we now move other considerations.

FORAGE AVAILABILITY

Foundational to any consideration of grazing permits is the actual amount of forage available to livestock.

The NPS must analyze, in a site-specific way, the capability of these allotments to provide forage for livestock. This analysis needs to assess the need for vegetative and BSC recovery, the availability of forage, the distances to water, and slopes not to exceed a certain limit depending on soil types. Forage produced on highly erosive soils must be removed from consideration.

Utilization limits (harvest coefficient) that meets all the requirements discussed in the section regarding NPS Policy as well as the physiological needs of the vegetation, while allowing for BSC to recover and fully play its ecological role, must also be factored in.

In addition, the NPS further subtract from the available forage, the forage and cover needs of wildlife. As stated above, the NPS must provide for compliance with 4.4.1:

The Service will successfully maintain native plants and animals by preserving and restoring the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur; for all plant and animal species, not just the hunted variety. So forage and cover for voles and other small mammals as well as insects and reptiles must also be provided for.

While the Forest Service is a multiple-use agency and the NPS is not, we provide examples of capability analysis processes by both R4 and R2. Of course, these fail to factor in issues other than production, slope, soils and distance from water.

We provide a science-based process for this process in Catlin et al. 2003.

While Catlin et al. provides some information regarding utilization rates we request that you review Range Management - Principles and Practice, which is the primary range management textbook. While the textbook is for livestock management maximization (not NPS requirements). This textbook recommends a maximum utilization rate of 25% and summarizes the literature by stating use of a harvest coefficient higher than 25% invariably leads to land degradation.

Lets look at the data which the NPS already has on forage availability. The most detailed and applicable Welsh 1982 which looked at the best case situation (at p2). The author found a total of 38.3 lbs of forage produced in the Sandy 3 allotment and 14 lbs of forage in the Hartnet allotment. His calculations utilized the faulty 'take half, leave half 50% utilization rate. Applying a more appropriate 25% harvest coefficient would result in 9.5 lbs per acres in the Sandy 3 and 3.5 lbs in the Hartnet allotment that could be allocated to livestock (without factoring in other NPS requirements).

The report found that the Sandy 3 allotment had 13,589 acres that livestock could physically access. 43,440 acres were found to be accessible to livestock in the Harnet allotment. The report stated that the figures provided were for the best case and that much of the accessible acres were producing less forage. But using this best case scenario without factoring in distance to water, slope or highly erosive soils or other factors would be 147 acres/AUM in Sandy 3 and 400 acres/AUM in the Hartnet allotment.

The current permits authorize use at 30 accessible acres per AUM in the Hartnet allotment, nearly 13 times over the rational stocking rate and on the Sandy 3 allotment, using the Welsh reports figure of 13,589 accessible acres, likely well

over reality, the allotment is stocked at 33 acres per AUM or 4.5 times over the rational stocking rate.

THE AUM AND LIVESTOCK WEIGHTS

Further underscoring the need to properly determine available forage is the fact that the current permits allocations were set nearly half a century ago, back when high levels of utilization were considered fine. In addition, livestock weights have dramatically increased over this time period, resulting in the removal of significantly more forage by the same number of livestock.

We attach Carter, 2008 for details on this issue. In summarizing the issue, Carter states:

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.

When the permits we issued, the BLM was using 790 lbs. of forage per AUM, yet current consumption is approximately twice that. So in other words, the current permits result in the removal of approximately twice the total biomass than occurred when the AUM allocation was set.

Clearly, if the NPS issues permits for the same number of AUMs and same numbers of livestock, the decision will be arbitrary and capricious.

SEASON

Lets begin the discussion regarding the current permits season of use by quoting in its entirety a document obtained from CARE under FOIA:

Justification for Changing the Livestock Off Date in the Hartnet Allotment from May 31 to April 1??

1. To be in conformance with Utah BLMs Guidelines for Grazing Management, and to address concerns with upland soils, the BLMs Rangeland Health Assessment (RHA) team recommended the following based upon their 2002 data collection:

1. Change off dates from 5/31 to 4/30
2. Develop a formal deferred grazing system in the allotment.

The specific Guidelines identified by the RHA team are:

- 1a. Maintain sufficient residual vegetation and litter on both upland and riparian sites to protect the soil from wind and water erosion and support ecological functions.
- 1c. Meet the physiological requirements of desired plants and facilitate reproduction and maintenance of desired plants to extent natural conditions allow.
- 1d. Maintain viable and diverse populations of plants and animals appropriate for the site.

2. Trend data collected by the BLM while managing the allotment is inconclusive with some sites improving, some degrading, and some staying the same. Trend monitoring evaluates frequency of key forage species occurring along a transect, and is only one component to look at. It doesnt tell you anything about productivity or diversity of the plant community, structural diversity, ability to support healthy wildlife populations, the status of T&E plants, condition of soils including biotic crust, condition of the watershed, etc.

3. There is a large disparity between what the trend and the Standards data show and what the range looks like on the ground. Sandy experienced this with other allotments she was involved with at the Henry Mountain Field Station area (e.g., Rockies). In almost all allotments, the assessment team concluded that Standards were met, however, when Sandy evaluated the allotments they clearly were not meeting many of the land health indicators. Either conditions had degraded dramatically since the data was collected, or the data collected was very biased.

4. Professional opinion of Leroy Smallie, the Hanksville BLM Range Conservationist who collected the trend monitoring data and was on the RHA team, is that grazing through the end of May, during the critical growth period of grasses, is not good for maintaining healthy grass communities and is poor range management. Repeatedly grazing grasses at the same

time each year reduces the vigor and productivity of the grass community. Other allotments in the Henry Mountain Field Station area have had the grazing season reduced to 4/30 with very good results, helping to make grazing sustainable. Leroy also felt that precipitation patterns have changed over the years, in particular the lack of June and July rains. Without these rains there is little opportunity for grasses to regrow before the grazing season begins in November. Leroy believed that based upon changing precipitation patterns, T&E plant species concerns, and his observations on the loss of cool season grasses in parts of the allotment, (i.e., Indian ricegrass) there was sufficient justification for moving the off date to 4/30 (personal communication, January 2009).

5. The BLM categorized the Hartnet allotment as an Improve (I) allotment. Category I allotments receive first priority for rangeland improvements as funding becomes available. Special management actions are needed because major resource conflicts and/or other grazing problems exist.

6. The Hartnet allotment contains three federally listed plant species whose habitat overlaps areas where livestock grazing occurs (Winkler cactus, Wright fishhook cactus, Last chance townsendia). There are various reports that cite impacts to these plants and/or their habitat from livestock grazing. Several of these reports include data from the Hartnet allotment (Clark and Clark, 2008a; Clark and Clark, 2008b; Clark 2008, and San Juan College 1994). For the Winkler cactus, which is typically above ground only during the spring reproductive season, reducing the grazing season will decrease the exposure of these plants to livestock, and therefore their potential to be trampled, dislodged, or damaged. All three species are in flower during the spring grazing season. Flowers and buds of these plants have been found knocked off by livestock, thereby reducing their reproductive potential. Shortening the grazing season will decrease the potential for this to occur. Past studies have also shown that the larger-sized Wright fishhook cacti with the greatest reproductive potential are more susceptible to being kicked out of the ground by livestock.

7. Within the Hartnet allotment, riparian areas occur near intermittent and perennial creeks, springs, and seeps. Between 2000 and 2008 the BLM conducted riparian assessments throughout the allotment. Nine of the sites were in the park. Of those nine sites, five were in proper functioning condition while four were functional at risk (FAR). Lower Polk Creek and Ring Water Spring were both FAR due to livestock grazing. Ring Water Spring was dominated by tamarisk, with no willows found. Some Juncus and Carex species were found, but they were heavily grazed. The area was also heavily trampled by livestock. The riparian assessment team recommended fencing the riparian zone and conducting tamarisk control. Lower Polk Creek was also heavily impacted by cattle. The team recommended constructing 200 yards of fencing at the mouth of the canyon to keep livestock out. Notch Water spring was FAR due to salinity/salt crust and tamarisk invasion while Ackland Spring was FAR due to geology, precipitation regime, and a gravel road. Park staff know that both Ackland and Notch Water get considerable livestock use which contribute to their poor condition, even though the riparian assessments state that there is little to sign of livestock grazing in these areas.

