June 25, 2019

Objection Reviewing Officer
USDA Forest Service Intermountain Region
324 25th Street
Ogden, Utah 84401

Subject: Crow Creek Pipeline Project

Transmitted via email to: **objections-intermtn-regional-office@fs.fed.us**

Pursuant to 36 CFR Part 218, Yellowstone to Uintas Connection files this Objection to the Final Environmental Impact Statement (FEIS) and Draft Record of Decision (Draft ROD) for the Crow Creek Pipeline Project (hereinafter "Crow Creek project"). The Crow Creek project is proposed for the Montpelier Ranger District, Caribou-Targhee National Forest (CTNF) and the Responsible Official is Forest Supervisor Mel Bolling.

Yellowstone to Uintas Connection is a 501c3 non-profit entity working to restore fish and wildlife habitat including the Regionally Significant Wildlife Corridor connecting the Greater Yellowstone Ecosystem to the Uintas Mountains and Southern Rockies through the application of science, education and advocacy.

Through the years Yellowstone to Uintas Connection and our members have observed the steady destruction and degradation of the natural character, water quality, and wildlife habitat integrity of the Regionally Significant Wildlife Corridor from human developments including energy development, mining, livestock grazing, motorized recreation, and logging on public and private land.

Yellowstone to Uintas Connection would be directly affected by this project and past and ongoing actions or inaction by the Forest Service (FS), as well as the consequences of other connected and cumulative actions the FS has authorized on national forest land. The Crow Creek project would directly and significantly harm Yellowstone to Uintas Connection and our members, who use the CTNF for quiet recreation, enjoyment of the natural world, and other forest related activities. The proposed activities would adversely impact and harm the natural qualities of the project area, and would further degrade the watersheds and wildlife habitat.

The Draft ROD's selected alternative is the FEIS's Alternative 2 "with one routing exception." As described in the FEIS the selected alternative:

> …proposes to construct, operate, and maintain a 12-inch or less outside diameter, high pressure natural gas pipeline to be installed across NFS land with a 50-foot construction (temporary) right-of-way (ROW) width (25-foot construction (temporary) width in wetlands and aquatic influence zones), a 20-foot wide permanent ROW, and to establish a 20-foot wide utility corridor for the permanent ROW.
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> The proposed pipeline also would require the creation of a utility corridor and subsequent Caribou National Forest Revised Forest Plan (hereinafter "RFP" or "Forest Plan")

Amendment as well as the issuance of a Special Use Permit Authorization (SUA) to LVE from the USFS for a pipeline ROW across National Forest System (NFS) lands.

The pipeline route analyzed under Alternative 2 (refer to page 2-18 of the EIS for a full description) would be 49.1 miles in length and would cross NFS, Bureau of Land Management lands, State lands, and private lands.

Yellowstone to Uintas Connection submitted comments on the Draft EIS (DEIS) on both November 21, 2018 and November 23, 2018. We fully incorporate those previous comments within this Objection, and offer the following additional discussion and request for remedy.

INTRODUCTION

A recent Media Release entitled "Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating'" from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services accompanies their latest Global Assessment report. The Media Release (Attachment 1) states, "Nature is declining globally at rates unprecedented in human history—and the rate of species extinctions is accelerating, with grave impacts on people around the world now likely…" IPBES Chair, Sir Robert Watson states, "The health of ecosystems on which we and all other species depend is deteriorating more rapidly than ever. We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide."

The Global Assessment report is also the subject of an article in The Guardian entitled "Human society under urgent threat from loss of Earth's natural life." (Attachment 2)

Within this context, the U.S. Forest Service continues with business as usual, refusing to throw off the shackles politically installed by financially vested interests.

ALTERNATIVES

This issue was raised on pages 1-2 of our 11/21/2018 comments and page 2 of our 11/23/2018 comments.

The project is said to be necessary for providing more reliable natural gas transmission to Afton, Wyoming in recognition that supplier plant operational problems can persist for a few days to a week. However the FEIS failed to fully analyze a reasonable range of alternatives to meet this need.

We asked the FS to include an alternative exploring creation of adequate central storage in Afton to supply the needs during these operational problem periods and address predicted long term demand.

In failing to do so, the FS also did not consider an alternative that fully avoids, minimizes, and mitigates significant impacts to wildlife and wildlife habitat.

We also emphasized that a key issue should be reducing the number of Lower Valley Energy (LVE) customers who use Liquefied Natural Gas (LNG) or natural gas and increasing the number of customers that use renewable energy, consistent with LVE's renewable energy program. Such an alternative would reduce air quality and climate change impacts.

The FEIS's range of alternatives does not comply with NEPA's mandate to consider reasonable alternatives to proposed management actions.

MITIGATION NOT ADEQUATE

This issue was raised on pages 2-4 of our 11/21/2018 DEIS comments and page 7 of our 11/23/2018 comments. In sum, the proposed 20 miles of pipeline would cross Inventoried Roadless Areas (IRAs) resulting in landscape scars that the FS has not proven it can prevent from being virtually permanent.

The project would create the situation whereby continuous or periodic maintenance would result in pipeline Right of Way (ROW) disturbance which would facilitate unauthorized motorized travel across all four seasons, increase dispersed camping, facilitate livestock movement into terrain otherwise inaccessible, and other actions that fragment and adversely affect wildlife habitat and wild character of the IRAs. The FEIS does not take a hard look at such connected, indirect, and cumulative impacts, including impacts on the potential of these IRAs to maintain Roadless Characteristics or Wilderness eligibility.

The FS is already unable to adequately prevent illegal motorized intrusions, and fails to analyze and disclose mitigations that would prevent furthering this unacceptable situation.

Soil and vegetation disturbance in other areas has proven to persist indefinitely, and the FEIS fails to propose ways for this to be avoided or at least mitigated to a large degree.

REGIONALLY SIGNIFICANT WILDLIFE CORRIDOR INCLUDING CUMULATIVE EFFECTS OF OTHER ACTIVITIES

This issue was raised on pages 4-6 and 8 of our 11/21/2018 DEIS comments.

The Forest Plan FEIS states:

> Most of the efforts to date to map corridors have focused on large-scale dispersal corridors generally from the Northern Rockies (Glacier NP) to the Greater Yellowstone Ecosystem. The USFWS, in efforts to conserve large carnivores in the Northern Rocky Mountains, has developed the concept of linkage zones. The linkage zone is an area between habitat fragments able to support both movement and low-density occupancy. The distinction between linkage zone and corridor is the width of habitat—that is the ability to support low density occupancy by species (Samson et a, 1997).

> Ruediger, et al, 2000 drafted map titled "IGBC Wildlife Habitat Linkage in the Northern Rocky Mountains." This map also includes the northeastern portion of the Caribou in the mapped north-south linkage zone. Other agencies and groups have done mapping as well.
>
> …In May 2000, meeting was held with several state and federal agencies as well as other interested groups, to discuss developing common criteria to help identify linkages of highest importance (Ruediger, 2000). They recommended factors to consider when identifying wildlife habitat linkages; 1) consider all scales, 2) landforms and topography are important, mountain passes, river bottoms and major ridges are often natural movement corridors, 3) vegetation is important, many species use forested areas for cover, 4) quality of habitat is important, 5) areas with low road densities and low levels of human use are important, 6) need data and 7) maintain large intact blocks of habitat (Ruediger, 2000)
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> …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 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.

Despite recognizing the significance of this Regionally Significant Wildlife Corridor in the Forest Plan, the FS almost continuously authorizes management and other actions that degrade the natural qualities, without ever analyzing and disclosing the cumulative impacts of all these authorized projects on the values this Corridor represents.

As our DEIS comments stated, although Corridor habitat will be altered and wildlife killed or harmed, the FS's position is essentially that there is habitat elsewhere and populations will persist. But the DEIS does nothing to quantify this other habitat or maintain the function of the corridor or to support viable populations of fish and wildlife.

The Forest Plan states, "Some roadless areas act as refugia for declining, rare, and listed species. These species may not be able to maintain viable populations in other areas of the Forest where management activities are evident."

The FS recognizes no quantitative, scientific, or otherwise meaningful thresholds for population viability. Schultz (2010) concludes that "the lack of management thresholds allows small portions of habitat to be eliminated incrementally without any signal when the loss of habitat might constitute a significant cumulative impact." In the absence of meaningful thresholds of habitat loss and no monitoring of wildlife populations at the Forest level, projects will continue to degrade habitat across the CTNF over time. (See also Schultz 2012.)

The Forest Plan states:

> The fish and wildlife resource regulation [36 CFR 219.19] is one part of the planning regulation to provide for viability within multiple use objectives. …Through 36 CFR 219.19 and other provisions of the planning regulations, Forest Plans provide for viability

> of vertebrate communities within multiple use objectives. The Forest Service uses the planning process and ongoing monitoring, evaluation and adjustment of fish, wildlife, and rare plant standards to prevent listing of species under the Endangered Species Act and avoid extirpation of species from its actions.

Traill et al., 2010 and Reed et al., 2003 are published, peer-reviewed scientific articles addressing how "minimum viable populations" can be estimated, and how they have been drastically underestimated in past. The FEIS fails to identify the best available science to make quantitative minimum viable population determinations for wildlife species on the CTNF.

Traill et al., 2010 state:

> To ensure both long-term persistence and evolutionary potential, the required number of individuals in a population often greatly exceeds the targets proposed by conservation management. We critically review minimum population size requirements for species based on empirical and theoretical estimates made over the past few decades. This literature collectively shows that thousands (not hundreds) of individuals are required for a population to have an acceptable probability of riding-out environmental fluctuation and catastrophic events, and ensuring the continuation of evolutionary processes. The evidence is clear, yet conservation policy does not appear to reflect these findings, with pragmatic concerns on feasibility over-riding biological risk assessment. As such, we argue that conservation biology faces a dilemma akin to those working on the physical basis of climate change, where scientific recommendations on carbon emission reductions are compromised by policy makers. There is no obvious resolution other than a more explicit acceptance of the trade-offs implied when population viability requirements are ignored. We recommend that conservation planners include demographic and genetic thresholds in their assessments, and recognise implicit triage where these are not met.

Assuring viability of most wildlife species is forestwide issue. The cumulative effects of carrying out multiple projects simultaneously across a national forest makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992; also see Ruggiero et al., 1994a). Since the FS fails to include strong, science-based commitments to manage the habitat for all species of concern, the agency fails to comply with NFMA's diversity requirements.

A large part of this failure is that of monitoring. The DEIS has little or no discussion of the results of Forest Plan Implementation monitoring (Forest Plan Chapter 5). This hampers understanding of cumulative impacts—and renders impossible a proper cumulative effects analysis. 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 FEIS fails to disclose that this "essential feature of the plan" is broken, and what that means for understanding the cumulative impacts of management.[1]

The Forest Plan states, "The Forest Service uses the planning process and ongoing monitoring, evaluation and adjustment of fish, wildlife, and rare plant standards to prevent listing of species under the Endangered Species Act and avoid extirpation of species from its actions." The Revised Caribou Travel Plan ROD notes, "Forest Plan monitoring involves both legally required monitoring activities and monitoring that is conducted based on the availability of funding and personnel." That the FS is unable to show that "legally required monitoring" has actually been conducted, or to disclose the evaluation of this monitoring, is troubling. The Revised Caribou Travel Plan ROD states: "Forest Plan monitoring that could indicate adverse impacts to forest resources from road and trail use include:

—Annual reviews of Best Management Practices and updating projects in the Forest's Watershed Improvement Needs Inventory are designed to protect water quality. (RFP 5-3)

—Riparian properly functioning condition will be reevaluated at the stream level by 2008 to determine rate of movement towards desired future conditions. (RFP 5-7)

—Fish habitat is monitored annually where needed to determine if conditions are outside of desired AIZ attributes. (RFP 5-13)

—Wildlife occurrences and territories are monitored to determine if management activities are providing adequate habitat to maintain populations of Management Indicator Species and to assist in recovery of listed species. (RFP 5-15).

—Condition surveys are conducted on system trails per national direction, these includes stream crossings and trails in riparian areas.

—Road and trail closure effectiveness will be monitored, as described in Chapter Two of the FEIS.

The FEIS violates NEPA in terms of failure to provide an explanation of how the project complies with Forest Plan direction, as we point out in a later section of this objection. And because of the failure to monitor as the Forest Plan specifies, the FEIS lacks the foundation upon which a properly thorough cumulative effects analysis might be based.

The FEIS fails to consider best available science regarding road and other motorized route densities, and the toll they exact on the quality of wildlife habitat. This includes impeding or

[1] Additionally, this failure to monitor, evaluate, and report on the effects of Forest Plan implementation makes cumulative effects analyses of most resources discussed in the FEIS inadequate.

impairing migrations, causing otherwise suitable habitat to be avoided, and mortality from hunting, trapping, or vehicle collisions.

Forest Service scientists Gucinski et al. (2001) identify many of the highly adverse impacts of forest roads. Concerning road density impacts on fish populations, they note:

> (I)ncreasing road densities and their attendant effects are associated with declines in the status of four non-anadromous salmonid species. These species are less likely to use highly roaded areas for spawning and rearing and, if found, are less likely to have strong populations. This consistent pattern is based on empirical analysis of 3,327 combinations of known species' status and subwatershed conditions, limited primarily to forested lands administered by the Forest Service and the Bureau of Land Management.

Scientific information from government studies conducted for the Interior Columbia Ecosystem Management Project strongly indicates the high negative correlation between road density and fish habitat conditions. USDA Forest Service & USDI Bureau of Land Management, 1996a state:

> High integrity (forests) contain the greatest proportion of high forest, aquatic, and hydrologic integrity of all …are dominated by wilderness and roadless areas [and] are the least altered by management. …Low integrity (forests have) likely been altered by past management …are extensively roaded and have little wilderness. (Pp. 108, 115 and 116).

And USDA Forest Service & USDI Bureau of Land Management (1996) state "Increasing road density is correlated with declining aquatic habitat conditions and aquatic integrity. [] An intensive review of the literature concludes that increases in sedimentation [of streams] are unavoidable even using the most cautious roading methods." (P. 105).

Carnefix and Frissell, 2009 state:

> Roads have well-documented, significant and widespread ecological impacts across multiple scales, often far beyond the area of the road "footprint". Such impacts often create large and extensive departures from the natural conditions to which organisms are adapted, which increase with the extent and/or density of the road network.

Likewise, Wisdom, et al. (2000) state:

> Our analysis also indicated **that >70 percent of the 91 species are affected negatively by one or more factors associated with roads.** Moreover, maps of the abundance of source habitats in relation to classes of road density suggested that road-associated factors hypothetically may reduce the potential to support persistent populations of terrestrial carnivores in many subbasins. Management implications of our summarized road effects include the potential to mitigate a diverse set of negative factors associated with roads. **Comprehensive mitigation of road-associated factors would require a substantial reduction in the density of existing roads as well as effective control of road access in relation to management of livestock, timber, recreation, hunting, trapping, mineral development, and other human activities.**
>
> **...Efforts to restore habitats without simultaneous efforts to reduce road density and control human disturbances will curtail the effectiveness of habitat restoration, or**

> **even contribute to its failure; this is because of the large number of species that are simultaneously affected by decline in habitat as well as by road-associated factors.** (Emphases added.)

It is important to recognize the ongoing ecological damage of roads—regardless of the adequacy of maintenance funding:

> Undesirable consequences include adverse effects on hydrology and geomorphic features (such as debris slides and sedimentation), habitat fragmentation, predation, road kill, invasion by exotic species, dispersal of pathogens, degraded water quality and chemical contamination, degraded aquatic habitat, use conflicts, destructive human actions (for example, trash dumping, illegal hunting, fires), lost solitude, depressed local economies, loss of soil productivity, and decline in biodiversity. (Gucinski et al., 2001)

Roads influence many processes that affect aquatic ecosystems and fish: human behavior (poaching, debris removal, efficiency of access for logging, mining, or grazing, illegal species introductions), sediment delivery, and flow alterations (Trombulak and Frissell 2000). (Also see: Gucinski et al. 2001; Wisdom et al., 2000; Pacific Rivers Council, 2010.) We also incorporate The Wilderness Society (2014) which discusses best available science on the ecological impacts of roads.

The Forest Service's Travel Management Regulations (TMR) at 36 CFR § 212. At CFR § 212.5, Subpart A the TMR states:

> (b) Road system—(1) *Identification of road system.* For each national forest, national grassland, experimental forest, and any other units of the National Forest System (§ 212.1), the responsible official must identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. In determining the minimum road system, the responsible official must incorporate a science-based roads analysis at the appropriate scale and, to the degree practicable, involve a broad spectrum of interested and affected citizens, other state and federal agencies, and tribal governments. The minimum system is the road system determined to be needed to meet resource and other management objectives adopted in the relevant land and resource management plan (36 CFR part 219), to meet applicable statutory and regulatory requirements, to reflect long-term funding expectations, to ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance.

The "science-based roads analysis" required under Subpart A of the TMR is generally referred to as the "travel analysis process" (TAP). The Forest Service Washington Office, through a series of directive memoranda, instructed forests to use the Subpart A process to "maintain an appropriately sized and environmentally sustainable road system that is responsive to ecological, economic, and social concerns." These memoranda also outline core elements that must be included in each Travel Analysis Report (TAR).

The Washington Office memorandum dated March 29, 2012 (USDA Forest Service, 2012d) directed the following:

- A TAP must analyze all roads (maintenance levels 1 through 5);

• The Travel Analysis Report must include a map displaying roads that will inform the Minimum Road System pursuant to 36 C.F.R. § 212.5(b), and an explanation of the underlying analysis;
• The TAP and Watershed Condition Framework process should inform one another so that they can be integrated and updated with new information or where conditions change.

The December 17, 2013 Washington Office memorandum (USDA Forest Service, 2013b) clarifies that by the September 30, 2015 deadline each forest must:
• Produce a Travel Analysis Report summarizing the travel analysis;
• Produce a list of roads *likely not needed for future use*; and
• Synthesize the results in a map displaying roads that are *likely needed* and *likely not needed in the future* that conforms to the provided template.

The TAP is intended to account for benefits and risks of each road, and especially to account for affordability. The TAP should account for the cost of maintaining roads to standard, including costs required to comply with Best Management Practices related to road maintenance.

The FEIS fails to consider best available science regarding noise impacts on both wildlife and those desiring quiet recreational activities.

SAFETY AND WILDLIFE LOSSES

This issue was raised on page 7 of our 11/21/2018 DEIS comments.

The FS claims that the pipeline would increase safety, but fails to adequately consider the inherently dangerous nature of inevitable or foreseeable pipeline rupture or other operational failures. This violates NEPA's mandate to take a hard look at direct, indirect, and cumulative impacts.

CLIMATE CHANGE

This issue was raised on pages 7-9 of our 11/21/2018 DEIS comments and pages 5-6 of our 11/23/2018 comments.

The FS approves project after project that further reduces the ability of the land to sequester carbon as an ecosystem service. Now we have another, the very purpose of which is to facilitate the combustion of more fossil fuels causing yet more unsustainable carbon dioxide (CO_2) emissions at a time in history when we can ill afford it. The agency is steeped in denial of the consequences of climate change, and of its role in helping to bring it on. FS Project team members should familiarize themselves with the most recent report from the Intergovernmental Panel on Climate Change.

This landmark report from the United Nations' scientific panel on climate change paints a much darker picture of the immediate consequences of climate change than previously thought and

says that avoiding the damage requires transforming the world economy at a speed and scale that has "no documented historic precedent."

The report, issued late last year by the Intergovernmental Panel on Climate Change, a group of scientists convened by the United Nations to guide world leaders, describes a world of worsening food shortages and wildfires, and a mass die-off of coral reefs as soon as 2040—a period well within the lifetime of much of the global population.

The report "is quite a shock, and quite concerning," said Bill Hare, an author of previous I.P.C.C. reports and a physicist with Climate Analytics, a nonprofit organization. "We were not aware of this just a few years ago." The report was the first to be commissioned by world leaders under the Paris agreement, the 2015 pact by nations to fight global warming.

The authors found that if greenhouse gas emissions continue at the current rate, the atmosphere will warm up by as much as 2.7 degrees Fahrenheit (1.5 degrees Celsius) above preindustrial levels by 2040, inundating coastlines and intensifying droughts and poverty. Previous work had focused on estimating the damage if average temperatures were to rise by a larger number, 3.6 degrees Fahrenheit (2 degrees Celsius), because that was the threshold scientists previously considered for the most severe effects of climate change.

The new report, however, shows that many of those effects will come much sooner, at the 2.7-degree mark.

The FS virtually ignores the potential impacts of this change, including but not limited to, increasing business and residential customers' use of fossil fuels and increased population and business development.

The Committee of Scientists, 1999 recognize the importance of forests for their contribution to sustainability and contributing to global carbon cycles. And the 2011 draft NFMA regulations recognize that forests provide "Benefits… including… Regulating services, such as long term storage of carbon; climate regulation…"

How can this national forest be considered "suitable" for activities that contribute to—rather than reduce—the greatest threat to the Earth's biosphere? The present level of CO_2 in Earth's atmosphere is already dangerous and not sustainable under any definition of the word.

Typical of FS NEPA documents, the FEIS has not real analysis of the project's carbon budget. As our DEIS comments stated:

> A proper analysis would determine the capacity of gas delivery from the new pipeline relative to current delivery by truck and calculate the GHG emissions and air quality impacts for both, as well as indirect emissions and impacts.

It is clear that the management of the planet's forest is a nexus for addressing this huge crisis of our times. Yet the FEIS fails to even disclose the amount of CO_2 emissions created by Forest Plan or project implementation, or consider the best available science on the topic. This is immensely unethical.

The FS has never analyzed and disclosed the cumulative effects of overall agency management contributions to the reduction in stored carbon and thus, to climate change. The FEIS fails to provide comprehensive estimates of the total amount of CO_2 or other greenhouse gas emissions caused by FS management actions and policies—forestwide, regionally, or nationally.

The DEIS fails to quantify CO_2 and other greenhouse gas emissions from several other common human activities related to forest management and recreational uses. These include emissions associated with machines used for logging and associated activities, vehicle use for administrative actions, recreational motor vehicles, and most emissions associated with livestock grazing. The Forest Service is simply ignoring the impacts of these management and other authorized activities.

Such greenhouse gas sources can be quantified. Kassar and Spitler (2008) for example, provide an analysis of the carbon footprint of off-road vehicles in California. They determined that:

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

Also, Sylvester, 2014 provides data on the amount of fossil fuel being consumed by snowmobiles in Montana, from which one can calculate the carbon footprint. The study finds that resident snowmobilers burn 3.3 million gallons of gas in their snowmobiles each year and a similar amount of fuel to transport themselves and their snowmobiles to and from their destination. Non-residents annually burn one million gallons of gas in snowmobiles and about twice that in related transportation. So that adds up to 9.6 million gallons of fuel consumed in the pursuit of snowmobiling each year in Montana alone. Multiply that by 20 pounds of carbon dioxide per gallon of gas (diesel pickups spew 22 pounds per gallon) and snowmobiling releases 192 million pounds (96 thousand tons) of climate-warming CO_2 per year into the atmosphere.

Nitrous oxide, a by-product generated by the microbial breakdown of nitrogen in livestock manure, is a potent greenhouse gas. Also, the digestion of organic materials by livestock is a large source of methane emission—another greenhouse gas. Methane is a far more potent substance than CO_2 causing climate change.

Gerber, et al., 2013 state, "Livestock producers, which include meat and dairy farming, account for about 15 percent of greenhouse gas emissions around the world. That's more than all the world's exhaust-belching cars, buses, boats, and trains combined."

Saunois et al., 2016a note "the recent rapid rise in global methane concentrations is predominantly biogenic—most likely from agriculture—with smaller contributions from fossil fuel use and possibly wetlands. …Methane mitigation offers rapid climate benefits and economic, health and agricultural co-benefits that are highly complementary to CO_2 mitigation." Also see Saunois et al., 2016b; Gerber et al., 2013.

Kutsch et al., 2010 provide an integrated view of the current and emerging methods and concepts applied in soil carbon research. They use a standardized protocol for measuring soil CO_2 efflux, designed to improve future assessments of regional and global patterns of soil carbon dynamics. The authors state:

> Excluding carbonate rocks, soils represent the largest terrestrial stock of carbon, holding approximately 1,500 Pg (1015 g) C in the top metre. This is approximately twice the amount held in the atmosphere and thrice the amount held in terrestrial vegetation. Soils, and soil organic carbon in particular, currently receive much attention in terms of the role they can play in mitigating the effects of elevated atmospheric carbon dioxide (CO_2) and associated global warming. Protecting soil carbon stocks and the process of soil carbon sequestration, or flux of carbon into the soil, have become integral parts of managing the global carbon balance. This has been mainly because many of the factors affecting the flow of carbon into and out of the soil are affected directly by **land-management practices**. (Emphasis added.)

As mentioned in our DEIS comments, in recognition of the current and coming changes to climate with longer, drier periods and drought, the FS has implemented a Roadmap to address climate change. This roadmap provides guidance, 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.

Yet the FS fails to cite or adhere to these principles in the FEIS.

Also cited in our DEIS comments, the National Fish, Wildlife and Plants Climate Adaptation Strategy proposed by the USFWS, 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.

CANADA LYNX

This issue was raised on pages 9-10 of our 11/21/2018 DEIS comments. We include the following additional discussion.

Lynx are highly mobile and generally move long distances [greater than 60 mi. (100 km.)]; they disperse primarily when snowshoe hare populations decline; subadult lynx disperse even when prey is abundant, presumably to establish new home ranges; and lynx also make exploratory movements outside their home ranges. 74 Fed. Reg. at 8617. The contiguous United States is at the southern edge of the boreal forest range, resulting in limited and patchy forests that can support snowshoe hare and lynx populations.

The FEIS states: "No Canada lynx or lynx sign was observed during winter track surveys conducted for nearby projects (i.e. Dairy Syncline Mine, East Smoky Mine) in 2008, March 2011, March 2014, and April 2014 (JBR 2012 and Stantec 2016). Likewise, tracking surveys were conducted in the Study Area in March 2018, with no observations or sign of Canada lynx (Stantec 2018a)." The FS fails to consider the likelihood that management and other human actions have degraded habitat quality to the degree that lynx mostly avoid the habitat, or that even if the habitat might be suitable, the surrounding landscapes have been impacted to the degree that migration into or through the project area is diminished. The FEIS fails to provide an adequate analysis of the cumulative impacts on this imperiled species—one that would acknowledge the uncertain population viability on the CTNF, and thus provide the basis for a conservation strategy based upon best available science.

The FEIS acknowledges:

> The Montpelier Ranger District, including the study area, has been identified as potential linkage habitat between the "core" Canada lynx habitat in Bridger-Teton National Forest and "peripheral" habitat in the Ashley National Forest in Utah (USFS 2003b; USFS 2007). This potential linkage habitat does not contain boreal forest and would likely be used for movement only. IFWIS records contain one observation of a female lynx with two cubs in August 2005 two miles southeast of the Blackfoot River Narrows. These individuals were believed to be transplants from Colorado that were moving back northwards (USFS 2018a).

Still, the FS has no cogent conservation strategy nor does the Forest Plan include habitat standards for protecting Canada lynx and its habitat in corridors/linkage areas.

The current best science indicates that lynx winter foraging habitat is critical to lynx persistence (Squires et al. 2010), and that this habitat should be "abundant and well-distributed across lynx habitat." (Squires et al. 2010; Squires 2009.) Squires et al., 2010 also noted that in heavily managed landscapes, retention and recruitment of lynx habitat should be a priority.

Existing openings such as clearcuts not yet recovered are likely to be avoided by lynx in the winter. (Squires et al. 2010; Squires et al. 2006a.)

Squires et al. (2013) noted that long-term population recovery of lynx, as well as other species as the grizzly bear, require maintenance of short and long-distance connectivity. The FEIS and Forest Plan do not include scientifically-based direction that would protect connectivity between Lynx Analysis Units (LAUs).

Lynx winter habitat, provided only in older, multi-storied forests, is critical for lynx preservation. (Squires et al. 2010.) Winter is the most constraining season for lynx in terms of resource use;

starvation mortality has been found to be the most common during winter and early spring. (Squires et al. 2010.) Prey availability for lynx is highest in the summer. (Squires et al. 2013.)

Openings, whether small in uneven-aged management, or large with clearcutting, remove lynx winter travel habitat on those affected acres, since lynx avoid openings in the winter. (Squires et al. 2010.)

Kosterman, 2014 found that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. Young regenerating forest should occur only on 10-15% of a female lynx home range, i.e. 10-15% of an LAU.

Holbrook, et al., 2018 "used univariate analyses and hurdle regression models to evaluate the spatio-temporal factors influencing lynx use of treatments." Their analyses "indicated …there was a consistent cost in that lynx use was low up to ~10 years after all silvicultural actions." From their conclusions:

> First, we demonstrated that lynx clearly use silviculture treatments, but there is a ~10 year cost of implementing any treatment (thinning, selection cut, or regeneration cut) in terms of resource use by Canada lynx. This temporal cost is associated with lynx preferring advanced regenerating and mature structural stages (Squires et al., 2010; Holbrook et al., 2017a) and is consistent with previous work demonstrating a negative effect of precommercial thinning on snowshoe hare densities for ~10 years (Homyack et al., 2007). Second, if a treatment is implemented, Canada lynx used thinnings at a faster rate post-treatment (e.g.,~20 years posttreatment to reach 50% lynx use) than either selection or regeneration cuts (e.g., ~34–40 years post-treatment to reach 50% lynx use). Lynx appear to use regeneration and selection cuts similarly over time suggesting the difference in vegetation impact between these treatments made little difference concerning the potential impacts to lynx (Fig. 4c). Third, Canada lynx tend to avoid silvicultural treatments when a preferred structural stage (e.g., mature, multi-storied forest or advanced regeneration) is abundant in the surrounding landscape, which highlights the importance of considering landscape-level composition as well as recovery time. For instance, in an area with low amounts of mature forest in the neighborhood, lynx use of recovering silvicultural treatments would be higher versus treatments surrounded by an abundance of mature forest (e.g., Fig. 3b). This scenario captures the importance of post-treatment recovery for Canada lynx when the landscape context is generally composed of lower quality habitat. Overall, these three items emphasize that both the spatial arrangement and composition as well as recovery time are central to balancing silvicultural actions and Canada lynx conservation.

The FEIS also fails to adequately consider the cumulative impacts on lynx due to trapping or from use of the road and trail networks in the CTNF.

WOLVERINE

This issue was raised on pages 10-12 of our 11/21/2018 DEIS comments.

The FEIS notes "multiple recent observations have occurred in southeast Idaho and presence of wolverine within/adjacent to the study area is possible (USFS 2018a)." Therefore, the FS must conduct Section 7 consultation with U.S. Fish and Wildlife Service (USFWS) regarding wolverine, proposed for listing under the Endangered Species Act (ESA), and describe the results of consultation in the FEIS. The FEIS contains no discussion of this consultation process.

Wolverines use habitat ranging from Douglas-fir and lodgepole pine forest to subalpine whitebark pine forest (Copeland et al., 2007). Lofroth (1997) in a study in British Columbia, found that wolverines use habitats as diverse as tundra and old-growth forest. Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter (USDA Forest Service, 1993).

Aubry, et al. 2007 note that wolverine range in the U.S. had contracted substantially by the mid-1900s and that extirpations are likely due to human-caused mortality and low to nonexistent immigration rates.

May et al. (2006) cite: "Increased human development (e.g. houses, cabins, settlements and roads) and activity (e.g. recreation and husbandry) in once remote areas may thus cause reduced ability of wolverines to perform their daily activities unimpeded, making the habitat less optimal or causing wolverines to avoid the disturbed area (Landa & Skogland 1995, Landa et al. 2000a)."

Ruggiero, et al. (2007) state: "Many wolverine populations appear to be relatively small and isolated. Accordingly, empirical information on the landscape features that facilitate or impede immigration and emigration is critical for the conservation of this species."

Roads result in direct mortality to wolverines by providing access for trappers (Krebs et al., 2007). Trapping was identified as the dominant factor affecting wolverine survival in a Montana study (Squires et al. 2007). Female wolverines avoid roads and recently logged areas, and respond negatively to human activities (Krebs et al., 2007)

Ruggiero et al. (1994b) recognized that "Over most of its distribution, the primary mortality factor for the wolverines is trapping." Those authors also state, "Transient wolverines likely play a key role in the maintenance of spatial organization and the colonization of vacant habitat. Factors that affect movements by transients may be important to population and distributional dynamics."

Roads and human density are important factors influencing current wolverine distribution (Carroll et al. 2001b); and wolverine habitat selection is negatively correlated with human activity, including roads (Krebs et al. 2007). Wolverine occurrence has shown a negative relationship with road densities greater than 2.8 mi/mi^2 (1.7 km/km^2) (Carroll et al. 2001b).

(T)he presence of roads can be directly implicated in human-caused mortality (trapping) of this species. Trapping was identified as the dominant factor affecting wolverine survival in a Montana study (Squires et al., 2007).

Krebs et al. (2007) state, "Human use, including winter recreation and the presence of roads, reduced habitat value for wolverines in our studies."

Results from Scrafford et al., 2018:

> …show that roads, regardless of traffic volume, reduce the quality of wolverine habitats and that higher-traffic roads might be most deleterious. We suggest that wildlife behavior near roads should be viewed as a continuum and that accurate modeling of behavior when near roads requires quantification of both movement and habitat selection. Mitigating the effects of roads on wolverines would require clustering roads, road closures, or access management."

Wisdom et al. (2000) state:

> Carnivorous mammals such as marten, fisher, lynx, and wolverine are vulnerable to over-trapping (Bailey and others 1986, Banci 1994, Coulter 1966, Fortin and Cantin 1994, Hodgman and others 1994, Hornocker and Hash 1981, Jones 1991, Parker and others 1983, Thompson 1994, Witmer and others 1998), and over-trapping can be facilitated by road access (Bailey and others 1986, Hodgman and others 1994, Terra-Berns and others 1997, Witmer and others 1998).
>
> …Snow-tracking and radio telemetry in Montana indicated that wolverines avoided recent clearcuts and burns (Hornocker and Hash 1981).
>
> Copeland (1996) found that human disturbance near natal denning habitat resulted in immediate den abandonment but not kit abandonment. Disturbances that could affect wolverine are heli-skiing, snowmobiles, backcountry skiing, logging, hunting, and summer recreation (Copeland 1996, Hornocker and Hash 1981, ICBEMP1996f).

Carroll et al. (2001b) state:

> The combination of large area requirements and low reproductive rate make the wolverine vulnerable to human-induced mortality and habitat alteration. Populations probably cannot sustain rates of human-induced mortality greater than 7–8%, lower than that documented in most studies of trapping mortality (Banci 1994, Weaver et al. 1996).
>
> … (T)he present distribution of the wolverine, like that of the grizzly bear, may be more related to regions that escaped human settlement than to vegetation structure.

Given the uncertain status of wolverine within the United States and elsewhere, there is growing concern regarding the potential negative effects of winter recreation on wolverine and particularly in areas potentially used by female wolverine for reproductive denning (Carroll et al. 2001, Rowland et al. 2003, May et al. 2006, Copeland et al. 2007, Krebs et al. 2007).

Wisdom et al. (2000) offered the following strategies:

- Provide large areas with low road density and minimal human disturbance for wolverine and lynx, especially where populations are known to occur. Manage human activities and road access to minimize human disturbance in areas of known populations.
- Manage wolverine and lynx in a metapopulation context, and provide adequate links among existing populations.
- Reduce human disturbances, particularly in areas with known or high potential for wolverine natal den sites (subalpine talus cirques).

The Forest Plan includes no such scientifically-based strategies for wolverine protection. The Analysis of the Management Situation Technical Report for Revision of the Kootenai and Idaho Panhandle Forest Plans states:

> Direct mortality (related to access) from trapping, legal hunting, and illegal shooting has impacted all wide-ranging carnivores (e.g. lynx, wolverine, grizzly and black bears, wolves)…
> …Wolverine populations may have declined from historic levels, as a result of over-trapping, hunting, habitat changes, and intolerance to human developments. As the amount of winter backcountry recreation increases, wolverine den sites may become more susceptible to human disturbance.

BIG GAME

This issue was raised on page 13 of our 11/21/2018 DEIS comments.

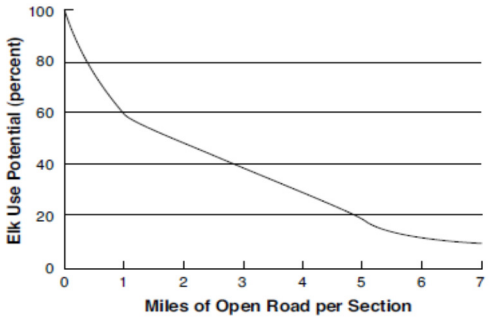
The Forest Plan lays out a process for assessing connectivity (Appendix D-4). That process includes: assessing historic patterns of vegetation and connectivity; assess current patterns and relative connectivity including human disturbance and barriers; compare historic and current patterns and relative connectivity to determine if animal movement opportunities have been significantly interrupted; consider measures to restore these. Little in the FEIS approaches an adequate analysis of such factors.

The Forest Plan FEIS states:

> Thomas, 2000 monitored movements of radio-collared elk from the Tex Creek winter range. Almost half of the elk marked in the study summered in the largely non-motorized area between Bald Mountain and Tincup Creek. He did an analysis and concluded that **by far the greatest concentration of elk is in the area least accessible to motorized vehicles.** (Emphasis added.)

Christensen, et al. (1993) is a FS publication on elk habitat effectiveness. Meeting a minimum of 70% translates to a road density of about 0.75 miles/ mi^2 in key elk habitat, as shown in their graph:

5. Levels of habitat effectiveness:



Motorized access via trail, road, or oversnow adversely impact habitat for elk. Servheen, et al., 1997 indicate that motorized trails increase elk vulnerability and reduce habitat effectiveness, and provide scientific management recommendations.

Hillis et al. (1991) emphasize the importance of a "valid analysis unit" when measuring elk security, in order to be biologically meaningful. They stated that analysis unit boundaries should be defined by the elk herd home range, and more specifically, by the local herd home-range during the hunting season; typically the hunting season elk herd home range would include the transitional range and at least the upper edge of winter range.

Hillis et al. (1991) also includes numerous references to the requirement of hiding cover in security, in addition to the definition of security in the abstract that each security area must be a nonlinear block of hiding cover.

SAGE GROUSE

This issue was raised in much detail on pages 13-16 of our 11/21/2018 DEIS comments. We pointed out that DEIS deficiencies make it impossible for the public or FS to conduct an informed assessment of how potential development might affect recovery efforts for the Eastern Idaho greater sage-grouse population.

In short, cumulative impacts of management on the long term persistence of the regional sage grouse population are not analyzed anywhere. With government planning in process that subverts the direction adopted largely to prevent listing of the sage grouse under the ESA, the FS is obligated to take a much harder look on these cumulative effects and the value of project area habitat as providing key peripheral populations and connectivity between higher quality habitats.

Within this objection we incorporate our comments on the FS's Notice of Intent to prepare Environmental Impact Statement for Amendments to Land Management Plans for Greater Sage-Grouse Conservation for National Forests in Idaho, Montana, Nevada, Utah, Colorado and Wyoming. We likewise incorporate our comments on the Bureau of Land Management's Notice of Intent to Amend Land Use Plans Regarding Greater Sage-Grouse Conservation and Prepare Associated Environmental Impact Statements or Environmental Assessments.

Eastern Idaho greater sage-grouse are notoriously understudied. In 2012, the U.S. Fish and Wildlife Service convened a "Conservation Objectives Team" of Service and state representatives with expertise in greater sage-grouse science and conservation.[2] In 2013, that body issued a Conservation Objectives Team Report (COT Report) evaluating the threats to the species and recommending conservation measures. The COT Report described the East- Central Idaho sage-grouse population as "isolated/small size" and "high risk" with a "low probability of persistence" (COT Report, 22, 76-77). Such a greater sage-grouse population is nevertheless valuable because it helps ensure the species continues to exist by contributing to its redundancy, representation, and resilience. (COT Report, 12). Preserving peripheral populations is essential to arresting the decline of greater sage-grouse toward extinction and Endangered Species Act listing. (COT Report, 12-13).

The COT Report further stated:

> [L]ittle information is available on [East Central Idaho] sage-grouse populations other than some limited location and attendance data on a few leks. No lek routes have been established within this area that would allow consistent monitoring of sage-grouse populations. This lack of data is largely due to very difficult access in most years during winter and spring. COT Report at 76.

This paucity of information about the East-Central Idaho/East Idaho Uplands population of sage-grouse is well known to resource managers. In the Crow Creek pipeline DEIS, it was clear that the pipeline may also affect greater sage-grouse populations in Wyoming and Utah that cross into Idaho, and the pipeline's impacts on Wyoming and Utah sage-grouse were not analyzed. For example, the COT Report states that Wyoming's Star Valley/State Line subpopulation includes two Idaho leks (COT Report, 67). The FEIS does not analyze connectivity between these SE Idaho, Wyoming and Bear Lake Plateau populations or their status.

The National Technical Team Report (NTT) provides analysis and recommendations that should be included in the analysis for this project.[3] Some of these include delineating the types and areas disturbed for leks and nesting areas from industrial development. For example, a 4-mile radius from the disturbance is recommended, while citing a Wyoming study showing impacts up to 11 miles. If one placed these buffers around the leks in SE Idaho, it would increase the area of analysis. Some additional points made in the NTT Report include the causes of decline and their mechanisms, the need for habitat restoration and monitoring. We do not recall seeing any population trend data for leks in the SE Idaho area in development proposals. Listed below are NTT recommended steps:

- Prioritize restoration in seasonal habitats limiting sage grouse distribution and abundance
- Include habitat parameters (cover and height of sagebrush, grasses and forbs) recommended by Connelly et al. (2000) and compare to ecological potential using NRCS Ecological Site Descriptions

[2] The Conservation Objectives Team Report is available at: https://www.fws.gov/greatersagegrouse/documents/COT-Report-with-Dear-Interested-Reader-Letter.pdf.
[3] Sage-grouse National Technical Team. 2011. A Report on National Greater Sage-Grouse Conservation Measures. 74p.

• Use native seeds and restore to ecological potential as the highest priority for restoration efforts
• Design management of livestock grazing and travel management to achieve or maintain conditions to benefit sage grouse
• Conduct population monitoring (lek counts) led by State wildlife agencies even though these have been challenged as inconsistently conducted and biased. However, lek counts appear the best available information on populations over time. Use standardized methodology.
• At landscape level, track percent of sagebrush cover and maturity of stands
• Collect quantitative habitat data (nesting, brood rearing, winter)
• Coordinate with State and Federal monitoring protocols.

The lack of monitoring and failure to address human intrusion in an effective manner is a problem that allows leks and populations to blink out as they are no longer monitored, making it appear impacts are less than actual. This does not benefit the sage grouse or migrant birds using the same habitats. This FEIS has failed to take the requisite hard look. That would include mapping all the known leks and presenting the population data and trends for each lek, and an analysis of the site-specific and regional factors causing the decline. It should include anthropogenic impacts out to an acceptable buffer of at least 4 miles to be consistent with the NTT report, or other larger buffers that are recommended. We would also expect a similar analysis for sharp-tailed grouse.

NORTHERN GOSHAWK

This issue was raised on page 4 of our 11/21/2018 DEIS comments.

The FEIS don't disclose the FS's strategy and best available science for insuring viable populations of the northern goshawk, a species whose habitat is adversely affected by forest management.

The FEIS discloses, "Stands of mature, closed-canopy Douglas fir, lodgepole pine, and aspen occurring in patches on north or easterly facing slopes within the study area may be suitable (northern goshawk) nesting habitat. However, surveys conducted in 2018 (Stantec 2018a) did not locate any goshawks." The FEIS doesn't provide any indication of the adequacy of surveys. The FS must utilize goshawk survey methodology consistent with the best available science. For example the recent and comprehensive protocol, "Northern Goshawk Inventory and Monitoring Technical Guide" by Woodbridge and Hargis 2006. Also, USDA Forest Service 2000b state:

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

> **confidence in identifying nesting goshawk pairs, four to six years of surveys are needed (Reynolds).** (Emphasis added.)

The FEIS states, "Impacts to northern goshawk would be the same as described above for flammulated owl." Goshawks, however, are not small owls—they are large predators which rely in habitats quite different from flammulated owls, including much larger territories.

Much scientific information discusses the impacts of cumulative management actions such as logging on the goshawk. For example, best available science implicates management impacts in a roughly 6,000-acre northern goshawk home range or the post-fledging area (PFA). Reynolds et al. 1992 goshawk guidelines recommend ratios of (20%/20%/20%) each in the mid-aged forest, mature forest, and old forest Vegetative Structural Stage (VSS) classes for PFAs and foraging areas. Reynolds et al. 1992 calls for 100% in VSS classes 5 & 6 and 0% in VSS classes 1-4 in nest areas.

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

Crocker-Bedford (1990) noted:

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

Moser and Garton (2009) reported that all goshawk nests examined in their study area were found in stands whose average diameter of overstory trees was over 12.2 inches and all nest stands had $\geq$ 70% overstory tree canopy. They described their findings as being similar to those described by Hayward and Escano (1989), who reported that nesting habitat "may be described as mature to overmature conifer forest with a closed canopy (75-85% cover)…."

WATERSHED IMPACTS AND BEST MANAGEMENT PRACTICES

This issue was raised on pages 16-17 of our 11/21/2018 DEIS comments.

The FS relies on BMPs to address the issues associated with roads. However, comprehensive monitoring of the effectiveness of BMPs in achieving water quality standards does not demonstrate that the BMPs are protecting water quality, nor does it undermine the abundant evidence that stormwater infrastructure along roads continues to deposit large quantities of sediment into rivers and streams. (Endicott, 2008.) Even as new information becomes available

about BMP effectiveness, many states do not update their logging road BMPs, and some states have retained BMPs that have been discredited for some time. (Endicott, 2008.) If the measure of success is whether a nonpoint source control program has achieved compliance with state water quality standards, the state forest practices programs have failed.

Furthermore, BMPs are generally triggered only when management operations occur. The lack of a requirement in most states to bring existing, inactive roads up to some consistent standard results in many forest roads that are not currently being used falling through the regulatory cracks and continuing to have a negative impact on our water quality. Currently, only the State of Washington requires that old roads be upgraded to comply with today's standard BMPs. Across most of the country, the oldest, most harmful roads have been grandfathered and continue to deliver sediment into streams and rivers. (Endicott, 2008.)

As discussed by Endicott, 2008, BMPs are "largely procedural, describing the steps to be taken in determining how a site will be managed," but they lack "practical in-stream criteria for regulation of sedimentation from forestry activities." The selection and implementation of BMPs are often "defined as what is practicable in view of 'technological, economic, and institutional consideration.'" The ultimate effectiveness of the BMPs are therefore impacted by the individual land manager's "value system" and the perceived benefit of protecting the resource values as opposed to the costs of operations.

Ziemer and Lisle (1993) note a lack of reliable data showing that BMPs are cumulatively effective in protecting aquatic resources from damage. Espinosa et al., 1997 noted that the mere reliance on BMPs in lieu of limiting or avoiding activities that cause aquatic damages serves to increase aquatic damage. Even activities implemented with somewhat effective BMPs still often contribute negative cumulative effects (Ziemer et al. 1991b, Rhodes et al. 1994, Espinosa et al. 1997, Beschta et al. 2004).

In analyses of case histories of resource degradation by typical land management (logging, grazing, mining, roads) several researchers have concluded that BMPs actually increase watershed and stream damage because they encourage heavy levels of resource extraction under the false premise that resources can be protected by BMPs (Stanford and Ward, 1993; Rhodes et al., 1994; Espinosa et al., 1997). Stanford and Ward (1993) termed this phenomenon the "illusion of technique."

Without the sufficient funding to maintain its road system in a timely manner, all the BMP implantation that can be mustered in the context of a project will only be a short term fix, and the road system will remain an ecological liability. The FS admits such problems in a non-NEPA context (USDA Forest Service, 2010t):

> Constructing and improving drainage structures on Forest roads is an ongoing effort to reduce road-related stream sediment delivery. Although BMPs are proven practices that reduce the effects of roads to the watershed, it is not a static condition. Maintaining BMP standards for roads requires ongoing maintenance. Ecological processes, traffic and other factors can degrade features such as ditches, culverts, and surface water deflectors. Continual monitoring and maintenance on open roads reduces risks of sediment delivery to important water resources.

Also in a non-NEPA context, a forest supervisor (Lolo National Forest, 1999) frankly admits that such projects are a "chance to at least correct some (BMP) departures rather than wait until the funding stars align that would allow us to correct all the departures at once."

FAILURE TO TAKE A HARD LOOK AT PUBLIC SAFETY

This issue was raised on pages 3-5 of our 11/23/2018 comments.

AIR QUALITY

This issue was raised on page 6 of our 11/23/2018 comments.

CUMULATIVE AND CONNECTED ACTIONS

This issue was raised on pages 2, 6-7 of our 11/23/2018 comments.

FEDERAL ENERGY REGULATORY COMMISSION APPROVAL

This issue was raised on pages 1-2 of our 11/23/2018 comments.

Basically the FEIS responded, "The decision by FERC on how they can and would approve the project is not anticipated to result in differences to resources that need to be analyzed in the EIS."

As our comments stated, "it appears that FERC is considering granting this pipeline an exemption from the normal interstate pipeline regulatory process requirements." This exemption issue alone is an important one for which analysis and disclosure must be fully included in the NEPA document. As it stands, the FEIS is grossly out of compliance with NEPA.

CONSISTENCY WITH 2003 CARIBOU NATIONAL FOREST - REVISED FOREST PLAN DIRECTION

Yellowstone to Uintas Connection's February 19, 2018 scoping comments stated, "The EA must explicitly demonstrate the project would be consistent with all applicable Land management plan direction, including standards, guidelines, and other direction." Below, we outline some of the provisions of the CTNF Revised Forest Plan (RFP). Consistency with each is not demonstrated or assured in FEIS analyses or mitigations. Chapters 1 - 3 of the Forest Plan address the Vision, Desired Future Condition (DFC), Goals, Standards and Guidelines the Forest Service committed to use. The public has relied on these commitments, but the FEIS did not address many of them in sufficient depth, if at all. Quotes are from the RFP with pages identified.

"Develops and uses scientifically credible strategies for the protection of species and ecosystems." (p. 1-2). Migration corridors, linkages, peripheral habitat were not analyzed.

"Monitoring and evaluation is an essential feature of the Plan." (p. 1-4). No monitoring of DFC, habitat and populations presented.

"The NFMA diversity provision and the fish and wildlife resource regulation establish a goal to provide habitat for the continued existence of vertebrate species in the planning area. The goal is met by following the provisions of 36 CFR 219.19(a)(1) through (a)(7). The bottom line is that the Forest Service may not adopt a plan that it knows or believes would, through possible future Forest Service actions, extirpate a vertebrate species from the planning area." (p. 1-4). The destruction of habitat from multiple projects' activities threatens to effectively extirpate species. There was no analysis of population data from Forest Service monitoring of population trends and no analysis of project and cumulative effects on habitats and species other than broad general assertions.

"Watershed protection and ecological restoration have been given a high priority in the Forest Service in decision-making processes, including budget and program planning, land management planning, project implementation, and watershed assessments for forest and interagency plans." (pp. 2-1). Other than dubious reclamation of the ROW footprint to some early seral plant community, habitat structure and ecological restoration were not addressed.

"New scientific information indicates that 60 percent of the healthiest aquatic habitats occur in roadless or very low road density areas on federal land, specifically in the Columbia River Basin (ICBEMP, 2000)." (p. 2-2). There is inadequate analysis of IRAs and security habitat in the FEIS.

Only 10% of watersheds are in good condition, 80% need restoration and improvement. Only about 30% of riparian areas are in Properly Functioning Condition. (p. 2-3). Aspen are in a high departure from HRV and a 40% decline in aspen acres on the Forest. (p. 2-4). Sagebrush habitats have more bare ground and suffer increasing soil loss. (p. 2-5). We have recommended mitigation for many aspects of the ecosystem. So many areas are degraded, yet we see no intent to restore or improve habitats.

"Due to changes in and loss of historic habitat, big game animals are pioneering new winter ranges on and adjacent to the Forest. The most recent impact is urban residential development on historic winter ranges." (p. 2-6). Winter and summer range is fragmented and degraded by this project, yet there is no concomitant restoration effort such as road closures to partially offset this loss.

"In six of the seven ecological subsections on the Forest, Yellowstone and Bonneville cutthroat trout stronghold restoration and protection will be emphasized." (p. 2-12). Restoration of degraded streams is NOT emphasized. For example, although the FEIS states that "numbers of … (Yellowstone cutthroat trout) have been lower in recent years in Crow Creek" we see no restoration efforts to restore habitat through addressing or mitigating other impacts. Restoration mechanisms are needed as mitigation.

"The National Forest Management Act (NFMA) regulations require National Forests to provide habitat in order 'to maintain viable populations of existing native and desired non-native

vertebrate species in the planning area.'" (p. 2-13). There was no population analysis for species at risk, nor was the habitat fragmentation affecting big game, sage grouse, lynx, wolverine, or raptors such as northern goshawk analyzed.

"The Plan addresses big game issues important to the Idaho Department of Fish and Game by designating winter ranges and prescription areas which emphasize big game security. It will maintain habitat for threatened, endangered, and sensitive species, where they exist." (p. 2-13). There was inadequate scientific analysis of the current state of wildlife security areas.

DFCs and Vision for the Caribou National Forest: *"Landscapes display a balance of physical landscape components, including upland terrestrial habitats, riparian areas, wetlands, and clean water. Both aquatic and terrestrial habitats are becoming less fragmented and more connected."* (p. 3-2). Once again there was no analysis showing that habitats are becoming less, not more, fragmented.

"Within 10 years of signing of the Record of Decision (ROD), reassess composition and structure and other indicators used in the Caribou Sub-regional Properly Functioning Condition Assessment. This should include the Caribou and adjacent areas to determine changes achieved." (p. 3-3). No information on Properly Functioning Condition of the habitats was provided.

"Soil quality, productivity, and hydrologic function are maintained and restored where needed. Long term soil productivity is sustained and meets future land needs. Soils have adequate protective cover, adequate levels of soil organic matter (litter), and coarse woody material. Physical, chemical and biological processes in most soils function to sustain the site. Microbiotic crusts and their importance to soil stability are recognized. Management practices are designed to retain these soil components." (p. 3-5). There was nothing in the FEIS describing how these processes and components are to be restored.

"Long-term soil productivity is sustained by limiting detrimental soil disturbances and by retaining ground cover, microbiotic crusts, fine organic matter and, where applicable, woody residue on activity areas." (p. 3-6). Woody residue will be lost from the ROW, and soil organic matter and microbes will be disrupted by excavation. This was not addressed.

"For ground-disturbing activities where detrimental soil disturbances (defined in FSH 2509.18) occur on areas of 10 acres or greater, plan and implement rehabilitation to meet desired future conditions." (p. 3-6). The FEIS and Reclamation Plan did not address DFC for the disturbed areas.

"Detrimental soil disturbance such as compaction, erosion, puddling, displacement, and severely burned soils caused by management practices should be limited or mitigated to meet long-term soil productivity goals." (p. 3-6). No data or research was provided to demonstrate that reclaimed areas will meet this.

"Sustain site productivity by providing the following minimum amounts of woody residue = 3 inches in diameter dispersed on the site as outlined in Table 3.1." (p. 3-7). Reclamation description did not provide for woody residue.

"Manage air quality to meet health and safety requirements and existing laws, rules, regulations and agreements." (p. 3-7).

"Priority shall be given to acquiring lands having special importance or unique characteristics such as riparian areas, historic sites, habitat for federally listed species, recreation sites, etc." (p. 3-9). No land acquisition is proposed to restore habitat.

"Adequate bonds or other security instruments shall be required for special use authorizations if it is determined that the use has potential for disturbance that may require rehabilitation or when needed to ensure other performance." (p. 3-10). Nothing to ensure that long term damage is corrected or habitats restored.

"Proponents of new facilities within existing corridors, and new corridor routes, shall demonstrate that the proposal is in the public interest, and that no other reasonable alternative exists to public land routing. Utility corridors should have irregular clearing widths and follow patterns of existing natural openings." (p. 3-10). There is a reasonable alternative (No Action) which would maintaining natural patterns in the IRAs and the FEIS fails to demonstrate the proposed pipeline is in fact in the public interest.

"Mineral resources are available for development, consistent with other resource uses. Paleontological resources are properly managed to provide for preservation and use of these resources for current and future generations. Drastically disturbed sites are reclaimed so that natural recovery to pre-disturbed conditions is most likely. Reclamation emphasizes: 1) suitable topsoil preservation; 2) use of native plant species; and 3) stabilizing lands to a topographic relief (landform) that conforms to natural surroundings. Drastically disturbed lands are reclaimed to prescribed post-disturbance land uses as soon after disturbance as is practical. On mined lands and other drastically disturbed lands, maintain or reestablish hydrologic function, integrity, quality and other surface resource values within the capability of affected lands. Provide for mineral resource development using state of the art practices for surface resource protection and reclamation, and with consideration of social and economic resources. Mining activities are administered to prevent the release of hazardous substances in excess of established state and/or federal standards. Reclamation is designed to eliminate or minimize wildlife, livestock, and/or human exposure to hazardous substances." (p. 3-11). No science provided or studies to show the success of reclaiming the ROW, the plant communities developed over time, the status of COPCs in soils and vegetation.

"Conduct annual reviews of Best Management Practices (BMPs) and make appropriate adjustments to ensure that hazardous substance releases do not exceed state and/or federal standards" and *"Best Management Practices shall continue to be developed, refined and implemented to ensure that no release of hazardous substances into the environment exceeding established state and/or federal standards occurs."* (p. 3-12). There was little in the way of

BMPs addressing hazardous substances in the FEIS, nor any cited studies documenting the effectiveness of BMPs.

"When surface disturbing activities are proposed within geologic units having a moderate or high potential for the occurrence of vertebrate fossils (other than fish or sharks), a field survey of the area shall be made prior to, and if possible, during the proposed activities." (p. 3-12). We found no reference to paleontology surveys or identification.

"The lessee/operator shall monitor reclamation work annually and report to the Forest Service until reclamation is accepted and the bond released." (p. 3-13). No bond required.

"Ground cover should be assessed prior to release of the reclamation bond to assure: 1) minimum ground cover exists to attain long-term soil productivity requirements; 2) ground cover should persist at minimum cover needs without artificial assistance (e.g. watering, fertilizers, etc.); and 3) meet or trend towards post-mining land use goals." (p. 3-14). No bond required.

"In reclaimed areas, vegetation should include species that meet wildlife habitat needs. Wildlife structures (slash piles, logs, rock piles) using native vegetation and materials are designed to provide cover for wildlife movements in created openings." (p. 3-14). No provision for these features in the FEIS.

"Watersheds provide infiltration, retention, and release of water appropriate to soil type, vegetation, climate, and landform. Watersheds provide a well-distributed pattern of nutrients and energy as well as diverse age-classes of vegetation that contribute to watershed health. Restoration strategies promote recovery of watershed, riparian, water quality and aquatic conditions characteristic of the geoclimatic setting." (p. 3-15). No restoration strategy described to restore these structural and functional characteristics.

"Each year, complete at least one Watershed Assessment for a 5th HUC watershed. Incorporate Hydrologic Condition Inventories using A Framework for Analyzing the Hydrologic Condition of Watersheds or current equivalent Regional or National guidance." (p. 3-16). Nothing provided in the FEIS.

"Not more than 30 percent of any of the principal watershed and/or their subwatersheds (6th HUC) should be in a hydrologically disturbed condition at any one time." Nothing provided in the FEIS.

"Proposed actions analyzed under NEPA should adhere to the State Nonpoint Source Management Plan to best achieve consistency with both Sections 313 and 319 of the Federal Water Pollution Control Act." (p. 3-16). IDAPA provides for practices such as livestock exclusion and buffer zones for riparian areas to address sediment and e. coli pollution. There is no plan to relieve stress on the streams and springs by reducing livestock impacts or water diversions.

"Diverse forested and non-forested ecosystems are maintained within their historic range of variability and/or restored through time with emphasis on aspen, aspen-conifer, mixed conifer, big sagebrush, mountain brush and tall forbs." (p. 3-17). FEIS does not provide this HRV.

"In each 5th code HUC which has the ecological capability to produce forested vegetation, the combination of mature and old age classes (including old growth) shall be at least 20 percent of the forested acres. At least 15 percent of all the forested acres in the HUC are to meet or be actively managed to attain old growth characteristics." (p. 3-19). There was no discussion or analysis of the current status of forested vegetation, the amount removed, the percentage of mature and old age classes to compare with this criterion.

"Maintain the dead and down woody material guidelines for wildlife. (See Wildlife Standards and Guidelines for Dead and Down material)." (p. 3-19). No mention of how this is to be achieved in the reclamation area.

"The Forest provides habitat that contributes to state wildlife management plans. Forest management contributes to the recovery of federally listed threatened, endangered, and proposed species and provides for conditions, which help preclude sensitive species from being proposed for federal listing." (p. 3-24). We discussed the displacement of wildlife and fragmentation of habitats, loss of security areas and obstruction of migration corridors for lynx and other species by project activities, roads, mines, transmission lines. This was not fulfilled in the FEIS.

"Maintain, and where necessary and feasible, provide for habitat connectivity across forested and non-forested landscapes." (p. 3-24). Nothing was provided in the FEIS to mitigate fragmentation or restore connectivity.

Wolverine Habitat: *"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."* (p. 3-24). There was no mention nor analysis of these studies in the FEIS.

Canada Lynx Habitat: *"Within three years of signing the ROD, complete surveys on the Soda Springs and Montpelier Ranger Districts."* (p. 3-24). No evidence in the FEIS that these District surveys were undertaken.

Sage Grouse: *"Within five years of signing the ROD, map functional and degraded sage grouse nesting and winter habitat within 5 miles of known leks. Identify opportunities to increase quality or quantity of that habitat."* (p. 3-25). No evidence that mapping or opportunity identification was done.

Migratory Landbirds: *"Within five years of signing the ROD, establish breeding bird trend plots to monitor changes in breeding birds in relation to structure or shrub riparian habitats. Once established, reread plots every three years."* (p. 3-25). There was no discussion of these trend plots and the resulting data if they were ever established and monitored.

Amphibians: *Repeat amphibian surveys at 10 year intervals to determine habitat and population trends."* Survey potential habitat. (p. 3-25). No evidence of these surveys.

Boreal toads: *"Within 2 years of signing the ROD, assess the potential for impacts to breeding boreal toads from migratory movements across Tincup Highway and impacts from trampling by recreational activities and fishing at the site. If problems are found, identify and implement measures to mitigate impacts."* (p. 3-25). No evidence this was done. It provides an opportunity for mitigation.

In project analyses affecting grassland, sagebrush, mature and old forest habitats, assess impacts to habitat and populations for MIS Columbian sharp-tailed grouse, sage grouse and northern goshawk. (p. 3-25). No data provided for the cover and vegetation community characteristics needed for these MIS. No population trends provided.

“Strive not to disturb or destroy existing nests, whether active or inactive.” (p. 3-27) No evidence of surveys or intent to survey the ROWs. Snag/cavity nesting habitat not quantified. Table 3.3 lists biological potentials by forested vegetation type. (p. 3-27). There was no analysis of these characteristics.

"Management direction which will maintain linkages for Canada lynx on the Forest is located in the following places: Vegetation Desired Future Conditions; Vegetation Goals 1-4; Vegetation Standard 2; Wildlife Goals 2, 3, and 5; Vegetation Goal 7; Lands Objective 1; and Lands Standard 1." (p. 3-28). There was no analysis of the current status of these attributes or measures needed to maintain or restore the linkages.

Northern goshawk standards and guidelines are provided in Table 3.5. *"Open roads in goshawk territories shall be given priority for closure to meet management prescription road density standards. First priority shall be to close roads in nest areas; second priority in post-fledging family areas; third priority in foraging areas. Where possible, open road density should be zero in the nest areas and the post-fledging family areas."* (p. 3-30). Road density was not addressed, goshawk home ranges were not mapped and analyzed for the habitat characteristics, security and road densities.

Habitat guidelines for Flammulated, Boreal and Great Gray owls include limiting timber harvest and maintaining mature and old forest age classes. (p. 3-31). Nothing was discussed regarding the current status of habitats for these owls relative to their needs.

Big game guidelines provide for buffers for sight distance around big game concentration areas and provide for security or travel corridors near created opening. (p. 3-31). These were not identified by location and there was no mapping or analysis of travel corridors functionality.

For Sage grouse, *"Management activities should consider proximity to active lek locations during site-specific project planning. Those within 10 miles of an active sage grouse lek and 2 miles of active sharp-tailed grouse leks should be considered further for suitability as grouse habitat."* (p. 3-32). The FEIS does not provide data or analysis of the current condition of all habitats for sage grouse within 10 miles of project activities.

Amphibian guidelines include *"Maintain amphibian habitats when developing and modifying springs and wetlands."* (p. 3-32). Habitats are to be damaged. Nothing was discussed relative to restoring or mitigating these.

Landbird guidelines include: *"Stands of mature trees (including snags and dead-topped trees) should be maintained next to wet meadows. Where feasible, maintain 30 to 50 percent of the sagebrush habitat in a 5th code HUC in contiguous blocks greater than 320 acres to support sagebrush obligate species. (Page and Ritter, 1999). Practices which stabilize or increase native grass and forbs cover in sagebrush habitats with 5% to 25% sagebrush canopy cover should be implemented. (Page and Ritter, 1999). In sagebrush habitats, manage herbaceous cover to conceal nests through the first incubation period for ground and low shrub-nesting birds. It is assumed that proper use of rest-rotation or deferred-rotation grazing should meet these conditions, although not every year on every area (Idaho Partners in Flight 2000)."* (p. 3-33). These attributes and their management were not addressed.

Transportation goals, standards, guidelines and objectives include: *"Roads and trails not needed for long-term objectives are decommissioned, stabilized, and restored to a more natural state. Within three years of signing the ROD, initiate site-specific travel planning to incorporate Revised Forest Plan direction on access management. Roads identified as unneeded in a roads analysis should be decommissioned, stabilized and returned to production."* (p. 3-36). This was not addressed. All temporary and illegal roads and trails should be mapped and rehabilitated as a mitigation.

REMEDY

We request the FS select and implement the No Action alternative. Further compromising increasingly rare and roadless landscapes including the Regionally Significant Wildlife Corridor by facilitating further degradation of our national forest is ecologically unacceptable. The FS should be proposing strategic restoration in these landscapes, where management impacts have already compromised habitats for rare and sensitive species of conservation concern.

If, in the alternative, the FS wants to further pursue this project, it must prepare a Supplemental Environmental Impact Statement to address the scientific concerns and legal and regulatory deficiencies we've identified in this Objection.

Objection respectfully submitted:

Jason Christensen, Manager
Yellowstone to Uintas Connection
PO Box 280
Mendon, UT 84325
jason@yellowstoneuintas.org
435-881-6917

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