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Re: Winschell Dugway Motorized Trail DEIS

Comments emailed to: comments-intermtn-caribou-targhee@fs.fed.us
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Ms. Taylor, Mr. Fuell:

These are comments on the Draft Environmental Impact Statement for the Winschell Dugway Motorized Trail Project, on behalf of Alliance for the Wild Rockies, Wildlands Defense and the Yellowstone to Uintas Connection. These organizations are 501c3 non-profit entities dedicated to preserving and restoring wildlife habitat in the Rocky Mountains and other regionally important lands, both public and private. We are science-based and advocate on behalf of the public for fish and wildlife and human health. This DEIS violates these precepts.

The Winschell Dugway Draft Environmental Impact Statement (DEIS) is introduced at page i:

> *The purpose of this project is to respond to outside public interest to provide an additional motorized trail opportunity – connecting Forest Road #189 at Morgan Meadows to Forest Road #165, which ends at the deserted historic mining town of Caribou City. The new trail would provide a motorized trail opportunity for Forest visitors to experience more of the gold mining history of the mountain.*

We cannot discern from the DEIS a genuine need for the project. Although the DEIS doesn't disclose this, there is already motorized access to the deserted Caribou City townsite via Forest Road 165, so why is a motorized trail needed from Morgan Meadows to Caribou City? This appears to be a proposal to expand motorized playgrounds for all-terrain vehicle (ATV) users regardless of any historical attraction and to turn management of this area over to local County officials.

In the pages that follow, we discuss in detail the importance of this area and region as part of a nationally and regionally significant wildlife corridor connecting habitats from Alaska to Mexico, and from the Greater Yellowstone Ecosystem to the Uinta Mountains and Southern Rockies. Seen in this context, this particular analysis area, in fact, the CEA and SE Idaho Region is a critical link. We provide detailed comments on the DEIS and a review of motorized vehicle impacts.

1. Regionally Significant Wildlife Corridor

Circa 2000, the WCNF produced the map shown in Figure 1 representing the Regionally Significant Wildlife Corridor. The Forest Service should provide a map and analysis of the corridor addressing habitat fragmentation and the presence of Core, Corridor, Lynx Analysis Units (including the LAUs proposed, but omitted from the RFP for the 2003 RFP and an analysis of their condition then and current conditions), Roadless Areas, Wilderness Areas, NRAs, areas closed to livestock grazing, and Goshawk home ranges. Then provide an alternative that proposes 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 Analysis Area and Cumulative Effects Areas so that 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 Prohibition Authority (36 CFR 261) to regulate noise and other activities detrimental to wildlife such as hunting, trapping or harassing wildlife.

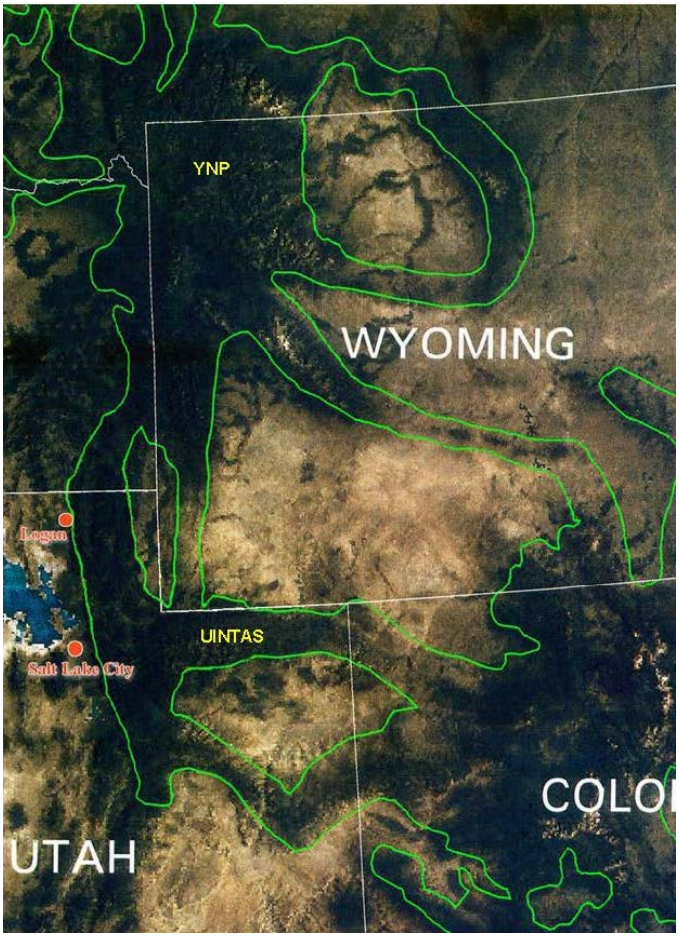

Figure 1. Regionally Significant Wildlife Corridor

The DEIS (p61) notes that, "**Manageability** – considered fair along roadless boundaries, due to road intrusions." Yet the DEIS uses OMRD as it criterion for road density and impacts, while not analyzing all the "closed" or "temporary" road and trails illegally accessed by off-road vehicles. Clearly closures are not effective and the Forest Service avoids documenting its inability to manage ohv use. 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[1]. The Forest Service published a Technical Report in 2005 (RWU – 2905) that recognized there is a lack of evidence that educational programs lead to behavioral changes in motorized users. The analysis must provide evidence that any proposed mitigation and enforcement efforts will be effective for those alternatives that allow any level of use by these machines. Here in SE Idaho, we have measured sound levels on a Forest access road of over 100 dBC from atvs, dirt bikes, snowmobiles, and pickup trucks with modified exhausts. The background level is approximately 40 dBC or lower.

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

The DEIS also addresses noise by reference to the dBA scale. However, this scale underestimates the noise effects wildlife might suffer as it truncates the lower and higher frequency sounds. True dB levels using the dBC scale are more representative of mechanical sounds as well as providing a full range of sound levels that might affect wildlife.[2] The DEIS (p 68) provides an analysis of sound decay with distance, assuming the source sound level of one or two atvs at 96 – 99 dBC would decay to 69 – 72 dBC at 3200 feet from the source. Then the DEIS (p65) states, *"However, the opportunities to experience primitive recreation and challenging experiences within the IRA exist in other places in the IRA and the RWA; allowing users to feel a part of nature, with a high degree of challenge and reliance on outdoor skills."* Yet, the analysis in the DEIS does not provide mapping or analysis showing how this level of sound fragments the RWA or IRA, in fact, the Cumulative Effects Areas. The closed and open roads and trails, plus illegally created and used trails must be mapped and sound contours plotted showing the distance and aerial effects on wildlife security areas and "quiet" users. How much of the CEA are protected from these sound levels? Where are the areas in the IRA referenced, that primitive recreation can occur when these ohvs can be heard above background for miles." Then, the DEIS (p 65) notes, *"During the dry season, dust from vehicles on the trail is visible for miles."* What are the human health effects aside from the visible deterioration of the naturalness of the Forest, RWA, IRA and CEA?

Surgeon General William H. Stewart stated that, *"Calling noise a nuisance is like calling smog an inconvenience."*[3, 4, 5, 6, 7] Loud noise, even within established health guidelines, can lead us to feel tense, angry, frustrated, annoyed and prone to violence in addition to contributing to hearing loss. In the period between 1982 and 2000, the incidence of measurable hearing loss increased by 15 to 60%, depending on the age group. In 1999, the U.S. Census Bureau rated noise as the single biggest neighborhood problem among those surveyed. More than one in ten people cited traffic noise as of concern and nearly half of those said they had considered moving as a way of escaping such noise[8]. The EPA has found that 20% of those surveyed are "highly annoyed" when sound levels reach 55 decibels[9]. Federal regulations for highways dictate that if a new or expanded road will yield noise levels of 67 decibels or higher, efforts must be made to bring about a substantial reduction in noise levels [10].

2. Canada Lynx

All Forest Sensitive, MIS and TE species must be analyzed to ensure compliance with NFMA, NEPA, ESA and other applicable regulations regarding capability, suitability of habitats and viability of populations.

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[2] http://www.sengpielaudio.com/calculator-dba-spl.htm
[3] "How Loud is Your House?," *CBC Marketplace*, Nov. 7, 2001, www.cbc.ca
[4] Howard Frumkin, "Beyond Toxicity: Human Health and the Natural Environment," *American Journal of Preventive Medicine* 20, no. 3 (April 2001): 234–240
[5] Christine Gorman, "Stressed Out Kids;" *Time*, December 25, 2000
[6] Noise Center of the League "Noise & Health Fact Sheet," (New York and Florida: League for the Hard of Hearing), www.lhh.org/noise/facts/health.htm
[7] "Sound, Sight & Solitude" *Leadership Bulletin from Early Childhood Connection* (a publication of the Early Childhood Music and Movement Association) 7, no. 1 (Fall 2001).
[8] Jim Louderback, "A Sound Solution," *USA Weekend*, October 19, 2003
[9] Environmental Protection Agency, press release, April 2, 1974; see also EPA website, www.epa.gov/history/topics/noise/01.htm.
[10] www.fhwa.dot.gov/environment/htnoise.htm

Past timber harvest activities, roads, mining and related activities (ohv use, including closed roads and trails illegally used) must be analyzed in the context of the importance of habitat connectivity. The DEIS clearly admits illegal trail use on non-motorized trails, yet obfuscates around these intrusions by defaulting to OMRD without providing an analysis of true road and trail density and use in the Analysis or Cumulative Effects areas. These add to OMRD and must be taken into account to achieve a hard look under NEPA.

The CNF RFP EIS (D-49) notes there have been 35 observations of lynx in the Caribou Targhee NF. Yet the DEIS, based on a "Streamlining meeting" with the USFWS in 2016, which came up with a *No Effect* determination due to lack of potential impacts to lynx and then dismissed them as an issue. This is not a "hard look" under NEPA. Where, when and in what habitats were these observations? In addition, the DEIS (p 77) states, "*It is important to note the BA and BE are written to further analyze the impacts of the selected alternative, therefore, these documents will not be finalized until after a final decision has been made. For simplicity, the BA and BE are often combined into one document*." The Forest Service clearly intends to make its decision and deny the public this information. This is a violation of NEPA due to using the NEPA process to "justify a decision already made".

The Forest Service provides a map of historic lynx distribution showing that the CTNF has historically been used by Canada lynx. Areas such as the CTNF are considered a peripheral and linkage area[11]. The Biological Assessment[12] for Canada lynx documents the importance of peripheral areas as:

> *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[13]). 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)[14] 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 2.[15] This reveals the

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[11] 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.
[12] 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.
[13] Meffe GK, Carroll CR (1997) Principles of conservation biology. Sinauer, Sunderland, Massachusetts
[14] 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.
[15] http://www.fs.usda.gov/detail/r1/landmanagement/resourcemanagement/?cid=stelprdb5160688

historical areas used and the pattern of connectivity, which clearly connects Colorado populations to the Greater Yellowstone Ecosystem.

