



Animal Welfare Institute

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BY ELECTRONIC MAIL (submitted via <https://parkplanning.nps.gov>)

Grand Canyon National Park
PO Box 129
Attn: Bison Management Plan EA
Grand Canyon, AZ 86023

To Whom It May Concern:

On behalf of the Animal Welfare Institute (AWI), Animal Defense League of Arizona (ADLA), and The Humane Society of the United States (HSUS), I submit the following comments on the Initial Bison Herd Reduction Environmental Assessment (hereafter "Bison EA").

AWI, ADLA, and HSUS find the Bison EA to be woefully inadequate as it is based primarily on speculation of what impact bison may have on natural and cultural resources in Grand Canyon National Park (hereafter "GCNP") instead of providing site-specific evidence of such impacts. The frequent use of descriptive terms like "may," "could," "might," and "potentially," suggest that the National Park Service (hereafter "NPS") is anticipating impacts or effects that may be unlikely, may be exaggerated, or may never occur. Where the NPS provides site-specific evidence of alleged impacts, nearly all such evidence is in the form of unpublished, non-peer reviewed, or even a poster presentation which can hardly be considered appropriate proof of the alleged impacts and should not be relied on by the NPS in this decision-making process. This is not to suggest that impacts to natural or cultural resources in GCNP cannot occur, but the evidence provided by the NPS in the Bison EA is inadequate and does not comply with the legal standards set forth in the regulations implementing the National Environmental Policy Act (hereafter "NEPA").

In developing the Bison EA and, in particular, the proposal to kill hundreds of bison over the next 3-5 years within GCNP, the NPS is ignoring the plain language and intent of its own Organic Act, regulations, and management policies. These legal and administrative standards were intended to ensure that the NPS managed its lands, wildlife, and other resources in a manner that distinguished it from other federal land and/or wildlife management agencies like the United States Forest Service, Bureau of Land Management, or the United States Fish and Wildlife Service. Those agencies follow mandates that permit the intentional lethal killing of native wildlife, often administered in collaboration with state wildlife agencies, to achieve certain, pre-determined, management outcomes. The NPS, conversely,

follows legal standards that promote natural regulation where nature, not humans, should be the predominant force in shaping park ecosystems and ecological function.

This has been described as “hands-off management” but NPS policies permit active management but not the wholesale slaughter of native wildlife¹ to achieve “balance” or re-determined desired future conditions. In line with such standards, when or if management of wildlife populations is needed to address a legitimate adverse impact to a park and/or its use, the NPS should seek out those options that attempt to mitigate the impact in the field and that do the least harm to wildlife populations and individual animals. Lethal culling of bison in GCNP, as is proposed in the Bison EA, is antithetical to mission of the NPS, its legal mandates, and, more specifically, is not authorized under the plain language of the Grand Canyon National Park Establishment Act of 1919.²

In the present case, the inclusion of lethal culling in Alternative 2, the preferred alternative, is particularly egregious as there are alternatives available that could achieve a reduction in the GCNP bison population (if there is legitimate reason to reduce numbers) without employing lethal management strategies. This includes the live capture and removal of bison from GCNP or, preferably, the implementation of an immunoconceptive strategy to gradually and humanely reduce bison numbers. The preferred alternative includes a capture and removal component but, instead of relocating the target bison to areas where they would be protected for the remainder of their lives, the NPS is proposing to send the bison to lands where they will be subject to slaughter for sport and/or food.

The NPS appears to be so committed to permitting the lethal control of bison on its own lands or in assisting the Arizona Game and Fish Department (hereafter “AGFD”) in reestablishing a bison hunt on state and/or US Forest Service lands, that it has given short shrift to other non-lethal management alternatives. These options are feasible, effective, realistic, and far more humane than the elements of

¹ There is increasing archeological, paleozoological, and other scientific evidence that bison are native to the Colorado Plateau including the North Rim of GCNP with a nearly continuous record of inhabitation in this region. This area represents the southern portion of the range of bison and, therefore, they were not known to occur in the same density or abundance as documented in other portions of their range. See J.M. Martin, R. Martin, and J.I. Mead. 2007. Late Pleistocene and Holocene Bison of the Colorado Plateau. *Southwestern Naturalist*. 62(1):14-28 (available at: [file:///C:/Users/DJ%20Schubert/Downloads/Late%20Pleistocene%20and%20Holocene%20Bison%20of%20the%20Colorado%20Plateau%20-%20The%20Southwestern%20Naturalist%20%202017-03-01%20\(BZID%20BZAA000094645107\).pdf](file:///C:/Users/DJ%20Schubert/Downloads/Late%20Pleistocene%20and%20Holocene%20Bison%20of%20the%20Colorado%20Plateau%20-%20The%20Southwestern%20Naturalist%20%202017-03-01%20(BZID%20BZAA000094645107).pdf)); J.M. Martin and J.I. Mead. 2014. Re-evaluation of bison remains from the Greater Grand Canyon Region and Colorado Plateau: native or non-native. In 10th North American Paleontological Convention: Abstract Book: Paleontological Society Special Publications Volume 13:59 (available at: file:///C:/Users/DJ%20Schubert/Downloads/Martin%20and%20Mead_2014_RE-EVALUATION%20OF%20BISON%20REMAINS%20FROM%20THE%20Greater%20Grand%20Canyon%20and%20Colorado%20Plateau_Native%20or%20non-native.pdf); and Fonseca, F. 2016. Report finds Grand Canyon bison are native to region (available at: <https://phys.org/news/2016-06-grand-canyon-bison-native-region.html>).

² See Sixty-Fifth Congress. Sess. III. CHs. 40,41,44. S. 390, Public Law No. 277, February 26, 1919 (available at: <https://www.loc.gov/law/help/statutes-at-large/65th-congress/session-3/c65s3ch44.pdf>)

Alternative 2. In addition, they would garner considerable public support in contrast to what is anticipated to be substantive opposition to a bison slaughter within the boundaries of GCNP. Ironically, as the NPS concedes in the Bison EA, it was the hunting of bison outside of GCNP that caused the animals to now occupy GCNP year-round given the protections afforded within the park. Bison EA at 33. While the NPS has a “good neighbor” policy, this policy does not require it to capitulate to the interests of the AGFD particularly when less cruel alternatives to lethal control of bison are available.