As temperatures warm up, livestock tend to concentrate in riparian areas for water and shade. Therefore, reducing the grazing season to avoid the heat of the mid April through May period will reduce the potential damage to riparian areas in the Hartnet allotment.

8. Grazing until May 31st can adversely affect migratory birds by directly impacting nests and nestlings, or indirectly by decreasing the suitability of nesting habitat (primarily by reduction in vegetation cover and vertical habitat complexity) which can reduce nesting success by making nesting birds more susceptible to predators. This was addressed in the South Desert portion of the Hartnet allotment in a 1994 study conducted funded by the NPS (Willey, 1994). Under the Migratory Bird Treaty Act, we should be avoiding, or at least mitigating, such impacts.

9. A Cathedral Allotment Evaluation was conducted by the BLM Hanksville Office in 1999. The evaluation states that spring grazing can and has dramatically affected the health of plant species in the Cathedral allotment. This evaluation further states that:

Damage to the [grass] plant in the spring occurs when the livestock keep coming back to the same area many times. With this repeated grazing of the same plants the seed stem is lost and the plant does not produce seed. Also, depending on how moist the soils are, plants can and are uprooted from the soil. The bottom line is, repeated use of an area causes loss of seed production, damaged root systems, which leads to poor plant vigor and loss of plant density in a short period of time.

Therefore, spring grazing must be reduced in Cathedral allotment by either reducing the number allowed, time allowed per year or totally closing the allotment.

Spring growth can occur as early as March and April depending on what weather conditions were like during the winter

months. Once green up starts, livestock tend to continue using the same areas. This does not allow the plants sufficient time to produce seed and amply store root reserves without repeated use.

T&E species are being attacked by rodents because there is not sufficient food sources. Three inches of top soil has disappeared due to erosion

Based upon our field observations and management practices in the Hartnet allotment, NPS staff feels that these comments from the Cathedral allotment evaluation apply to the NPS portion of the Hartnet allotment as well.

10. The idea that (spring) grazing in the Hartnet allotment should be reduced or eliminated has been an issue for years. Following are some examples:

a) In 1978 two range professors from Utah State University (Dr. Urness and Dr. Malachek) toured the park with the biologist, Gerry Hoddenbach to discuss a potential grazing study. Their first recommendation was: Critically policing removal of stock from ranges in spring as listed on permits to prevent as much damage as possible to remaining plants in spring growth surges.

b) In 1982 Dr. Stanley Welsh did an assessment of range conditions in the Hartnet and Sandy 3 allotments (Welsh 1982). Regarding the 1271 AUMs of actual use in the Hartnet at that time (compared to 1141 currently), he states that the number of AUMs is about 50% more than should be allowed based upon forage production in the allotment. So this excessive rate has continued for 30 more years!

c) In 1993 grazing management recommendations were put together for the park by Jerry Dodd and David Swift. The following was written regarding the Hartnet allotment:

The problem is that nearly all the bottomlands in South Desert are overgrazed in the spring to the point where Indian ricegrass has been almost eliminated. This occurs because the most reliable water supply is in the channels of several intermittent streams and creeks that dissect the lowlands. Further, very little standing vegetation exists on the lowlands to support birds and small mammals that are indigenous to the area. In order to correct this problem and get the ricegrass back to its dominant state these areas must receive minimal grazing pressure in the spring. Several alternatives are possible to achieve this. The objective of management should be to eliminate or minimize use of forage in the lowlands (along drainages) during the grazing season.

They go on to list alternatives to better manage the Hartnet including developing water, implementing a rest-rotation grazing regime, and conducting trigger monitoring. But the most doable alternative is the first one they mention which states:

Eliminate grazing in the entire allotment at the end of April. This is probably the single most effective action that can be taken. During most years late April and May probably constitute the bulk of the growing season for this area. Resting the plants (of all species) during this time will give them a chance to recover from the cumulative effects of past grazing in the low lying areas. This alternative does not require changing the total number of AUMs that could come from the pasture and therefore does not change stocking rate. The operator could run more animals for a shorter period of time. However, this plan will require the operator to take the animals to another location prior to going on the Forest Service allotment on June 1 and this may be a problem.

d) A report produced by San Juan College (1994) entitled The Effects of Grazing on Threatened/Endangered Plant Species in the Hartnet and Sandy III Grazing Allotments recommends that the Hartnet and South Desert areas of the Hartnet allotment (basically all livestock accessible areas of the allotment) be restricted from grazing due to unacceptable impacts on Winkler cactus, Wright fishhook cactus, and Last Chance Townsendia and their habitats. Field work for this project was conducted by Dr. Ken Heil, Dr. Dave Schleser, Bob Melton, and Rich Fleming.

11) Observations of range conditions in the Hartnet allotment made by park staff during April and May 2012 include:
Unproductive grasslands with low species diversity and low structural diversity.
Short, low vigor grass plants that produce few if any seed heads (especially true for Indian ricegrass).
Loss of cool season grasses (i.e., Indian ricegrass) from much of the allotment.
Heavy utilization (>60%) roughout the grazed portions of the allotment.
High percentage of bare ground

Excessive trampling and extensive damage to soil crusts

Conversion of large areas in the South Desert to halogeton and Russian thistle. These areas have crossed a threshold and are unlikely to convert back to grasslands without intervention.

Conversion of large areas in the Hartnet Draw to Opuntia/snakeweed which is indicative of poor range conditions.

Riparian areas have downcut banks, heavy utilization of vegetation, poor species diversity, and are heavily trampled as described in the BLMs riparian assessments.

Brief Literature Review:

The observations mentioned above are consistent with findings in the literature that describe detrimental effects from repeated spring grazing as occurs in the Hartnet allotment. These detrimental effects have been known for decades. Studies conducted as early as the 1940s showed that removal of vegetation before or after the normal growth period reduced plant vigor less than harvesting during the active growing season. Experiments conducted in Utah in the late 1950s and early 1960s substantiated these studies. Cook and Stoddart (1963) demonstrated that spring grazing was significantly more detrimental than grazing in the fall, early winter or late winter. The most harmful was harvesting a grass twice during the grazing season, once in the winter and again in late spring, which is what occurs in the Hartnet allotment every year. This study found that such harvesting for three successive years killed an average of 29% of the plants and reduced crown cover of the remaining plants about 33%. ant species evaluated in the study included those in the Hartnet allotment such as Indian ricegrass, squirreltail grass, and shadscale. More recent studies support findings of the early research. Paulsen (1975) suggested that spring grazing is especially detrimental to cool-season grasses such as Indian ricegrass. According to McCarthy (2003) stocking rate on an area is not as critical as the timing of livestock use. Annual grazing of both forbs and grasses during the early spring growing season can result in lowered plant health and may dramatically decrease annual production. Seefeldt and McCoy (2003) conducted experiments that demonstrated that recurring spring grazing results in decreased plant cover and higher proportion of introduced and annual plants. Vavra et al. 2007 state that the timing of grazing can have a significant impact on plant productivity and vigor, especially if livestock are repeatedly present during the plant growth and reproductive stages. Spring grazing should be brief to permit photosynthesis and to give plants time to recover. Excessive grazing while plants are actively growing, completing reproduction and storing carbohydrates (i.e., in the spring) is especially damaging.

