January 22nd, 2020

Jon White - Project Lead
Ashland/Island Park Ranger District
46 South Hwy 20
PO Box 858
Ashton, ID 83420

Re: Middle Henry's Fork Aspen Enhancement Project Scoping

Comments sent via email to: comments-intermtn-caribou-targhee-ashton-islandpark@usda.gov, jonathan.white@usda.gov AND USPS CERTIFIED/RETURN RECEIPT.

Mr. White,

Yellowstone to Uintas Connection (Y2U), Alliance for the Wild Rockies (AWR) and Native Ecosystems Council (NEC) are submitting these scoping comments for the above referenced project.

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 Uintas 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 Uintas Connection is headquartered in Mendon, Utah with a satellite office at Kiesha's Preserve near Paris, Idaho.

Alliance for the Wild Rockies 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.

NEC is a 501c3 public interest organization whose staff reviews Forest Service National Environmental Policy Act (NEPA) assessments of logging impacts on wildlife in Montana and Idaho. NEC is headquartered in Willow Creek, Montana.

Overall Position

This project should be analyzed with an Environmental Impact Statement (EIS) to **assess** the **cumulative impacts** of the proposal along with all other existing and reasonably foreseeable future project impacts in the region, specifically in the Corridor.

Reasons why an EIS is needed for this project:

- The use of CE lack of programmatic or site-specific project NEPA without addressing the circumstances prevailing in this project area.
- The lack of site-specific analysis and comparison to ecological criteria, best available science or Forest Plan intent.
- There was no designation of a cumulative effects area (CEA) and no analysis of cumulative effects.
- Reliance is placed on Best Management Practices (BMPs) instead of science-based criteria under which to manage the project and overlapping uses such as livestock grazing and recreation.
- Climate change was not addressed.
- There was no analysis included in the Scoping Document of the Regionally Significant Wildlife Corridor, ESA, special status species such as Grizzly bear, goshawk, Canada lynx or wolverine, or for that matter native plants. No data is presented to show current state of each special status species nor of the impact the project will have on these species in the project area.
- The Scoping Document does not include the results of a formal consultation with the US Fish and Wildlife Service (USFWS) regarding the impact of the project on lynx, grizzly bears and wolverines.
- There was no analysis of NFMA viability requirements for special status species.
- Old growth and the impact that removal of old growth forest has on wildlife was not addressed.
- The Scoping Document lacks data to support the projected outcome of the project – shifting species composition from conifer to aspen where aspen is present and reducing conifer where aspen is absent.
- The Scoping Document lacks analysis of the impact that domestic livestock grazing has on aspen regeneration and the lack of seedling and sapling age class.
- The Scoping Document lacks detail as to how temporary roads, landings and skid trails will be effectively closed and rehabilitated.
- The Scoping Document lacks defined monitoring protocol and timing for tree regeneration, tree condition, survival and mortality, herbivory by ungulates, motorized violations on closed routes within the project area, noxious weed invasion of the project area and domestic livestock movement and utilization impacts on the project area.

Y2U, AWR and NEC request a reduction in overall route density to create security areas for big game species including deer, elk and moose. This should include the roads and trails that are user created, remain after project implementation, are temporary or other status, but remain as routes into the Forest for vehicles and OHVs. Effective closure of decommissioned roads, speed limit signs and enforcement to reduce noise and dust pollution is needed. Livestock exclusion in the project area should be incorporated to promote aspen regeneration. Monitoring of aspen regeneration is needed showing full stand stocking of saplings reaching 6' height prior to the reinstatement of livestock grazing. No harvest of old growth trees (individuals above a certain size defined in Hamilton, 1993[1]). As discussed later,

[1] Hamilton, R.C. 1993. Characteristics of Old Growth Forests in the Intermountain Region. USDA Forest Service, Intermountain Region

these larger trees may contain genetics and other characteristics providing resistance to insects and disease. This must be addressed. We oppose the removal of any old growth stands of any trees of any species. All these actions would show a desire by the Forest Service to mitigate the impacts of this project and the cumulative effects of other timber, mining and grazing projects in the region.

The regional and nationally significant Corridor in which this project lies must be addressed in an EIS. Over a decade ago, the Forest Service published a map of this corridor, outlining the higher elevation connections between the Greater Yellowstone Ecosystem and the Uinta Mountains, and the Northern and Southern Rockies. Historically, Grizzly bears, Canada lynx, and wolverine have utilized this corridor. Today, the Corridor is heavily fragmented with roads, timber harvest, OHVs, human-created noise, and livestock grazing.

Livestock grazing impacts on regeneration of aspen and conifer species must be addressed in an EIS. This must be addressed in the NEPA document. A discussion of these impacts should not be dismissed. In fact, NEPA would require such an analysis to achieve objectives of a hard look, not fragmenting the analysis, and cumulative impacts.

A summary of all monitoring of resources and conditions relevant to the proposal or Analysis Area as a part of the Forest Plan monitoring and evaluation effort is necessary. Additionally, a cumulative effects analysis which includes the results from the monitoring required by the Forest Plan must be included in an EIS.

Purpose and Need

The Forest Service seeks to conduct a forest management project in the project area because the current condition of aspen communities in this watershed do not meet the desired condition as outlined in the Targhee National Forest - Revised Forest Plan (USDA 1997).

Y2U, AWR and NEC may agree that conditions in this landscape indicate that forest structure is out of balance. The dense mature and late seral age classes may be overrepresented, with a corresponding shortage of younger classes and result in aspen as well as other early seral species are declining across the landscape. However, we would argue that the Forest Service has failed to effectively analyze the magnitude of the impact of domestic livestock grazing on aspen regeneration and overall forest health in the project area. What adjustments has the Forest Service made to the domestic grazing practices occurring within the project area to assist with aspen regeneration and achievement of desired conditions as outlined in the Targhee National Forest – Revised Forest Plan (RFP)?

Y2U, AWR and NEC differ from the Forest Service in terms of which management protocols should be implemented to best manage forest resources and roads as well as identify and protect critical habitat connectivity in the Corridor.

1. Proposed Action

Y2U, AWR and NEC do not support the proposed action. There must be an alternative that specifically addresses livestock grazing impacts on forest stand and understory conditions, aspen recruitment, the role of water developments and sheep bedding on ecosystem dysfunction and lack of aspen recruitment. There must also be an alternative that addresses the Regionally Significant Wildlife Corridor, ESA, special status species such as Grizzly bear, goshawk, Canada lynx or wolverine, or for that matter the native plant community and the impact that this project will have on these species. It should include mapping and identification of all roads, trails, open or closed, user created or not and a plan to close the illegal roads and trails, while also reducing the OMRD to within limits recognized in the RFP.

2. Use of a Categorical Exclusion

The Scoping Notice proposes that this project and its unknown number of site-specific projects will be "categorically excluded from documentation in an environmental assessment or environmental impact statement". This precludes the public from seeing and commenting on a site-specific analysis and no opportunity to comment, object or appeal. It also implies that there will be no cumulative effects or hard look at direct or indirect effects, or for that matter, informing the public about existing conditions and the cause and effect related to those conditions in their National Forest.

However, there is no actual data provided in the Scoping Notice to demonstrate to the public how this use of a CE has been determined. Implementation of a CE does not free the Forest Service from the requirements of the National Environmental Policy Act (NEPA). The basis for a determination that this project will increase age-class diversity of aspen, restore and maintain self-replacing aspen stands, expand aspen and reduce conifers to reduce fire intensity was never provided. The only objective mentioned for wildlife is “improving habitat for a variety of wildlife species". There is no analysis of the relative importance of livestock vs wildlife on current aspen conditions.

The term “wildlife” includes a large suite of wildlife species. Demonstrating that all wildlife species will be benefited by this project would seem to require some rather extensive documentation to the public, none of which was provided in the scoping notice or report. We believe that the NEPA requires the agency to adequately demonstrate that the determination that this project will benefit all wildlife species needs to be included in the public involvement process, which in this case is scoping. There is no documentation of the current status of special status species potentially occurring or occurring in the project (and cumulative effects) areas. As discussed below, species such as Bald Eagle, Grizzly bear, Northern goshawk, Canada lynx, and wolverine are potentially affected by this project.

Use of a CE for this project is also invalid because the proposed vegetation treatments would occur within the habitat provided or potentially provided for special status species such as Bald Eagle, Grizzly bear, Northern goshawk, Canada lynx, and wolverine, threatened or endangered plants and others is not documented in the Scoping Report and no analysis will be available for public input or objection or appeal. These qualify as extraordinary circumstances that invalidate use of a CE. Although the presence of an extraordinary circumstance does not automatically preclude use of a CE, application of a CE requires documentation. It is the existence of a cause-effect relationship between a proposed action and the potential effects on these resource conditions and if such a relationship exists, the degree of the potential effects of a proposed action on these resource conditions that determine whether extraordinary circumstances exist (36 CFR 220.g(b).

There is no analysis in the Scoping Notice that defines why forest thinning, logging and prescribed burning will not significantly affect the area’s value to wildlife. We contend that the proposed thinning and burning will have significant adverse impacts on many wildlife species, impacts that are not currently present. The Scoping Notice does not identify any adverse impacts to wildlife or the current habitat conditions in the project area. The project may eliminate existing values of special status species habitats or may further degrade those values, such as wildlife security habitat. This would be a cause-effect relationship, invalidating the use of a CE.

3. Reliance on Best Management Practices

Will this project rely on Best Management Practices (BMP)? The BMPs 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 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

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 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 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?

The reliance on BMPs is a flawed approach that assumes they work. Ziemer and Lisle (1993)[2] indicated that there are no reliable data showing that BMP's are cumulatively effective in protecting aquatic resources. Espinosa et al. (1997)[3] provided evidence from case histories in Idaho that BMP's thoroughly failed to cumulatively protect salmonid habitats and streams from severe damage from roads and logging. 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 (Stanford and Ward, 1993[4], Rhodes et al., 1994[5] Espinosa et al., 1997). Stanford and Ward (1992) termed this phenomenon the *"illusion of technique."*

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[2] 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.

[3] 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.

[4] 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.

[5] 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.

4. Climate Change

The Scoping Document does not mention climate change and the role of forests in storing carbon. Instead, trees are to be removed and/or burned, the reverse of damping down climate change. Scientists say halting deforestation is just as urgent as reducing emissions to address climate change, given the function forests provide as a carbon sink.[6] Forest thinning reduces this carbon sink function. The IPCC released its special report on climate change in August 2019.[7] 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." In past reports such as Livestock's Long Shadow[8], the FAO discussed the contribution of livestock to greenhouse gas emissions. A large factor is also conversion of forests to grasslands for livestock. "Worldwide, livestock production accounts for about 37 percent of global anthropogenic methane emissions and 65 percent of anthropogenic nitrous oxide emissions with as much as 18% of current global greenhouse gas emissions (CO_2 equivalent) generated from the livestock industry." Livestock grazing and trampling in the western US led to a reduction in the ability of vegetation and soils to sequester carbon and led to losses in stored carbon.

An analysis of net carbon change in US Forests found that, "Carbon loss in the western US (44 ± 3 Tg C per year) was due predominantly to harvest (66%), fire (15%), and insect damage (13%). Across the US, the various disturbances (harvest, fire, insect, wind and forest conversion) reduced the estimate of potential Carbon sink of the US forests by 42%."[9] 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. 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 expected benefit from fuels reduction."[10]

Both fuel treatments and wildfire remove carbon from forests. A simulation showed that even in mature ponderosa pine forest, 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

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[6] Millman, O. 2018. Scientists say halting deforestation "just as urgent" as reducing emissions. The Guardian, October 4, 2018.

[7] 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.

[8] 7H. Steinfeld, P. Gerber, T. Wassentaar, V. Castel, M. Rosales, and C. de Haan, Livestock's Long Shadow, Food and Agriculture Organization of the United Nations, Rome, Italy, 2006. http://www.fao.org/3/a0701e/a0701e00.htm. Accessed 11/23/2019.

[9] Harris, N.L.; Hagen, S.C.; Saatchi, S.S.; Pearson, T.R.H.; Woodall, C.W.; Domke, G.M.; Braswell, B.H.; Walters, B.F.; Brown, S.; Salas, W.; Fore, A.; and Y. Yu. 2016. Attribution of net carbon change by disturbance type across forest lands of the conterminous United States. Carbon Balance and Management. 11(1): 24. 21 p. http://dx.doi.org/10.1186/s13021-016-0066-5.

[10] 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.

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 and these were similar to the losses with low- severity fire that treatments are meant to encourage.[11]

A USDA study[12] 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. The Proceedings of the American Society of Mining and Reclamation reported that, "Soil organic matter (OM) is drastically reduced by various 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."[13] What impact does the mechanical disturbance of soils to carry out a project such as the Bridge Creek Forest Management Project have when bulldozers, masticators, feller-bunchers and other equipment dig up the soils surface for skid trails, masticating and other actions? See Figure 1 below showing the result of such a "treatment".

The BLM and Forest Service allocate AUMs for livestock that relate to forage consumption by a cow and calf, or five ewes with lambs. In a review of the forage consumption for both cattle and sheep using current weights for these animals, we found that currently, a cow/calf pair consumes 1,504 lbs/month and five ewes with lambs consume 1,976 lbs/month.[14] The cumulative effect of this forage consumption, the gases released by livestock and that lost in timber removal should also be added to the Green House Gas (GHG) emissions analysis as a contribution to atmospheric GHGs and loss in carbon sequestration. Removing livestock from the project area is a possibility to offset annual GHG emissions.

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[11] 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.

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

[13] 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

[14] Carter J. 2016. Updating the animal unit month. Report by Yellowstone to Uintas Connection. https://app.box.com/s/zx4xjekrfuht2aq12soruw0qfil8hogk

Figure 1. Photograph of a Fuels Treatment in Idaho

In 2010, the Forest Service produced a National Roadmap for Responding to Climate Change. The principles expressed therein are applicable to this project and others in the phosphate mining region.[15] This roadmap provides guidance to the agency, including, but not limited to:

- Assess vulnerability of species and ecosystems to climate change
- Restore resilience
- Promote carbon sequestration
- Connect habitats, restore important corridors for fish and wildlife, decrease fragmentation and remove impediments to species migration

To date, we have not seen the Forest Service cite or adhere to these principles in any project EA or EIS. A "hard look" would require such an analysis and promote appropriate mitigation actions to include carbon sequestration and offsets as well as habitat restoration and corridor connectivity and habitat integrity.

In addition, the National Fish, Wildlife and Plants Climate Adaptation Strategy proposed by the US Fish and Wildlife Service, NOAA Fisheries and the American Fish and Wildlife Association describes climate change effects and emphasizes conservation of habitats and reduction of non-climate stressors to help fish and wildlife adapt.[16] Agencies such as the Forest Service and Bureau of Land Management must address conservation of habitats and reduction of non-climate stressors such as the habitat

[15] USDA. 2010. National Roadmap for Responding to Climate Change. 30p. www.fs.fed.us/climatechange/pdf/roadmap.pdf

[16] https://www.wildlifeadaptationstrategy.gov/

degradation from livestock grazing, including soil loss, stream dewatering, plant communities shifting to increasers or weeds to help fish and wildlife adapt in accordance with the National Fish, Wildlife and Plants Climate Adaptation Strategy.

Regarding connecting habitats, later in these comments we describe the regional Corridor and its importance to perpetuation of wildlife and their gene pools.

Figure 2 shows the Western Wildway, the Continental Corridor connecting Mexico to Alaska and the regions of that corridor being addressed by scientists and advocates of connectivity for wildlife. In that map, the Yellowstone to Uintas Connection is identified, and is the focus of Y2U. This represents a conservation biology approach to landscape conservation which emphasizes corridors and connectivity for Canada lynx and other species. As we read EAs and EIS for project after project in our National Forests, it appears that conservation biology principles are abandoned, and corridor/connectivity ignored.

Figure 2. Western Wildway

An analysis of factors affecting climate change as well as the other topics covered in these comments should include the loss of vegetation and stored carbon by logging, burning, mastication and livestock consumption of vegetation. In addition, use of gas or diesel-powered machines to carry out the project needs to be addressed in terms of the emissions generated. Soil carbon loss due to mechanical disturbance for skid trails, mastication, chainsaws and other machines needs to be calculated. Recreation occurring in the Project Area and any Cumulative Effects Area produces GHGs from ATVs/OHVs, dirt bikes, snowmobiles and other vehicles used for camping and recreating.

Such greenhouse gas sources can be quantified. An analysis[17] of the carbon footprint of off-road vehicles in California determined that:

- Off-road vehicles in California currently emit more than 230,000 metric tons — or 5000 million pounds — of carbon dioxide into the atmosphere each year. This is equivalent to the emissions created by burning 500,000 barrels of oil. The 26 million gallons of gasoline consumed by off-road vehicles each year in California is equivalent to the amount of gasoline used by 1.5 million car trips from San Francisco to Los Angeles.
- Off-road vehicles emit considerably more pollution than automobiles. According to the California Air Resources Board, off-road motorcycles and all-terrain vehicles produce 118 times as much smog-forming pollutants as do modern automobiles on a per-mile basis.
- Emissions from current off-road vehicle use statewide are equivalent to the carbon dioxide emissions from 42,000 passenger vehicles driven for an entire year or the electricity used to power 30,500 homes for one year.

Another study[18] provides data on the amount of fossil fuel being consumed by snowmobiles in Montana, from which one can calculate the carbon footprint. The study found that resident snowmobilers burn 3.3 million gallons of gas in their snowmobiles each year and a similar amount of fuel to transport themselves and their snowmobiles to and from their destination. Non-residents annually burn one million gallons of gas in snowmobiles and about twice that in related transportation. So that adds up to 9.6 million gallons of fuel consumed in the pursuit of snowmobiling each year in Montana alone. Multiply that by 20 pounds of carbon dioxide per gallon of gas (diesel pickups spew 22 pounds per gallon) and snowmobiling releases 192 million pounds (96 thousand tons) of climate-warming CO_2 per year into the atmosphere.

Any project proposal such as the Bridge Creek Forest Management Project must address climate change by addressing these factors within the Project and Cumulative Effects Areas.

5. Regionally Significant Wildlife Corridor

Circa 2000, the Wasatch Cache National Forest produced the map shown in Figure 3 representing the Corridor.[19] The Forest Service should provide a map and analysis of the Corridor addressing habitat fragmentation and the presence of core habitat and habitat connectivity for special status species including Grizzly Bear, Canada Lynx and wolverine, Roadless Areas, Wilderness Areas, NRAs, areas closed to livestock grazing, security areas, and Goshawk and owl home ranges. In future proposed timber projects, Y2U, AWR and NEC would like to see more alternatives that propose additional road closures to attain a scientifically defensible density per square mile, grazing allotment closures, fence removals, and setting noise limits on vehicles. Winter use should be closed or severely limited in the Corridor so that Grizzly bear, Canada lynx, wolverine and other far-ranging species (elk, deer) have an opportunity to migrate and have security cover during all seasons. The Forest Service can use its

[17] Kassar, C. and P. Spitler, 2008. Fuel to Burn: The Climate and Public Health Implications of Off-road Vehicle Pollution in California. A Center for Biological Diversity report, May 2008.
[18] Sylvester, James T., 2014. Montana Recreational Off-Highway Vehicles Fuel-Use and Spending Patterns 2013. Prepared for Montana State Parks by Bureau of Business and Economic Research, University of Montana. July 2014.
[19] https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5076928.pdf

Prohibition Authority (36 CFR 261) to regulate noise and other activities detrimental to wildlife such as hunting, trapping or harassing wildlife.

The FEIS for the 2003 Caribou National Forest Revised Forest Plan provides a section on corridors in Volume IV. In that section (pages D-4 to D-8), a process for assessing connectivity is suggested and should be considered for the Targhee NF as well. This includes:

- 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.

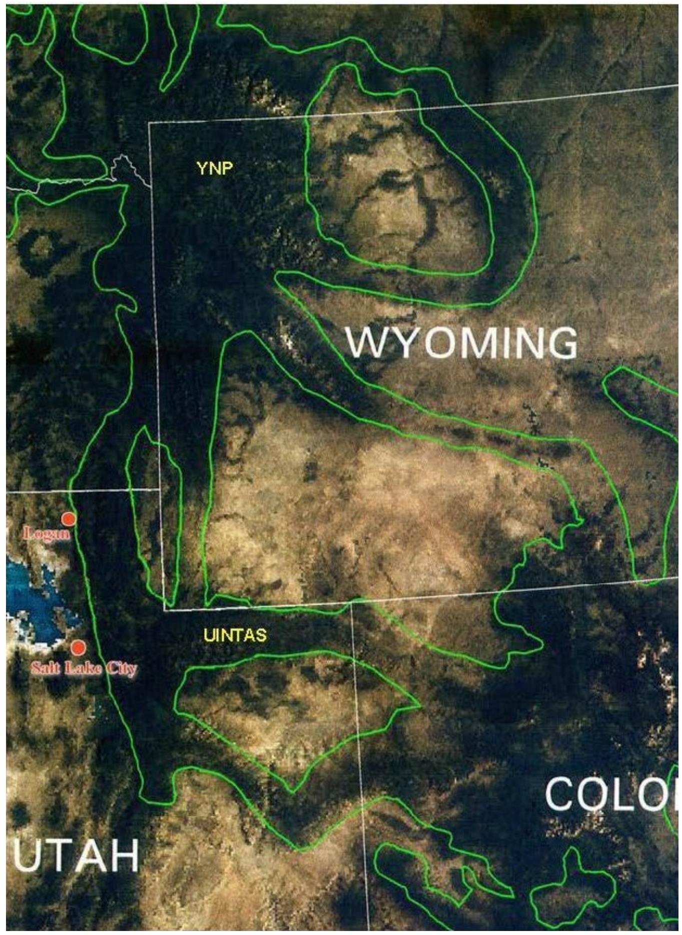

Figure 3. Regionally Significant Wildlife Corridor

The FEIS for the 2003 Caribou National Forest Revised Forest Plan also summarizes past efforts at corridor identification, including factors that the Targhee NF should consider when identifying linkages. The map in that FEIS Figure 1 (D-5) is referenced in that discussion. This proposed project provides the opportunity for the Forest Service to accomplish some mitigation on behalf of wildlife in the region through the closure of additional routes, livestock grazing moratoriums, and snowmobile exclusion during and after the vegetation management project is completed.

6. Grizzly Bear

There was no analysis included in the Scoping Document to show the current state of each special status species in the project area. No direct, indirect, and cumulative effects on Grizzly bears in the project area were identified. Y2U, AWR and NEC identified the following potential issues:

- Livestock grazing reduces a basic Grizzly bear food source—herbaceous vegetation.
- Has conflict with livestock grazing in the project area led to unusually high grizzly bear mortality or relocation?
- Cattle carcasses invite conflicts, and livestock grazing practices do not effectively mitigate these conflicts.
- Roads facilitate human access, which results in habitat disturbance and avoidance, and increases hunter-caused mortalities.
- Does grazing management in the project area avoid preferred foraging or security areas

for grizzly bears?

- Measures to reduce livestock/grizzly bear conflicts are too discretionary and ineffective as evidenced by high grizzly mortalities.
- Habitat fragmentation and other cumulative effects on the Regionally Significant Wildlife Corridor are not being properly addressed.
- The project must adhere to the principles in the Forest Plan Amendment for the Grizzly Bear Habitat Conservation for the Greater Yellowstone Area National Forests FEIS and Record of Decision at a minimum.

7. Canada Lynx

The Forest Service provides a map of historic lynx distribution showing that the Uintas have historically been used by Canada lynx. (Figure 4). There are core and peripheral or linkage areas.[20] The Uintas are a core area as will be discussed below. The Biological Assessment[21] for Canada lynx documents the importance of peripheral areas as:

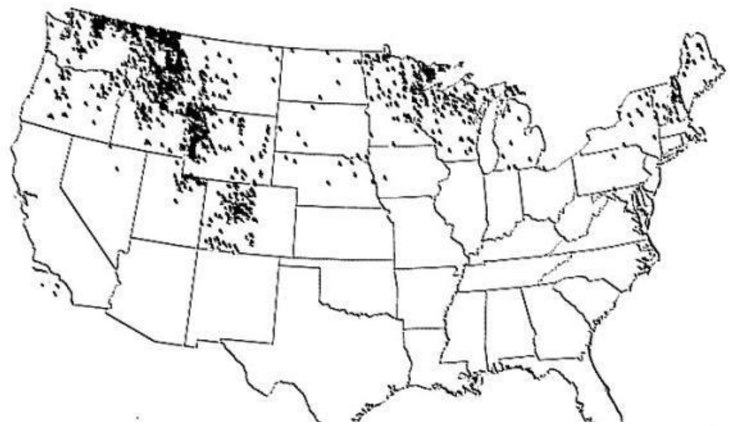

Figure 4. Historical Canada Lynx Distribution

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[22]). 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 levels.

Ruggierio et al (1999)[23] also discuss the effects of fragmentation on competition with lynx by other carnivores and the loss of connectivity. The Forest Service map of historic lynx distribution for 1842 - 1998 is shown in the referenced link and in Figure 4.[24] This reveals the historical areas used and the pattern of connectivity, which clearly connects Colorado populations to the Greater Yellowstone

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[20] USDA Forest Service. 2007. Final Environmental Impact Statement Northern Rockies Lynx Management Direction National Forests in Montana, and parts of Idaho, Wyoming and Utah. Figure 1-1.

[21] 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.

[22] 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.

[23] Ruggerio, L.F., Aubry, K.B., Buskirk, S.W., Koehler, G.M., Krebs, C.J., McKelvey, K.S., Squires, J.R. (Eds.), Ecology and Conservation of Lynx in the United States. University of Colorado Press, Boulder, CO.

[24] http://www.fs.usda.gov/detail/r1/landmanagement/resourcemanagement/?cid=stelprdb5160688

Ecosystem and northern Rockies. The Ashley, Wasatch-Cache and Uinta NFs also published a map showing lynx analysis units, primary and secondary habitat, and connections.[25] (Figure 5).

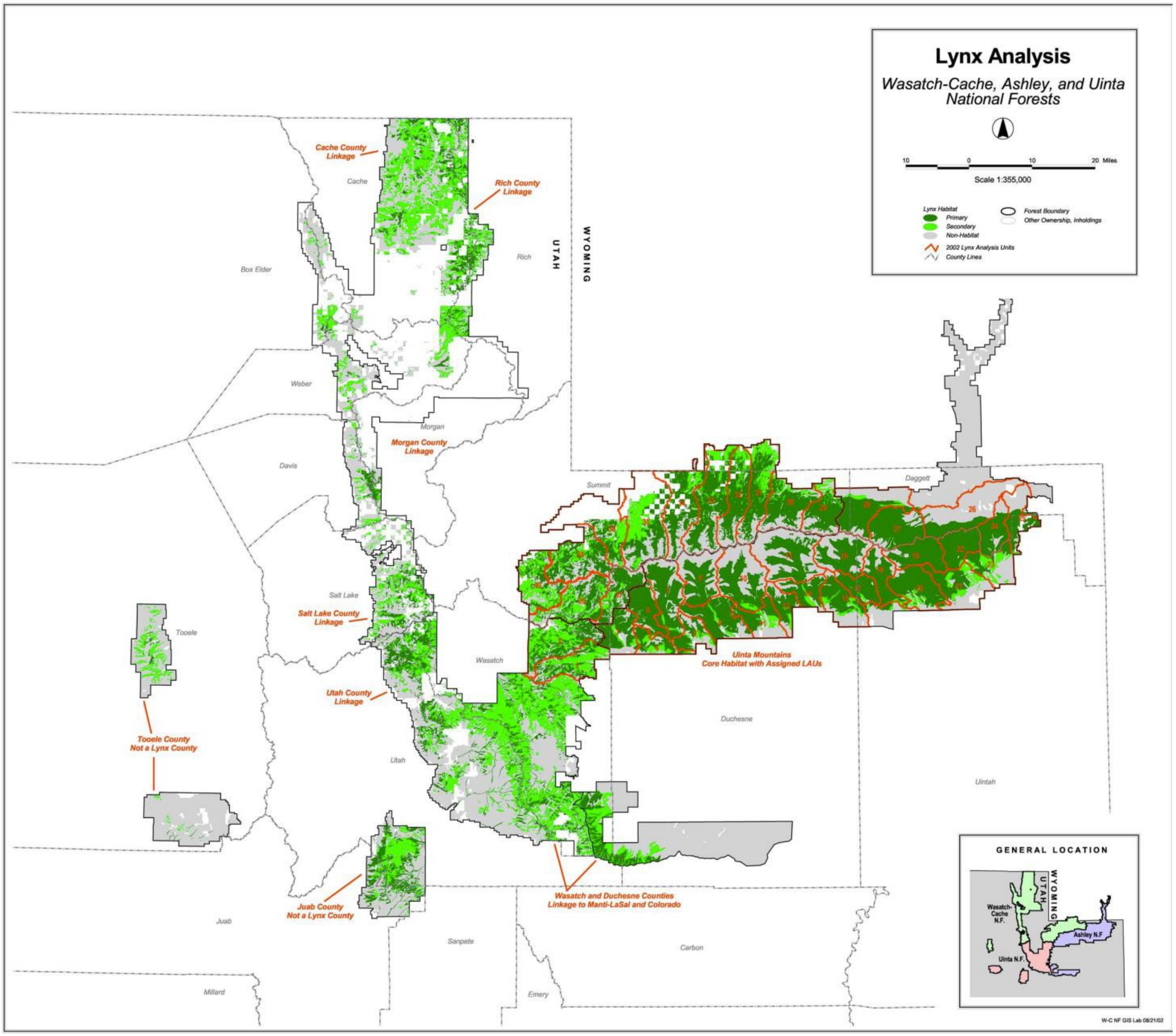

Figure 5. Lynx LAUs, Primary and Secondary Habitat and Connections

[25] https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5076927.pdf

In a sophisticated modeling of lynx habitat, it was determined that the Uintas are core lynx habitat.[26] (Figure 6).

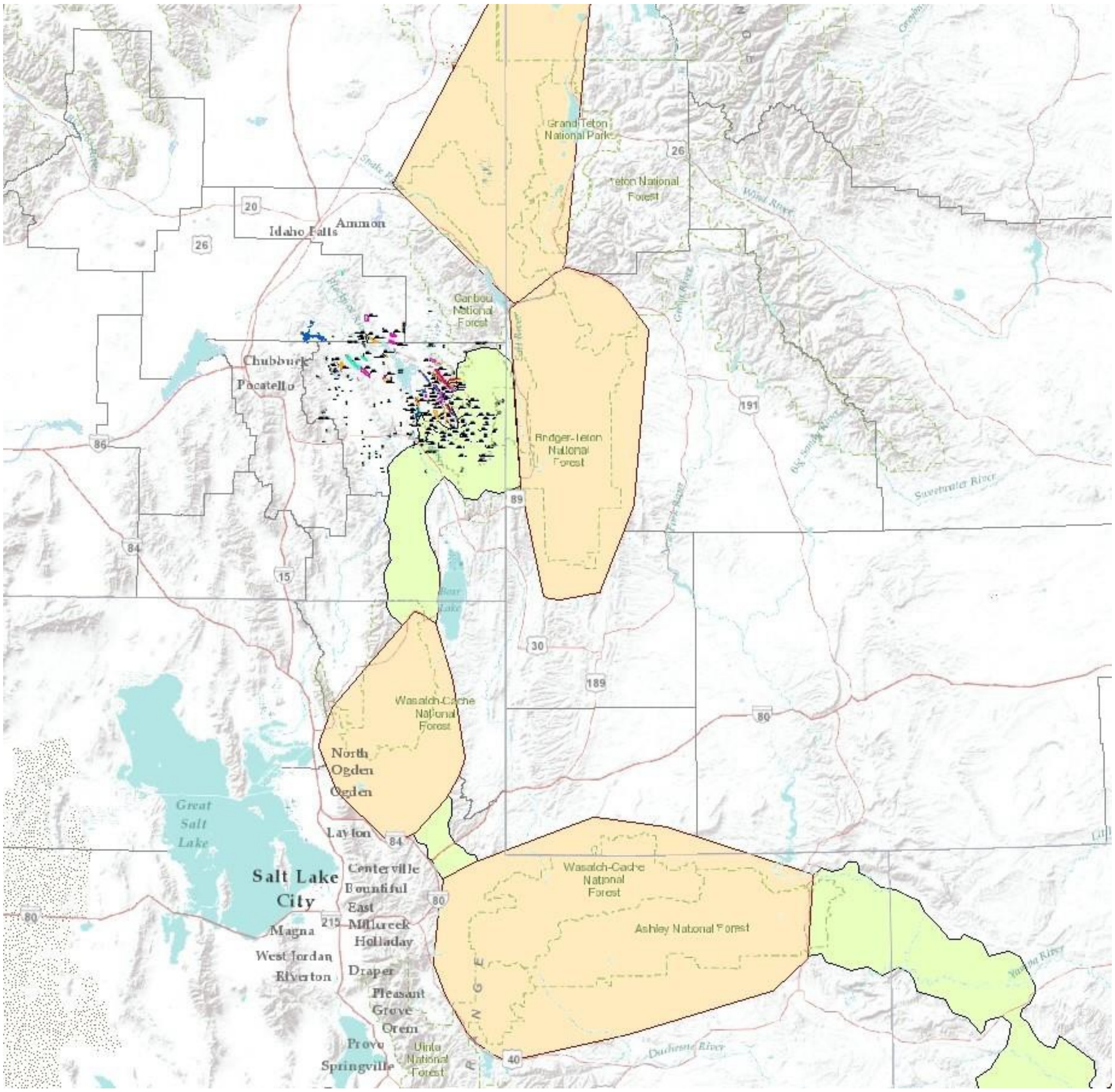

Figure 6. Modeled corridor from Bates and Jones. Orange is depicting a core area for lynx, while yellow are linkages. Mine leases in Idaho shown in various colors blue, red, orange depending on status.

[26] Bates,W. and A. Jones. 2010. Least-Cost Corridor Analysis for Evaluation of Lynx Habitat Connectivity in the Middle Rockies. Wild Utah Project, Salt Lake City, UT. https://app.box.com/s/0g8b1ryqg1iz6r1fd61rdkc8fso97oh5

More recently, the Colorado Division of Wildlife tracked radio-collared lynx released in Colorado. The tracked lynx show a similar pattern of use in the map. (Figure 7).[27] These maps show the migration path, and that lynx have been historically using NE Utah and SE Idaho and have many occurred in the Uinta Mountains. 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 and potential core area, it is no surprise that lynx still use the Uintas. Indeed, telemetry records confirm that there is a "hot spot" of lynx occurrences at the western end of the Uinta Mountains, where collared lynx 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 telemetry and satellite.[28] 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."[29]

A recent paper found that lynx exhibited decreasing use of stand initiation structures up to a maximum availability of 25%.[30] Another found that 50% of lynx habitat must be mature-undisturbed forest for it to be optimal lynx habitat and no more than 15% can be young clear-cuts, i.e. trees <4" dbh.[31] The study also found that lynx do not use clear-cuts in winter when they are at most risk of starvation.

It is critical that the Forest Service fully analyze the effect of livestock grazing, the effects of these aspen treatment or restoration projects as well as any other past, present and foreseeable actions in the Uinta Mountains on Canada lynx habitat and food base, such as hares and squirrels as well as the impact of livestock grazing on accelerating conifer encroachment into aspen and the direct effects of livestock grazing removal of aspen shoots on recruitment.

A "hard look" must be conducted of habitat fragmentation, corridor functionality, vegetation treatments, road density, snowmobile and ohv activity, trapping and other human activity as well as livestock grazing on Canada lynx. That look must also include any and all Forest Plan requirements and intent as well as embody the best available science applicable to Canada lynx.

7. Wolverine

Recently, a US District Court ruling remanded the 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.[32] 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

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[27] Devineau P, Shenk T.M., White, G.C., Doherty Jr., P.M. and R.H. Kahn. 2010. Evaluating the Canada lynx reintroduction programme in Colorado: patterns in mortality. Journal of Applied Ecology. doi: 10.1111/j.1365-2664.2010.01805.x 8 p.

[28] Colorado Department of Wildlife (CDOW) Report, 2006-7, Tables 4 and 6, pages 23 and 24.

[29] Ibid. page 10; see also Figure 2, page 29.

[30] Holbrook, J. D., J. R. Squires, L. E. Olson, N. J. DeCesare, and R. L. Lawrence. 2017. Understanding and predicting habitat for wildlife conservation: the case of Canada lynx at the range periphery. Ecosphere 8(9): e01939.10.1002/ecs2.1939.

[31] Kosterman, M.K. 2014. Correlates of Canada lynx reproductive success in northwestern Montana. Masters Thesis,University of Montana,Missoula, MT. 79p.

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

factor alone should place greater emphasis on habitat integrity and restoration for corridors, connectivity for both lynx and wolverine.

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[33], 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[34] 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 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 road kill, before records were kept. So delineating habitat based on these records can understate actual range for wolverines. He also provides 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

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[33] 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.

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

traffic, infrastructure, transportation that can affect mortality.[35] 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 species. See Figure 8 which is a map of the USFWS modeled wolverine habitat.[36] 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 Northern Utah and Idaho with sufficient snow cover. Connecting these "dots" would likely lead to a connectivity pattern similar to that of Canada lynx, discussed previously. Note the Uintas are considered wolverine habitat. The Idaho Management Plan for the Conservation of Wolverines identified the movement corridors shown in Figure 9.[37] These overlay with the Regionally Significant Wildlife Corridor and the Lynx Least Cost Path shown above, principally emphasizing the corridor from SW Wyoming through SE Idaho and the Bear River Range south to the Uinta Mountains. We call this the Yellowstone to Uintas Connection.

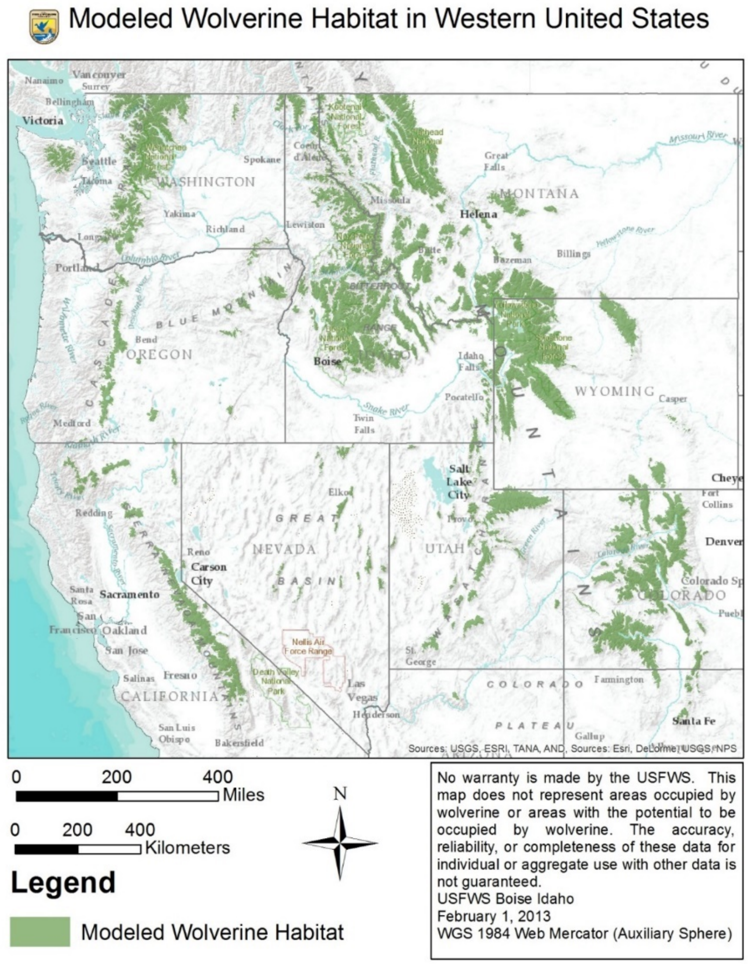

Figure 8. Fish and Wildlife Service Modeled Wolverine Habitat

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[35] 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

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

[37] 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

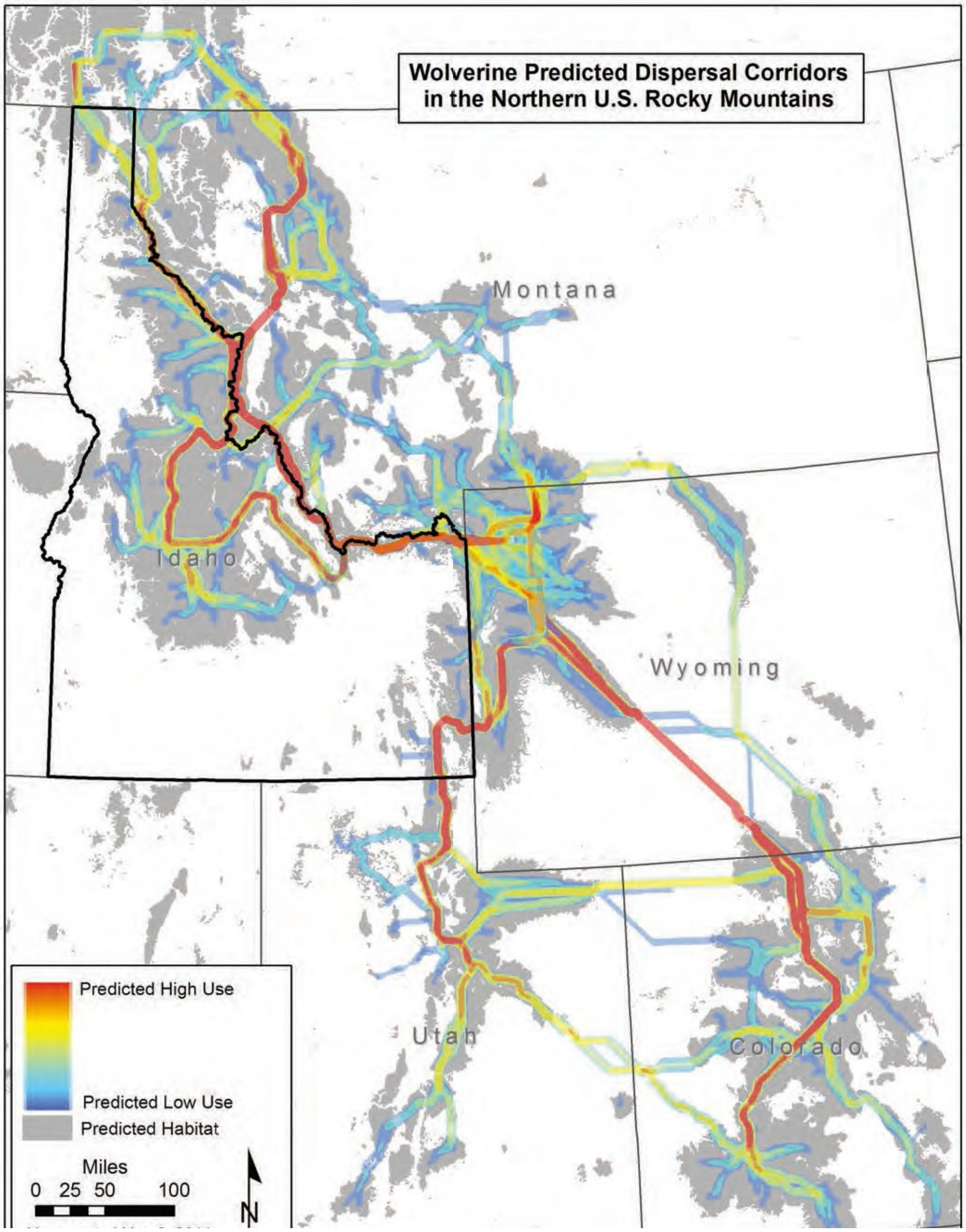

Figure 9. Wolverine predicted movement corridors in the Northern Rockies

8. Bald Eagle, Boreal Owl, Flammulated Owl, Great Grey Owl and Northern Goshawk

Population trends and viability assessments for these species and their habitats must be analyzed in concert with the various activities the Forest Service has implemented and approved throughout the Corridor and specifically in the proposed project area. Any active or historical nesting sites for these species occurring in the project area must be an analyzed to include the current state of post-fledgling family areas, foraging habitat, forage productivity, livestock utilization of forage and the impact of livestock grazing on these species.

Like Canada lynx and wolverine, Northern goshawks also depend on mammals and birds for prey. Reynolds et al (1992)[38] provide specific recommendations that livestock grazing utilization will average no more than 20% in goshawk home range of approximately 6,000 acres, which also includes nesting and post-fledging areas. They also specify forest stand structure needed for goshawk across its home range and the protection of mycorrhizal fungi in the forest floor to aid in nutrient cycling.

In the event of project approval, Y2U, AWR, NEC and KP would recommend a reduction in grazing numbers and season or closures of pastures and allotments within the project area to mitigate the impact of vegetation management on the Northern Goshawk population in surrounding nesting and foraging habitat.

9. Forest Structure – Species Composition/Aspen Regeneration/Permitted Livestock Grazing

"...the forested landscape as a whole is currently 97% mature/late seral age-class, which is outside of the Desired Future Conditions (DFC) outlined in the RFP." (Scoping Document – p1)

As stated above in our overall position, livestock grazing impacts on regeneration of aspen and conifer species must be addressed in an EIS. Y2U, AWR, NEC and KP do not agree with the Forest Service's general position that livestock grazing impacts on the forest conditions are outside of the scope of this and any other National Forest project. A discussion of these impacts should not be dismissed in an EIS.

The proposed action does not consider the impact on forest health from livestock grazing. Livestock grazing has negative effects on forest health regarding accelerating succession of aspen to conifers and increases the fire hazard in conifer forests. Aspen do not regenerate under the constant herbivory removal of younger age classes. Livestock grazing plays a key role in removing the herbaceous vegetation from the forest floor and disturbing the soil resulting in accelerated establishment of conifer seedlings. This results in thickets of saplings and a dense forest with a reduced herbaceous component and increased risk of high-intensity fires. Y2U has reviewed the aspen literature regarding impacts by livestock and browsers such as deer and elk. That review is available on line.[39] There needs to be more analysis by the Forest Service of the effects of grazing on forest health and the adverse consequences to fuels, fire cycles, fire intensity, insect infestations, infiltration and nutrient cycling in an EIS for this project as well as other proposed grazing and timber projects in the CTNF.

Livestock grazing also negatively impacts AIZ or riparian zones as well as willow and aspen regeneration. Browsing of willows is a problem that needs to be addressed in riparian areas as well.

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[38] 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.

[39] https://app.box.com/s/78706949e8651d6c908e

In a Forest Service research paper, Clary and Webster (1989) also found that vigorous woody plant growth and at least 6 inches of residual herbaceous plant growth at the end of the growing/grazing season typified riparian areas in excellent, good, or rapidly improving condition. This corresponds to a riparian utilization rate of 24 – 32%. "Most riparian grazing results suggest that the specific grazing system used is not of dominant importance, but good management is – with control of use in the riparian area a key item." Degraded riparian areas may require complete rest to initiate the recovery process.[40] An important consideration for sheep grazed areas is to define and document the locations and conditions in bedding areas. The bedding locations change daily throughout the grazing season and denude bedding areas, leaving non-palatable species such as tall larkspur, mint and others as the dominant understory in forested areas in the CTNF.

Range management is an issue that must be addressed in an EIS for this project as well as other proposed grazing and timber projects in the CTNF. The analysis should not omit any discussion regarding the impacts of continued grazing on the seedling/sapling age classes. Livestock grazing is the principle factor damaging forest and watershed integrity in the Montpelier Ranger District. It is the fundamental factor needing to be addressed in the Analysis Area and in the CTNF. Over the years, Y2U staff members have monitored conditions and found excessive amounts of bare soil, forest understory litter loss, soil carbon and nitrogen depletion, conifer forest mycorrhizal fungi layer disruption, degradation of riparian areas, sedimentation from erosion impacting spawning habitats, and the resulting depletion of many species such as the native cutthroat trout.[41] Our analyses have shown that National Forest allotments are generally overstocked leading to a native herbaceous plant community greatly below potential with increasers dominating the plant community. Water developments create highly damaged areas as cattle and sheep congregate around them. Livestock grazing also compacts the soil, reduces infiltration, and increases runoff, erosion and sediment yield.[42, 43]

How is the Forest Service ensuring that the requirements outlined in the Annual Operating Instructions (AOIs) for the project area grazing permits are being met? Y2U, AWR, NEC and KP requests that the Forest Service disclose the level of permittee compliance with terms and conditions of allotment management plans and grazing permits as well as utilization and other monitoring protocols and results.

In the event of project approval by the Forest Service, Y2U, AWR, NEC and KP would request that the Forest Service issue a 5-year moratorium on livestock grazing in the project Analysis Area to ensure that the stand is fully stocked with saplings and that comprehensive monitoring be implemented to document the regeneration of aspen. The rate of stocking recovery of other species seedlings/saplings must be documented prior to reinstating any livestock grazing on in the project Analysis Area.

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

[41] Chard, B., Chard, J., Carter, J., 2002. Assessment of habitat conditions Bear River Range Caribou National Forest, Idaho. https://app.box.com/s/ad8412aa500005c761d6

[42] Trimble, S.W. and A. C. Mendel. 1995. The cow as a geomorphic agent, a critical review. *Geomorphology* 13:233-253.

[43] 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* 14:1671–1679.

10. Old Growth

Y2U, AWR, NEC and KP oppose the removal of any old growth stands of any species in the project area and CTNF. There is not sufficient information on what old growth trees of any species will be included in the harvest within the Scoping Document.

The 1985 Forest Plan showed more than 90% of conifer stands to be in mature and old growth age classes. In 1997-98 the CNF used revised definitions for old growth reflecting a recent study by Hamilton (1993). The 1985 Forest Plan identified 24% of the conifer component as old growth. After applying the Hamilton definition, this declined to 14%. (p3-227). Current old growth status should be mapped using stand exams and quantitative data required to define timber sale for contract purposes and compared to both the pre-Hamilton definition and that resulting from applying the Hamilton definition in the CNF RFP.

The impact of removing old growth stands of any tree species on nesting sites and home range habitat for, Bald Eagle, Boreal Owl, Flammulated Owl, Great Grey Owl and Northern Goshawk must be included in the project analysis. What is the potential impact on other wildlife species associated with old growth forests such as Pine Martin, Brown Creeper, Snowshoe Hare and Moose?

11. Aspen

The Forest Service typically ignores livestock grazing effects on forest structure, understory conditions as related to potential that might be described in Natural Resource Conservation Service Ecological Site Descriptions. Those ESDs acknowledge the role of livestock and other factors in state changes and degradation of natural conditions. Recent projects proposed by the Forest Service have deflected around this issue, but it is foundational in determining ecological status of the Forest. It must be addressed Forest wide.

Browsing of aspen has been studied by Forest Service scientists such as Bartos, Mueggler, Campbell and other researchers such as Charles Kay who conducted a historic study for BLM in Nevada.[44] 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 are found to be in poor condition and many stands have 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 observes 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 cites other exclosure studies that have found that aspen stands have expanded and eliminated sagebrush. Exclosure studies have 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.

[44] 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

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 exclude cattle but not deer, including canyons closed to livestock, had 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 cites 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."[45] 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."[46]

It is incumbent on the Caribou NF to update the capable acres based on Regional Criteria and stocking rates for all allotments in the project area and use current livestock weights and forage consumption

[45] 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

[46] 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

rates.[47] Part of this analysis should also be to analyze the impact of sheep bedding areas and proximity of water developments and/or water and livestock on aspen stand dynamics, recruitment, age class, disease. The effect of slope must also be analyzed. [48] This is one of a number of capability criteria. Region 4 has produced updated capability criteria[49]:

- Areas with less than 45 percent slope for domestic sheep, 30% for cattle.
- Areas producing more than or having the potential to produce an average of 200 lbs. 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.

12. Active Management

Active management, by whatever name used, whether treatment, fuel reduction, logging, restoration, salvage, mastication cannot be effective in restoring ecosystem function or reducing large wildfires and are inappropriate in most situations. For example, in a letter to Congress[50], over one hundred scientists stated that in Wilderness and other protected areas (protected from logging etc.) "fires burned more severely in previously logged areas, while fires burned in natural fire mosaic patterns of low, moderate and high severity, in wilderness, parks, and roadless areas, thereby, maintaining resilient forests." They concluded their letter by stating, "Public lands were established for the public good and include most of the nation's remaining examples of intact ecosystems that provide clean water for millions of Americans, essential wildlife habitat, recreation and economic benefits to rural communities, as well as sequestering vast quantities of carbon. When a fire burns down a home it is tragic; when fire burns in a forest it is natural and essential to the integrity of the ecosystem, while also providing the most cost-effective means of reducing fuels over large areas. Though it may seem to laypersons that a post-fire landscape is a catastrophe, numerous studies tell us that even in the patches where fires burn most intensely, the resulting wildlife habitats are among the most biologically diverse in the West. For these reasons, we urge you to reject misplaced logging proposals that will damage our environment, hinder climate mitigation goals and will fail to protect communities from wildfire."

Fire hysteria is used to justify more logging and active management when the evidence is that climatic factors such as wind and high temperatures drive severe fires and that they burn through treated areas. Beetle infestations are also implicated in these severe fires.

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[47] Carter, J. 2016. Updating the Animal Unit Month. Yellowstone to Uintas Connection, Paris, ID. 7p. https://app.box.com/s/zx4xjekrfuht2aq12soruw0qfil8hogk

[48] Carter, J. 2013. Utilization, Rest and Grazing Systems - A Review. Yellowstone to Uintas Connection. 11p. https://app.box.com/s/ngw6723dx52quxw2rd8u

[49] USDA Forest Service. 2003. Final Environmental Impact Statement Wasatch-Cache National Forest. Appendix B9.

[50] Geos Institute. 2018. Open Letter to Decision Makers Concerning Wildfires in the West. https://app.box.com/s/nemr8uoccub0u8hubomjx4uhn6sfbu83

In a review[51] 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 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."

Analysis of fuel treatments and fire occurrence in the western US 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").[52]

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, in reality 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."[53]

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[51]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

[52]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

[53] 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.

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."[54]

13. Transportation Management – Road Densities/Big Game Security Areas

Big Game security areas are defined as an area of cover over 0.5 miles from an open motorized route and over 250 acres. These areas are important for limiting disturbance and hunting vulnerability to big game animals (but provide benefits to other animals as well). Because of the number of roads and trails within the analysis area, there are no security areas within the analysis area.

Road density and the status of all roads and OHV/ATV trails (legal, illegal, open, temporary, closed, user-created and other classifications), not just OMRD, should be mapped and the density per square mile determined and compared to the best available science. This should be done at the project level, by Mountain Range Block for the Block(s) affected and watersheds affected by the proposed project. This analysis should determine additional closures necessary to provide security areas for wildlife such as deer, elk, and moose as well as the migration corridors for Canada lynx, wolverine, and Grizzly bears.

There have been numerous publications on the benefits of roadless areas and the negative effects of roads regarding noise pollution and wildlife. Roads increasingly provide vehicle access into more and more remote areas, forcing sensitive species to be eliminated or greatly reduced especially when the cumulative impacts from livestock, oil, gas and mineral exploration and development are included. Roads and groomed trails provide increased access that can be used in summer and winter to damage environmental resources and displace or disrupt wildlife. Motorized vehicles, OHV/ATVs and snowmobiles, with their ability to travel large distances cross-country, often have negative environmental impacts whether the trail is open, closed, or user-created. The ecological effects of roads and/or mechanized use include erosion, air and water pollution, spread of invasive weeds, avoidance of road or machine-affected areas by wildlife, and habitat fragmentation.[55,56] Roads, human activity, and noise fragment habitats by breaking large areas into smaller areas. These smaller areas no longer retain their original functions and begin losing the

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https://app.box.com/s/4y9y70lbqyza4xnn56a9764abhyr92h8

[54] 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.

[55] T. W. Clark, P. C. Paquet, and A. P. Curlee. 1996. Large Carnivore Conservation in the Rocky Mountains of the United States and Canada," Conservation Biology 10: 936–939.

[56] Trombulak, S. C. & C. A. Frissell. 2000. The ecological effects of roads on terrestrial and aquatic communities: a review. Conservation Biology 14:18-30

ability to support many species, especially those that are wide-ranging.[57, 58, 59, 60, 61] Roads have been shown to have thresholds of density above which species begin to decline or be eliminated. This has been reported to generally be 1 mile per square mile, with effects to some large mammals such as bears at a road density of 0.5 miles/square mile.[62, 63] The importance of roadless areas was documented for both small (1,000-5,000 acres) and large (>5,000 acres) roadless areas under consideration in the Clinton roadless area environmental impact statement and for three case study regions (Klamath-Siskiyou, Appalachia/Blue Ridge, and Tongass National Forest) recognized by World Wildlife Fund (WWF) for global biodiversity importance.[64]

Road densities and effects on wildlife must be analyzed for this and other projects proposed and approved by the CTNF. Researchers, including those with the Forest Service, have documented the benefits of roadless areas and the negative effects of roads and OHV/ATVs on wildlife. For example, Gilbert[65], Noss[66] and Wisdom et. al.[67] describe the detrimental effects of road density and human activity on large mammals, causing displacement away from roads and mechanized activity. A recent publication by the National Park Service discussed the effects of snowmobiles on wildlife.[68] Agency researchers at UC Davis have suggested an integrated approach for addressing Canada lynx linkage corridors.[69] An integrated analysis of the effects of roads, human use and habitat fragmentation on lynx and other species that incorporates this information as well as addressing other species of wildlife should be completed by the CTNF.

Y2U has witnessed the difficulty in effectively closing and rehabilitating temporary roads, landings and skid trails after a timber harvest concludes and roads are "decommissioned". The EIS needs to outline how this road decommissioning will be accomplished as well as provide a monitoring and enforcement plan to ensure the integrity of such closures.

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[57] D. A. Saunders, R. J. Hobbs, and C. R. Margules. 1991."Biological Consequences of Ecosystem Fragmentation: A Review," Conservation Biology 5 (1991): 18-32.

[58] Hitt, N.P. and C.A. Frissell. 1999. Wilderness in a landscape context: a quantitative approach to ranking Aquatic Diversity Areas in western Montana. Presented at the Wilderness Science Conference, Missoula, MT, May 23-27, 1999.

[59] The Importance of Roadless Areas to Idaho's Fish, Widllife, Hunting & Angling. 2004. Trout Unlimited. http://www.tu.org/atf/cf/%7B0D18ECB7-7347-445B-A38E-65B282BBBD8A%7D/Roadless_Idaho.pdf

[60] J. R. Strittholt and D. A. DellaSala, Importance of Roadless Areas in Biodiversity Conservation in Forested Ecosystems: A Case Study-Klamath-Siskiyou Ecoregion, U.S.A. 2001. Conservation Biology 15 (6): 1742-1754.

[61] G. E. Heilman, Jr., J. R. Strittholt, N. C. Slosser, and D. A. DellaSala. 2002. Forest Fragmentation of the Conterminous United States: Assessing Forest Intactness Through Road Density and Spatial Characteristics. Bioscience 52 (5): 411-422.

[62] R. P. Thiel. 1985. Relationship Between Road Densities and Wolf Habitat Suitability in Wisconsin. American Midland Naturalist 113: 404-407.

[63] L. D. Mech, S. H. Fritts, G. L. Radde, and W. J. Paul. 1988. Wolf Distribution and Road Density in Minnesota. Wildlife Society Bulletin 16: 85-87.

[64] http://www.worldwildlife.org/wildplaces/kla/pubs/exec_sum.pdf

[65] Gilbert, Barrie K. 2003. Motorized Access on Montana's Rocky Mountain Front. A Synthesis of Scientific Literature and Recommendations for use in Revision of the Travel Plan for the Rocky Mountain Division.

[66] http://www.wildlandscpr.org/resourcelibrary/reports/ecoleffectsroads.html

[67] Wisdom, M. J., H. K. Preisler, N. J. Cimon, B. K. Johnson. 2004. Effects of Off-Road Recreation on Mule Deer and Elk. Transactions of the North American Wildlife and Natural Resource Conference 69: in press.

[68] http://www.nps.gov/yell/publications/pdfs/wildlifewint.pdf

[69] http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1002&context=jmie/roadeco

Y2U, AWR and NEC would like to see a plan included in an EIS for temporary project route closures as well as additional route closure in the CEA as mitigation for the cumulative effects of mining, timber, grazing and OHV/ATV use in the region and to create security areas in the project Analysis Area.

Y2U, AWR and NEC would also request that the installation of speed limit signage and the enforcement of speed limits be used by the Forest Service to help meet the Forest Guideline of:

"*People visiting the National Forest enjoy a broad range of recreation opportunities amid natural settings. Recreation experiences and settings meet public expectations of quality and variety, while complimenting other resource objectives*."

Noise, high speed OHV/ATV use, and dust all negatively impact "quiet" users of the forest and their experience. Motorized recreation in the CTNF has been and remains largely unpatrolled and unenforced. The USU Institute for Outdoor Recreation and Tourism has conducted studies showing that nearly 40% of riders admit going off legal trails on their last ride.[70] The Forest Service published a Technical Report in 2005 (RWU – 2905) that recognized a lack of evidence that educational programs lead to behavioral changes in motorized users. A Forest Service report on ohv collaborative efforts across National Forests demonstrates the difficulty of managing OHV/ATV use, user conflicts, enforcement and the intensive efforts needed.[71] In spite of the effort, certain statements in the report stand out as ongoing problems, which we see in the CTNF with the illegal, user-created trails that have proliferated:

- "Effective, far-reaching communication about rules, regulations and actions remains a challenge."
- "Posters and literature distributed at OHV/motorcycle retailers have not proven to be successful as 'it isn't in their best interests' to communicate closures, rules and regulations that could impact sales.' "
- "Funding for enforcement, education and trail work is a perpetual challenge."

We also note that the Caribou NF Winschell Dugway DEIS (p68) provided an analysis of sound decay with distance, assuming the source sound level of one or two ATVs at 96 – 99 dBA would decay to 69 – 72 dBA at 3200 feet from the source. This is still above the EPA recommended outdoor limit of 55 dBA. (Winschell Dugway DEIS p78). Roads and trails, including illegal, user-created routes, must be mapped and sound contours plotted showing the distance and aerial effects on wildlife security areas and "quiet" users. How much of the Analysis Area is protected from these sound levels?

What are the effects of increased dust levels due to OHV/ATV activity on the naturalness of the Forest, RWA, IRA, CEA, Corridor?

It is also important to monitor, control and prevent the spreading of noxious weeds when constructing temporary roads or resurfacing existing roads. The Scoping Document does not include any protocol to prevent the spreading of noxious weeds during the implementation of the project.

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[70] http://extension.usu.edu/iort/htm/professional

[71] USDA Forest Service. 2005. Off-highway vehicle use and collaboration: Lessons learned from project implementation

14. Hydrology and Soils

There is no clear outline in the Scoping Document of how the "best management practices" will be enforced. Will mechanical treatments take place when ground conditions are wet enough that there is a risk of rutting and compaction? Will the project implementation occur with the time period that the ground would be frozen and the least impact to soils and hydrology would occur as well as the least amount of disturbance and displacement of wildlife?

We have provided links for downloading some of the articles cited and many are agency references which are available from the Forest Service.

Respectfully,

Jason L. Christensen – Director
Yellowstone to Uintas Connection
jason@yellowstoneuintas.org
435-881-6917

And For

Michael Garrity – Executive Director
Alliance for the Wild Rockies
P.O. Box 505
Helena, MT 59624

And For

Sara Johnson – Executive Director
Native Ecosystems Council
P.O. Box 125
Willow Creek, MT 59760