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 below (Figure 3).[16] These maps show the migration path (corridor) as depicted in Figure 1, and that lynx have been using SE Idaho. This demonstrates that this peripheral area could be a core area if it and its connections were left un-fragmented by roads, mining, ohv and snowmobile use throughout the area, timber harvest and other pervasive human activities. An important consideration for lynx aside from the roads and habitat fragmentation by logging, timber and mining projects is the loss of prey base, particularly snowshoe hare, that are no doubt affected by the massive removal of herbaceous vegetation by livestock.

Figure 2. Historical Distribution of Canada Lynx

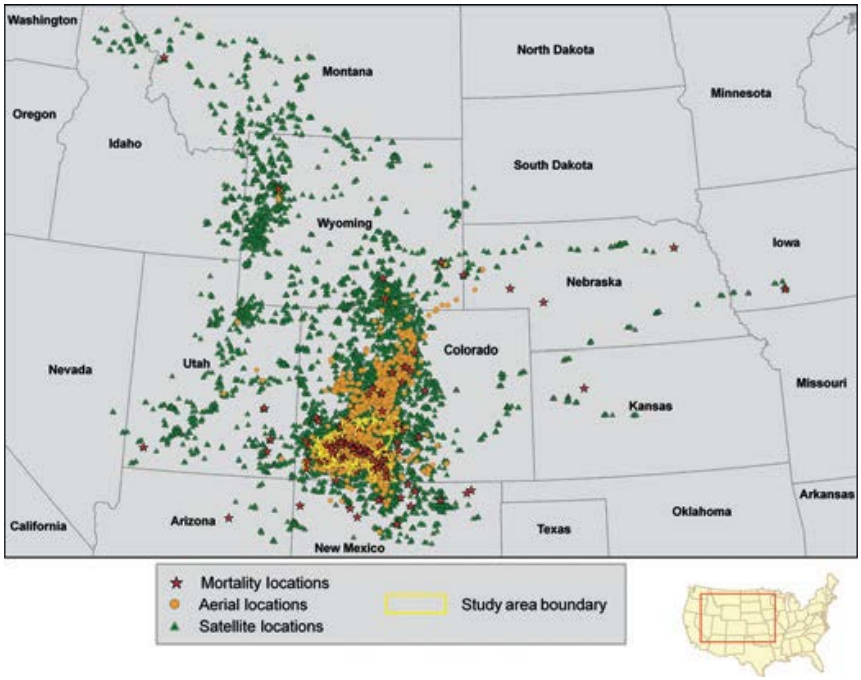

Figure 3. Tracked Lynx from Colorado Re-introductions

The "Least-Cost Corridor Analysis for Evaluation of Lynx Habitat Connectivity in the Middle Rockies" by Bates and Jones (2007) may be accessed at the link shown. That quantitative analysis of lynx habitat connectivity for lynx moving north from the Colorado population to the northern Rockies population provides science-based criteria and analysis. This study and its associated maps demonstrate how habitat and connectivity should be addressed. The resultant map (Figure 8 of that report) is shown in

[16] Devineau P, Shenk TM, White GC, Doherty Jr PM, Kahn RH. 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.

Figure 4. A map showing of lynx core and corridor areas in the SE Idaho area, along with big game winter range is shown in Figure 5.

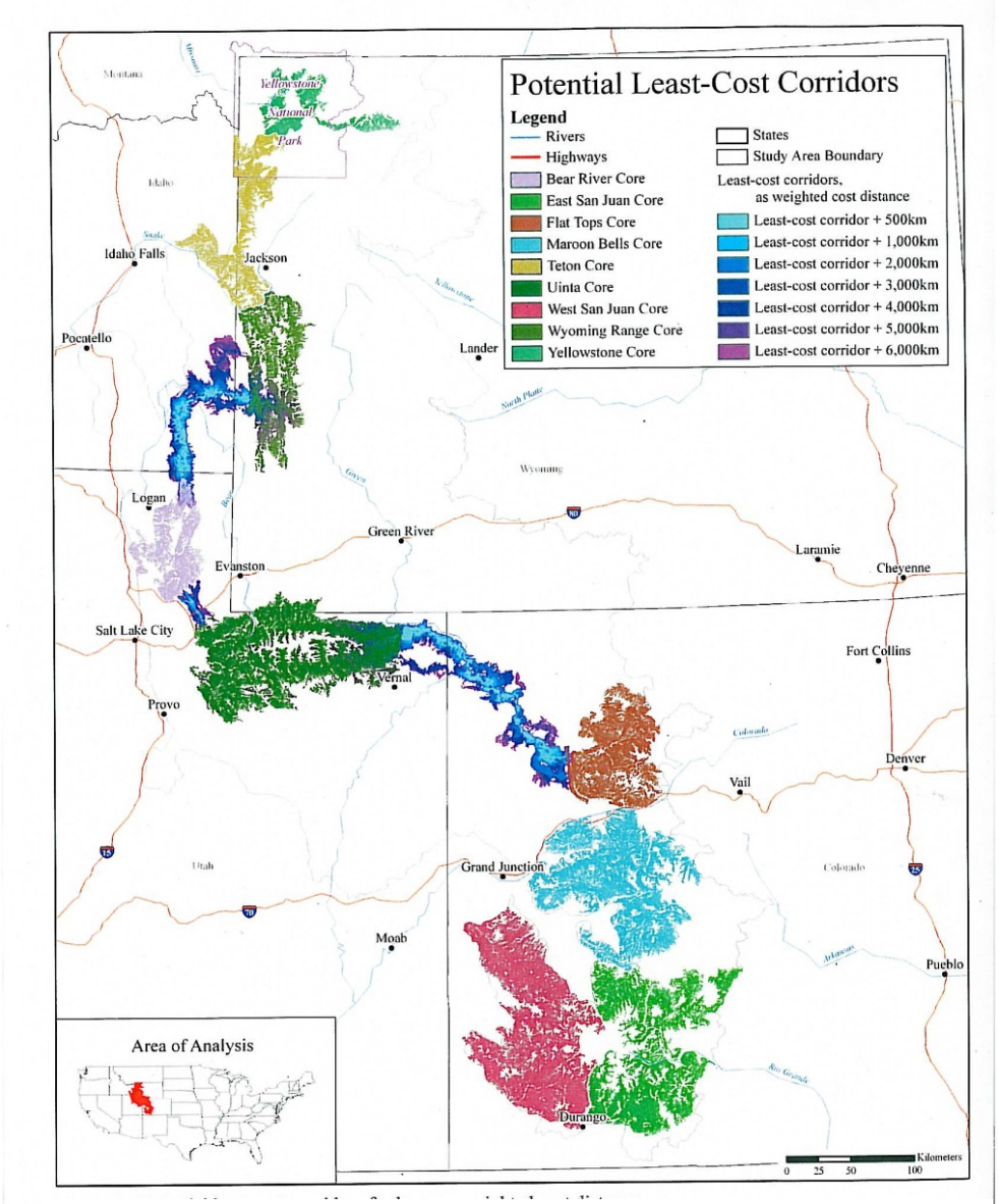

Figure 4. Least Cost Path for Lynx

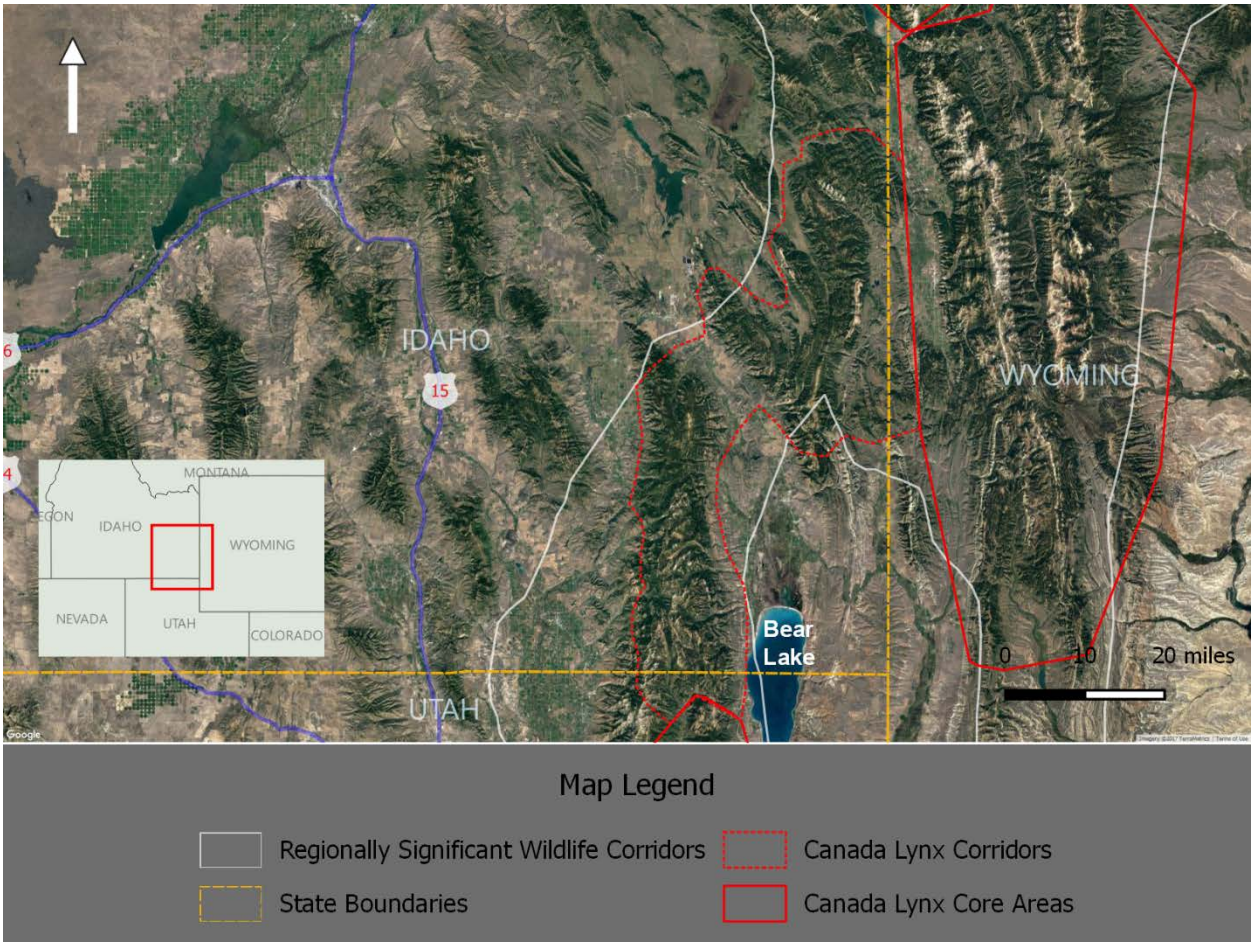

Figure 5. Map of Lynx Core and Corridor Areas and Regionally Significant Wildlife Corridor

3. 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.[17] The ruling reviewed the science relating to the selection of denning sites in combination with snow presence

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

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.