Publications distributed by state university Cooperative Extension Units also encourage ranchers to rest plants from grazing during the growing season in order to maintain healthy productive rangelands. A publication entitled Rangeland Management Strategies produced by the Sustainable Agriculture Research and Education program (www.sare.org/publications/ranching.htm) explains that grasses and forbs are especially vulnerable to harmful grazing during the boot stage, when the seed head is rapidly shooting up from the base of the plant to the pinnacle. Almost all of the plants energy goes to the stem and seed head. If leaves are grazed during this period, the plant cannot photosynthesize enough energy so it draws from the roots, potentially weakening them. The publication goes on to state that repeated grazing during the growing season is the most harmful to grasses because the plant keeps using all its energy to grow new leaves which draws energy from the roots; eventually the roots get so depleted that they can no longer support the plant and it dies. In general grass leaves need to be at least 2 inches long before they can provide enough photosynthesis to maintain healthy roots. The University of Wyoming Cooperative Extension Service has a publication entitled Flexible Grazing and Livestock Management Systems for Good and Bad Times which also state that grasses should be rested during their physiologically sensitive periods when their seed stalks are growing in the spring. As explained in Pasture, Rangeland and Grazing Management a publication of ATTRA - National Sustainable Agriculture Information Service (www.attra.ncat.org) continuous grazing allow cattle to selectively graze the most palatable plants, such as Indian ricegrass, over and over. This repeated grazing doesnt allow the plant time to regrow before its grazed again. New growth is more palatable and contains more nutrients than old growth so a cow will come back for a second or third bite on the same plant resulting in the most palatable plants being eliminated.

Grazing also causes disturbance and compaction to soils and damage to cryptogamic crusts (Belnap et al. 2001). Experiments conducted by Memmott et al. (1998) showed that, compared to other seasons, spring and summer grazing had the greatest negative impact on cryptogamic crusts. They concluded that in the fragile deserts of the Intermountain West where lands are susceptible to accelerated erosion, winter grazing was the most compatible with stable, moss-dominated cryptogam crusts; in contrast, repetitive summer and especially spring grazing jeopardizes long-term ecosystem stability.

Summary

Good range management practices allow plants to rest during the growing season when they are trying to restock energy to roots and leaves. At Capitol Reef, we have the worst case scenario in the Hartnet allotment which is grazed winter into late spring so plants are often grazed more than once during the grazing season, and this happens year after year. It has been known for decades that such repeated spring grazing is not sustainable. The poor range conditions in the Hartnet allotment substantiate that fact.

Literature Cited:

- Belnap, J., J. Kaltenecker, R. Rosentreter, J. Williams, S. Leonard, and D. Eldridge. 2001. Biological Soil Crusts: Ecology and Management. Department of the Interior, Bureau of Land Management Technical Reference 1730-2. 110pp.
- Clark, D. J. 2008. Summary of two *Pediocactus winkleri* paired monitoring plots. July 22, 2008. Report prepared for BLM and National Park Service. 4 pp.
- Clark, D. J. and T. O. Clark. 2008a. Summary of Conclusions on Effects of Livestock Trampling on *Sclerocactus wrightiae*, *Pediocactus despainii* and *Pediocactus winklerii*. July 22, 2008. Report prepared for BLM and National Park Service. 14 pp.
- Clark, D. J. and T. O. Clark. 2008b. *Pediocactus winkleri* Monitoring in Capitol Reef National Park. July 22, 2008. Report prepared for BLM and National Park Service. 6 pp.
- Clark, D. J. 2008. Summary of Repeat Inventory Monitoring and Site Visit Accounts to *Sclerocactus wrightiae*, *Pediocactus winkleri* and *P. despainii* sites. Report prepared for BLM and National Park Service. 31 pp.
- Cook C. and L. Stoddart. 1963. The effect of intensity and season of use on the vigor of desert range plants. *Journal of Range Management* 16(6): 315-317.
- McCarthy, J. 2003. Results from the use of a system of rest rotational grazing for livestock to improve wildlife habitat in Montana. *Journal of Mountain Ecology* 7 (Supplement): 13-16.
- Memmott, K., V. Anderson, and S. Monsen. 1998. Seasonal grazing impact on cryptogamic crusts in a cold desert ecosystem. *J. Range Manage.* 51: 547-550.
- Paulsen, Jr., H.A. 1975. Range management in the central and southern Rocky Mountains: a summary of the status of our knowledge by range ecosystems. Res. Paper RM-154. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 34 p.
- San Juan College. 1994. The effects of grazing on threatened/endangered plant species in the Hartnet and Sandy III grazing allotments, Capitol Reef National Park, UT. Prepared for National Park Service. 44pp appendices.
- Seefeldt, S. S., and S. D. McCoy. 2003. Measuring plant diversity in the tall threetip sagebrush steppe: influence of previous grazing management practices. *Environmental Management*, v. 32, no. 2, p. 234-245.
- Vavra, M. D. Parks, and M. Wisdom. 2007. Biodiversity, exotic plant species, and herbivory: the good, the bad, and the ungulate. *Forest Ecology and Management* 246: 66-72.
- Welsh, S. 1982. Range condition survey of Hartnet and Sandy III allotments, Capitol Reef National Park, Utah. 19pp.
- Wiley, D. 1994. Effects of livestock grazing on grassland birds in Capitol Reef National Park, Utah. Technical Report NPS/NAUCARE/NRTR-94/05. 27pp.

While the NPSs review is good start, a more thorough review of this issue must be done. Your analysis must also factor in climate change, both in terms of the 2-6 week earlier greenup than 50 years ago as well as the decrease in effective precipitation and greater evaporation rates.

Further, this basic range science must be incorporated in the EIS and ROD. Failure to do so will again vitiate the NEPA document and make the decision arbitrary and capricious.

We also provide Painter, 2006 Herbivory Review as an additional resource.

Dont be fooled into thinking that winter grazing has no impacts on both vegetation or BSC. To quote Hudak, 2013 (attached):

There is no right way to do a wrong thing. It is impossible to commercially graze domestic livestock on public lands without significantly degrading many public values.

We provide a number of papers for your review on this matter.

THE ECOSYSTEM DID NOT EVOLVE WITH LIVESTOCK

Cattle are a large non-native herbivore of which there was no analogous species since at least the last ice age. Carter et al., 2014 Holistic Management: Misinformation on the Science of Grazed Ecosystems provides a review of this issue in Section 2. We request that you also review the literature cited in this section. The paper concludes: Western US ecosystems outside the prairies in which bison occurred are not adapted to the impact of large herds of livestock.

We also provide the classic Mack and Thompson, 1982 paper.

The basic incompatibility of livestock grazing with the ecosystems of the arid west must be fully acknowledged and the final decision must deal with this fact.

BIOLOGICAL SOIL CRUST

BSC, while playing a foundational ecosystem role on CARE has essentially been ignored by the NPS. Little research has been done on BSC or its potential within the park and no management requirements or limitations have been implemented in relation to the NPSs authorization of livestock grazing and trailing.

We provide as attachments ten papers regarding BSC and its management with clear implications for the EIS and ROD.

Again, failure to implement the management implications of this mass of literature will result in a decision that is arbitrary and capricious.

Given the foundational nature of BSC, we request that you set up a project with Matt Bowker who did extensive BSC research and modeling work in the adjacent Grand Staircase Escalante National Monument to conduct a similar process on CARE so that not only can you determine departure from the reference state, but can also set measurable objectives and requirements in the permits. For instance, if crust coverage in the reference state is 70% and current coverage is 6%, then permit requirements need to include such actions as major reductions in livestock numbers and time until recovery occurs. While all grazing is destructive to BSC, certain conditions are somewhat less destructive, so requirements need to also be put in place to put any grazing to that time period.

ESA LISTED SPECIES

The NPS has done extensive monitoring of listed cacti species and has documented the destruction of plants as well as degradation of their habitat by livestock grazing and trailing. What has NOT happened is application of that monitoring to eliminate impacts to the species. That is what needs to happen in the EIS and ROD.

We provide as attachments just a few of the applicable documents. I expect the NPS to thoroughly review the mass of information on these species. Particularly necessary is the USFWS 2013 review of the impacts of livestock to the listed cacti species, which unfortunately was ignored in the recent BA.

For Townsendia, the NPS has done very little work on this species and again no management requirements or limitations

have been put in place to protect the species.

For MSO, the NPS must examine carefully the current degraded upland and riparian vegetative conditions in relation to MSO prey habitat. Clear, measurable objectives with timelines for recovery must be provided as common to all alternatives. The NPS must also carefully assess the current degraded conditions in relation to MSO Critical Habitat.