The deficiencies in the Bison EA are significant and include a failure to:

- justify the purpose and need for the proposed action;
- provide a legal justification for the proposed capture, removal, and slaughter of bison in GCNP;
- consider a reasonable range of alternatives;
- disclose all relevant information and to properly elucidate and assess the full range of impacts inherent to the no action and action alternatives;
- subject bison management to a more comprehensive analysis in an Environmental Impact Statement.

Until and unless these deficiencies are remedied, the NPS cannot continue with the current decision-making process. It must either prepare a new, far more substantive Bison EA or, preferably and as is consistent with NEPA, prepare an Environmental Impact Statement (hereafter “EIS”). In this case, although the NPS originally intended to prepare an EIS on a long-term management plan for bison in GCNP,³ it is now attempting to circumvent engaging in such a comprehensive review by claiming that it must act immediately to reduce bison numbers in GCNP. NEPA, however, does not permit a federal agency to avoid the preparation of an EIS based merely on a self-serving claim that more urgent action is required. Given these deficiencies, at this time AWI, ADLA, and HSUS can only support Alternative 1, the no-action alternative.

The remainder of this comment letter will address these and related deficiencies in the Bison EA.

The NPS has failed to provide a legitimate purpose and need to justify the urgent implementation of a bison management plan for GCNP:

The NPS states that the “purpose of taking action is to (1) quickly reduce bison population density in collaboration with other agencies with jurisdiction for bison management on the Kaibab Plateau, and (2) protect park resources and values from the impacts of a steadily growing bison population.” Bison EA at 2. Such action is deemed to be needed “now” because:

- most of the House Rock bison herd spends a majority of its time inside the park.

³ See 79 Federal Register 18929, April 4m 2014.

- biologists estimate that since the early 1990s, despite a state-managed hunt outside the park, the House Rock bison herd grew from approximately 100 bison to between 400 and 600 bison that currently roam the Kaibab Plateau.
- the House Rock bison herd is expected to grow to nearly 800 bison in the next 3 years and as large as 1,200 to 1,500 animals within 10 years (Sturm and Holm 2015).
- Given current bison distribution, abundance, and density and the expected growth of the House Rock bison herd, the NPS is concerned about any current and potential increased impacts on park resources, such as water, vegetation, soils, and archeological sites; and on values such as visitor experience and wilderness character. Id.

Based on this need, the NPS has proposed to reduce the GCNP bison herd to approximately 140 animals over the course of 3-5 years requiring, given the anticipated annual herd growth rate, the removal of approximately 560 animals. Bison EA at 20. Of those 560 bison, the NPS anticipates that 275 would be captured live, 140 would be killed within GCNP, and approximately the same number would be hunted outside the park. Bison EA at 20.

NEPA requires that a federal agency “briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.”⁴ The information contained in any NEPA document must be of “high quality,” must “insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken,” and the information must be subject to “accurate scientific analysis.”⁵

The NPS has not satisfied these mandates in the Bison EA. In particular and as is discussed in greater detail below, the NPS has failed to provide credible evidence that the bison in GCNP are causing the impacts triggering the need for the implementation of a herd reduction plan. For example, despite the claim that the bison herd has grown from 100 bison to between 400 and 600 bison, the NPS provides no evidence to prove this assertion in the Bison EA. It fails to describe: the methodology used to count bison; any assumptions inherent to that methodology; whether any correction factors or extrapolation is used to provide a population estimate; whether population surveys are conducted from the air, ground or both; the experience of observers used to count bison; the frequency of such surveys; and it fails to disclose any survey data. This is not to suggest that the bison population has not grown or that several hundred bison may not inhabit the North Rim within GCNP but, without such data, the NPS is asking the public to believe its claims without providing any proof that they are accurate.

In regard to the anticipated growth of the GCNP bison herd to 1,500 animals in ten years, the NPS sites to Sturm and Holm (2015).⁶ As indicated in the references section of the Bison EA, Sturm and Holm is an

⁴ 40 CFR 1502.13.

⁵ *Id.* at 1500.1(b).

⁶ Sturm, M. and G. Holm. 2015. “GRCA Bison Deterministic Model Description and Spreadsheet, 10-28-2015.” Unpublished Analysis.

unpublished deterministic model and spreadsheet. Bison EA at 167. The NPS admits that the model is not “prescriptive” nor should it be used as a guide for implementation. Bison EA at 4, 19. Absent additional disclosure and analysis of the development, characteristics, and content of this model, it does not provide a reliable basis to justify the anticipated herd growth, the public has no means of critically evaluating its structure or parameters, and the NPS should not rely on it to prove that the GCNP bison herd will increase by so many animals by 2027.

Finally, although the NPS expresses concern for current and potential increased impacts on park resources such as water, vegetation, soils, archeological sites and park values including visitor experience and wilderness character, the NPS provides little site-specific evidence to verify these impacts. Indeed, absent some site-specific examples of a few archeological sites reportedly impacted by bison and visitor complaints about the number of bison dung piles on trails or in a few backcountry campgrounds, the other assertions by the NPS about such impacts are not substantiated. Instead, the NPS relies on rhetorical claims alone to create a doomsday scenario in an attempt to justify its preferred alternative. To make matters worse, the NPS fails to adequately consider whether other factors, natural and anthropogenic, including acute or chronic changes to ambient temperatures, precipitation amounts and timing, air quality, exotic or invasive species, or pathogens/disease may also be impacting park resources and/or values.

Absent the disclosure of far more detailed data and credible scientific evidence to justify the purpose and need for immediate action to reduce the GCNP bison population, the purpose and need statement is woefully inadequate and the decision-making process must be terminated.

The NPS has failed to provide a legal justification for the proposed slaughter of bison in GCNP:

The NPS provides no substantive discussion in the Bison EA of the legal justification for its proposed killing of bison in GCNP. It references a specific statute and its own policies to try to justify its actions but fails to acknowledge other legal standards which raise questions about the legality of the proposed action.

GCNP was formally established in 1919 by President Woodrow Wilson.⁷ The Grand Canyon National Park Establishment Act does not include any verbiage that authorizes the lethal control of any wildlife in GCNP. If a park’s enabling legislation does not explicitly authorize the killing of wildlife within a national park, that killing is not permitted.

While the NPS Organic Act does provide limited authorization for the NPS to “provide for the destruction of such animals and plant life as may be detrimental to the use of any System unit,”⁸ that standard is not

⁷ See Sixty-Fifth Congress. Sess. III. CHs. 40,41,44. S. 390, Public Law No. 277, February 26, 1919 (available at: <https://www.loc.gov/law/help/statutes-at-large/65th-congress/session-3/c65s3ch44.pdf>)

⁸ 54 U.S.C. 100752.

intended to permit the wide-scale slaughter of wildlife that are native to the ecosystem. It can be used, albeit sparingly, to remove specific “problem” or “nuisance” wildlife but only if those animals are proven to be detrimental to use of a park.

Use, in this context, clearly refers to public use of a park suggesting, that the NPS must demonstrate that, in this case, bison are adversely impacting public use of GCNP. The claim that bison may be overgrazing certain areas of the north rim, may be impacting water quality, or affecting other wildlife species in GCNP is irrelevant to this determination unless the NPS can link such impacts to effects on public use of the park. With the exception of reported complaints by park visitors of bison dung piles on some trails and in certain North Rim campgrounds, the NPS provides absolutely no evidence in the Bison EA to document that bison have caused a detriment to public use of the park. Without such evidence, the NPS is not authorized to engage in the lethal control of bison within the boundaries of GCNP.

The NPS avoids any reference to its regulations to authorize the slaughter of bison within GCNP. This is because there is no regulation that can be cited to provide a legal basis for the proposed action. The lack of such regulatory authority reflects the fact that, absent explicit Congressional authorization for lethal take of park wildlife in a park’s enabling act or proclamation, it was never the intent of the NPS to authorize the large-scale slaughter of wildlife in national parks. The authorization to remove wildlife detrimental to the “use” of a park was intended to be used sparingly and surgically to target animals that pose a real risk to public use of a park.⁹

The NPS claims that its management policies, specifically those in section 4.4, allow it to engage in the lethal control of park wildlife. It fails, however, to identify any specific policy or to include a discussion of how its policies apply in this case. Indeed, given the full suite of NPS management policies, an argument could be made that its policies do not permit the lethal control of bison particularly given the NPS failure to provide compelling and site-specific evidence of the alleged impacts of bison within GCNP and the availability of alternative management options. Even if specific policies provide justification for the proposed slaughter, they do not have the full force and effect of law as they are trumped by statutes and regulations which, in this case, do not authorize the use of lethal take of bison from within GCNP.

In addition, pursuant to NPS management policies, the NPS relies on a set of hierarchical planning documents to justify management actions. A key document in this hierarchy is the General Management

⁹ Indeed, in the past, GCNP proposed to remove specific deer that had become a danger to GCNP visitors after becoming acclimated to feeding by humans under this authority. While it is unknown if the GCNP exercised this authority, it targeted specific, “problem” deer and did not permit the whole-sale slaughter of park deer. See: https://www.nps.gov/grca/learn/nature/wildlife_alert.htm.

Plan (hereafter “GMP”) which, for GCNP, was prepared in 1995.¹⁰ According to NPS management policies, a GMP is:

a broad umbrella document that sets the long-term goals for the park based on the foundation statement. The general management plan (1) clearly defines the desired natural and cultural resource conditions to be achieved and maintained over time; (2) clearly defines the necessary conditions for visitors to understand, enjoy, and appreciate the park’s significant resources, and (3) identifies the kinds and levels of management activities, visitor use, and development that are appropriate for maintaining the desired conditions; and (4) identifies indicators and standards for maintaining the desired conditions. NPS Management Policies at 23.

As noted in the GCNP GMP, it is intended to “guide(s) the management of resources, visitor use, and general development at the park over a 10- to 15-year period.” Consequently, not only is the GCNP GMP out of date, but it contains no verbiage that even contemplates the use of lethal action to control native wildlife in the park making the proposed lethal culling of bison in GCNP bison inconsistent with management direction contained in the GMP.

The public has a right to understand if an action being proposed by any federal agency is legal and the agency, in turn, has an obligation to provide such a comprehensive legal analysis. Here, however, the NPS has failed to provide sufficient information or analysis of the legal justification for the proposed killing of bison in GCNP. Until and unless that analysis is provided in a revised EA or, preferably, an EIS, - the NPS must not continue this decision-making process.

The NPS has failed to consider a reasonable range of alternatives:

NEPA regulations require federal agencies to “identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.”¹¹

In the Bison EA, the NPS considers only two alternatives – the no action alternative (Alternative 1) and the preferred alternative (Alternative 2). The preferred alternative is a combination of non-lethal and lethal management options including the use of fencing to protect important natural or cultural resources, herding and hazing of bison to move them away from the rim of the Canyon or toward areas where other management actions are being implemented, non-lethal capture and removal, and lethal control via culling conducted with the assistance of qualified tribal members and volunteers.¹² Bison EA

¹⁰ Grand Canyon National Park, General Management Plan, August 1995 (available at: https://www.nps.gov/grca/learn/management/upload/GRCA_General_Management_Plan.pdf).

¹¹ 40 CFR 1500.2(e).

¹² AWI, ADLA, and HSUS strongly oppose the use of tribal personnel or skilled volunteers to kill bison in GCNP as authorizing such actions serves only to provide additional reason for tribes and hunting organizations to seek access to GCNP and other national parks to engage in sport hunting activities. While, for GCNP, this would require

at 23. Even with the assortment of management strategies contained in Alternative 2, the NPS has failed to consider a range of reasonable alternatives as required by regulations implementing NEPA.

The NPS discloses in the Bison EA that it considered fertility control and non-lethal capture and removal strategies as stand-alone alternatives but rejected them because they would not achieve a rapid reduction in bison numbers. Bison EA at 35, 36, 37. This assertion is either wrong and/or is not a legitimate basis for rejecting these options from additional analysis as separate, stand-alone action alternatives.