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[18], 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[19] 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 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 FWS 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 FWS 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 FWS 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

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[18] 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.; May, R. 2010. The bioclimatic envelope of the wolverine (Gulo gulo): do climatic constraints limit its geographic distribution? Canadian Journal of Zoology. 88: 233-246.

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

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.[20] 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.

So, while the Fish and Wildlife Service 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 6 which is a map of the FWS modeled wolverine habitat.[21] 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 and connecting these "dots" would likely lead to a connectivity pattern similar to that of Canada lynx, discussed previously. Clearly, the CTNF and UWCNF provide these high elevation snow habitats. They constitute the most likely migration pathway for wolverine and lynx. Recently, a wolverine was documented in the Uinta Mountains in northern Utah and one was killed on a highway in Rich County, Utah near Bear Lake, further testimony to their attempts to occupy these areas.

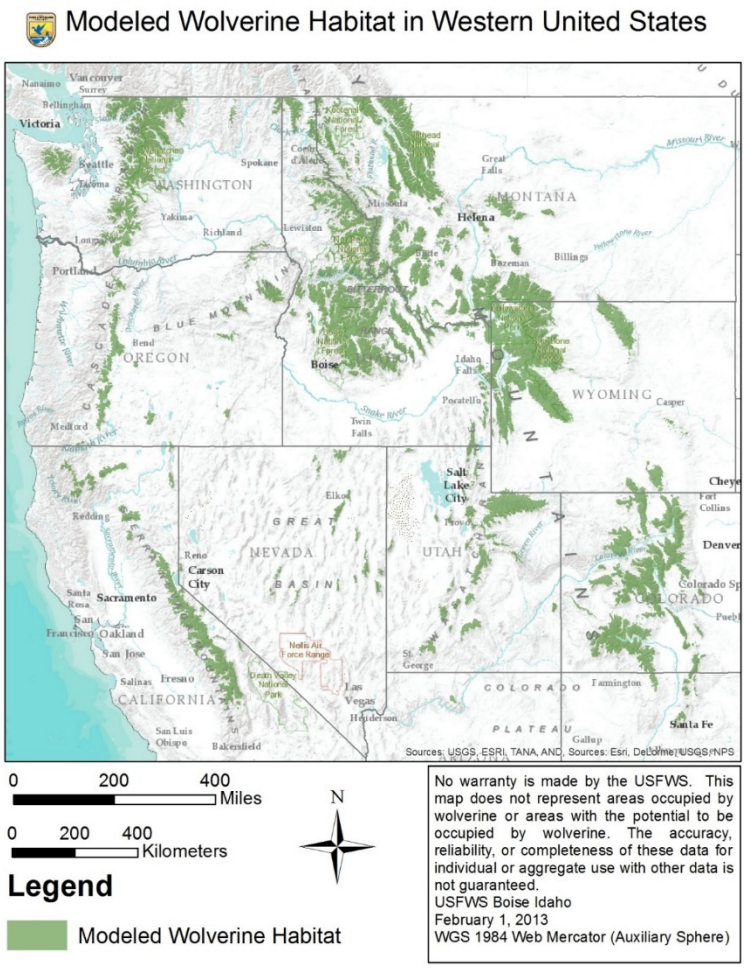

Figure 6. Fish and Wildlife Service Modeled Wolverine Habitat

[20] 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

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

4. Big Game

There are important wildlife corridors, connections, summer and winter range for deer and elk in the region. This was recognized in the Caribou National Forest Revised Forest Plan. That RFP contains prescriptions identifying winter range for elk and deer and emphasizes the value of roadless areas and low road densities for elk security cover. It identifies an elk summer area in the TinCup area of the Caribou Range and emphasizes the need for migration between that summer area and winter range (RFP Appendix D-6):

> *A map of migration corridors in Brown (1981) indicates that elk in his study moved from Fall Creek down along Iowa Creek and into the head of Tincup Creek and into Trail Creek. Another group of elk used the area to the west of Caribou Mountain and moved into the head of Tincup Creek. Other areas are used for seasonal migration corridors such as movement of mule deer from the Aspen Range east to winter range on Soda Springs Hills (BLM and private).*

Figure 7 shows winter range from the Forest Service GIS data obtained via FOIA. It also shows sage grouse leks, indicating the importance of connectivity for big game between summer and winter range

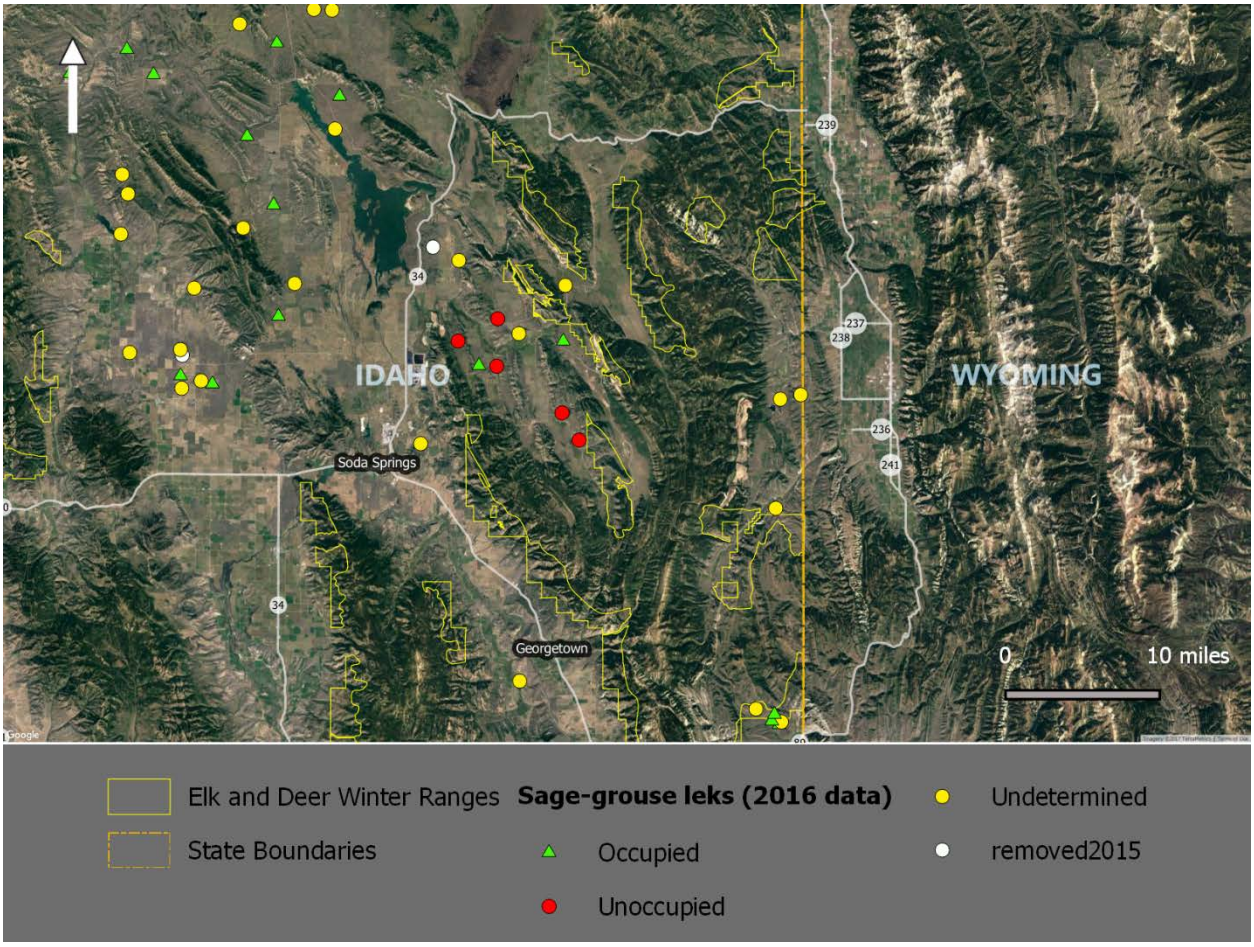

Figure 7. Deer and Elk Winter Range, Sage Grouse Leks in the Phosphate Patch

as well as connecting the Bear Lake Plateau sage grouse populations. These, of course were written off in the recent Rasmussen Valley Mine EIS.

The DEIS indicates that illegal atv trails have been intruded into Tincup Creek and other areas, does not map security cover or travel corridors for big game. Nor does it map the parturition or rearing areas for deer, elk and moose. The Forest Service allows miles of hardened atv trails in riparian zones that moose, deer and elk depend upon, not to mention numerous other species. It is important to identify all winter and summer range and how much is affected by direct (roads, mine) and indirect effects (human activity, road density, security cover) and how much has been affected by other activities in the Analysis and Cumulative Effects Areas. This would include fragmentation by roads, timber harvest, off-road vehicle use in summer and snowmobile use in winter. We note that cow elk objectives in the Diamond Big Game Analysis Unit are not currently met[22].

The RFP lays out a process for assessing connectivity (RFP Appendix D-4). That process includes: assessing historic patterns of vegetation and connectivity; assess current patterns and relative connectivity including human disturbance and barriers; compare historic and current patterns and relative connectivity to determine if animal movement opportunities have been significantly interrupted; consider measures to restore these. Nothing in the DEIS has attempted to analyze these factors.

The RFP also describes the Wasatch Cache National Forest regionally significant wildlife corridor. (See Figures 1 and 5) It is described as (RFP Appendix D-5):

> *The Wasatch-Cache National Forest in Utah looked at a north-south corridor passing through the Forest. They used McNab, et al (1994) to identify Province M331 "Southern Rocky Mountain Steppe" as a main north-south corridor. (Williams, Forest Biologist, pers. comm.). Part of this province (M331) passes through part of the Caribou NF (in the Caribou/Webster/Preuss subsections). This same area has been mapped as part of the Greater Yellowstone Ecosystem and was included on Ruediger's "IGBC Wildlife Habitat Linkages" map.*

Mining activity, road density and other activities fragmenting habitat for Canada lynx, sage grouse, elk and deer migration must be addressed in the Cumulative Effects Area. Deer, elk and moose population trends must be presented and migration routes between summer and winter range areas delineated and analyzed for human impacts. The area of winter range directly affected as well as indirect effects showing acres affected should be revealed from this and other projects. Direct impacts include such as mine footprints, roads, oil and gas, timber harvest as well as the broader area (indirect effects) affected by human activity, noise from these activities, and recreational use such as summer traffic and winter snowmobile use.