THE SCOPING NOTICE

On page 5 of the scoping notice, the NPS stoops to the low level of the BLM by proposing a wide range of actions to prop up the unsustainable livestock grazing that has been taking place and further degraded park resources and values, turning the allotments more into feedlots than they already are.

The scoping notice states The NPS has met with other agency technical specialists, our permit holders, and our cooperating agencies. Each one of these groups of people have little understanding of ecosystem function and all come from a livestock production world view, so of course the suggestions you get from them have little to nothing to do with protecting NPS resources and values and a whole lot to do with subsidizing and propping up the livestock industry.

Lets look at some of these individually:

More effectively coordinate with permit holders and adjacent land managers on overall administration of livestock grazing and trailing in the park;

The problem over the last 45 years is the NPS has lacked the spine to do what it knows to be right in the face of permittee temper tantrums. There is no need to expend any more energy than you already are in coordinating with permittees. What is needed is a science-based, ecosystem restoration plan with clear requirements and timelines and clear, punitive actions if those requirements and timelines are not met.

Collaborate with permit holders on the investments needed in labor and/or range improvements to implement the plan;

What this translates into is more range trash, more water developments, pipelines, fences, etc. instead of dealing with the foundational issue of stocking rate. Her the NPS is thinking with the same warped mentality that the BLM uses. Dump more money into propping up the livestock industry instead of dealing with the fundamental incompatibility of livestock grazing in these ecosystems.

Expand visitor education efforts regarding the history and status of livestock grazing and trailing activities in the park.

Translation - Educate visitors to expect a degraded, fouled and denuded park where the interests of a small handful of people take priority over NPS Policies or the Organic Act.

Adaptively manage timing, duration, intensity, and distribution of livestock grazing and trailing, based on collaborative, short- and long-term monitoring of desired conditions for key resources and range conditions.

This is bureau-speak for permit now, take action later or never. The above also does not deal with the foundational issue that livestock are incompatible with a functional ecosystem on the park. The primary researchers in range management science have all come to the conclusion that grazing systems are of secondary consideration and the most important issue is stocking rate.

Potential livestock grazing management practices and tools identified to date consist of both active livestock management (e.g., ongoing, hands-on activities and adjustments before, during and after the grazing season) and constructed range improvements (e.g., fencing),

We see this always in the usual 'suggestions as to how to deal with livestock impacts. While herding can reduce some impacts of livestock grazing, it increases others such as increases trampling and soil erosion, impacts to areas not preferred by livestock and hence in better condition and greater disturbance. Further, there is no way to enforce it.

The NPS proposed more fencing yet there is little evidence that rotational grazing is any better than season long at the same livestock densities, without getting into violations of Wilderness area management policies, degradation of visual resources, degradation of visitor experiences and impacts to wildlife movements.

Consider revising current animal unit month stocking rates, last updated 25 years ago, based on U.S. Department of Agriculture Natural Resource Conservation Service Ecological Site Descriptions and U.S. Department of the Interior stocking rate factors.

Consider is also often bureau-speak for doing nothing. The ESDs do not provide condition information. The only way ESDs would be useful is if the NPS mapped current range condition into the current states and then calculated carrying capacity by forage production in each state. This is far less accurate than doing clipped production studies. Further, the BLM (USDI) is a multiple-use agency whose main purpose is the transfer of public resources to private profit. Methods for calculating stocking rates on BLM lands would be wholly inappropriate for NPS lands. As we have stated previously, if the NPS does not set AUM levels based on reality and current conditions the resultant decision will be arbitrary and capricious.

- o Consider fencing to protect sensitive resources.

Again this prioritizes livestock grazing over the purposes and values of the unit, while impacting those very values.

- o Provide livestock access to water at locations outside the critical ecological footprint of sensitive hydrologic resources.

This proposal does not comply with NPS Policies as we have discussed above. Further, it demonstrates a complete lack of understanding as to why livestock denude riparian areas. Upland water developments do not reduce riparian impacts because upland water developments only provide one aspect of what livestock are seeking, water. They do not provide cooler microclimates, riparian vegetation and shade.

- o Explore the use of supplements and imported feed to encourage livestock to use areas away from sensitive resources.

More idiocy, in the rush to prop up the unsustainable livestock industry. This absurd idea is not even permitted by the BLM (except by approval during emergencies) Again, the NPS is proposing to prop up the unsustainable, by creating what amounts to feedlots on our National Park.

- o Consider active management of livestock through herding and/or developing pastures combined with pasture rotation strategies.

Please review Carter, 2013 regarding the fallacy of grazing systems.

The first and most important action that needs to be taken is bring the stocking rate into line with the physical capability of the land with current science and NPS policies factored in.

Secondly, establish a clear framework of measurable objectives with timelines along with clear accountability actions that are automatically triggered if objectives are not met.

Regarding trailing, all trailing should be restricted to existing roads and road ROWs.

THE ALTERNATIVE

Nearly everything we have discussed in these comments would need to be implemented as common to all alternatives, but at a minimum, the preferred alternative must incorporate all of the NPS Policy and direction we have discussed above. In addition, because you are mandated to plan and manage based on the best available science, the preferred alternative must set stocking rates based off a science-based process such as Catlin et al, 2003 that also explicitly factors in NPS Policies 4.4.1, which was not done in Catlin. The preferred alternative must also implement a science-based, performance-based, accountability-based framework to avoid the failures of the past, where permittees have severely degraded park resources

and values with no repercussions.

We request consulting party status for NHPA compliance.

We would like to set up a meeting with you to discuss the contents of our comments as well as the literature we are providing. Could you let us know when you have had a chance to review this material?

Sincerely yours,

Jonathan B Ratner
Director, WWP -Wyoming Office

Correspondence: 44

Date Received: 05/15/2015

Type: Letter

Organization: Yellowstone to Uintas Connection

Correspondence Text:

March 15, 2015

Leah McGinnis, Superintendent
Capitol Reef National Park
HC 70 Box 15
Torrey, UT 84775

Re: EIS Livestock Grazing and Trailing Management Plan Scoping Comments

Dear Ms. McGinnis:

Over the past 40 years, I have visited the Park many times as an end destination and to travel through in relation to my work on livestock grazing in the adjacent Grand Staircase Escalante National Monument. In 2010, as Utah Director for the Western Watersheds Project, I submitted a FOIA for information relative to grazing in the Park and later visited with your Natural Resource Director, Dave Worthington to discuss the issue.

To quote language from my FOIA letter, I have observed and photographed terribly degraded conditions including livestock-induced gullies tens of feet deep in the Halls Creek area with the soil in many areas barren and eroding at accelerated rates because cattle have eliminated the ground cover. The cattle were so driven by hunger they were eating the branches and trunks of greasewood shrubs. In addition, areas with artificial water tanks are surrounded by piles of manure and look like a moonscape - hardly the sight one would expect in a National Park, which we envision as being in pristine condition with a full representation of the native plants and animals functioning at or near their potential.

These conditions are typical of what we see in Capitol Reef and Grand Staircase. Neither the Park Service in Capitol Reef, or BLM in Grand Staircase have implemented the most basic of range science principles or enforceable permit terms and conditions that would alleviate the damage. The existing damage cannot be reversed with continued livestock grazing. My co-authors and I published a paper in the International Journal of Biodiversity in 2014 that addresses the fact that these lands, with their sensitive native plants and soil, are adapted to herds of large hooved mammals. I have not seen a soil survey for Capitol Reef if one exists, but in reviewing the soil survey for the Grand Staircase, containing similar soils and plants, livestock grazing had reduced forage available to about 25% of potential. Of course in this highly erodible landscape, gullies, rills and downcut streams are commonplace. Bank erosion is common, springs are nearly destroyed by livestock, littered with cowshit and hordes of flies to welcome visitors. This is not what our National Parks are intended to be.

The Yellowstone to Uintas Connection strongly opposes continued livestock grazing and trailing in the Park. There is no scientific or economic justification for its continuance and the Park Service should use the science and its own monitoring

Livestock Grazing and Trailing Management Plan
Environmental Impact Statement

Public Scoping Correspondence

data to support closing this activity down.

