July 23, 2022

Susan Eickhoff, Forest Supervisor
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Kristy Groves, District Ranger
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Ashley National Forest
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Re: Objection to Aspen Restoration Project

Sent VIA email to: objections-intermtn-regional-office@usda.gov and kgroves@fs.fed.us

This objection is filed by the Yellowstone to Uintas Connection, Alliance for the Wild Rockies, Native Ecosystems Council, Western Watersheds Project, WildEarth Guardians, and Wildlands Defense in accordance with the instructions provided in the Draft Decision Notice. The Draft Decision Notice announced that the Ashley NF intends to implement this decision immediately following release of the Final Decision Notice.

Comments were submitted on behalf of these organizations. They were dated July 6, 2021 (signed by John Carter). July 6, 2021 (signed by Sara Johnson), and July 9, 2021 (signed by Adam Rissien). Because the June, 2022 EA/FONSI and Draft Decision Notice failed to adequately respond to the points we raised in our comments, we are not going to repeat those in detail in this objection. Instead, we are attaching these comment letters and a brief summation of the aspects of the projects objected to. Our full analysis and points that the Forest Service must address are contained in those comments. A link to references cited in our comments can be used to access those documents. Violations of law and regulations flowing from those laws include:

- NEPA failure to complete "hard look" and "cumulative effects" analysis, fails to describe baseline or current conditions, is not based on the best available science, and does not provide effective alternatives such as removal of livestock
- NFMA failure to comply with terms of the Ashley NF 1986 LRMP and NFMA requirements to assess species viability and habitat capability
- MUSYA failure to manage without impairment of the productivity of the land
- APA violation by approving a project based on arbitrary and capricious use of design criteria and lack of evidence supporting the project
- ESA violation by failing to analyze and consult on the direct and indirect effects of the project on candidate, threatened, or endangered species.

- Failure to comply with the intent of the Roadless Rule
- Failure to comply with the Migratory Bird Treaty Act and Fish and Wildlife Service MOU

1. **Mitigation Based FONSI** was used as the basis of approval. We noted that the original project was a CE and that when it was changed to an EA, the analysis did not change in any significant way. Mitigation-based FONSIs require a "hard look" and that is not provided. Proposed mitigation for aspen treatments, fencing to keep livestock out, or removal of livestock was never identified as a planned activity; mitigation measures are required to be effective if they are going to eliminate significant impacts to wildlife.

2. **Roadless Areas** affected by the project also occur in the Uinta Wasatch Cache NF. No Forest Plan provisions for the UWCNF were addressed. The EA mentions the 2001 Inventoried Roadless Rule but contains no analysis of the characteristics of the 24 IRAs included in the Project Area. This is relegated to the RE, which provides general descriptions of the landscape, habitats, and activities occurring in the IRAs, but no site-specific analysis of these and the factors affecting the IRA characteristics, such as roads, road densities, extent of unauthorized roads and trails, extent of these to be used to carry out the project, infrastructure, mines, timber projects and other activities. There is no analysis of habitat elements needed for species like lynx, wolverine, and other special status species. There is no analysis of the extent and size classes of trees to be cut, extent of pile burning, no analysis of how roadless characteristics will be maintained or improved. There is no analysis of the effects of past activities conducted in these IRAs on their characteristics. The proposed treatment of 147,858 acres of aspen within inventoried roadless lands, which is 83% of the total planned for treatment, is a violation of the Roadless Rule.

3. **The Project Purpose** was to "restore aspen forests where an assessment has indicated a need for treatment". Yet, despite the statement that an assessment was performed, we don't see that assessment or an analysis of the 1,171 aspen study plots claimed to exist, no analysis of the status of prior treatments, no analysis of the effects of livestock, no presentation of stand structure, understory plant community cover and diversity as compared to potential or desired future conditions. There was no effective alternative to restore aspen such as removing livestock, which are a major factor in aspen loss. An EIS and full analysis is needed. For example, the Fishlake NF completed an EIS for treating 55,106 acres of aspen in its Monroe Mountain project. This proposed aspen project is 177,707 acres.

4. **The Forest Plan** provides many issues for analysis as to whether Forest Plan intent has been carried out, how current conditions compare to past, and the results of planned monitoring. It describes degraded conditions, but the EA does not analyze how forest management has addressed or corrected those or the habitat needs and conditions for special status species. It does not evaluate the range management situation and analyze condition and trend, stocking rates and whether aspen are directly and indirectly affected by livestock and their management. Old growth is not delineated, forest cover types are not analyzed, and the

extent of timber manipulations and their effects on aspen and other types considered. Road densities are not analyzed relative to wildlife security. Management Zones and their objectives or requirements are not delineated or analyzed. Wildlife habitat provisions are not addressed. Habitat capability for special status species, T&E, MIS, Sensitive species is not determined. No population trends are provided.

5. **Climate Policy** was not addressed. This includes connectivity, carbon storage, and an analysis of the capability of migration corridors to support species such as lynx. The effects of timber harvest, livestock grazing, roads, oil and gas, mining, and other permitted activities on connectivity and habitat capability for wildlife was not addressed. The loss of carbon storage as well as emissions was not addressed.

6. **Livestock Grazing** was excluded from analysis despite the known detrimental effects it has on aspen, aspen understory, and other forest types as well as riparian areas, water quality and spawning areas. A full analysis of stocking rates, capability, water developments and their impacts on aspen and other vegetation types was not done.

7. **Aspen** are described as progressing towards mature and old classes, yet the EA is unclear in its characterization of aspen stands. The claim of old and mature seems in conflict with Figure 2 that shows a lack of older classes. There is no information on recruitment, no overlay of stand status with livestock capable areas, and water developments which can have devastating effects on aspen recruitment. Stands that are not subject to livestock grazing should be compared with those that are subject to livestock grazing. Locations of sheep bedding areas needs to be assessed for recruitment and understory composition. Locations near livestock water sources need to be assessed for recruitment and understory composition. Areas away from water and upslope should be compared to valleys and areas near water. Surely, out of the over 1,000 plots the ANF reported it has monitored, there is data for these and other comparisons.

8. **Fuel Treatments** and their outcomes on the Ashley NF have not been analyzed. Nor is the science behind the claims that fuel treatments affect fire severity analyzed. Treating fuels to reduce fire occurrence, fire size, or amount of burned area is ultimately both futile and counter-productive because most acreage burned is under extreme conditions which make suppression ineffective. If, due to treatments, moderate intensity fires are suppressed this leads to most acres burning under extreme conditions. Reducing burned area would not be desirable as large fires were common prior to European settlement and many western plant species are adapted to large, severe wildfires. Large fires generally have many areas lightly to moderately burned. Any fire could offer a unique opportunity to restore fire to historically fire-dominated landscapes and thereby reduce fuels and subsequent effects. Reducing fuel hazard is not the same as ecosystem restoration. Treatments such as mastication and thinning to reduce wildfire risk are highly controversial and uncertain and will not overcome long-term drought and high temperatures caused by the climate crisis.

Mastication breaks, chips, grinds canopy and surface woody material into a "compressed fuel bed" while thinning that removes fire-adapted species and leaves shade tolerant species fail to consider the ability of the treated areas to adapt to future climate conditions. Fire itself can best establish dynamic landscape mosaics that maintain ecological integrity. Prescribed fires and pile burning can get out of control as well. Consider the recent New Mexico fire that started with pile burning.

9. **ESA Species** Lynx, wolverine, Colorado River endangered fish species, Monarch butterfly, and whitebark pine are all candidate or listed species requiring consultation with Fish and Wildlife Service. This has not been done. Lynx habitat requirements are not compared to current conditions or conditions when lynx was resident in the Uintas. LAUs and linkage areas are not analyzed to determine the extent of habitat fragmentation and alteration by forest activities such as timber harvest, wildfires, roads, mines, oil and gas, livestock grazing effects on lynx prey and lynx habitat. Similarly, wolverines are dismissed without analysis of their habitat requirements and current habitat conditions, or capability.

10. **Monarch Butterfly** habitat and occurrence was not analyzed to show whether the various plant communities or vegetation types it requires occur on the Ashley NF or in the project area and whether the project, livestock grazing, or past project activities have degraded its habitat.

11. **Whitebark Pine** is mentioned but no habitat areas or populations are mapped in the Ashley NF.

12. **Other ESA and Sensitive Species** EA Tables 2 and 3 list plant and animal species that are listed under the ESA or are Sensitive Species. As such, their specific habitat requirements and the locations of that habitat need to be mapped and identified relative to the Project Area, the cumulative effects area and individual treatment areas. The potential and current capability of the habitats to support viable populations of these species must be determined along with their current population status across the ANF and UWCNF. For example, the number of flammulated, boreal, great gray owl, three-toed woodpecker, and red-naped sapsucker nests that will be destroyed with the aspen project is never estimated, yet no significant impacts on these MIS and sensitive species was noted in the draft EA and wildlife reports. Analysis of Northern goshawk habitat and identification of home range areas, PFAs, nest areas affected, population status was not done. Project impacts must be analyzed for all special status species.

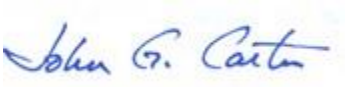
13. **Reliance on Design Criteria and BMPs** This Project will rely on Design Criteria and BMPS. These are assumed to be effective and relied upon. However, a fundamental aspect of NEPA is to take a “Hard Look” at current management, conditions, assumptions, and implementation. NEPA requires the Forest Service to account for the current degraded conditions it claims, such as conifer encroachment into aspen stands. But what is the mechanism of this conifer encroachment and lack of recruitment in aspen stands? Is it past

fire suppression? Livestock grazing? Past vegetation management implemented by the Forest Service? What is the history of this project area? What Forest actions or permitted activities play a role in the current state of aspen, wildlife habitat, watershed health and other ecosystem attributes? There is no analysis, merely a tabulation of various design criteria.

14. **Cumulative Effects** are not considered. For example, currently the Ashley NF has this project, a Forest Wide Range Improvement Project and a Forest Wide Prescribed Fire project being planned. These are all major actions requiring an EIS and detailed analysis of their combined effects to all ecosystem attributes we have described.

15. **Remedy** In our comments we have outlined numerous failings by the Forest Service to address causes of the issues adversely affecting vegetation communities, wildlife, their habitats, and climate. These failings must be corrected by remanding this EA/FONSI/DN back to the Forest Service for preparation of an Environmental Impact Statement, or withdrawal of the Project in its entirety.

Respectfully,



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Re: Comment - Ashley National Forest Aspen Restoration Project

Sent VIA USPS Certified Mail/Return Receipt and VIA email to: comments-intermtn-ashley@fs.fed.us and kgroves@fs.fed.us

Dear Supervisor Eickhoff and District Ranger Groves:

Yellowstone to Uinta Connection, Alliance for the Wild Rockies, Native Ecosystems Council and Western Watersheds Project are submitting these scoping comments for the Ashley National Forest Aspen Restoration Project (Project). The Project should be withdrawn for the reasons provided in these comments.

Yellowstone to Uinta Connection (Y2U) is a 501c3 public interest organization whose staff and members have and will continue to work to protect the integrity of habitat for fish and wildlife as well as recreate in this region. We are concerned about the loss of integrity of the Regionally Significant Wildlife Corridor (Corridor) that connects the Greater Yellowstone Ecosystem and Northern Rockies to the Uinta Wilderness and Southern Rockies. The Yellowstone to Uinta Connection organization was given this name to bring attention to this Corridor and we use this name in reference to both the organization and Corridor as it provides context and public awareness to the location and its importance. Yellowstone to Uinta Connection is headquartered in Paris, Idaho with a satellite office in Bondurant, Wyoming.

Alliance for the Wild Rockies (AWR) is a 501c3 public interest organization whose mission is to secure the ecological integrity of the Wild Rockies Bioregion through citizen empowerment and the application of conservation biology, sustainable economic models and environmental law. Alliance for the Wild Rockies is headquartered in Helena, Montana.

Native Ecosystems Council (NEC) is a 501c3 public interest organization whose staff reviews Forest Service National Environmental Policy Act (NEPA) assessments of Forest Service impacts on wildlife in the Northern Rockies. NEC is headquartered in Willow Creek, Montana.

Western Watersheds Project (WWP) is a non-profit conservation organization founded in 1993 with the mission of protecting and restoring western watersheds and wildlife through education, public policy initiatives, and legal advocacy. Headquartered in Hailey, Idaho, Western Watersheds Projects has over 11,000 members and supporters, field offices in Idaho, Nevada, Wyoming, and Arizona, as well as additional staff covering Washington, Oregon, California, Montana, Utah, Colorado, and New Mexico.

1. The Scoping Letter

The Scoping Letter we downloaded from the Ashley National Forest (ANF) website is dated 10/28/2019 and appears to be the same that we commented on in our comments dated December 1, 2019 on behalf of AWR, NEC and Y2U. That Scoping Letter laid out the process that could lead to a Categorical Exclusion related to Extraordinary Circumstances. As we have reviewed the Specialists Reports and EA we also downloaded from the ANF website, we find many references to CE and Extraordinary Circumstances. Those reports have not been updated since 2019 to reflect that the ANF now has prepared an Environmental Assessment (EA) for the proposed Project. We see very little difference in the original Scoping Report and the current Scoping Letter or EA. Both lack site specific analyses and approval of the Project is based on "design criteria" and best management practices (BMPs). This is a mitigation-based Finding of No Significant Impact and leaves the public with no meaningful analysis of impacts by delaying site-specific analysis until after the opportunity for the public to comment has come and gone.

While mitigation-based FONSIs have been approved in some court cases, there are interesting caveats as outlined in one review of this situation. This relies on: (1) whether the agency took a "hard look" at the problem; (2) whether the agency identified the relevant areas of environmental concern; (3) whether the agency made a convincing case that the expected impacts were not significant; and (4) if there was a truly significant impact, whether the agency "convincingly established" that changes in the project were sufficient to reduce it "to a minimum." [1] As the review pointed out, this last criterion requires a heavy burden of proof to justify a mitigation-based FONSI.

The Scoping Letter lays out a very large Project Area that includes 177,707 acres on the Ashley NF. What is missing from the Scoping Letter and EA is any mention that some of the treatment areas also occur on the Uinta Wasatch Cache National Forest (UWCNF). The Roadless Evaluation (RE) states, "The individual roadless area evaluations are presented in numerical order. The first three are part of larger areas which include lands on the Wasatch-Cache and

[1] Herson, A. (1986). Project Mitigation Revisited: Most Courts Approve Findings of No Significant Impact Justified by Mitigation. Ecology Law Quarterly, 13(1), 51-72. Retrieved June 23, 2021, from http://www.jstor.org/stable/24112816

Uinta National Forests."[2] Some 16,652 acres of Inventoried Roadless Areas in those three areas are to be included in this Project. It is a major flaw that the EA and Scoping Letter failed to address this and that provisions of the Forest Plans for those Forests are not included in the analysis.

The EA (p4) states that:

> "The purpose of this project is to restore aspen forests where an assessment has indicated a need for treatment with consideration of the effects of ungulate or livestock browsing. The goals and objectives of the project are to move aspen forests closer to the desired future conditions and:
>
> 1. Increase aspen resilience and improve wildlife habitat by:
>
> - Increasing the age-class diversity of aspen on the landscape
> - Restoring and maintaining self-replacing aspen stands
>
> 2. Increase forest resistance to uncharacteristically large and severe wildfires, and increase opportunities for managing wildfires for natural resource objectives by:
>
> - Expanding the extent of aspen on the landscape
> - Reducing conifers in aspen-dominated stands to reduce fire intensity

While describing the acres of potential treatment of aspen at 177,707 acres, the EA (p5) notes that over 30 years, 1,171 long term study plots have been established in aspen stands and impacts from various activities monitored. Several plots are within aspen stands that have had previous treatments such as prescribed fire, salvage, or clear cutting.

There was no analysis of these study plots, no comparisons between those that were previously treated and those that were not. There was no detailed assessment of the current condition of aspen forest types, no assessment of stand structure for the individual stands, no characterization of understory conditions, no analysis of livestock impacts to recruitment and no description of the desired future conditions and the ecological basis of those or how aspen stands are deviating. As we review later in these comments, the wildfire issue is essentially a pretext to allow the Forest Service to log and mechanically treat across the landscape when there is no evidence provided other than assertions that these treatments will discourage future wildfires. The Project is an unneeded expenditure when any issues with aspen are more likely related to livestock grazing and loafing, and sheep bedding in aspen stands that destroy recruitment and deplete the understory vegetation.

[2] USDA Forest Service. 2019. Roadless Evaluation for Ashley National Forest Aspen Restoration Project. Ashley National Forest.

Due to the lack of site-specific analysis, reliance on design criteria and BMPs, the large area of IRAs to be impacted, Threatened, Endangered and Sensitive Species issues and the confusion over multi-forest management of this project, it should be withdrawn and a full Environmental Impact Statement prepared incorporating the analyses outlined herein.

2. The Roadless Rule

The EA mentions the 2001 Inventoried Roadless Rule but contains no analysis of the characteristics of the 24 IRAs included in the Project Area. This is relegated to the RE, which provides general descriptions of the landscape, habitats, and activities occurring in the IRAs. The RE indicates that habitat for species such as Canada lynx and wolverine is present, but it does not map that habitat or analyze its structural and functional attributes or connectivity relative to the needs of the species. Roads are characterized as classified, unclassified and ATV trails. Human activities include "Roads, trails, irrigation water developments, Central Utah Water Project infrastructure, waterlines, fences, troughs, ponds, mining activity, timber harvest, and developed recreation facilities." Motorized access can be used to maintain most of these facilities.

The RE and EA do not map and analyze the extent of the vegetation cover types, habitat types for specific species, the total road, trail, and maintenance access route density as related to wildlife security and connectivity needs. It is unknown to what extent these various activities occur and what their impacts are to the integrity of the IRAs and their ecological attributes. Analysis should be done for each IRA and the combination of all IRAs in the Project Area as well as a Cumulative Effects Area (CEA). This analysis needs to be done to meet the intent of the Roadless Rule[3] to ensure that,

> The intent of the rule is to limit the cutting, sale, or removal of timber to those areas that have become overgrown with smaller diameter trees. As described in the FEIS (Vol. 1, p3 - 76), areas that have become overgrown with shrubs and smaller diameter trees creating a fuel profile that acts as a ''fire ladder'' to the crowns of the dominant overstory trees may benefit ecologically from thinning treatments that cut and remove such vegetation. The risk of uncharacteristic fire intensity and spread may thus be reduced, provided the excess ladder fuels and unutilized coarse and fine fuels created by logging are removed from the site (FR p3257).
>
> Paragraph (b)(1) allows generally small diameter timber to be cut, sold, or removed in inventoried roadless areas where it maintains one or more of the roadless area characteristics as defined in § 294.11 and: (1) improves habitat for threatened, endangered, proposed or sensitive species or (2) maintains or restores the characteristics of ecosystem composition and structure, such as to

[3] Federal Register. Vol. 66, No. 9, January 12, 2001.

> reduce uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period. (FR p3258)

Nowhere in the RE and EA are ladders of fuel to overstory trees described as the issue. Neither are "small diameter" trees defined. Instead, the intent of the Project appears to be removing larger diameter trees. Mapping and analysis would reveal the extent of old growth aspen, conifer, whitebark pine and other forest types compared to their potential. Field measurements would define the overstory and where ladder fuels are found within aspen. It would define the percent canopy of aspen and conifer relative to each other and to security needs of wildlife. EA Figure 2 provides a chart of acreage of seral aspen forest type by diameter at breast height, but the maximum category ranges from 8" to 15.9". These are hardly large overstory trees when compared to old growth diameters.[4] And they are not small diameter trees in the spirit of the Roadless Rule.

Neither the RE or EA describe how this Project will improve habitat for TES species, maintain or restore ecosystem composition and structure. They do not define the natural range of variability, nor map and analyze the extent, where and when fires have occurred in the Project Area. The current ages and successional status are not compared to the fire return intervals for the different forest types such as Douglas fir, Engelmann spruce, lodgepole pine, whitebark pine or aspen. Most of these have fire return intervals in the hundred to several hundred-year time frame. The Ashley NF can't claim the aspen and conifer stands are outside the historic range of variability without site-specific analysis of treatment areas within each IRA and across the entire Project and Cumulative Effects Areas.

A recent analysis of the Roadless Area Conservation Rule (RACR) by Friends of the Clearwater described the evolution of logging in roadless areas in which logging went from degrading roadless characteristics to logging enhances roadless characteristics.[5] They reviewed the history of logging in the Nez Perce and Clearwater National Forests, finding that initially the RACR stopped roadless logging entirely. The Idaho Roadless Rule reversed the cessation on logging. Since that time, "forest health" has been used to support logging projects. Similarly, in Montana, the exceptions to the RACR have been applied to support logging. This includes "restoring" ecosystems, yet when the Forest Service evaluated roadless areas in the Beaverhead-Deerlodge Revised Forest Plan, the evaluation excluded areas where the trees were cut, regardless of the reason for the tree cutting. For example, the following passage describes this process.

> The Forest Service's quality of discourse on how logging impacts roadless characteristics has eroded over time, which further facilitates roadless logging.

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[4] Hamilton, Ronald G. 1993. Characteristics of old-growth forests in the Intermountain Region. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Region. 86 p.

[5] Bilodeau, K. and Macfarlane, G. 2020. The Roadless Report: Analyzing the Impacts of Two Roadless Rules on Forested Wildlands.

> Prior to RACR, 1990s Forest Service project-specific environmental analyses in the Nez Perce and Clearwater National Forests recognized that logging degraded and eliminated roadless characteristics. The agency held that timber harvest modified natural processes, shelterwood logging created unnatural disturbances in the landscape, and cutting trees, which generated features such as stumps, created signs of human alteration. Even in the environmental analyses that accompanied RACR and the Idaho Roadless Rule, the Forest Service recognized that logging and road construction can potentially eliminate roadless characteristics.

This failure to take a hard look at site specific conditions, impacts and cumulative effects are violations of the intent of NEPA. It denies the public an opportunity to be informed.

3. The Forest Plan

The following points are from the 1986 Ashley National Forest Plan. Page numbers for the excerpts are provided in parentheses. Our comments regarding each are highlighted. This does not mean other Forest Plan requirements are not applicable. Each of these comments should be addressed in an analysis of Direct, Indirect and Cumulative Effects for the Project area and a designated Cumulative Effects Area (CEA). All Forest Plan proposed monitoring needs analysis as to whether it occurred, to what extent it occurred, the results and how ANF actions affected the results. This should be incorporated into the Project and CEA analysis.

Projects are tiered to the Forest Plan EIS and the local project environmental analysis will use the data and evaluations in the Plan and EIS as its basis. (pI - 2).

The analysis should present the baseline as established in these documents, compare it to the current situation and explain any differences. For example, the EA Table 1 states that there are 177,707 acres of aspen in the Ashley NF outside of Wilderness. The Forest Plan in Table II-3 lists 66,351 acres of aspen with most in mature and old-growth stages that occur within the ANF.

Declining budgets have resulted in declines in facilities and will result in increases in soil and vegetation loss if increases in use continue. The trail system is in poor condition due to lack of maintenance. (pII-5). Cultural resource surveys have been conducted on 16,660 acres. (pII-6)

This establishes that degraded facilities, soils, and vegetation conditions were occurring at the time of the Forest Plan. Insufficient funding was described as a cause. It is important to analyze the current condition and report whether actions since the Plan adoption have reversed these trends and how the proposed Project relates to those trends. What is the current extent of cultural resources identified on the Forest? The RE indicates that few acres have been surveyed in the IRAs comprising the Project Area. Surveys should be conducted before any decision is

made to pursue this Project so the interested public can be informed and comment. The cost of this Project should be presented and alternative uses of those funds that are foregone analyzed.

There were no Research Natural Areas on the Forest, but potential areas were identified. (pII-6). The Wilderness inventory found 13 roadless areas totaling 715,405 acres across the Forest. (pII-7).

Since this Project occurs within 21 IRAs on the Ashley NF and 3 IRAs on Wasatch-Cache NF, an update to the inventory and reporting on the fate of those 715,405 roadless acres should be provided. Were IRAs added or dropped? Where were these IRAs in 1986 as opposed to now? What is the extent of NRAs today? Do they represent reference landscapes and plant communities where human activities have not interfered with their structural and functional attributes? What are the management protocols, standards, and guidelines for any NRAs that have been established? What are their current conditions? How will this Project affect any current or potential IRAs occurring within the Project Area.

There are a diversity of fish and wildlife on the Forest with special habitat needs and distinct habitats important to different groups. There are specific habitat requirements for most groups. Indicator species will be monitored due to sensitivity to management actions. Fire suppression has allowed plant communities to reach maturity with fuel buildup and conifer advances. (pII-8).

The habitat needs and extent of special status species (TES and MIS) should be delineated and mapped, showing the extent of current and potential habitat. Population trends for these should also be provided in the analysis to determine whether NFMA viability is being attained across the Forest and what the current population status is as compared to carrying capacity. Address capability and suitability for each species' habitats.

There are 455,285 acres of suitable acres within range allotments. (pII-9). The allotments are managed to capacity. The Forest has constructed many water developments and fences to improve livestock distribution and revegetated several thousand acres that could not be restored through grazing systems alone. (pII-10).

The current grazing allotments occurring within the Project area need to be mapped and disclosed relative to the locations of fences, water developments, riparian areas and proximity to aspen. The suitability of these allotments was determined decades before the 1986 Forest Plan. An updated capability and stocking rate analysis reflecting current Forest Service regional criteria must be done so that stocking rates are brought into line with current carrying capacity. See comments relating to livestock grazing in a later section. The impacts of these water developments on surrounding vegetation and soils needs to be analyzed and the results of the treatment of those several thousand acres of vegetation reported. What are the conditions today compared to the conditions that created the need for restoration? What are the conditions of aspen that have resulted from installing water developments and as a result of sheep bedding

in aspen stands? Map the locations and provide data showing these changes. Identify whether these are located in the Project Area.

Table II-3 provides a summary of Timber types by acres on the ANF by age class that existed at the time of the Forest Plan. It also provides land classification and suitability for timber harvest. The Preferred Alternative provided planned timber sale quantities over the next three decades, with a long term sustained yield of 6.3 million MMCF. (pII-11).

The current forest cover types and their status relative to old growth, mature and younger age classes should be disclosed for the Project Area. How have these changed since the Forest Plan? What areas have been logged or treated in various ways and what are the results of those treatments? How do these correspond to the proposed treatment areas for this Project? Did those treatments accomplish the goals established at the time? Provide the timber harvest on an annual basis since the Forest Plan. How does that compare to the goal? Are all salvage and treatment board feet included or counted in annual sales?

The primary sources of water pollution on the Forest include grazing, logging, construction for the CUP, roads, and maintenance. (pII-14).

Provide an analysis of the current water quality status in the Project Area with a summary of data types collected for each affected stream, the results and what actions were taken to bring exceedances in compliance with water quality criteria. Sediment loads affect spawning areas for cutthroat trout. Have spawning areas been monitored for sediment fines? What are the results and what measures were taken to correct excessive fines in these areas?

Soils with seasonally or permanently high water table occur on the Forest. They contain some of the more productive timber stands. These soils need to be recognized as a special situation in road construction, timber sale layout, and any other management practice that involves disturbance to the area. (pII-20).

These soils should be mapped and their extent in the Project Area compared to the proposed treatment areas and any areas of temporary road construction or cross-country travel by motorized equipment for mechanical treatments. These areas should be avoided and a site specific plan developed to ensure they are.

Fire management policy requires suppression of wildfires. (pII-22).

An analysis of the occurrence of wildfire history, acres and forest types burned should be analyzed and mapped. Annual trends should be provided. Maps of prior burned areas need to be developed and overlain with the proposed treatments to ascertain what, if any effects resulted with emphasis on aspen stands. Aspen recruitment in those burned stands should be analyzed and this should be used to determine if management, including livestock grazing has adversely affected recruitment and age class distribution in these affected stands.

Research needs were identified, including: (1) determination of habitat types, land productivity, and the influence of land management on this productivity; (2) determine the effect of management activities on soil characteristics and vegetative productivity; (3) determine factors limiting vegetative productivity in high meadows; (4) determine limits of acceptable change in heavily used recreation areas in the High Uinta Mountains Wilderness; (5) set up needed control areas thru evaluation and designation of Research Natural Areas. (pII-28).

Provide analysis of the outcomes of this research, identification of control areas and discuss its applicability to the proposed Project.

Road closures for protection of wildlife and watershed resources will be determined on a case-by-case basis during project level planning. (pIII-2).

In other sections of these comments we discuss road density issues concerning wildlife. Identify roads that have been or are planned to be closed in the Project Area and CEA to decrease habitat fragmentation and increase habitat capability for special status species and their connections to other habitats.

Indicator species will be monitored to assure habitat diversity is maintained. Maintenance of critical habitat for all species will be given high priority. (pIII-3).

Provide analysis of this monitoring data and the status of this "critical habitat" as to its capability for the species of interest. Map these habitats and compare to the individual treatment areas and analyze the effects of the various treatments on the habitat and species.

Recreation demand is expected to be met for five decades, while wilderness will be at capacity in decade two. (p(III-3). Use of Tread Lightly and ORV closures should continue. (pIII-4).

Because of the limited extent of wilderness and the large size of the IRAs included in this Project, an analysis should report the status of the unroaded portions of these to reveal whether they have retained roadless character. Included in this analysis should be all roads, trails, motorized access routes to maintain fences, water developments. Roads and trails that are user created should also be included. Map and analyze the road density at the time of the Forest Plan and the current density of all classes of road and trail, as described. Have these proliferated? Have illegal or user created ones been closed and reclaimed? What has been the outcome of this program on wildlife security habitat?

The Forest has been divided into 14 management zones. (pIV-2ff).

Mapping technology has improved since the time of the Forest Plan. It is impossible to compare the Project Area, individual IRAs and treatment areas with the management zones. A mapping analysis should be done to make these comparisons and then analyze each set of

prescriptions applicable to each treatment area and how those apply to these treatment areas. Such classifications as RNA candidates, wildlife habitat emphasis are important to explore as to the extent of these areas that have been identified and how their prescriptions have been effective in achieving habitat goals. For instance, it is noted that livestock grazing may be limited or excluded from the wildlife habitat emphasis areas. What is the status of livestock grazing in these areas?

Goals, objectives, standards, and guidelines by management zone. (pIV-14ff). Roads and trails obliterated to meet objectives. (pIV-15).

Define all management zones for the Project area and map those. Analyze the applicability of the goals, objectives, standards and guidelines for each treatment area. Report on the trends in habitat and other uses and whether the applicable standards and guidelines have been met. For example, have roads and trails been obliterated to meet objectives?

Manage fish and wildlife habitat to maintain diversity and productivity. Develop and implement habitat management plans that will include key ecosystems and maintain habitat for supporting TES plant and animal species and MIS. (pIV-28). Standards and guidelines call for: providing habitat capable of supporting a minimum of 5,600 elk and 43,700 deer; evaluate and update aspen management plans every five years; maintain wildlife cover within 100 feet of forest openings; maintain down woody material and snags for wildlife as specified; complete management plans for riparian, aspen and old-growth; identify and manage habitats capable of supporting self-sustaining trout populations; identify and map elk calving areas, deer and antelope fawning areas, sage grouse strutting and nesting areas for assessing cumulative impact; designate and protect old growth areas for dependent species; old-growth should be a minimum of 160 contiguous acres and have old-growth characteristics. (pIV-28 to IV-29).

The analysis for the Project Area and CEA should identify and map these habitats and disclose their current capability and condition for the special status species. Describe all plans and reports generated pursuant to this section and the results of those plans and reports and how they reflect on conditions in the Project and CEA and apply specifically to the individual treatment areas.

Develop the species/habitat relationships of fish and wildlife. Standards and guidelines include: complete inventory of MIS to determine their occurrence, abundance, distribution, habitat requirements, and population trends; establish and maintain thermal and security habitat needs to meet Forest's big game and MIS habitat objectives; manage Bear Top Mountain giving preference to bighorn sheep; maintain all streams for a biotic condition index (BDI) of 75 or above and a habitat condition index (HCI) of 42 or above; complete aquatic inventories of all streams. (pIV-29 to IV-30).

Analyze whether these have been done, map the habitats described, report on their condition and the population trends. Compare these to the Project Area and CEA and with each treatment area.

Manage the habitat of all TES plant and animal species to maintain or enhance their status. Standards and guidelines include: resource management activities will be allowed if they do not adversely affect any TES species; complete inventory of sensitive plant and animal species on the Forest to determine their occurrence, abundance, distribution, habitat requirements, and distribution. (pIV-30 to IV-31).

Report on these and map the habitats and occurrence for each species. Report on their population trends and current habitat capability. It is important to identify why the RE indicates habitat for Canada lynx and wolverine are marginal across the Project area by comparing habitat conditions to their needs.

Achieve satisfactory ecological condition on all rangelands. Maintain or obtain plant diversity to meet NFMA. Maintain or improve all range in a fair or better condition class. Prepare and implement an allotment management plan for each allotment. (pIV-32).

Report on the status of these AMPs, current range condition, and trend data for all allotments in the Project Area and CEA.

Optimize wood fiber production to meet public demands consistent with other resource objectives and environmental constraints. Standards and guidelines include maintenance of wildlife habitat and maintain down materials of 2 to 4 tons per acre for wildlife habitat or 30% of slash from clearcuts. (pIV-34 to IV-36).

As for other management objectives, analyze compliance with each standard and guideline for the proposed Project.

Soil, water and air standards and guidelines include: complete order three soil survey for the Forest; obtain at least 80% of original ground cover within 5 years of project completion; stabilize road corridors and control road use to reduce soil erosion. (pIV-39).

Has the soil survey been completed? Report monitoring results for past projects in the Project Area and CEA showing the attainment of the ground cover requirement. Map the soils in the Project Area and CEA and for each treatment unit show the soils affected and the soil survey requirements applicable to uses for each soil type.

Other Management Principles and Guidelines. Project analysis - Economic analysis and the evaluation of the cumulative effects of project activities will be considered in all resource management decisions. (pIV-56).

The current NEPA analysis is inadequate in addressing direct, indirect and cumulative effects.

4. The Proposed Project Flies in the Face of National Climate Policy

The EA (p13) mentions that climate change was brought up during scoping. No further mention or analysis of Project effects or outcomes relative to ameliorating or exacerbating climate change was provided.

The ANF Forest Plan and its FEIS are decades-old and do not effectively address or provide DFC, Prescriptions, Standards and Guidelines addressing climate change. Likewise, the UWCNF RFP is two decades old. This is an interwoven topic encompassing all aspects of Forest management including, but not limited to, forested habitat manipulations, vegetation treatments, livestock grazing, recreation, roads, ohv trails and other activities. To be proposing a Project that is directly related to climate is premature without updated guidance. This Project should be withdrawn until such time as the climate issues and requirements are codified in a revised Forest Plan, or an objective analysis is conducted in a full EIS for this project.

On January 27, 2021, President Biden signed the Executive Order on Tackling the Climate Crisis at Home and Abroad. One aspect of that Order directed the Interior Department to formulate steps to achieve the President's commitment to conserve at least 30% of our lands and waters by 2030. The Interior Department issued a press release describing this process in more detail and referenced a U.S. Geological Survey (USGS) report that only 12% of lands in the continental U.S. are permanently protected.[6] The USGS protected area database is available online.[7] Even those lands given the highest status of current protection such as wilderness areas and national parks are still subject to activities that degrade them from being truly protected. For example, livestock grazing continues in over a quarter of the 52 million acres of wilderness areas in the lower forty-eight states in the U.S.[8] In Yellowstone National Park, each day during winter, hundreds of snowmobiles pollute and cause disturbance.[9]

Our National Forests, Bureau of Land Management (BLM) managed lands, and State managed lands are further down the list and remain far from protected, being in the third of four levels of protection, the fourth level being no protection at all. According to the January 27, 2021 Executive Order, the Secretary of the Interior shall submit a report within 90 days proposing guidelines for determining whether lands and waters qualify for conservation. **The USGS report stresses analyzing and setting aside migration corridors for species (both plants and animals) to prevent their extinction from the effects of climate change.**

[6] U.S. Department of Interior. 2021. Fact Sheet: President Biden to Take Action to Uphold Commitment to Restore Balance on Public Lands and Waters, Invest in Clean Energy Future. January 27, 2021.
[7] U.S. Geological Survey. 2021. GAP Analysis Project PAD - US Data Overview.
[8] Wilderness Watch. 2019. The Cattle Compromise: Livestock Grazing's Damaging Effect on Wilderness and the Way Toward a Livestock - Free Wilderness System. Missoula, MT.
[9] U.S. Department of Interior. 2021. Visiting Yellowstone in Winter. National Park Service. https://www.nps.gov/yell/planyourvisit/visiting-yellowstone-in-winter.htm

In 2010, the Forest Service produced a National Roadmap for Responding to Climate Change.[10] This roadmap provides guidance to the agency to: (1) **Assess vulnerability of species and ecosystems to climate change**, (2) **Restore resilience**, (3) **Promote carbon sequestration**, and (4) **Connect habitats, restore important corridors for fish and wildlife, decrease fragmentation and remove impediments to species migration**. These guidelines are suited to the current goals of the Executive Order and should be foundational in any proposals, analyses or decisions by the ANF, including this Project. We have included a map of the Regionally Significant Wildlife Corridor[11] within which the ANF lies as Figure 1.

For this Project, the ANF should undertake mapping of the core and connection areas for each special status species (Threatened, Endangered, Proposed for listing, Sensitive Species, Management Indicator Species) of plant and animal. Current habitat conditions of those areas for the species in question need to be compared to their needs with an analysis of past actions that have fragmented or reduced the capability of these areas. Examples would be timber harvest, road and trail density, livestock grazing and the relation of these to impaired condition such as sediment content of trout spawning areas, aspen recruitment and age class distribution in forested stands, vigor and species composition of riparian and upland plant communities, habitats for amphibians, sage grouse, security cover for deer, elk, moose, bears and others.

In the FEIS for its 2003 Revised Forest Plan, the Caribou NF suggested the following approach to analysis of connectivity for wildlife to include:[12]

- Assess historic patterns in vegetation and relative connectivity,
- Assess current patterns in vegetation and relative connectivity, including the impacts of human disturbance or physical barriers,
- Compare historic and current patterns of relative connectivity to determine if animal movement opportunities have been significantly interrupted.
- Consider ecologically based measures to restore historic animal movement, referring to Table 1 provided therein.

[10] USDA Forest Service. 2010. National Roadmap for Responding to Climate Change.
[11] https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5076928.pdf
[12] USDA Forest Service. 2003. Final Environmental Impact Statement for the Caribou National Forest Revised Forest Plan.

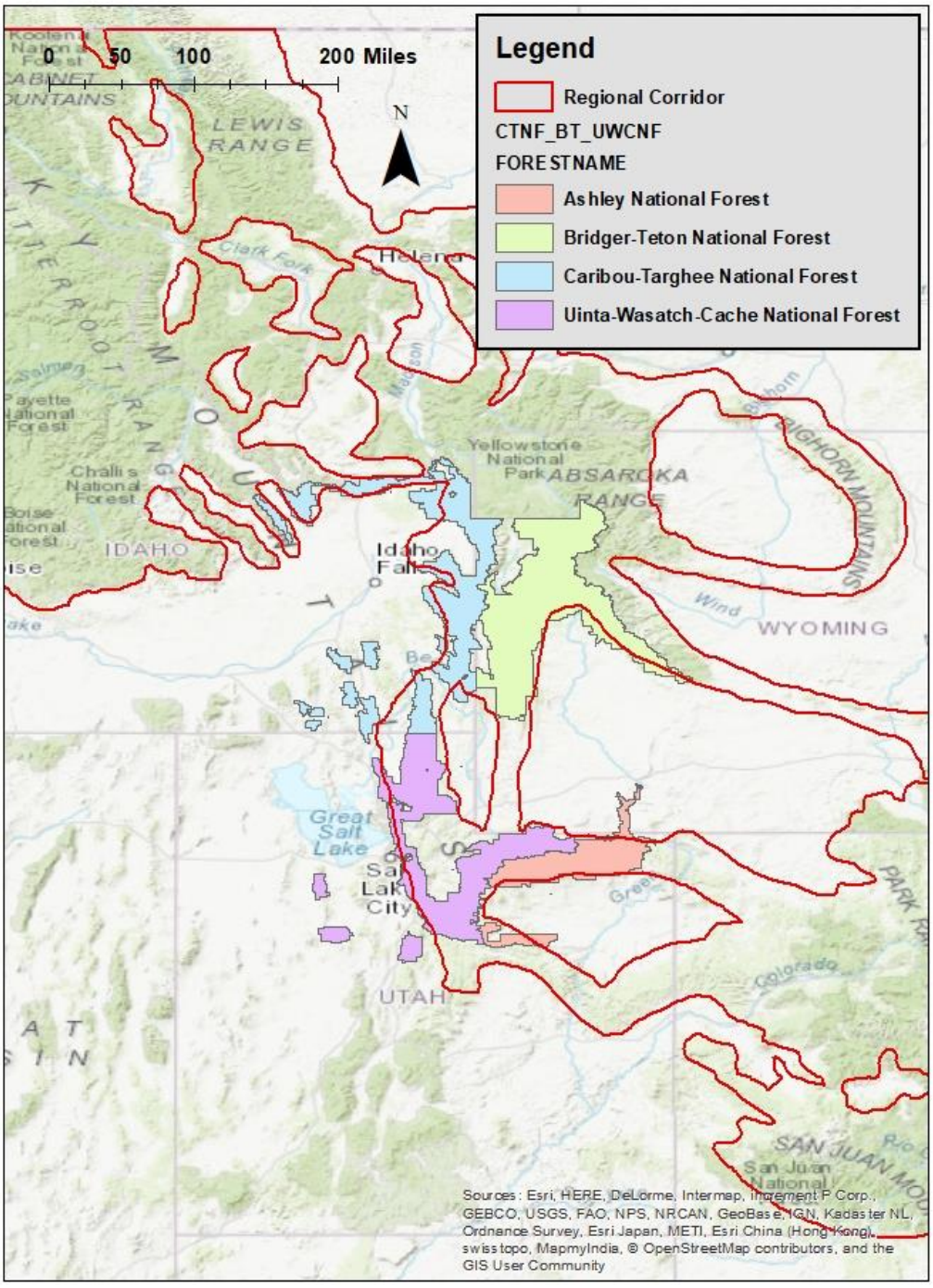

Figure 1. Regionally Significant Wildlife Corridor connecting the GYE to the Northern Rockies and to the Uinta Mountains and Southern Rockies.

As advocates for restoring wildlife corridors and wildlife habitats, we have continued to insist that the Forest Service analyze these corridors, their associated habitats, and their ability to function for the species of interest, whether it be deer, elk, Canada lynx, wolverine, sage grouse or other special status species. This entails use of the quantitative, science-based habitat criteria required for these species and comparing this to the current and potential habitat conditions in the corridor or lands of interest. Then, the agency must adjust management to meet these conditions, such as reducing road density, timber projects, livestock grazing and other actions that fragment and degrade these habitats. To date, the Forest Service has ignored our request as pipelines, mines, timber and "forest health" or "restoration" projects continue to expand their footprint, while roads, noise and activity from off road vehicles are pervasive. In the West, livestock grazing is adversely affecting most of our National Forest and BLM managed lands. These are all cumulative effects that must be analyzed in combination for this Project.

In 16 western states in the US, 165 million acres on Bureau of Land Management-managed land (94%) and 103 million acres of Forest Service-managed land are grazed by livestock. Seventy percent of the western US is grazed by livestock. This includes BLM and Forest Service managed areas as well as wildlife refuges, wilderness areas, national monuments, and national parks. These grazed lands have suffered severe impacts leading to loss of biodiversity, lowered population numbers of species, disrupted ecosystem function, and altered terrestrial and aquatic habitats.[13] The resulting simplified plant communities with the associated loss of vegetation mosaics negatively affect pollinators, birds, small mammals, amphibians, wild ungulates, and other native wildlife, as well as rare species such as Western sage-grouse.[14] A meta-analysis of 109 global studies that looked at the response of animals or plants to livestock grazing relative to livestock exclusion showed that "Across all animals, livestock exclusion increased abundance and diversity, but these effects were greatest for trophic levels directly dependent on plants, such as herbivores and pollinators.[15] Other studies have documented increased riparian songbird abundance after livestock exclusion.[16] [17] Overall biodiversity increased under long term rest from livestock grazing.[18] [19]

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[13] Fleischner, T. 1994. Ecological costs of livestock grazing in western North America. Conservation Biology 8(3):629-644.

[14] Beschta, R.L., D.L. Donahue, .A. DellaSala, J.J. Rhodes, J.R. Karr, M.H. O'Brien, T.L. Fleischner, and C.D. Williams. 2012. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. Environmental Management DOI 10.1007/s00267-012-9964-9. 18p.

[15] Filazzola,A., Brwn, C., Dettlaff, M.A., Batbaatar, A., Grenke,J.,Bao, T., Heida, I.P., and Cahill, J.F. 2020. The effects of livestock grazing on biodivesity are multi-trophic: a meta-analysis. Ecology Letters 23:1298 - 1309. doi: 10.1111/ele.13527

[16] Dobkin, D. S., A. C. Rich, and W. H. Pyle. 1998. Habitat and avifaunal recovery from livestock grazing in a riparian meadow system of the northwestern Great Basin. Conservation Biology 12: 209-221.

[17] Earnst, S.L., Ballard, J.A., Dobkin, D.S., 2005, Riparian songbird abundance a decade after cattle removal on Hart Mountain and Sheldon National Wildlife Refuges In: Ralph, C.J., Rich, T. [eds.], Proceedings of the Third International Partners in Flight Conference; Albany, CA, USA. US Department of Agriculture. Forest Service, General Technical Report PSW-GTR-191. p. 550-558.

[18] Bock, C.E., J.H. Bock, W.R. Penney, and V.M. Hawthorne. 1984. Responses of birds, rodents, and vegetation to livestock exclosure in a semidesert grassland site. Journal of Range Management 37:239-242

A goal of the January 27, 2021 Executive Order is to determine the characteristics of "protected" or "conserved" lands for the purpose of reducing or reversing carbon loss for mitigating climate change, providing species protections for biodiversity, and restoring biological corridors. Corridors are essential to effect climate-induced animal or plant migration. It is important to eliminate from consideration those lands that are grazed by livestock due to their negative effects on these goals.

The Intergovernmental Panel on Climate Change (IPCC) released its special report on climate change in August 2019.[20] That report noted that, "**reducing deforestation and forest degradation rates represents one of the most effective and robust options for climate change mitigation, with large mitigation benefits globally**." The Food and Agriculture Organization (FAO) estimated total global emissions of greenhouse gases (GHG) from livestock are 7.1 Gigatons of CO2 equivalent, or 14.5% of all human related GHG emissions. An estimated 44% of these emissions are methane, 29% Nitrous Oxide, and 27% carbon dioxide. This is 5% of global anthropogenic CO2 emissions, 44% of methane emissions, and 53% of nitrous oxide emissions.[21] In a prior study, FAO estimated the GHG emissions from livestock production was more than that of all transportation and industry sources. [22]

Three times as much carbon resides in soil organic matter as in the atmosphere, while grasslands and shrublands have been estimated to store 30 percent of the world's soil carbon with additional amounts stored in the associated vegetation. [23] [24] Long term intensive agriculture can significantly deplete soil organic carbon and past livestock grazing in the United States has led to such losses. [25] [26] [27] The United Nations Convention to Combat Desertification

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[19] Brady, W.W., M.R. Stromberg, E.F. Aldon, C.D. Bonham, and S.H. Henry. 1989. Response of a semidesert grassland to 16 years of rest from grazing. Journal of Range Management 42:284-288.
[20] IPCC. 2019. Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. https://www.ipcc.ch/report/srccl/. Accessed 11/23/2019.
[21] Gerber, P.J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., Falcucci, A. & Tempio, G. 2013. Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities. Food and Agriculture Organization of the United Nations (FAO), Rome. http://www.fao.org/news/story/en/item/197623/icode/ Accessed 03/28/2021.
[22] Steinfeld H., Gerber, P., Wassentaar, T., Castel, V., Rosales, M. & de Haan, C. 2006. Livestock's long shadow. Rome, Italy. Food and Agriculture Organization of the United Nations. 407 p.
[23] Almaras, R. R., H. H. Schomberg, and C. L. Douglas. 2000. Soil organic carbon sequestration potential of adopting conservation tillage in U.S. croplands. Journal of Soil and Water Conservation 55:365-373.
[24] Grace, J., San Jose, J., Meir, P., Miranda, H. and Montes, R. 2006. Productivity and carbon fluxes of tropical savannas. Journal of Biogeography 33: 387–400.
[25] Benbi, D. K. and J. S. Brar. 2009. A 25-year record of carbon sequestration and soil properties in intensive agriculture. Agronomy for Sustainable Development 29:257-265.
[26] Follett, R. F., J. M. Kimble, and R. Lal [eds.]. 2001. The potential of U.S. grazing lands to sequester carbon and mitigate the greenhouse effect. Boca Raton, FL, USA: Lewis Publishers. 457p.

has estimated that 73 percent of livestock-grazed lands worldwide have suffered soil degradation.[28]

Livestock grazing was found to significantly reduce carbon storage on Australian grazed lands while destocking currently grazed shrublands resulted in net carbon storage. [29] Livestock-grazed sites in Canyonlands National Park, Utah had 20% less plant cover and 100% less soil carbon and nitrogen than areas grazed only by native herbivores.[30] In a study of livestock grazing effects in the Wasatch Cache National Forest in NE Utah, there were declines in soil carbon and nitrogen in livestock grazed areas compared to ungrazed areas. As grazing intensity increased, ground cover, plant litter, soil organic carbon and nitrogen decreased. [31] Analysis of livestock grazing in the High Uinta Mountains Wilderness demonstrated that the Forest Service grossly overstocked this 160,410 acre area by including areas that are not capable for grazing livestock, such as steep slopes, forested areas and highly erodible soils. When current forage production, current forage consumption rates for livestock and a science-based conservative utilization factor were used to determine the amount of forage that could be allocated to livestock, it was determined that the stocking rate should be reduced by over 90% to be sustainable.[32]

As noted above, the analysis of domestic sheep grazing in the High Uinta Mountains Wilderness revealed that the Ashley and UWCNFs failed to update stocking rates to current U.S. Forest Service Region 4 capability criteria, failed to use current forage production and livestock consumption rates to set stocking rates, and failed to use the best science regarding grazing systems, utilization levels, and rest. Forest Service monitoring was generally non-quantitative and in areas more resistant to impacts from livestock.[33]

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[27] Neely, C., S. Bunning, and A. Wilkes. 2009. Review of evidence on drylands pastoral systems and climate change: Implications and opportunities for mitigation and adaptation. Rome, Italy: Food and Agriculture Organization of the United Nations. Land and Water Discussion Paper 8. 48 p.

[28] Gabathuler E., H. Liniger, C. Hauert, and M. Giger. 2009. Benefits of sustainable land management. Bern, Switzerland: World Overview of Conservation Approaches and Technologies, Center for Development and Environment, University of Bern. 15 p.

[29] Daryanto, S. D.J. Eldridge, and H.L. Throop. 2013. Managing semi-arid woodlands for carbon storage: Grazing and shrub effects on above and belowground carbon. Agriculture, Ecosystems and Environment 169:1– 11.

[30] Fernandez, D.P., J.C. Neff and R.L. Reynolds. 2008. Biogeochemical and ecological impacts of livestock grazing in semi-arid southeastern Utah, USA. Journal of Arid Environments 72: 777–791.

[31] Carter, J., B.Chard and J.Chard. 2011. Moderating livestock grazing effects on plant productivity, carbon and nitrogen storage. In: Monaco, T.A. et al. [eds.]. Proceedings of the 17th Wildland Shrub Symposium: 18-20 May 2010: Logan, UT, USA. p191-205.

[32] Carter, J., Vasquez, E. and Jones, A. (2020) Spatial Analysis of Livestock Grazing and Forest Service Management in the High Uintas Wilderness, Utah. Journal of Geographic Information System, 12, 45-69. https://doi.org/10.4236/jgis.2020.122003

[33] Conservation Community Comments on the DEIS for the High Uintas Wilderness Domestic Sheep Analysis Project. August 05, 2019. https://app.box.com/s/797x21rggtx1t6yayr0gi9kpbouis4sr

In this Project, data should be collected in all habitat types and compared to potential plant communities and their production. Due to the grazing of domestic sheep, their bed ground locations need to be located and characterized with the current state of plant species, ground cover and aspen recruitment. Locations in proximity to water developments and salting locations need to be characterized. Cattle grazing is concentrated in areas near water and in low gradient areas, consequently, the conditions in these areas and especially where aspen stands are nearby need documentation and analysis. Because livestock browsing is a major impact on aspen stands, the lack of this critical information will be a failure to take the requisite "hard look" under NEPA. We discuss many aspects of livestock grazing in the following sections. This science must be applied to this Project Area to lessen the effects of livestock grazing on ecosystem attributes.

5. Determining Livestock Stocking Rate and Management

The ANF Forest Plan and FEIS are over 25 years old and apparently have not been updated to reflect current Forest Service Regional Criteria for determining lands capable for livestock grazing. The current soil survey, current plant community status and desirable forage production. Typically, the Forest Service allocates 26 lb/day of forage per AUM of livestock. Based on our review of records obtained through FOIA for the High Uinta Mountains Wilderness Domestic Sheep Analysis, there have apparently been no current surveys to determine the amount of desirable and intermediate forage production that is available today after decades of drought. Current management of livestock grazing in both the Ashley and Wasatch Cache NFs includes excessive utilization criteria, turn in during active plant growth and before seed ripe, lack of adequate rest to allow grazed plants to recover their vigor and therefore, their productivity; reliance on grazing systems rather than accurate determination of stocking rates; and active, rather than passive, management.

All these factors combine to produce degraded conditions for the native plant communities, soils, and riparian areas. This Project cannot meet "hard look" requirements until all these factors are considered. More detailed analysis of each issue follows.

(1) Capability

The concept of "capability" for livestock grazing is a core concept directed at limiting soil erosion and degradation of grazing allotment watersheds and plant communities by factoring out areas of steeper slopes, highly erodible soils, dense forest, and barren areas to reduce risk of soil erosion and degradation of plant communities.[34] It also is used to determine stocking rates based on forage consumption rates of livestock and allocates an appropriate proportion of the available, preferred or desirable forage species on the capable acres to livestock so that stocking rates are sustainable and reduce the risk of degradation. To our knowledge, the ANF has not updated its capability and suitability determinations for livestock grazing since the 1960's. This

[34] USDA Forest Service. 1964. Forest Service Handbook – R4 Range Analysis Handbook.

past capability and suitability analysis must be compared to the current USFS Region 4 capability criteria and a revised analysis completed.

The current USFS Region 4 Criteria for range capability were described in a 1998 memorandum by the Forest Service (USDA, 1998). These were:

- Areas with less than 45 percent slope for domestic sheep, 30% for cattle
- Areas producing or having the potential to produce an average of 200 lbs. or more of forage/acre on an air-dry basis over the planning period
- Areas without dense timber, rock, or other physical barriers
- Areas with naturally resilient soils (not unstable or highly erodible soils)
- Ground cover greater than 60%
- Areas within one mile of water or where the ability to provide water exists.

We have not seen any evidence that these criteria are fully addressed in any Region 4 Forest. For example, in its 2003 Forest Plan Revision, the Wasatch-Cache National Forest (WCNF) used only a subset of these criteria.[35] It evaluated the slope of the land using a digital elevation model to determine where the lands of less than or equal to 45 percent slope for grazing domestic sheep or 30% for cattle were located. Lacking current forage production data, the WCNF used a vegetation layer as a surrogate for forage production. While forage production had been determined in the 1960's and was their most recent data, it was not used. The WCNF FEIS described it thusly: *"The vegetation layer was used as a surrogate for minimum forage production. In general, coniferous-forested vegetation types (spruce, fir, pine, Douglas-fir), oak, and barren areas were said to not produce the minimum 200 lbs/acre of forage. All other types were included as potential forage-producing types."* This was not an actual determination of forage currently present.

Therefore, it is critical that a capability analysis of the allotments in this Project Area be updated to reflect the current Regional Criteria. It is also critical that field data collection be used to determine the current available desirable and intermediate forage for each Soil Map Unit or Ecological Site and the specialized or preferred types that livestock would use such as aspen stands. In our stocking rate analysis for the High Uinta Mountains Wilderness Domestic Sheep grazing project, we collected field data to determine forage production for each soil map unit in areas that were capable based on the physical factors contained in the Regional Criteria: slope, distance to water, not barren, rocky, highly erodible or forested.[36] Once we applied a sustainable proper use criterion of 30% utilization along with current forage consumption rates for the livestock and applied these to the capable acres and amount of usable forage, we determined

[35] USDA Forest Service. 2003. Final Environmental Impact Statement Wasatch-Cache National Forest Revised Forest Plan: Appendix B9. Salt Lake City, Utah.

[36] Carter, J., Vasquez, E. and Jones, A. (2020) Spatial Analysis of Livestock Grazing and Forest Service Management in the High Uintas Wilderness, Utah. Journal of Geographic Information System, 12, 45-69. https://doi.org/10.4236/jgis.2020.122003

that the stocking rates should be reduced by more than 90%. This is likely the case on the many allotments in the Project Area and CEA.

(2) Forage Consumption Rates of Livestock

The NRCS, in its National Range and Pasture Handbook, defines an Animal Unit (AU) as one mature cow of approximately 1,000 pounds and a calf as old as 6 months, or their equivalent, and states, "*An animal unit month (AUM) is the amount of forage required by an animal unit for one month*".[37] NRCS further defines the actual forage consumption as 26 pounds of oven-dry weight or 30 pounds of air-dry weight per day as *"the standard forage demand for a 1,000 pound cow (one animal unit)".* This is 2.6% of body weight for oven-dry weight and 3% of body weight for air-dry weight of forage. (Note that there is no forage allowance for the calf in this consumption rate. The same would be true for lambs, when considering sheep grazing.)

We looked up current USDA statistics for live weights of cattle and sheep.[38] The average weight of adult cattle processed during April 2021 ranged from 1,203 lbs to 1,369 lbs with an overall average of 1,316 lbs. Calves ranged from 266 lbs to 366 lbs with an overall average of 300 lbs. Weights will increase throughout the grazing season, but for an average monthly forage consumption, we have used these average weights and 3% of body weight to obtain the monthly forage consumption as air-dry weight for an AUM for cattle. This is 48.5 lb air dry forage per day or 1,473 lb air dry forage/month per AUM for a cow/calf pair. Updating this factor alone would reduce the stocking rate by nearly half compared to the 26 lb/day we typically see.

Domestic sheep and lambs were reported as a group by USDA. The average live weights ranged from 95 to 126 lbs with an average of 114 lbs. Since permits can include ewes, rams and lambs, we calculate that a ewe and two lambs would consume 312 lbs per month and since an AUM includes 5 adult sheep (with lambs), the total consumption by sheep would be 1,564 lb air dry forage/month for an AUM. We note that the literature suggests mature sheep can be much larger than these numbers depending on species.

(3) Utilization

Allowable use or utilization rates are typically 50% or more on public lands we have addressed. This is double that based on actual evidence. The following summary of studies provides a historical perspective on the relationship between utilization and plant community production or range condition. Many studies are reviewed, demonstrating the overwhelming evidence for lower utilization rates than agencies use today. We have known for decades that 50% utilization is not proper, or sustainable, in arid areas such as the ANF or UWCNF.

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

[38] USDA National Agricultural Statistics Service. 2021. Livestock slaughter. https://www.nass.usda.gov/Publications/Todays_Reports/reports/lstk0521.pdf. Accessed on 5/21/2021.

The effects of different livestock grazing intensities on forage plant production were studied in a ponderosa pine type in Colorado in the 1940's.[39] Livestock forage consumption at a rate of 57% resulted in forage production of double that at a rate of 71%. An area ungrazed by livestock for 7 years produced three times as much forage as the 71% use area. The authors concluded that, as grazing use increased, forage production decreased. During that same period, a classic paper on the use of quantitative ecology in range management presented examples of how stocking rates must be adjusted based on precipitation and range condition. This included a rating based on the departure from the potential plant community.[40] A utilization range of 25 – 30 % use of all forage species by livestock was considered proper.[41] This level was recommended because routinely stocking at capacity would result in overgrazing in half the years and necessitate heavy use of supplemental feed. Even with this system, they recognized that complete de-stocking would be needed in 2 or 3 out of ten years due to drought or below normal precipitation. This is because plant production is related to precipitation and is lower during lower precipitation years, including drought. During these lower precipitation years, not only is production lower, but the ability of plants to recover from grazing is lessened.

A USDA study on root growth stoppage from plant top removal provided quantitative measurements of plant re-growth under different amounts of removal.[42] Three mid-west perennial grasses were grown in a greenhouse in pots under ideal conditions of watering and fertilization. After sixty days of growth, these potted grasses were clipped once at intervals from 10% to 90% of the above ground biomass. Repeat clippings of the potted grasses were made every two days to return the plants to the same height as the original clipped percent. The experiment lasted thirty-three days at which time root growth of unclipped controls became inhibited by the size of the pot. The author concluded that under these ideal growing conditions, if these species of grasses had 40% or less of their aboveground biomass clipped either once or many times, then the net root mass was the same or more at the end of the experiment. This was used to assume that grazing during the entire growing season at 40% or less would sustain plants from one season to the next. However, the data showed that root production was actually reduced at clipping levels of 20%. This study has been used to justify the 50% or "take half/leave half" proposition that range managers have used for decades. But this does not apply to natural conditions found in arid systems as these grasses were grown in greenhouses under ideal conditions of water and nutrients, conditions that do not exist in the ANF or UWCNF and especially under current drought conditions.

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[39] Schwan, H.E., Donald J. Hodges and Clayton N. Weaver. 1949. Influence of grazing and mulch on forage growth. Journal of Range Management 2(3):142-148.

[40] Dyksterhuis, E. J. 1949. Condition and management of range land based on quantitative ecology. Journal of Range Management 2:104-115.

[41] Hutchings, S.S. and G. Stewart. 1953. Increasing forage yields and sheep production on Intermountain winter ranges. U.S. Department of Agriculture Circular 925. 63p.

[42] Crider, Franklin J. 1955. Root-growth stoppage resulting from defoliation of grass. Technical Bulleting No. 1102. USDA Soil Conservation Service. 23p

The effect of conservative (30 – 35%) vs. heavy (60 – 65%) grazing use on grasses and forbs by cattle was determined in a New Mexico study.[43] The study area consisted of two pastures that had experienced conservative use for over 10 years. In 1997, one pasture was changed to heavy use. Measurements at key locations in both pastures in the following year, while being rested, showed that heavy stocking rates resulted in significant declines in productivity in the following year. Perennial grass production was reduced by 57% and forbs by 41% in the heavily grazed pasture compared to the conservatively grazed pasture.

Long-term stocking rate studies from three different locations in Arizona, New Mexico and Utah documented similar patterns. In the Desert Experimental Range in Utah, a 13-year study with moderate (35%) and heavy (60%) use by sheep resulted in annual forage production of 198 lbs/acre and 72 lbs/acre. The authors recommended 25 – 30% use of all forage species.[44] A 37-year study at the Jornada Experimental range in New Mexico involving conservative (33%) and moderate (45%) use showed that the lower grazing intensity resulted in greater black grama (perennial grass) cover. Lowland areas with high clay content and periodic flooding grazed at moderate intensity had higher cover of Tobosa, a perennial grass, than heavily grazed areas. They recommended 30% be used as a stocking intensity with no more than 40% removed in any year. A 10-year study at the Chihuihuan Desert Rangeland Research Center looked at four grazing intensities of 25%, 35%, 50% and 60%. Light (25%) and moderate (35%) use produced 70% more forage than 50% use and more than double that achieved at 60% use. Here, the authors recommended conservative stocking at 30 – 35%.

A review of the "classic" range studies, which are the long-term stocking rate and grazing system studies that provided much of the scientific foundation for modern range management showed that light use is closer to sustainable use, while heavy use is not.[45] Definitions of "heavy", "moderate" and "light" grazing developed in 1961 were cited. Heavy grazing was defined as the degree of forage utilization that does not allow desirable forage species to maintain themselves. Moderate grazing was defined as the level at which palatable species can maintain themselves. Light grazing was defined as the degree of utilization at which palatable species maximize their herbage producing ability. When averaged across all the long-term studies for all regions, heavy grazing was 57% use of primary forage species, moderate use was 43% and light use was 32%. In arid regions, the research showed that moderate grazing use was 35 – 45%. When the average forage production change over time was compared with use, heavy stocking resulted in a 20% decline in production, moderate use experienced no change and light use resulted in an 8% increase. During drought, moderately stocked pastures produced 20% more forage than heavily stocked pastures, light grazing produced 49% more forage than heavy and 24% more than moderate stocking levels. Heavy stocking resulted in a

[43] Galt, Dee, Greg Mendez, Jerry Holechek and Jamus Joseph. 1999. Heavy winter grazing reduces forage production: an observation. Rangelands 21(4):18-21.
[44] Holechek, Jerry L., Milton Thomas, Francisco Molinar and Dee Galt. 1999b. Stocking desert rangelands: what we've learned. Rangelands 21(6):8-12
[45] Holechek, Jerry L., Hilton Gomez, Francisco Molinar and Dee Galt. 1999. Grazing studies: What we've learned. Rangelands 21(2):12-16

downward trend and light stocking an upward trend in ecological condition. Moderate stocking showed a slight, but not significant increase in condition, resulting in depleted ranges being maintained in depleted condition.

The Holechek et al (2004) Range Management Principles & Practices book lists the percent use of key species for moderate grazing in different range types.[46] In sagebrush grassland and semi-desert grass and shrubland, this level of grazing is 30-40%. Recommended utilization rates are 20% for alpine ranges grazed during the growing season or in poor condition, while for ranges in good condition and grazed during the dormant season 30% is recommended. The table goes on to note that rangelands *"in poor condition or grazed during active growth should receive the lower utilization level."* This principle would apply to this Project Area because allotments are grazed during the growing season. Further they state that while 50% utilization may apply to humid grasslands, this level of utilization *"results in rangeland deterioration in the semi-arid grasslands, desert and coniferous forest rangelands."* They also recognized that trampling by livestock and consumption by rodents and other wildlife must be included as part of this utilization, otherwise, rangeland productivity would suffer even at these levels of use.

Galt et al (2000) recommended that 25% of forage be allocated to livestock, 25% to wildlife and 50% to watershed protection.[47] They also note NRCS has adopted guidelines for reduction in capacity for distance to water and slope with areas more distant or upslope having reduced use and therefore reduced capacity.[48] These adjustments are necessary for this Project. Reynolds et al (1992)[49], recommended an average of 20% utilization of herbaceous forage species in goshawk home ranges, which are 6,000 acres. They also stressed the importance of maintaining mycorrhizal fungi function in these home ranges.

(4) Rest

Over-utilization and lack of required rest are common across BLM and Forest Service managed lands in the west. Agencies refer to deferment as "rest", but areas are still grazed each year. Forest Service researchers originally developed guidance for rest-rotation grazing based on

[46] Holechek, Jerry L., Rex D. Pieper and Carlton H. Herbel. 2001. Range Management: Principles and Practices, Fourth Edition. Prentice-Hall, New Jersey. 587p.
[47] Galt, D., Molinar, F., Navarro, J., Joseph, J., and Holechek, J. 2000. Grazing capacity and stocking rate. Rangelands 22(6):7 - 11.
[48] USDA Natural Resources Conservation Service. 2003. National Range and Pasture Handbook Chapter 5 Management of Grazing Lands. Tables 3 - 12 and 3 - 13. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1043064.pdf Accessed on 6/15/2021.
[49] Reynolds, R.T., R.T. Graham, M.H. Reiser, R.L. Bassett, P.L. Kennedy, D.A. Boyce, Jr., G. Goodwin, R. Smith, and E.L. Fisher. 1992. Management Recommendations for the Northern Goshawk in the Southwestern United States. Gen. Tech. Rep. GTR-RM-217, Fort Collins, Colorado. U.S. Department of Agriculture, Rocky Mountain Forest and Range Experiment Station. 90p.

intensive field studies.[50] They stated, *"While the idea of incorporating rest in grazing management is not new, the concept of longer rest periods than have heretofore been recommended, at least for mountain bunchgrass ranges, and of closer correlation of resting and grazing with plant growth requirements, is new."* Some points of interest from the study were that, even with the rest-rotation system, some areas were more heavily used than others, regrowth was minimal on clipped plants after the seed-in-milk phase and clipping during active growth reduced total herbage yield during that year. A single season of clipping reduced basal area of forbs and grasses the next year. Four consecutive seasons of clipping at the seed-in-milk phase reduced basal area of Idaho fescue 80%, bottlebrush squirreltail 62%, longspur lupine 91% and wooly Wyethia 16%. Four years' rest after four years' clipping resulted in little or no recovery of Idaho fescue, wooly Wyethia and longspur lupine. They also found that cool-season grasses such as Idaho fescue varied in production by a factor of three due to changes in annual precipitation, while the beginning of growth varied by up to a month with similar variations on time to flowering and seed ripening. Based on this research, the basic principle was to require adequate years of rest to allow the native plants to recover their vigor before again being grazed. They also recommended that it is important to include adequate monitoring of each grazed unit or pasture to determine if these rest periods are sufficient to maintain or restore production.

Native cool-season perennial bunchgrasses can be very sensitive to defoliation and growing season use. Regarding bluebunch wheatgrass, *"Effects of growing season defoliation injury are well documented: basal area, stem numbers and both root and forage yields are reduced and mortality can be high. … Defoliation to very short stubble heights during the boot stage has been reported to essentially eliminate plants within as few as three years. … Vigor recovery has been found to require most of a decade, even with complete protection from grazing."* [51] The author went on to describe experiments in which a single clipping of the grass during the growing season resulted in 43% less herbage and 95% fewer flower stalks the following year than unclipped plants. Under a deferred system in eastern Oregon, it was reported that bluebunch wheatgrass could not be maintained at 30 – 40% use in the boot stage (early June). A one-time removal of 50% of the shoot system during active growth may require six years' rest even in an area with 17" precipitation. *"The belief that range improvement will occur after one or two years of rest following a single season of more than 'light' use during the growing season is erroneous."* Idaho fescue of moderately low vigor required 3 years of rest for recovery and plants of bluebunch wheatgrass and Idaho fescue in very low vigor may require 8 years and 6 years of rest, respectively, for recovery.[52]

Other studies concluded that no management system appears to be satisfactory if that system results in overgrazing during the growing season to defer or rest vegetation in other grazing

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

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

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

periods. These concluded that the amount of deferment and rest provided by the three-pasture system was not sufficient to overcome the effects of periodic overuse. They recommended utilization levels that allow plants of desirable species to respond to proper management by adjusting stocking rates to forage production levels. [53, 54]

(5) Grazing Systems

In a review paper that considered grazing systems, grazing intensity and season of use, it was determined that, *"financial returns from livestock production, trend in ecological condition, forage production, watershed status and soil stability are all closely associated with grazing intensity."* [55] Grazing systems such as rest-rotation had limited or no benefit in arid systems. Long-term studies in Arizona, after 12 years of rest-rotation management compared to continuous grazing, found neither forage plant densities nor forage plant production differed between the treatments. Grazing intensity employed was 30 – 35% use with occasional high use of 50% or more. *"Rest and deferment were not sufficient to overcome the effects of periodic heavy use on primary forage plants when rest-rotation grazing was applied on big sagebrush range in northern Nevada."* In an Arizona study comparing winter-spring grazing with summer-fall rest to continuous grazing, the rotation scheme was inferior to the year-long system from the standpoint of perennial grass density and production. Perennial grass production was closely associated with the degree of use and was highest where grazing use was lowest. A Vale, Oregon study, lasting over 20 years compared moderate grazing intensity and rotational grazing. Rotational grazing showed no advantage over season-long grazing in improving range condition or forage production. *"The key factor in range improvement appeared to be the reductions in grazing intensities that were applied when the project was initiated... ."*

Relying on additional water developments, fences and grazing systems will not alleviate the problem. The use of range improvements and rotation systems is not sufficient to correct over-stocking. A review of results from 18 western grazing system studies found that adjustment of livestock numbers, or stocking intensity was more important than implementing grazing systems to improve herbage production. [56] The various claims made by advocates of short-duration or time-controlled grazing were not proven. [57] The most comprehensive review on this topic to date analyzed outcomes of over 30 separate studies that compared rotational

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

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

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

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

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

grazing to continuous grazing.[58] Eighty-nine percent of the experiments analyzed reported no difference in plant production or standing crop between rotational and continuous grazing with similar stocking rates. Stocking rate emerged as the most consistent variable influencing vegetation response.

A discussion of rest-rotation is found in Clary and Webster's General Technical Report titled *"Managing Grazing of Riparian Areas in the Intermountain Region."*[59] They summarized studies showing significant increases in forage production occurred with decreased intensities of grazing. The report described the improvements found in reducing grazing from heavy, to moderate and then to light grazing. Grazing with utilization above 50% was described as heavy, moderate was 30 - 50% and <25-30% was called light grazing in most of these studies. The study concluded that *"managers should place more emphasis on proper stocking intensity and less on grazing system implementation. The concentrated use of grazing pastures is not compensated for during rest years if grazing use is heavy. In summary, although grazing systems have great intuitive appeal, they are apparently of less consequence than once thought. In fact as long as good management is practiced so that there is control of livestock distribution and grazing intensity, the specific grazing system employed may not be significant."*

(6) Riparian Grazing

A Forest Service study determined the order in which cattle grazed particular areas; *"Ravine bottoms were usually grazed first. Next in order were openings in timber stands on gentle slopes, areas near water, areas along fences and ridgetops, salt grounds, accessible openings in timber stands on steeper slopes, areas under large trees, and finally areas covered by tree thickets."* [60] In another study, *"cattle dispersion was constrained by the spatial distribution of water and slope. Across 3 seasons, 77% of observed use was within 366 meters of water. Approximately 65% of the land area was beyond 723 meters from water and sustained only 12% of observed use. Cattle concentrated use (79%) on slopes less than 7%. Consequently 35% of the area, on or surrounded by slopes > 10%, received only 7% of observed use. Loamy, grazable woodland and wetland sub-irrigated range sites were most preferred and accounted for over 65% of observed use while occupying less than 35% of the land area. Overall, coarse upland, very shallow and shallow loamy sites were not preferred"* [61]

Vigorous woody plant growth and at least 6 inches of residual herbaceous plant growth at the end of the growing/grazing season typified riparian areas in excellent, good, or rapidly improving condition. This corresponds to a riparian utilization rate of 24 – 32%. *"Most riparian grazing results suggest that the specific grazing system used is not of dominant importance, but good*

[58] Briske, D.D., Derner, J.D., Brown, J.R. et al., 2008. Rotational grazing on Rangelands: Reconciliation of perception and experimental evidence," Rangeland Ecology and Management, 61(1):3–17.
[59] Clary, Warren P and Bert F. Webster. 1989. Managing Grazing of Riparian Areas in the Intermountain Region. USDA Forest Service GTR-INT-263.
[60] Hormay, op. cit.
[61] Pinchak, W.E., Smith, M.A., Hart, R.H., and Waggoner, J.W. 1991. Beef cattle distribution patterns on foothill range. Journal of Range Management, 44(3):267-275.

management is – with control of use in the riparian area a key item." Degraded riparian areas may require complete rest to initiate the recovery process.[62]

W. S. Platts reviewed grazing systems and found that none were compatible with healthy aquatic ecosystems[63]. A study of long-term riparian exclosures found that, after 30 years of livestock exclusion, willow canopy cover was 8.5 times greater in livestock exclosures than in adjacent grazed riparian areas.[64] Grasses were 4 to 6 times greater in cover within the exclosure than outside. Mean peak standing crop of grasses within the exclosure was 2,410 Kg/Ha (1950 lb/acre), while outside in caged plots, mean peak standing crop was 1,217 Kg/Ha (1083 lb/acre).

Another study of upland and wet meadow communities that had livestock excluded for 9 – 18 years found major differences between the ungrazed communities and those continuing to be grazed. In each case, the area without grazing had greater belowground plant biomass, lower soil bulk density and higher soil pore space. In dry meadows the infiltration rate was 13 times greater than those dry meadows continuing to be grazed and in wet meadows, infiltration of rested areas was 2.33 times greater.[65] A long-term study in Utah sage-steppe comparing results of implementing a deferred rotation grazing system and upland water troughs found that riparian use did not decrease after implementation of the new system and troughs.[66] Riparian use remained extreme at 90 - 100% and while greenline stubble heights declined following implementation, bank alteration remained constant at 80%.

The implications of these studies relative to Forest Service NFMA requirements for sustainable use and preventing impairment of productivity are clear. Grazing systems do not compensate for over-stocking, light use is necessary to sustain productivity and long-term rest is essential to restore productivity following livestock grazing. Current livestock management practices in the ANF and UWCNF are not compliant with the Multiple Use Sustained Yield Act and NFMA provisions for sustainability.

6. Livestock Effects to Water Quality

Of particular concern with growing recreational demand is the pollution of surface waters by livestock. E. coli are typical of fecal bacteria found in the digestive tracts of animals and

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[62] Clary and Webster. Op cit.

[63] Platts, W.S. 1991. Livestock Grazing. In Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. American Fisheries Society Special Publication 19:389-423.

[64] Schulz, Terri T and Wayne C. Leininger. 1990. Differences in riparian vegetation structure between grazed areas and exclosures. Journal of Range Management 43(4):295-299.

[65] Kauffman, J. Boone, Andrea S. Thorpe, and E. N. Jack Brookshire. 2004. Livestock exclusion and belowground ecosystem responses in riparian meadows of eastern Oregon. Ecological Applications 14(6):1671-1679.

[66] Carter, J., Catlin, J., Hurwitz, N., Jones, A., and Ratner, J. 2017. Upland water and deferred rotation effects on cattle use in riparian and upland areas. Rangelands 39(3-4):112-118. doi 10.1016/j.rala.2017.06.003

humans and are used as indicators of fecal contamination. Their presence may also be indicative of contamination by other bacteria or protozoans that can cause illness resulting in diarrhea, nausea, and vomiting. They can cause eye, ear, nose and throat infections, or even death such as that experienced in the Milwaukee cryptosporidium outbreak in 1993.[67] Cattle have been shown to produce 5.4 billion fecal coliform and 31 billion fecal streptococcus bacteria in their feces per day. Since cattle spend a significant portion of their time in or near streams, lakes and wetland areas and average 12 defecations per day, they can contribute significant numbers of these organisms to surface waters.[68]

Recent research in areas used by cattle, recreationists, pack animals or wildlife is pertinent to this effort. Research conducted in wilderness areas in the Sierra Nevada mountains included areas of high use by backpackers, high use by pack animals and cattle grazed watersheds. Fifteen areas used by backpackers yielded only one site containing E.coli and this site was significantly lower than those used by cattle or pack animals.[69] Five years of data collection from these sites found similar results, concluding, "*Surface water from watersheds below cattle areas and those used by pack animals is at high risk for containing coliform organisms. Water from Wild, Day Hike, or Backpack sites poses far less risk for contamination by coliforms"*.[70]

The costs of nutrients and bacteria from cattle grazing in the Sierra Nevada were characterized as, "*summer cattle grazing on federal lands affects the overall water quality yield from this essential watershed as cattle manure is washed into the lakes and streams or directly deposited into these bodies of water. This organic pollution introduces harmful microorganisms and also provides nutrients such as nitrogen and phosphorus which increase algae growth causing eutrophication of otherwise naturally oligotrophic mountain lakes and streams. Disinfection and filtration of this water by municipal water districts after it flows downstream will become increasingly costly. This will be compounded by increasing surface water temperatures and the potential for toxins release by cyanobacteria blooms*."[71]

Another study in the Sierra Nevada mountains sampled for coliform bacteria in one ungrazed site and four sites grazed by cattle. Before cattle entered the area, all sites were below criteria for coliforms and E.coli. After cattle entered the area, the ungrazed site remained low, while the grazed sites rapidly increased above criteria and remained there until after cattle left the area,

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[67] Rock C, B Rivera. 2014. Water quality, e. coli and your health. University of Arizona College of Agriculture and Life Sciences. AZ1624.

[68] Howard G, Johnson S, Ponce S. 1983. Cattle grazing impact on surface water quality in a Colorado front range stream. J. Soil and Water Conservation. March-April 1983:124-128.

[69] Derlet R, Carlson J. 2006. Coliform bacteria in Sierra Nevada wilderness lakes and streams: What is the impact of backpackers, pack animals, and cattle? Wilderness and Environmental Medicine 17:15-20.

[70] Derlet R, Ger K, Richards J, Carlson J. 2008. Risk factors for Coliform bacteria in backcountry lakes and streams in the Sierra Nevada mountains: a 5-year study. Wilderness and Environmental Medicine 19:82-90.

[71] Derlet R, Goldman C, Connor M. 2010. Reducing the impact of summer cattle grazing on water quality in the Sierra Nevada Mountains of California: a proposal. J. of Water and Health:08.2:326-333.

then quickly declined.[72] The influence of differing climatic regimes on coliform bacteria in cattle grazed areas in the Sierra Nevada mountains showed, "*Water year 2009 had near normal precipitation; 2010 had late precipitation and snowmelt; and 2011 had 150% above normal precipitation" … "After the beginning of grazing, mean E. coli counts increased as follows: 2009 from 8 to 240 CFU/100mL, 2010 from 7 to 561 CFU/10mL; 2011 from 7 to 657 CFU/100mL ($p < 0.05$ all years).*"[73]

In a study of the effect of high precipitation years on benthic algae and coliform bacteria in areas grazed by cattle, areas used predominantly by pack animals, recreation areas used only by humans and remote wildlife areas in the Sierra Nevada mountains, mean benthic algae coverage was 29.5% in cattle grazed areas compared to 8.5% in pack animal areas, 3.7% in human use areas and 1.8% in wildlife only areas. E.coli attached to the benthic algae was 90% at cattle grazed sites, 23% at pack animal sites, 0% at human and wildlife sites. E. coli was detected suspended in water at concentrations greater than 100 colony forming units/100 ml at 70% of cattle grazed sites and none at pack animal, human or wildlife sites.[74] While this study focused on E. coli impacts, it is worth noting that livestock have many negative effects on stream systems. They impair water quality and quantity by increasing nutrients and sediment. They alter channel morphology through hoof shear causing channel widening and reducing depth. They alter hydrology by destroying bank stabilizing vegetation, increase water temperature by loss of stream shading vegetation and cause loss of fish and wildlife populations as a result.[75]

Water quality monitoring data collected for streams potentially supporting cutthroat trout, tributaries to the Colorado River system and its Threatened and Endangered fish species needs to be analyzed and reported. The effects of diversions for livestock and irrigation on stream flows should all be analyzed for the Project Area and CEA. The cumulative effects of this Project and the associated livestock grazing and soil damage (erosion, bare soil, compaction) on watershed function and stream flows for TES species should be analyzed and reported.

7. Livestock Grazing Effects on Aspen

The Forest Service typically ignores livestock grazing effects on forest structure and understory conditions as related to potential that might be described in Natural Resource Conservation Service Ecological Site Descriptions or other scientific reports. Those ESDs acknowledge the role of livestock and other factors in state changes and degradation of natural conditions.

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[72] Myers L, Kane D. 2011. The impact of summer cattle grazing on surface water quality in high elevation mountain meadows. Water Qual. Expo. Health 3:51–62.

[73] Myers L, Whited B. 2012. The impact of cattle grazing in high elevation Sierra Nevada mountain meadows over widely variable annual climatic conditions. Journal of Environmental Protection: (3): 823-837.

[74] Derlet R, Richards J, Goldman C. 2012. Does above-normal precipitation reduce the Impact of mountain cattle grazing on watershed algae and bacteria? Water Qual Expo Health (4):105–112.

[75] Belsky A, Matzke A, Uselman S. 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. J. Soil and Water Cons. 54(1):419-431.

Recent projects we have reviewed have failed to address this issue, but it is foundational in determining the ecological status of the Forest.

Browsing of aspen by livestock has been studied by Forest Service scientists such as Bartos, Mueggler, and Campbell using exclosures. They documented the use by livestock, deer and elk showing the disproportionate influence of livestock.[76] The EA (p3) cites Kay (1997). Here, we review a historic study Charles Kay performed for BLM in Nevada.[77] Kay reported the results of a study of hundreds of aspen clones in the Shoshone, Simpson Park, Diamond, Desatoya and Roberts Mountains on BLM lands in central Nevada. Aspen in these areas were found to be in poor condition and many stands had not successfully regenerated in 100 years or more. No evidence of elk presence was found in or near any of the stands, so elk were not contributors to the problem. Forest succession was not a problem as conifer invasion had not taken place in the communities studied. Other than pinyon pine, conifers were absent from the study area. Kay observed that where aspen in central Nevada has been protected from grazing, aspen has maintained its position in the vegetation community and, in fact, has replaced sagebrush, contrary to the opinion of some that say sagebrush naturally replaces aspen. He cited exclosure studies that found aspen stands have expanded and eliminated sagebrush. Exclosure studies also suggested that climate has little impact on aspen in central Nevada. Aspen inside exclosures regenerated without fire or other disturbance while aspen in adjacent, unprotected areas did not. Numerous papers were cited that demonstrate that climatic variation does not account for observed declines in aspen.

Fire exclusion was also examined. It was noted that BLM has suppressed fires for a long period and the study areas contained little evidence of fires. In fact, only a few out of the hundreds of clones studied had experienced fire during the past 20 years. Aspen age data suggest that few aspen stands in central Nevada have burned during the past 100 years. Kay points out that while the burned stands did regenerate, in all cases where aspen were protected from livestock grazing, aspen regenerated. So, while fire may benefit the species, aspen declines cannot be attributed to absence of fire.

Exclosure data indicated that herbivory had a major influence on aspen stem dynamics and understory composition in central Nevada. Most herbivory was from livestock. Pellet counts were used and showed that 59.3% were from domestic sheep, 40.2% from cattle and 0.4% from deer. Exclosures that excluded cattle but not deer, including canyons closed to livestock, had

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[76] Carter, J. 2012. Aspen - Review of Literature Regarding Vegetation Treatments, Conifer Invasion and Browsing. Yellowstone to Uintas Connection, Paris, ID. https://app.box.com/s/kbpatshjcnzj7sneghi5fxeyu53gmrp9

[77] Kay, Charles E. 2001. The Condition and Trend of Aspen Communities on BLM Administered Lands in Central Nevada – with Recommendations for Management. Final Report to Battle Mountain Field Office, Bureau of Land Management. Battle Mountain, Nevada. An updated (2003) version is available at: https://idahoforwildlife.com/Charles%20Kay/59-%20Aspen%20Management%20Guidelines%20for%20BLM%20Lands%20in%20North-Central%20Nevada.pdf

aspen stands that all were regenerating. When fallen trees blocked livestock access, aspen were able to regenerate in the protected spaces. Reductions in livestock numbers also resulted in aspen regeneration. Distance to water and slope were also factors that related to aspen regeneration or the lack of regeneration. Cattle use was generally related to distance from water and slope. Steeper slopes or areas further from water received less use. Aspen stands further from water and on steeper slopes were in better condition than those nearer water or on more gentle slopes, again indicating that grazing by livestock was the operative factor causing declining health of aspen clones. While Kay cited other research indicating that wildlife have impacts on aspen regeneration, he states that in all cases where aspen is protected from livestock, it successfully regenerated and formed multi-aged stands without fire or other disturbance. He concluded by saying, *"The single stem-aged stands seen in central Nevada and found throughout the West are not a biological attribute of aspen, but a result of excessive ungulate herbivory. … In central Nevada, however, domestic livestock are the predominate ungulate herbivore."*

A recent study in Utah's famous Pando clone looked at the lack of recruitment of aspen. The study documented "4.5 times the amount of cattle use herbivory in two weeks than the mule deer use over six months. Forage utilization by mule deer prior to the onset of livestock grazing was unobservable, while forage utilization by livestock (plus mule deer) during the 2 weeks of cattle grazing consumed 70 to 90 percent of the understory vegetation's annual production."[78] This demonstrates that the effect of wildlife, in this case, deer, are negligible compared to domestic livestock.

Age structure of aspen was determined in the Hart Mountain National Antelope Refuge to determine the relationship to the presence of livestock and climate. A significant decline in aspen recruitment occurred in the late 1800s that coincided with the onset of high levels of livestock grazing. Livestock grazing was terminated in 1990 and aspen recruitment increased "by more than an order of magnitude". Climate variables were not a significant factor. "Where long-term declines in aspen are currently underway on grazed lands in the western US, land managers need to carefully consider the potential effects of livestock and alter, as needed, management of these ungulates to ensure retention of aspen woodlands and their ecosystem services."[79]

As we have noted, the effects of livestock grazing on the lack of regeneration of aspen and in the current state of aspen understory must be analyzed for each treatment area for this Project Area. This is necessary to meet the intent of NEPA to inform the public and take a "hard look" at Project effects and meet requirements of the NFMA sustainability provision.

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[78] Ratner, J.R., E.M. Molvar, T.K. Meek, and J.G. Carter. 2019. What's eating the Pando Clone? Two weeks of cattle grazing decimates the understory of Pando and adjacent aspen groves. Hailey, ID: Western Watersheds Project, 33 pp. https://app.box.com/s/ysuufd9dl5dcaof8ija9f7xy67b8q8vj

[79] Beschta, R.L., Kauffman, J.B., Dobkin, D.S., and L.M. Ellsworth. 2014. Long-term livestock grazing alters aspen age structure in the northwestern Great Basin. Forest Ecology and Management. 329(30-36). http://dx.doi.org/10.1016/j.foreco.2014.06.017

8. Livestock Grazing Effects on Conifer Forests

Livestock negatively affect forest health. Typically, agency analyses and management have not considered the effects of livestock on forest health, including aspen and conifer forests in regard to accelerating conifer succession in aspen and increasing the fire hazard in conifer forests. Livestock grazing plays a key role in removing herbaceous vegetation from the forest floor and disturbing the soil resulting in accelerated establishment of conifer seedlings. This results in thickets of saplings, a dense forest with a reduced herbaceous component, and increased risk of high-intensity fires[80]. Forest stands suffer *"retrogression"* and loss of grasses when grazed by cattle and big-game, but big-game grazing alone did not result in significant effects.[81]

Livestock grazing in Douglas-fir communities caused increased tree numbers, decreased production, cover and frequency of major palatable grasses, and altered dominance of shrub and forb species. Grazing resulted in increased accumulation of downed woody fuel in every size class, increased forest floor duff and decreased herbaceous fuels. The consequences were *"fuel distribution and composition were slightly less favorable to frequent surface fires, highly conducive to vertical spreading of fire and potentially more capable of major conflagrations."* These conditions make prescribed fire more likely to cause high-intensity fires.[82] It was predicted in 1972 that growing fuel accumulation would place forests at higher risk.[83]

A study of tree density and herbaceous understory vegetation on ungrazed Meeks Table and grazed Devils Table in Washington found that herbaceous vegetation was 183% to 254% greater on the ungrazed site with 850 pounds of air-dry herbage per acre compared to 240 pounds per acre in the grazed site. *"While the timbered overstories on the two Tables were similar, Meeks Table had only a very few small trees, but Devils Table had 3,291 small trees per acre."*[84] A study of grazed and ungrazed Ponderosa pine forests in Zion National Park found that grazing by livestock and associated reduction of the herbaceous ground layer promoted the establishment of less palatable tree and shrub seedlings.[85] Loss of soil nutrients from logging was lower than from grazing.[86] In studies of grazed and ungrazed woodlots, the highly compacted soils of the

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[80] Belsky, A.J. and Dana M. Blumenthal. 1997. Effects of livestock grazing on stand dynamics and soils in upland forests of the interior West. Conservation Biology 11(2):315-327.

[81] Kreuger, William C. and A. H. Winward. 1974. Influence of cattle and big-game grazing on understory structure of a Douglas-fir Ponderosa Pine- Kentucky bluegrass community. Journal of Range Management 27(6):450-453.

[82] Zimmerman, G. Thomas and L.F. Neuenschwander. 1984. Livestock grazing influences on community structure, fire intensity and fire frequency within the Douglas-fir/Ninebark habitat type. Journal of Range Management 37(2):104-110.

[83] Dodge, Marvin. 1972. Forest fuel accumulation – a growing problem. Science 177:139-142.

[84] Rummell, Robert S. 1951. Some effects of livestock grazing on Ponderosa pine forest and range in central Washington. Ecology 32(4):594-607.

[85] Madany, Michael H. and Neil E. West. 1983. Livestock grazing-fire regime interactions within montane forests of Zion National Park, Utah. Ecology 64(4):661-667

[86] Smith, David M., Bruce C. Larson, Matthew J. Kelty and P. Mark S. Ashton. 1997. The Practice of Silviculture: Applied Forest Ecology. John Wiley & Sons, New York. 537p.

heavily grazed woodlot had lower moisture content and much lower infiltration rates than in ungrazed soils.[87] Soil disturbance such as this has far-reaching consequences on forest health, including reduced production and increased susceptibility to insects and disease.

The current condition, composition and productivity of the conifer stands in the Project Area and CEA must be characterized and the effects of past timber projects and livestock grazing on forest stand structure, understory plant communities and woody residue revealed. Security cover must be identified and mapped, and the Project must be designed to retain and promote security cover. These elements need to be analyzed to meet the intent of NEPA and NFMA.

9. Fuels and Vegetation

The EA (p7 - 8) lays out a rationale for the prescribed fire and mechanical treatments. Persistent aspen are described as "where declining, successful regeneration is occasionally observed. However, without active treatments in some of these stands, the progression towards a landscape with mature and old stands would continue for long time periods." This is essentially a description of normal succession to old growth. There is no discussion of the life cycle of aspen, the fire return interval and how aspen stands persisted for thousands of years in the absence of human interference, particularly the effects of livestock.

Similarly, the EA describes seral aspen in the Project Area as "having an abundance of late seral conditions and moderate to extensive colonization by conifers. New aspen is limited in these stands. Eventually, these stands with a conifer component would transition to a conifer dominated cover type, and possible, the long-term loss of the aspen clone if not treated or disturbed by natural events such as fire." Here, the ANF merely describes what appears to be a natural succession of aspen to conifer, likely accelerated by its own management. After all, the seral aspen is on a path to conifers, then fire kills the conifers and the aspen regenerate. Isn't that what has happened since the Pleistocene? A natural cycle.

These descriptions appear to be a pretext to use fire dollars and support logging in the guise of mechanical treatments while not addressing any real cause of perceived problems with aspen. If left alone and not abused by livestock, their natural cycle could continue.

Figure 2 of the EA shows the acreage of seral aspen forest type by diameter at breast height. It is unclear if these measurements are for aspen alone, or for both aspen and conifer. What the chart shows is a lack of older age classes, i.e. old growth. There is no information on suckers or recruitment below the breast height level. Are stands regenerating? What is the effect of browsing by livestock? This chart is a depiction of a point in time and not site-specific to individual treatment units.

[87] Barnes, Burton V., Donald R. Zak, Shirley R. Denton and Stephen H. Spurr. 1998. Forest Ecology. John Wiley & Sons, New York. 774p.

To meet the burden of "hard look" under NEPA, a much more in-depth analysis is needed. Stands that are not subject to livestock grazing should be compared with those that are subject to livestock grazing. Locations of sheep bedding need to be assessed for recruitment and understory composition. Locations near livestock water sources need to be assessed for recruitment and understory composition. Areas away from water and upslope should be compared to valleys and areas near water. Surely, out of the over 1,000 plots the ANF is monitoring, there is data for these and other comparisons. Once these comparisons are quantified, then intelligent aspen management can be attempted by changing the livestock stocking rate, moving water sources, herding livestock, and reducing stocking rates as discussed above. This analysis should be superimposed on areas treated in the past to determine whether treatments, design criteria, forest plan standards and guidelines, and BMPs made a difference. To not do this is to repeat current conditions and waste taxpayer dollars.

The EA does not disclose the anticipated board feet of lumber to be sold from the Project. What is this amount? What portion of the annual harvest from the ANF is this planned to be? What is the cost? The Roadless Project Summary notes that "Commercial-size trees within 1,000 feet of existing roads and on slopes of less than 40% may be sold or removed." [88] A tabulation of the acres affected by mechanical treatments indicates 13,961 acres are to be mechanically treated by cutting, sale or removal. These areas should be mapped and compared to where old growth occurs, where security habitat occurs. Protection and expansion of both old growth and security areas should be planned as part of the Project.

10. Forests, Carbon Storage, Fire and Treatments

Forests currently capture and store approximately 25% of global anthropogenic carbon emissions. Forests in the lower 48 states sequester 460 ± 48 Teragrams (Tg) of carbon per year, while losses from disturbance average 191 ± 10 Tg carbon per year. Carbon loss in the southern US was 105 ± 6 Tg with 92% from harvest and 5% from wind damage. Carbon loss in the western US was 44 ± 3 Tg with 66% due to harvest, 15% from fire, and 13% from insect damage. Carbon loss in the northern US was 41 ± 2 Tg with 86% from harvest, 9% from insect damage, and 3% from land conversion. Taken together, these disturbances reduced the estimated potential carbon sink of US forests by 42%.[89] Life cycle analyses of fuel reduction treatments including removal of woody biomass, combustion of fuel in logging machinery, transport, burning of slash, milling energy use, and other factors lead to the conclusion that over the long term, carbon losses from treatment projects may exceed those from wildfire because most of the carbon mass remains on site unburned during fire. (Figure 2). The authors further noted that, **"Studies at large spatial and temporal scales suggest that there is a low likelihood of high-severity wildfire events interacting with treated forests, negating any**

[88] USDA Ashley National Forest. 2020. Region 4 Roadless Project Summary and Briefing Sheet 2001 Roadless Rule.

[89] Harris, N.L., Hagen, S.C., Saatchi, S.S. et al. Attribution of net carbon change by disturbance type across forest lands of the conterminous United States. Carbon Balance Manage 11, 24 (2016). https://doi.org/10.1186/s13021-016-0066-5

expected benefit from fuels reduction."[90]

Figure 2. Area burned in the 2018 Roosevelt Fire in Wyoming. Note the standing dead trees. Most remained standing in this severely burned area. Photo by John Carter.

A USDA study estimated soil organic carbon in relatively undisturbed secondary forests in the Rocky Mountain Region is 71,571 lbs/acre. Estimated carbon in dead organic matter above the mineral soil horizon in lodgepole pine forest in the Rocky Mountain Region is 13,411 lb/acre. Average storage of carbon by Forest ecosystem component for the Rocky Mountain Region is 148,190 lb/acre for Idaho with trees (60,961 lb/acre), soil (64,417 lb/acre), forest floor (21,735 lb/acre) and understory (1,077 lb/acre). Annual average carbon accumulation in live trees for Idaho is 1,112 lb/acre/year. [91] The Proceedings of the American Society of Mining and Reclamation reported that, "Soil organic matter (OM) is drastically reduced by various

[90] Restaino, J.C. and D.L. Peterson. 2013. Wildfire and fuel treatments effects on forest carbon dynamics in the western United States. Forest Ecology and Management 303:46-60.

[91] Birdsey, R. A. Carbon Storage and Accumulation in United States Forest Ecosystems. USDA Forest Service General Technical Report WO-59.

processes (erosion, leaching, decomposition, dilution through soil horizon mixing etc.) typically associated with topsoil salvage prior to surface mining activities. Of these processes, loss of physical protection of OM through the breaking up of soil aggregation can result in up to 65% of soil carbon (C) reductions."[92] This has implications not only for mining, but for timber harvest and associated roads, mechanical treatments, livestock grazing, and other activities that disturb and disrupt the soil.

Both fuel treatments and wildfire remove carbon from forests. In mature ponderosa pine forests, for example, protecting one unit of carbon from wildfire combustion came at a cost of removing three units of carbon with treatments. "The reason for this is simple: the efficacy of fuel reduction treatments in reducing future wildfire emissions comes in large part by removing or combusting surface fuels ahead of time. Furthermore, because removing fine canopy fuels (i.e. leaves and twigs) practically necessitates removing the branches and boles to which they are attached, conventional fuel-reduction treatments usually remove more carbon from a forest stand than would a wildfire burning in an untreated stand." The analysis showed that thinning and other fuel treatments to reduce high-severity fire, although considered to keep carbon sequestered, do not do so. High carbon losses came from treatments while only small losses were associated with high-severity fire. These were similar to losses with low-severity fire that treatments are meant to encourage.[93]

(1) Wildfire and Species Effects

More species (48% of the community) reached peak abundance at moderate-high-severity-fire locations than at low-severity fire (8%), silvicultural management (16%), or undisturbed (13%) locations. Total community abundance was highest in undisturbed dense forests as well as in the first few years after silvicultural management and lowest in the first few years after moderate-high-severity fire, then abundance in all types of disturbed habitats was similar by 10 years after disturbance. Even though the total community abundance was relatively low in moderate-high-severity-fire habitats, species diversity was the highest. Moderate-high-severity fire supported a unique portion of the avian community, while low-severity fire and silvicultural management were relatively similar.[94]

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[92] Wick et al. 2008. Soil aggregate and aggregate associated carbon recovery in short-term stockpiles. Proceedings America Society of Mining and Reclamation, 2008 pp 1389-1412. DOI: 10.21000/JASMR08011389

[93] Campbell, J.L., Harmon, M.E., and S.R. Mitchell. 2012. Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions? Frontiers in Ecology and Environment 10(2):83-90. doi:10.1890/110057.

[94] Roberts, L.J., Burnett, R., Fogg, A. 2021. Fire and Mechanical Forest Management Treatments Support Different Portions of the Bird Community in Fire-Suppressed Forests. Forests 2021, 12, 150. https://doi.org/10.3390/f12020150

(2) Wildfire and Insect Outbreaks

An analysis of 2,766 large wildfires that burned in the west during the 2003 - 2012 period was carried out to determine the influence of mountain pine beetle outbreaks on fire behavior and area burned. Approximately 12% of these fires intersected prior beetle outbreaks and burned in those areas for only about 4 days. Daily area burned for high-extreme fire behavior in large fires burning for long periods in landscapes affected by mountain pine beetles was not related to beetle activity, but was due to warm, dry, and windy conditions.[95] A study of the effects of spruce beetle on fire activity in Colorado found no effect of pre-fire beetle activity on fire severity. Both bark beetle outbreaks and wildfires have increased due to climate variability while topography, weather conditions and pre-outbreak basal area exerted a stronger effect on fire severity.[96] Review of treatments (tree harvest and prescribed burning, among other actions) for mountain pine beetle control found that overall, they had little to no impact on mountain pine beetle. Controls that had not been logged or thinned had more trees killed by beetles, but in the end, contained more residual mature trees than did thinned stands.[97]

(3) Fire Suppression and Fuel Buildup

Fire suppression and the associated fuel buildup is often blamed for the larger wildfires in recent years. The solution proposed nearly always is for more logging and thinning, or fuel treatments. But this does not apply to most fires and plant communities in the West. For example, about half the 20,000,000 acres burned in California in 2020 were in chapparal or grassland, not forests, while about 35% were in conifer forests. There is also a difference in fire intervals depending on whether the forest is a dry conifer forest. These make up only about 4% of forest types in western Montana and northern Idaho and are subject to more frequent fire return intervals on the order of decades. Higher elevation conifer forests have much longer fire return intervals of 200 - 300 years. Large fires are the result of drought, high temperatures, low humidity and wind.[98] An analysis of 1,500 fires affecting Ponderosa and Jeffrey Pine and mixed conifer western forests found that "forests with higher levels of protection had lower severity fire even though they are considered to have the highest levels of biomass and fuel loads.[99]

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[95] Hart, Sarah J.; Preston, Daniel L. 2020. Fire weather drives daily area burned and observations of fire behavior in mountain pine beetle affected landscapes. Environmental Research Letters 15(5):054007.
[96] Robert A Andrus, Thomas T Veblen, Brian J Harvey, Sarah J Hart. 2016. Fire severity unaffected by spruce beetle outbreak in spruce-fir forests in southwestern Colorado. Ecol Appl;26(3):700-11. Doi: 10.1890/15-1121.
[97] Six, D.L., Biber,E., and Long, E. 2014. Management for mountain pine beetle outbreak suppression: Does relevant science support current policy? Forests 5:103-133. doi:10.3390/f5010103
[98] Wuerthner, G. 2021. Fire Suppression Hyperbole. The Wildlife News, March 1, 2021. https://www.thewildlifenews.com/2021/03/01/fire-suppression-hyperbole/
[99] Bradley, C.M., Hanson, C.T., and DellaSala, D.A. 2016. Does increased forest protection correspond to higher fire severity in frequent fire forests in the western United States? Ecosphere 7(10)/e01492. https://doi.org/10.1002/ecs2.1492

11. Summaries of Issues Around Fire, Logging and Fuel Treatments (Figures 3 - 9)

(1) The Firefighters United for Safety, Ethics and Ecology have summarized the issues surrounding fires, logging, fuels treatments, carbon storage and climate change. Some of their points are that: (1) most forests are fire-adapted and renewed by fire; (2) more acres burned in the past than today; (3) logging targets commercially valuable trees for harvest and these trees have the least influence on fire spread; (4) logging does not address fuels such as small diameter ladder and surface fuels; (5) past logging has made the forest more flammable than the original forest cover; (6) firefighting efforts are irrelevant against large or high-intensity fires burning under severe conditions; (7) firefighters are most effective in suppressing small, low-intensity fires that should not be suppressed; (8) only 15% of total carbon from a tree is preserved in wood products while most enters the atmosphere from logging and milling and these losses are greater than from wildfires; (9) most carbon is stored in large tree boles or soils and most severe wildfires do not completely consume large tree boles or deep layers of organic soils; (10) areas closest to communities have the legacy of logging and fire exclusion and these areas pose the greatest fire risk and fuel hazards. They conclude that "attempts to fire-proof the forest through landscape-scale logging or mechanized firefighting are essentially geoengineering schemes that would fundamentally alter forest ecosystems, ultimately put them at greater risk of destruction, and further accelerate global heating."[100]

(2) A recent book has addressed the value of large trees using Oregon Eastside Forests as an example.[101] The values of large trees include: (1) forest raptors, woodpeckers, songbirds, bats, and other small mammals depend on large trees to nest, forage, overwinter, roost, and den; (2) large trees provide shelter and microclimates for countless invertebrates, epiphytes, herpetofauna, and rare plants; (3) large trees in riparian areas provide stream-side shading and, when they fall into streams, hiding cover for aquatic species; (4) large trees store the accumulation of decades to centuries of atmospheric carbon helping to reduce adverse consequences of global overheating; (5) large trees are essential to nutrient cycling, soil stabilization, and below-ground processes that develop as they mature; (6) large trees remain in short supply due to a legacy of logging; (7) when logged, large trees release most (up to two-thirds) of their stored carbon to the atmosphere (contributing to global overheating) and their emitted carbon takes decades to centuries to recover, if ever. A current article also reviews the value of large trees for carbon storage and notes that live and dead trees and forest soil hold the equivalent of 80% of all the carbon currently in Earth's atmosphere.[102] They point out that in mature and old forests in Oregon: "Big trees, with trunks more than 21 inches in diameter, make up just 3% of these forests but store 42% of the above-ground carbon. Globally, a 2018 study

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[100] Ingalsbee, T. 2020. Incendiary rhetoric: climate change, wildfire, and ecological fire management. Firefighters United for Safety, Ethics & Ecology. 24 p. https://fusee.org/fusee/incendiary-rhetoric

[101] DellaSala, D.A. and Baker, W.L. 2020. Large Trees: Oregon's Bio-Cultural Legacy Essential to Wildlife, Clean Water, and Carbon Storage. https://oregonwild.org/sites/default/files/pdf-files/Large%20Trees%20Report%20resize.pdf

[102] Law, B. and Moomaw, W. 2021. Curb climate change the easy way: Don't cut down big trees. Phys.Org April 7, 2021. https://phys.org/news/2021-04-curb-climate-easy-dont-big.html

found that the largest-diameter 1% of trees hold half of all the carbon stored in the world's forests." This validates the need to protect and restore mature and old-growth forests for their value in carbon storage.

(3) Another article regarding fire in California addressed these and similar points, citing supporting science.[103] Some of these are that: (1) there is not an unnatural excess of fires in forests today, in fact, there is less than in the past; (2) current fires are mostly low to moderate intensity in western US forests; (3) those forests that have remained without fire the longest have mostly low to moderate intensity fire; (4) high intensity fires do not destroy wildlife habitat, but create "snag forest" which is comparable to old growth forest in terms of native biodiversity and wildlife abundance; (5) human-caused climate change increases temperatures and influences wildland fire; (6) today's forests are not unnaturally dense and overgrown, there are more small trees and fewer medium and large trees, less overall biomass and therefore less carbon stored; (7) recent large fires are not unusual and occurred prior to modern fire suppression; (8) drought and native bark beetles do not make forests unhealthy. During drought, bark beetles selectively kill the weakest and least climate adapted trees leaving the better adapted ones to survive and reproduce, while bird and small mammal species increase in numbers because snags provide excellent wildlife habitat; (9) logging reduces the cooling shade of forest canopy, creating hotter and drier conditions and leaves behind "kindling-like slash debris, and spreads combustible weeds; (10) Field studies of large fires find only about 11% of forest carbon is consumed and only 3% of the carbon is from trees. Vigorous post-fire regrowth absorbs huge amounts of CO2 from the atmosphere, resulting in an overall net decrease in atmospheric carbon a decade after fire; and (11) landscape scale prescribed burning would cause at least a ten-fold increase in smoke emissions relative to current fire levels; (12) prescribed burns do not stop wildland fire when it occurs but can alter intensity, while the short-term benefit lasts only about 10 - 20 years so would have to be repeated every 10- 20 years.

(4) In a review[104] of wildland fuel treatments in the interior forests of the US, the following points were made:

- "Treating fuels to reduce fire occurrence, fire size, or amount of burned area is ultimately both futile and counter-productive" because most acreage burned is under extreme conditions which make suppression ineffective. If, due to treatments, moderate intensity fires are suppressed this leads to most acres burning under extreme conditions. Reducing burned area would not be desirable as large fires were common prior to European settlement and many western plant species are adapted to large, severe wildfires. Large fires generally have many areas lightly to moderately burned. Any fire "could offer a

[103] Hanson, C. 2019. Common Myths about Forests and Fire. In: A New Direction for California Wildfire Policy - Working from the Home Outward. Leonardo DeCaprio Foundation.
[104]Reinhardt, E.D., Keane, R.E., Calkin, D.E., and J.D. Cohen. 2008. Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States. Forest Ecology and Management. 256:1997-2006. https://app.box.com/s/loj3dqgz37akelxs18thq0qpkplmk533

unique opportunity to restore fire to historically fire-dominated landscapes and thereby reduce fuels and subsequent effects."

- Reducing fuel hazard is not the same as ecosystem restoration. Treatments such as mastication and thinning may leave stand conditions that do not mimic historical conditions. Mastication breaks, chips, grinds canopy and surface woody material into a "compressed fuel bed" while thinning that removes fire-adapted species and leaves shade tolerant species do not mimic historical conditions. "Fire itself can best establish dynamic landscape mosaics that maintain ecological integrity."

- Thinning for fire hazard reduction should concentrate on the smaller understory trees to "reduce vertical continuity between surface fuels and the forest canopy." Thinning can increase surface fire behavior, for example, it increases surface wind speed and results in solar radiation and drying of the forest floor creating drier surface fuels.

- Fuel treatments are transient. Prescribed fire creates tree mortality with snag fall contributing to fuel loads, tree crowns expand to fill voids, trees continue to drop litter. Trees cut for harvest or killed by fire contribute limbs to the forest floor, increasing fuel loadings. Up to seven treatments may be needed to "return the area to acceptable conditions that mimic some historical range."

- Fire was historically more complex and everchanging than commonly believed and cannot be mimicked by prescribed burning. The low-severity model that is being pushed as "restoration" is no longer widely accepted by scientists. Prescribed fires do not have the variability of past wildfires, and thus can cannot mimic them.

- Commercial Thinning and Prescribed out of season burning have negative ecological impacts. Out of season burning coincides with nesting season for birds. Smoke may drive them from their nest, possibly even kill nestlings, etc. Ground nesters will be most impacted.

- The probability that a fire will encounter a fuel treatment of any kind is low.

(5) Another review questions current policy and whether it is based on science. Lack of monitoring of post treatment effects leaves questions as to the efficacy of treatments. "While the use of timber harvests is generally accepted as an effective approach to controlling bark beetles during outbreaks, there has been a dearth of monitoring to assess outcomes, and failures are often not reported. Additionally, few studies have focused on how these treatments affect forest structure and function over the long term, or our forests' ability to adapt to climate change. Despite this, there is a widespread belief in the policy arena that timber harvesting is an effective and necessary tool to address beetle infestations. That belief has led to numerous proposals for, and enactment of, significant changes in federal environmental laws to encourage

more timber harvests for beetle control."[105] A thorough evaluation of past treatments in the Project Area and CEA must be completed and look at aspen recruitment, stand structure, understory composition, security habitat, old growth and other ecosystem attributes..

(6) Analysis of fire severity patterns in western ponderosa pine and mixed conifer forests showed that " that the traditional reference conditions of low-severity fire regimes are inaccurate for most forests of western North America. Instead, most forests appear to have been characterized by mixed-severity fire that included ecologically significant amounts of weather-driven, high-severity fire." "Biota in these forests are also dependent on the resources made available by higher-severity fire. Diverse forests in different stages of succession, with a high proportion in relatively young stages, occurred prior to fire exclusion. Over the past century, successional diversity created by fire decreased. Our findings suggest that ecological management goals that incorporate successional diversity created by fire may support characteristic biodiversity, whereas current attempts to 'restore'' forests to open, low-severity fire conditions may not align with historical reference conditions in most ponderosa pine and mixed-conifer forests of western North America."[106]

(7) Analysis of fuel treatments and fire occurrence in the western U.S. Forest Service managed lands determined that fuel treatments have a probability of 2.0 - 7.9% of encountering moderate or high-severity fire in a 20-year period of reduced fuels (estimated time frame for return of fuels to prior levels or the "window of effective fuel reduction").[107]

(8) In an Open Letter to Decision Makers Concerning Wildfires in the West, 215 scientists and Forest advocates expressed their concerns about ongoing proposals to expand logging on public land in response to recent increases in wildfire in the West.[108] They called for science-based solutions to maintain biologically diverse fire-dependent ecosystems while reducing risks to communities and firefighters. Today, less acres burn than in the past, but since the 1980s, the fire season has become longer and the number of wildfires has increased, while temperatures have risen and snowpack decreased, and the fire season has increased from five to seven months. This is attributed in part to climate change. They make several points about forest management, including; (1) thinning is ineffective in extreme fire weather; (2) post-disturbance salvage logging reduces forest resilience and can increase fire hazards; (3) wilderness and other

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[105] Six, D.L., Biber, E., and E.L. Esposito. 2014. Management for mountain pine beetle outbreak suppression: does relevant science support current policy?. Forests 5(1):103-133. DOI: 10.3390/f5010103. https://app.box.com/s/4y9y70lbqyza4xnn56a9764abhyr92h8

[106] Odion DC, Hanson CT, Arsenault A, Baker WL, DellaSala DA, et al. 2014. Examining Historical and Current Mixed-Severity Fire Regimes in Ponderosa Pine and Mixed-Conifer Forests of Western North America. PLoS ONE 9(2): e87852. doi:10.1371/journal.pone.0087852.

[107]Rhodes, J.J. and Baker, W.L. 2008. Fire probability, fuel treatment effectiveness and ecological tradeoffs in western U.S. public forests. The Open Forest Science Journal 1: 1-7. https://app.box.com/s/s3dqfmgcxizw0pkrva56ott43qphhjya

[108] Geos Institute. 2018. Open Letter to Decision Makers Concerning Wildfires in the West. Geos Institute, Ashland, Oregon. https://wildfiretoday.com/2018/09/22/217-scientists-sign-letter-opposing-logging-as-a-response-to-wildfires/

protected areas are not especially fire prone; (4) fires burned more severely in previously logged areas, while in wilderness, parks and roadless areas, they burned "in natural fire mosaic patterns of low, moderate, and high severity" which maintained resilient forests.

Figure 3. Clearcuts in the Helena NF (upper) and Gallatin NF (lower) result in habitat fragmentation and loss of carbon storage. Photos by George Wuerthner.

Figure 4. Thinning projects in the Deschutes NF result in soil disturbance, drying of soils, loss of habitat and loss of carbon storage. Photos by George Wuerthner.

Figure 5. Old growth mixed conifer forests in the Caribou NF have diverse habitat structure, moist, healthy, and diverse understory habitat and provide maximum carbon storage. Photos by John Carter.

Figure 6. Aspen regeneration on Southeast Idaho's Kiesha's Preserve 15 years following removal of cattle. Remains of original stand that died out are seen as snags.

Figure 7. Kiesha's Preserve - showing aspen recruitment in diseased and dying aspen. Recruitment and understory recovery resulted from livestock exclusion.

Figure 8. Kiesha's Preserve - Aspen/tall forb community.

Figure 9. Upper - Aspen suckers in burn after Roosevelt Fire. Lower - Aspen sucker sheltered by standing dead trees in severe burn area of the Roosevelt Fire near Bondurant, Wyoming.

12. Canada Lynx

The EA (p9) states: "The Canada lynx and wolverine are unlikely to be affected by the project because they are unlikely (to) occur on the Forest. Federally listed threatened or endangered aquatic species or designated critical habitat does not occur within the project area. Therefore, the proposed management actions would have 'no effect'." EA Table 2 refers to the Wildlife BA (WBA). Table 3 of the WBA provides a brief narrative reporting that lynx are considered dispersers with no recent evidence of lynx occurring in the Uinta Mountains. While habitat is present the Ashley NF is considered unoccupied peripheral habitat. The Project is considered to have No Effect to lynx because:

- The project will not change vegetation types or remove snowshoe hare habitat.
- The project is unlikely to impede movement of lynx within and through the LAUs or impede the ability of a lynx to procure sufficient food.
- A lynx disturbed by human activity associated with the project may temporarily be displaced or habituate to the activity, neither of which is likely to alter the likelihood this individual would procure prey.

The Roadless Evaluation also describes lynx habitat as marginal in the descriptions for each IRA to be affected by the Project. This analysis fails to take the "hard look" required by NEPA, fails to address the actual habitat parameters needed by lynx to occupy a place or to use connections to move from place to place. The three conclusions presented above that purport to explain why lynx will be unaffected are unsupported by the facts. First, the project is by design, planned to change vegetation types from aspen/conifer to aspen; and this removes snowshoe hare habitat. Second, there is no analysis showing the LAUs and their current and potential condition relative to the needs of lynx, nor are the treatments analyzed in the context of their position within LAUs or their effects to habitat. Third, the idea that displacement from this Project is temporary and would not affect the ability to find prey is not supported. There is no cumulative effects analysis to show all the past, present and planned activities affecting the Project Area, LAUs and the CEA and how those affect the ability of lynx to use or move through the area. The following discussion addresses these points in more detail.

The Forest Service has provided a map of historic lynx distribution showing areas, including the Ashley and UWCNFs that have been historically been used by Canada lynx. (Figure 10).[109] This shows the occurrences between 1842 and 1998. The Northern Rockies Lynx Management Direction FEIS provides a map showing occupied and unoccupied areas at the time of publication in 2007. This map (Figure 11) indicates the Uinta Mountains, including the Ashley

[109] Ruggiero, L. F., Aubry, K. B., Buskirk, S. W., Koehler, G. M., Krebs, C. J., McKelvey, K. S.; Squires, J. R. Ecology and conservation of lynx in the United States. General Technical Report RMRS-GTR-30WWW. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Available at: http://www.fs.fed.us/rm/pubs/rmrs_gtr030.html

and UWCNFs are considered peripheral habitat for lynx.[110] The Biological Assessment for Canada lynx documents the importance of peripheral areas. [111]

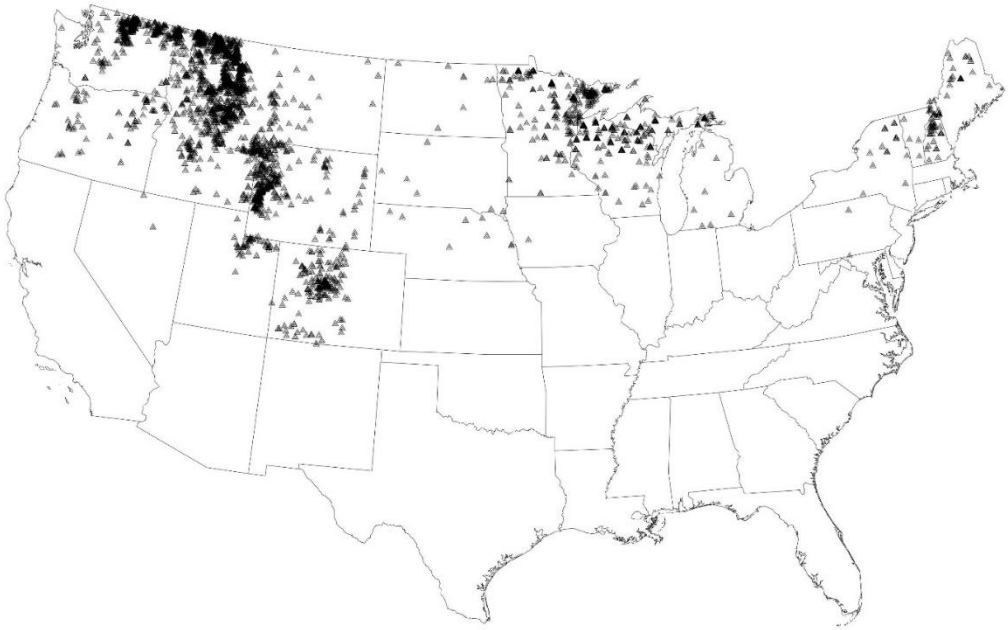

Figure 10. Canada lynx occurrence 1842 to 1998

"Peripheral populations may contain valuable genetic, physiological or behavioral adaptations that are unique to their ecological success. Because suitable habitats in areas where populations act as metapopulations are spatially separated, the persistence of a metapopulation is dependent on the efficiency and success of dispersing animals in reaching isolated patches of suitable habitat. When patches are fragmented and connections between patches do not exist, recolonization becomes problematic and the metapopulation may be unable to persist, even though patches of suitable habitat remain (Meffe and Carroll 1997[112]). Additional fragmentation and isolation of suitable habitat occurring as a result of land management activities can not only affect small, isolated habitat patches supporting smaller populations but also large contiguous patches supporting higher population

[110] USDA Forest Service. 2007. Northern Rockies Lynx Management Direction Final Environmental Impact Statement.

[111] USDA Forest Service 1999. Biological Assessment of the Effects of National Forest Land and Resource Management Plans and Bureau of Land Management Land Use Plans on Canada Lynx. 149p.

[112] Meffe, G.K., and C.R. Carroll. 1997. Principles of conservation biology. Sinauer, Sunderland, Massachusetts 22 Ruggerio, L.F., Aubry, K.B., Buskirk, S.W., Koehler, G.M., Krebs, C.J., McKelvey, K.S., and J.R. Squires (Eds.), Ecology and Conservation of Lynx in the United States. University of Colorado Press, Boulder, CO.

levels." These general principles of genetics and population viability should be applicable to ALL populations of animals as well as plants in these Forests.

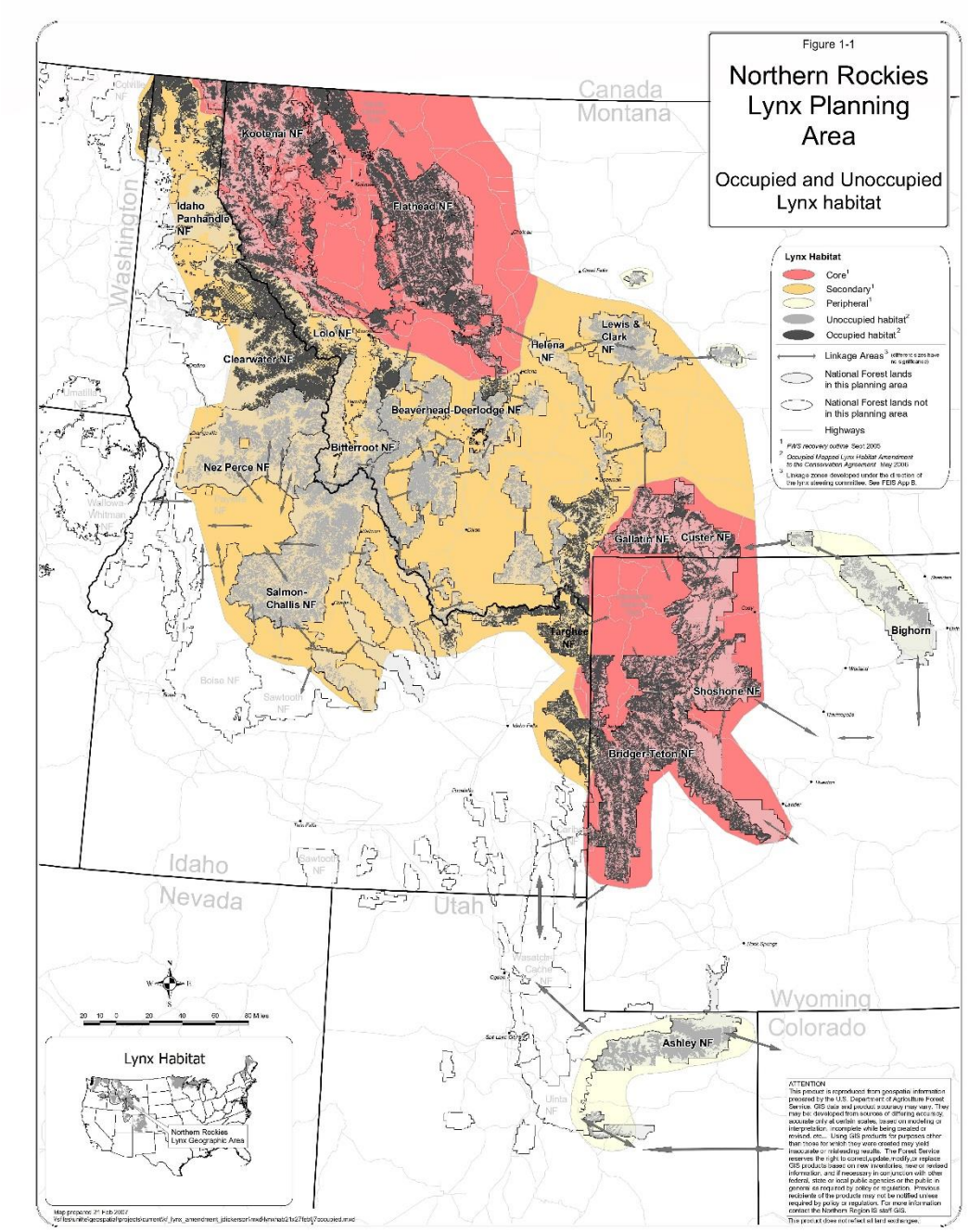

Figure 11. Map showing Ashley and UWCNFs as Peripheral Habitat for Canada lynx.

(1) Canada lynx in the Uinta Mountains

While the Northern Rockies Lynx Management Direction ROD cited in the WBA does state that Ashley NF is currently unoccupied habitat, there is no explanation as to why the Ashley NF is unoccupied.[113] The UWCNF is not mentioned. While there does not appear to be a resident population of lynxes in Utah today, Utah nevertheless contains vast expanses of lynx habitat where lynxes were historically present.

Having been previously extirpated from Colorado, the Canada lynx was reintroduced into the San Juan Mountains beginning in 1999. Lynxes have since proliferated and spread out over the landscape. Several lynxes have made forays into Utah, with the Uinta Mountains and surrounding forestlands being most visited.[114] In addition, the greater Yellowstone ecoregion, including the Salt River and Wyoming ranges, which are located just to the north of the Uinta Mountains, supports a naturally occurring Canada lynx population and is classified as critical habitat for the Canada lynx.[115] The Regional Corridor and linkages defined by the Forest Service are shown in Figure 12. This Figure shows the potential habitat in Colorado.[116] Critical habitat designated by the U.S. Fish and Wildlife Service is also shown.[117]

The Uinta Mountains are recognized as part of a regionally significant wildlife corridor.[118] (Figure 1). This corridor connects to the greater Yellowstone ecoregion through the Bear River Mountains of northern Utah and southern Idaho, and through the Crawford Mountains of southwest Wyoming. Figure 12 shows the lynx linkages determined by the Forest Service.[119]

Given that there are resident lynx populations in Colorado and Wyoming today, and given that the Uinta Mountains are recognized as a regionally significant wildlife corridor, it is no surprise that lynxes still use the Uinta Mountains. Indeed, telemetry records confirm that there is a "hot spot" of lynx occurrences at the western end of the Uinta Mountains, where collared lynxes from Colorado remain for a time before moving on, presumably unable to find mates. As of 2009, at least 22 individuals had made at least 27 visits to the state of Utah, recorded by air

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[113] USDA Forest Service. 2007. Record of Decision, Northern Rockies lynx management direction. March 2007.

[114] Colorado Department of Wildlife Report, 2006-7, page 29.

[115] https://www.fws.gov/mountain-prairie/es/species/mammals/lynx/criticalhabitat_files/20081016_noa_yellowstone_map.pdf

[116] Ivan, J., Rice, M., Shenk, T., Theobald, D., and Odell, E. 2020. Predictive Map of Canada Lynx Habitat Use in Colorado. Colorado Parks and Wildlife, National Park Service, Colorado State University. The Report and shapefiles may be accessed at: https://cpw.state.co.us/Documents/Research/Mammals/Publications/CPWPredictiveLynxMapReport.pdf .

[117] USFWS. 2014. Canada Lynx Critical Habitat. Shapefiles located at: https://www.fws.gov/mountain-prairie/es/canadalynx.php Accessed 05/21/21.

[118] Wasatch-Cache National Forest March 2003 Revised Forest Plan 4-21.

[119] USDA Forest Service. 2003. Canada Lynx Linkage Areas for Northern Rockies Lynx Amendment Area. Map data from https://databasin.org/datasets/0659dded-ba41-4f0f-a38c-fa930ab1eb85/ Accessed on 5/20/2021.

telemetry and satellite.[120] The highest concentration of lynx locations in Utah, as identified by telemetry, is in the Uinta Mountains. "The use-density surface for lynx use in Utah indicates the primary area of use being located in the Uinta Mountains."[121]

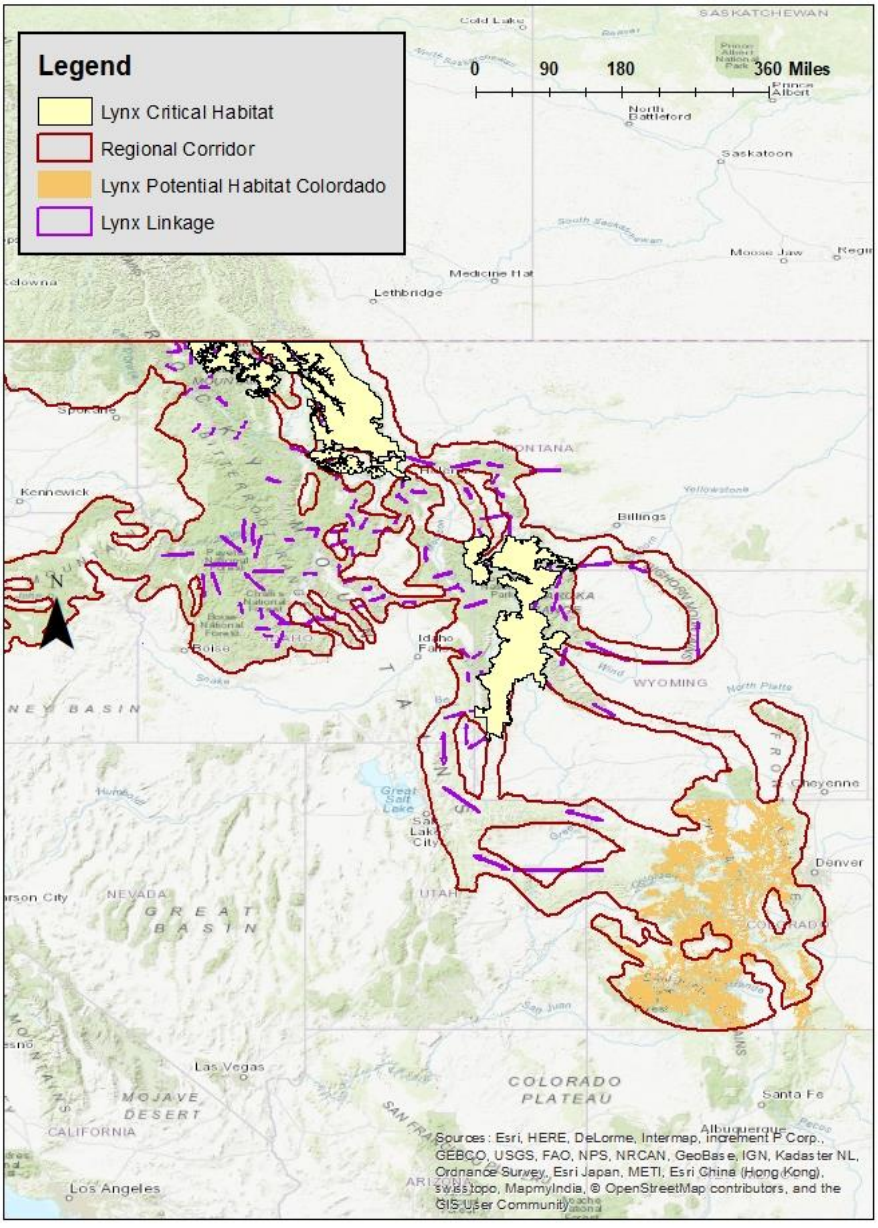

Figure 12. Canada lynx critical habitat, linkages, and potential habitat in Colorado, all within the Regionally Significant Wildlife Corridor

[120] Colorado Department of Wildlife (CDOW) Report, 2006-7, Tables 4 and 6, pages 23 and 24.
[121] Ibid. page 10; see also Figure 2, page 29.

Sophisticated, peer-reviewed modeling identifies the Uinta Mountains as core lynx habitat.[122] The study used vegetation cover types, road densities and classified suitable vegetation types based on current science at the time. After all cells that surpassed both the vegetation suitability and road density suitability thresholds were identified, habitat patches were formed using ArcGIS. For the purposes of the model, the analysis considered large enough core patches for lynx to be those that are at least 1,600 km^2, the approximate area of eight average home range sizes for male lynx in the American Rockies (Ruggiero et al. 1999, Squires 2005, Shenk 2006, personal communication John Squires, personal communication Tanya Shenk).[123]

The authors further assumed that areas identified as core patches in their model would: (1) be of sufficient area to support more than two mated pairs of lynx to reside year round, for multiple years; (2) provide necessary land cover types for denning and hunting; (3) contain necessary prey to support lynx year-round; and (4) sufficient safety from human persecution. The model indicated that there are nine clusters of relatively well-connected blocks of suitable landscapes of sufficient size to be considered core lynx habitat. These habitat concentration areas included the High Uinta Mountains Wilderness (plus adjacent forested lands), a core patch in the Bear River Range, and many core patches near one another in both the west slope of the Colorado Rockies and the greater Yellowstone region."[124] (Figure 13).

All the habitat factors were then evaluated through a separate analysis to determine the suitability for lynx traveling throughout the study area. This provided a "least-cost" path for lynx traveling between core patches. It is shown in Figure 14.

Given that the Uinta Mountains are core lynx habitat and part of a regionally significant wildlife corridor, it is perhaps surprising that there does not appear to be a resident population of lynxes in the Uinta Mountains today.[125] Why would this be the case? Have researchers simply failed to detect them? Not likely. Lack of evidence of lynxes in this case is evidence of lack of lynxes. The most obvious and most probable explanation is that, following an initial extirpation due to trapping, hunting, poisoning, road and trail networks, logging and livestock grazing, natural recolonization of the Uinta Mountains by Canada lynx is prevented by ongoing anthropogenic disturbances. This Project would merely exacerbate ongoing degradation of lynx habitat.

[122] Bates, W. and Jones. A. 2007. Least-Cost Corridor Analysis for Evaluation of Lynx Habitat Connectivity in the Middle Rockies. Wild Utah Project, Salt Lake City, UT.
[123] Op. cit. Bates and Jones.
[124] (Least-Cost Corridor Analysis for Evaluation of Lynx Habitat Connectivity in the Middle Rockies, by Allison Jones and Wendy Bates, 2010)
[125] Draft Environmental Impact Statement High Uintas Wilderness Domestic Sheep Analysis (DEIS), June 2019, page 27.

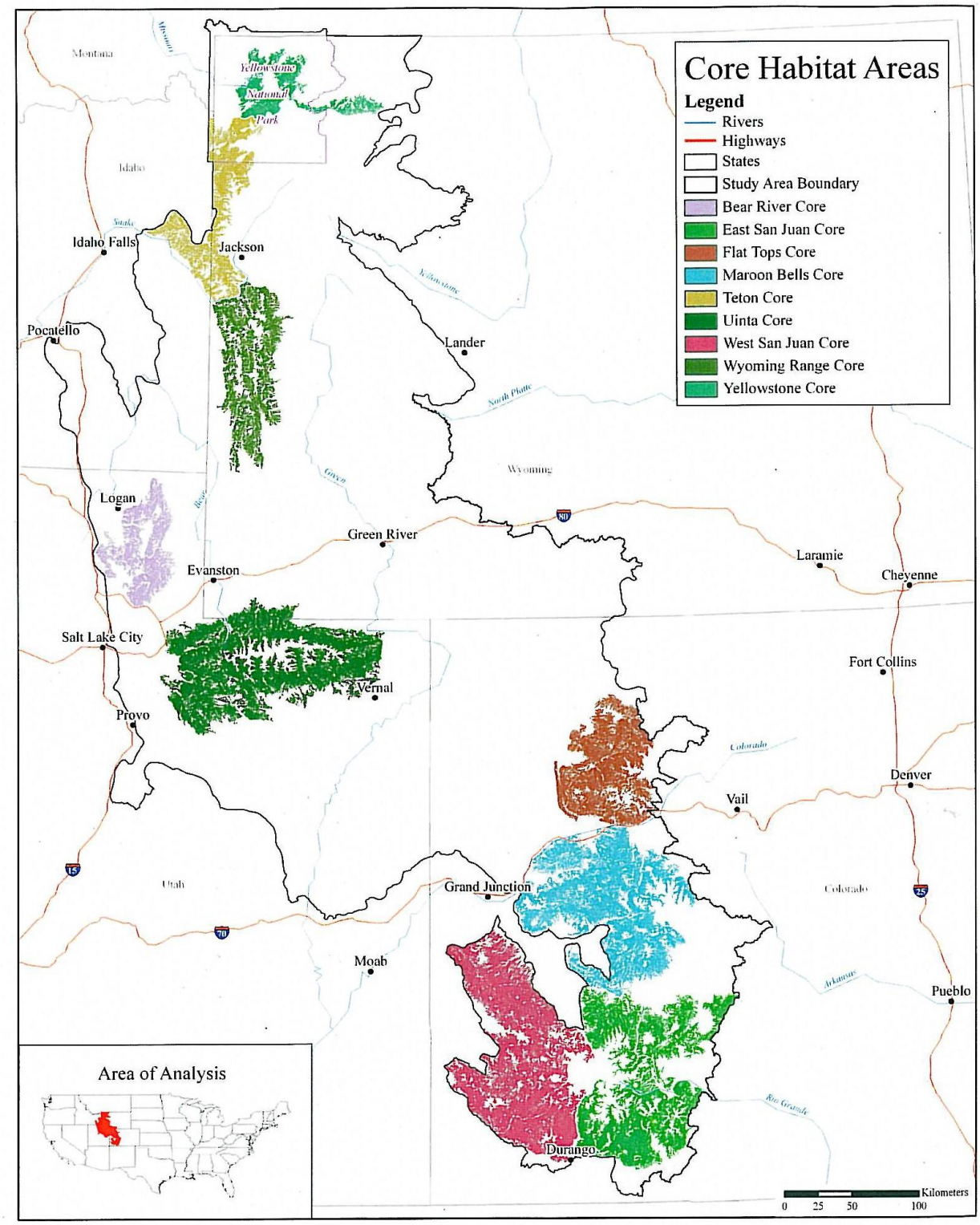

Figure 13. Lynx Core Habitat Areas - Map Reproduced from Bates and Jones, 2007

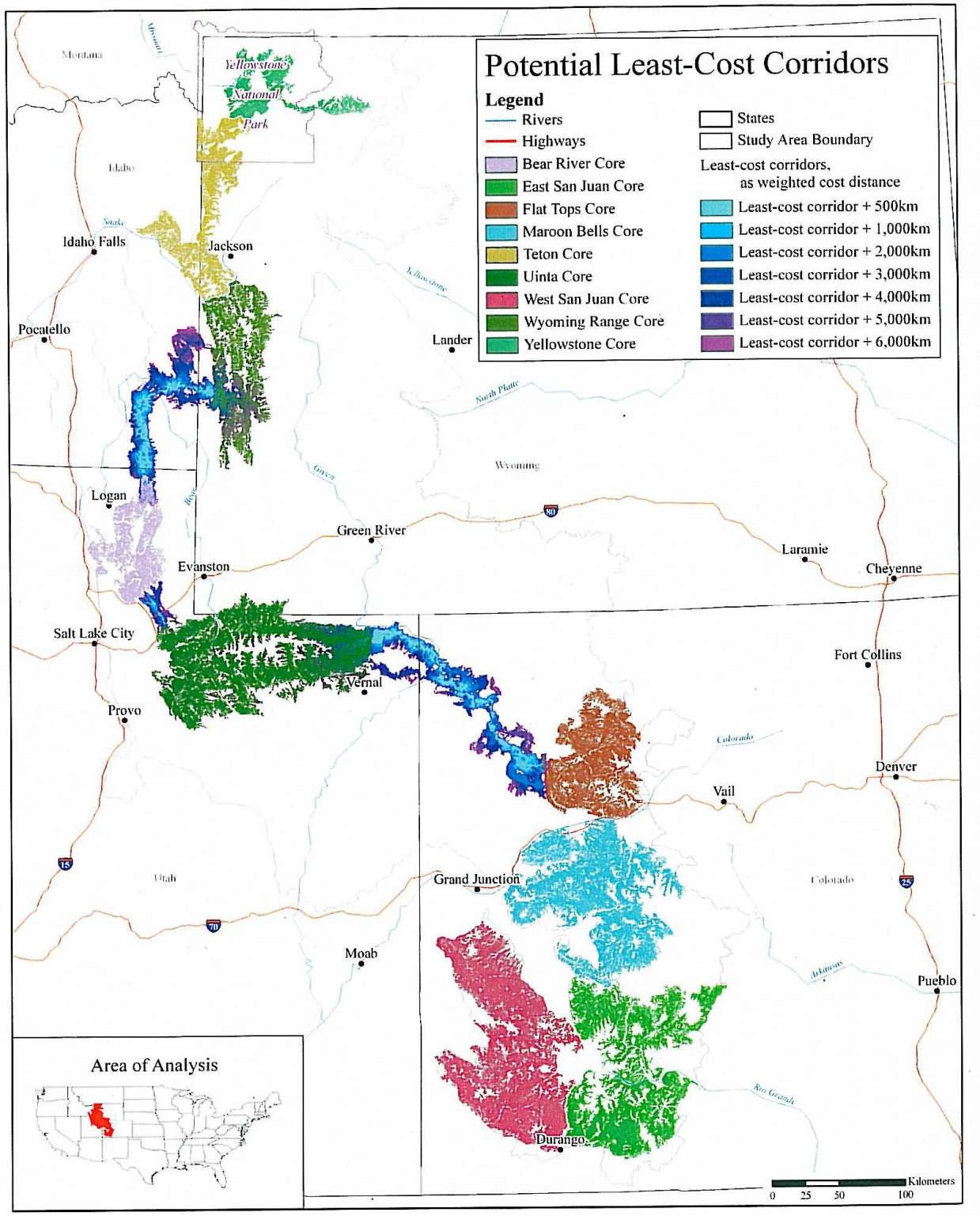

Figure 14. Potential Least-Cost Corridors for Lynx as Weighted Cost Distance

Based on lynx surveys conducted by state and federal agencies between 1999 and 2017, which found no solid evidence of lynx presence, the FS concludes that there is not a resident lynx population in the Uinta Mountains today. The FS further concludes that there never was a resident lynx population in the Uinta Mountains—only occasional transients. According to this hypothesis, the Uinta Mountains are not good lynx habitat, which explains why lynxes have not been detected and leads to the conclusion that the Uinta Mountains will probably never host a resident lynx population. Here is what the FS states in an earlier document: "We conclude that lynx that occur in Utah are dispersers rather than residents."[126] This is from a Wasatch-Cache National Forest FEIS for renewing domestic sheep grazing permits in the Uinta Mountains. The DEIS for that project also stated that there were only 10 verified records of lynx in Utah in the 20th century, most of them in or near the Uinta Mountains, and that four of the 10 verified lynx occurrences in the Uinta Mountains correlate to the cyclic [lynx] highs of the 1960s and 1970s.[127]

To conclude from this that there has never been a resident population of lynxes in the Uinta Mountains commits the fallacy of "begging the question" by presupposing what is to be proved. (For simplicity, we'll narrow "never" to "since 1800".) Obviously, the explanation for why there is not a resident population of lynxes in the Uinta Mountains today, and no detectable reproduction, could just as easily be that human uses of the forest have resulted in the extirpation of lynxes from the Uinta Mountains and are preventing their natural recovery.

There may have only been 10 verified records of lynx occurrence in the Uinta Mountains in the 20th century, but there have been an additional 17 reliable reports of lynx in Utah in the 20th century, based on physical remains (including photographs), visual sightings and track identifications, plus another 10 of unknown reliability.[128] The total number of records is 37. Most of these lynx occurrences were on the north slope of the Uinta Mountains, in or near the West Fork of Blacks Fork. Even if we discount the 10 reports of unknown reliability, we still have 17 reliable reports and 10 verified records of lynx, for a total of 27, most of which located the lynx in the Uinta Mountains! In other words, the historical evidence indicates a minimum of 10-37 lynxes in the Uinta Mountains over the last 103 years (not counting dispersers from Colorado). Thus, there can be little doubt that the actual number of "sightings" was greater than 10 - 30 would be much more probable.

Of interest is an account of Harold Wadley, who was a Forester working for the U.S. Forest Service in Idaho and in the Uinta Mountains. Harold worked in the Uinta Mountains in 1957 and 1958. He used dogs and traveled by snowshoe to track and tree lynx. His records show he treed 20 Canada lynx in those two years. Harold encountered Canada lynx along the entire north slope of the Uinta Mountains. He estimated that there were 15 Canada lynx on the north slope of the Uinta Mountains between the West Fork of the Bear River and the Little East Fork

[126] West Fork Blacks Fork Grazing FEIS (WFBF FEIS), 2006, page 48.
[127] DEIS page 129.
[128] Ruggiero, et al., Ecology and Conservation of Lynx in the United States, University Press of Colorado, (1999.) p. 210

of the Black Fork River. This essentially was the area within his ranger district.[129] Was his report even considered? Do we just discount this as unreliable? After all, Harold worked for the U.S. Forest Service.

At this point we should ask ourselves how many records—verified records, if you like—it would take to establish that there was a resident population of lynxes in the Uinta Mountains during some part of the 20th century. Does anyone have even the slightest clue? Of course not. And the reason is that there are no empirical data for establishing a baseline on which to base a prediction. Surely all we can reliably say is that the more records (verified + reliable), the higher the probability. Thus, this premise commits the fallacy of begging the question by presupposing what is to be proved.

The fact that four of the verified records of lynx occurrence correlate with cyclic highs in the lynx metapopulation does nothing to support the hypothesis that lynx in the Uinta Mountains were transient dispersers rather than members of a resident population. This premise also begs the question. First, the cyclic high explanation is inconsistent with the predominant snowshoe hare story: "The predominant snowshoe hare story in this century has been that snowshoe hares are strongly cyclic in the north but show reduced or no cycles in their southern distribution."[130] Second, the Uinta lynx population, assuming there was one, would most likely have also been undergoing a cyclic high, since cyclic highs occur throughout the metapopulation.[131]

Third, the fact that only four of 27-37 lynx occurrences—one in seven—correlated with a lynx population cyclic high is statistically irrelevant to the question of where those four lynxes came from. The conclusion insinuated by the FS is that they probably immigrated to the Uinta Mountains from a distant population when the habitat for that distant population became saturated—but, significantly, no evidence is given for this conclusion. It is to be expected that some of the records and reports would correlate with a lynx population cyclic high, since cyclic highs, which occur one or two years out of 10 or 11,[132] exhibit about the same frequency as the proportion of lynx records during the purported cyclic highs to the proportion of lynx records plus reliable reports (= 1 in 7).

(2) What About Lynx Habitat?

The EA, RE and WBA do not analyze the current condition of habitat for Canada lynx to ascertain to what extent, if any, human activities have compromised that habitat and prevented occupancy or travel by lynx. While the NRLMD ROD dismisses the Ashley NF as unoccupied lynx habitat and provides various standards and guidelines for management, we have seen no

[129] Lewis, L. and Wenger, C.R. 1998. Idaho's Canada Lynx: Pieces of the Puzzle. Idaho Bureau of Land Management Technical Bulletin No. 98 - 11 in cooperation with the U.S. Forest Service.
[130] Ruggiero, et al. p. 191.
[131] Ruggiero, et al. p. 438.
[132] Ruggiero, et al. p. 271,2.

analysis of the effectiveness of these. In addition, there have been many publications relating to lynx habitat conditions since the publication of that ROD in 2007. Now, a hard look needs to be taken by the Ashley and UWCNFs and this Project Area as to the actual conditions existing from all past, present and reasonably foreseeable actions compared to habitat preferences of lynx. Each LAU, IRA and treatment area should be analyzed as to its habitat capability for lynx as an essential element of NFMA and NEPA. There is intent from legal precedent and the U.S. Fish and Wildlife Service.

For example, in its Rule designating critical habitat for Canada lynx in 2014, the USFWS noted: "This rule also rescinds the existing State boundary-based definition of the lynx DPS and replaces it with a definition that extends the Act's protections to lynx ''where found'' in the contiguous United States. This change ensures that lynx, which are known for their long-distance dispersal capability and tendency to occur in places well outside of typical habitats, receive the Act's protections wherever they occur in the contiguous United States."[133] Further, the USFWS in its Rule listing the lynx as Threatened said, " Because a substantial amount of lynx habitat in the contiguous United States occurs on federally managed lands, particularly in the West, we conclude that the factor threatening lynx in the contiguous United States is the lack of guidance in existing Federal land management plans for conservation of lynx and lynx habitat."[134] However, as was noted in October of 2017 by the FWS in their Species Status Assessment of lynx in the contiguous U.S., there has to date been no actual verification that the NRLMD is conserving lynx.[135]

Marble Mountain Audubon v. Rice[136] interprets NEPA to require the Forest Service to consider biological corridors and to ensure their functionality. The standard for such a review is the same "hard look" NEPA requires of other environmental effects. This means those corridors within the analysis area and linkages with areas adjacent to the analysis area need to be examined, plus the value of the entire analysis area, as part of a larger corridor within or between ecosystems. Friends of the Bitterroot, Inc. v. USFS[137], and Oregon Natural Resources Council v. John Lowe[138] also highlight the importance of including corridors as an element of consideration for an agency decision. Therefore, the Forest Service is required to address how the grazing and other management activities in the Uinta Mountains affect the Uinta Core and Corridor that would

[133] U.S. Fish and Wildlife Service. 2014. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx and Revised Distinct Population Segment Boundary. Federal Register / Vol. 79, No. 177 / Friday, September 12, 2014

[134] U.S. Fish and Wildlife Service. 2000. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Contiguous U.S. Distinct Population Segment of the Canada Lynx and Related Rule; Final Rule. Federal Register / Vol. 65, No. 58 / Friday, March 24, 2000

[135] U.S. Fish and Wildlife Service. 2017. Species Status Assessment for the Canada lynx (Lynx canadensis) Continuous United States Distinct Population Segment. Version 1.0, October, 2017. Lakewood, Colorado.

[136] No. 90-15389, D.C. No. CV89-170-EJG, Sept. 13, 1990

[137] 900 F. Supp. 1368, 1372 (D. Mont 1994)

[138] 109 F.3d 521, 526 (9th Cir. 1997)

normally function to promote genetic diversity and population stability of lynxes among far flung populations in the Rocky Mountains.

Regarding the NRLMD ROD and its standards and guidelines, there is no standard for levels of mature forest habitat within LAUs. While it states that habitat connectivity will be maintained, there is no definition of what constitutes connected habitat, even though this can be defined by current science. The NRLMD ROD does not clearly define what qualifies as unsuitable lynx habitat, which is limited to no more than 30% of an LAU (VEG S1) with no more than 15% unsuitable habitat created in 10 years (VEG S2). The ROD glossary at 14 defines stand initiation habitat as generally developed after a stand-replacing disturbance by fire or regeneration timber harvest; a new single-story layer of shrubs, tree seedlings and saplings establish and develop, reoccupying the site; trees that need full sun are likely to dominate these even-aged stands. The glossary at 12 also defines lynx habitat in an unsuitable condition as the stand initiation structural stage, but notes that unsuitable habitat can also be created by shelterwood cuts and commercial thinning depending on the resulting stand composition and structure. The ROD at 9 defines lynx habitat in an unsuitable condition as those forests in a stand initiation structural stage that are too short to provide winter snowshoe hare habitat; these conditions are created by stand-replacing wildfires, prescribed burns that remove all vegetation, or regeneration timber harvest. The ROD at 10 states that the definition of VEG S2 was changed to clarify that it only applies to timber management practices that regenerate a forest, as clearcut, seed tree, shelterwood, and group selection. The VEG S2 standard applies to all timber management projects that regenerate forests, including clearcuts, seed tree, shelterwood and groups selective cuts. The NRLMD does not ensure persistence of lynx, since there are no restrictions on the amount of an LAU that can be converted to habitats that are avoided by lynx, and to habitats that reduce habitat connectivity via mature forests.

The 30% clearcut standard for lynx habitat in the NRLMD is based on outdated habitat recommendations published in 1989 by lynx experts, while other key recommendations were ignored. Although these recommendations noted that monitoring was required to determine if they would be effective, no such monitoring was ever done before they were partially included in the LCAS and subsequently the NRLMD. Currently, the current best science demonstrates that the 33% opening level allowed by these recommendations are invalid, while the unused recommendations of maintaining a high level of forest cover of 69% has been validated. The 1989 Brittell recommendations for lynx habitat defined a level of habitat connectivity for lynx, which included denning, travel, and stalking habitat as 66% of each square mile of lynx habitat, not an entire LAU of many square miles with no guidance as to where within that LAU habitat should be maintained.[139]

While clearcuts and sparse forests may receive some lynx use, their suitability for lynx is significantly reduced for a significant amount of time. It has been shown not only that clearcuts

[139] Brittell, J.D., R.J. Poelker, S.J. Sweeney, G.M. Koehler. 1989. Native cats of Washington. Washington Department of Wildlife, Olympia.

and sparse forest are strongly avoided by lynx but that restoration of lynx habitat use in these logging areas to 50% of previous use takes 20 years in forest thinnings, and 34-40 years for selection cuts and clearcuts. Also, all logging treatments are avoided by lynx for at least 10 years.[140] Predictors for lynx reproductive success within occupied female home ranges were the connectivity of mature forest, intermediate (10 - 15%) amounts of young regenerating forest, young regenerating forest patches with low perimeter - area ratios, and the adjacency of mature forest to young regenerating types. Female lynx home ranges with greater than 50% mature forest and 10 - 15% young regenerating forest appear to be the optimum.[141]

More recent work has characterized habitat quality of Canada lynx at their "range periphery".

> Our results indicated that the probability of a female producing kittens was most associated with the connectivity of mature, multistoried forests (composed of mostly spruce-fir). However, the variation among female lynx accounted for ≈62% of the total variation explained in litter production, suggesting substantial individual-level variation. Thus, managers can contribute to increased reproductive success of female Canada lynx by facilitating the development of mature forests, but measuring that success will be difficult given the individual variation. In core areas of high quality females (i.e., produced kittens frequently), mature forest was 17% more abundant (i.e., ≈60% of the total core area), more connected, less clumpy, and exhibited 2.25-times larger patch sizes than the core areas of low quality females. At the home-range extent, patterns were less pronounced while the abundance of mature forests remained high (≈50%) for high quality females. Additionally, we demonstrated that the relative density of snowshoe hares was ≥2.8 times higher in advanced regenerating forests compared to all other structural classes, including mature forest. Advanced regenerating forests accounted for ≈18–19% of the core area and home range of high quality female lynx. Combined, our results suggest that a high quality mosaic for female Canada lynx contains ≈50–60% mature forest and ≈18–19% advanced regenerating forest. Furthermore, we used Forest Inventory and Analysis data to characterize the approximate age distribution of advanced regeneration and mature forest, which was relevant for rotation schedules of forest silviculture. Results indicated that advanced regeneration was ≈20 to 80 years old while mature forest was ≈50 to ≥200 years old.[142]

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[140] Holbrook, J.D., Squires, J.R., Bollenbacher, B., Graham, R., Olson, L.E., Hanvey, G., Jackson, S., Lawrence, R.L., 2018. Spatio-temporal responses of Canada lynx to silvicultural treatments within the Northern Rockies, U.S. For. Ecol. Manage. 422, 114–124.

[141] Kosterman, M.K. 2014. Correlates of Canada Lynx Reproductive Success in Northwestern Montana. Graduate Student Theses, Dissertations, & Professional Papers. 4363. https://scholarworks.umt.edu/etd/4363

[142] Holbrook, J.D., Squires, J. R., Bollenbacher, B., Graham, R. O., Lucretia E., Hanvey, G., J, S., Lawrence, R.L., Savage, S. L. 2019. Management of forests and forest carnivores: Relating landscape mosaics to

In addition, lynx spend a significant amount of time at the interface between mature and advanced regeneration forest. This is likely because advanced regeneration forest provides the most hares, but mature forest habitat makes these hares more accessible. This indicates that advanced regeneration forest subsidizes the occurrence of hares in adjacent mature forest where they are more accessible to lynx.[143]

Some other characteristics of habitat were laid out in the Lynx Conservation Assessment and Strategy.[144] Most lynx observations in the Western US was in conifer within the 4,920 - 6,560 foot elevation zone and in the southern Rockies the 8,000 to 11,500 foot zone. Snowshoe hares comprise 35 - 97% of the diet with red squirrels of increased importance during hare declines. Hares feed on accessible twigs and stems in winter and forbs, grasses, and small shrubs in summer. Livestock compete directly with hares for forage due to high similarity in diets. Red squirrel populations are highest in dense closed canopy conifer forest with large amounts of woody debris. Populations are higher in young un-thinned lodgepole pine stands than in thinned stands. Den sites need large woody debris, can be in older regenerating stands, or mature conifer or mixed conifer. Primary vegetation types are lodgepole, subalpine fir, and Engelmann spruce with Douglas fir, aspen and dense riparian willow stands among other types used. Home ranges vary between males and females and hare density and can range from between 4 - 47 square miles in the U.S. Home ranges in Canada are larger.

A map of the predicted distribution for Canada lynx in the 2050's based on modeled climatic conditions is provided in Figure 15.[145] This illustrates the critical importance of the Uinta Mountains to lynx and other species such as wolverine as climate causes shifts in habitat.

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habitat quality of Canada lynx at their range periphery. Forest Ecology and Management. 437: 411-425. https://doi.org/10.1016/j.foreco.2019.01.011

[143] Holbrook, J.D., Squires, J.S., Olson, L.E., Lawrence, R.L., Savage, S., 2017. Multi-scale habitat relationships of snowshoe hares (Lepus americanus) in the mixed conifer landscape of the Northern Rockies, USA: cross-scale effects of horizontal cover with implications for forest management. Ecol. Evol. 7, 125–144.

[144] Ruediger, B., Claar, J., Gniadek, S., Holt, B., Lewis, L., Mighton, S., Naney, B., Patton, G., Rinaldi, T., Trick, J., Vandehey, A., Wahl, F., Warren, N., Wenger, D., and Williamson, A. 2000. Canada Lynx Conservation Assessment and Strategy. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication #R1-00-53, Missoula, MT. 142 pp.

[145] Hamilton, H. 2008. Predicted Distribution of Canada Lynx (Lynx canadensis) - A2 emissions scenario - 2050's. California Academy of Sciences 07.29.2008. Map data from https://databasin.org/galleries/1d3dd1c4-96fc-4c13-95ff-a2e03e6e6aca/ Accessed on 5/20/21.

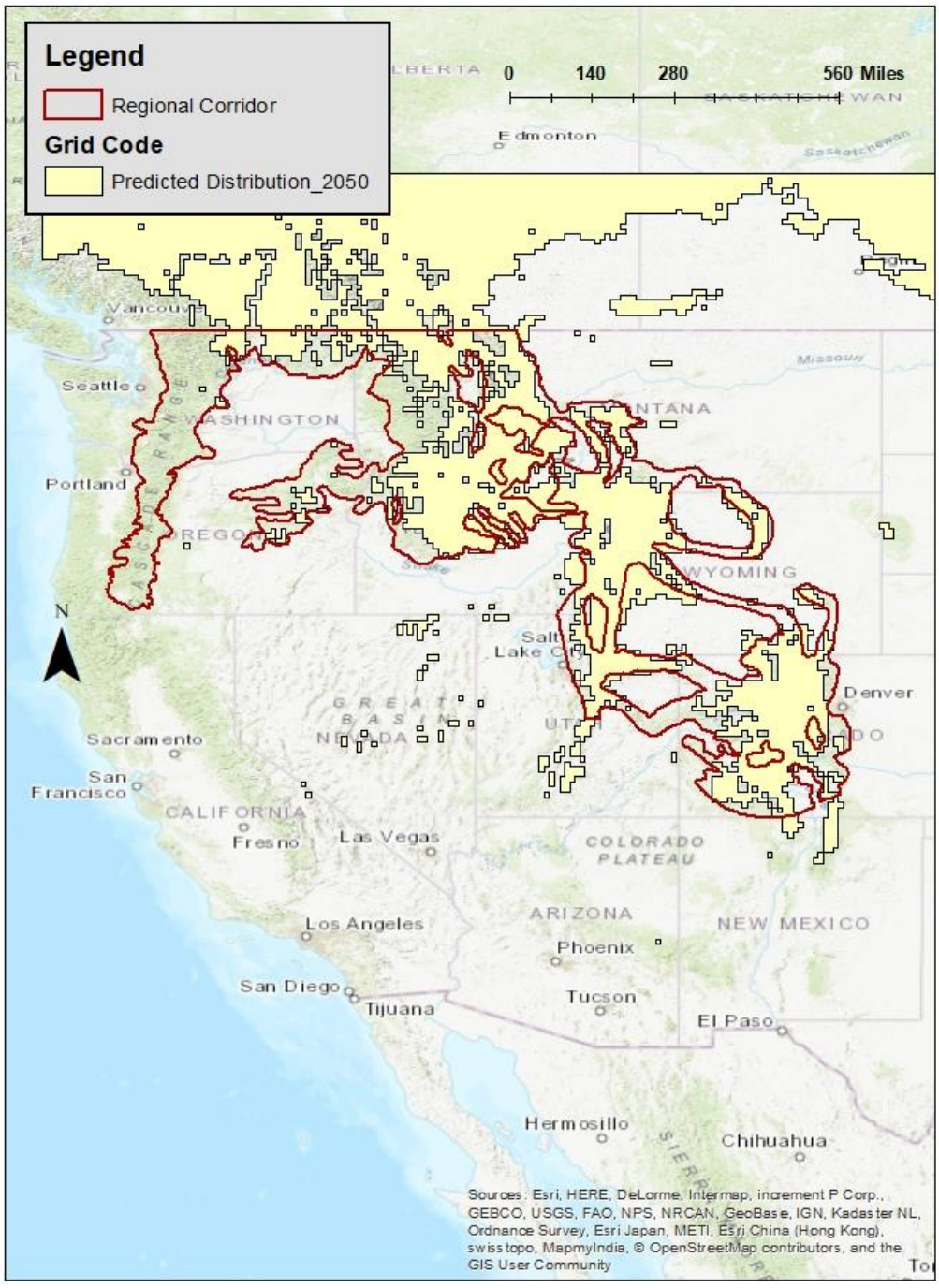

Figure 15. Modeled Canada lynx habitat in 2050's

13. Wolverine

The EA (p9) states: "The Canada lynx and wolverine are unlikely to be affected by the project because they are unlikely (to) occur on the Forest. Federally listed threatened or endangered aquatic species or designated critical habitat does not occur within the project area. Therefore, the proposed management actions would have 'no effect'." EA Table 2 refers to the Wildlife BA (WBA). Table 4 of the WBA says the wolverine is not known on the Ashley NF although in 2014 a wolverine was documented on the north slope of the Uinta Mountains with possible tracks seen near Dutch John on the Flaming Gorge RD that same year. Bait stations placed in the Ashley NF between 2005 and 2009 detected no wolverines. Annual winter carnivore track surveys on the Ashley NF between 2009 and 2017 have detected no wolverines.

The Project is determined to have "no impact" to wolverine populations because: "Even if an individual wolverine happened to wander on the Forest and thus 'exposed' to elements of the project, the effects to an individual wolverine are expected to be negligible based on the following: 1) the project will not change vegetation types or remove prey species habitat, thus wolverine habitat would not change to an unsuitable condition 2) the project is unlikely to impede movement of wolverine within and through the Forest, or impede the ability of a wolverine to procure sufficient food, often a limiting factor; and 3) a wolverine disturbed by human activity associated with the project may temporarily be displaced or may habituate to the activity, neither outcome of which is likely to alter the likelihood this individual would procure prey." (WBA p13).

The Roadless Evaluation also describes wolverine habitat as marginal in the descriptions for each IRA to be affected by the Project. This analysis fails to take the "hard look" required by NEPA, fails to address the actual habitat parameters needed by wolverine to occupy a place or to use connections to move from place to place. The three conclusions presented above that purport to explain why wolverine will be unaffected are unsupported by the facts. First, the project is by design, planned to change vegetation types from aspen/conifer to aspen; and this removes cover from these areas. Second, there is no analysis showing that habitat in the Ashley NF currently meets the requirements for wolverines. Have human activities so fragmented and disturbed these IRAs that potential wolverine habitat is eliminated, thus no wolverines? The current and potential condition relative to the needs of wolverines and the effects of the treatments should be analyzed to determine the capability of the habitat for wolverines based on their habitat preferences. Third, the idea that displacement from this Project is temporary and would not affect the ability to find prey is not supported. There is no cumulative effects analysis to show how all the past, present and planned activities plus these treatments affect the Project Area, IRAs and the CEA and how those affect the ability of wolverines to use or move through the area. The following discussion addresses these points in more detail.

Recently, a US District Court ruling remanded the U. S. Fish and Wildlife Service (USFWS) withdrawal of its Proposed Rule to list the distinct population segment of the North American wolverine occurring in the contiguous United States as a threatened species under the

Endangered Species Act for further consideration.[146] The ruling reviewed the science relating to the selection of denning sites in combination with snow presence during the natal period and recent analyses of potential climate change effects to snow pack that indicate a severe reduction in snow cover during this century with negative implications to wolverine populations. This factor alone should place greater emphasis on habitat integrity and restoration for corridors and connectivity for both wolverine and lynx as these species overlap in habitat use and travel.

The ruling also emphasized that populations in the US, which exist as meta-populations **"require some level of regular or intermittent migration and gene flow among subpopulations, in which individual subpopulations support one-another by providing genetic and demographic enrichment through mutual exchange of individuals."** If connectivity is lost, **"an entire meta-population may be jeopardized due to subpopulations becoming unable to persist in the face of inbreeding or demographic and environmental stochasticity."**

The study by Copeland, 2010[147], cited in the ruling, analyzed spring snow cover to determine overlap with known den sites, finding 97.9% overlap. They concluded that if reductions in snow cover continue to occur, **"habitat conditions for the wolverine along the southern extent of its circumboreal range will likely be diminished through reductions in the size of habitat patches and an associated loss of connectivity, leading to a reduction of occupied habitat in a significant portion of the species range."** A second analysis by McKelvey, 2011[148] used Global Climate Models to predict the change in distribution of persistent spring snow cover so that "for conservation planning, predicting the future extent and distribution of persistent spring snow cover can help identify likely areas of range loss and persistence, and resulting patterns of connectivity." McKelvey concluded that they expect, **"the geographic extent and connective(ity) of suitable wolverine habitat in western North America to decline with continued global warming"** and that **"conservation efforts should focus on maintaining wolverine populations in the largest remaining areas of contiguous habitat and, to the extent possible, facilitating connectivity among habitat patches."**

In its Proposed Rule, the USFWS accepted these studies as the best available science with climate change as the driving factor. Other threats were considered of lower priority in comparison, "however, cumulatively they could become significant when working in concert with climate change if they further suppress an already stressed population." The USFWS noted harvest, demographic stochasticity, and loss of genetic diversity as these secondary

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[146] US District Court for the District of Montana, Missoula Division. April 4, 2016. Defenders of Wildlife v US DOI. CV 14-246-M-DLC

[147] Copeland, J. P.; McKelvey, K. S.; Aubry, K. B.; Landa, A.; Persson, J.; Inman, R. M.; Krebs, J.; Lofroth, E.; Golden, H.; Squires, J. R.; Magoun, A.; Schwartz, M. K.; Wilmot, J.; Copeland, C. L.; Yates, R. E.; Kojola, I.; and R. May. 2010. The bioclimatic envelope of the wolverine (Gulo gulo): do climatic constraints limit its geographic distribution? Canadian Journal of Zoology. 88: 233-246.

[148] McKelvey et al. 2011. Climate change predicted to shift wolverine distributions, connectivity, and dispersal corridors. Ecological Applications, 21(8), 2011, pp. 2882–2897.

factors but avoided mention of habitat integrity and fragmentation by roads, infrastructure and human activity, or loss of prey base due to depletion of herbaceous plant communities and cover by livestock grazing.

Robert Inman, PhD, a biologist and Director of the Greater Yellowstone Wolverine Program at the Hornocker Institute/Wildlife Society noted that the USFWS singled out a particular activity, fur trapping, that can cause mortality, while ignoring the full range of human activities such as roadkill, before records were kept. So delineating habitat based on these records can understate actual range for wolverines. He also provided evidence that wolverines can den in areas lacking the presumed snow cover, and that conditions suitable for competing for food are also a limiting factor. He further argues that road density was found to be a factor in an earlier telemetry-based habitat analysis, particularly at higher elevations. Wolverines were observed to avoid or alter their travel when encountering housing developments and traffic, infrastructure, transportation that can affect mortality.[149] He also pointed out the extensive trapping that occurred in the US prior to records of wolverine and that they may well have been eliminated from suitable places before records were kept.

So, while the USFWS emphasizes the role of connectivity and genetic exchange in maintaining meta-populations and genetic diversity, it avoids the identification of the connections vital to maintenance and recovery of the species. See Figure 16 which is a map of the USFWS modeled wolverine habitat.[150] This map shows wolverine habitat areas in Montana, Idaho, Utah, and Wyoming but provides no indication of travel corridors that wolverine might use to connect these. This map shows the areas in Wyoming, Idaho, and Utah with sufficient snow cover. Connecting these "dots" would likely lead to a connectivity pattern like that of Canada lynx. Note the Uinta mountains are considered wolverine habitat.

The Idaho Management Plan for the Conservation of Wolverines identified the movement corridors shown in Figure 17.[151] These overlay with the Regionally Significant Wildlife Corridor and the Yellowstone to Uinta Connection shown above, principally emphasizing the corridor from SW Wyoming through SE Idaho and the Bear River Range south to the Uinta Mountains in Utah. Recent modeling of wolverine connectivity illustrates the close correlation with the

[149] Review of the United States Fish and Wildlife Service's Proposed Rule to List Wolverines as a Threatened Species in the Contiguous United States, May 2013. https://www.federalregister.gov/documents/2013/02/04/2013-01478/endangered-and-threatened-wildlife-and-plants-threatened-status-for-the-distinct-population-segment

[150] https://www.fws.gov/mountain-prairie/es/species/mammals/wolverine/02012013ModeledWolverineHabitatMap%20.jpg.pdf

[151] Idaho Department of Fish and Game. 2014. Management plan for the conservation of wolverines in Idaho. Idaho Department of Fish and Game, Boise, USA. https://idfg.idaho.gov/old-web/docs/wildlife/planWolverine.pdf

Regionally Significant Wildlife Corridor (Figure 18).[152] Note how these mapped core and corridor connections overlap with those for lynx. Analyses and habitat-based prescriptions should be completed for wolverine as outlined for Canada lynx.

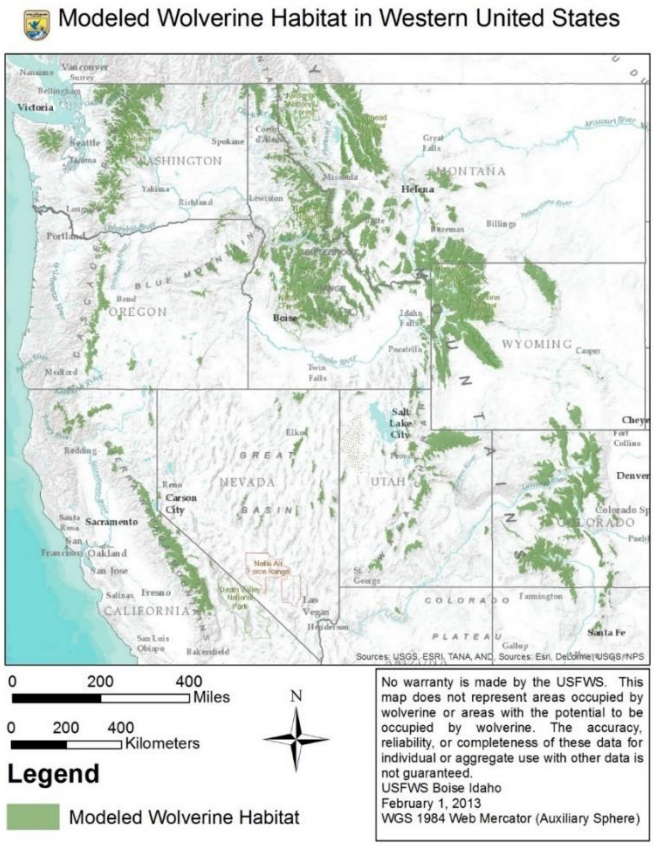

Figure 16. Fish and Wildlife Service Modeled Wolverine Habitat

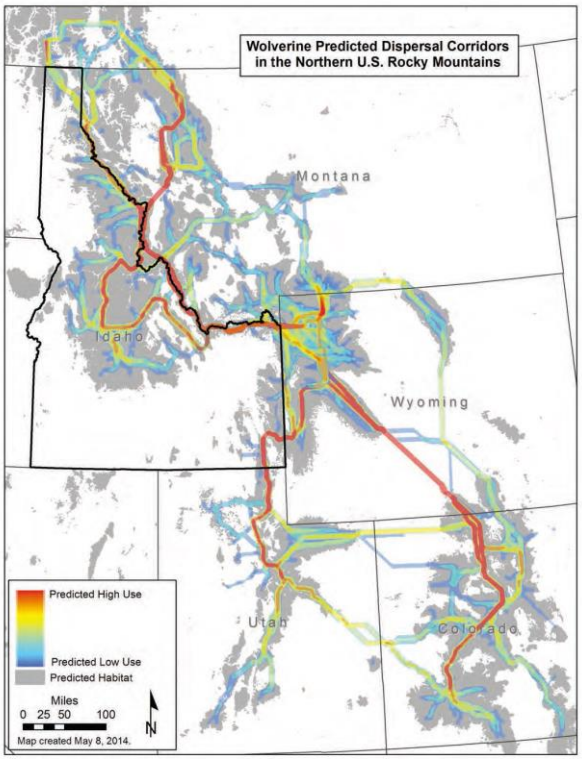

Figure 17. Movement Corridors for Wolverine from the Idaho Management Plan

[152] Carroll, K.A., Hansen, A.J., Inman, R.M., Lawrence, R.L. and Hoegh, A.B., 2020. Testing landscape resistance layers and modelling connectivity for wolverines in the western United States. Global Ecology and Conservation. https://doi.org/10.1016/j.gecco.2020.e01125

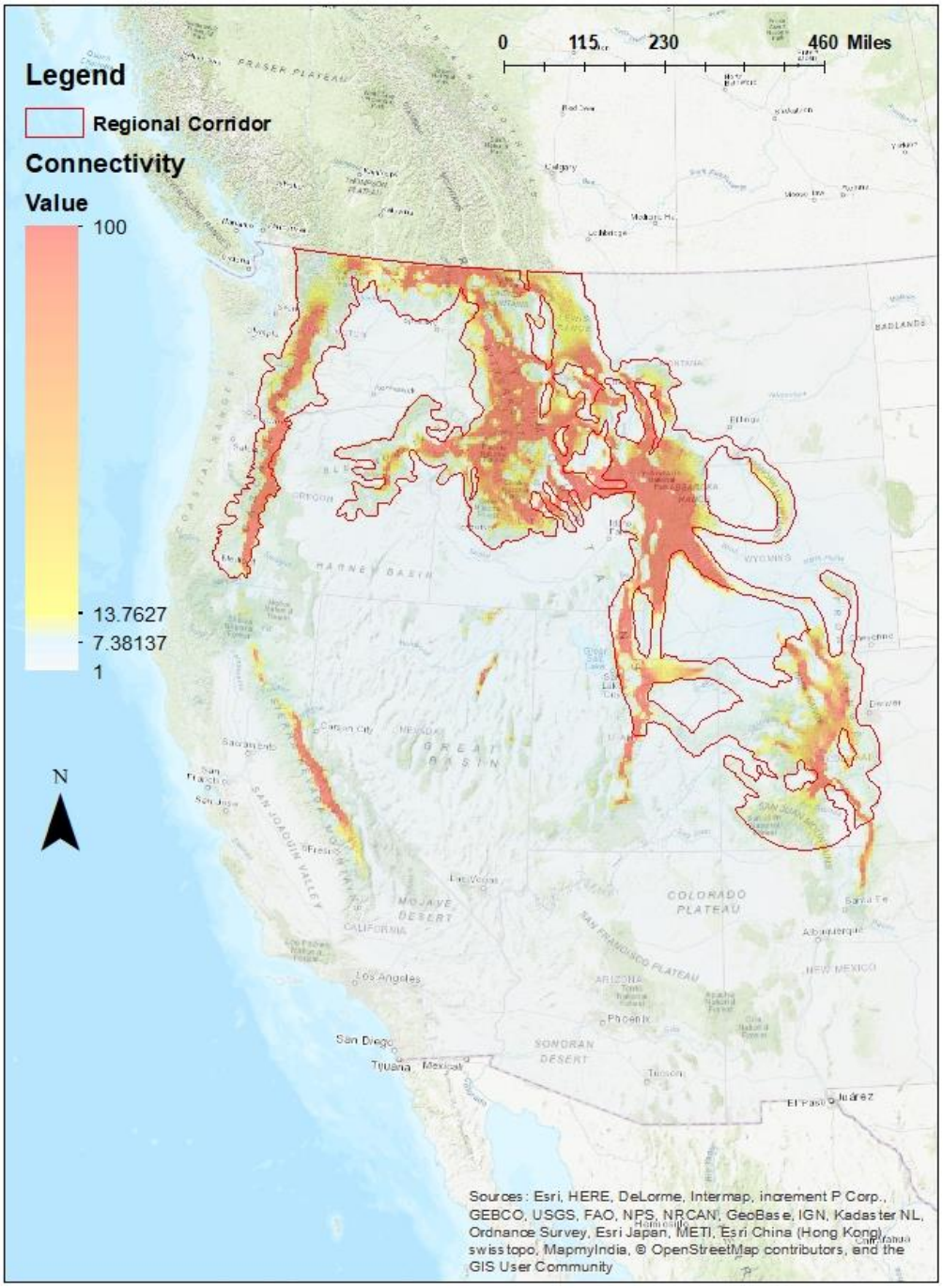

Figure 18. Modeled Wolverine Habitat Concentration Areas and Movement Patterns

14. Monarch Butterfly

The EA Table 3 (p11) notes that Monarch Butterfly is a sensitive species and there is No Impact from the Project. The WBA notes they may occur on the Ashley NF during parts of the life cycle. On December 15, 2020 the U.S. Fish and Wildlife Service announced that listing the monarch as endangered or threatened under the ESA is warranted, but precluded by higher priority listing actions. The monarch is now a candidate under the ESA.[153] As such, consultation under Section 7 of the ESA is needed. The habitat associations and species of plants used by monarch butterflies need to be determined and their extent on the Ashley NF documented and mapped to evaluate past, present, and foreseeable activities and their impacts on its habitat and populations. The Project treatment areas also should be evaluated for their location and extent compared to the current and potential habitat for monarch butterfly. Project and cumulative effects should be analyzed for each treatment area, the Project Area and CEA.

15. Whitebark Pine

The EA Table 1 (p21) mentions Whitebark Pine in its Design Criteria as: " In areas with whitebark pine, take steps to improve the likelihood of survival. Where necessary, thin the stand prior to prescribed burning to prevent crown fire and assure that residual activity fuels and subsequent burning will not scorch whitebark pine crowns by more than 20-30%." We could find no other mention of whitebark pine in the NEPA documents for the Project. On December 2, 2020, the U.S. Fish and Wildlife Service released a proposed rule to list whitebark pine as a threatened species under the ESA. As such, consultation under Section 7 of the ESA is needed. Listing of whitebark pine was not considered prudent at the time.[154] The extent of whitebark pine occurrence in the Ashley NF needs to be determined and mapped to evaluate past, present, and foreseeable activities impacts on its habitat and populations. The Project treatment areas also should be evaluated for their location and extent compared to the current and potential habitat of whitebark pine. Project and cumulative effects should be analyzed for each treatment area, the Project Area and CEA.

16. Other ESA and Sensitive Species

EA Tables 2 and 3 list plant and animal species that are listed under the ESA or are Sensitive Species. As such, their specific habitat requirements and the locations of that habitat need to be mapped and identified relative to the Project Area, the CEA and individual treatment areas. The potential and current capability of the habitats to support viable populations of these species must be determined along with their current population status across the ANF and UWCNF. Where conservation plans exist, the provisions of those conservation plans need to be

[153] U.S. Fish and Wildlife Service. 2020. Endangered and Threatened Wildlife and Plants: 12 - Month Finding for the Monarch Butterfly. Federal Register / Vol. 85, No. 243 / Thursday, December 17, 2020.
[154] U.S. Fish and Wildlife Service. 2020. Endangered and Threatened Wildlife and Plants: Threatened Species Status for Pinus albicaulis (Whitebark Pine) With Section 4d Rule. Federal Register Vol. 85, No. 232. Wednesday, December 2, 2020.

evaluated and their effectiveness determined. For example, the NEPA documents for the Project enumerate the Conservation Strategy for Northern goshawk; conservation agreements for Colorado River cutthroat trout, Bonneville cutthroat trout and Columbia spotted frog. While design criteria are referenced as minimizing impacts to occupied or suitable habitat, there is no mapping of this suitable habitat and no analysis of the outcomes of past projects that may have relied on these criteria or bmps. There can be no assurance that a project such as this that relies on these mitigations without any site-specific analysis can accomplish the mitigation claimed.

The Threatened or Endangered Colorado River fish species are not addressed other than mention they and their habitat do not occur in the Project Area. (EA Table 2, p10). What is not addressed is how this Project and other past projects in the Ashley NF have affected sediment loads and alterations of hydrology in the downstream areas where there is potential habitat for the species. Livestock grazing, roads and trails, timber projects, CUP and water diversions all affect watersheds, erosion and sedimentation, and changes in stream flows that affect these downstream habitats. This is a basic example of a needed cumulative effects analysis.

Northern goshawk and the WBA notes that in 2000, the Ashley NF Plan was amended to incorporate guidelines from Reynolds 1992. Reynolds specified six structural stages of forested habitats along with protections from grazing of livestock to include an average of no more than 20% utilization in goshawk home ranges and protection of mycorrhizal fungi. Earlier in these comments we referenced a study in the Wasatch Cache National Forest that showed livestock grazing reduced soil carbon and nitrogen, disrupted the fungi layer at the soil and litter interface.[155]

The WBA notes that goshawk populations have been monitored on the ANF since 1999. It also notes that "Many of the known goshawk nest areas and PFA's on the Forest intersect with aspen stands that may be included for possible treatments under this project proposal. Goshawk habitat may be manipulated with this project, however following the goshawk guidelines (the best management practices/mitigations listed above in Table 2) will maintain goshawk habitat (including prey species habitat) and protect nesting goshawks." (p13). Once again, these home range, PFAs and Nesting Areas need to be mapped and the effects of the individual treatments analyzed. The population trends of goshawk should be analyzed along with the relationship to past actions such as timber harvest, prescribed fire, road occurrences and the Home Range, PFA and Nesting Areas that overlapped with each. The Project analysis should also analyze for each aspen and aspen/conifer treatment area how the balance in the six forest stand structure criteria are affected, how canopy cover is affected and what this means regarding habitat capability for goshawks.

Another example of failure to analyze habitat relates to bighorn sheep. EA Table 3 (p11) notes that there is No Impact from the Project to bighorn sheep because there is no habitat for bighorn

[155] Op. cit. Carter et al 2011.

sheep present. The WBA (Table 4, p9) indicates they are present on the Ashley NF and provides a simplified listing of habitat characteristics. There is no separation of breeding, parturition or seasonal ranges and the characteristics of those habitats. Figure 19 provides a map of bighorn sheep range as mapped by state wildlife agencies. This shows they have habitat in the Ashley and UWCNFs. These need to be mapped and overlain with the Project Area, CEA, treatment areas and IRAs affected. Then the habitat characteristics needed by bighorns need to be determined for each area and a determination as to how the Project will affect each. Cumulative effects from past actions such as timber harvest, prescribed fire, roads and trails that fragment habitat all need to be evaluated. In addition, the cumulative effects of domestic sheep grazing and transmittal of disease need be analyzed by comparing the suitable bighorn habitat with allotments where domestic sheep are grazed. Suitable buffering should be incorporated.

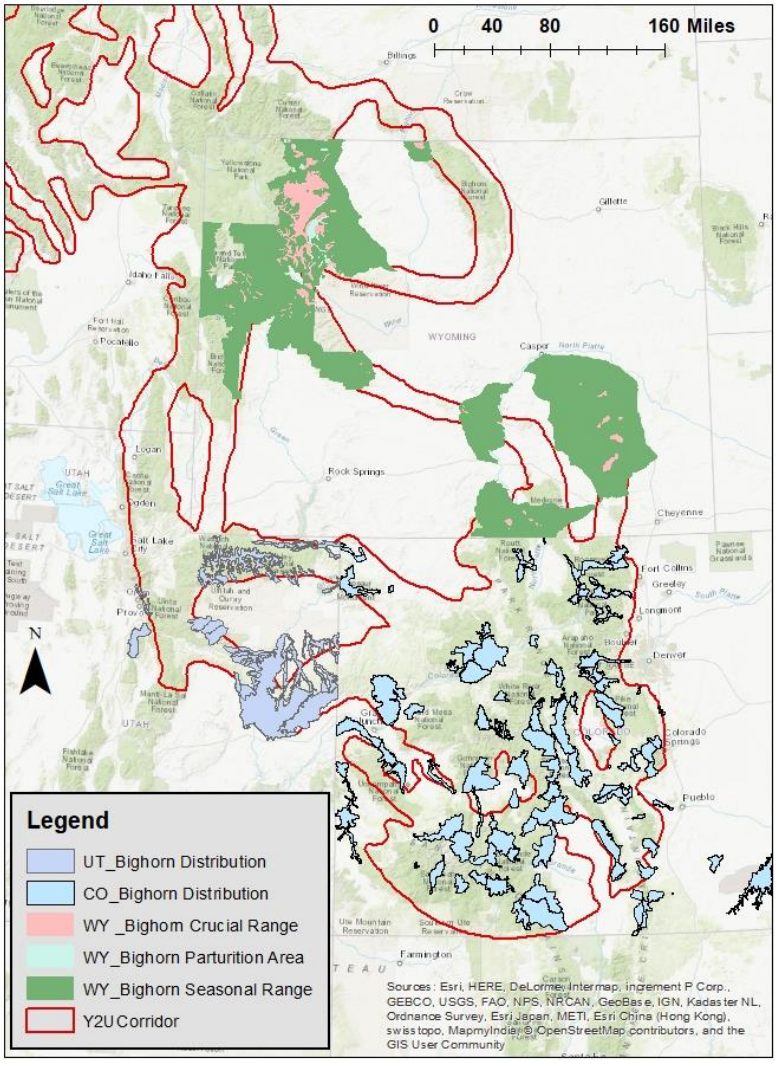

Figure 19. Current Distribution of Bighorn Sheep Populations from State Wildlife Agency Data

17. Reliance on Best Management Practices

This Project will rely on Design Criteria and BMPS. These are assumed to be effective and relied upon. However, a fundamental aspect of NEPA is to take a "Hard Look" at current management, conditions, assumptions, and implementation. NEPA requires the Forest Service to account for the current degraded conditions it claims, such as conifer encroachment into aspen stands. But what is the mechanism of this conifer encroachment and lack of recruitment in aspen stands. Is it past fire suppression? Livestock grazing? Past vegetation management implemented by the Forest Service?

What is the history of this project area? What Forest actions or permitted activities play a role in the current state of aspen, wildlife habitat, watershed health and other ecosystem attributes? There should be an analysis of:

- Validity of assumptions from previous NEPA processes
- Accuracy of predictions from previous NEPA processes
- Adequacy of Forest Service implementation of previous decisions
- Effectiveness of actions taken in previous decisions, including an analysis of these design criteria and BMPs

The above items are critical for effective decisions and outcomes and for the public to be informed. Without this analysis the validity of the current assumptions cannot be determined. Without analyzing the accuracy and validity of the assumptions used in previous NEPA processes and projects, one has no way to judge the accuracy and effectiveness of the current analysis and proposals. The predictions made in previous NEPA processes also need to be disclosed and analyzed because if these were not accurate, and the agency is making similar decisions, then the process will lead to failure. For instance, if in previous processes the agency or permittee said they were going to perform a certain monitoring plan or implement a certain type of management, meet certain goals and objectives, and these were never effectively implemented, it is important for the reader and the decision maker to know. If there have been problems with implementation in the past, it is not logical to assume that implementation will now be appropriate. If prior projects have not been monitored to document and compare post project initiation conditions to baseline data, then there is no proof that models, design criteria or BMPs are accurate, effective, or can be relied upon. What commitments have been made in the Forest Plan and subsequent project plans? Have these been realized? In a prior section we outlined some of the commitments made in the Forest Plan and the need for an analysis of implementation and outcomes.

The reliance on BMPs is a flawed approach that assumes they work. There are no reliable data

showing that BMP's are cumulatively effective in protecting aquatic, or other resources. [156] Case histories from Idaho showed that BMP's thoroughly failed to cumulatively protect salmonid habitats and streams from severe damage from roads and logging. [157] In analyses of case histories of resource degradation by stereotypical land management (logging, grazing, mining, roads) several researchers have concluded that BMP's increased watershed and stream damage because they encourage heavy levels of resource extraction under the false premise that resources can be protected by BMP's.[158] [159] This phenomenon is called the *"illusion of technique."*[160]

18. Remedy

In these comments we have outlined numerous failings by the Forest Service to address causes of the issues adversely affecting vegetation communities, wildlife, their habitats, and climate. These failings must be corrected by remanding this EA and FONSI back to the Forest Service for preparation of an Environmental Impact Statement, or withdrawal of the Project in its entirety.

- The NEPA documents provided continue to refer to Categorical Exclusion and Extraordinary Circumstances. They do not provide the detail and depth needed to meet the hard look requirement under NEPA.
- There is no analysis as to how the Project will sustain or restore ecosystems, productivity, population viability, and habitat capability under NFMA.
- The EA fails to adequately inform the public and deciding officials about the true nature of the current condition of habitats, wildlife corridors, and wildlife populations affected by the Project. These corridors, populations and habitats are not compared to their historical condition or potential. The current state of habitats is not analyzed in the context of past timber or vegetation projects, livestock grazing, road and trail density.
- The EA does not provide any site-specific analysis of the effects to each treatment area, IRA, the Project Area itself, or the wider region surrounding the Project Area, i.e. the Cumulative Effects Area which was not designated.
- The cumulative effects of past actions combined with this Project and other actions either ongoing or planned are not analyzed, another failing to meet NEPA requirements.

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[156] Ziemer, R.R., and T.E. Lisle. 1993. Evaluating sediment production by activities related to forest uses--A Northwest Perspective. Proceedings: Technical Workshop on Sediments, Feb. 1992, Corvallis, Oregon. pp. 71-74.

[157] Espinosa, F.A., Rhodes, J.J. and D.A. McCullough. 1997. The failure of existing plans to protect salmon habitat on the Clearwater National Forest in Idaho. J. Env. Management 49(2):205-230.

[158] Stanford, J.A., and J.V. Ward., 1992. Management of aquatic resources in large catchments: Recognizing interactions between ecosystem connectivity and environmental disturbance. Watershed Management: Balancing Sustainability and Environmental Change, pp. 91-124, Springer Verlag, New York.

[159] Rhodes, J.J., Espinosa, F.A., and C. Huntington. 1994. Watershed and Aquatic Habitat Response to the 95-96 Storm and Flood in the Tucannon Basin, Washington and the Lochsa Basin, Idaho. Final Report to Bonneville Power Administration, Portland, Or.

[160] Stanford and Ward. Op. cit.

- During a time of severe drought and climate emergencies in the Northwest, this Project analysis failed to address Project and cumulative effects on climate. On the converse, climate effects on the Project Area and CEA were not analyzed.
- The Forest Service must provide analysis showing that the intent of the many provisions of the Forest Plan has been met on past projects and for this proposed Project.
- The use of design criteria and BMPs is used to avoid or delay site-specific analysis. This leaves the public and deciding officials out of the loop. Their effectiveness for past projects must be determined. Their effectiveness for this Project must be demonstrated by definitive monitoring and reporting of the status of habitat, soils, plant communities, water quality, fish and wildlife populations, aspen and conifer regeneration, forest stand structure, security habitats, and other ecosystem attributes.
- There is no consultation under the ESA for the many T&E, candidate, or proposed species for listing.

Respectfully,

Dated: July 6, 2021
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July 6, 2021

Forest Supervisor

Ashley National Forest

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Hello,

Native Ecosystems Council, the Alliance for the Wild Rockies, Kiesha's Preserve, Yellowstone to Uintas Connection, and Wildland Defense would like to provide the following comments on the draft Environmental Assessment (EA) for the proposed Ashley National Forest Aspen Restoration Project.

1. This proposal is a violation of the National Environmental Policy Act (NEPA) because the agency has already determined that 177,707 acres of aspen and mixed conifer/aspen stands needs management intervention in order to restore historical conditions of aspen, without any assessments yet being completed.

The draft EA notes that after this analysis is complete, specific project areas would be identified and on-the-ground assessments would be completed to determine the ecologic al specific conditions and an interdisciplinary review, the appropriate treatments for the project area would be selected from the list below; treatment actions would target the most effective management option and be followed by post-treatment monitoring; based on the monitoring results, additional management actions (from the list of treatments) may be implemented if needed to achieve restoration objectives. These various treatments are identified as

necessary to maintain or improve aspen, including a broadcast burning, selectively cut conifers and aspen, removal of all aspen and conifers, commercial use of cut material, killing just conifers, root separation, and protection from browsing by wildlife and livestock.

The specific treatment per aspen patch, and the rationale for this specific treatment, is never provided to the public. The specific reasons why these various treatments are needed to restore historical conditions of aspen are never provided to the public as well. For example, if conifers are to be removed from aspen stands, it is not clear why this is needed to restore historical conditions. If conifers have never occurred in aspen stands on the Ashley National Forest, this information needs to be provided to the public in order for the agency to support claims that conifers in aspen is an unnatural condition that needs management intervention. If conifers have not historically occurred in aspen stands, the current presence of aspen in conifers would have to be due to interruption of the natural fire cycle on this forest. The draft EA did not define how the interruption of the natural fire cycle on the forest was determined.

Also, the proposed treatment of fencing indicates that the agency recognizes that livestock browsing is having an impact on aspen regeneration. However, there is no information on what the current impact of this browsing is on aspen. The picture on the front of the draft EA is a strange example for the agency to use. It demonstrates a heavily grazed landscape with no aspen regeneration and a dying aspen clone due to regeneration failure. Although a few conifers are present, these are clearly not responsible for a lack of aspen regeneration. This photo is a typical example of severe livestock grazing impacts on aspen. This photo demonstrates that the agency is proposing to do expansive management interventions in aspen without addressing the real problem, which is livestock browsing. The agency is misleading the public by concealing the ecological problem with aspen and claiming that various treatments other than removing livestock grazing will restore historical conditions.

2. The proposed treatments will severely degrade what little viability aspen stands have on the Ashley National Forest due to severe livestock browsing; this severe impact is concealed to the public, in violation of the NEPA.

It is clear from the photo on the front of the project draft EA that livestock browsing is having a severe impact on aspen , by preventing regeneration. AS a result, that stand is old and dying. The agency includes possible fencing of treated aspen stands following treatments. However, this would be a massive undertaking, with 177,707 acres proposed for treatment. In addition, if the agency actually planned to fence treated aspen stands to keep the cattle out, it is unclear why this has not been done in the past to protect aspen stands. What the likely scenario is for this program is that the agency will spend vast amounts of tax payer dollars to try and increase grass for cows. These cows will continue to browse off aspen regeneration, as they have done in the past. What remaining viability that these aspen stands have will be spent on regeneration that will be subsequently destroyed by livestock. This scenario was never identified in the draft EA. Failure to evaluate the actual impact of the proposed treatments means that the likely outcome of this program is not being disclosed to the public, in violation of the NEPA.

3. The agency did not provide any monitoring data to the public to demonstrate that the proposed treatments, which do not include removal of livestock, will increase aspen regeneration in treated stands; without supporting documentation that the proposed treatments will increase and maintain aspen regeneration, the agency is violating the NEPA as well as the Administrative Procedures Act (APA), since expansion of an aspen treatment program needs to be supported with evidence.

The agency noted that from 2009-2018, there have been 9,934 acres of aspen restoration treatments on the Forest. However, there is no information provided to the public about the effectiveness of these treatments. We looked at the most recent Forest Plan Monitoring Report for 2013, and there is no information

included on aspen treatments. This indicates that either these treated acres are not actually being monitored to measure aspen regeneration success, or that these treatments are failures due to a lack of protection from livestock grazing. Since the agency is proposing to greatly expand these aspen treatments, from roughly a 1,000 acres per year to 17,707-8,888 acres over a 10-20 year period, the agency needs to demonstrate how past treatments have worked. The proposed increase of these treatments by roughly 9 to 17 times the current average acreage treated would indicate that past treatments have been very successful in improving the viability of aspen stands. However, there is no information ever provided that this actually occurred. In particular, the continued impact of livestock grazing on these 9,934 of previously-treated aspen acres needs to be provided to the public in order for the agency to demonstrate there is a rational basis for greatly expanding these treatments.

4. The agency is completing an EA for a project of 177,707 acres of aspen treatments, while the Fishlake National Forest completed an EIS for treating 55,106 acres.

The Monroe Mountain Aspen Ecosystems Restoration Project on the Fishlake National Forest, completed in 2012, proposed to treat aspen on 55,106 acres with completion of an EIS. Yet the Ashley National Forest would treat over 3 times as many acres of aspen, including within Inventoried Roadless Areas, with just an EA. The level of analysis planned for the Ashley National Forest aspen treatment projects is far greater than the Fishlake National Forest, and as such, has a potential to create far greater impacts to wildlife. There is no information provided in the draft EA as to how the Ashley National Forest determined that there will be no significant impacts on wildlife in spite of the large acreage to be treated, in comparison with the same treatment program on the Fishlake National Forest. The reasons for such a difference in the scale of analysis between these 2 projects were never defined to the public, to support this inconsistency in agency management actions.

5. The proposed mitigation for aspen treatments, or fencing to keep livestock out, was never identified as a planned activity; mitigation measures are

required to be effective if they are going to eliminate significant impacts to wildlife.

There are no specific requirements in the proposed aspen treatments on the Ashley National Forest to fence treated areas to protect aspen regeneration from livestock. The cost of constructing fences around 177,707 acres of treated aspen would like be very expensive. These costs were not identified in the draft EA.

The Fishlake National Forest noted that for the Monroe Mountain Aspen Restoration Project, due to the high cost and continual maintenance, fencing is not a long term sustainable response option for protecting aspen sprouts from overbrowsing. So it is unclear how much protection, if any, is actually planned for treated areas. This is essential information that is needed in order for the public to understand how treated aspen stands will be managed. If the agency is just going to do the treatments, and then walk away from them afterwards, without any protections from livestock, this impact must be addressed in the environmental analysis, and conclusions provided to the public as to what the success of these treatments is likely to be without protection from livestock grazing.

The Forest Service did not define how the previously treated 9,934 acres of treated aspen have been managed as per fencing. Have any of these areas been fenced, and if not, what has been the livestock impact on aspen regeneration?

Also, it is unclear as to how the agency will be able to effectively monitor the livestock use on regenerating aspen on roughly 9-17 thousand acres per year, with the cumulative total reaching the 177,707 acres after 10-20 years. If heavy browsing by livestock is going to be mitigated with this project implementation, the agency has to ensure that planned mitigation will actually occur. What will the person-power needs be for monitoring livestock use in treated aspen areas, and will the agency receive additional budgeting for these increased needs for monitoring?

6. The agency has violated the NEPA by failing to include an action alternative that would truly restore aspen, which is to remove livestock.

Although the Ashley National Forest has not provided any actual monitoring data on the browsing use of aspen by livestock and wildlife, it is clear that livestock use, due to their sheer numbers and concentration within pastures, are the major impact on aspen recruitment. This is actually even noted in the Monroe Mountain Aspen Restoration Project on the Fishlake National Forest, where it was noted that aspen recruitment of 5-15 feet in height were uncommon, despite continued sprouting of aspen. This is a clear acknowledgement that livestock are browsing aspen sprouts repeatedly every grazing season. If aspen are repeatedly sprouting, the presence of any conifers should not be limiting aspen height to 5 feet or less. The mechanisms for conifers limiting aspen heights to under 5 feet would be unclear at best.

Even though there is widespread acknowledgement in the scientific community that livestock are preventing aspen recruitment, the proposed aspen treatments on the Ashley National Forest did not include an action alternative that would remove livestock from aspen areas. This would be a true restoration alternative, since livestock grazing is not a natural ecological process at the level that it occurs. The photo on the front of the EA for the aspen restoration project is an excellent example of the severe impacts of livestock grazing on aspen. Since the purported purpose of this project is to restore aspen, the absence of an action alternative that would restore aspen by removing livestock is a NEPA violation.

7. The proposed treatment of 147,858 acres of aspen within inventoried roadless lands, which is 83% of the total planned for treatment, is a violation of the Roadless Area Conservation Rule.

Table 1 of the draft EA identifies that most of the proposed treatments would occur within roadless lands. The agency claims this is consistent with the 2001 Inventoried Roadless Rule because it would maintain or improve one or more roadless area characteristics. The Migratory Bird Specialist Report for this project also claims that the aspen treatments will improve wildlife habitat. However, no references were ever provided to define why some wildlife species would increase with the aspen treatments. Also, the agency did not provide any

references as to why creating a diversity of aspen age classes within a roadless area would improve the roadless area characteristics. The basis for creating different aspen age classes was never identified. As was noted in the Monroe Mountain Aspen Restoration project documents, aspen stands are typically multi-aged, with recruitment occurring possibly many times over time. Having an aspen stand with just one age class would be very unusual. This would mean that as the stand aged, it would never produce sprouts. An aspen stand that did not produce any sprouts over it's lifetime would be a very unnatural stand, not a restored stand.

In addition, cutting down aspen stands to increase sprouting would have a very adverse impact on cavity nesting birds. Aspen stands have a very high value to cavity nesting birds, due to their high incidence of rot. Certainly cutting down aspen would not constitute habitat improvement for cavity nesting birds, which may comprise up to 25% of the local breeding bird populations in mixed conifer/aspen forests. Two species on the Ashley National Forest that require snags, including within aspen stands, include the red-naped sapsucker and three-toed woodpecker. Reducing snag habitat would be an adverse impacts on these MIS/sensitive bird species, as well as many other bird species, including within roadless lands. In regards to conifers in aspen stands, these are the only trees that will provide large, long-lived snags, including those needed by the great gray owl. Removing conifers will have an adverse impact on cavity-nesting birds. Removing conifers will also eliminate conifer seed sources, hiding cover for birds during the nesting season, thermal cover for adults and young fledged birds during the nesting season, and bark foraging opportunities for many bark-gleaning birds. Removal of conifers will therefore eliminate many important habitat features for birds.

The agency also failed to define why mixed conifer/aspen stands are an unnatural characteristic in roadless areas that need to be treated. The Ashley National Forest noted that only roughly 22% of the potential treatment aspen on the forest is persistent aspen, which lacks conifers, while 78% of the aspen contains conifers. There was never any science or agency monitoring information cited as

to why conifers present in aspen stands is uncharacteristic, or bad for wildlife, so that removing conifers would restore historical conditions. Also, as noted previously, degrading wildlife habitat is inconsistent with purported claims of restoring historical conditions. This brings into question the need for the proposed treatments, since wildlife habitat will be degraded as a result. Given the current plight for many landbirds in the U.S., it is illogical that the Forest Service is claiming that destroying and/or degrading their habitat is a restoration project. This is a violation of the NEPA, the APA, the National Forest Management Act, as well as the Roadless Area Conservation Rule.

Given that the largest share of proposed treatments would address conifer removal within roadless lands, the wildlife and ecosystem benefits need to be defined to the public in order for the agency to represent these actions as habitat improvement and ecosystem restoration.

The agency claims that one problem with aspen regeneration is the lack of fire. Yet one of the purposes of the treatment of aspen is to create fuel breaks, so there will be less fire. Also, the agency did not provide any definitions of what would constitute “catastrophic fire” in the IRAs, if the aspen treatment projects do not move forward. The measures of “unnatural fires” need to be defined to the public, including where such fires have been recorded elsewhere on the Ashley National Forest.

In conclusion, the agency never identified why aspen in inventoried roadless areas should be treated so that each stand contains only a single age class, or why conifers should be removed from aspen to benefit wildlife. Along with this lack of information, the agency noted that these treatments in roadless area would involve massive disturbances to the landscape, which means these areas would be heavily trammeled. Examples of activities that would occur on up to almost 0.2 miles from any existing roads, including nonsystem roads where motorized use is illegal include: appearance of tree stumps for many years after cutting aspen and conifers; burned trees due to prescribed burns; burn piles from burned slash and trees; firebreak and control lines needed to surround up to 147,858 acres of treatment areas; and tracked vehicles needed to achieve mechanical treatments,

even though motorized use is prohibited in roadless areas; the noise from these massive treatments would also destroy the natural solitude of these roadless lands for the public. The agency claims that because these 147,858 acres of roadless area treatments constitute such a small percentage of the landscape, they would not cause an "untrammeled appearance" to the public. Claiming that the appearance of management activities within only a small percentage of roadless lands does not violate the roadless rule is not based on any criteria. There is no criteria in this rule that we are aware of that permits a certain percentage of the landscape to appear heavily managed by the agency.

It is unclear where access to these 147,858 acres of roadless lands will be available. There is no information in the draft EA as to what roads, including user-created and nonsystem roads, will be required to access roadless treatment areas. Will motorized access be increased on currently-closed roads in order to treatment roadless lands? If so, how is this consistent with the Roadless Area Rule? The maps of the proposed treatment areas are too small for the agency to identify travel routes and their current status. So the public is not being provided with the travel management information portion of this proposal, in violation of the NEPA.

8. The number of flammulated, boreal, great gray owl, three-toed woodpecker, and red-naped sapsucker nests that will be destroyed with the aspen project is never estimated, yet no significant impacts on these MIS and sensitive species was noted in the draft EA and wildlife reports.

It does not appear that any effective wildlife surveys will be done for the aspen treatment project, given that these surveys would be required on roughly 9,000 to 17,000 acres per year. Nesting surveys for owls require considerable amounts of time, as nesting areas are quite difficult to locate. Surveys for sapsuckers and woodpeckers are also quite labor intensive. The draft EA did not provide any information on survey protocols for each of the treatment areas. It actually appears that no serious surveys are actually planned on the 177,707 acres of

planed treatments, even though the agency claims that aspen habitat are prime wildlife habitat. The agency states that regardless of how many nests of various bird species are destroyed within treatment areas, no significant population impacts would occur. The criteria for this conclusion were not provided. What was the measure of bird nesting loss that would trigger significant impacts?

9. The agency did not provide any monitoring information on the Ashley National Forest MIS for aspen, including the warbling vireo and red-naped sapsucker.

Claims that the proposed aspen treatments will benefit wildlife is a violation of both the NEPA and the NFMA, because the agency did not support this claim with any Forest Plan monitoring of MIS for aspen. We also could not find any information of monitoring of the warbling vireo and red-naped sapsucker on the agency's web page. The last monitoring report provided on the web page was in 2013. There is nothing in this report on warbling vireos and red-naped sapsuckers. The 9,934 acres of past aspen treatments overlapped with this 2013 report, but were not addressed for the 2 aspen MIS. The function of MIS is to indicate the impact of management activities on these species. Since there does not appear to have been any monitoring to date on these MIS in spite of 9,934 acres of aspen treatments, the agency is violating the NFMA by not monitoring treatment impacts on these MIS, and is also violating the NEPA by claiming that these species will benefit from aspen treatments without any monitoring data to support the claims.

10. The proposed treatments on 177,707 acres of aspen and aspen/conifer forests is a violation of the Migratory Bird Treaty Act and the associated MOU with the Fish and Wildlife Service.

There are 67 species of western forest birds associated with conifer forests, including mixed conifer/aspen stands. Those species more closely tied to aspen stands, especially those that have a dense understory and if riparian areas are close, include species as the Yellow Warbler, White-crowned Sparrow, Warbling

Vireo, Tree Swallow, Violet-green Swallow, Dusky Flycatcher, Yellow-rumped Warbler, Song Sparrow, Western Tanager, Cassin's Finch, Mourning Dove, House Finch, Dark-eyed Junco, American Robin, MacGillivaray's Warbler, House Finch, Black-headed Grosbeak, Lazuli Bunting, Western Wood-pewee, Orange-crowned Warbler, Hairy Woodpecker, Fox Sparrow, European Starling, Bullock's Oriole, House Wren, Northern Flicker, Swainson's Thrush, Veery, Mountain Bluebird, Brown-headed Cowbird, Downy Woodpecker, Red-naped Sapsucker, Sharp-shinned Hawk, Williamson's Sapsucker, and various species of hummingbirds. At least 9 of these species are cavity nesting birds. Also, the boreal and flammulated owls will nest in aspen snags in cavities created by flickers, and the three-toed woodpecker will nest in aspen trees that are mixed conifer/aspen stands. Thus mature aspen stands provide nesting habitat for at least 12 species of neotropical migratory birds. Activities in these stands that reduce mature aspen and snags will remove nesting habitat for all these species, as well as roughly 25 additional migratory bird species that don't require cavities for nesting. These are general estimates of birds likely present in aspen and aspen/conifer stands. All of these cavity-nesting species will nest in cavities in conifer trees as well. So the proposed aspen treatments will adversely impact roughly 37 species of neotropical migratory birds. These adverse impacts include direct removal of habitat, and destruction of nests during the nesting season. In spite of this impact on a huge number of birds, there is no analysis in the Ashley National Forest Aspen Restoration EA, including the 4-page report on neotropical migratory birds, which is mostly tables.

The impact of past aspen treatments on this forest on 9,934 acres on neotropical migratory birds is unknown, as no such information was provided in the draft EA. Due to the lack of analysis and monitoring impacts of past treatments, the agency has no basis for claiming that adverse impacts on neotropical migratory birds will not be significant on Forest populations. Also, the expected destruction of bird nests is a violation of the MOU and MBTA. There was no indication that the number of deaths is being estimated, which is necessary in order for the Forest Service to obtain the required "take permit" from the FWS.

11. There was no information provided on utilization levels of aspen in proposed treatment areas by livestock and wildlife.

Even though this project is supposedly being driven by a need to increase aspen sprouting, the agency did not provide any monitoring information on what the browsing level is in these proposed treatment areas by either wildlife or livestock. This is essential information since the lack of aspen regeneration is the stated need for the project.

Regards.

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CENTER FOR BIOLOGICAL DIVERSITY
WILDEARTH GUARDIANS

July 9, 2021

District Ranger Kristy Groves
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Duchesne, UT 84021
Submitted electronically to: comments-intermtn-ashley@fs.fed.us; kristy.groves@udsa.gov

Re: Comments on Environmental Assessment for Aspen Restoration Project, #57075

Dear Ranger Groves:

On behalf of the Center for Biological Diversity, WildEarth Guardians, Western Watersheds Project, The Wilderness Society, Rocky Mountain Wild, and Sierra Club, and our many hundreds of thousands of supporters, we thank you for the opportunity to provide comments on the Ashley National Forest Aspen Restoration Project that would authorize a variety of treatments including mechanical harvests for up to 10-20 years across 177,707 acres in any aspen community within the planning area, including within 147,858 acres of Inventoried Roadless Areas (IRAs).

The Center for Biological Diversity (the Center) is a 501(c)(3) nonprofit organization based in Tucson, Arizona, with more than one million members and online activists with offices across the country, and with offices in Salt Lake City, Utah and in Denver, Colorado. The Center is dedicated to protecting and restoring imperiled species and natural ecosystems. The Center uses science, policy, and law to advocate for the conservation and recovery of species on the brink of extinction and the habitats they need to survive. The Center has and continues to actively advocate for increased protections for species and their habitats across the Rocky Mountain West, including Utah.

WildEarth Guardians is a 501(c)(3) nonprofit conservation organization headquartered in Santa Fe, NM with offices in several western states. With more than 270,000 members and supporters WildEarth Guardians work to protect and restore wildlife, wild places, wild rivers, and the health of the American West. WildEarth Guardians has a long history of advocating for and supporting Forest Service project that truly restores the ecological integrity of degraded watersheds in order to improve fish and wildlife habitat.

The groups appreciate that the Forest Service has abandoned its attempt to approve this project via a categorical exclusion, and identified limits on some types of logging in IRAs. We thank the Ashley National Forest for this opportunity to provide additional comments. However, the undersigned remain concerned that this project risks violating both the National Environmental Policy Act and the Roadless Rule.

The proposal risks violating NEPA because the agency will not define the where, when, and how of the project, or even assess the need for site-specific treatments, until *after* the NEPA process is

complete. Thus, the Forest Service's proposal eliminates the requisite environmental analysis, the consideration of alternatives, and opportunities for meaningful public review and input. This approach to NEPA has been struck down by the courts, and cheats the agency of informed public input. The post-NEPA public process the EA alludes to is poorly defined, and provides no avenue for holding the agency accountable if the agency ignores citizen input.

The proposal to use heavy equipment to undertake logging (including commercial logging) across 20+ square miles of roadless areas also does not appear to comply with the Roadless Rule. The Rule's intent, as the Forest Service stated in the Rule's preamble, is "to limit the cutting, sale, or removal of timber to those areas *that have become overgrown with smaller diameter trees*."[1] The purpose of this project is not to thin overgrown forests, as the Rule envisions, but to remove large, encroaching conifers and "decadent" (also presumably large) aspen.

We are sympathetic to the Forest Service's desire to undertake potentially important Forest-wide restoration and resilience projects. But as we did in our comments on scoping, we again urge the agency to make a better case to the public, and to ensure compliance with bedrock environmental laws. The Forest Service could address concerns about the project's impact, and potentially increase public support for its actions, by: involving the public in site-specific planning *before* completing the NEPA process; better explaining the baseline conditions of the areas to be treated and the Forest Service's goals in implementing the treatments; providing information about the specific timing and location of the proposed treatments; and describing the impacts of individual proposals and considering alternatives thereto. We again urge the Forest Service to take these steps.

I. THE FOREST SERVICE'S PROPOSAL

The Forest Service states that the proposal is needed because "[t]he current state of aspen in northern Utah does not meet [desired] conditions, and there is a need for active restoration treatments to reduce conifer encroachment and increase the structural diversity of aspen."[2] The agency states that "[t]he purpose of this project is to restore aspen forests where an assessment has indicated a need for treatment with consideration of the effects of ungulate or livestock browsing."[3] The goals and objectives of the project include "[i]ncreas[ing] aspen resilience and improv[ing] wildlife habitat by ... [i]ncreasing the age-class diversity of aspen on the landscape," and "[i]ncreas[ing] forest resistance to uncharacteristically large and severe wildfires [by] ... [e]xpanding the extent of aspen on the landscape," and "[r]educing conifers in aspen-dominated stands to reduce fire intensity."[4]

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[1] Forest Service, Roadless Area Conservation Rule, 66 Fed. Reg. 3244, 3257 (Jan. 12, 2001) (emphasis added).

[2] Ashley National Forest, Aspen Restoration Environmental Assessment (June 2021) at 3-4 hereafter ("Aspen Project EA").

[3] *Id*. at 4.

[4] *Id*.

The project would "allow for treatments on up to 177,706 acres in any aspen community across the Ashley National Forest outside of designated Wilderness," including within nearly 148,000 acres of IRAs – 83.2% of total acreage identified for logging and burning – protected by the Roadless Area Conservation Rule.[5]

The EA asserts that it "considers the effects of each of the treatments that could be implemented based on an existing condition," although no "specific project area[] would be identified" nor "on-the-ground assessments ... completed" until *after* the NEPA process is complete.[6]

Based on site-specific assessments completed only after the NEPA process is completed, actions "needed to maintain or improve conditions for aspen" may include one or more of the following, among others: prescribed burning; "selective cutting of conifers, aspen, or both," using methods that may include "coppice" (AKA clearcutting) or group selection, and that may include commercial logging; "[g]irdling conifers (killing the tree but leaving it standing) within aspen stands;" pile burning of cut material; the construction of wildlife proof fencing, 6'-8' high, to protect young aspen from browsing; and "[p]rotection from livestock using permitted grazing practices (e.g. temporarily resting pastures or allotments, or using fencing, water and or supplements to distribute livestock away from aspen stands)."[7]

II. THE FOREST SERVICE VIOLATES NEPA BECAUSE IT FAILS TO ANALYZE SITE-SPECIFIC IMPACTS, OR DESIGN A SITE-SPECIFIC PROJECT.

A. NEPA Requires Agencies to Take a Hard Look at Site-Specific Impacts.

NEPA is "'our basic national charter for protection of the environment.'"[8] In enacting NEPA, Congress recognized the "profound impact" of human activities, including "resource exploitation," on the environment and declared a national policy "to create and maintain conditions under which man and nature can exist in productive harmony."[9]

The statute has two fundamental two goals: "(1) to ensure that the agency will have detailed information on significant environmental impacts when it makes decisions; and (2) to guarantee

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[5] *Id*. at 5.

[6] *Id*. at 5. *See also id*. at 40 (Appendix B) ("The Aspen Assessment Field Form would be completed [after NEPA compliance, but] prior to the implementation of a treatment to assess the ecological conditions of the aspen, the potential for problems with ungulate browsing, and other local factors. The data collected would help inform the selection of the appropriate treatment action.").

[7] *Id*. at 6, 24. The Forest Service defines "coppice" logging as "An even-aged method of regeneration a stand …." *See* U.S. Forest Service, Reforestation Glossary, available at https://www.fs.fed.us/restoration/reforestation/glossary.shtml (last viewed July 7, 2021)

[8] *Center for Biological Diversity v. United States Forest Serv*., 349 F.3d 1157, 1166 (9th Cir. 2003) (quoting 40 C.F.R. § 1500.1).

[9] 42 U.S.C. § 4331(a).

that this information will be available to a larger audience."[10] "NEPA promotes its sweeping commitment to 'prevent or eliminate damage to the environment and biosphere' by focusing Government and public attention on the environmental effects of proposed agency action."[11]Stated more directly, NEPA's "'action-forcing' procedures ... require the [Forest Service] to take a 'hard look' at environmental consequences"[12] *before* the agency approves an action. "By so focusing agency attention, NEPA ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct."[13] To ensure that the agency has taken the required "hard look," courts hold that the agency must utilize "public comment and the best available scientific information."[14]

NEPA's review obligations are more stringent and detailed at the project level, or "implementation stage," given the nature of "individual site specific projects."[15] "[G]eneral statements about possible effects and some risk do not constitute a hard look, absent a justification regarding why more definitive information could not be provided."[16]

NEPA requires site-specificity to fulfill two basic purposes: 1) to ensure agencies are making informed decisions prior to acting; and 2) to ensure the public is given a meaningful opportunity

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[10] *Envtl. Prot. Info. Ctr. v. Blackwell*, 389 F. Supp. 2d 1174, 1184 (N.D. Cal. 2004) (quoting *Neighbors of Cuddy Mt. v. Alexander*, 303 F.3d 1059, 1063 (9th Cir. 2002)); *see also Earth Island v. United States Forest Serv.*, 351 F.3d 1291, 1300 (9th Cir. 2003) ("NEPA requires that a federal agency 'consider every significant aspect of the environmental impact of a proposed action ... [and] inform the public that it has indeed considered environmental concerns in its decision-making process.'").

[11] *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 371 (1989) (quoting 42 U.S.C. § 4321).

[12] *Metcalf v. Daley*, 214 F.3d 1135, 1141 (9th Cir. 2000) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989)).

[13] *Marsh*, 490 U.S. at 371 (citation omitted).

[14] *Biodiversity Cons. Alliance v. Jiron*, 762 F.3d 1036, 1086 (10th Cir. 2014) (internal citation omitted).

[15] *Ecology Ctr., Inc. v. United States Forest Serv.*, 192 F.3d 922, 923 n.2 (9th Cir. 1999); *see also Friends of Yosemite Valley v. Norton*, 348 F.3d 789, 800-01 (9th Cir. 2003); *New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 718-19 (10th Cir. 2009) (requiring site-specific NEPA analysis when no future NEPA process would occur); *Colo. Envtl. Coal. v. Ofc. of Legacy Mgmt.*, 819 F. Supp. 2d 1193, 1209-10 (D. Colo. 2011) (requiring site-specific NEPA analysis even when future NEPA would occur because "environmental impacts were reasonably foreseeable").

[16] *Or. Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1134 (9th Cir. 2007) (citation omitted); *see also Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007) (holding the Forest Service's failure to discuss the importance of maintaining a biological corridor violated NEPA, explaining that "[m]erely disclosing the existence of a biological corridor is inadequate" and that the agency must "meaningfully substantiate [its] finding").

to participate in those decision-making processes.[17] Federal courts apply these touchstone criteria when evaluating whether a NEPA document is adequately site-specific.[18]

Analyzing and disclosing site-specific impacts is critical because where (and when and how) activities occur on a landscape strongly determines the nature of the impact. As the Tenth Circuit Court of Appeals has explained, the actual "location of development greatly influences the likelihood and extent of habitat preservation. Disturbances on the same total surface area may produce wildly different impacts on plants and wildlife depending on the amount of contiguous habitat between them."[19] The Court used the example of "building a dirt road along the edge of an ecosystem" and "building a four-lane highway straight down the middle" to explain how those activities may have similar types of impacts, but the extent of those impacts – in particular on habitat disturbance – is different.[20] Indeed, "location, not merely total surface disturbance, affects habitat fragmentation,"[21] and therefore location data is critical to the site-specific analysis NEPA requires. Merely disclosing the existence of particular geographic or biological features is inadequate – agencies must discuss their importance and substantiate their findings as to the impacts.[22]

Courts in the Ninth Circuit have taken a similar approach. For example, in 2019 the U.S. District Court for the District of Alaska issued a preliminary injunction in the case *Southeast Alaska Conservation Council v. U.S. Forest Service,* halting implementation of the Tongass National Forest's Prince of Wales Landscape Level Analysis Project.[23] The court did so because the Forest Service's failure to disclose the site-specific impacts of that logging proposal raised "serious questions" about whether that approach violated NEPA.

The district court explained the approach the Forest Service took in the Prince of Wales EIS:

> each alternative considered in the EIS "describe[d] the conditions being targeted for treatments and what conditions cannot be exceeded in an area, or place[d] limits on the intensity of specific activities such as timber harvest." But the EIS provides that "site-specific locations and methods will be determined during implementation based on defined conditions in the alternative selected in the ...

[17] *Stein v. Barton*, 740 F. Supp. 743, 749 (D. Alaska 1990).

[18] *See WildEarth Guardians*, 790 F.3d at 921-25 (holding EIS inadequate for failure to disclose the location of moose range); *Or. Nat. Desert Ass'n v. Rose*, 2019 WL 1855419 (9th Cir. 2019) (holding environmental analysis violated NEPA by failing to establish "the physical condition of [roads and trails] and authorizing activity without assessing the actual baseline conditions").

[19] *New Mexico ex rel. Richardson*, 565 F.3d at 706.

[20] *Id*. at 707.

[21] *Id*.

[22] *Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007).

[23] *Southeast Alaska Conservation Council v. U.S. Forest Serv.*, 413 F. Supp. 3d 973 (D. Ak. 2019).

> ROD ... in conjunction with the ... and Implementation Plan ....” The Forest Service has termed this approach “condition-based analysis.”[24]

The Prince of Wales EIS made assumptions “in order to consider the ‘maximum effects’ of the Project.”[25] It also identified larger areas within which smaller areas of logging would later be identified, and approved the construction of 164 miles of road, but “did not identify the specific sites where the harvest or road construction would occur.”[26]

The Court found the Forest Service’s approach contradicted Ninth Circuit precedent including *City of Tenakee Springs v. Block*, 778 F.2d 1402 (9th 1995), concerning logging on the Tongass National Forest. In *City of Tenakee Springs*, the appellate court set aside the Forest Service’s decision to authorize pre-roading in the Kadashan Watershed, without specifically evaluating where and when on approximately 750,000 acres it intended to authorize logging. The district court evaluating the Prince of Wales project found the Forest Service’s approach was equivalent to the deficient analysis set aside in *City of Tenakee Springs.*

> Plaintiffs argue that the Project EIS is similarly deficient and that by engaging in condition-based analysis, the Forest Service impermissibly limited the specificity of its environmental review. The EIS identified which areas within the roughly 1.8-million-acre project area could potentially be harvested over the Project’s 15-year period, but expressly left site-specific determinations for the future. For example, the selected alternative allows 23,269 acres of old-growth harvest, but does not specify where this will be located within the 48,140 acres of old growth identified as suitable for harvest in the project area. Similar to the EIS found inadequate in *City of Tenakee Springs*, the EIS here does not include a determination of when and where the 23,269 acres of old-growth harvest will occur. As a result, the EIS also does not provide specific information about the amount and location of actual road construction under each alternative, stating instead that “[t]he total road miles needed will be determined by the specific harvest units offered and the needed transportation network.”[27]

The district court concluded that plaintiffs in the case raised “serious questions” about whether the Prince of Wales EIS’s condition-based management approach violated NEPA because “the Project EIS does not identify individual harvest units; by only identifying broad areas within which harvest may occur, it does not fully explain to the public how or where actual timber activities will affect localized habitats.”[28] After finding the plaintiffs also met the other factors for preliminary injunction, the Court enjoined all logging until a decision on the merits.[29]

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[24] *See id.* at 976-77 (citations omitted).

[25] *Id*. at 977.

[26] *Id*.

[27] *Id*. at 982 (citations omitted).

[28] *Id*. at 983.

[29] *Id*. at 986.

In March 2020, the Alaska district court reaffirmed its September 2019 preliminary injunction decision and holding that the Forest Service's condition-based management approach violated NEPA.[30] The court explained that "NEPA requires that environmental analysis be specific enough to ensure informed decision-making and meaningful public participation. The Project EIS's omission of the actual location of proposed timber harvest and road construction within the Project Area falls short of that mandate."[31]

The district court also concluded that the Forest Service's "worst case analysis" was insufficient, explaining: "This approach, coupled with the lack of site-specific information in the Project EIS, detracts from a decisionmaker's or public participant's ability to conduct a meaningful comparison of the probable environmental impacts among the various alternatives."[32] Consequently, the court concluded that

> By authorizing an integrated resource management plan but deferring siting decisions to the future with no additional NEPA review, the Project EIS violates NEPA. The Forest Service has not yet taken the requisite hard look at the environmental impact of site-specific timber sales on Prince of Wales over the next 15 years. The Forest Service's plan for condition-based analysis may very well streamline management of the Tongass ... however, it does not comply with the procedural requirements of NEPA, which are binding on the agency. NEPA favors coherent and comprehensive up-front environmental analysis to ensure ... that the agency will not act on incomplete information, only to regret its decision after it is too late to correct.[33]

The Ashley Aspen Project is a project-level decision.[34] As a result, any NEPA analysis must include the detailed information and analysis that NEPA and the CEQ regulations require because the Forest Service discloses that there will be no further NEPA analysis beyond the Final EA. Failure to provide such detailed, site-specific analysis, precludes informed agency decision-making and informed public comment, in violation of NEPA.

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[30] *Southeast Alaska Conservation Council v. United States Forest Serv*., 443 F. Supp. 3d 995 (D. Ak. 2020).

[31] *Id*. at 1009 (citations omitted).

[32] *Id*. at 1013.

[33] *Id*. at 1014-15 (internal citations and quotations omitted). The Forest Service should not interpret the Alaska District's decision to somehow endorse the use of condition-based analyses for environmental assessments. Where the exercise of site-specific discretion is material to a project's environmental consequences, NEPA requires consideration of site-specific proposals and alternatives, regardless of whether the effects are "significant." 42 U.S.C. § 4332(2)(C), (E).

[34] While the EA envisions further site-specific data collection, monitoring, and project design, it does not anticipate or describe any future NEPA analysis or public involvement consistent with that law.

NEPA further mandates that the agency provide the public "'the underlying environmental data' from which the Forest Service develop[ed] its opinions and arrive[d] at its decisions."[35] "The agency must explain the conclusions it has drawn from its chosen methodology, and the reasons it considered the underlying evidence to be reliable."[36] In the end, "vague and conclusory statements, without any supporting data, do not constitute a 'hard look' at the environmental consequences of the action as required by NEPA."[37]

CEQ's regulations establish specific ways agencies must analyze proposed actions, including project-level decisions, including a detailed discussion of direct, indirect, and cumulative impacts and their significance; and an analysis of reasonable alternatives to the proposed action. Such analysis is required for both environmental assessments and EISs.

B. The EA's Approach Violates NEPA.

Although NEPA requires that analysis disclose specific information about the when, where, and how of any agency action, so that the impacts (and alternatives) can be described and weighed, the EA anticipates that none of that information will be gathered before the Forest Service makes a decision authorizing logging and burning over a vast landscape. The Forest Service intends to postpone gathering information about values present at specific sites, and proposing components of site-specific project design, only *after* the NEPA process is complete.[38] This upends NEPA's central purpose that agencies analyze and disclose such information *before* they leap, as the court concluded in *Southeast Alaska Conservation Council*.

The Forest Service proposes a "public outreach" process to solicit public input *after* the NEPA process is complete, perhaps as an attempt to make it appear that the agency will comply with the law:

> During each year of implementation across all units, a public outreach period will be conducted at least 3 months prior to implementation to identify any new information or issues so as appropriate, the proposed implementation may be

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[35] *WildEarth Guardians v. Mont. Snowmobile Ass'n*, 790 F.3d 920, 925 (9th Cir. 2015).

[36] *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1075 (9th Cir. 2011) (citation omitted).

[37] *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 973 (9th Cir. 2006); *see also Ocean Advocates v. Army Corps of Engineers*, 402 F.3d 846, 869 (9th Cir. 2004) (finding that a vague and uncertain analysis is insufficient to meet NEPA's mandate).

[38] *See* Aspen Project EA at 5 ("*After the analysis is complete*, specific treatment areas would be identified and on-the-ground assessments (Appendix B) would be completed to determine the ecological condition of the aspen stands, the potential for problems with browsing, and other local factors like impacts from dispersed recreation. Based on the site-specific conditions and an interdisciplinary review, the appropriate treatment(s) for the area would be selected" (emphasis added)).

> modified or site-specific mitigation may be applied to the proposed treatment sites.[39]

The Forest Service does not well define this process. How will the Forest Service notify the public, and with what information? How will the Forest Service respond to comments? Will the Forest Service only review "new information"? How would the Forest Service decide whether to modify a proposal? How much time would the Forest Service grant the public to provide feedback? How could the public hold the Forest Service accountable if the agency ignores science or fails to respond to comments? The answers to all of these questions are not apparent because the agency is essentially creating from whole-cloth an ersatz-NEPA process. While this process might ensure that some information about logging, bulldozing, skidding and the like are available to officials before a site-specific project proceeds, it fails to ensure that "environmental information is available to ... citizens *before decisions are made*," as the law requires.[40]

The Forest Service's NEPA end-run is even more apparent when compared to how the agency will address compliance with the National Historic Preservation Act (NHPA). The EA notes that the agency will undertake a "phased" consultation approach with the State Historic Preservation Office (SHPO), "in which proposed treatment units will [be] consulted on with Utah SHPO and Native American Tribes prior to implementation."[41] It is unclear why the Forest Service will comply with the NHPA concerning proposed treatments units, but is declining to do the same with NEPA, particularly when NEPA itself provides for such a "phased" approach: preparation of a programmatic analysis followed by site-specific NEPA compliance. We urge the Forest Service to comply with NEPA by either undertaking the required site-specific analysis before making a final decision, or preparing a programmatic analysis now to which the agency can tier for subsequent NEPA analysis that addresses site-specific conditions and proposed treatments.

III. THE FOREST SERVICE FAILS TO TAKE A HARD LOOK AT THE PROPOSED ACTION'S IMPACTS.

NEPA regulations and federal courts require that agencies prepare an environmental impact statement (EIS) in those cases where the major federal action has the potential to result in significant impacts.[42]

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[39] *Id*. at 13.

[40] 40 C.F.R. § 1500.1(b) (1978) (emphasis added).

[41] *See* Aspen Project EA at 12 ("The Ashley National Forest and Utah SHPO have agreed to a phased NHPA Section 106 compliance process, in which proposed treatment units will consulted on with Utah SHPO and Native American Tribes prior to implementation. If Historic Properties are identified within the area of potential effect, then mitigation measures will be identified through the consultation process. The implementation of the mitigation measures will prevent adverse impacts to historic properties.")

[42] This action should be governed by the Council on Environmental Quality's 1978 regulations, as amended, and so all references to the CEQ regulations are to those in force as of July 14, 2020, unless otherwise noted. Although CEQ issued a final rulemaking in July 2020 fundamentally rewriting those regulations, the 2020 rules apply only "to any NEPA process

For example, the Ninth Circuit has established a "relatively low threshold for preparation of an EIS," namely that an EIS must be prepared if a plaintiff raises substantial questions about whether a project will have significant effects.[43] "We have held that an EIS must be prepared if 'substantial questions are raised as to whether a project ... may cause significant degradation to some human environmental factor.' To trigger this requirement a 'plaintiff need not show that significant effects will in fact occur,' [but instead] raising 'substantial questions whether a project may have a significant effect' is sufficient."[44]

The Tenth Circuit agrees. "If the agency determines that its proposed action may 'significantly affect' the environment, the agency must prepare a detailed statement on the environmental impact of the proposed action in the form of an EIS."[45]

Where an agency has questions as to whether a federal action has the potential to have significant impacts, the agency prepares an environmental assessment (EA) to "determin[e] whether to prepare an environmental impact statement or a finding of no significant impact."[46] Even where a proposal will not have significant impacts, NEPA nonetheless requires consideration of alternatives when there are "unresolved conflicts concerning alternative uses of available

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begun after September 14, 2020," or where the agency has chosen to "apply the regulations in this subchapter to ongoing activities." 40 C.F.R. § 1506.13 (2020). The Ashley Aspen Project NEPA process began before September 2020; the Ashley NF issued a scoping notice and solicited public comment in October 2019. *See* Ashley National Forest, Aspen Restoration Project (Oct. 2019), available at https://www.fs.usda.gov/nfs/11558/www/nepa/112519_FSPLT3_4879629.pdf (last viewed July 9, 2021). Thus the 1978 regulations would apply unless the Forest Service has chosen to apply the 2020 regulations. The Forest Service nowhere affirmatively represents that the agency has chosen to apply the 2020 rules to this project, although it does appear to rely on the 2020 regulations for its definition of significant impacts. *See* Ashley Aspen EA at 15 (citing 40 C.F.R. § 1501.3(b), apparently from the 2020 regulations). We request that the Forest Service explicitly state which version of the CEQ regulations – 1978 or 2020 – it intends to rely on or this analysis.

[43] *NRDC v. Duvall*, 777 F. Supp. 1533, 1537 (E.D. Cal. 1991).

[44] I*daho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1149-50 (9th Cir. 1998) (citations omitted) (emphasis original). *See also Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 864-65 (9th Cir. 2005) ("To trigger this [EIS] requirement a plaintiff need not show that significant effects will in fact occur, but raising substantial questions whether a project may have a significant effect is sufficient.") (internal quotations, citations, and alterations omitted); *Anderson v. Evans*, 314 F.3d 1006, 1017 (9th Cir. 2002) ("To prevail on the claim that the federal agencies were required to prepare an EIS, the plaintiffs need not demonstrate that significant effects will occur. A showing that there are "'substantial questions whether a project may have a significant effect' on the environment" is sufficient.") (citations omitted); *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998).

[45] *Airport Neighbors Alliance v. U.S.*, 90 F.3d 426, 429 (10th Cir. 1996) (citation omitted) (emphasis added).

[46] 40 C.F.R. § 1508.9.

resources" via an EA.[47] If an agency "decides not to prepare an EIS," and instead to prepare an EA, "'it must put forth a convincing statement of reasons' that explains why the project will impact the environment no more than insignificantly. This account proves crucial to evaluating whether the [agency] took the requisite 'hard look.'"[48]

A. The Forest Service Fails to Define the Project.

The Forest Service's failure to precisely define which treatment methods it will use and where it will use them make it difficult to understand what the project area will look like once the treatments occurs.

For example, one of the "actions" that the agency may take is "[p]rotection from browsing (including, but not limited to wildlife proof fencing, 6-8' high)."[49] But the agency provides no metric to evaluate when such "protection" might be necessary, thus giving neither the public nor the decision-maker any idea of when, whether and how this measure might protect aspen or otherwise impact the environment, or how many miles (or thousands of miles) of fencing may be built. While the agency proposes that browsing impacts be evaluated *post*-treatment, the project does not require any concrete action once thresholds are exceeded, only suggesting that "[i]f … thresholds are exceeded, *consider* additional management actions to protect the aspen regeneration and how the scale and timing of future treatments *may* be adjusted to avoid heavy browsing pressure."[50] The agency proposed "threshold," if exceeded, thus does not *require* a response, nor does the agency specify any response. One therefore cannot predict what actions the agency will undertake, what impacts those actions will cause, and when or whether certain mitigation measures will be implemented.

The EA states: "Based on the monitoring results, additional management actions (from the list of treatments) may be implemented if needed to achieve restoration objectives."[51] But the EA does not identify what criteria it would use to determine "the most effective management option," nor what "monitoring results," or thresholds would trigger "additional management actions (from the list of treatments)," or when or why such additional treatments would be needed. Because the Forest Service fails to explain when, where, or why management actions may occur, it cannot rationally conclude that its actions cannot have significant impacts.

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[47] 42 U.S.C. § 4332(2)(E).

[48] *Ocean Advoc.*, 402 F.3d at 864. *See also Blue Mountains*, 161 F.3d at 1212 (If the agency decides not to prepare an EIS, the agency must supply a "convincing statement of reasons" to explain why the action will not have a significant impact on the environment); *Save the Yaak Committee v. Block*, 840 F.2d 714, 717 (9th Cir. 1988) ("An agency's decision not to prepare an EIS will be considered unreasonable if the agency fails to supply a convincing statement of reasons why potential effects are insignificant") (citation and quotations omitted); 40 C.F.R. § 1501.4(e); 40 C.F.R. § 1508.13.

[49] Aspen Project EA at 6.

[50] Aspen Project EA at 43 (emphasis added).

[51] *Id*. at 6.

The EA also includes for the first time several pages of "Activity Cards" as an appendix to the EA. The EA does not explain the purpose or use of these "cards," stating only: "Treatment actions would target the most effective management option and be followed by post-treatment monitoring – see Appendix D for activity cards."[52] The EA does not describe what these cards mean or how they may or may not constrain the project, or guide Forest Service implementation. We urge the Forest Service to explain these "cards" and their role in any subsequent NEPA document the agency prepares.

The EA also fails to provide a sufficient basis for the need for specific treatments, nor does it effectively describe why certain treatments would be chosen over others. Critically, the EA does not distinguish between the major *causes* of lack of recruitment in "persistent aspen" (i.e., aspen with no or insignificant component of conifers) and "aspen-conifer." The causes of lack of recruitment are different for the two community types: usually excessive browsing in persistent aspen, as opposed to lack of fire leading to overtopping/shading by conifer in aspen-conifer. Although the EA cites O'Brien, *et al*. 2010 and Kitchen, *et al*. 2019,[53] those documents emphasize the importance of addressing the underlying causes of lack of regeneration or recruitment. This the EA fails to do.

The EA also appears to rely on mitigation measures that have not yet even been identified to reach its draft finding of no significant impact. For example, the EA states: "Site specific boreal toad mitigation measures will be identified prior to implementation based on species presence and riparian conditions."[54] It is unclear how the Forest Service can be certain that it can mitigate impacts to boreal toad when it has no idea what those mitigation measures will be.

B. The EA Fails to Describe Baseline Conditions.

NEPA documents must "succinctly describe the environment of the area(s) to be affected or created by the alternative under consideration."[55] NEPA also requires the action agency to set an appropriate baseline detailing the nature and extent of the resources in the area: "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process."[56] "Without establishing ... baseline conditions ... there is simply no way to determine what effect [an action] will have on the environment and, consequently, no way to comply with NEPA."[57]

Without baseline data, neither the public nor the agency can understand the effects of the proposed action or craft and analyze alternatives and mitigation measures to protect these values.

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[52] Aspen Project EA at 5-6.

[53] *Id*. at 5.

[54] *Id*. at 19, 23, 26.

[55] 40 C.F.R. § 1502.15 (1978 & 2020).

[56] *See* Council on Environmental Quality, *Considering Cumulative Effects under the National Environmental Policy Act* 41 (January 1997).

[57] *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988).

As such, the Forest Service must identify the environmental baseline and affected environment, as well as the scope of impacts and where those impacts are most likely to be felt.

Because the EA contains so little information about the location and nature of forest, recreation, wildlife, wetland, riparian habitat conservation areas, and other resources within the project area, the agency fails to comply with NEPA's baseline data requirement. For example, EA fails to map or describe where elk/deer ungulate populations are high, moderate, or low, an important consideration for planning which treatment areas are likely to require fencing.

The failure to include baseline data is puzzling because the EA notes that over 30 years, 1,171 long term study plots have been established in aspen stands and impacts from various activities monitored.[58] Several plots are within aspen stands that have had previous treatments such as prescribed fire, salvage, or clear cutting. The EA apparently provides no data from these study plots, and it discloses no comparisons between those that were previously treated and those that were not. The EA fails to include: site-specific assessment of the current condition of aspen forest types; assessment of stand structure for the individual stands; characterization of understory conditions; analysis of livestock impacts to recruitment; and a description of the desired future conditions and the ecological basis of those or how aspen stands are deviating from those conditions.

We urge the Forest Service in any subsequently prepared NEPA document to include baseline, site-specific information about the project area so that the public can better understand and appreciate the values at issue and how the proposed action and alternatives may impact those values.

C. The EA Fails to Take a Hard Look at Potentially Significant Transportation Impacts.

The Forest Service uses the general term "road" to describe access to the project, which the regulations define as "[a] motor vehicle route over 50 inches wide, unless identified and managed as a trail."[59] This may permit the Forest Service to implement this project by opening existing closed roads, and even use unauthorized roads. The number and length of unauthorized roads is highly uncertain and extremely concerning given that a 2017 Ashley National Forest assessment found that "[t]he amount of unauthorized user created routes mainly from motorized use has been increasing," and "[t]he increase in unauthorized user created routes increases resource damage."[60] The EA does not disclose the number or location of user-created roads the Forest Service may utilize, making it impossible to determine the precise nature of road impacts, but likely having significant impacts. Though the EA includes many pages of project design

[58] Aspen Project EA at 5.

[59] 36 C.F.R. § 212.1.

[60] Mortenson, Valton. 2017. Ashley National Forest Assessment Infrastructure Report. p. 7. Available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd564538.pdf (last viewed July 9, 2021).

criteria, those criteria do not preclude the use of unauthorized roads to implement this project. The agency should have directed the removal of unauthorized routes wherever found.

The EA also fails to address the impacts of utilizing system roads in dire need of repair, reconstruction or relocation. "The Ashley National Forest annual roads budget has decreased from approximately $1.07 million in 2005 to $706,000 in 2015, a 34 percent reduction."[61] Further, the total estimated annual funding needed for road maintenance and operation totals $5.5 million, meaning the Ashley National Forest has a total annual road maintenance backlog of $4.8 million dollars, representing an 87% shortfall.[62] The lack of adequate funding for maintenance means the Forest Service cannot meet its road management objectives, a shortfall which can cause adverse environmental effects such as increased stream sedimentation due to poor drainage and even mass wasting. This is especially true for high-clearance roads that this project will likely use; such routes total 898 miles forest-wide. The current condition of the agency's road system suggests any road use associated with this project – especially log hauling – may require a significant amount of road reconstruction and realignment that could further increase surface erosion, impacts the EA fails to address.

These effects are unanalyzed, but likely and are specific to the currently open, but poorly maintained, ML 2 roads. More resource damage will likely occur if the Forest Service opens any of its closed roads since they are often in a stored condition due to resource concerns and require reconstruction for project utilization. Where roads are in an ML 1 status to mitigate resource damage, opening them will further create uncertain conditions, and potential damage to soils, watersheds, and wildlife habitat, requiring disclosure in any subsequently prepared NEPA document.

Further, the Forest Service states that project activities will include the use of new and existing skid trails or other "user-created travel ways" to implement vegetative treatments.[63] No matter the degree of best management practices (BMPs), construction and use of an unknown number, length, and location of skid trails increases the project's potential impacts to the degree that it is likely the skid trails will have significant environmental consequences, requiring either disclosure in an EA, or preparation of an EIS.

D. The EA Fails to Take a Hard Look at Potentially Significant Impacts to Northern Goshawk.

The Forest Service's "leap first-look later" approach is especially evident in regards to the potential harm this project poses to the Northern goshawk (goshawk; *Accipiter gentilis*) and their habitat. The Forest Service asserts that its proposed BMPs and design criteria will properly

[61] *Id.* at 5.

[62] *Id.* at 4-5.

[63] Aspen Project EA at 31.

address any negative consequences to the species without providing any supporting evidence.[64] This is insufficient to comply with the agency's legal requirements under the National Forest Management Act to maintain viable populations and maintain biodiversity, or to take a hard look at potential impacts per NEPA. Rather, the Forest Service provides no analysis at all.

The goshawk is a Regional Forester Sensitive Species for the Intermountain Region (Region 4) of the Forest Service, and goshawks occur on the Ashley National Forest. Timber harvest has historically been the primary threat to the species, including in Utah. Before the 1980s, when most large ponderosa pine trees were harvested, goshawk nests had been observed in ponderosas on the Ashley National Forest; this is no longer the case.[65] The failure to leave enough large trees on the landscape during timber harvesting remains a threat.[66]

We are concerned that the proposed project will fail to protect the goshawk's habitat needs, including the retention of large trees, snags, and dense forest cover. Protections are required for nesting, foraging, and non-breeding season habitat.

While goshawks in Utah use a variety of coniferous and deciduous forests, aspen is among the most important cover types for the species in the state. Aspen trees are used for nesting, and lodgepole pine is also important in the Ashley.[67] Any vegetation management activities have the potential to negatively impact goshawk habitat by destroying and degrading important forest nesting and foraging structural conditions and harming individuals by disturbing nests. The proposed project presents a level of risk to northern goshawks and their habitat that may not be mitigated by the BMPs and design criteria.

Dominant tree species used by goshawks vary throughout their range in North America, but other habitat requirements are similar across regions.[68] Nesting habitat tends to be characterized by mature to old forest conditions, with large trees and closed canopy (60%-80%), and

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[64] *See id*. at 5 ("To accomplish the project objectives while also maintaining the appropriate level of resource protection, resource specialists have provided Best Management Practices (BMPs) and project design criteria for each treatment type ….").

[65] *See* R. T. Graham *et al*., Forest Service, Rocky Mountain Research Station, The northern goshawk in Utah: habitat assessment and management recommendations. Gen. Tech. Rep. RMRS-GTR-22 (1999), attached as Ex. 2 to the Center's Nov. 24, 2019 scoping comments.

[66] S. Rodriguez *et al*., "Timber harvest and tree size near nests explains variation in nest site occupancy but not productivity in northern goshawks (Accipiter gentilis)," Forest Ecology and Management 374: 220-229 (2016), attached as Ex. 3 to the Center's Nov. 24, 2019 comments.

[67] *See* Graham, The northern goshawk in Utah: habitat assessment and management recommendations.

[68] U.S. Fish and Wildlife Service, Northern Goshawk Status Review (June 1998), attached as Ex. 4 to the Center's Nov. 24, 2019 scoping comments, available at https://www.fws.gov/pacific/news/pdf/gh_sr.pdf (last viewed July 9, 2021).

moderately dense to dense stands.[69] Adults tend to select one of the largest trees within a forest stand for nesting.[70] Goshawks likely prefer dense cover to protect chicks from inclement weather conditions and predators.[71] Thus, simply protecting snags in nesting habitat is inadequate. Goshawks will typically hunt on the edges of dense, closed forests, but often kill in more open areas.[72] Woody debris is essential to provide habitat for prey species, particularly small mammals.[73] Wintering habitat tends to be more varied in Utah, for example, pinyon-juniper ecosystems may be used.[74]

Goshawks have large home ranges that surround nest sites, and the home range size of males in generally larger than females. The more food available, the smaller the home range.[75] Based on research in the Southwest, see below, home range sizes roughly average 6,000 acres. In Idaho, male home ranges were found to be as large as 15,000 acres.[76] Moser and Garton concluded that conservation of goshawk habitat at the home range scale is important and stated: "When managing for male and female goshawk foraging habitat, managers should seek to minimize the proportion of openings (VSS 1-2) and moderately closed forests (VSS 3) at the home-range scale."[77]

In Utah, northern goshawks hunt a variety of prey species, including squirrels and lagomorphs, and a range of bird species.[78] Woodpeckers, including northern flickers, three-toed woodpeckers, and others are on the menu.

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[69] FWS, Northern Goshawk Status Review (Ex. 4 to the Center's Nov. 24, 2019 scoping comments); Graham, The northern goshawk in Utah: habitat assessment and management recommendations (Ex. 2).

[70] FWS, Northern Goshawk Status Review (Ex. 4 to the Center's Nov. 24, 2019 scoping comments).

[71] Rodriguez, "Timber harvest and tree size near nests" (Ex. 3 to the Center's Nov. 24, 2019 scoping comments).

[72] Graham, The northern goshawk in Utah: habitat assessment and management recommendations (Ex. 2 to the Center's Nov. 24, 2019 scoping comments).

[73] FWS, Northern Goshawk Status Review (Ex. 4 to the Center's Nov. 24, 2019 scoping comments).

[74] J. Underwood, *et al*., "Winter movement and habitat use of northern goshawks breeding in Utah," Studies in Avian Biology, 31:228 (2006), attached as Ex. 5 to the Center's Nov. 24, 2019 scoping comments.

[75] B. Moser & E. Garton, "Northern goshawk space use and resource selection," Journal of Wildlife Management, 83(3): 705-713 (2019), attached as Ex. 6 to the Center's Nov. 24, 2019 scoping comments.

[76] *Id*.

[77] *Id*.

[78] Graham, The northern goshawk in Utah: habitat assessment and management recommendations (Ex. 2 to the Center's Nov. 24, 2019 scoping comments).

The proposed action includes "coppice" cutting of aspen, a type of clearcutting, as one potential treatment that could occur anywhere and everywhere.[79] This logging would occur as part of treatments that would "[*s*]*electively cut or remove all* conifers, *aspen* or both using hand crews with chainsaws," and "[*s*]*electively cut or remove all* conifers, *aspen* or both using ground-based mechanized equipment."[80] Such treatments could effectively remove all goshawk habitat within aspen stands, an impact neither disclosed nor addressed in the EA.

Proposed BMPs and design criteria would mean little in the face of wide-spread coppice cutting. For example, a design criteria directing that "[w]ithin goshawk territories, leave a minimum of 600 snags/100 acres (6 snags/acre) 8" dbh > 15 feet tall."[81] Leaving six snags per acre will not provide nest security or good hunting or fledging habitat for goshawk. Another criteria "[p]rohibits vegetative treatments within active northern goshawk nest areas (approximately 30 acres) during nesting periods (March 1–September 30)."[82] This "protective" measure would allow each entire 30-acre nesting area to be clearcut when the nest is not in use. In short, there are no protections proposed for unoccupied nests, even though goshawks are known to reuse breeding sites.

Moreover, 6 snags/acre is unlikely to retain enough snags for goshawks, other raptors, and snag-dependent prey species, such as woodpeckers. These species as well as the red squirrel and mountain bluebird also depend on snags. Woodpeckers are not only prey for goshawks but primary cavity excavators, keystone species, on whom a host of secondary cavity users depend. Though goshawks are not known to depend on tree cavities for nesting, the presence of woodpeckers in goshawk habitat must be maintained.

Studying how woodpeckers select trees for excavating nests, Lorenz *et al*. concluded that most snag recommendations set density targets too low because they don't account for the snag requirements of primary cavity excavators.[83] The paper concludes: "the felling or removal of snags for any purpose ... should not be permitted where conservation and management of PCEs [primary cavity excavators] or SCUs [secondary cavity users] is a concern."[84] Further, woodpecker studies indicate, "if one of every 20 snags (approximately 4 percent) has suitable wood, and there are five to seven species of woodpeckers nesting in a given patch,

[79] *See* Aspen Project EA at 24, 29 (authorizing "coppice" logging of aspen, a type of clearcutting).

[80] *Id*. at 22, 26 (emphases added).

[81] *Id*. at 25, 29.

[82] *Id*. at 25, 30.

[83] T. Lorenz *et al*., "The role of wood hardness in limiting nest site selection in avian cavity excavators," Ecological Applications, 25(4): 1016-1033 (2015), attached as Ex. 7 to the Center's Nov. 24, 2019 scoping comments.

[84] *Id*. at 1030.

approximately 100 snags may be needed each year for nesting sites alone."[85] Hutto has suggested that snag retention post-disturbance should perhaps be 50% higher than Forest Service guidelines.[86]

We note further that the proposed action fails to include BMPs or design elements consistent with Forest Plan guidelines adopted to protect goshawk. The 2000 Forest Plan Amendment that applies to "all management areas containing goshawk habitat" includes "standards and guidelines that will be implemented [which] are designed to protect goshawk habitat during all management activities, particularly in the nest and post-fledgling areas."[87] The Aspen Project fails to include or address many of the plan amendment's provisions, including:

- (g) (Guideline) Planned vegetative management treatments (excluding unplanned and unwanted wildland fire) in the mature and/or old structural groups in a landscape that is at or below the desired percentage of land area in mature and old structural stages (40% conifer, 30% aspen), should be designed to maintain or enhance the characteristics of these structural stages. Within these landscapes, the percentage of land area in mature and old structural stages treated should not move out of the mature and old structural stage.

- (j) (Guideline) - Vegetative treatments designed to maintain or promote a VSS 4, 5 and/or 6 group, the percent of the group acreage covered by clumps of trees with interlocking crowns should typically range from 40-70% in post-flegling and foraging areas, and 50-70% in nest areas.

- (o) (STANDARD) When an active nest area has been identified, identify 2 alternate nest areas and 3 replacement nest areas.

- (p) (Guideline) Each nest area (active, alternate and replacement) should be approximately 30 acres (total of approximately 180 acres) in size when sufficient suitable habitat exists. If sufficient amounts of suitable habitat are not present, use existing suitable habitat that is available.

- (q) (Guideline) Alternate nest areas should be identified in suitable habitat with similar vegetative structures as the active nest areas. Replacement nest areas should be identified in habitat which will develop similar vegetative structures as the active nest area at the

[85] N. Vizcarra & T. Lorenz, "Woodpecker woes: the right tree can be hard to find," Science Findings 199, Forest Service, Pacific Northwest Research Station. 5: 199, attached as Ex. 8 to the Center's Nov. 24, 2019 scoping comments.

[86] R. Hutto, "Toward meaningful snag-management guidelines for postfire salvage logging in North American conifer forests," Conservation Biology, 20(4): 984-993 (2006), attached as Ex. 9 to the Center's Nov. 24, 2019 scoping comments.

[87] Forest Service, Decision Notice and FONSI of the Forest Plans in Utah for the Northern Goshawk Project (Mar. 14, 2000) at 2, available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5277393.pdf (last viewed July 9, 2021).

time the active and alternate nest areas are projected to no longer provide adequate nesting habitat.

- (s) (Guideline) In active nest areas (approximately 30 acres; i.e. Guideline (p)), restrict Forest Service management activities and human uses for which Forests issue permits during the active nesting period (does not include livestock permits) unless it is determined that the disturbance is not likely to result in nest abandonment. If the disturbance is likely to result in abandonment, a biological evaluation (BE) must be completed.

- (u) (Guideline) Identify a Post-Fledgling Area (PFA) which encompasses the active, alternate and replacement nest areas and additional habitat needed to raise fledglings. A PFA should be approximately 420 acres in size (exclusive of nest area acres) when sufficient suitable habitat exists. If sufficient amounts of suitable habitat are not present, use existing suitable habitat that is available.

- (v) (Guideline) Forest vegetative manipulation within the PFAs should be designed to maintain or improve the same habitat features as discussed for the goshawk home range (i.e., stand structure, snags, down logs, nest trees important in the life histories of the goshawk and its prey species common to the geographic location), except:
    - i) Openings, as defined in glossary and Reynolds *et al*., created as a result of mechanical vegetative treatments (does not include wildland fire) should not exceed the following by cover type … Aspen and Lodgepole pine Follow current management direction
    - ii) Management activities should be restricted during the active nesting period. The active nesting period will normally occur between March 1st and September 30th.
    - iii) Where timber harvest is prescribed to achieve desired forest conditions, plan the transportation system to minimize disturbance to the PFAs.

- (w) (Guideline) Through the landscape assessment process identify plant communities important to goshawk prey species that contain seed, mast, and foliage components that are important to these prey species.[88]

These standards and guidelines emphasize the importance of: managing goshawk post-fledgling areas (PFAs), which the EA does not mention at all; managing alternative nest sites, similarly unmentioned; and the necessity for preparing a biological evaluation for management actions within goshawk habitat, which it is unclear whether the Forest Service will address.

And while the EA states that BMPs for goshawk and other wildlife "are based on law, regulation, and policy as well as years of experience and professional judgement from implementing these types of projects,"[89] one document they are apparently not based on is the project's Biological Evaluation (BE) for wildlife, which specifically identifies many of the Forest Plan standards and

[88] *Id*. at Appendix CC-4 – CC-7.

[89] Aspen Project EA at 7.

guidelines as BMPs.[90] The EA inexplicably fails to include the BMPs from the BE. The EA must include the BE's mitigation measures if the agency hopes to support the BE's conclusion that the project "May Impact Individuals, but Will Not Likely Contribute to a Trend Towards Federal Listing or Loss of Population Viability" for goshawk.[91]

Further, because the proposed action provides a menu of treatments, and does not identify which one, or several treatments, could occur where, and clearcutting aspen and conifer is not otherwise limited by the proposed action, it is foreseeable that the entirety of nesting areas in aspen forest PFAs could be chain-sawed or burned. Such an action would clearly have the potential to violate the Forest Plan and significantly impact the northern goshawk (not to mention other wildlife and other aspects of the environment). The agency therefore cannot justify a finding of no significant impact for a proposal that could allow such damaging treatments. Further, the Forest Service must ensure that actions that may harm the goshawk do not violate the Forest Plan and the National Forest Management Act provisions to protect biodiversity and species viability, which, absent adoption of the BMPs identified in the BE, the agency clearly cannot do.

The Forest Service must utilize goshawk survey methodology consistent with the best available science, including, for example, the comprehensive protocol, "Northern Goshawk Inventory and Monitoring Technical Guide" by Woodbridge *et al*.[92] Also, USDA Forest Service 2000 states:

> A common thread in the interviews was the lack of a landscape approach in providing goshawk habitat well distributed across the Forest (Squires, Reynolds, Boyce). Reynolds was deeply concerned that both alternatives focus only on 600 acres around known goshawk nests. He was concerned that this direction could be keeping the goshawk population artificially low. *Because goshawks move around within their territories, they are very difficult to find (Reynolds). There might be more goshawks on the Forest than currently known (Squires). One or two years of goshawk surveys is not enough (Reynolds). Some pairs may not lay eggs for five years (Reynolds). To get confidence in identifying nesting goshawk pairs, four to six years of surveys are needed (Reynolds)*.[93]

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[90] P. Manders & B. Christensen, Ashley Aspen Restoration Wildlife Biological Evaluation (Jan. 2021) at 6-7, 12-13 ("Wildlife BE"). Note that the Wildlife BE also includes mitigation measures not explicitly identified in the Forest Plan that the EA similarly failed to incorporate. For example, the Wildlife BE includes a measure to: "Prohibit fence construction within active northern goshawk nest areas (approximately 30 acres) and PFA's (approximately 420 acres surrounding the nest area) during nesting periods (March 1 –September 30)." *Id*. at 6. The EA contains no similar measure.

[91] *Id*. at 1.

[92] *See* B. Woodbridge *et al*., Northern goshawk inventory and monitoring technical guide, U.S. Forest Service Gen. Tech. Rep. WO-71 (2006), attached as Ex. 11 to the Center's Nov. 24, 2019 scoping comments, available at https://www.fs.fed.us/rm/pubs_series/wo/wo_gtr071.pdf (last viewed July 9, 2021).

[93] Forest Service, "Expert interview summary for the Black Hills National Forest Land and Resource Management Plan Amendment," (2000) at 77 (emphasis added), attached as Ex. 12 to

However, the Forest Service authorizes its field staff to conduct potentially *no surveys at all* of territory occupancy within suitable habitat, relying instead on unidentified "GIS data."[94] Further, the Forest Service does not acknowledge or address existing monitoring data concerning the presence of goshawk within the 177,000+ project area.

Scientific studies indicate analysis must be conducted for adverse impacts in a roughly 6,000- to perhaps 14,000-acre northern goshawk home ranges or PFAs, neither of which are recognized or provided protection by the BMPs and design criteria in the EA. Reynolds *et al*.'s goshawk guidelines recommend ratios of (20%/20%/20%) each in the mid-aged forest, mature forest, and old forest Vegetative Structural Stage (VSS) classes for PFAs and foraging areas, and calls for 100% in VSS classes 5 & 6 and 0% in VSS classes 1-4 in nest areas.[95]

This differs from the Ashley Forest Plan Amendment, which contains a guideline that directs:

> [v]egetative treatments designed to maintain or promote a VSS 4, 5 and/or 6 group, the percent of the group acreage covered by clumps of trees with interlocking crowns should typically range from 40-70% in post-flegling and foraging areas, and 50-70% in nest areas. To manage outside this range, it should either be shown that the range is not within PFC for the site and the biological evaluation process determines that managing outside the range will be consistent with landscape needs of the goshawk and its prey. Use the best information available and deemed most reliable to make determinations. Groups are made up of multiple clumps of trees. Groups should be of a size and distribution in a landscape that is consistent with disturbance patterns defined in Regional or local

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the Center's Nov. 24, 2019 scoping comments, available at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm9_011876.pdf (last viewed July 9, 2021).

[94] Aspen Project EA at 25, 29 ("The presence or absence of northern goshawks will be determined based on existing GIS data and/*or* field surveys (as needed) after a specific treatment area has been identified." (emphasis added)).

[95] R. Reynolds *et al*., Management recommendations for the Northern goshawk in the southwestern United States. Rocky Mountain Forest and range Experiment Station and Southwest Region Forest Service, U.S. Forest Service Gen. Tech. Rpt. RM-217 (1992), attached as Ex. 13 to the Center's Nov. 24, 2019 scoping comments, available at https://www.fs.fed.us/rm/pubs_rm/rm_gtr217.pdf (last viewed July 9, 2021); *see also* R. Reynolds *et al*., "Northern goshawk habitat: an intersection of science, management, and conservation," Journal of Wildlife Management, 72(4): 1047-1055 (2008) at 1248 (providing continued support for these guidelines), attached as Ex. 14 to the Center's Nov. 24, 2019 scoping comments. We recognize that these guidelines were developed in the southwestern U.S. in different forest types, but the still appear to represent the best available science concerning goshawk.

> proper functioning condition assessments (PFC). Clumps typically have 2 to 9 trees in the VSS 4, 5 or 6 size class with interlocking crowns.[96]

In addition, Reynolds *et al*. 1992 recommend logged openings of no more than 2 acres in size or less in PFAs, depending on forest type, and logged openings of no more than 1-4 acres or less in size in the foraging areas, depending on forest type.[97] Clough (2000) noted that in the absence of long-term monitoring data, a very conservative approach to allowing logging activities near active goshawk nest stands should be taken to ensure that goshawk distribution is not greatly altered.[98] This indicates that the full 180-acre nest area management scheme recommended by Reynolds *et al*. (1992) should be used around any active goshawk nest.[99] Removal of any large trees in the 180-acre nesting area would contradict the Reynolds *et al*. (1992) guidelines. Crocker-Bedford (1990) noted:

> After partial harvesting over extensive locales around nest buffers, reoccupancy decreased by an estimated 90% and nestling production decreased by an estimated 97%. Decreases were probably due to increased competition from open-forest raptors, as well as changes in hunting habitat and prey abundance.[100]

Moser and Garton (2009) reported that all goshawk nests examined in their study area were found in stands whose average diameter of overstory trees was over 12.2 inches and all nest stands had > 70% overstory tree canopy.[101] Given the Forest Service proposes no analysis and provides no evidence supporting its design criteria, any assertions that project activities will sustain the viability of the northern goshawk forest-wide or otherwise meet the biodiversity goals of the National Forest Management Act, or will avoid potentially significant impacts to the species, are arbitrary and capricious, and a violation of NFMA and NEPA.

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[96] Forest Service, Ashley National Forest Plan Amendment, Appendix CC, at page CC-5.

[97] R. Reynolds *et al*., Management recommendations for the Northern goshawk in the southwestern United States (Ex. 13 to the Center's Nov. 24, 2019 scoping comments) at 5, 16.

[98] L. Clough, Nesting Habitat Selection and Productivity of Northern Goshawks in West-Central Montana, M.S. Thesis, University of Montana, 87 pp. (2000), attached as Ex. 15 to the Center's Nov. 24, 2019 scoping comments.

[99] R. Reynolds *et al*., Management recommendations for the Northern goshawk in the southwestern United States (Ex. 13 to the Center's Nov. 24, 2019 scoping comments) at 22.

[100] D. Crocker-Bedford, "Goshawk reproduction and forest management," Wildlife Society Bulletin; v. 18, no. 3, pp. 262-269 (1990), at 267, attached as Ex. 16 to the Center's Nov. 24, 2019 scoping comments.

[101] Moser & Garton, "Northern goshawk space use and resource selection" (Ex. 6 to the Center's Nov. 24, 2019 scoping comments) at 3. *See also* Hayward, G. D., and R. E. Escano, "Goshawk nest-site characteristics in western Montana and northern Idaho," Condor: v. 91, no. 2, pp. 476-479 (1989) attached as Ex. 17 to the Center's Nov. 24, 2019 scoping comments.

E. The EA Fails to Take a Hard Look at the Potentially Significant Impacts of Livestock Grazing.

Livestock present a significant threat to healthy aspen regeneration. A recent Forest Service technical report concluded that "excessive browsing by wild or domestic ungulates" represents one of the "few root causes for aspen decline in Utah."[102] "Heavy browse pressure on regeneration after aspen canopy removal (i.e., fire or clearcut) can result in depletion of root reserves and *permanent loss of aspen* in a matter of a few years."[103] That report also concluded that overuse by livestock was likely to worsen as the climate heats up: "The extent and severity of this driver [that is, excessive browsing] of aspen instability are likely to expand in the future as average snowpack decreases (longer grazing season) and the frequency and severity of drought increase with changing climate."[104] Studies of the Pando clone of aspen in Utah demonstrate that livestock threaten regeneration far more than wild ungulates.[105]

The EA identifies "[p]rotection from livestock using permitted grazing practices (e.g. temporarily resting pastures or allotments, or using fencing, water and or supplements to distribute livestock away from aspen stands)" as an action that the agency could use to manage aspen stands.[106] The project will require post-implementation data gathering concerning regeneration. But the EA fails to set hard triggers for when to undertake adaptive management in response to excessive browsing.[107]

Further, each item on the EA's menu of actions will have a cascade of other impacts, any of which could be significant. Fencing out aspen stands may result in increased livestock damage to areas outside the fence as AUMs are concentrated in a smaller area. It is also likely financially costly. Eliminating grazing from aspen stands may also require permit modifications (including a reduction of AUMs), or changes to pastures, actions that the Forest Service has typically concluded require preparation of an EA.

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[102] S. Kitchen *et al.*, Guidelines for aspen restoration in Utah with applicability to the Intermountain West, Forest Service Gen. Tech. Rep. RMRS-GTR-390 (2019) at 24, 25, attached as Ex. 18 to the Center's Nov. 24, 2019 scoping comments, available at https://www.fs.fed.us/rm/pubs_series/rmrs/gtr/rmrs_gtr390.pdf (last viewed July 9, 2021).

[103] *Id*. at 26 (emphasis added).

[104] *Id*. at 27.

[105] J. Ratner, *et al*., What's Eating the Pando Clone? (June 2019), attached as Ex. 19 to the Center's Nov. 24, 2019 scoping comments.

[106] Aspen Project EA at 6, 59.

[107] The EA identifies target browsing levels but state that "[i]f these thresholds are exceeded" the agency need only "*consider* additional management actions to protect the aspen regeneration;" "[t]he thresholds should be adapted as necessary on the basis of observed success in stand recruitment." *Id*. at 43 (emphasis added). In other words, exceeding the "thresholds" may not result in any agency action. Nor is any precise action identified.

The use of water or supplements to redistribute livestock also has the potential to have significant impacts. Peer-reviewed studies show that attempts to lure cattle away from riparian areas are largely ineffective.[108] If the Forest Service has evidence that artificially provided water actually results in reducing impacts to aspen regeneration, we urge the agency to make that information available to the public. Further, using water to redistribute livestock often involves the development of natural springs or the construction of miles of pipeline, both of which have potentially significant financial and ecological costs (the latter of which include making water less available for wildlife and/or degrading aquifers and riparian areas). In a landscape where livestock are nearly ubiquitous, upland sites where grazing is currently precluded or limited by water scarcity are often the only places where relatively undisturbed, native vegetation can be found. Historically, the provision of livestock water to such sites has caused livestock to degrade upland soils, vegetation, wildlife habitat, scenery, and aesthetic qualities.[109]

Because measures to reduce damaging livestock impacts may themselves result in damage outside of protected areas, the Forest Service must disclose these impacts to take the hard look required by NEPA.

In addition, because many of these measures – fencing areas, building pipelines – may be costly, the Forest Service must disclose how these "improvements" will be paid for and who will pay them. The fact that these socio-economic impacts have the potential to be significant provides a further basis for preparing at least an EA.

F. The EA Fails to Take a Hard Look at Noxious Weed Control.

When first proposed, the Forest Service intended to rely on the categorical exclusion that involves "[t]imber stand and/or wildlife habitat improvement activities *that do not include the*

[108] *See* L.D. Bryant, *Response of Livestock to Riparian Zone Exclusion*, Journal of Range Management, Vol. 35, No. 6 (Nov. 1982), pp. 780-785 (concluding that "Neither salt placement nor alternate water location away from the riparian zone influenced livestock distribution appreciably."), attached as Ex. 20 to the Center's Nov. 24, 2019 scoping comments. *See also* J. Carter *et al*., *Upland Water and Deferred Rotation Effects on Cattle Use in Riparian and Upland Areas*, Rangelands, Vol. 39 (2017), 112, 117 (concluding, based on a four year study of an allotment in Utah that "Upland water developments and supplements do not overcome the propensity of cattle to linger in riparian areas, resulting in overgrazing and stream damage, and therefore do not lead to recovery of these damaged systems."), attached as Ex. 21 to the Center's Nov. 24, 2019 scoping comments; R.L. Gillen, Cattle Distribution on Mountain Rangeland in Northeastern Oregon, Journal Of Range Management 37(6), November 1964, pp. 549-53 ("Water distribution was not correlated with grazing patterns in uplan[d] plant communities."), attached as Ex. 22 to the Center's Nov. 24, 2019 scoping comments.

[109] *See, e.g*., Laurence A. Stoddart, *et al*., *Range Management*, Third Edition (1975) (concentration of livestock at water sources on arid rangelands causes severely denuded areas); Joan E. Scott, *Do Livestock Waters Help Wildlife?*, in Environmental, Economic, and Legal Issues Related to Rangeland Water Developments, Proceedings of a Symposium (1997), pp. 493-507, attached as Ex. 23 to the Center's Nov. 24, 2019 scoping comments.

use of herbicides or do not require more than 1 mile of low standard road construction."[110] Neither the Scoping Report nor the EA make clear whether the agency will use herbicides.

Ground disturbance – caused by the use of heavy equipment, scraping of skid trails and landings, and fire – across the potentially vast area envisioned by the proposed action is likely to create conditions conducive to the spread of noxious weeds. To address this fact, the BMPs and design elements include, for many of the management actions proposed, language requiring "treatment" of noxious weeds through undefined means.

> All noxious and invasive plant populations found within the project area will be treated prior to project implementation. For at least three years after a project is completed, treat invading noxious weeds as needed on areas impacted by ground disturbing operations.[111]

The Forest Service does not explain what sort of treatment would be applied, nor do the BMPs and design elements explicitly forbid the use of herbicides. We note that the Ashley National Forest in 1994 explicitly *declined* to adopt an integrated weed management plan that prohibited the use of herbicides, and instead adopted one that approves a number of pesticides including the controversial chemicals glyphosate and dicamba, about which much new information has been developed since the now-27-year-old weed management plan was issued.[112] The Forest Service must make clear whether "treatments" of noxious weeds will require herbicides, identify which ones, explain whether it will consider new information concerning weed management that has been developed since 1994, and consider and disclose the effectiveness and impacts of non-herbicide noxious weed treatments.

IV. THE PROPOSAL THREATENS TO VIOLATE THE ROADLESS RULE.

The national Roadless Area Conservation Rule, adopted in 2001, generally prohibits the cutting, sale or removal of timber from National Forest Service inventoried roadless areas in Utah.[113] The EA nonetheless asserts that the cutting, and removal and/or burning of an unspecified amount of timber from unspecified locations "would be consistent with the Roadless Rule, including the cutting, sale, or removal of generally small diameter timber and that the cutting, sale, or removal must maintain or improve one or more roadless characteristics," citing 36 C.F.R. § 294.13(b)(1)

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[110] Ashley NF, Scoping Report, Ashley Aspen Restoration Project (Oct. 2019) at 5; 36 C.F.R. § 220.6(e)(6) (emphasis added).

[111] Aspen Project EA at 24, 29, 36, 39.

[112] Ashley National Forest, Decision Notice and Finding Of No Significant Impact, Noxious Weed Management (Mar. 22, 1994) at 3-4, available at https://www.fs.usda.gov/nfs/11558/www/nepa/71715_FSPLT2_025940.pdf (last viewed Nov. 24, 2019).

[113] 36 C.F.R. § 294.13(a), published at 66 Fed. Reg. 3244 (Jan. 12, 2001) ("Timber may not be cut, sold, or removed in inventoried roadless areas of the National Forest System, except as provided in paragraph (b) of this section.").

of the Roadless Rule.[114] The Ashley National Forest also prepared a "Roadless Evaluation" for the project, and submitted to the Regional Forester a "Roadless Concurrence" form.[115]

A. Proposed Actions within Roadless Areas

As the EA describes, the Aspen Project will involve the cutting, sale, or removal of trees in IRAs:

- Logging and burning treatments over a 10-20 year period across 147,858 acres of IRAs, or 83.2% of the project area.[116]

- No road construction.[117]

- "Heavy equipment use in the roadless areas will be limited to 1,000 feet from existing roads where slope allows (approximately 13,961 acres [or over 20 square miles] across 19 roadless areas)."[118]

- "Design criteria included in this EA would ensure that only generally small diameter trees will be cut, sold, or removed in IRAs; larger trees may be girdled to reduce conifer competition."[119] Despite this statement, we could locate nothing in the EA's appendix for "BMP/Design Criteria" related to tree diameters, large or small trees, or roadless areas. The EA's appendix containing "Activity Cards" describes actions that would likely involve the cutting, sale, or removal of generally large-diameter trees in IRAs.

    - The activity card for "Selective Cutting and Leave – Machinery or hand tools" identifies two types of logging: (1) "Tree thinning without product removal," which would cut down "conifer trees within existing aspen stands to reduce competition with aspen" with no discussion of the diameter or size of the tree; and (2) "Falling decadent aspen trees," which would almost certainly involve cutting older (and therefore the largest) trees. The activity card makes clear that these treatments could occur in IRAs.[120]

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[114] Aspen Project EA at 5.

[115] *See* Ashley National Forest, Roadless Evaluation for Ashley National Forest Aspen Restoration Project (no date) (FS project file); S. Eickhoff, Forest Supervisor, Ashley National Forest, Region 4 Roadless Project Summary and Briefing Sheet, 2001 Roadless Rule, Ashley National Forest Aspen Restoration Project (Oct. 22, 2020) (FS project file).

[116] Aspen Project EA at 5.

[117] *Id*.

[118] *Id*.

[119] *Id*. at 12.

[120] *Id*. at 54.

- The activity card for "Selective Cutting Commercial Removal– Machinery or hand tools" states that this prescription would cut down "conifer trees within existing aspen stands to reduce competition with aspen and improve the vigor of residual aspen stand," and that this activity could occur within 1,000 feet of roads on slopes of less than 40% within IRAs.[121] The activity card states that an "objective" of this treatment is to "[r]emove larger conifer fuel types within aspen stands."[122]

- The activity card for "Selective Girdling of Conifers" states that this activity can occur within IRAs, including "outside of 1000 feet from existing roads," and could include the "mechanical falling of smaller diameter conifer within aspen stands prior to burning."[123] However, the card identifies the "method" of implementation as "Hand girdl[ing] large diameter conifer."[124]

- Prescribed fire treatments within IRAs could also require the creation of "hand lines" (presumably, fire lines created by hand tools) "wherever needed for containment lines if existing roads or trails or terrain features cannot be used to minimize ground disturbance…. [I]n general line will be 18-24 inch wide scrape to bare mineral soil."[125]

B. Legal Framework: The Roadless Rule

The Roadless Rule provides that, in general, "[t]imber may not be cut, sold, or removed in inventoried roadless areas of the National Forest System."[126] One exception to this general provision states:

> timber may be cut, sold, or removed in inventoried roadless areas if the Responsible Official determines that one of the following circumstances exists. The cutting, sale, or removal of timber in these areas *is expected to be infrequent.*
>
> (1) The cutting, sale, or removal of *generally small diameter timber* is needed for one of the following purposes and will *maintain or improve one or more of the roadless area characteristics* as defined in § 294.11.
>
> (i) To improve threatened, endangered, proposed, or sensitive species habitat; or
>
> (ii) To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects,

[121] *Id*. at 55.

[122] *Id*.

[123] *Id*.

[124] *Id*.

[125] *Id*. at 52.

[126] 36 C.F.R. § 294.13(a).

> within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period.[127]

The Roadless Rule defines roadless area characteristics as:

> Resources or features that are often present in and characterize inventoried roadless areas, including:
>
> (1) High quality or undisturbed soil, water, and air;
>
> (2) Sources of public drinking water;
>
> (3) Diversity of plant and animal communities;
>
> (4) Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land;
>
> (5) Primitive, semi-primitive nonmotorized and semi-primitive motorized classes of dispersed recreation;
>
> (6) Reference landscapes;
>
> (7) Natural appearing landscapes with high scenic quality;
>
> (8) Traditional cultural properties and sacred sites; and
>
> (9) Other locally identified unique characteristics.[128]

The rule requires a highly site-specific analysis, given the regulation's emphasis on "*locally identified* unique characteristics."[129]

The Roadless Rule's preamble reinforces the need for such a site-specific analysis.

> Because of the great variation in stand characteristics between vegetation types in different areas, a description of what constitutes "generally small diameter timber" is not specifically included in this rule. Such determinations are best made through *project specific* or land and resource management plan *NEPA analyses*, as guided by ecological considerations such as those described below.
>
> The intent of the rule is to limit the cutting, sale, or removal of timber *to those areas that have become overgrown with smaller diameter trees*….

[127] 36 C.F.R. § 294.13(b)(1) (emphasis added).

[128] 36 C.F.R. § 294.11.

[129] *Id.* (emphasis added).

> [A]ll such *determinations of what constitutes* "*generally small diameter timber*" will consider how the cutting or removal of various size classes of trees would affect the potential for future development *of the stand*, and the characteristics and interrelationships of plant and animal communities associated with the site and the overall landscape. *Site productivity due to factors such as moisture and elevational gradients, site aspect, and soil types will be considered, as well as how such cutting or removal of various size classes of standing or down timber would mimic the role and legacies of natural disturbance regimes in providing the habitat patches, connectivity, and structural diversity critical to maintaining biological diversity*. In all cases, the cutting, sale, or removal of small diameter timber will be consistent with maintaining or improving one or more of the roadless area characteristics as defined in § 294.11.[130] ….
>
> Vegetative management would focus on removing generally small diameter trees while leaving the overstory trees intact. The cutting, sale, or removal of trees pursuant to 294.13(b)(1) *must be clearly shown through project level analysis to contribute to the ecological objectives described*. Such management activities are expected to be rare and to focus on small diameter trees.[131]

In adopting the Roadless Rule, the Forest Service thus anticipated that logging in IRAs under this specific exception would only occur following a project-level NEPA analysis that evaluated stand-specific conditions.

C. The Forest Service Fails to Address the "Frequency" of Roadless Area Logging.

The Roadless Rule "expects" that logging (tree removal) in roadless areas for any purpose will "be infrequent."[132] The Forest Service fails to address or limit the frequency of logging in roadless areas in the EA, the "Roadless Evaluation" or the "Roadless Concurrence" form. (Neither the words "frequent" or "infrequent" appears in the EA.) Logging – including commercial logging – over a period of up to 20 years across up to 147,858 acres of roadless lands is not "infrequent;" in fact, under the proposal, such logging could be constant and ubiquitous over a vast swath of roadless forest. At an absolute minimum, the Forest Service must explain how this project will not violate the Roadless Rule's provision that logging should be "infrequent."

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[130] Forest Service, Roadless Area Conservation Rule, 66 Fed. Reg. 3244, 3257 (Jan. 12, 2001) (emphasis added).

[131] *Id*. at 3258 (emphasis added).

[132] 36 C.F.R. § 294.13(b).

D. The Forest Service Fails to Ensure that Logging Will Be Limited to "Generally Small Diameter Timber."

The EA contends that the Aspen Project can authorize logging within IRAs under the Roadless Rule exception for logging of "generally small diameter timber."[133] But the EA does not support demonstrate that the project will meet the conditions of this exception.

The Department of Agriculture in adopting the Roadless Rule explained that "[t]he intent of the rule is to limit the cutting, sale, or removal of timber *to those areas that have become overgrown with smaller diameter trees*."[134] That is not what the Aspen Project would do. Nowhere does the EA assert that the aspen stands are thick with smaller trees. In fact, the EA alleges the opposite – that there are too many large and old aspen, and not enough small, young aspen in seral stands.[135] The project's intent is to remove encroaching conifers (generally large trees) and "decadent" aspen (generally large trees). Thus, the entire purpose of the project appears to be to remove large, not small, trees, contradicting the Roadless Rule.

The specific types of logging the EA identifies appear to target larger trees, or contain no limits on the size of tree to be logged. The activity card for "Selective Cutting and Leave – Machinery or hand tools" identifies two types of logging. "Tree thinning without product removal" would cut down "conifer trees within existing aspen stands to reduce competition with aspen" with no discussion of the diameter or size of the tree.[136] But if logging is necessary to remove conifers as competition, these are likely to be larger trees. "Falling decadent aspen trees," the second type of logging specific under "machinery and hand tool removal" would likely involve cutting older (and therefore the largest) trees.[137]

Further, "Selective Cutting Commercial Removal– Machinery or hand tools" would involving the cutting, sale, or removal of "conifer trees within existing aspen stands to reduce competition with aspen and improve the vigor of residual aspen stand," an activity that could occur within 1,000 feet of roads on slopes of less than 40% within IRAs.[138] The stated "objective" of this treatment is to "[r]emove *larger* conifer fuel types within aspen stands."[139] Targeting "larger" trees is the opposite of logging "generally small diameter" trees.

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[133] Aspen Project EA at 5; 36 C.F.R. § 294.13(b)(1).

[134] Forest Service, Roadless Area Conservation Rule, 66 Fed. Reg. 3244, 3257 (Jan. 12, 2001) (emphasis added).

[135] *See* Aspen Project EA at 7 (stating that "New aspen is limited in" seral aspen stands"); *id*. at 8, Figure 2 (showing the vast majority of seral aspen stands with a preponderance of trees 8" dbh and greater).

[136] *Id*. at 54.

[137] *Id*. at 54.

[138] *Id*. at 55.

[139] *Id*. (emphasis added).

"Selective Girdling of Conifers," which can occur within IRAs, including "outside of 1000 feet from existing roads," could include the "mechanical falling of *smaller* diameter conifer within aspen stands prior to burning."[140] However, the card identifies the "method" of implementation as "[h]and girdl[ing] *large* diameter conifer."[141] Given the conflicting statements in the EA, it is impossible to confirm that girdling large diameter conifers will result in the cutting of "generally small diameter" timber.

The EA's "BMP/Design Criteria Tables" also describe logging treatments in ways that would appear to violate the Roadless Rule. The tables describe one treatment as involving the "[s]electively cut or remove *all* conifers, aspen or both using hand crews with chainsaws."[142] Another treatment would "[s]electively cut or remove *all* conifers, aspen or both using ground-based mechanized equipment."[143] While these table headers may be inartful shorthand, they contain no indication that cutting or removal will be limited to small diameter timber. Similarly, one of the project's stated purposes is to "[r]educ[e] conifers in aspen-dominated stands."[144] It does not aim to reduce "generally small diameter conifers," but potentially any and all conifers in aspen stands, including and especially the largest ones. The fact that "[c]ut material associated with mechanical treatments may be … [r]emoved, potentially as a commercial sale (e.g. ... post and pole, ... and sawlogs)," hints that some larger trees will be targeted for removal, because larger timber has greater commercial value.[145]

The Forest Service could have clarified the issue by providing explicit BMPs or design features that limit the size of trees to be removed in IRAs. The EA fails to do so. The few diameter specifications contained in BMPs or Design Features relate to the retention of snags in goshawk habitat and the girth of downed timber.[146] One design element states that the agency should "consider leaving a minimum of 2-5 TPA [trees per acre] of the largest aspen,"[147] but merely "considering" leaving the largest trees does not prevent their harvest. Further, even if the agency protected the 2-5 largest trees per acre, that does not protect other trees, which may be large diameter though not the largest. Thus, none of these BMPs ensures the removal of generally small diameter trees. Failing to include design elements that limit logging to generally small diameter trees violates the Roadless Rule.

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[140] *Id*. (emphasis added).

[141] *Id*. (emphasis added).

[142] *Id*. at 22-25 (emphasis added).

[143] *Id*. at 26-30 (emphasis added). Elsewhere, the EA defines this treatment as "[s]elective cutting of conifers, aspen, or both." *Id*. at 6.

[144] *Id*. at 4.

[145] *Id*. at 6.

[146] *See id*. at 21, 23, 25, 27, 29, 31, 32 (setting diameter limits on snag retention and downed log woody debris to benefit wildlife or soils).

[147] *Id*. at 24, 29.

The Forest Service may be tempted to argue that the selective logging and leaving of trees or the girdling of conifers are not prohibited by the Roadless Rule because neither involves the "cutting, sale, or removal of *timber*," that is a commercial product for sale. The Roadless Rule however generally prohibits the "cutting" of trees. Further, it would be an unreasonable interpretation of the Rule's plain language to conclude that the general prohibition on "cutting" of timber nonetheless authorized the killing of trees by girdling across thousands of acres.

The targeting of old, large conifers in aspen stands not only conflicts with the Roadless Rule, it also appears to contradict Forest Service guidance for restoration of aspen in Utah, which states: "Old-growth conifer trees which predate fire suppression activities and probably coexisted in or near the aspen stand during a more active fire regime are likely to resist fire when retained. *Consideration should be given for retaining these legacy trees*."[148] There is no evidence that the Forest Service has given any consideration to identifying or retaining such legacy trees, or that it has disclosed the effects of removing or killing them via girdling. The Forest Service must, at a minimum, explain why it intends to ignore the best available science concerning the impacts of legacy conifers on fire resistance.

As noted above, the Roadless Rule preamble indicates that before the agency can use the exception permitting logging within IRAs, it must undertake a site-specific analysis to determine the nature of individual stands to be logged. This the EA and the Roadless Evaluation fail to do. The EA makes clear that it will not undertake a site-specific review to identify the what, where, and how of treatments within individual stands until long after the NEPA review is complete, and only with an ersatz NEPA process. The Roadless Evaluation published with the EA provides some data about the values found within each roadless area in which logging may occur. But it contains little, if any, information about the precise location, type, (seral? persistent?) or nature of individual aspen stands as the Roadless Rule requires, nor what types of treatment may occur in each stand. Without this information, neither the Forest Service nor the public can be assured that logging will cut or remove generally small diameter timber.

E. The Forest Service Fails to Ensure that Logging Will Maintain or Improve One or More Roadless Area Characteristic.

The exception the Forest Service seeks to invoke to allow logging in IRAs requires that logging "will maintain or improve one or more of the roadless area characteristics."[149] The EA asserts that the Forest Service would only undertake IRA logging that would "maintain or improve one or more roadless characteristics,"[150] but it makes this assertion without evidence, and does not explain how the proposed action would meet this test.

Virtually all roadless area characteristics identified in the Roadless Rule could be degraded by logging, the clearing of fire lines, the use of heavy equipment and skid trails, and pile burning. Further, the analysis outlined above requires a highly site-specific analysis, given the

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[148] *See* Guidelines for aspen restoration in Utah, GTR-390 (Ex. 18 to the Center's Nov. 24 scoping comments) at 30 (emphasis added).

[149] 36 C.F.R. § 294.13(b)(1).

[150] Aspen Project EA at 5.

regulation's emphasis on "*locally identified* unique characteristics."[151] Thus, the only way to determine whether a project may comply with these provisions is for the Forest Service to undertake a site-specific analysis that maps the roadless areas at issues, reviews the values of each roadless area threatened by a specific project, and evaluates the impacts of proposed actions. Because the Aspen Project would approve numerous, indeterminate logging actions across numerous roadless areas over decades, the Forest Service cannot ensure compliance with the Roadless Rule exception.

Further, the proposed logging projects will likely degrade, or at least are unlikely to "maintain or improve," most of the roadless area characteristics. For example, the use of heavy equipment and the use of pile burning, which can scarify soil, is incompatible with maintaining or improving "[h]igh quality or undisturbed soil, water, and air."[152] The fact that the BMP/Design Criteria tables include pages of mitigation measures to attempt to prevent damage to hydrology and soils indicates the potential for such impacts.[153] Further, the EA does not address the certain damage caused by logging, mechanized equipment (presumably, motor vehicles operating off-road), fire-line clearing, and pile burning in roadless areas.

The undated "Roadless Evaluation" attempts to address the values of roadless lands at stake that could be logged or burned for the Aspen Project, but that document fails to adequately disclose or characterize the project's potential impacts. First, the Roadless Evaluation contains incorrect or superseded statements that any subsequent analysis should correct. For example, the Roadless Evaluation refers repeatedly to various sections of the "CE form," referring to the proposed categorical exclusion, which the agency has since abandoned.[154] The Evaluation also claims for 17 roadless areas that the project will improve habitat for wildlife because "aspen makes up the majority of this roadless area" when the agency's own data show that characterization to be false.[155]

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[151] 36 C.F.R. § 294.11.

[152] *Id*.

[153] Aspen Project EA at 19-39 (Appendix A).

[154] *See* Roadless Evaluation at 4, 5, 7, 11, 15, 20, 23, 24, 26, 27, 29, 30, 32, 33, 35, 36, 40, 43, 44, 47, 52, 53, 58, 59, 62, 63, 65, 66, 69, 70, 74, 77, 78, 82, 83, 86, 87, 90, 91, 95 (citing to various sections of "the CE form").

[155] *See id*. at 26 (for IRA number 0401029 alleging that "Since aspen makes up the majority of this roadless area[,] the treatment of aspen stands now would help to maintain the diversity of tree species into the future" although statistics in the Roadless Concurrence, at 1-2, show that aspen makes up less than half of the area); *id*. at 30 (same for IRA number 0401006); *id*. at 33 (same for IRA number 0401034); *id*. at 36 (same for IRA number 0401004); *id*. at 40 (same for IRA number 0401002); *id*. at 44 (same for IRA number 0401007); *id*. at 47 (same for IRA number 0401005); *id*. at 53 (same for IRA number 0419020); *id*. at 63 (same for IRA number 0401016); *id*. at 66 (same for IRA number 0401015); *id*. at 70 (same for IRA number 0401033); *id*. at 74 (same for IRA number 0401008); *id*. at 78 (same for IRA number 0401013); *id*. at 82 (same for IRA number 0401012); *id*. at 87 (same for IRA number 0401011); *id*. at 91 (same for IRA number 0401010); *id*. at 95 (same for IRA number 0401009).

The Roadless Evaluation alleges that the "untrammeled" characteristic of each roadless area will not suffer from the use of heavy equipment (with its noise, soil compaction, disturbance of wildlife, etc.) "[d]ue to the relatively small percentage of the area being treated mechanically."[156] The Forest Service reaches the conclusion that the area degraded is "relatively small," despite the fact that the total area degraded by this activity will constitute more than 20 square miles of roadless lands, and despite the fact that for at least one IRA, more than 1 in 7 IRA acres will be degraded by heavy mechanical use.[157]

The Roadless Evaluation states for each IRA that logging and burning would degrade scenic values for 3 to 5 years, and fencing "could detract from scenic values for up to 10 years."[158] The Forest Service does not explain why degrading scenic values for this significant length of time would not constitute a significant impact. Similarly, the Evaluation admits that "[m]echanical treatments would disturb soils and remove vegetation while prescribed fire would impart a charred appearance on the land and also remove vegetation,"[159] which would undermine the maintenance and improvement of the roadless values of soil, air, and water.

The Roadless Evaluation also fails to address the impacts of fire line construction, which could impact scenic and natural values. Such construction involves the creation of an area up to two feet wide scraped down "to bare mineral soil."[160] The Forest Service does not disclose how many miles (or hundreds of miles) of such swaths of denuded land could be built across each IRA.

Unless and until the Forest Service undertakes a specific analysis of *each specific treatment* within each specific roadless area, it cannot ensure that it will comply with the Roadless Rule. Because neither the EA nor the Roadless Evaluation provides such an analysis, the Forest Service will violate the Roadless Rule if it proceeds with this project as proposed.

The Forest Service may undertake logging project under the chosen Roadless Rule exception only if the project will: (1) "improve threatened, endangered, proposed, or sensitive species habitat; or ... [2] maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period."[161] The EA does not appear to allege that logging an undefined amount within roadless areas over an indeterminate length of time "will improve threatened, endangered, proposed, or sensitive species habitat." If the agency intends to invoke this reason for the proposed logging, it should explicitly state so and provide evidence to support its contentions.

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[156] *See, e.g.*, Roadless Evaluation at 25.

[157] *See id*. at 2 (indicating that 15.8% of IRA number 0419022 will be impacted by mechanical treatments).

[158] *See, e.g., id*. at 25.

[159] *See, e.g., id*. at 4.

[160] *Id*. at 52.

[161] 36 C.F.R. § 294.13(b)(1).

The EA, Roadless Evaluation, and Roadless Concurrence all fail to demonstrate that its undefined treatments will "maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period."[162] The Forest Service does not disclose what an "uncharacteristic wildfire" would entail in such an ecosystem, nor does it analyze the "range of variability that would be expected to occur under natural disturbance regimes of the current climatic period" for any or all of the roadless areas at issue. Because the Forest Service fails to provide the necessary information, it cannot avail itself of this exception to the Roadless Rule.

Roadless areas are beloved and staunchly protected by forest advocates because they include the last remnants of undisturbed forests, pure water, critical wildlife habitat and quiet recreation. The Forest Service should tread particularly carefully when proposing management in these areas. This is not to say that the Forest Service cannot demonstrate that some treatments in some roadless areas may be necessary and helpful. But once again the agency has failed to do so here.

V. THE PROPOSED ACTION IS NOT BASED ON THE BEST AVAILABLE SCIENCE.

NEPA regulations state that:

> NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.[163]

To ensure that the agency has taken the required "hard look," courts hold that the agency must utilize "public comment and the best available scientific information."[164] NFMA also requires the Forest Service to use high quality, accurate, scientific information to assess the effects of a proposed action on the environment.[165]

[162] 36 C.F.R. § 294.13(b)(1).

[163] 40 C.F.R. § 1500.1(b) (1978).

[164] *Biodiversity Cons. Alliance v. Jiron*, 762 F.3d 1036, 1086 (10th Cir. 2014) (internal citation omitted).

[165] *See* 36 C.F.R. § 219.3.

NEPA requires agencies to explain opposing viewpoints and their rationale for choosing one viewpoint over the other.[166] Courts will set aside a NEPA document where the agency fails to respond to scientific analysis that calls into question the agency's assumptions or conclusions.[167]

To ensure that the agency is using the best available science and high-quality information, the Forest Service must consider its own technical report, "Guidelines for aspen restoration in Utah," issued in 2019.[168] That report, among other things:

- Recommends the identification of reference areas, which the EA fails to do or reference;[169]

- Identifies climate change as one of four key threats to the persistence of aspen in Utah, a threat that the EA does not explicitly acknowledge nor does it propose measure to mitigate or address;[170]

- Identifies recreation as another key threat to the persistence of aspen in Utah, a threat that the EA neither acknowledges nor proposes measure to mitigate;[171] and

- Notes that "[o]ld-growth conifer trees which predate fire suppression activities and probably coexisted in or near the aspen stand during a more active fire regime are likely to resist fire when retained. Consideration should be given for retaining these legacy trees."[172] The EA does not contain this as a BMP or design element.

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[166] 40 C.F.R. § 1502.9(b) (1978) (requiring agencies to disclose, discuss, and respond to "any responsible opposing view"); 40 C.F.R. § 1502.9(c) (2020) (same).

[167] *See Ctr. for Biological Diversity v. U.S. Forest Serv*., 349 F.3d 1157, 1168 (9th Cir. 2003) (finding Forest Service's failure to disclose and respond to evidence and opinions challenging EIS's scientific assumptions violated NEPA); *Seattle Audubon Soc'y v. Moseley*, 798 F. Supp. 1473, 1482 (W.D. Wash. 1992) ("The agency's explanation is insufficient under NEPA – not because experts disagree, but because the FEIS lacks reasoned discussion of major scientific objections."), aff'd sub nom. *Seattle Audubon Soc'y v. Espy*, 998 F.2d 699, 704 (9th Cir. 1993) ("[i]t would not further NEPA's aims for environmental protection to allow the Forest Service to ignore reputable scientific criticisms that have surfaced").

[168] S. Kitchen et al., Guidelines for aspen restoration in Utah with applicability to the Intermountain West, Forest Service Gen. Tech. Rep. RMRS-GTR-390 (2019), attached to the Center's Nov. 24, 2019 scoping comments as Ex. 18, and available at https://www.fs.usda.gov/treesearch/pubs/57976 (last viewed July 9, 2021).

[169] *Id*. at 12-13.

[170] *Id*. at 25.

[171] *Id*. at 27.

[172] *Id*. at 30.

While the EA cites to the report,[173] it fails to address the report's key findings, without explanation. Failure to address this best available science, or explain why the agency has chosen to depart from that science, violates federal caselaw interpreting NEPA.

The failure to address the impact of climate change and the intensifying drought it has and is bringing to the project area is a significant oversight. The EA fails to acknowledge that persistent drought – made more intense by climate change, and only likely to continue and worsen in the coming decades – can cause aspen mortality; nor does the EA address the implications of drought for the agency's proposed treatments. For example, the EA does not address the fact that drought may result in extending the period of time for aspen recruitment, and therefore may require the need to extend the period for monitoring the potential for excessive browsing. Aspen can grow quickly with enough access to water; but do so much more slowly in shallow soils or minimal water.[174] Because the Forest Service may still be implementing this project beyond 2040, the agency must include assessments of the impacts of climate change in the area, and the potential impacts of the predicted increase in temperatures and drought on the effectiveness and impact of proposed treatments over time. Persistent drought conditions may also reduce the ability of the agency to use prescribed fire.

Further, as we did in our scoping comments, we urge the Forest Service to utilize post-implementation monitoring data concerning treatments on Monroe Mountain on the Fishlake National Forest. We understand that the Forest Service there has had comparatively little success in achieving project goals through mechanical removal of conifers from among seral aspen. Failure to address the ineffectiveness of such treatments at Monroe Mountain, when the EA here proposes to lock in similar treatments for up to 20 years, would be arbitrary and capricious.

The EA appears to ignore science demonstrating that persistent aspen does not depend on disturbance (e.g., fire), though it can adapt to disturbance if excessive browsing is absent. Thus, it is unclear why the Forest Service assume persistent aspen require treatment. If persistent aspen is experiencing lack of recruitment, browsing by livestock or native ungulates is the likely cause, in which case burning such stands and exposing the sprouts to ungulate browsing may be counterproductive.

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[173] Aspen Project EA at 5, 14.

[174] The EA states that "aspen can act as a firebreak except under extreme burning conditions, or in situations with autumn leaf-fall combined with drought create aspen stands that are highly fire-prone." *Id*. at 8. The EA fails to note that in a time of climate warming, drought is a chronic condition in the American West, including northeast Utah, rendering aspen stands' ability to act as a firebreak far less likely. *See* UNL Drought Monitor, Utah map (July 8, 2021) (showing nearly all of the project area in "extreme" or "exceptional drought"), available at https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?UT (last viewed July 9, 2021)

VI. THE FOREST SERVICE SHOULD ANALYZE A RANGE OF REASONABLE ALTERNATIVES.

A properly drafted EA or EIS requires the agency to discuss appropriate alternatives to the proposed project.[175] Even where impacts are "insignificant," the Forest Service must still consider alternatives.[176] The agency's treatment of alternatives must also be measured against the standards in 42 U.S.C. § 4332(2)(E) and 40 C.F.R. § 1508.9(b) (requiring the agency to study, develop and discuss appropriate alternatives and to briefly describe those alternatives in environmental assessments).[177]

Consideration of a range of reasonable alternatives is necessary to ensure that the agency has before it and takes into account all possible approaches to, and potential environmental impacts of, a particular project. Importantly, NEPA's alternatives requirement ensures that the "most intelligent, optimally beneficial decision will ultimately be made."[178]

As federal courts have recognized, "[c]learly, it is pointless to 'consider' environmental costs without also seriously considering action to avoid them."[179] "[T]he heart" of an environmental analysis under NEPA is the analysis of alternatives to the proposed project, and agencies must evaluate all reasonable alternatives to a proposed action.[180] An agency must gather "information sufficient to permit a reasoned choice of alternatives as far as environmental aspects are concerned."[181] Thus, agencies must "ensure that the statement contains sufficient discussion of the relevant issues and opposing viewpoints to enable the decisionmaker to take a 'hard look' at environmental factors, and to make a reasoned decision."[182] Informed and meaningful consideration of alternatives is critical to the NEPA statutory scheme, ensuring that agency decisionmakers assess a project's costs, benefits, and environmental impacts in the correct

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[175] *Davis v. Mineta*, 302 F.3d 1104, 1120 (10th Cir. 2002), citing 42 U.S.C. § 4332(2)(E); 40 C.F.R. § 1508.9(b).

[176] *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1229 (9th Cir. 1988) (agency's duty to consider alternatives "is both independent of, and broader than," its duty to complete an environmental analysis); *Greater Yellowstone Coalition v. Flowers*, 359 F.3d 1257, 1277 (10th Cir. 2004) (duty to consider alternatives "is operative even if the agency finds no significant environmental impact").

[177] *Davis*, 302 F.3d at 1120.

[178] *Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n,* 449 F.2d 1109, 1114 (D.C. Cir. 1971).

[179] *Id*. at 1128.

[180] *Colo. Envt'l Coalition v. Dombeck,* 185 F.3d 1162, 1174 (10th Cir. 1999), quoting 40 C.F.R. § 1502.14.

[181] *Greater Yellowstone*, 359 F.3d at 1277, citing *Colo. Envt'l Coalition*, 185 F.3d at 1174; *see also Holy Cross Wilderness Fund v. Madigan*, 960 F.2d 1515, 1528 (10th Cir. 1992).

[182] *Izaak Walton League of America v. Marsh*, 655 F.2d 346, 371 (D.C. Cir.1981) citing K*leppe v.Sierra Club*, 427 U.S. 390, 410 n. 21 (1976).

context.[183] This requirement also ensures that decisionmakers "have before them and take into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance."[184]

To comply with these NEPA mandates, the Forest Service must "rigorously explore and objectively evaluate all reasonable alternatives" to a proposed action.[185] "Section 102(2)(E) of NEPA requires that agencies 'study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.' 42 U.S.C. § 4332(2)(E) (emphasis added)…. While a federal agency need not consider all possible alternatives for a given action in preparing an EA, it must consider a range of alternatives that covers the full spectrum of possibilities. 42 U.S.C. § 4332(2)(E)."[186] The Forest Service cannot dismiss an alternative from analysis unless it shows that the proposal is too remote, speculative, or impractical or ineffective, or too similar to an alternative already considered.[187]

Here, the Forest Service must rigorously explore and objectively evaluate alternatives including, but not limited to:

(1) An alternative that eliminates heavy equipment use in all roadless areas, which, under the proposed action, can occur within 1,000 feet from existing roads where slope allows. Eliminating this treatment would impact 13,961 acres, less than one-tenth of proposed treatment areas, but would reduce impacts to recreationists, soils, scenery and other resources while permitting the agency to use all the rest of the proposed treatment tools within IRAs. It would thus permit the agency to meet project objectives on all, or the vast majority, of the project area, while resulting in the Forest Service treating all roadless lands consistently and uniformly.

(2) An alternative that implements a minimum road system and removes unauthorized roads and trails;

(3) An alternative that identifies with precision which proposed treatment options will be applied to which specific areas, based on the collection of site-specific information.

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[183] See *Alaska Wilderness Recreation & Tourism Ass'n v. Morrison,* 67 F.3d 723, 729-30 (9th Cir. 1995).

[184] *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (emphasis in original).

[185] 40 C.F.R. § 1502.14(a); accord 42 U.S.C. § 4332(2)(C)(iii).

[186] *Ayers v. Espy*, 873 F. Supp. 455, 473 (D. Colo. 1994).

[187] *High Country Conservation Advocates v. United States Forest Serv.*, 951 F.3d 1217 (10th Cir. 2020) (setting aside Forest Service decision for failing to consider reasonable alternative).

VII. THE FOREST SERVICE MUST EVALUATE THE POTENTIAL FOR CUMULATIVE EFFECTS.

This action should be governed by the 1978 NEPA regulations, which require the agency to disclose direct, indirect, and cumulative impacts of agency actions.[188] But even if the Forest Service contends it may rely on the 2020 NEPA regulations, it must still disclose the cumulative effects of the Aspen Project together with other actions that may impact the project area.

A. The 2020 NEPA Regulations Cannot Eliminate the Requirement that the Forest Service Disclose Cumulative Effects.

Although CEQ adopted new regulations implementing NEPA in July 2020, 85 Fed. Reg. 43304 (July 16, 2020), and those regulations became effective for projects "begun" after September 14, 2020, those regulations have been challenged as illegal in numerous courts and are likely to be vacated.[189] Further, the Biden administration has already announced it is considering modifying the 2020 regs.[190]

While the 1978 NEPA regulations identified three types of impacts – direct, indirect, and cumulative – the revised 2020 regulations eliminate the terms "indirect" and "cumulative," and explicitly repeal the definition of cumulative effects.[191] However, this attempt to eliminate the mandate that agencies analyze and disclose cumulative impacts contravenes Congressional intent, statutory language, previous CEQ guidance, and federal court decisions interpreting NEPA prior to the adoption of the agency's 1978 regulations that the 2020 regulations purport to re-write. If the Forest Service here fails to address cumulative effects, it does so at considerable legal peril.

As it considered taking action that ultimately resulted in NEPA's enactment, the United States Congress hosted a joint House-Senate Colloquium on a "National Policy for the Environment" on July 17, 1968.[192] Invited to participate in the Colloquium were "interested members with

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[188] *See* note 42, above.

[189] *See Environmental Justice Health Alliance v. CEQ*, Case 1:20-cv-06143 (S.D.N.Y. Aug. 6, 2020); *Wild Virginia v. CEQ*, Case 3:20-cv-00045-NKM (W.D. Va. July 29, 2020); *Alaska Community Action on Toxics v. CEQ*, Case 3:20-cv-05199-RS (N.D. Ca. July 29, 2020); *State of California v. Council on Environmental Quality*, Case No. 3:20-cv-06057 (N.D. Cal. Aug. 28, 2020).

[190] *See* Council on Environmental Quality, Deadline for Agencies To Propose Updates to National Environmental Policy Act Procedures, 86 Fed. Reg. 34154, 34155 (June 29, 2021) ("CEQ is engaged in an ongoing and comprehensive review of the 2020 Rule for consistency with the nation's environmental, equity, and economic priorities; to evaluate the process CEQ used in developing the 2020 Rule; and to consider whether the 2020 Rule properly and lawfully interprets and implements NEPA.")

[191] 40 C.F.R. § 1508.1(g)(3) (2020).

[192] *See* Congressional White Paper on a National Policy for the Environment, U.S. Gov't Printing Office (Oct. 1968), attached as Ex. A.

executive branch heads and leaders of industrial, commercial, academic, and scientific organizations," with the purpose of "focus[ing] on the evolving task the Congress faces in finding more adequate means to manage the quality of the American environment."[193] The outcome of the day-long discussion was a Congressional White Paper on a National Policy for the Environment, published in October 1968.[194] Noting the near-consensus views expressed by those participating in the Colloquium, the Congressional White Paper explained that "in the recent past, a good deal of public interest in the environment has shifted from its preoccupation with the extraction of natural resources to the more compelling problems of deterioration on natural systems of air, land, and water. The essential policy issue of conflicting demands has become well recognized."[195]

The Congressional White Paper highlighted additional issues that stakeholders agreed were essential and ripe for Congressional consideration in its development of a national environmental policy. For example, Dr. Walter Orr Roberts, an atmospheric physicist and founder of the National Center for Atmospheric Research, explained the importance of considering climate change due to "[s]ubtle alterations of the chemical constitution of the atmosphere, through pollutants added in the form of trace gases, liquids, or solids, result from industrial activity or urbanization. This is an area of biometeorology that has significance in every living person and yet we have not yet seen even the first beginnings of an adequately sustained research effort in this area."[196] Subtle alterations from multiple projects, including the type of projects at issue here, could also have significant impacts when viewed cumulatively.

NEPA's legislative history is replete with additional references to the complexity of environmental impacts, the consequences of "letting them *accumulate* in slow attrition of the environment" and the "ultimate consequences of quiet, creeping environmental decline," all of which Congress concluded required an analysis of proposed impacts beyond the immediate, direct effects of an action.[197] For 50 years, CEQ interpreted the law to accomplish just that.

NEPA's statutory text indicates that agencies should address cumulative environmental effects. The evaluation of a proposed project must include a "detailed statement" on "the environmental impact of the proposed action," including "*any* adverse environmental effects which cannot be avoided should the proposal be implemented."[198] The evaluation must examine "the

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[193] *Id*. at III, 1.

[194] *Id*.

[195] *Id*. at 1.

[196] *Id*. at 5-6.

[197] 115 Cong. Rec. 29070 (October 8, 1969) (emphasis added); *see also*, S. Rep. No. 91-296, 91st Cong., 1st Sess. (July 9, 1969) at 5 (bemoaning the fact that "[i]mportant decisions concerning the use and the shape of man's future environment continue to be made in small but steady increments which perpetuate rather than avoid the recognized mistakes of previous decades."), attached as Ex. B.

[198] 42 U.S.C. § 4332(2)(C)(ii) (emphasis added).

environmental impact of the proposed action" "*to the fullest extent possible*."[199] The evaluating agency must also seek out other agencies' expertise regarding "*any* environmental impact involved."[200] The statute requires agencies to "recognize the *worldwide* and *long-range character* of environmental problems."[201]

Further, the statute itself anticipates that agencies will consider impacts that, like climate pollution and climate change, may accrete from numerous projects with small individual impacts to harm our "biosphere."[202].

Within a few months of its establishment, CEQ reinforced the need to address all environmental impacts, including cumulative effects. "The statutory clause 'major Federal actions significantly affecting the quality of the human environment' is to be construed by agencies with a view to *the overall, cumulative impacts of the action* proposed (and of *further actions contemplated*)."[203] CEQ published interim guidance in 1971 that confirmed this mandate.[204] The guidance explained that the requirement in Section 102(2)(C) of NEPA to identify "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity" in the detailed statement (now known as an EIS) required the agency "to assess the action for cumulative and long-term effects from the perspective that each generation is trustee of the environment for succeeding generations."[205]

Some of the earliest Federal court decisions, issued years before CEQ adopted its 1978 regulations, hold that NEPA *requires* disclosure of cumulative effects. The Second Circuit ruled in 1972:

> In the absence of any Congressional or administrative interpretation of the term, we are persuaded that in deciding whether a major federal action will "significantly" affect the quality of the human environment the agency in charge,

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[199] *Id.* §§ 4332 (emphasis added), 4332(2)(C)(i).

[200] *Id.* § 4332(2)(C) (emphasis added).

[201] *Id*. § 4332(2)(F) (emphasis added).

[202] 42 U.S.C. § 4321 (NEPA's purpose is "to declare a national policy which will encourage productive and enjoyable harmony between man and his environment; [and] to promote efforts which will prevent or eliminate damage to the environment and *biosphere* …." (emphasis added)).

[203] Council on Environmental Quality: Statements on Proposed Federal Actions Affecting the Environment; Interim Guidelines, April 30, 1970, Section 5(b) (filed with Fed. Reg. May 11, 1970), available in *Environmental Quality, The First Annual Report of the Council on Environmental Quality* (1970) at 288, *available at* https://www.slideshare.net/whitehouse/august-1970-environmental-quality-the-first-annual-report-of (last viewed July 9, 2021).

[204] CEQ, *Statements On Proposed Federal Actions Affecting The Environment Guidelines*, 36 Fed. Reg. 7,724 (April 23, 1971), attached as Ex. C.

[205] *Id*. at 7,725 (interpreting 42 U.S.C. 4332(2)(C)(iv)).

> although vested with broad discretion, should normally be required to review the proposed action in the light of at least two relevant factors: (1) the extent to which the action will cause adverse environmental effects in excess of those created by existing uses in the area affected by it, and (2) the absolute quantitative adverse environmental effects of the action itself, including *the cumulative harm* that results from its contribution to existing adverse conditions or uses in the affected area.

Hanly v. Kleindienst, 471 F.2d 823, 830-31 (2d Cir. 1972) (emphasis added)). Following *Hanly*, the Second Circuit reiterated the importance of disclosing cumulative impacts.

> As was recognized by Congress at the time of passage of NEPA, a good deal of our present air and water pollution has resulted from the *accumulation of small amounts of pollutants added to the air and water by a great number of individual, unrelated sources*. '*Important decisions concerning the use and the shape of man's future environment continue to be made in small but steady increments which perpetuate rather than avoid the recognized mistakes of previous decades.*' S. Rep. No. 91-296, 91 Cong., 1st Sess. 5 (1969). NEPA was, in large measure, an attempt by Congress to instill in the environmental decisionmaking process a more comprehensive approach *so that long term and cumulative effects of small and unrelated decisions could be recognized, evaluated and either avoided, mitigated, or accepted* as the price to be paid for the major federal action under consideration.

Natural Resources Defense Council v. Callaway, 524 F.2d 79, 88-89 (2d Cir. 1975) (emphasis added) (citation omitted).

The Ninth Circuit in 1975 further explained:

> while "foreseeing the unforeseeable" is not required, an agency must use its best efforts to find out all that it reasonably can: It must be remembered that the basic thrust of an agency's responsibilities under NEPA is to predict the environmental effects of proposed action before the action is taken and those effects fully known. Reasonable forecasting and speculation is thus implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as "crystal ball inquiry." Nor does characterization of industrial development as a "secondary" impact aid the defendants. As the Council on Environmental Quality only recently pointed out, consideration of secondary impacts may often be more important than consideration of primary impacts.
>
> > Impact statements usually analyze the initial or primary effects of a project, but they very often ignore the secondary or induced effects. A new highway located in a rural area may directly cause increased air pollution as a primary effect. But the highway may also induce residential and industrial growth, which may in turn create substantial pressures on available water supplies,

> sewage treatment facilities, and so forth. For many projects, these secondary or induced effects may be more significant than the project's primary effects.
>
> ….
>
> While the analysis of secondary effects is often more difficult than defining the first-order physical effects, it is also indispensable. If impact statements are to be useful, they must address the major environmental problems likely to be created by a project. Statements that do not address themselves to these major problems are increasingly likely to be viewed as inadequate. As experience is gained in defining and understanding these secondary effects, new methodologies are likely to develop for forecasting them, and the usefulness of impact statements will increase.[206]

The Supreme Court in 1976 endorsed the Second and Ninth Circuits' view that the statute requires disclosure of cumulative effects.

> [W]hen several proposals for coal-related actions that will have *cumulative or synergistic environmental impact upon a region* are pending concurrently before an agency, their environmental consequence must be considered together. Only through *comprehensive* consideration of pending proposals can the agency evaluate different courses of action.

Kleppe v. Sierra Club, 427 U.S. 390, 410 (1976) (emphasis added) (citation omitted). As a result, CEQ's attempt in its 2020 regulations to eliminate an agency's duty to consider cumulative effects is contrary to legislative intent, statutory language, 40 years of case law, and consistent CEQ interpretation. Therefore, the Forest Service must continue to disclose the cumulative effect of federal actions.

B. Even Under the 2020 NEPA Regulations, the Forest Service Must Disclose Environmental Impacts that Occur in the Same Time and Place.

While the 2020 NEPA regulations rescind the definition of cumulative impacts and are silent as to whether the agency should disclose indirect effects, the 2020 regulations require that agencies disclose:

> changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives, including those effects that occur at the same time and place as the proposed action or alternatives and may include effects that are

[206] *City of Davis v. Coleman*, 521 F.2d 661, 676-77 (9th Cir. 1975) (quoting *Scientists' Institute for Public Information v. A. E.C.*, 481 F.2d 1079, 1092 (D.C. Cir. 1973) and CEQ, Fifth Annual Report of the Council on Environmental Quality, 410-11 (Dec. 1974), available at https://www.slideshare.net/whitehouse/august-1974-the-fifth-annual-report-of-the-council-on-environmental-quality (last viewed July 9, 2021)).

> later in time or farther removed in distance from the proposed action or alternatives.

40 C.F.R. § 1508.1(g) (2020).

C. The Forest Service Fails to Address the Potential for Significant Cumulative Effects.

This proposed action is likely to have significant impacts when viewed together with projects that overlap or adjoin the Aspen Project area. The Surface Transportation Board released a Draft EIS last year on a proposal to build a rail line between the Uinta Basin and Kyune, Utah, and one alternative would build the line through aspen forest near Highway 191 in the Indian Canyon area within the south unit of the Duchesne Ranger District.[207] Clearcutting and rail line construction and operation through aspen forest in the Duchesne south unit, together with the Aspen Project's proposed clearcutting and burning, could, when combined, result in significant environmental harm to wildlife, hydrology, and other values, and to other roadless area characteristics. The Utah Basin Railway EIS does not appear to have addressed the Aspen Project, so the Ashley NF cannot rely on that document to disclose the cumulative effects of both projects.

Further, the Roadless Evaluation prepared for this project notes that multiple roadless areas impacted by the Aspen Project have been leased for oil and gas, or have been impacted by exploratory drilling.[208] Although the evaluation also discloses recreational and livestock grazing use in many of the roadless areas, it never addresses the potential for cumulative effects on the areas' values, as NEPA mandates. The Aspen Project EA should address the cumulative impacts of past and likely oil development and other activities within the project area.

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[207] *See* Surface Transportation Board, Draft Environmental Impact Statement for the proposed Uinta Basin Railway (Oct. 2020), available at http://www.uintabasinrailwayeis.com/DocumentsAndLinks.aspx (last viewed July 9, 2021).

[208] *See, e.g.*, Roadless Evaluation at 88 (stating re: Roadless Area 0401011 "The eastern half of the roadless area is covered by portions of three oil and gas leases, and wells have been proposed."); *id*. at 90 (stating re: Roadless Area 0401010 "Oil and gas leases cover most of the area, there are wells present, and additional oil and gas developments are proposed."); *id*. at 92 (stating re: Roadless Area 0401010 "Oil and gas exploration and development potential is high. Over 95 percent of the area is covered by portions of four oil and gas lease. Several oil wells have been drilled."), *id*. at 94 (stating re: Roadless Area 0401009 "Portions of six oil and gas leases cover parts of the roadless area, and applications have been filed for exploratory wells. Four plugged and abandoned oil and gas wells exist within or immediately adjacent to the roadless area.")

RECOMMENDATIONS AND CONCLUSION.

The Forest Service cannot rely on the current EA to address the potential for significant impacts and the likelihood that the project may violate the Roadless Rule and NFMA. The agency should either prepare an EIS, or a more robust EA that demonstrates that the proposal cannot have significant environmental impacts.

We again urge the Forest Service to consider preparing a programmatic-style EA or EIS to which the agency could tier specific logging activities, assuming the NEPA document is of sufficient quality and detail to allow such tiering. The programmatic document should describe the baseline conditions in the area in detail, identify specific locations where treatment would be implemented for at least the first few years, and disclose the potential impacts from treating these areas, as well as methods to reduce such impacts as the NEPA requires.

The NEPA document should also analyze in detail a range of reasonable alternatives, including one that eliminates the use of heavy machinery in IRAs, and that implements a minimum road system while removing unauthorized roads and trails. To the extent that any alternative anticipates logging in roadless areas, the Forest Service must explain the need for treatment, explain how it will log only generally small diameter timber, and explain how such treatment will protect and maintain roadless area characteristics. The current EA fails to do so.

Thank you for this opportunity to comment.

Sincerely,

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TABLE OF EXIBITS