The trend in populations of sage grouse at these leks should be analyzed and correlated with mining and road activity to determine when leks were abandoned or population declines were occurring, and if it

[22] Idaho Fish and Game. 2016. 2015 Elk Population Status by Elk Zone. Showing Diamond Creek units not meeting objective.

relates to the time frame of mines within the possible effects area, which according the National Technical Team Report can be up to 11 miles from the development. This includes road and human activity associated with them.

5. Climate Change

It is necessary to recognize these connections for lynx, wolverine and other wildlife and provide analysis, standards, mitigations and other on-ground measures such as road crossings, overpasses, road closures, closure of areas to ohvs/snowmobiles, and limiting noise levels to enable these and other animals that rely on migration to be allowed to do so. For example, since climate change is such a central part of the wolverine's fate as evidenced in the cited court ruling and papers, the Forest Service should address its own Roadmap to address climate change. Recognizing the current and coming changes to climate with longer, drier periods and drought, the Forest Service has implemented a Roadmap to address climate change[23]. 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 and the Winschell Dugway is no exception.

In addition, the National Fish, Wildlife and Plants Climate Adaptation Strategy proposed by the Fish and Wildlife Service, NOAA Fisheries and the American Fish and Wildlife Association describes climate change effects and emphasizes conservation of habitats and reduction of non-climate stressors to help fish and wildlife adapt.[24] The Forest Service must address conservation of habitats and reduction of non-climate stressors such as the habitat degradation from livestock grazing, including soil loss, 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.

Figure 8 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. This represents a conservation biology approach to landscape conservation instead of the Forest Service abandonment of all conservation biology principles in which it dismisses corridors and connectivity for Canada lynx and other species and has the position that it doesn't matter if all species are wiped out in the project area because it won't lead to extinction of the species. Is it the Forest Services' belief that if lynx exist in Canada then fine, they aren't extinct and it has no obligation to restore connectivity or address habitat fragmentation and habitat capability in order to provide for species such as lynx? This Winschell Dugway project clearly has an objective of writing off all impacts and pushing more

[23] USDA. 2010. National Roadmap for Responding to Climate Change. 30p. www.fs.fed.us/climatechange/pdf/roadmap.pdf
[24] https://www.wildlifeadaptationstrategy.gov/

destruction on the Forest and those who love and respect the Forest and its wildlife or seek solace in the quiet study of nature. Instead, those wishing to retreat from the noise and hyper activity of the city, come to the Forest and find it has been converted into a motocross track where reckless riders jump obstacles, rap out their engines with their gutted mufflers and disdain all but themselves. It is time to reverse this trend.

Figure 8. Western Wildway

6. MIS and Special Status Species

Population trends and viability assessments for these species must be analyzed in concert with the various activities the Forest Service has implemented over the history of the Analysis and Cumulative Effects Areas. Like Canada lynx and wolverine, Northern goshawks also depend on mammals and birds for prey. Reynolds et al (1992)[25] provide specific recommendations that livestock grazing utilization will

[25] 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.

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. There must be an analysis of the current state of habitat, forage productivity and livestock utilization of forage in the project area, with reductions in grazing or closures of pastures and allotments. As Carter et al, 2011 found, grazing by livestock reduces ground cover, herbaceous plant production, carbon and nitrogen stored in herbaceous plants and soils when compared to reference values[26]. They found that the mycorrhizal fungi layer in conifer forest was destroyed by livestock trampling, essentially destroying the nutrient cycling of forest litter at the litter/soil interface.

Livestock grazing also compacts the soil, reduces infiltration, increases runoff, erosion and sediment yield.[27, 28] The effects of these activities on the nutrient cycle and soil conditions must be analyzed in connection with forest health and in goshawk home ranges. Habitats suitable for goshawk and goshawk home ranges should be mapped showing all home ranges in a CEA of sufficient size relative to motorized use and other activities, and showing their occupancy status. Northern goshawk, as an MIS, must have a determination of capable and suitable habitat and these home ranges must be analyzed for current condition, and whether capable or suitable, taking into account past timber and forest health treatments, roads and grazing. Is the absence of observed goshawk nests as reported in the DEIS a result of road intrustions, timber harvest?

Snowshoe hares are prey for lynx and goshawk. Their forage base is depleted by historic and current livestock grazing in the AA and CEA. The population data for snowshoe hare should be analyzed and compared to the level of activities occurring here. Sheep bedding areas should be mapped, soil ground cover revealed compared to potential and the accelerated erosion on the steep slopes grazed by sheep disclosed. An analysis of sheep forage demand for the permitted numbers should be determined and evaluated against the capable and suitable acre desirable forage production that occurs today. Aerial images reveal significant bare soil on slopes in the Analysis and Cumulative Effects Areas.

The Forest Plan is nearly 15 years old and many projects have occurred in goshawk habitat in the intervening years in addition to older projects. In addition, roads continue to expand, both permanent and temporary, which engender additional human activity in areas that were previously interior forest habitat. The Forest Service Manual 2323.33c - Predator Control states, *"Predacious mammals and birds play a critical role in maintaining the integrity of natural ecosystems. Consider the benefits of a predator species in the ecosystem before approving control actions."* The NEPA analysis must address the role of predators and the killing of these important animals by livestock permittees, trappers, DWR and Wildlife

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Gen. Tech. Rep. GTR-RM-217, Fort Collins, Colorado. U.S. Department of Agriculture, Rocky Mountain Forest and Range Experiment Station. 90p.

[26] Carter, J. Chard, J. and Chard, B. 2011. Moderating Livestock Grazing Effects on Plant Productivity, Nitrogen and Carbon Storage. In Monaco, T.A. et al. comps. 2011. Proceedings – Threats to Shrubland Ecosystem Integrity; 2010 May 18-20; Logan, UT. Natural Resources and Environmental Issues, Volume XVII. S.J. and Jessie E. Quinney Natural Resources Research Library, Logan Utah, USA. Enclosed.

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

[28] 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.

Services, disclosing the losses on an annual basis since the 2003 Forest Plan was implemented. It should also address the economics of this, and the risk to non-target animals, pets and the ecosystem.

7. NEPA Analysis

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

- Validity of assumptions from previous NEPA processes
- Accuracy of predictions from previous NEPA processes
- Adequacy of Forest Service implementation of previous decisions
- Permittee compliance with permit terms and conditions, AMP's, AOIs and other requirements
- Effectiveness of actions taken in previous decisions

These above items are absolutely critical to be part of this NEPA process. Without this critical link the validity of the current assumptions are baseless. 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. A review of the adequacy of the FS's implementation of current AMP's and FP direction is essential to a valid NEPA process. For instance, if in previous processes the FS said they were going to do a certain monitoring plan or implement a certain type of management and these were never effectively implemented, it is important for the reader and the decision maker to know. If there have been problems with FS's implementation in the past, it is not logical to assume that implementation will now all of a sudden be appropriate. Another critical component is permittee compliance. If the permittee(s) have failed to properly comply with their permit terms and conditions and AMP requirements, including utilization requirements, rotation requirements and fence maintenance then it is absolutely critical to discuss this in the document and its effects on the proposed action. If prior timber harvests, salvage sales, prescribed fire and other "forest health treatments" have not been monitored to document regeneration, beetle suppression, restoration of aspen recruitment and herbaceous understory, recovery of ground cover, then there is no valid reason for this project. Report and analyze all past vegetation projects in the AA and CEA.

Furthermore, the reliance on BMPs is a flawed approach that assumes they work. Ziemer and Lisle (1993)[29] indicated that there are no reliable data showing that BMP's are cumulatively effective in protecting aquatic resources. Espinosa et al. (1997)[30] 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)

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

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[31], Rhodes et al., 1994[32] Espinosa et al., 1997). Stanford and Ward (1993) termed this phenomenon the "illusion of technique."

We wish to (re)emphasize that negative impacts, and conflicts among alternative uses, relating to the following items must not just be within the scope of the NEPA process, but treated as significant and/or key alternative-driving in nature:

- Rocky Mountain bighorn sheep. Is this historic range, currently occupied, if so is habitat capable?
- Wilderness or roadless areas, Research Natural Areas comparing their conditions to baseline for the AA and CEA and project goals
- Threatened/Endangered/Proposed/Candidate and U.S.F.S. Sensitive plant and animals, as well as their habitats
- Soils
- Bare ground from:
    - sheep grazing as well as bedding and trailing practices between watersheds
- Hydrology, including the role as water storage sources for downstream water users and how activities such as timber harvests, prescribed fire, grazing of domestic sheep and cattle in these sensitive watersheds affect water storage, flood forces and stream habitats (bank scouring), cover and substrate for spawning cutthroat trout.
- Native plant biodiversity compared to long-term livestock exclosures/ungrazed watersheds/RNAs
- Dominance of sites by increasers, native or exotic plants
- Native pollinators compared to long-term livestock exclosures/ungrazed watersheds/RNAs
- Global warming science re: cumulative effects on high elevation native vegetation and wildlife of higher temperatures, earlier snowmelt, reduced snowpack
- The impact on populations of elk, deer, bighorn sheep, moose from forage competition with livestock. Compare forage demand for wildlife at objective with livestock at permitted numbers. Include not only numbers of individuals equivalent based on forage demand, but displacement from preferred foraging, breeding and rearing areas.
- Analysis of the killing of predator/carnivores by permittees, herders, DWR, Wildlife Services, guard dogs, requiring predator-friendly management methods and a means of tracking mortality of these Sensitive, Management Indicator, or T&E Species populations as affected by conflicts with livestock.
- Cumulative Impacts of other projects, road densities, noise, incursions into roadless areas, oil and gas developments, and ohv impacts to the integrity of the Regionally Significant Wildlife Corridor.
- Areas/routes traveled by Canada lynx based on radio collar data from the Colorado reintroductions in the late 1990's – mid 2000's.