Your proposal implies that adaptive management will be used, yet in all the years I have worked on public lands grazing, adaptive management has been nothing more than a shell game where degradation, rarely documented, is explained away as historic, due to gophers, elk or other causes. Generally degradation is overlooked and the result is a faith-based continuation of the status quo with no adjustment of stocking rates. Then, of course, more pastures and water developments are proposed to more evenly distribute livestock. No supporting science is provided to show that these ever work, in fact they don't, because livestock have preferences in the areas they graze based on slope, plant community type, riparian or upland. They will graze these areas in preference to those near water developments until they are grazed out, then they concentrate near new water developments and continue to concentrate in springs, streams, riparian and wetland areas.

Our comments below are based on a review of the range science and relate to establishing stocking rates, water developments and grazing systems. Our principal concerns include:

1. The plant communities and soils in Capitol Reef NP are not adapted to livestock grazing, soils are highly erodible, biological crusts are eliminated as a result of trampling by livestock. Ecological and Economic values dictate that livestock grazing be ended in Capitol Reef NP.
2. Stocking rate is the most important variable as the literature shows. Grazing systems cannot compensate for overstocking.
3. The systems do not contain adequate rest for native bunchgrasses to recover. As you know deferred rotation is not rest as plants continue to be grazed during active growth.
4. Lands available or capable should be identified and the stocking rate determined by current desirable forage on those available lands. This is generally the grasses as they are grazed in preference to shrubs and forbs (we find today's forbs dominated by low growing unpalatable forms or annuals).
5. Utilization rate to determine stocking rate should be 25% of desirable forage on capable lands.
6. Permits must contain enforceable standards, terms and conditions that require moves from pastures or the allotment upon meeting the upland utilization standard; a riparian utilization standard that leaves sufficient herbaceous vegetation height (7) to provide cover for riparian obligate species - this corresponds to a 25% utilization and is not measured at the greenline, but in the aquatic influence zone outside the greenline.
7. Evaluate habitat fragmentation from fences and water developments and the effects of these water developments in concentrating livestock upon upland and riparian plant communities.
8. Analyze the past performance of water developments and other range improvements as well as grazing systems on allotment plant and soil community conditions in Capitol Reef NP.
9. Rangeland Health assessments are qualitative and do not address the habitat elements for wildlife or water quality.

The files listed at the end of this letter support these comments and must be analyzed in order for BLM to meet its requirement to take a hard look at the alternatives. These are available for download at <https://app.box.com/s/rcwwwsgzfsidz884mtlwvzo9fq4s50ag>. A CD containing these references will be sent via postal mail service if requested. If other references cited in these comments are needed, we will provide them upon request.

1. Capability and Suitability -The analysis for all alternatives should evaluate capability and risk to the watersheds and habitat by ensuring that forage for cattle and sheep occurs in sufficient quantity in capable areas during low precipitation years to support the numbers grazed for the length of time grazed. Agencies typically do not do this analysis accurately if at all. Relying on time and timing or utilization measures which are conducted sporadically will not ensure the native plant communities, and particularly, the sensitive native bunchgrasses such as Indian rice grass and others will be sustained or that soil cover will be provided adequate to prevent accelerated erosion.

The inability of the agencies to accurately measure utilization during the grazing period in order to move livestock, or at the end of the grazing period in sufficient locations to ensure standards are met and ecological functions protected, demand that a forage capacity determination be used and validated. By adjusting stocking rates, the risk of inadequate monitoring and the resulting degradation are lowered. Agency monitoring of utilization using single species and qualitative measures does not represent the actual utilization when compared to the herbaceous community using clipping methods.

Doing the necessary capability and forage capacity determination prevents the risk of overgrazing and loss of native plant communities and riparian areas by using the precautionary principle. This approach buffers management when staffing and funding are inadequate to monitor and as we have seen currently allow only minimal, infrequent monitoring in a few isolated locations that may not be representative of conditions across the allotment and in the different plant communities and topographic positions. Maps should be generated showing areas capable for cattle and sheep. These should be provided separately so the public can see whether capable areas are isolated patches, valley bottoms or steep slopes. In addition the capable areas should be superimposed on the vegetation or plant community types to allow a better understanding of the proximity to current and proposed water developments and to assist in understanding what plant communities are placed at further risk from livestock. Criteria for this analysis should include slopes <30%, tance to water <1 mile and exclude soil with high erosion hazard based on the soil survey K factors and universal soil loss equation. More details are covered below under the discussion on stocking rate.

2. Utilization - Science supports the use of a 25% utilization rate. The NRCS National Range and Pasture Handbook also supports this level of livestock use¹. Refer to the included file, UtilizationGrazingSystems_2013, for a more detailed review. Decades of research by range professionals provide direction to recover depleted bunchgrass communities, restore production and provide cover for wildlife species in upland and riparian areas. Galt et al. (2000)² and Holecheck et al. (2010)³ recommend 25 percent utilization to improve productivity and land health compared to higher utilization levels. To maintain adequate cover in riparian areas, USFS researchers have determined that 24-30 percent utilization across the riparian zone will maintain 6 residual height (Clary and Webster 1989)⁴. This approximates the 7 we recommend. These authors also indicate that, for riparian areas in degraded condition, as much as 15 years rest may be needed for recovery.

Native bunchgrasses require rest after being grazed during the growing season. Hormay and Talbot (1961)⁵ designed rest-rotation grazing to allow recovery after each grazing session, allowing sensitive native grasses to recover their vigor. Other BLM and USFS researchers have provided guidance for recovery of native grasses that may require multiple years of rest to restore vigor following grazing (Anderson 19916; Mueggler 19757). Anderson and Inouye (2001)⁸ working in sagebrush steppe in southern Idaho determined that native perennial grasses were recovering after 45 years of livestock exclusion and the increasing trend of these native grasses was inversely correlated to non-native invasive species such as cheatgrass.

3. Stocking Rate - Range scientists have determined that stocking rate rather than grazing system is the primary factor affecting rangeland production (Briske et al. 20089; Holechek et al. 199810; Van Poollen and Lacey 197911), yet agencies continue to place emphasis on water developments and rotation grazing systems rather than addressing current forage capacity and landscape constraints. Galt et al. (2000) and Holechek et al. (2010) provided recommendations for establishing stocking rates in arid rangelands 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. Table 1 presents factors that are applied to align stocking rates for cattle with capacity and reduce the risk of excessive grazing. These are then combined with current forage available and the consumption rates of livestock to determine the stocking rate. They also recommended grazing capacity surveys at no more than 10 year intervals.

>>Table 1

Forage palatability must be considered and stocking rates determined based on the current plant community composition, eliminating those species that are not desirable from the capacity determination. If this is not done, then the sensitive native species will be overgrazed as they are preferred forage. The current weights of cattle and sheep with their forage consumption rates must be used. See the file UpdatingAUM included with these comments. That review shows that forage consumption by cattle (cow/calf pair) is 1532 lbs/month, for Ewe and lambs it is 276 lb/month for each ewe lamb pair. The stocking rate for these allotments was established decades ago and has not been adjusted for current conditions.

4. Water Developments - Holechek et al (2001)¹² 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)¹³ 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.

In a comprehensive study of the effect of water developments on plant communities in the Little Missouri National Grassland, Rinehart and Zimmerman (2001)¹⁴ analyzed the effects of water developments for livestock on total species, native bunchgrasses, decreasers, increasers, perennials, native species, vegetation structure (using Robel Pole), and grass production (Table 2). Based on these sources, it is apparent that an area of one mile radius is adversely affected by each water development. This constitutes an area of disturbance per water development of about 2000 acres in which community structure attributes important to sage grouse and other wildlife species are degraded. This damage from existing and proposed water developments must be evaluated.

In addition, disturbance due to livestock grazing and trampling around salt areas, roads and fences must be analyzed.

>>Table 2

Measurement of habitat structure on 1000 foot transects leading away from four new water troughs in the Duck Creek allotment in Utah three years after the installation of the troughs provided the canopy cover of shrubs, forbs and grasses as well as the ground cover of forbs, grasses and bare soil. See DCreekReport_Final_03_04_13 in the references provided. The data is shown in the figure below.