The NPS erred in not considering the implementation of a fertility control program as a separate alternative. The use of immunocontraceptive vaccines, namely Porcine Zona Pellucida (hereafter “PZP”) or Gonadotropin Releasing Hormone or Gonacon, has been documented to be safe and efficacious in bison (Miller et al 2004, Duncan et al 2013).¹³

On Santa Catalina Island, which is part of the Channel Islands archipelago off the coast of California, the birth rates of bison treated with PZP declined from approximately 67 percent prior to treatment, to 10.4 percent in the first year post-treatment, and 3.3 percent in the second year after treatment (Duncan et al 2013).¹⁴ There is no compelling reason why PZP couldn’t be successfully employed in GCNP.

It is true that, absent any direct removals, the use of fertility control to treat GCNP bison will not result in the immediate reduction in bison numbers. However, if a sufficient number of personnel and funding is available and efforts are made to either capture and parentally vaccinate or remotely dart a maximum number of female bison, the herd’s productivity could be immediately reduced to approximately zero. If the current population consists of approximately 400 animals and the herd’s sex ratio is 50:50, approximately 200 bison would require treatment to fully vaccinate the herd.

The consistent treatment of bison over multiple years given anticipated bison mortalities (natural or accidental) will gradually result in a reduction in bison numbers. Compared to non-lethal capture and

Congressional action to permit hunting in the park there is little question that many hunters and hunting organizations clamor for such access and will use any assistance provided to the NPS to cull wildlife as evidence that hunting is required in national parks to responsibly manage wildlife. The fact that the NPS indicates that volunteers will not receive any heads, hides, or meat from any slaughtered bison, does not address the broader concern about providing the impetus for hunters to seek hunting access to national parks.

¹³ See L.A. Miller, J.C. Rhyon, and M. Drew. 2004. Contraception of bison by GnRH Vaccine: A Possible Means of Decreasing Transmission of Brucellosis in Bison. *Journal of Wildlife Diseases*. 40(4):725-730. (available at: <http://www.bioone.org/doi/pdf/10.7589/0090-3558-40.4.725>); and C.L. Duncan, J.L. King, and J.F. Kirkpatrick. 2013. Romance Without Responsibilities: The use of the Immunocontraceptive Porcine Zona Pellucida to Manage Free-Ranging Bison (*Bison bison*) on Catalina Island, California, USA. *Journal of Zoo and Wildlife Medicine*. 44(4s):S123-S131.

¹⁴ A report on the status of the Santa Catalina Island bison immunocontraception project will be given at the upcoming 8th International Wildlife Fertility Control Conference in July 2017 in Washington, DC. The NPS is encouraged to ensure its officials attend this conference to obtain the most up-to-date scientific data on the safety and efficacy of immunocontraceptive use in wildlife, including, bison.

removal or lethal control, the use of fertility control will generate greater public/visitor support as it would provide a humane, non-lethal alternative that would permit the NPS to achieve its bison management goals without disrupting bison family groups, subjecting bison to harassment and potential harm via capture, and intentionally killing bison within GCNP.

The non-lethal capture and removal alternative, as described in the Bison EA, calls for the establishment of circular corrals at one or more locations, the capture of the bison (using hazing/herding, mineral bait, water, or other attractants), and their removal from GCNP. Bison EA at 20. The bison would be released on state or federal lands (e.g., US Forest Service) adjacent to GCNP to reestablish bison populations on those properties or they would be given to tribes that are members of the Inter Tribal Bison Cooperative.¹⁵ Bison EA at 20. On these lands, although not clearly articulated in the Bison EA, the bison would be subject to hunting, slaughter for food, or presumably could be used as stock to either establish or augment existing herds. As the number of bison that could be non-lethally captured and removed would only be dependent on funding, personnel, and equipment, it is unclear as to why this alternative, alone, could not be used to rapidly achieve NPS bison management goals in GCNP if sufficient evidence were provided for the need to act with such haste.

Another stand-alone alternative that should have been evaluated in the Bison EA is a holistic alternative that would combine non-lethal management options and habitat management strategies to rapidly achieve GCNP bison management objectives if evidence exists to justify the urgent reduction in bison numbers in the park. This alternative would combine non-lethal capture and removal of bison for placement in sanctuaries, the restoration or improvement of bison habitat on federal and state lands adjacent to GCNP (i.e., using prescribed burning, habitat manipulation, artificial plantings to create ideal bison habitat, and other proven techniques), hazing or herding (using so-called soft techniques) to move select bison groups off of GCNP lands, non-lethal management of bison on lands outside of GCNP, and selective fencing to immediately protect natural and/or cultural resources.

The need for non-lethal management of bison on federal and/or state lands outside of GCNP is linked to the need to create conditions that would facilitate bison restoration to those lands. As sport hunting facilitated bison emigration into GCNP and their occupation of park lands year-round, Bison EA at 33, removing that threat and harassment factor, at least short term, is critical to the success of this alternative. Long-term, while AWI, ADLA, and HSUS would prefer that non-lethal management strategies be used to manage the newly established herds to permit wildlife watching opportunities, the Arizona Game and Fish Department would ultimately determine the management strategies for these herds preferably implementing population management schemes that will retain the bison on non-GCNP lands.

¹⁵ Notably, the NPS fails to provide for the placement of the bison in privately-held sanctuaries as an option for the captured bison; an option that AWI, ADLA, and HSUS would support if there were credible evidence justifying the need to reduce the park's bison population.

The analysis of only two alternatives in the Bison EA, one of which is the no-action alternative, does not satisfy the requirements of NEPA. If the NPS intends to stand by its decision to limit its analysis to only a single action alternative it must provide additional explanation for its decision. Preferably, however, the NPS will reevaluate its lack of reasonable alternatives and, in a revised EA or EIS, subject additional alternatives to detailed analysis.

The NPS has failed to disclose all relevant information and to properly elucidate and assess the full range of impacts inherent to the no action and action alternatives:

NEPA regulations require federal agencies to “insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.”¹⁶ The information contained in a NEPA analysis must be of “high quality” and subject to “accurate scientific analysis.”¹⁷ The purpose of such mandates is to ensure that the agency considers the environmental impacts of its proposed action before implementing the action and to ensure that the public has an opportunity to participate in the decision-making process. In order for the public to submit informed and substantive comments for consideration by the agency, the agency must ensure that the public can understand all elements of proposed agency actions and that the relevant impacts, regardless of their severity, are distinguishable.

As previously noted, the NPS has grossly failed to disclose all relevant information required to permit the public to understand and provide meaningful and informed comments in response to the alternatives evaluated. This deficiency is not limited to failing to include data or evidence to substantiate claims contained in the Bison EA but it also encompasses information that is entirely absent from the analysis.

For example, despite noting that climate change will create drier and warmer conditions in Colorado River Basin including the GCNP, Bison EA at 14, no short or long-term temperature or precipitation data for the North Rim of GCNP is included in the Bison EA. Considering the direct link between temperature, precipitation (amount and timing), and vegetation production, composition, abundance, and vigor, failing to disclose such data is a significant shortcoming in the Bison EA. This deficiency is magnified given the NPS claims that bison are adversely impacting park vegetation, water sources (i.e., wetlands, seeps, springs, lakes, ponds), soils, and other wildlife as changing climatic conditions can directly or indirectly affect these same park resources.

For bison, beyond providing estimates of current bison numbers and claims that the bison population may increase substantially over the next decade, Bison EA at 3, the NPS not only failed to describe its bison counting or census methodologies but it neglected to include any information about the biological characteristics of the GCNP herd. There is, for example, no credible information about the age-structure of the herd, the actual sex-ratio of the population, growth rate, annual and age-specific survivorship,

¹⁶ 40 CFR 1500.1(b).

¹⁷ Id.

level of genetic (including allelic) diversity, number of distinct herds or social groups, herd-specific movement patterns, or existence or prevalence of any disease in the herd. This information is crucial to understand the impact of the alternatives on the bison population as a whole, social groupings, and individual animals.

While the NPS discussed some elements of visitor use and how bison can influence visitor behavior, traffic patterns, visitor safety, and the park experience, Bison EA at 148, it fails to disclose any meaningful visitor use data. With the exception of reporting a total of 289,357 and over 4.7 million visitors to the North Rim and all of GCNP in 2014, respectively (Bison EA at 64), the NPS does not provide any visitor trend data either for GCNP as a whole or for the North Rim area. Such data are crucial to understand how or if bison in GCNP has influenced visitor use of GCNP. Ideally, the NPS would engage in visitor surveys to assess visitor opinions about bison, positive or negative, so that such data can be incorporated into the NEPA analysis and decision-making process.

In addition to these examples of data entirely absent from the analysis, the NPS has failed to provide information to substantiate many of its assertions included in the Bison EA. Examples of such deficiencies include:

- The NPS claims that as the bison herd grows in size, the bison will consume greater amounts of forage potentially adversely impacting vegetation production, composition, abundance, and overall diversity, reducing plant vitality, and increasing individual and whole herd water consumption rate. Bison EA at 72. It provides no species-specific information about the preferred plants utilized by bison and how their distribution, abundance, vitality, and productivity have declined since bison occupied the park. Nor does it examine other factors, including recent changes in precipitation patterns or amount, ambient temperatures, or plant pathogens or disease that may have contributed to the reported reduction in vegetation in bison occupied landscapes. In regard to water resources, while the NPS includes information about the number of lakes, ponds, seeps, and springs on the North Rim, there is no data provided in regard to changes in the availability of water or alterations in the hydrology of the area since bison returned to the landscape. The lack of annual precipitation data for the region prevents a determination as to whether changes in precipitation patterns, and not water intake rates of bison, may be influencing any purported decline in water availability or other adverse impacts to the hydrology of the area that the NPS attributes to bison.
- The NPS claims that increasing bison number may adversely impact water quality by increasing water turbidity, reducing water recharge rates due to soil compaction, and reducing water quality including in underground aquifers as a result of increased nutrient loading caused by increased defecation in and around water sources. Bison EA at 78. With the exception of citing

to Coraci et al (2015),¹⁸ the NPS provides no data or other evidence documenting changes in water turbidity, recharge rate, or water quality on the North Rim in areas used by bison. Ideally, the NPS would have water monitoring data both pre and post bison return to the North Rim area which could provide evidence of changes to water characteristics that could be attributable to bison. In this case, it appears such data does not exist and, instead, the NPS is speculating that such impacts are occurring based on livestock impacts on water quality. Bison EA at 79. Coraci et al (2015) does not remedy this deficiency as it is merely a poster (Bison EA at 158) presented at some unnamed conference which apparently reported *E. coli* being found in some North Rim water sources in bison occupied habitat but could not attribute the contamination to bison.

- The NPS identifies some of the key plant species in the different types of habitats found on the North Rim and claims that bison overgrazing, trampling, wallowing, and associated disturbances may adversely impact the productivity, composition, abundance, diversity, and vitality of such species while also facilitating the spread of exotic species. Bison EA at 84. For exotic species, the NPS identifies some of the species of concern and notes that for some, including smooth brome, drooping brome, Kentucky bluegrass, and garden sorral, the feasibility of control is low. Bison EA at 50. The studies cited by the NPS to substantiate these claims are not specific to GCNP, are internal NPS documents or reports, or are not in the published, peer-reviewed literature. Reimondo et al (2015)¹⁹ which reported on bison impacts to wetland associated vegetation cover, appears to be a single page report from the proceedings of a conference about the Colorado Plateau. Bison EA at 166. The findings reported by Reimondo et al (2015) may be accurate but it is not sufficient to substantiate the broad claims made by NPS as to the impact of bison on vegetation resources on the North Rim. Long-term vegetation transect data collected and analyzed using proven vegetation sampling methodologies if available would provide a more meaningful and appropriate assessment of potential bison impacts to vegetative characteristics in GCNP. Ideally, this data would be presented alongside an analysis of other natural and anthropogenic factors that could be causing changes in vegetation characteristics so that the public would be aware that it is likely that bison alone are not responsible for any diminishment in vegetation production, health, abundance, and composition in GCNP.
- The NPS reports that bison movements and wallows are likely to result in compaction of soils and destruction of riparian vegetation in bison occupied habitat which, in turn, can reduce soil percolation capacity, erosion, and soil instability. Bison EA at 90. The NPS fails, however, to provide any information or data on past or existing soil characteristics other than noting that most of the North Rim lands contain loamy soils. Bison EA at 50. If there is evidence of erosion,

¹⁸ Coraci, V., C. Valle, B. Tobin, J. Reeder, and G. Holm. 2015. "Impacts of Bison on the North Rim of Grand Canyon National Park." Poster Session at the Geological Society of America Conference.

¹⁹ Reimondo, E., T. Sisk, and T. Theimer. 2015. Effects of Introduced Bison on Wetlands of the Kaibab Plateau, Arizona. The Colorado Plateau VI: Science and Management at the Landscape Scale, 120.

soil instability, and/or a reduction in water percolation rates in soils on the North Rim as a result of bison presence, that data should have been disclosed in the Bison EA. Absent such evidence, the claims made by the NPS are entirely speculative and should not be relied on in the decision-making process.

- The NPS asserts that bison presence on the North Rim may impact other wildlife either directly via trampling or, indirectly, as a result of habitat changes associated with bison foraging, movements, and water use. Bison EA at 96. Beyond identifying some of the small mammals, carnivores, scavengers, ungulates, birds, and reptiles and amphibians that could be impacted by bison, the NPS fails to provide any information about those species. For example, it provides no population estimates for any species identified in the Bison EA, no population trend data for said species, nor does it cite to any site-specific studies documenting bison impacts, adverse or beneficial, on any species. Considering that bison have been largely remaining in GCNP since the late 1990s (Bison EA at 3) and that their numbers have reportedly been increasing since that time, if the NPS is regularly monitoring other wildlife populations it should have data reflecting any change in population numbers. If such data do not exist then the NPS should not be asserting, based merely on speculation, that bison are likely to adversely impact many of the species that share its range on the North Rim.
- Only four special status wildlife species are considered in detail in the Bison EA (the Mexican spotted owl, California condor, the Northern goshawk, and the Northern leopard frog). Bison EA at 54, 56, 57. The NPS concedes that the survival and conservation of the Mexican spotted owl, California condor, and Northern goshawk or the integrity of their habitats are not likely to be adversely impacted by bison in GCNP (Bison EA at 108) although it claims, without providing any proof, that all of these species will benefit if the bison herd size in GCNP was reduced. Bison EA at 119. The potential for impact appears to be highest for the Northern leopard frog if individual frogs are found in or around water sources used by bison (Bison EA at 109) yet, due to the limited number of frogs known to occur in GCNP, these impacts are unlikely. As is the case with other wildlife species in the park, the NPS fails to provide any information about these special status species in regard to their population estimates, population trend data, identification of prey species, or prey density and trend data. This information, if available, should have been disclosed in order to provide a complete picture of the status of these species in GCNP and to provide the public with an opportunity to provide input to the NPS on the impact, or lack thereof, of bison on these special status species.
- The cultural and tribal resources in GCNP encompass a large variety of objects and values which are of importance in the history of GCNP and to the tribal nations that existed and/or continue to exist in the region. The types of objects or other items designated as cultural and tribal resources include archeological resources (e.g., pueblos, small habitation structures, storage features, rockshelters, thermal features and roasters, artifact scatters and caches, water control features, trails, rock writing, mining adits, roads, telephone and telegraph lines, historic dumps,

and tree towers) (Bison EA at 122), the North Rim entrance road (Bison EA at 128), and ethnographic resources (Bison EA at 132). The NPS claims that bison may adversely impact cultural and tribal resources as a result of soil compaction, trailing, wallowing behaviors, trampling, foraging, and water use. Bison EA at 122. While the NPS concedes that only 15 percent of the project area has been evaluated for such resources (Bison EA at 57), it is only able to identify a handful of sites that either exhibit evidence of bison use and potential adverse impacts or where bison wallows are known to occur. Bison EA at 122. Furthermore, in a random sample of 24 cultural/tribal sites examined in 2014, 15 showed evidence of bison presence but only two had been adversely impacted by bison. Bison EA at 58. Inexplicably, despite the lack of survey data and limited evidence of actual bison damage to cultural/tribal resources evaluated in 2014, the NPS concluded that that the potential exists “for bison to affect approximately one-third of the archeological sites.” Bison EA at 58. What the NPS failed to disclose is a site by site analysis of bison impacts to tribal and cultural resources describing, for each known site, whether there is evidence of bison presence and if any adverse impacts to the site could be attributed to the bison. Furthermore, as bison are believed to be native to the North Rim, bison presence at tribal/cultural sites or their impacts to such sites should not necessarily be deemed to be problematic but, rather, should be considered a natural element or process that can affect such sites. The mere fact that bison may have only recently re-inhabited the North Rim of GCNP should not be used to claim that bison impacts to tribal/cultural resources are unnatural or inappropriate.

- The NPS reports that the majority of North Rim habitat is suitable for wilderness designation under The Wilderness Act (16 U.S.C. 1131 *et seq.*). To qualify for wilderness designation, the lands in question must be untrammeled (i.e., unhindered and free from intentional actions of modern human control and manipulation), natural (i.e., free from the effects of modern civilization where native plants and animals predominate and with natural processes dominating the community organization), undeveloped (i.e., without permanent improvements or sights and sounds of modern human occupation and use), and provide opportunities for solitude and primitive and unconfined recreation (i.e., benefits derived from self-reliance, self-discovery, physical and mental challenges, and freedom from societal obligations). Bison EA at 138. The NPS concedes that it is preparing a Minimum Requirements Analysis (Bison EA at 138) to determine if the proposed action can be undertaken on North Rim lands declared to qualify as wilderness and if any restrictions need to be incorporated into the management action to prevent the loss of wilderness character of the lands. Where the NPS has failed is in not completing the Minimum Requirements Analysis and incorporating it into the Bison EA so that the public is aware of the content of the analysis, any restrictions imposed on the proposed action as a result of the analysis, and to facilitate informed public comments on the Bison EA and the Minimum Requirements Analysis.

- As indicated previously, the NPS fails to disclose visitor use data and trends for GCNP in the Bison EA with the exception of providing North Rim and overall GCNP visitor numbers for 2014. It did also include in the Bison EA a description of some of the visitor experience issues associated with bison use of North Rim lands (e.g., traffic congestion, safety issues for visitors that exit their vehicles to observe the bison, vehicle-bison collisions). Bison EA at 148. However, with the exception of disclosing that seven bison died as a result of collisions with vehicles in 2014 (Bison EA at 65) and reports of visitor complaints of bison dung piles on trails and in campgrounds (Bison EA at 148), no other specific data documenting any of the reported visitor issues, positive or negative, attributable to bison are disclosed in the Bison EA. Without such data it is impossible for the public to assess the severity of the alleged impacts of bison, including both impacts that benefit visitors and those that cause detrimental effects, on park visitors.

Beyond these deficiencies, the NPS has failed to define or establish measurable metrics for the impact threshold terms used in the Bison EA. Unlike many previous NPS NEPA analyses where it classifies the level of impact using terms such as “negligible,” “minor,” “moderate,” and “major,” in the Bison EA the NPS relies on an assortment of terms and phrases to describe the level of impact. Without defining these terms or providing metrics to use to distinguish between different classifications, the NPS will be unable to determine if its impact assessments disclosed in the Bison EA are accurate if the preferred alternative is selected. Moreover and, perhaps, more importantly, without such definitions or metrics the public simply cannot understand or distinguish between the different levels of impact. In Bluewater Network v. Salazar (721 F. Supp.2d 7 (D.D.C. 2010)), the court determined that a NPS EA on jet-ski use in Gulf Islands National Seashore and Pictured Rocks National Lakeshore was invalid based, in part, on the NPS reliance on impact threshold standards that were indistinguishable from one another.

Some examples of the impact threshold descriptors used in the Bison EA for which the NPS has provided no definitions or metrics include:

- beneficial impacts (Bison EA at 74)
- adverse impacts (Bison EA at 74, 118)
- incremental effect would be considerable (Bison EA at 74, 99, 124)
- noticeable contribution to adverse effects (Bison EA at 77)
- substantial contributions to beneficial effects (Bison EA at 77)
- incremental contribution of adverse impacts would be substantial (Bison EA at 80)
- increasingly adverse impact (Bison EA at 80)
- incremental contributions of the benefits would be substantial (Bison EA at 83)
- disproportionate adverse effect (Bison EA at 85)
- overall adverse cumulative impact (Bison EA at 85)
- substantial adverse increment (Bison EA at 85, 91)

- substantial increment to the overall beneficial cumulative impact (Bison EA at 88)
- contribute substantially to overall cumulative impact (Bison EA at 89)
- primarily beneficial (Bison EA at 99)
- primarily beneficial impact (Bison EA at 105)
- overall beneficial cumulative impact (Bison EA at 105)
- substantial beneficial increment (Bison EA at 105)
- adverse effects (Bison EA at 116)
- a small and intermittent increment to cumulative impacts (Bison EA at 118, 119)
- small intermittent, adverse effects (Bison EA at 119)
- substantial beneficial increment (Bison EA at 119)
- noticeable beneficial increment to this overall cumulative effect (Bison EA at 127)
- considerable adverse increment (Bison EA at 129)
- considerable contribution (Bison EA at 134)
- noticeable benefit (Bison EA at 137)
- overall beneficial impact (Bison EA at 137)
- substantial adverse impact (Bison EA at 140)
- adverse, with the incremental impacts being substantial (Bison EA at 149)
- adverse, with the incremental impacts being responsible (Bison EA at 149, 152)

The lack of standardization of terminology to describe the level of impacts is alarming and the failure by the NPS to define these terms and/or to create metrics to allow these impact levels to be measured and distinguished from each other compromises the ability of the public to fully comprehend the level of impact associated with the proposed action. For example, how is the public supposed to distinguish between a “substantial beneficial increment,” a “noticeable beneficial increment,” and a “noticeable benefit”? Or, what distinguishes “adverse effects” from a “substantial adverse increment” or an “increasingly adverse impact”? There is no remedy to this deficiency that the NPS can include in a Final EA or Finding of No Significant Impact. Instead, the NPS must either publish a new EA, a supplement EA, or, preferably, an EIS that contains a more standardized assessment of impacts using defined impact thresholds which include metrics that allow them to be measured and to be distinguishable.

The failure to disclose all relevant information and data in the Bison EA along with the lack of defined, standardized, and measurable impact thresholds renders the Bison EA invalid and illegal under NEPA.

The NPS has failed to prepare an Environmental Impact Statement to comprehensively assess the environmental impacts of its proposed action as required under federal law:

Given the deficiencies contained in the Bison EA as described above, there is no question that the NPS should terminate the current decision-making process in favor of engaging in a more complete analysis of the environmental impact of its proposed action in an EIS. The NPS originally planned to prepare an

EIS on bison management in GCNP based on an EIS scoping notice published in the Federal Register in April 2014.²⁰ The purpose of that EIS was “to address the impacts of the current abundance, distribution, and movement of bison on the natural and cultural resources of the North Rim of Grand Canyon National Park.”²¹ Notably, the originally planned EIS was not for the long-term management of bison in GCNP but, rather, for the management of the current abundance, distribution, and movement of bison inside the park. Sometime after this initial scoping process, the NPS elected to prepare an EA instead of an EIS. To justify this change in the level of NEPA analysis, the NPS attempted to reduce the scope of its analysis to focus only on an initial herd reduction analysis.

It is not consistent with the requirements of NEPA to avoid a more comprehensive analysis of the full range of environmental impacts of a proposed action in an EIS by reducing the scope of the analysis either spatially or temporally. Here, the NPS is attempting to claim that an EA is legally sufficient given its alleged urgent need to reduce the size of the GCNP bison population. Nevertheless, the NPS makes clear in the Bison EA that it intends to develop a long-term bison management plan and that this will require additional NEPA analysis (Bison EA at 3, 4, 5, 6) but does not indicate if this analysis will be in the form of a new EA, a revised or supplemental EA, or an EIS. Pursuant to the regulations implementing NEPA, the current proposed action and any effort to develop a long-term bison management plan must be evaluated in an EIS.

In determining if an EIS is the appropriate level of NEPA analysis, an agency must evaluate the significance of the impact associated with the proposed action.²² This is done by considering both the context of the action and the intensity of the impact. The context of an impact can include society as a whole, the affected region, the affected interests, and the locality.²³ In this case, since GCNP is one of America’s oldest, most popular, and important national parks (based on its geological history, uniqueness, biological diversity, and ecological value) and is considered one of the seven natural wonders of the world,²⁴ the context of the proposed action itself requires the preparation of an EIS to evaluate the impacts of bison management actions.

When considering the intensity of the impacts of a proposed action, NEPA regulations identify 10 factors that agencies are to consider.²⁵ If a proposed action meets or exceeds even one of the factors, the agency should consider preparing an EIS. In this case, the proposed management of GCNP bison, including the use of lethal control, meets or exceeds eight of the ten intensity factors. These factors include:

²⁰ 79 Federal Register 18929.

²¹ *Id.*

²² 40 CFR 1508.27.

²³ *Id.* at 1508.27(a).

²⁴ See <https://www.mnn.com/earth-matters/wilderness-resources/stories/the-7-natural-wonders-of-the-world>

²⁵ *Id.* at 1508.27(b)(1-10).

- Impacts that may be both beneficial and adverse. As indicated throughout the Bison EA, impacts associated with the proposed action are anticipated to be both beneficial and adverse depending on the impact topic being considered.²⁶
- Unique characteristics of the geographic areas such as proximity to historical or cultural resources, park lands, wetlands, or ecologically critical areas. GCNP is also a unique geographic area that, as indicated in the Bison EA, contains vast cultural resources, important and unique wetland areas including on the North Rim, and areas of ecological importance including critical habitat as designated under the Endangered Species Act.²⁷
- The impacts on the quality of the human environment are likely to be highly controversial. Considering the value that most people place on the protections afforded wildlife in national parks, the proposed capture and removal or killing of bison in GCNP bison, particularly when humane, non-lethal alternatives are available, will be highly controversial. In addition, the need for the action, particularly lethal control, and the availability of effective and realistic non-lethal options, including the use of immunocontraceptive vaccines, may be scientifically controversial which should mandate the preparation of an EIS.²⁸
- The impacts on the human environment are likely to be highly uncertain or involve unique or unknown risks. The Bison EA contains statements making clear that the NPS does not entirely understand what impact the proposed action will have on bison, visitor experience, cultural or ethnographic resources, or other park resources or values thereby mandating the preparation of an EIS.²⁹
- The proposed action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. Here, the NPS concedes that it intends to prepare a long-term bison management plan that will be subject to separate NEPA analysis. The current plan, as articulated in the Bison EA, will indisputably establish a precedent for any future, long-term, plan thereby requiring preparation of an EIS. If the current plan is finalized and permits the capture and removal or killing of bison, it is difficult to contemplate that this will not set a precedent for any long-term management plan.³⁰
- The proposed action is related to other actions with individually insignificant but cumulatively significant impacts. The NPS proposal for an urgent reduction in the GCNP bison population as articulated in the Bison EA is directly linked to a future long-term bison management plan. Both plans involve a variety of actions some of which may have individually insignificant impacts, but many of which involve impacts that are cumulatively significant. Notably, the NEPA regulations explicitly state that the significance of the impact “cannot be avoided by terming an action

²⁶ Id. at 1508.27(b)(1).

²⁷ Id. at 1508.27(b)(3).

²⁸ Id. at 1508.27(b)(4).

²⁹ Id. at 1508.27(b)(5).

³⁰ Id. at 1508.27(b)(6).

temporary or by breaking it down into small component parts,” which is precisely what the NPS has done by attempting to circumvent the preparation of an EIS by claiming that there is an urgent need to reduce the size of the GCNP bison population.³¹

- The action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. The Bison EA provides numerous examples of the alleged impacts of bison on various structures, objects, roads and other objects listed in or eligible for listing in the National Register of Historic Places thereby necessitating the need to subject such impacts to evaluation in an EIS.³²
- The action threatens a violation of federal law or requirements imposed for the protection of the environment. There is evidence, as described above, that the proposed action is not consistent the NPS Organic Act, associated regulations, or the Grand Canyon National Park Establishment Act of 1919. Furthermore, since most of the North Rim lands are recommended wilderness, the proposed action and, particularly, the use of vehicles, helicopters, snowmobiles, construction of corrals, hazing of bison, and shooting of bison may not be consistent with the Wilderness Act.³³

The NPS, instead of preparing an EIS on bison management in GCNP as clearly required pursuant to NEPA regulations, has attempted to circumvent such a detailed analysis by claiming that the urgent need to reduce the park’s bison population allows for the preparation of an EA. This is wrong and illegal. Given the severity of the impacts associated with the proposed bison management actions in GCNP, the NPS would be well advised to use the Bison EA, as intended under NEPA, as a tool to conclude that an EIS is the proper level of NEPA review in this case.

Conclusion:

The lethal control of bison in GCNP is not consistent with federal law, including the Grand Canyon National Park Establishment Act, NPS regulations, and/or its management policies. Furthermore, the Bison EA does not satisfy the legal requirements of NEPA. The NPS has failed to justify the purpose and need for its proposal to rapidly reduce the size of the bison population in GCNP including via lethal control, it failed to consider a reasonable range of alternative, did not disclose all relevant information, and its impact analysis did not provide sufficient, defined, and measurable criteria to understand, evaluate, or distinguish the impacts to bison, water resources, other wildlife, vegetation, or other park resources or values inherent to the alternatives evaluated. If the NPS intends to move forward with the implementation of a bison management plan to reduce the number of park bison, the impacts of such a proposal must be evaluated in an EIA to meet NEPA mandates.

³¹ Id. at 1508.27(b)(7).

³² Id. at 1508.27(b)(8).

³³ Id. at 1508.27(b)(10).

There are alternatives to lethal control of bison in GCNP but, in its efforts to placate the AGFD and its desire to provide opportunities for bison hunting in and near the park, GCNP has not provided such alternatives, including the use of immunocontraceptive vaccines, with the attention that they warrant. If the NPS can prove that GCNP bison are adversely affecting public use of the park, it should explore the use of non-lethal and humane strategies to remedy the impacts while managing bison on the range. Such a compassionate choice would generate considerable public support for the NPS in contrast to the likely public scorn and outrage that will follow any decision to kill bison in the park.

AWI, ADLA, and HSUS strongly encourage the NPS to reconsider its strategies for bison management in GCNP and to embrace non-lethal and humane methods to manage the bison herd if credible evidence exists that such management is necessary.

Thank you in advance for considering this input on the Bison EA. Should you have any questions or need additional information, please contact me at dj@awionline.org or, by telephone, at (609) 601-2875.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Schubert". The signature is fluid and cursive, with a large initial "D" and a long, sweeping underline.

DJ Schubert
Wildlife Biologist