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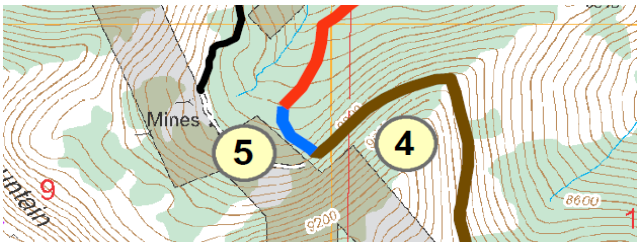
[31] Stanford, J.A., and Ward, J.V., 1992. Management of aquatic resources in large catchments: Recognizing interactions between ecosystem connectivity and environmental disturbance. Watershed Management: Balancing Sustainability and Environmental Change, pp. 91-124, Springer Verlag, New York.

[32] Rhodes, J.J., Espinosa, F.A., and Huntington, C., in process. 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.

- All past observations and records of bighorn sheep occurrences, re-introductions, their travel routes, wintering areas, summer feeding areas, breeding and calving areas and transitional areas.
- Elk and deer population objectives, trends in population
- Define old growth characteristics, the current extent of old growth forest and how this has changed over time in the AA and CEA.
- Costs of the project, both direct and indirect compared to the Re-analyze capability and suitability for livestock to reflect data provided in Attachments.

8. Detailed Comments on the DEIS

Implementation of alternative 2 would almost certainly result in an ATV loop trail the DEIS doesn't even disclose. This would run from Morgan Meadows Forest Road 189, along ATV Trail 449, to ATV Trail 451, to Forest Service Road 188, to Forest Road 381, south to the patented mines in Section 9 just west of Caribou Mountain (all of this already existing as per the maps and DEIS)—then through the patented mine site on what is apparently an existing old road connecting to the new proposed Alternative 2 motorized trail near its northern terminus, then running south to where the new trail links in with Trail 447 (the Old Winschell Dugway which is now non-motorized), to complete the loop back to Morgan Meadows. Below is a snip of the Alternative 2 map, showing the connection the DEIS does not discuss, under the circled 5:



Such a loop would have nothing to do with visiting historic Caribou City. With Alternative 2, ATVs may access Caribou City from this patented mine site using the proposed motorized trail (the one in common with Alternative 3), but the motorized trail ends there anyway.

The DEIS doesn't really identify how many people would benefit from this expanded motorized playground (likely very few), and at what cost to taxpayers. The DEIS says the Bonneville County taxpayers will be on the hook for construction, reconstruction and maintenance of "the route" but what exactly is meant by "the route" is open to interpretation. Is it all the newly constructed and reconstructed, or would it include any currently existing trail(s)?

And what are Bonneville County's expected financial benefits from this project—if any? There is no economic analysis in the DEIS.

The DEIS fails to disclose construction, reconstruction and maintenance costs. If Bonneville County were unable to come up with the funds at some point in the future, U.S. taxpayers would be left with the annual maintenance but the question remains—how much would that be? In any case, U.S. taxpayers would be on the hook for *"Yearly inspections of the trail and bridges for safety and maintenance issues"* but how much would that cost? And what is the likelihood that funds may not be adequate for or appropriated for these Forest Service inspections and related administrative duties?

This project represents transfer of a significant component of federal control to the County, but the DEIS dodges this issue. Bonneville County would also supposedly be responsible for *"Informing the Forest Service of any illegal user created trails that are identified during trail maintenance activities"* but the DEIS doesn't explain how the County would be held accountable if they didn't uphold this responsibility. And why is this being put on the County, when the FS is to be conducting annual safety/maintenance inspections anyway? It seems the FS is trying to hand off its responsibilities.

The DEIS doesn't disclose the frequency or extent of existing or recent MVUM violations in the project area. Is there evidence that ATV riders make unauthorized excursions off-trail anywhere on Caribou Mountain or from Trail 450?

The DEIS doesn't consider safety of travelers on Forest Roads such as 165, 87, 188, and 381, which would likely receive increased ATV use under the action alternatives.

The DEIS lists relevant desired future conditions, goals, standards and guidelines in Table 1, however for many of those components that's the only place the DEIS addresses them. How each of the alternatives complies with many of those components is not disclosed. So for example, the DEIS does not explain how the project is consistent with the Forest Plan goals to *"Minimize construction of new transportation routes, evaluate existing routes, and reconstruct or relocate those routes not meeting management goals"* and *"Operations, maintenance and rehabilitation of existing trails should be the priority over new construction."*

Likewise, alternatives' compliance with requirements to minimize damage to forest resources, disruption of wildlife, and user conflicts (Travel Management Rule Subpart B and Executive Orders 11,644 and 11,989) is not adequately explained. The DEIS takes the position that, since Alternative 3 would create fewer ATV impacts than Alternative 2, that constitutes minimizing. Alternative 3 itself increases conflicts and motorized recreational impacts to resources over and above the existing conditions, but how it "minimizes" conflicts, damages, and disruptions is not explained. The DEIS does not demonstrate that it implemented or applied the minimization criteria in the route designation process, to be consistent with the objective of minimizing impacts.

The DEIS does not disclose if the Caribou-Targhee NF has completed a science-based forestwide travel analysis process as per the Travel Management Rule Subpart A, to identify the Forest's minimum road system. This has logical implications for this Winschell Dugway ATV access proposal.

The DEIS has little or no discussion of the results of Forest Plan Implementation monitoring (Forest Plan Chapter 5). This hampers public understanding of cumulative impacts. The Forest Plan states:

> ***Monitoring and evaluation is an essential feature of the Plan.*** *This Plan adopts an adaptive approach to forest management. Adaptive management is based on the premise that we do not have enough knowledge to forecast outcomes with total accuracy for the life of the Plan. Project effects are monitored and evaluated against the direction in the Plan and in the context of the social environment at the time. Using this approach, the Forest can insure that trends in resource conditions and services provided are consistent with the general strategic intent of the Plan and the public.*

> *Part 2 of Chapter 5 contains the Monitoring and Evaluation section.* ***This describes the Forest Plan monitoring to do to validate the RFP assumptions, determine the effectiveness of standards and guidelines in meeting our desired future conditions, and measure the rate of implementation of those standards and guidelines. This information will be compiled to validate the effectiveness of the RFP and ensure that it is the "living document" intended.*** (Emphases added.)

It appears the FS has not published a monitoring report for over ten years. The DEIS fails to disclose that this "essential feature of the plan" is broken, and what that means for understanding the cumulative impacts of management.

The DEIS does not include enough analysis of existing conditions under the no action alternative (or in cumulative effects discussions for any alternative). There isn't even an Alternative 1 map displaying only existing transportation routes and areas. The DEIS lists past and ongoing management actions and some non-FS activities, but fails to adequately disclose their impacts on various resources.

It is also impossible to understand the existing conditions on many portions of the proposed ATV trails. Locations mapped for "Reconstruction" suggest existing road segments, but the DEIS doesn't disclose conditions there, including legacy adverse effects of roads. Nor does it disclose what activities—motorized or otherwise—occur on the "reconstruction" segments. The same deficiency is apparent of the DEIS for the "Old Roadbeds" sections.[33]

Aside from the "Reconstruction" and Old Roadbeds" sections to be built upon for new ATV routes, the DEIS mentions there are many other old legacy travel routes, but it doesn't properly disclose their locations, environmental impacts, or what unauthorized motorized uses they might receive.

The DEIS does not demonstrate that current FS management of these old or degraded roads and trails are being managed consistent with the Travel Plan and Forest Plan. The DEIS does not adequately analyze and disclose the environmental liabilities of these artifacts, which are supposed to be managed to have no significant impacts.

The DEIS mentions the proposed Caribou Connector Trail but does not analyze or disclose cumulative impacts of the project.

The DEIS states, **"**Obstacles (up to) 12"; may be common or placed for increased challenge." This is consistent with creating an ATV playground, <u>not</u> providing access to the historic townsite.

For the Caribou Mountain Special Emphasis Area, the Forest Plan states, *"Within five years of signing the ROD, complete a plan for interpretation of the historic mining areas."* Has this been completed? Since the FS is not publishing monitoring reports on its website as the Forest Plan promised, the DEIS must

[33] In other places the DEIS calls these artifacts "degraded road or trail prisms."

disclose this information, as well as the FS's follow-through on all other Forest Plan commitments relevant to the project area.

The DEIS fails to explain how the project minimizes impacts on soil productivity and soil quality, water quality, riparian and aquatic habitats, and wildlife habitat. It fails to explain how the project minimizes conflicts with non-motorized recreationists and with wilderness qualities and roadless characteristics.

The DEIS states, "FSH 2309.18 and FSM 2350 and FSM 7723, along with the Idaho Roadless Rule, the Forest Plan and the Forest Travel Management Plan provide direction on management of recreation, trails, and Inventoried Roadless and Recommended Wilderness areas." The DEIS largely omits even stating what this direction is.

The DEIS states, *"The Caribou City Inventoried Roadless Area (IRA) is approximately 93,000 acres. This IRA is the second largest roadless area in the Caribou portion of the Caribou-Targhee National Forest…"* The DEIS pretends that potential designation of any portion of the Caribou City Inventoried Roadless Area as Wilderness would not be affected. As if the installation of more motorized uses won't have any influence.

"The boundary of the IRA was changed to reflect the Recommended Wilderness Area boundary." Did that change consider roadless and wilderness characteristics?

The DEIS describes the rather remote character of the project area:

> *Little data exists in the district files regarding the number of users in the project area. Observations by district staff indicate there is relatively low use in the area with the exception of the fall hunting season. In July of 2016, the entire route was GPS'd and reviewed, very few public encounters occurred during the route inspections.*

Clearly, creating more motorized ATV routes does not minimize impacts to the many wildlife and other resources which benefit by Wilderness designation and management.

The DEIS states under Alternative 2, *"the proposed project would affect the landscape character by building a motorized route through a large expanse of previously reclaimed and undisturbed area."* Doesn't this also apply to Alternative 3?

The DEIS does not demonstrate consistency with the forest plan requirement*, "Suitability for resource management activities shall be disclosed in the site-specific analysis."*

The DEIS discloses that past actions have damaged streams and water bodies in the project area. But it fails to explain if beneficial uses have been impaired. If doesn't disclose if there are any Water Quality Limited Segments, if TMDLs have been prepared for them, or if project activities would be consistent with TMDLs.

The Forest Plan states:

> *"Riparian Condition Indicators (RCIs) provide criteria against which attainment or progress toward attainment of riparian and aquatic habitat goals are measured. RCIs provide the target toward which managers aim as they manage resources across the landscape. …Actions that reduce riparian quality, whether existing conditions are better or worse than attribute values, would be inconsistent with the purpose of this direction."* We note that RCIs are not discussed in this DEIS.

The DEIS does not disclose if the Open Motorized Route Density (OMRD) complies with the levels identified on the Forest Plan OMRD map.

The DEIS does not demonstrate consistency with the forest plan requirements that *"Resource developments and utilizations should be restricted to lands identified in the Soil Resource Inventory as being capable of sustaining such impacts."* How the FS determines "capable" is not disclosed.

The DEIS does not demonstrate consistency with the FSM 2550 guidance it cites, nor the FSH 2509.18 - Soil Management Handbook Region 4 Supplement No. 2509.18-95-1.

The DEIS states, *"Incomplete information includes an inventory of historic mining roads with the Caribou City area that is within the project HUC 6 watersheds."* The DEIS also states: *"Forest system roads exist within the project area, as well as roads that were closed but have not been decommissioned. The area includes historic mining roads and remnants of historic mining roads from the 1800s."*

> *Mining activities have occurred since the late 1860s. Gold and other metals were recovered using hydraulic mining techniques. These activities scarred the landscapes with eroded hillsides, extensive canal works and mining debris.*
>
> *Historic gold mining left road and hydraulic mine spoil disturbances in the area in the 1800's. Most of the mine spoils support trees, but have a reduced productivity compared to undisturbed soils. Some of the historic mining roads were at some point restored to natural contour, but others were simply left to natural processes.*

So the DEIS is basically saying the FS will not quantify these old roads and other legacy mine impacts, in order to include in a quantitative measurement of hydrologically disturbed conditions, as the Forest Plan requires.

The DEIS does not demonstrate how management is consistent with Forest Plan requirements to *"Monitor, as needed, disturbed areas, such as landings, skid trails, roads, mines, burned areas, etc., for noxious weeds or invasive species and treat where necessary."*

The DEIS does not demonstrate consistency with forest plan requirements to *"Maintain, and where necessary and feasible, provide or habitat connectivity across forested and non-forested landscapes."*

The DEIS doesn't disclose if trail maintenance needs have been monitored on a timely basis, or the results of that monitoring.

The DEIS does not define the trail specification "cross slope."

The DEIS states, "*Site specific surveys for Northern Goshawk along the trail corridor will be completed prior to implementation."* It also states that goshawk surveys were previously completed in 2012. This ignores the fact that goshawks do not nest in their established territories every year, and that surveys conducted only twice in seven years can easily miss established territories. This is especially important, since the FS is ignoring the forest plan requirement to *"Monitor 1/3 of the known goshawk nest territories yearly for occupancy and productivity"* and report "annually." The goshawk is one of the few management indicator species (MIS) under the Forest Plan, so it's disturbing the FS is so lax about protecting its habitat and monitoring population trends. What is the habitat capability for goshawk and how do the roads, trails and proposed trail affect habitat capaility.

Since, as the DEIS states, none of the MIS occur in the project area, the DEIS must explain how the FS can insure viability of all species that may occur here, as NFMA's diversity provisions require.

The Forest Plan requires*, "Within two years of signing the ROD, complete a GIS analysis to identify potential wolverine natal den sites. Within four years of the ROD, survey potential wolverine natal den sites to document wolverine presence and assess suitability as natal denning habitat."* Please disclose the results of those efforts.

The DEIS states, *"There are two documented observations of wolverines within the analysis area, one in 2006 in the McCoy Creek area, and one in the Tincup Mountain area in 2001(Idaho Fish and Wildlife Information System, 2016)."* The DEIS fails to disclose the best available science the FS uses for considering cumulative and motorized travel impacts on wolverine.

The Forest Plan requires, *"Within three years of signing the ROD, complete (lynx) surveys on the Soda Springs and Montpelier Ranger Districts."* Please disclose the results of those surveys.

The DEIS fails to biologically justify the FS's "No Effect" determination and its decision to omit analysis of the Canada lynx.

The DEIS also fails to include an analysis that utilizes best available biological science for the great gray owl, flammulated owl, boreal owl, three-toed woodpecker, mule deer and elk.

"A large wildlife (sic) occurred in 1988. Sections of dozer lines from this fire are still evident in the Tincup drainage." Did the FS rehabilitate and monitor these sites, as is required? Are they now illegally used atv trails?

The DEIS states, *"The primary current man-made sources of fine sediment are from the several trail approaches to stream crossings along the route 447 (historic Winschell Dugway) all of which are lacking proper drainage to minimize sediment and meet the desired condition for riparian areas."* This reveals the FS is not accountable for managing consistent with the Forest Plan.

The Forest Plan states:

> *Some aquatic species are at risk on the Forest, including the Yellowstone cutthroat trout and the Bonneville cutthroat trout, which inhabit decreasing portions of their historic range. Aquatic habitat has become more fragmented and connectivity has been lost between the lower reaches of the watershed and higher elevation habitat needed for spawning and rearing. …Special conservation and restoration management is needed.*

The DEIS indicates that Yellowstone cutthroat trout occur in Bilk and Tincup Creeks, and that ongoing or project activities will damage water and fish habitat. What *"Special conservation and restoration management"* is being provided for these fish?

What are the population trends of Yellowstone cutthroat trout in Bilk and Tincup Creeks?

The DEIS fails to analyze and disclose impacts of oversnow winter travel, which is allowed everywhere in the project area.

The DEIS fails to analyze and disclose cumulative impacts of livestock grazing which occurs in *"most of the area."*

The DEIS states:

> *Big Game security areas are defined as an area of cover over 0.5 miles from an open motorized route and over 250 acres and are important for limiting disturbance and hunting vulnerability to big game animals (but provides benefits to other animals as well). The analysis area overlaps a large security area, approximately 54,324 acres in size.* ***This security area is, by far, the largest security area occurring on the Caribou National Forest****. (Emphasis added.)*

How does slicing up this largest security area in the Forest with motorized ATV routes constitute minimizing?

The DEIS states:

> *Trail 449 also connects to non-motorized trails including Trail 447 (Historic Winschell Dugway Route) and contains two un-improved ford crossings on Tincup Creek. The hydrology report describes the crossings as degraded and not meeting desired conditions. At one location degraded conditions may have been caused or further degraded by off-system route ATV use (Laprevote 2016).*

This same segment of Trail 447 is part of a proposed motorized trail in Alternative 2.

The FS's "preferred" Alternative 3 would apparently do nothing about ongoing impacts as identified in the above paragraph.

Similarly, for Alternative 2, the DEIS states, *"All existing motorized trail in the AIZ of Tincup would be brought up to standard, yielding a minor improvement in AIZ quality in that drainage."* And for Alt. 3,

"Only 0.1 miles of historic trail in AIZ of Bilk Creek would be brought up to standard." Still, the DEIS concludes that Alternative 3 "minimizes."

Again, for Alternative 2 only:

> *As detrimental effects from historic motorized use persist in the current condition of Tincup Creek, this alternative provides beneficial effects to offset some of the negative effects by bringing existing, historic motorized trail in the AIZ of Tincup Creek and existing, primitive historic crossings up to standard and thus reducing sediment in those locations.*
>
> *The proposed action would bring existing trail 447 to current standards, both in the uplands and in the AIZ. This would reduce existing effects to the AIZ.*

The DEIS states, of Alternative 1 (No Action): *"None of the improvements to the existing trail in the Tincup drainage and to sections of closed road in the Bilk Creek drainage would occur. The existing sediment impacts to water quality from the existing poorly designed crossings would continue."*

Please include an alternative in the Final EIS which addresses those, and the other extensive soil and aquatic restoration needs identified in the DEIS, but which doesn't propose any increases of ATV routes.

9. Motorized Recreation Impacts

Motorized recreation has been and remains largely unpatrolled, unenforced and is bordering on an outlaw activity because riders of ATVs, Dirt Bikes and Snowmobiles understand there is none to minimal enforcement. The outlaw activities of southern Utah Counties in grading roads into National Monuments or areas closed to off-road vehicles further degrades any credibility these people and their supporters have. In view of the President's declaration that our dependence on foreign oil is a National Security issue and we must engage in conservation, Federal Agencies should take this mandate seriously to minimize greenhouse gases, soil erosion and noise pollution from recreational vehicles. The science on this issue as presented in the book, *"Thrillcraft",* by George Wuerthner is a comprehensive source that Agencies must consult in evaluating any alternatives regarding Motorized Recreation.[34]

When evaluating projects directed at off-road vehicles, roads and trails, Agencies should at a minimum, analyze alternatives including No Action (status quo), No ATVs, Dirt Bikes or Snowmobiles, or the new experimental playtoys, Personal Aerial Vehicles, and the level of use allowed in the current set of alternatives.

[34] Wuerthner, G (ed). 2007. Thrillcraft: The Environmental Consequences of Motorized Recreation. Chelsea Green Publishing Company. White River, Vt.

Enforcement: 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[35]. The Forest Service published a Technical Report in 2005 (RWU – 2905) that recognized there is a lack of evidence that educational programs lead to behavioral changes in motorized users. The analysis must provide evidence that any proposed mitigation and enforcement efforts will be effective for those alternatives that allow any level of use by these machines.

Noise and Safety: Agencies must address safety and noise effects to non-motorized users and wildlife. Thirty years ago we could experience our Public Lands in a quiet and peaceful manner, hiking and camping. You could see wildlife, hear the birds and the sounds of nature. This is not the case today as the sounds you hear are the roar or scream of rapped out dirt bikes, atvs, and snowmobiles. This sound travels for miles, and the smells you smell are hydrocarbons and hazardous air pollutants. These mechanized users appear to mostly use the Public Lands for a motocross track, an obstacle course, speed and amusement, not wildlife-based or quiet recreation. Because of the hands-off attitude toward off-road vehicles, Federal land management agencies have allowed an increased emphasis on motorized recreation, which has decreased the utility of the Public Lands for wildlife and deprived non-motorized users of the opportunity to enjoy skiing, hiking and camping in the study of nature. Quiet users don't degrade the experience of off-road vehicle users, but the opposite is true in the extreme.

Quiet environments are becoming extremely rare. In a recent study by a professional sound recorder who visited 15 western and Midwestern states, it was found that quiet periods longer than a minute and a half without the sound of motors were difficult to find[36]. Another study pointed out that in 1999, the decibel levels of conversation among Americans had risen to 65 decibels, up 10 decibels from a decade earlier, or a doubling of volume due to elevation of background noise levels[37]. While it is recognized by OSHA and other health officials that exposure to noise of 85 decibels and higher leads to hearing loss, noise at even lower levels can lead to physiological changes in blood pressure, sleep, digestion, and other stress-related disorders. Former U.S. Surgeon General William H. Stewart stated that, *"Calling noise a nuisance is like calling smog an inconvenience."*[38, 39, 40, 41, 42] Loud noise, even within established health guidelines, can lead us to feel tense, angry, frustrated, annoyed and prone to violence in addition to contributing to hearing loss. In the period between 1982 and 2000, the incidence of measurable hearing loss increased by 15 to 60%, depending on the age group. In 1999, the U.S. Census Bureau rated noise as the single biggest neighborhood problem among those surveyed. More than one in ten people cited traffic noise as

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

[36] Richard Laliberte, "The Sound of Silence," *Cooking Light*, March 1999

[37] http://interact.uoregon.edu/MediaLit/WFAE/home/index.html

[38] "How Loud is Your House?," *CBC Marketplace*, Nov. 7, 2001, www.cbc.ca

[39] Howard Frumkin, "Beyond Toxicity: Human Health and the Natural Environment," *American Journal of Preventive Medicine* 20, no. 3 (April 2001): 234–240

[40] Christine Gorman, "Stressed Out Kids;" *Time*, December 25, 2000

[41] Noise Center of the League "Noise & Health Fact Sheet," (New York and Florida: League for the Hard of Hearing), www.lhh.org/noise/facts/health.htm

[42] "Sound, Sight & Solitude" *Leadership Bulletin from Early Childhood Connection* (a publication of the Early Childhood Music and Movement Association) 7, no. 1 (Fall 2001).

of concern and nearly half of those said they had considered moving as a way of escaping such noise[43]. The EPA has found that 20% of those surveyed are "highly annoyed" when sound levels reach 55 decibels[44]. Federal regulations for highways dictate that if a new or expanded road will yield noise levels of 67 decibels or higher, efforts must be made to bring about a substantial reduction in noise levels. Generally this involves construction of sound barriers[45]. The DEIS now proposes to impose noise levels of nearly 100 dB on people and wildlife, near trails or roads, and over 55 dB at approximately one mile from these use areas.

After Zion National Park banned private vehicles and instituted a low pollution shuttle bus system, visitors commented that the absence of RVs with generators running, buses with clouds of diesel fumes and noise were noticeable and that they could now hear birds calling, streams running, and other low-volume sounds of nature that were previously obliterated by "vehicle noise". [46] Noise is a particularly objectionable aspect of snowmobile use. A Park Service report showed that even "quiet" snowmobiles could be heard more than two miles away, thus affecting a four mile wide area adjacent to travel corridors or use areas[47]. This means that a snowmobile traveling 50 miles in one day, which they can easily do, can affect an area of 200 square miles. A visitor survey at Grand Teton National Park found that 96% thought snowmobiles had a negative impact on the park because of noise, air pollution and negative effects on wildlife[48]. Yet they are allowed throughout the Winschell Analysis and Cumulative Effects area as well as the broader region.

Air and Water Pollution: Public Lands and National Forests should function primarily as the watershed for local communities and for preserving natural stream flows and water quality. The combined effects of sediments from watershed uses such as roads, OHVs, grazing and logging, have not been addressed in a comprehensive analysis. No evaluation has been done for the contribution of hazardous pollutants to the air and watersheds where motorized vehicles are used. Atmospheric inversions and canyon environments can trap and hold these hazardous air pollutants and raise exposures to people and wildlife. Those who hike or cross country ski are exposed to these hazardous fumes in close proximity while they are breathing hard and deep with the exertion of skiing or hiking. At Yellowstone, many of the Rangers there suffered persistent headaches, dizziness and nausea prior to using gas masks and having oxygen

[43] Jim Louderback, "A Sound Solution," *USA Weekend*, October 19, 2003
[44] Environmental Protection Agency, press release, April 2, 1974; see also EPA website, www.epa.gov/history/topics/noise/01.htm.
[45] www.fhwa.dot.gov/environment/htnoise.htm
[46] Lin Alder, "A Park Rediscovers A Surprising Asset," *High Country News*, September 25, 2000.

[47] U.S. Department of the Interior, National Park Service. Winter Use Plans: Supplemental Draft Environmental Impact Statement. Yellowstone and Grand Teton National Parks and John D. Rockefeller, Jr., Memorial Highway. March 29, 2002.
[48] Greater Yellowstone Coordinating Committee. "Greater Yellowstone Winter Visitor Use Management -- Examples of Issues Facing Parks and Forests in the Greater Yellowstone Area." Draft. 1995.

piped into their kiosks[49]. Unfortunately, skiers, hikers and wildlife cannot have oxygen piped to them and must breathe these fumes.

Fuel and lubricants used in these machines spill on the ground and are carried out in exhaust streams and then deposited into the snow and soils wherever they go. They contain benzene, xylene, toluene, polycyclic aromatic hydrocarbons and other hazardous organic chemicals[50]. As the Montana DEQ states, *"A portion of the air/fuel/lubricant charge escapes directly to the atmosphere with the combustion products, producing poor fuel economy and releasing high levels of hydrocarbons as air pollutants. This phenomenon is known as "short circuiting."* EPA models and emission factors should be used to determine the impacts on the environment and exposures to cross country skiers and snowmobile users from these machines. Other information is available showing that noise levels of both two-cycle and four-cycle engines reach levels up to 110 dB even in four stroke engines. EPA and the Montana Department of Environmental Quality have provided research on this issue. The EPA[51] and Montana DEQ[52] websites provide links to much of this information and EPA has modeling protocols to allow prediction of emissions from these vehicles[53].

Accumulations of motorized hydrocarbon pollutants from rubber tires, fuel and motor oils collect on rocks and within pothole waters within streams and canyons (USDI, 2005 Jeep Safari EA) which can support and adversely affect wildlife, growth of amphibians and invertebrates used for prey bases (Lefcort et al, 1997). Vehicle disturbance within streams can also negatively affect reproduction of amphibians where eggs and growth occur in warm pools which can be fatally crushed or covered with silt as vehicles pass (Schelz, Salt Creek Report 2001).

The pollutants emitted by these machines are carcinogenic to humans and highly persistent in the environment, adversely affecting terrestrial and aquatic organisms, including reduced plant productivity, tree mortality and making plants susceptible to disease and pests.[54, 55, 56, 57]. A two stroke snowmobile

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[49] National Park Service, *Winter Use Plan, Final Supplemental Environmental Impact Statement (FEIS) for the Yellowstone and Grand Teton National Parks and the John D. Rockefeller, Jr., Memorial Parkway, Wyoming and Montana* (Intermountain Station: U.S. Department of the Interior, February 2003).

[50] http://deq.mt.gov/CleanSnowmobile/concerns/tyler2000.pdf

[51] http://www.epa.gov/otaq/recveh.htm

[52] http://deq.mt.gov/CleanSnowmobile/solutions/engine/index.asp

[53] http://www.epa.gov/otaq/ap42.htm

[54] J. P. Giesy, Testimony of John P. Giesy at the Tahoe Regional Planning Hearing on Boating Impacts, February 26, 1997.

[55] J. T. Oris et al., "Toxicity of Ambient Levels of Motorized Watercraft Emissions to Fish and Zooplankton in Lake Tahoe, California/Nevada, USA" Proceedings of the 8th Annual Meeting of the European Society of Environmental Toxicology and Chemistry (SETAC-Europe), April 14–18, 1998 (University of Bordeaux, Bordeaux, France), http://zoology.muohio.edu/oris/TahoePoster.pdf [viewed August 1, 2006].

[56] C. Shaver, D. Morse, and D. O'Leary. 1988. *Air Quality in the National Parks*, report prepared by Energy and Resources Consultants, Inc., NPS Contract No. CX-0001-4-0054 (Washington DC: U.S. Department of the Interior, National Park Service, Air Quality Division, 1998).

[57] M. D. Einarson, "Impacts to South Lake Tahoe Water Supply Wells Resulting from Non-Point Sources of MTBE," prepared for Groundwater Resources Association of California, 2002.

can emit more pollution in a single hour than a modern car does in a year. Even though four strokes emit lower amounts of pollutants, they emit more than an automobile.[58]

Because of inconsistencies in management between National Forests and the effects of OHVs on the resource and non-OHV users of the Forests, a petition was submitted to the Forest Service on November 2, 2005 by dozens of environmental organizations and individuals calling for better and more consistent management[59]. Some National Forests are banning them altogether as inconsistent with the management imperative of that agency. That petition presents Forest Service case studies and other research pertinent to the issue. The Wildlands Center for Preventing Roads has an extensive bibliography of the research regarding the effects of OHVs and its website provides a discussion, press release and summary of the petition[60]. Agencies must review all this information in their analyses in order to meet their obligation under NEPA to take a "hard look" at the effects of its actions.

Conservation of Energy and Global Climate Change: The President has called for conservation to save energy as our dependence on foreign oil has become a national security issue. The series of reports from the International Panel of Climate Change shows global warming is almost completely related to human activities, especially consumption of fossil fuels and agriculture with livestock providing some 18% of greenhouse gases. Agencies must address these issues. How many acres of Public Land, its water and wildlife are degraded just to support these "Thrillcraft"? Where is the analysis of energy savings or costs from activities permitted by Federal Agencies? Continuing to permit these unmanageable and destructive fuel-consuming uses that were not envisioned in the Multiple Use and Sustained Yield Act is counter to our national interest as described by the President and is irresponsible in view of the current state of knowledge regarding climate change and its devastating impacts[61].

Roadless Areas, Motorized Habitat Fragmentation and Ecological Impacts: There have been numerous publications on the effects of roads on noise, pollution, wildlife and the benefits of roadless areas. 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 to hunters and trappers who can use them in summer and winter to damage environmental resources, loot archaeological sites, and kill predators, birds, or other mammals for sport. Motorized vehicles, motorcycles and snowmobiles, with their ability to travel large distances cross-country bring these same impacts along whether there is a maintained trail or not. 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[62,63]. When roads and increased human

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[58] Based on California Air Resources Board Data, January 5, 1999, www.arb.ca.gov.
[59] http://www.alleghenydefense.org/alleghenywild/docs/Attachment_9.pdf
[60] http://www.wildlandscpr.org/
[61] http://www.eemsonline.co.uk/press_releases/02-02-07?s=wndscl4ow8w4ka2
[62] 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.
[63] Trombulak, S. C. & C. A. Frissell. 2000. The ecological effects of roads on terrestrial and aquatic communities: a review. Conservation Biology 14:18-30

activity and noise fragment habitats, breaking large areas into smaller areas, they no longer retain their original functions and begin losing species, including those that are wide-ranging[64, 65, 66, 67, 68]. 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.[69, 70] 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 WWF for global biodiversity importance[71].

In general roadless areas in these exceptionally diverse regions were found to provide many ecological benefits compared to roaded landscapes, including: relatively high levels of intact late-seral/old-growth forests; essential habitat for many species of conservation concern; buffer areas from exotic species invasions and edge effects; landscape and regional connectivity; areas most likely to have fire regimes operating within natural bounds; essential habitat for species key to the recovery of forests following disturbance such as herbaceous plants, lichens, and mycorrhizal fungi; habitat refugia for threatened species and those with restricted distributions such as endemics; aquatic strongholds for salmonids; undisturbed habitats for mollusks and amphibians; remaining pockets of old-growth forests; overwintering habitat for resident birds and ungulates; and dispersal "stepping stones" for wildlife movement across fragmented landscapes.[72, 73]

Extensive literature on the effects of motorized routes on ecosystem processes has also shown many negative consequences, especially in arid environments. These include increased erosion, habitat destruction, soil and water pollution, noise pollution, exotic invasions, and wildlife disturbance,

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

[65] 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.

[66] 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

[67] 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.

[68] 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.

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

[70] 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.

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

[72] R. L. DeVelice and J. R. Martin, "Assessing the Extent to Which Roadless Areas Complement the Conservation of Biological Diversity," Ecological Applications 11, no. 4 (2001): 1008-1018

[73] C. Loucks, N. Brown, A. Loucks, and K. Cesareo, "USDA Forest Service Roadless Areas: Potential Biodiversity Conservation Reserves," Conservation Ecology 7, no. 2 (2003): 5, http://www.consecol.org/vol7/iss2/art5/.

elimination and dispersion (Andrews 1990[74], Brown 1994[75], Dittmer and Johnson 1975[76], Forman and Hersperger 1996[77], Forman and Alexander 1998[78], Gelbard 1999[79], Harris and Gallagher 1989[80], Iverson et al. 1981[81], Langton 1989[82], Miller et al. 1996[83], Montgomery 1994[84], Oxley et al. 1974[85], Schmidt 1989[86]). Within Salt Creek in Canyonlands, impacts from motorized routes were documented on the distribution and abundance of small mammals, plants, and aquatic organisms, as well as increases in sedimentation from road crossings and interruption in the continuity of riparian wetlands (Mitchell and Woodward, 1993[87]).

Vehicle travel within streams, and resulting sedimentation and turbidity, may affect macroinvertebrate diversity and abundance (Carothers 2001[88]). Differences in aquatic invertebrate species richness were attributed to the presence of roads within Salt Creek, Canyonlands NPS (Wolz and Shizowa 1995[89], Schelz

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[74] Andrews, A. 1990. Fragmentation of habitat by roads and utility corridors: a review. Aust. J. Zool. 26:130-141

[75] Brown, K.J. 1994. River-bed sedimentation caused by off road vehicles at river fords in the Victorian Highlands, Australia. Water Res. Bull. 30:239-50

[76] Dittmer, M., and A.A. Johnson. 1975. Impacts of high-intensity rainstorms on low-volume roads and adjacent land. Transportation Research Board Special Report, (160) Pp. 82-91

[77] Forman, Richard T.T., Anna M. Hersperger. 1996. Road ecology and road density in different landscapes, with international planning and mitigation solutions. In: Trends in addressing transportation related wildlife mortality. Evink, G.L., P. Garrett, D. Zeigler and J. Berry, eds. Florida Department of Transportation, Tallahassee, Florida. 1996. Pps. 1-22

[78] Forman, Richard T.T., L.E. Alexander. 1998. Roads and Their Major Ecological Effects. Annu. Rev. Ecol. Syst. 29: 207-31

[79] Gelbard, Jonathon L. 1999. Multiple-scale causes of exotic plant invasions in rangelands of the Colorado Plateau and Great Basin, USA. M.S. Thesis, Nichols School of the Environment, Duke University. 71 pp

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[81] Iverson, R.M., B.S. Hinckley, and R.M. Webb. 1981. Physical Effects of Vehicular Disturbance on Arid Landscapes. Science v.212:915-917

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[85] Oxley, D.J., M.B. Fenton, G.R. Carmody. 1974. The effects of roads on populations of small mammals. J. Applied Ecology 11:51-59

[86] Schmidt, W. 1989. Plant dispersal by motor cars. Vegetation 80:147-152

[87] Mitchell, S., and B. Woodward. 1993. Man's effects on aquatic and riparian organisms in the canyons of Canyonlands and Arches National Parks and Natural Bridges National Monument. Rock Springs, Wyoming: Western Wyoming College

[88] Carothers, S.W. 2001. An Evaluation of Off-Road Vehicle Use within the Riparian Corridor of Salt Creek, Needles District, Canyonlands National Park, Utah. Unpublished report to NPS. National Park Service, Monticello, Utah

[89] Wolz, E.R. and D. K. Shiozawa. 1995. Aquatic macroinvertebrates of the Needles District, Canyonlands National Park, Utah (including Lost Canyon, Salt Creek, Big Spring Canyon, and Squaw Canyon). Provo, Utah: Brigham Young University

Salt Creek Report 2001[90]). Additionally riparian cover, volumes and heights of vegetation decreased along roaded segments due to mechanical disturbance and down-cutting of the road which resulted in soil erosion and lowering of the riparian water table (Schelz Salt Creek Report 2001). Vegetative recovery, both in uplands and riparian areas is highly dependent upon the re-stabilization of soil (Iverson et al. 1981[91], Iverson 1979[92]). Trampling, compaction, and shear forces from vehicles resulted in destruction of wetland meadows within Salt Creek, thereby increasing associated stream energies which become confined and channelized, creating deep wide stream channels from erosion and downcutting, further reducing the functioning of the wetland with respect to sediment filtration, groundwater recharge, site stability, and ability to support greater biodiversity (Schelz, Salt Creek Report 2001, Statzner et al. 1988[93]). To the extent that motorized vehicles result in increased accessibility of pedestrian related recreation, increased disturbances to raptor and other birds have been documented (Belanger and Bedard 1989[94], McGarigal et al. 1991[95], Holmes et al. 1993[96], USDI Middle Salt Creek Canyon EA 2002). Schelz (2001)[97] calculated that potential breeding bird density may be reduced due to the reduction in vegetation volume represented by the width of the road corridor. Reptiles are also susceptible to direct vehicle impacts, and have been observed crushed in the roadway (Graham 2001)[98].

Road densities and effects on wildlife must be analyzed. Researchers, including those with the Forest Service have documented the effects of roads and OHVs on wildlife and the benefits of roadless areas. For example, Gilbert[99], Noss[100] and Wisdom et al[101] describe the detrimental effects of road density and human activity on large mammals causing large displacements away from roads and mechanized activity.

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[90] Schelz, C., M. Moran and D. Silva. 2001. Total vegetation volume and total breeding bird density in Salt Creek, Needles District, Canyonlands National Park. Unpublished NPS report. National Park Service, Monticello, Utah

[91] Iverson, R. M., B. S. Hinckley, R. M. Webb, and B. Hallet. 1981. Physical effects of vehicular disturbances on arid landscapes. *Science* 212:915-916.

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[99] 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.

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

[101] 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.

A recent publication by the National Park Service discussed the effects of snowmobiles on wildlife[102]. Agency researchers at UC Davis have suggested an integrated approach for addressing Canada lynx linkage corridors[103]. 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 must be completed.

Other impacts to soils and vegetation include findings that soils under snow compacted by snowmobiles were colder than unpacked snow, leading to a decrease in soil bacteria, which can affect seed vernalization, seed dispersal, spring germination and changes in plant species distribution, density and productivity[104]. If snow cover is limited, then snowmobiles and other OHVs can impact small trees and shrubs causing damage, deformities and a decline in vigor or death[105].

The discussion above describes these effects and provides numerous sources of scientific information that should be taken into account. In addition, a number of studies have documented adverse impacts of off-road vehicles on wildlife species. These include displacement from preferred habitats, increased stress and increased use of scarce energy reserves to flee from approaching vehicles. By compacting snow, snowmobiles create travel routes that can affect species distribution, movement, habitat use patterns and population dynamics. These same routes can become barriers to subnivean animals by fragmenting their habitat[106]. Motorized use (by snowmobiles) results in impacts to animals in Yellowstone and other national parks with animals in areas of snowmobile activity exhibiting elevated stress hormones when compared with those in areas where snowmobiles were absent. In a comparison between wolves at Voyageurs National Park in Minnesota, where snowmobiles are allowed, to Isle Royale National Park in Michigan, where they are banned, wolves exhibited higher stress hormones in areas with snowmobile activity. The stress hormone increased as snowmobiling intensity rose, almost doubling in areas with heavy snowmobile use[107].

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

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

[104] W. J. Wanek, "Snowmobiling Impact on Vegetation, Temperatures and Soil Microbes," in *Snowmobile and Off-Road Vehicle Research Symposium Proceedings*, Technical Report No. 8 (Department of Park and Recreation Resources, Michigan State University, Lansing, MI, 1971), 117–130.

[105] W. J. Wanek and L. H. Schumacher. "A Continuing Study of the Ecological Impact of Snowmobiling in Northern Minnesota," final report (Center for Environmental Studies, Bemidji State College, Bemidji, MN, 1975).

[106] T. Olliff, K. Legg, and B. Kaeding, eds, Effects of Winter Recreation on Wildlife of the Greater Yellowstone Ecosystem: A Literature Review and Assessment. Report to the Greater Yellowstone Coordinating Committee (Yellowstone National Park, WY, 1999).

[107] S. Creel et al., "Snowmobile Activity and Glucocorticoid Stress Responses in Wolves and Elk," *Conservation Biology* 16, no. 3 (2002): 809–814.

Noise itself has detrimental effects to wildlife, creating stress, loss of hearing, and early emergence from hibernation resulting in death.[108, 109] Scientists studying coyotes have determined that coyote use of packed trails or roads allows them access that would be otherwise difficult or impossible into areas that are habitat for Canada lynx, where they prey on snowshoe hares which are preferred by lynx, a threatened species as well as goshawk, a MIS[110]. An evaluation of these interrelated effects on these predators, their prey and habitat requirements must be included.

In conclusion, please keep our organizations fully informed of all further developments on the Winschell Dugway project.

Sincerely,

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[108] A. Anthony and E. Ackerman, "Biological Effects of Noise in Vertebrate Animals," Technical Report 57-647, Wright Air Development Center, Wright-Patterson Air Force Base, OH, 1957
[109] B, H. Brattstrom and M. C. Bondello, "Effects of Off-Road Vehicle Noise on Desert Vertebrates," in *Environmental Effects of Off -Road Vehicles: Impacts and Management in Arid Regions*, eds. R. H. Webb and H. G. Wilshire (New York: Springer-Verlag, 1983).
[110] Dr. Barrie Gilbert, personal communication