>>Figure 1

Shrub canopy ranged from 25.2 to 37.7%, b grass canopy ranged from 6.6 to 7.9%, e soil ranged from 31.1 to 38.9% and grass forb ground cover ranged from 3 to 7.1%. a long term ungrazed location in the Highway 30 right of way adjacent to the allotments measured in 2012, cover found was 45% shrub canopy, 36% grass forb canopy, and bare soil was 14%. the trough locations, grass forb canopy > 7 inches was near zero, while at the ungrazed site above, grass forb canopy > 7 inches was 14%. a second big sagebrush site at a higher elevation in the Highway right of way, in October 2008, shrub canopy was 48%, ass forb canopy was 60%, th 13% greater than 7 in height, and bare soil was 2%. arly, the presence of troughs has affected sage grouse 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.

5. Deferred Rotation Grazing - Cattle heavily graze riparian areas before moving on to adjacent uplands to seek forage (Pinchak et al. 1991)¹⁵. This paper also documented that most use by cattle is in areas of less than 10% slope and near water. Capability analysis described above should also consider the cattle distribution factors provided in this paper and focus monitoring and management on these low gradient areas and near streams or springs. Deferred rotation grazing resulted in higher use of meadows and there was no correlation of upland presence of cattle with upland water developments (Gillen et al. 1984)¹⁶. Data collected from the BLM Duck Creek allotment in Rich County prior to and after installation of new upland water troughs and implementation of a four pasture deferred rotation grazing scheme illustrate that, in fact, the new deferred grazing system and upland water did not reduce bank trampling intensity at all, let alone approaching current recommendations¹⁷. See the included file DCreekReport_Final_03_04_13 which shows that bank alteration remained above 80% from trampling before and after installation of new upland water developments and a deferred rotation grazing system with four pastures. The report also shows extreme utilization in riparian areas, being near 90% before and after installation of the new upland water developments.

6. Fences and Habitat Fragmentation - If Park Management proposes new pastures and fences, pipelines and water developments, these, combined with roads and trails for OHVs, constitute habitat fragmentation that adversely affects wildlife. Noise and disturbance from vehicles, openings created by roads, presence of cattle and sheep, fences, and water developments all have negative impacts on wildlife, either thru direct mortality, loss of habitat structure and food resources, fear, displacement from preferred habitats and foraging times. In addition the random killing of native carnivores and other animals by herders or livestock producers are a major concern. The Analysis must incorporate the best available science on protection and management of wildlife core and corridor areas and the factors that degrade these. It must also delineate the species affected and the impacts on those species.

7. Native Plant Communities -Our observations and review of the science show that, as a result of livestock grazing, plant communities have or are being shifted to grazing tolerant species. This is the norm on public lands. Understories are dominated by unpalatable or toxic species and noxious weeds with elevated bare soil and increased erosion, greatly reduced grass production and are being shifted to forbs and grasses that are grazing tolerant. The analysis must address the potential plant communities, their current conditions relative to potential, relate those conditions to the presence of livestock and water sources and propose grazing management that will recover the native species in these areas. NRCS Ecological Site Descriptions are available that provide the species and production values for the plant communities occurring in these allotments. It is the Park Services duty to use the best available information and make a determination regarding the current condition and fate of the native plant communities under all alternatives. Environmental Analyses are greatly flawed by omitting these considerations and continuing the practices that lead to that very degradation while claiming otherwise.

8. Springs and Streams - It has been a common practice of Federal agencies to treat springs as water sources for livestock either directly or by diverting or altering them to water troughs. We almost never see any analysis of the potential and current condition of these water sources, their flow rates and their associated riparian areas and watersheds. The effects of livestock are ignored in spite of the wide knowledge of livestock impacts to riparian areas, yet the practice is allowed to continue. The Analysis should evaluate current condition of these water sources relative to their potential attributes such as flow, habitat, shading, extent of wetland and riparian area, species potentially inhabiting these areas and delineate how the project will restore or degrade these areas and their native complement of aquatic and terrestrial plants and animals.

9. Water Quality - The impacts of livestock on water quality include loss of stream shading, depleted streamflow, bank erosion, sedimentation and bacterial pollution. See the included review, LivestockWQ, for a discussion of the relevant watershed, stream, riparian and water quality issues and science showing the effects of livestock on water quality and riparian areas. The Park Service must demonstrate that surface waters in the project area meet State and Federal water quality requirements. In particular, when cattle are present in a pasture, water sources in those pastures should be monitored to ensure that E.coli meet criteria for drinking water and/or recreational use, whichever is applicable. The analysis must address the other factors listed.

10. Climate Change - Recognizing the current and coming changes to climate with longer, drier periods and drought, the Forest Service has implemented a Roadmap to address climate change¹⁸. This roadmap provides guidance to that agency, including, but not limited to:

- a. Assess vulnerability of species and ecosystems to climate change
- b. Restore resilience
- c. Promote carbon sequestration
- d. Connect habitats, restore important corridors for fish and wildlife, decrease fragmentation and remove impediments to species migration.

These are valid points for the Park Service to address as well. In addition, the National Fish, Wildlife and Plants Climate Adaptation Strategy proposed by the Fish and Wildlife Service, NOAA Fisheries and the American Fish and Wildlife Association describes climate change effects and emphasizes conservation of habitats and reduction of non-climate stressors to help fish and wildlife adapt¹⁹. Recent published research shows that grazed areas in the Bear River Range in Utah and Idaho are reduced in ground cover, herbaceous plant production, carbon and nitrogen stored in herbaceous plants and soils when compared to ungrazed areas or reference values²⁰. Another current paper reviews the influence of ungulate grazing on climate change and calls for elimination or reductions in these influences to restore resilience as a buffer against climate change²¹. These losses in productivity and resilience are likely occurring in the grazed areas of the Park. Concentrating livestock in smaller areas of the allotment by using grazing systems, fences, water developments and pastures has the potential to further reduce resilience, carbon storage and soil fertility.

11. Invasives and Weeds - 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, fence lines and roads are subject to increased populations of invasives. A review of livestock grazing related to weeds by Belsky and Gelbard (2000)²² described a number of mechanisms by which livestock grazing exacerbates weed infestations. This report is included with these comments as Belsky_Gelbard_Weed_Invasion. These include: Livestock transport weed seeds into uninfested sites on their coats and feet and in their guts; 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 germination²³.

12. Watersheds - If the project area includes public and private water supply watersheds, these should be delineated and the communities and individuals affected should be notified of the proposed action and its effects on their water supplies and given an opportunity for input. The effects of livestock grazing on water quality and water quantity should be analyzed, e.g. increased bare soil and/or compaction leads to greater runoff, less ground water recharge and lower summer baseflows.

13. Adaptive Management - In regards to the stated goal of using adaptive management, the Park Service must recognize that adaptive management is based on having enforceable, quantitative standards and adequate monitoring. For example, the Forest Service evaluated Adaptive Management in its work on the Northwest Forest Plan.²⁴ They stated that, Although the concept of adaptive management has an appealing simplicity to it, it remains primarily an ideal rather than a demonstrated reality. Inadequate training, staffing, and financial resources are described as major problems. Citizens surveyed on their experiences with adaptive management cite failure to follow through and that, despite organizational rhetoric, AMA management is 'business as usual. The authors concluded in this regard, that Clearly, there is a need for agencies to deliver on what it is they have said they will do.

The Bureau of Land Management also has published its own technical guide to Adaptive Management.²⁵ They cite the National Research Council definition of Adaptive Management as:

Adaptive management [is a decision process that] promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders.

BLM recognizes some key elements of the process in determining whether it is applicable or not. Some of these include:

- a. Management objectives must be stated explicitly.
- b. In the absence of uncertainty, adaptive management is not needed.
- c. In the absence of targeted monitoring it is not possible to reduce uncertainty and improve management.
- d. Adaptive management is not feasible if progress in understanding and improving management is not recognizable.

Livestock grazing and its effects have been researched for decades and Range Science has basic principles that have been established through this research. There is little uncertainty if the scientific principles of stocking rate are followed, standards are established on an ecological basis, monitoring is designed appropriately and carried out, and management then reflects that monitoring data in a timely manner.

Management methods such as providing the rest needed for native plant communities to thrive and retain their vigor and productivity are well established by the agencies own research. The tendency of cattle to concentrate in riparian areas and areas of less than 10% slope are likewise well documented, yet use is not monitored in these areas in any timely and systematic manner and no rest is provided. So, cattle linger, are not moved to the next pasture or off the allotment, and the streams and riparian habitat remain degraded. Likewise, long-term rest from livestock that is needed to restore biological crusts, soil cover, stream and spring function, watershed function, and native plants is never implemented in my experience.

14. References (alphabetical by file name)

- a. AndersonBLMBBunchDefol - This review of the effects and recovery of bluebunch wheatgrass to defoliation was published by BLM. It points out that trampling by livestock does not enhance seedling establishment; that it is quite sensitive to grazing during the growing season; grazing during this time reduces stem numbers, root and forage yields; and

- high mortality. It is most vulnerable to grazing during the boot/early flowering stage. Vigor recovery can require most of a decade of protection from grazing.
- b. Belsky_Gelbard_Weed_Invasion - This report by Joy Belsky and Jonathan Gelbard provides a comprehensive review of the role and mechanisms of livestock grazing in weed establishment.
- c. Belsky_Livestock_Riparian - This paper reviews nearly 200 scientific papers on the effects of livestock grazing on the various attributes of riparian and stream systems. No papers were found showing livestock had a beneficial impact on stream and riparian systems
- d. Braun_et_al_Seasonal_Habitat_Requirements - This symposium proceedings paper by Clait Braun, John Connelly and Michael Schroeder describes the seasonal habitat structural needs of sage grouse including describing the grass/forb component and the cover needed for various life stages.
- e. Braun_Sage_Grouse_Blueprint - This set of recommendations by Clait Braun covers most aspects of land management. In particular, his recommendation for residual cover for sage grouse is to: not exceed 25-30% utilization of herbaceous forage each year. Grazing should not be allowed until after 20 June and all livestock should be removed by 1 August with a goal of leaving at least 70% of the herbaceous production each year to form residual cover to benefit sage-grouse nesting the following spring.
- f. Briske_et_al_2008RotationalGrazing - This paper reviews the efficacy of grazing systems and points out that experimental evidence does not support rotational systems as more effective than continuous grazing. They state, Continued advocacy for rotational grazing as a superior strategy of grazing on rangelands is founded on perception and anecdotal interpretations, rather than an objective assessment of the vast experimental evidence.
- g. CarterChard_2010 - This symposium proceeding by John Carter et al reports on data collected in the Bear River Range. The findings show that areas grazed by livestock were lower in herbaceous productivity, soil carbon and nitrogen than nearby areas that have been excluded from livestock grazing. It also showed that livestock grazing and trampling reduce forest understory litter and disrupt mycorrhizal fungi which are important in decomposition and nutrient cycling, and forest health.
- h. CatlinCarterJones_2010 - This symposium proceeding evaluates BLM methodologies for measuring and reporting on ecological conditions based on five years of research on the Duck Creek allotment in Rich County. It found that BLMs methods were qualitative, underreported damage and utilization by livestock. Quantitative data on plant production and utilization by livestock combined with a science based capacity analysis showed that nearly six times as many livestock were grazing than is sustainable.
- i. CarterUSU9_06.ppt - Power Point presentation of cutthroat and bull trout spawning habitat condition in Idaho, Utah and Wyoming.
- j. ClaryWebster_int_gtr263 - This Forest Service Technical Report reviews grazing systems and provides recommendations for best management practices for protection of water quality, sustainable grazing management of riparian areas including long term rest for restoration, and that riparian areas in good or excellent condition left 6 of residual vegetation in the riparian zone and they state, 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.
- k. ConnellySage_Grouse_Guidelines - This paper provides a review of sage grouse habitat needs for the different life stages. Of particular importance is the need to provide sufficient cover and vegetation height to protect nesting and brood rearing areas. Leaving 7 residual herbaceous vegetation height in these areas in sagebrush and riparian zones are necessary to provide that cover and food base for sage grouse and chicks.
- l. Crider_1955 - This paper is the basis of agency claims that 50% utilization is sustainable and is used to justify allocating 50% of forage to livestock. However, the experiment used containers with mid western prairie grasses such as smooth brome with unlimited water and nutrients. These conditions do not represent conditions in the arid west as to water stress

and the sensitivity of native bunchgrasses to being grazed.

m. DCreekReport_Final_03_04_13 - This report provides data from Rich County in the Duck Creek allotment adjacent to the Project Area. It compares five years of data prior to implementation of upland water developments and a four pasture deferred rotation grazing system with three years after implementation. In spite of agency claims, riparian utilization and bank alteration did not decline after implementation of the system. Uplands remained heavily grazed. Habitat structure data show that no areas met the Connelly et al (2000) guidelines for nesting and brood rearing habitat, in fact, little herbaceous cover was found, reflecting the severely depleted productivity on the allotment and the high stocking rate of livestock that exceeds carrying capacity.

n. Feller_Comb Wash Case - This article describes the Comb Wash case which resulted in closure of sensitive canyon areas to livestock grazing to protect resources. This was based on balancing of resource uses.

o. Fleischner_EcologicalCosts - This paper describes the many forms of degradation to plants, animals and fish across the west due to livestock grazing.

p. GillenCattleDistributionMtnRangeland_JRM_1984 - This paper describes research into cattle behavior and preferred habitats under continuous and deferred rotation grazing systems. It found that small riparian meadows were most preferred, receiving use disproportionate to their area and that deferred rotation increased use in riparian areas.

q. GillenCattleUseRiparianMeadow_JRM_1985 - This paper studied the pattern of cattle use of riparian meadows under continuous grazing and a two pasture deferred rotation system.

r. Holechek_GrazingIntensity - This paper discusses the various aspects of grazing intensity, season of use and the effect of moderate or light stocking and grazing systems. A key finding is that rotational grazing schemes made little difference, most improvement occurred due to reductions in grazing intensity.

s. Holechek_GrazingStudies - This paper defines heavy, moderate and light utilization based on a review of grazing studies and notes that the 50% utilization allowed by agencies may work in humid areas, but not arid areas, resulting in range deterioration in these systems. Light use resulted in improvement of forage production, while moderate and heavy resulted in declines. Grazing systems did not result in improvement in arid areas.

t. Holechek_ShortDuration - This is a review of the claims and studies relating to short duration or time controlled grazing. It shows there is no experimental evidence supporting the claims of advocates of this system.

u. HolisticMgt_IntlJBiodiversity.pdf - This paper reviews the evolutionary and ecological adaptation of western lands to livestock grazing and the assumptions upon which time controlled, multi-pasture grazing systems are based.

v. HormayTalbot61 - This paper developed a rest rotation system based on studies of plant tolerance to grazing and defoliation, showing that sensitive native plant species would be lost under continuous defoliation or defoliation without adequate rest to restore vigor before being grazed again. The authors designed a rest rotation system based on these plant physiological needs.

w. IBLA Comb Wash Decision - Interior Board of Land Appeals decision on the Comb Wash Case.

x. KauffmanRiparianBelowground_2004 - The authors studied grazed and excluded riparian areas to determine the effects of grazing on water storage and nutrient cycling. Wet and dry meadows had higher infiltration rates and pore space when livestock were excluded than in areas that continued to be grazed. The rates of nitrification were also higher in excluded areas. The below ground biomass of plants was higher in exclosures than in areas continuing to be grazed.

y. LivestockWQ - Review of livestock grazing effects on water quality, riparian habitats and watersheds.

z. Mack_Thompson_Evolution_Steppe - The authors analyzed the adaptations of the native plant communities in steppe areas and found that these systems did not evolve with large numbers of hooved animals as was the case in the prairies to the east. This shows that claims of large herds of bison are mere myths used by the livestock industry and agencies to

deflect concerns over grazing large numbers of livestock in these sensitive areas.

aa. MuegglerBlueBunch - Forest Service research showing that native bunchgrasses such as bluebunch wheatgrass are not grazing tolerant to growing season use and require years of rest to recover from grazing episodes.

bb. Nickel Creek Decision - Decision by an Administrative Law Judge on a BLM decision to implement a multi pasture system in Idaho. Absence of permit terms and conditions is an important issue.

cc. PinchakJRM_91 - This is a study of the preference of cattle for particular areas, showing they spend their time in riparian areas and areas with lower slope angles in preference to other areas. Thus riparian valleys receive most use.

dd. Presidential Proclamation on Scientific Integrity - Describes obligations of agencies to ensure scientific integrity in decision making.

ee. Salt and Upland Water - Bryant - Cattle preferred riparian zones over uplands. Neither salt nor upland water influenced cattle distribution appreciably.

ff. Schulz_Leininger_Riparian_Exclosure_1990 - Studies of long term riparian exclosures compared to adjacent areas continuing to be grazed showed a loss of productivity in the grazed areas and much lower willow presence.

gg. ScientificIntegrity DOI Manual - Describes Department of Interior policy on scientific integrity.

hh. TrimbleMendelCowGeomorphic - Discusses the effects of cattle on soils, infiltration, erosion and geomorphology in upland and riparian areas.

ii. UpdatingAUM - This review assembles the historical data showing today's cattle are heavier and consume much more forage than agencies allocate per AUM.

jj. UtilizationGrazingSystems_2013 - Review paper by John Carter showing the scientific basis supporting utilization rates of 25%, notifying the area effects of water developments and providing a summary of reviews of the effectiveness of grazing systems for upland and riparian areas.

kk. Wuerthner Article on Grazing June 2013 - This article reviews some of the research cited by BLM to support livestock grazing, such as weed and fire control. It rebuts these presumptions and provides a series of rebuttals to the time controlled or Savory grazing concept.

Comments Submitted by:

John Carter

Yellowstone to Uintas Connection



Correspondence: 45

Date Received: 05/15/2015

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Organization: US EPA Region 8

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

1595 Wynkoop Street

Denver, CO 80202-1129

Livestock Grazing and Trailing Management Plan
Environmental Impact Statement

Public Scoping Correspondence

Phone 800-227-8917
www.epa.gov/region08
MAY 12 2015

Ref: 8EPR-N

Leah McGinnis, Superintendent
Capitol Reef National Park
HC 70 Box 15
Torrey, Utah 84775

Re: Scoping Comments for the Livestock Grazing and Trailing Management Plan at Capitol Reef National Park Environmental Impact Statement

Dear Superintendent McGinnis:

The U.S. Environmental Protection Agency Region 8 has reviewed the Department of the Interior National Park Service's (NPS) March 16, 2015 notice of intent (NOI) to prepare an Environmental Impact Statement (EIS) for the Capitol Reef National Park (CRNP) Livestock Grazing and Trailing Management Plan (Plan). The NPS intends to analyze environmental impacts associated with a comprehensive approach for managing livestock grazing and trailing. The EPA provides the following comments to assist with development of the EIS and in accordance with our authorities and responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

Background

The Bureau of Land Management (BLM) previously permitted and managed livestock grazing in the CRNP. Between 2000 and 2010, the NPS assumed responsibility for the permitting and management of the active allotments consistent with direction provided in the park's 1998 General Management Plan (GMP). While the GMP addressed potential effects of livestock grazing and trailing, it did not layout a comprehensive approach. Therefore, the NPS is developing this Plan to provide guidance and tools to the CRNP and its permit holders for long-term management to address potential impacts to natural resources, ecological processes, and cultural resources.

Currently there are two remaining grazing allotments within CRNP that will eventually phase out. The Hartnet Allotment is located in the northern area of the park and consists of 70,760 acres grazed by livestock from October 15 to May 31 with up to 163 cow/calf pairs for a maximum of 1,141 animal unit months (AUMs). The Sandy 3 Allotment is located in the southern section of the park and consists of 14,982 acres grazed by livestock from November 1 to April 1 with up to 82 cow/calf pairs for a maximum of 410 AUMs. The eight traditional livestock trailing routes that are utilized in the park by seven permittees will be allowed to continue in perpetuity; currently five trailing routes are used once or twice per year and the remaining three are only used periodically.

The project area lies within the CRNP Class 1 Area and also includes valuable aquatic resources. There are several important issues associated with livestock grazing that we recommend for discussion in the Draft 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. For informational purposes, we recommend that Draft EIS identify Class I and Sensitive Class II areas in the vicinity and qualitatively discuss the related baseline air conditions;
- 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;
- Whether the NPS will modify and/or continue to implement the BLM's standards and guidelines identified in The Utah Standards for Rangeland Health and Guidelines for Livestock Grazing Management 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 scopmg.

Based on preliminary information, the EPA's initial comments on the Draft EIS are specific to the following areas: (1) aquatic resources and (2) adaptive management and monitoring. We recommend the Draft 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.

Comments

Aquatic Resources

Existing Conditions

Existing resource conditions provide the basis for an effective analysis of potential impacts. Therefore, we recommend the Draft 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 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) can identify/validate any such CWA Section 303(d) listed water bodies potentially affected by the project.

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 Draft 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 Draft 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 is a good source of information concerning aquifers.

In addition, UDEQ has conducted source water assessments for groundwater and surface water sources of public water supplies and 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 Draft EIS 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. We also recommend that the Draft EIS include a generalized map, appropriate for public dissemination, showing the generalized locations of all source water assessment and protection areas associated with public drinking water supplies. The UDEQ or the public water systems themselves are primary sources for this information. Please note that more specific maps, available from the UDEQ, should be utilized by the NPS when locating project activities.

Effects to Impaired Water Bodies

We recommend that the Draft EIS describe potential effects on the CWA Section 303(d) listed water bodies within, or downstream of, the planning area. The Fremont Watershed includes impaired water bodies that may be within or downstream of the planning area. Some of these CWA Section 303(d) listed water bodies have been identified as impaired for dissolved oxygen, total dissolved solids, pH, benthic macro invertebrates bioassessments, and total phosphorous.

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, 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.

Effects to Wetlands and Riparian Areas

The EPA recommends that the Draft 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 Draft EIS describe how the NPS 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.

Water Quality Impacts o/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. We recommend the Draft 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.

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 Draft 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; and
- Monitoring to assess effectiveness of range improvements in protecting aquatic resources.

Adaptive Management and Monitoring

The March 2015 Scoping Newsletter identifies adaptive management and phased implementation of actions as potential practices and tools for managing livestock grazing and trailing. Timing, duration, intensity of grazing and distribution of livestock are all being considered as tools/practices to manage towards desired conditions for key resources and range

condition. When developing an effective adaptive management plan, we recommend the Draft EIS include the following features in the discussion:

- 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 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 available 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.

We note that the NPS has already identified some of these concepts. In addition, since the planning area is susceptible to periods of drought, we recommend the Draft EIS include a list of potential grazing strategies for use during periodic droughts that will maintain vegetation and aquatic resources in their desired conditions.

Monitoring Rangeland Condition

To help evaluate and adjust grazing management strategies, the EPA recommends that the Draft EIS include a monitoring section that describes how monitoring will be implemented 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.

Other Considerations

Endangered Species Act

We understand that the NPS will be coordinating with the U.S. Fish and Wildlife Service (USFWS) throughout the planning process since the planning area may contain numerous special status species under the Endangered Species Act, including Mexican Spotted Owl critical habitat. Documentation of the USFWS's consultation and recommendations for design criteria, mitigation, monitoring, and adaptive management strategies will be a valuable addition to the Draft EIS.

Closing

We appreciate your consideration of our comments at this early stage of the process. These comments are intended to help ensure a comprehensive analysis of environmental impacts, adequate public disclosure, and an informed decision-making process. If further explanation of our comments is desired, please call me at 303-312-6704, or your staff may call Melanie Wasco at 303-312-6540.

Sincerely,
Philip S. Strobel
Acting Director
NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation