

April 19, 2026

Josh Connors, District Ranger
Madison Ranger District
5 Forest Service Road
Ennis, MT 59729

Re: South Tobacco Roots Vegetation Management Project

Dear Ranger Connors,

Thank you for this opportunity to comment on the South Tobacco Roots Vegetation Management Project Project EA. Please accept these comments from me on behalf of the Alliance for the Wild Rockies, Native Ecosystems Council, Center for Biological Diversity, and Yellowstone to Uintas Connection.

The Alliance for the Wild Rockies, Yellowstone to Uintas Connection, Center for Biological Diversity, and Native Ecosystems Council (collectively “Alliance”) submit the following comments to guide the development of the environmental analysis for the proposal.

We see that the EPA submitted comments on May 3, 2024 that state:

EPA's review of the information provided in the Draft EA identified one overarching concern. It appears the Forest is implementing a programmatic (vs. site-specific) approach and analysis that would authorize multiple non-commercial thinning, commercial logging, and prescribed fire projects without requiring future, site-specific project NEPA analyses. The draft EA's effects analyses for resources do not take into consideration more defined project details such as the duration of time required to complete the Proposed Project, the precise locations of resources such as waterbodies within the treatment areas, and the specific types and general timing of treatment activities to be conducted in those areas. Given the lack of site-specific information and analysis, and potential for significant water quality, air quality and ecological impacts, it is unclear how the EA and FONSI will ensure significant impacts will be avoided for this project. We recommend the Forest develop this as a programmatic NEPA document that commits to tiered, site-specific NEPA analyses that provide opportunities for public involvement and comment on individual treatment projects.

We agree with the EPA.

Since the EA is using conditions based management, i.e., you are violating NEPA but not telling the public where, when and how you are going to log and bulldoze roads,

please explain how the project is complying with the Historic Preservation Act.

Crucial to the preservation of the historical and cultural foundations of the nation, Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 C.F.R. Part 800 (PDF) (revised August 5, 2004) require Federal agencies to consider the effects of projects they carry out, approve, or fund on historic properties. Additionally, Federal agencies must provide the Advisory Council on Historic Preservation (ACHP) opportunity to comment on such projects prior to the agency's final decision.

A Federal project that requires review under Section 106 is defined as an "undertaking." An undertaking means a project, activity or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency,

including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license, or approval.

Section 110 of the NHPA

Added to the NHPA in 1992, Section 110 requires Federal agencies to emphasize the preservation and enhancement of cultural resources. Section 110 directs agencies to initiate measures necessary to direct their policies, plans, and programs in such a way that federally-owned sites, structures, and objects of historical architectural or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the public. The agencies are also encouraged to institute (in consultation with the ACHP) procedures to assure Federal plans and programs contribute to the preservation and enhancement of non-Federally owned sites, structures, and objects of historical, architectural, and archaeological significance. Has the MT

SHPO received this survey? The cultural surveys need to be done before the NEPA and NHPA process can be completed, which has not occurred. The project must be approved by the SHPO and the public needs to be given a chance to comment on this.

Conditions based management

Conditions based analysis relies heavily on design features to minimize the detrimental effects of project actions on soils, streams, ecological resources, bull trout, lynx, white bark pine, elk, rare plants, and all other flora and fauna in the project area. Design features are mentioned 54 times in the DEA alone. How will BNF guarantee that these design features will be followed? Are any of these design features dependent on future funding? What will be the consequences for not fulfilling the necessary design features to minimize effects to the forest?

The agency needs to identify all existing old growth stands in the South Plateau Project Area, and define their individual patch size, and map their locations across the project area. The agency also needs to identify what the proposed logging and/or burning treatment is for each of these old growth stands, is required by the NEPA for project decisions.

There is no map of the big game winter range in the South Plateau Project area, or any information of where remaining thermal cover exists, or where it will be removed with this project. The current condition of thermal cover in this project area is important information to the public, as it demonstrates how the agency is implementing the forest plan.

There are no maps provided of where existing or planned security areas will be in the South Plateau project area, in violation of the NEPA. There is also no analysis of how only 15% security (at best) is affecting elk displacement to private lands, given a minimum of 30% security is recommended by the current best science. The agency claims there is no impact of this lack of security based on the current best science. It is not clear how there can be a huge increase in the number of motorized routes in the South Plateau Project Area, as well, and still maintain what is the current level of big game security.

The project's use of conditions based management is a violation of NEPA, NFMA, the Clearwater Act, the APA and the ESA based on the Federal Court ruling on a Forest Service logging project in the Tongass N.F.

Please see the following article by the American bar Association about the use of Condition-Based Management.

May 10, 2021

The U.S. Forest Service's Expanding Use of Condition-Based Management: Functional and Legal Problems from Short-Circuiting the Project-Planning and Environmental Impact Statement Process

Andrew Cliburn, Paul Quackenbush, Madison Prokott, Jim Murphy, and Mason Overstreet

https://www.americanbar.org/groups/environment_energy_resources/publications/fr/20210510-the-us-forest-services-expanding-use-of-condition-based-management/

Condition-based management (CBM) is a management approach that the U.S. Forest Service has increasingly used to authorize timber harvests purportedly to increase flexibility, discretion, and efficiency in project planning, analysis, and implementation. The agency believes it needs this [flexible](#) approach because sometimes conditions on the ground can change more quickly than decisions can be implemented. In practice, however, CBM operates to circumvent the National Environmental Policy Act (NEPA) review framework by postponing site-specific analysis until the Forest Service implements the project, which effectively excludes the public from site-specific decisions, reduces transparency, and removes incentives for the agency to avoid harming localized resources. The practice should be curtailed by the Biden administration

NEPA requires federal agencies including the Forest Service to provide the public with “notice and an opportunity to be heard” in the analysis of “specific area[s] in which logging will take place and the harvesting methods to be used.” Ohio Forestry Ass’n v. Sierra Club, 523 U.S. 726, 729–30 (1998). Site-specific public involvement can significantly improve projects because the agency may be unaware of harmful impacts or resource concerns until the public flags them during the environmental analysis process. Nationally, the Forest Service drops about one out of every five acres it proposes for timber harvest based on information or concerns presented during the NEPA process, often due to public comments regarding site-specific information. [Public Lands Advocacy Coalition, Comments on Proposed Rule, National Environmental Policy Act \(NEPA\) Compliance \(June 13, 2019\)](#) (analyzing 68 projects that relied on environmental assessments).

The Forest Service appears to be abandoning the site-specific analysis model in favor of CBM. CBM projects use an overarching set of “goal variables”—predetermined management criteria that guide implementation—that Forest Service staff apply to on-the-ground natural resource “conditions” encountered during the course of project implementation, a period that can span years or even decades: essentially, when the Forest Service finds X resource condition on the ground, it applies Y timber harvest prescription. However, basic information regarding the project’s details—such as unit location, timing, roadbuilding, harvesting methods, and

site-specific environmental effects—is not provided at the time the Forest Service conducts its NEPA environmental review (when the public can weigh in), nor when it gives its final approval to a project (when the public can seek administrative review). Instead, site-level disclosures are made after NEPA environmental and administrative review is complete, depriving the public of opportunities to comment and influence the decision based on localized conditions.

While CBM is not a new management tool, the Forest Service has employed it for over a decade and it was used sparingly during the Obama administration. However, its use accelerated during the Trump administration and shows no sign of slowing. To date, dozens of Forest Service projects across the country have used CBM. See, e.g., [Red Pine Thinning Project](#), Ottawa National Forest; [Medicine Bow Landscape Vegetation Analysis](#), Medicine Bow-Routt National Forest; [Sage Hen Integrated Restoration Project](#), Boise National Forest.

As the Forest Service’s use of CBM continues, questions remain about its legality. Public-lands advocates argue that CBM violates NEPA’s mandate that agencies take a hard look at the consequences of their actions before a project commences. This “look before you leap” approach was the primary purpose of NEPA and remains the statute’s greatest strength. NEPA works by requiring an agency to consider alternatives and publicly vet its analysis whenever its proposal may have “significant” environmental consequences, 42 U.S.C. § 4332(2)(C), or

implicates “unresolved conflicts” about how the agency should best accomplish its objective. Id. at § 4332(2)(E). However, CBM allows the Forest Service to circumvent the effects analysis process when exercising discretion about where and how to log decisions that often may have “significant” environmental consequences.

Only two federal cases have addressed CBM’s legality. In WildEarth Guardians v. Connor, 920 F.3d 1245 (10th Cir. 2019), the Tenth Circuit approved a CBM approach for a logging project in southern Colorado in Canada lynx habitat. The environmental assessment utilized CBM and analyzed three different alternatives, one of which was a worst-case scenario. For the worst-case scenario, the Forest Service assumed that the entire lynx habitat in the project area would be clear-cut. The Forest Service “took the conservative approach” because it “did not know precisely” where it would log in the lynx habitat areas. WildEarth Guardians, 920 F.3d at 1255. Based on this conservative approach, coupled with a comprehensive, region-wide lynx management agreement and its associated environmental impact statement, the court agreed with the Forest Service that its future site-specific choices were “not material” to the effects on lynx—i.e., that no matter where logging occurred, “there would not be a negative effect on the lynx.” Id. at 1258–59.

However, a second case addressing CBM found that site-specific analysis was needed to satisfy NEPA’s “hard-look” standard. In Southeast Alaska Conservation Council v. U.S. Forest Service, 443 F. Supp. 3d 995 (D.

Ak. 2020), the court held that the Forest Service’s Prince of Wales Landscape Level Analysis Project—a 15-year logging project on Prince of Wales Island in the Tongass National Forest—violated NEPA. The project would have authorized the logging of more than 40,000 acres, including nearly 24,000 acres of old growth, along with 643 miles of new and temporary road construction, but it “d[id] not include a determination—or even an estimate—of when and where the harvest activities or road construction . . . w[ould] actually occur.” Id. at 1009. The court found that this analysis was not “specific enough” without information about harvest locations, methods, and localized impacts. Id. at 1009–10. The court further held that a worst-case analysis could not save the project, because site-specific differences were consequential. Id. at 1013.

The Forest Service’s widespread use of CBM also creates compliance challenges under the Endangered Species Act (ESA). Section 7(a)(2) of the ESA requires federal agencies to consult with the Fish and Wildlife Service and/or National Marine Fisheries Service whenever a proposed action “may affect” listed species or destroy or adversely modify its critical habitat to ensure that the action is “not likely to jeopardize” these species. 16 U.S.C. § 1536. CBM conflicts with that statutory requirement because it does not allow agencies to properly determine whether an action “may affect” or is “likely to jeopardize” a listed species when the consulting agencies do not know the specifics of when or where the action will

be implemented, or what the site-specific impacts of the action may be.

For some projects, the Forest Service has tried to avoid this tension by conducting section 7 consultation prior to each phase of a CBM project, but this approach has run headlong into the general rule against segmenting project consultation duties under the ESA. See, e.g., Conner v. Burford, 848 F.2d 1441, 1457 (9th Cir. 1988). With few exceptions, section 7 consultation must cover the overall effects of the entire project at the initial stage before the project can commence. Thus, regardless of whether agencies choose to consult up front or to consult in stages, the Forest Service is likely to face significant legal hurdles when its CBM project “may affect” listed species.

CBM is not only legally dubious, but also unnecessary. The Forest Service already has NEPA-compliant methods to deal with situations that require a nimble response to the needs of a dynamic landscape. In these cases, the Forest Service can complete a [single “programmatic” analysis](#) to which future site-specific decisions will be tiered. This programmatic approach allows the Forest Service to speed the consideration and implementation of site-specific, step-down proposals. Unlike CBM, this approach allows for public review of site-specific decision-making and administrative review of those decisions.

Surveying the regulatory horizon, the future of CBM in the Forest Service system is uncertain. The national forests face a host of complex challenges including

climate-related crises, insect and forest pestilence, protecting and restoring biodiversity, and wildfire management. These challenges are made [worse](#) by budget and staff restrictions. Without adequate funding, the Forest Service must rely on imperfect tools like commercial logging, which can cause more harm than good in the wrong places.

But this is not the time to shortchange the most consequential decisions that the agency must make: determining where and how to act. During the final two years of the Trump administration, the Forest Service attempted to explicitly codify CBM provisions in [revisions to its NEPA regulations](#), although those provisions were dropped from the [final rule](#). Simultaneously, other federal land-management agencies like the Bureau of Land Management have started to use [CBM analogues in their NEPA-related planning documents](#). Although it is still early, the Biden administration's newly appointed Council on Environmental Quality team has yet to weigh in on CBM. If use of CBM continues in a manner that undermines public participation and NEPA's "hard look" standard, some of our riskiest land management projects may not receive proper environmental oversight.

This is a violation of NEPA to not identifying specific areas where logging would have occurred and where roads and how many roads will be built.

Please see the article below about a similar timber sale in Alaska which a federal district court ruled was illegal.

Federal court blocks timber sale in Alaska's Tongass National Forest

<https://www.adn.com/alaska-news/2020/06/25/federal-court-blocks-timber-sale-in-alaskas-tongass-national-forest/>

JUNEAU — A federal judge has blocked what would have been the largest timber sale in Alaska's Tongass National Forest in decades.

Wednesday's ruling ends the U.S. Forest Service's plan to open 37.5 square miles of old-growth forest on Prince of Wales Island to commercial logging, CoastAlaska reported.

The ruling by Judge Sharon L. Gleason also stops road construction for the planned 15-year project.

Conservationists had already successfully blocked the federal government's attempt to clear large amounts of timber for sale without identifying specific areas where logging would have occurred.

Gleason allowed the forest service to argue in favor of correcting deficiencies in its review and moving forward without throwing out the entire project, but ultimately ruled against the agency.

Gleason's ruling said the economic harm of invalidating the timber sales did not outweigh "the seriousness of the errors" in the agency's handling of the project.

The method used in the Prince of Wales Landscape Level Analysis was the first time the agency used it for environmental review on an Alaska timber sale.

The forest service, which can appeal the decision, did not return calls seeking comment.

Gleason's decision affects the Prince of Wales Island project and the Central Tongass Project near Petersburg and Wrangell.

The ruling triggers a new environmental review under the National Environmental Policy Act, said Meredith Trainor, executive director of the Southeast Alaska Conservation Council.

The ruling in the lawsuit brought by the council includes a requirement for public input on specific areas proposed for logging, Trainor said.

Tessa Axelson, executive director of the Alaska Forest Association, said in a statement that the ruling "threatens the viability of Southeast Alaska's timber industry."

The project is in violation of NEPA, NFMA, the Clean Water Act, the APA and the ESA.

The Forest Service must complete a full environmental impact statement (EIS) for this Project because the scope of the Project will likely have a significant individual and cumulative impact on the environment. Alliance has reviewed the statutory and regulatory requirements governing National Forest Management projects, as well as the relevant case law, and compiled a check-list of issues that must be included in the EIS for the Project in order for the Forest Service's analysis to comply with the law. Following the list of necessary elements, Alliance has also included a general narrative discussion on possible impacts of the Project, with accompanying citations to the relevant scientific literature. These references should be disclosed and discussed in the EIS or in an EA if you refuse to write and EIS for the Project.

I. NECESSARY ELEMENTS FOR PROJECT EIS:

- A. Disclose all Beaverhead-Deerlodge National Forest Plan requirements for logging projects and explain how the Project complies with them;
- B. Disclose the acreages of past, current, and reasonably foreseeable logging, grazing, and road-building activities within the Project area;
- C. Solicit and disclose comments from the Montana Department of Fish, Wildlife, and Parks and the

- U.S. Fish and Wildlife Service regarding the impact of the Project on fish and wildlife habitat;
- D. Solicit and disclose comments from the Montana Department of Environmental Quality regarding the impact of the Project on water quality;
- E. Disclose the biological assessment for the candidate, threatened, or endangered species with potential and/or actual habitat in the Project area;
- F. Disclose the biological evaluation for the sensitive and management indicator species with potential and/or actual habitat in the Project area;
- G. Disclose the snag densities in the Project area, and the method used to determine those densities;
- H. Disclose the current, during-project, and post-project densities in the Project area;
- I. Disclose the number of road closure violations in the Madison Ranger District in the last 5 years;
- J. Disclose the Beaverhead-Deerlodge National Forest's record of compliance with state best management practices regarding stream sedimentation from ground-disturbing management activities;
- K. Disclose the Beaverhead-Deerlodge National Forest's record of compliance with its monitoring requirements as set forth in its Forest Plan;
- L. Disclose the Beaverhead-Deerlodge National Forest's record of compliance with the additional monitoring requirements set forth in previous DN/FONSI and RODs on the Beaverhead-Deerlodge National Forest;

- M. Disclose the results of the field surveys for threatened, endangered, proposed, sensitive, and rare plants and species, in each of the proposed units;
- N. Disclose the number of acres and location of Lynx Analysis Units (LAU)s that were removed from the BDNF without going through NEPA;
- O. Disclose the level of current noxious weed infestations in the Project area and the cause of those infestations;
- P. Disclose the impact of the Project on noxious weed infestations and native plant communities;
- Q. Disclose the amount of detrimental soil disturbance that currently exists in each proposed unit from previous logging and grazing activities;
- R. Disclose the expected amount of detrimental soil disturbance in each unit after ground disturbance and prior to any proposed mitigation/remediation;
- S. Disclose the expected amount of detrimental soil disturbance in each unit after proposed mitigation/remediation;
- T. Disclose the analytical data that supports proposed soil mitigation/remediation measures;
- U. Disclose how grazing affects aspen regeneration;
- V. Disclose the timeline for implementation;
- W. Disclose the funding source for non-commercial activities proposed;
- X. Disclose the current level of old growth forest in each third order drainage in the Project area;

- Y. Disclose the method used to quantify old growth forest acreages and its rate of error based upon field review of its predictions;
- Z. Disclose the historic levels of mature and old growth forest in the Project area;
- AA. Disclose the level of mature and old growth forest necessary to sustain viable populations of dependent wildlife species in the area;
- BB. Disclose the amount of mature and old growth forest that will remain after implementation;
- CC. Disclose the amount of current habitat for old growth and mature forest dependent species in the Project area;
- DD. Disclose the amount of habitat for old growth and mature forest dependent species that will remain after Project implementation;
- EE. Disclose the method used to model old growth and mature forest dependent wildlife habitat acreages and its rate of error based upon field review of its predictions;
- FF. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security currently available in the area;
- GG. Have forest fires contributed to a diverse landscape?
- HH. Please disclose what is the best available science for restoration of whitebark pine.
- II. Disclose the level of current noxious weed infestations in the Project area and the cause of those infestations

- JJ. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security during Project implementation;
- KK. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security after implementation;
- LL. Disclose the method used to determine big game hiding cover, winter range, and security, and its rate of error as determined by field review;
- MM. Disclose and address the concerns expressed by the ID Team in the draft Five-Year Review of the Forest Plan regarding the failure to monitor population trends of MIS, the inadequacy of the Forest Plan old growth standard, and the failure to compile data to establish a reliable inventory of sensitive species on the Forest;
- NN. Disclose the actions being taken to reduce fuels on private lands adjacent to the Project area and how those activities/or lack thereof will impact the efficacy of the activities proposed for this Project;
- OO. Disclose the efficacy of the proposed activities at reducing wildfire risk and severity in the Project area in the future, including a two-year, five-year, ten-year, and 20-year projection;
- PP. Disclose when and how the Beaverhead-Deerlodge National Forest made the decision to suppress natural wildfire in the Project area and replace natural fire with logging and prescribed burning;
- QQ. Disclose the cumulative impacts on the Forest-wide level of the Beaverhead-Deerlodge National

Forest's policy decision to replace natural fire with logging and prescribed burning;

RR. Disclose how Project complies with the Roadless Rule;

SS. Disclose the impact of climate change on the efficacy of the proposed treatments;

TT. Disclose the impact of the proposed project on the carbon storage potential of the area;

UU. Disclose the baseline condition, and expected sedimentation during and after activities, for all streams in the area;

VV. Disclose maps of the area that show the following elements:

WW. Disclose how will the project effect sage grouse;

XX. What is the fire cycle of sagebrush;

1. Past, current, and reasonably foreseeable logging units in the Project area;
2. Past, current, and reasonably foreseeable grazing allotments in the Project area;
3. Density of human residences within 1.5 miles from the Project unit boundaries;
4. Hiding cover in the Project area according to the Forest Plan definition;
5. Old growth forest in the Project area;
6. Big game security areas;
7. Moose winter range;

Sage Grouse

Pages 46-47 of the South Tobacco Roots Vegetation Management Project Draft EA states:

Greater Sage-grouse

In 2015, Forest Plan was amended, along with several other forests in the Great Basin area, by the Greater Sage Grouse Record of Decision for Idaho and Southwest Montana, Nevada, and Utah (USFS 2015). The current sage-grouse habitat in the project area are sagebrush uplands that are currently being encroached by conifers from edge forested habitats. None of the mapped sage-grouse habitat was burned in the Bivens Creek or Cloudrest wildfires. The closest known sage-grouse lek is the Virginia City hill lek approximately eight miles south of the project area. The project area is not within the distance preferred by nesting sage-grouse as all leks are farther than 6.2 miles away.

Research indicates that up to 95 percent of nests occur within 6.2 miles of active leks. Conifer expansion is the most significant threat to their habitat on the Forest, where conifer canopy cover is found to negatively impact sagebrush cover. Conifer expansion negatively impacts habitat quality by providing nesting and perching habitat for predators of sage-grouse. Lek abandonment has been found to occur at as low as four percent conifer cover and research suggests that sage-grouse which avoided areas of encroaching conifer experienced increased rates of survival. Removal of conifers has been shown to immediately increase the probability of nesting in the short term and improves nesting success. This project proposes to remove conifers within sage-grouse habitats and design criteria reduce any potential short-term or long-term negative effects. Based on this information, sage-grouse were dismissed from being considered South Tobacco Roots Vegetation Management Project Draft Environmental Assessment, Madison Ranger District an issue in this EA and effects are beneficial in the long-term. See Appendix D for compliance with sage-grouse standards.

The problem is the Forest Plan states: “Sage Grouse: Sagebrush habitat supports sage grouse and pygmy rabbit populations by providing suitable sage grouse brood-rearing habitat on at least 40% of the sagebrush habitat within 18 kilometers of documented active or inactive sage

grouse leks and the area mapped as potential pygmy rabbit habitat.” The Draft EA states that the project won’t be 6.2 miles or 10 km of active leks instead of 18 km in violation of NEPA, NFMA, the Forest Plan, and the APA.

The Forest Plan states: “Sage Grouse: Maintain or improve sagebrush height, and canopy and grass-forb canopy of sagebrush habitat, emphasizing habitat within 18 kilometers of documented active or inactive sage grouse leks and the area mapped as potential pygmy rabbit habitat.”

The Forest Plan states: “Standard 8: Within 18 kilometers of documented active or inactive sage grouse leks, do not remove sagebrush within 300 meters of riparian zones, meadows, lakebeds or farmland, unless site specific analysis indicates such removal promotes achievement of the sagebrush habitat goal. Springs developed for livestock water in these areas must be designed to maintain free water and wet meadows.”

Does the project comply with the Greater Sage Grouse Record of Decision for Idaho and Southwest Montana, Nevada, and Utah? The EA does not demonstrate that it does. Please show how the project is complying with the Greater Sage Grouse Record of Decision for Idaho and Southwest Montana, Nevada, and Utah.

The Greater Sage Grouse Record of Decision for Idaho and Southwest Montana, Nevada, and Utah states on page 29:

Fire represents one of the most immediate threats to GRSG habitat. Annual invasive grasses are prone to frequent, recurring wildland fire, which further exacerbates the conversion of habitat to annual invasive grasses. Recognizing the nature and extent of this threat, the LMP amendments include specific guidance to fight the spread of cheatgrass and other invasive species, position wildland fire management resources for more effective rangeland fire response, and accelerate the restoration of fire-impacted landscapes to native grasses and sagebrush. In addition, the LMP amendments include guidance that restricts prescribed fire use in 12-inch or less precipitation zones unless necessary to facilitate restoration of GRSG habitat consistent with desired conditions or for pile burning. The exception for pile burning does not apply on the NFS lands in the Utah sub-region that are located within the boundaries of the State of Wyoming: Uintah, Wasatch, Cache and Ashley National Forests. If prescribed fire is for restoration the associated NEPA analysis must identify how the project would move towards GRSG desired conditions, why alternative techniques were not selected, and how potential threats to GRSG habitat would be minimized.

The draft EA does not mention why alternative techniques were not selected and how potential threats to GRSG habitat would be minimized.

The Forest Service's failure to disclose and demonstrate compliance with the Forest Plan requirements for sage grouse in the Project EA, violates the Forest Plan, NFMA, NEPA, and the APA.

There is no mention of cheatgrass in the wildlife report. Page 39 of the wildlife reports states:

Cumulative Effects of the Proposed Action

A variety of past activities have contributed to the current condition for sage-grouse within the project area.

The effects of past activities are accounted for in the description of the existing condition. Therefore, they are not discussed further here. There are no other projects proposed for the project area that would be likely to impact sage-grouse or their habitats.

The primary ongoing activity with the potential to adversely affect sage-grouse is livestock grazing , hunting and high intensity wildfire. Appropriate grazing management will be achieved through implementation of the Forest Plan which states, "Use of forage by domestic livestock will maintain or enhance the desired structure and diversity of plant communities on grasslands, shrub lands, and forests. Use will be managed to maintain riparian function as defined in the allotment management plan." Additionally, grazing would comply with

Forest Plan Amendment standards specific to sage-grouse.

Weeds already exist in these units. Treatment of noxious weeds and invasive plants like cheat grass, is identified as a priority. Other activities going on in the project area and adjacent to the project area are conifer encroachment work on BLM and on private lands in coordination with NRCS. These projects are spaced out through the valley and in the long term benefit sage-grouse by maintaining and enhancing sagebrush habitats in the area used by sage-grouse from the nearest lek.

Based on this information the proposed project, in combination with other activities, would not result in significant adverse cumulative effects to sage-grouse or their habitats.

Page 89 of the draft EA states:

I6: Units will be assessed for cheatgrass and other invasive nonnative plant species after commercial harvest or prior to implementation of broadcast burning. Cheatgrass presence will be monitored following treatment. If post-fire conditions indicate that cheatgrass is expanding, targeted treatment may be implemented. An EPA approved herbicide with rangeland label for Montana will be used to respond if site-specific conditions warrant action.

Is that an effective ways to control cheatgrass? It appears not since the previous South Tobacco Roots EA states, ***Should herbicides be developed that are effective in controlling cheatgrass and have a complete risk assessment...***

Basing the decision on hoping an effective herbicide is developed to control cheatgrass and it is found to be safe is an arbitrary and capricious decision and in violation of NEPA, NFMA, the Forest Plan and the APA.

Noxious weeds are one of the greatest modern threats to biodiversity on earth – greater than both pollution and over-exploitation of resources. Noxious weeds cause harm because they displace native plants, resulting in a loss of diversity and a change in the structure of a plant community. For example, noxious weeds such as leafy spurge forms such dense stands that it excludes nearly all other non-woody vegetation and the root sap further inhibits growth of other plants in the surrounding soil. Moreover, by removing native vegetative cover, invasive plants like knapweed may increase sediment yield and surface runoff in an ecosystem. In addition, weed colonization can alter fire behavior by increasing flammability: for example, cheatgrass cures early and leads to more frequent burning. Weed colonization can also deplete soil nutrients and change the physical structure of soils. Herbicide application – intended to eradicate invasive plants – also results in a loss of native plant diversity because herbicides kill native plants as well as invasive plants. The ecological threats posed by noxious weed infestations are so great that a former chief of the Forest Service called the invasion of noxious weeds “devastating” and a “biological disaster.” Noxious weeds have expanded into every county in Montana. Noxious weed infestations may be irreversible. Even if weeds are eliminated with herbicide treatment, they may be replaced by other weeds,

not by native plant species. Rinella et al (2009). Additionally, when areas treated with herbicides are reseeded on the Forest, they are usually reseeded with exotic grasses, not native plant species.

Please analyze the effects of spraying herbicides and pesticides on people, wildlife and fish.

The Forest Services's own management activities are largely responsible for noxious weed infestations. Vehicle traffic and soil disturbances from road construction and maintenance create ideal establishment conditions for weeds. Tyser & Key (1988); Ferguson et al (2003). Roads also provide "obvious dispersal corridors." Parendes & Jones (2000). One Montana study demonstrated that a vehicle picked up 2,000 knapweed seeds after driving several feet through knapweed, and that the vehicle was still dispersing those seeds after driving ten miles from the infestation. Sheley & Petroff (1999). Once established along roadsides, invasive plants may spread into adjacent grasslands. Sheley & Petroff (1999). In general, noxious weeds occur in clearcuts, but are rare in mature and old growth forests. Parendes & Jones (2000).

This Project will exacerbate existing infestations and create new infestations as a result of the mechanical treatment. The Revised Forest Plan and the Noxious Weed Plan for the Forest contain no thresholds or standards to restrict the cumulative impact of land management activities that will cause new infestations. In light of the significant threat to biodiversity from new and expanding noxious weed infestations, the Forest Service's proposal for more cutting,

burning and grazing will undoubtedly lead to new weed infestations is arbitrary and violates NFMA's mandate to protect native plant diversity. The BDNF must amend the Forest Plan to adopt legally binding standards that restrict new noxious weed infestations with preventive thresholds for roads and ground-disturbing activities.

Throughout the arid West, biological soil crusts (BSC) consisting of moss, algae, lichens, and cyanobacteria cover the soil between native bunch grasses. These crusts are very fragile and easily broken up by trampling from livestock hooves. As livestock destroy soil crusts, cheatgrass seeds can establish on the bare soil.

A second way that livestock promotes cheatgrass is by selectively grazing native bunch grasses. By selectively and preferentially grazing the native grasses, livestock gives cheatgrass a competitive advantage.

Please look at the cumulative impact of this project and other projects on cheatgrass and all noxious weeds and the cumulative impact of cheatgrass and all noxious weeds.

Weeds

Native plants are the foundation upon which the ecosystems of the Forest are built, providing forage and shelter for all native wildlife, bird and insect species,

supporting the natural processes of the landscape, and providing the context within which the public find recreational and spiritual opportunities. All these uses or values of land are hindered or lost by conversion of native vegetation to invasive and noxious plants. The ecological threats posed by noxious weed infestations are so great that a former chief of the Forest Service called the invasion of noxious weeds “devastating” and a “biological disaster.” Despite implementation of Forest Service “best management practices” (BMPs), noxious weed infestation on the Forest is getting worse and noxious weeds will likely overtake native plant populations if introduced into areas that are not yet infested. The Forest Service has recognized that the effects of noxious weed invasions may be irreversible. Even if weeds are eliminated with herbicide treatment, they may be replaced by other weeds, not by native plant species.

Invasive plant species, also called noxious weeds, are one of the greatest modern threats to biodiversity on earth. Noxious weeds cause harm because they displace native plants, resulting in a loss of diversity and a change in the structure of a plant community. By removing native vegetative cover, invasive plants like knapweed may increase sediment yield and surface runoff in an ecosystem. As well knapweed may alter organic matter distribution and

nutrient through a greater ability to uptake phosphorus over some native species in grasslands. Weed colonization can alter fire behavior by increasing flammability: for example, cheatgrass, a widespread noxious weed on the Forest, cues early and leads to more frequent burning. Weed colonization can also deplete soil nutrients and change the physical structure of soils.

The Forest Service's own management activities are largely responsible for noxious weed infestations; in particular, logging, prescribed burns, and road construction and use create a risk of weed infestations. The introduction of logging equipment into the Forest creates and exacerbates noxious weed infestations. The removal of trees through logging can also facilitate the establishment of noxious weed infestations because of soil disturbance and the reduction of canopy closure. In general, noxious weeds occur in old clearcuts and forest openings, but are rare in mature and old growth forests. Roads are often the first place new invader weeds are introduced. Vehicle traffic and soil disturbances from road construction and maintenance create ideal establishment conditions for weeds. Roads also provide obvious dispersal corridors. Roadsides throughout the project area are infested with noxious weeds. Once established along roadsides, invasive plants will likely spread into adjacent grasslands and forest openings.

Logging activities within the analysis area would likely cumulatively contribute to increases to noxious weed distribution and populations. As a disturbance process, logging has the potential to greatly exacerbate infestations of certain noxious weed species. Please disclose the amount of detrimental soil disturbance that currently exists in each proposed unit from previous logging and grazing activities. Please disclose the expected amount of detrimental soil disturbance in each unit after ground disturbance and prior to any proposed mitigation/remediation. Please disclose the expected amount of detrimental soil disturbance in each unit after proposed mitigation/remediation. Please also disclose the analytical data that supports proposed soil mitigation/remediation measures.

Dry site vegetation types and road corridors are extremely vulnerable, especially where recent ground disturbance (timber management, road construction) has occurred. Units proposed for logging within project area may have closed forest service access roads (jammers) located within units. These units have the highest potential for noxious weed infestation and exacerbation through fire activities. Please provide an alternative that eliminates units that have noxious weeds present on roads within units from fire management proposals.

Please address the ecological, social and ascetic impact of current noxious weed infestations within the project area.

Include an analysis of the impact of the actions proposed by this project on the long and short term spread of current and new noxious weed infestations. What treatment methods will be used to address growing noxious weed problems? What noxious weeds are currently and historically found within the project area? Please include a map of current noxious weed infestations which includes knapweed, Saint Johnswort, cheat grass, bull thistle, Canada thistle, hawkweed, hound's-tongue, oxeye daisy and all other Category 1, Category 2 and Category 3 weeds classified as noxious in the MONTANA COUNTY NOXIOUS WEED LIST. State-listed Category 2 noxious weed species yellow and orange hawkweeds are recently established (within the last 5 to 10 years) in Montana and are rapidly expanding in established areas. They can invade undisturbed areas where native plant communities are intact. These species can persist in shaded conditions and often grow underneath shrubs making eradication very difficult. Their stoloniferous (growing at the surface or below ground) habit can create dense mats that can persist and spread to densities of 3500 plants per square mile (Thomas and Dale 1975). Are yellow and orange hawkweeds present within the project area?

Please address the cumulative, direct and indirect effects of the proposed project on weed introduction, spread and persistence that includes how weed infestations have been and will be influenced by the following management actions: road construction including new permanent and temporary roads, and skid trails proposed within this

project; opening and decommissioning of roads represented on forest service maps; ground disturbance and traffic on forest service template roads, mining access routes, and private roads; removal of trees through salvage logging. What open, gated, and decommissioned Forest Service roads within the project area proposed as haul routes have existent noxious weed populations and what methods will be used to assure that noxious weeds are not spread into the proposed action units?

Noxious weeds are not eradicated with single herbicide treatments. A onetime application may kill an individual plant but dormant seeds in the ground can still sprout after herbicide treatment. Thus, herbicides must be used on consistent, repetitive schedules to be effective.

What commitment to a long-term, consistent strategy of application is being proposed for each weed infested area within the proposed action area? What long term monitoring of weed populations is proposed?

When areas treated with herbicides are reseeded on national forest land, they are usually reseeded with exotic grasses, not native plant species. What native plant restoration activities will be implemented in areas disturbed by the actions proposed in this project? Will disturbed areas including road corridors, skid trails, and burn units be planted or reseeded with native plant species?

The scientific and managerial consensus is that prevention is the most effective way to manage noxious weeds. The Forest Service concedes that preventing the introduction of weeds into uninfested areas is “the most critical component of a weed management program.” The Forest Service’s national management strategy for noxious weeds also recommends “develop[ing] and implement[ing] forest plan standards” and recognizes that the cheapest and most effective solution is prevention. Which units within the project area currently have no noxious weed populations within their boundaries? What minimum standards are in the Beaverhead-Deerlodge National Forest Plan to address noxious weed infestations? Please include an alternative in the DEIS that includes land management standards that will prevent new weed infestations by addressing the causes of weed infestation. The failure to include preventive standards violates NFMA because the Forest Service is not ensuring the protection of soils and native plant communities. Additionally, the omission of an EIS alternative that includes preventive measures would violate NEPA because the Forest Service would fail to consider a reasonable alternative. Disclose the impact of the Project on noxious weed infestations and native plant communities;

Rare Plants

The ESA requires that the Forest Service conserve endangered and threatened species of plants as well as animals. In addition to plants protected under the ESA, the Forest Service identifies species for which population viability is a concern as “sensitive species” designated by the Regional Forester (FSM 2670.44). The response of each of the sensitive plant species to management activity varies by species, and in some cases, is not fully known. Local native vegetation has evolved with and is adapted to the climate, soils, and natural processes such as fire, insect and disease infestations, and windthrow. Any management or lack of management that causes these natural processes to be altered may have impacts on native vegetation, including threatened and sensitive plants. Herbicide application – intended to eradicate invasive plants – also results in a loss of native plant diversity because herbicides kill native plants as well as invasive plants. Although native species have evolved and adapted to natural disturbance such as fire on the landscape, fires primarily occur in mid to late summer season, when annual plants have flowered and set seed. Following fall fires, perennial root-stocks remain underground and plants emerge in the spring. Spring and early summer burns could negatively impact emerging vegetation and destroy annual plant seed.

What threatened, endangered, rare and sensitive plant species and habitat are located within the proposed project area? What standards will be used to protect threatened, rare, sensitive and culturally important plant species and their habitats from the management actions proposed in this project? Describe the potential direct and indirect effect of the proposed management actions on rare plants and their habitat.

Whitebark Pine

Not all ecosystems or all Rocky Mountain landscapes have experienced the impacts of fire exclusion. In some wilderness areas, where in recent decades natural fires have been allowed to burn, there have not been major shifts in vegetation composition and structure (Keane et al. 2002). In some alpine ecosystems, fire was never an important ecological factor. In some upper subalpine ecosystems, fires were important, but their rate of occurrence was too low to have been significantly altered by the relatively short period of fire suppression (Keane et al. 2002). For example, the last 70 to 80 years of fire suppression have not had much influence on subalpine landscapes with fire intervals of 200 to several hundred years (Romme and Despain). Consequently, it is unlikely that fire exclusion has yet to significantly alter stand conditions or forest health within Rocky Mountain subalpine ecosystems.

Pages 20 and 57 of the EA and page 3 of the South Tobacco Roots Vegetation Management Project Forested Vegetation Effects Analysis states that there are whitebark pine trees in the project area.

Whitebark pine are hard to identify. Will you survey the entire project area to ensure that you won't kill whitebark pine trees? If not, how are loggers expected to identify whitebark pine from their feller buncher? How many whitebark pine trees to you expect to kill?

Please disclose the failure rate of these practices as a technique for natural regeneration of whitebark pine under these conditions.

Please disclose or address the results of the Forest Service's only long-term study on the effects of tree cutting and burning on whitebark pine. This study, named "Restoring Whitebark Pine Ecosystems," included prescribed fire, "thinning", "selection cuttings," and "fuel enhancement cuttings" on multiple different sites. The results were that "[a]s with all the other study results, there was very little whitebark pine regeneration observed on these plots." See U.S. Forest Service, General Technical Report RMRS-GTR-232 (January 2010). These results directly undermine the representations the Forest Service makes in the EA and is therefore a violation of NEPA, NFMA, and the APA.

More specifically, the Forest Service's own research at RMRS-GTR-232 finds: "the whitebark pine regeneration that was expected to result from this [seed] caching [in new openings] has not yet materialized. Nearly all sites contain very few or no whitebark pine seedlings." Thus, even ten years after cutting and burning, regeneration was "marginal."

Moreover, as the Forest Service notes on its website: "All burn treatments resulted in high mortality in both whitebark pine and subalpine fir (over

Accordingly, the only proven method of restoration of whitebark pine is planting: "Manual planting of whitebark pine seedlings is required to adequately restore these sites."

Whitebark pine seedlings, saplings and mature trees, present in subalpine forests proposed for burning, would experience mortality from project activity. Whitebark pine is fire intolerant (thin bark).

White pine blister rust, an introduced disease, has caused rapid mortality of whitebark pine over the last 30 to 60 years. Keane and Arno (1993) reported that 42 percent of whitebark pine in western Montana had died in the previous 20 years with 89 percent of remaining trees being infected with blister rust. The ability of whitebark pine to reproduce naturally is strongly affected by blister rust

infection; the rust kills branches in the upper cone bearing crown, effectively ending seed production.

In some areas the few remaining whitebark that show the potential for blister rust resistance are being attacked and killed by mountain pine beetles, thus accelerating the loss of key mature cone-bearing trees.

As the EA states, whitebark pine seedlings and saplings present in the subalpine forests proposed for burning and logging? In the absence of fire, this naturally occurring whitebark pine regeneration would continue to function as an important part of the subalpine ecosystem. Since 2005, rust resistant seed sources have been identified in the Northern Rockies (Mahalovich et al 2006). Due to the severity of blister rust infection within the region, natural whitebark pine regeneration in the project area is prospective rust resistant stock.

What surveys have been conducted to determine presence and abundance of whitebark pine regeneration? If whitebark pine seedlings and saplings are present, what measures will be taken to protect them? Please include an alternative that excludes burning in the presence of whitebark pine regeneration. Will restoration efforts include planting whitebark pine? Will planted seedling be of rust-resistant stock? Is rust resistant stock available? Would enough seedlings be planted to replace whitebark pine lost

to fire activities? Have white pine blister rust surveys been accomplished? What is the severity of white pine blister rust in proposed action areas?

Why is the EA misleading the public that this project will benefit whitebark pine when the Forest Service's own studies show that manual planting of whitebark pine is the only proven way to restore whitebark pine?

Please formally consult with the US FWS on the impact of the project on whitebark pine.

White pine blister rust, an introduced disease, has caused rapid mortality of whitebark pine over the last 30 to 60 years. Keane and Arno (1993) reported that 42 percent of whitebark pine in western Montana had died in the previous 20 years with 89 percent of remaining trees being infected with blister rust. The ability of whitebark pine to reproduce naturally is strongly affected by blister rust infection; the rust kills branches in the upper cone bearing crown, effectively ending seed production.

Montana is currently experiencing a mountain pine beetle epidemic. Mountain pine beetle prefer large, older whitebark pine, which are the major cone producers. In some areas the few remaining whitebark that show the potential for blister rust resistance are being attacked and killed by mountain pine beetles, thus accelerating the loss of key mature cone-bearing trees.

Whitebark pine seedlings and saplings are very likely present in the subalpine forests proposed for burning and logging. In the absence of fire, this naturally occurring white-bark pine regeneration would continue to function as an important part of the subalpine ecosystem. Since 2005, rust resistant seed sources have been identified in the Northern Rockies (Mahalovich et al 2006). Due to the severity of blister rust infection within the region, natural whitebark pine regeneration in the project area is prospective rust resistant stock.

Planting of rust-resistant seedlings would likely not be sufficient to replace whitebark pine lost to fire activities. What surveys have been conducted to determine presence and abundance of whitebark pine re-generation? If whitebark pine seedlings and saplings are present, what measures will be taken to protect them? Please include an alternative that excludes burning in the presence of whitebark pine regeneration (consider 'Daylighting' seedlings and saplings as an alternative restoration method). Will restoration efforts include planting whitebark pine? Will planted seedling be of rust-resistant stock? Is rust resistant stock available? Would enough seedlings be planted to replace white-bark pine lost to fire activities? Have white pine blister rust surveys been accomplished? What is the severity of white pine blister rust in proposed action areas?

Does the Beaverhead Deerlodge National Forest have any forest plan biological assessment, biological opinion,

incidental take statement, and management direction amendment for whitebark pine?

Please see the attached paper titled: “Management for Mountain Pine Beetle Outbreak Suppression: Does Relevant Science Support Current Policy?” By Six et al. 2014. Please also find attached Six et al;. 2021.

WUI

Please demonstrate that the definition of the Wildland Urban Interface or WUI that the project is using follows the plain language of the Healthy Forest Restoration Act.

The current fuel/fire hazard situation on land of all ownerships within the WUI (at least the WUI that’s relevant to this area) must be displayed on a map. More importantly, the fuel/fire hazard situation post-project on land of all ownerships within the WUI must also be displayed on a map. Based on this mapping of current and projected conditions, please accurately disclose the threats to private structures and people under those scenarios, for all alternatives. It must be discernible why some areas are included for treatment and others are not.

Page 26-27 of the EA states:

Wildland Urban Interface

Potential WUI within and adjacent to the project area was analyzed and mapped. The Healthy Forest Restoration Act (HFRA) defines the WUI as, “An area within or adjacent to an at-risk community that is identified in recommendations to the Secretary [of Agriculture] in a community wildfire protection plan” (16 USC 6511(16) (A)).

Where there is no community wildfire protection plan in effect, HFRA defines the WUI as “An area extending ½-mile from the boundary of an at-risk community and within 1½ miles of the boundary of an at-risk community, including any land that has a sustained steep slope that creates the potential for wildfire behavior endangering the at-risk community, geographic features that aid in creating an effective fuel break or is in condition class 3. In addition, areas adjacent to an evacuation route for an at-risk community requires hazardous fuel reduction to provide safer evacuation from the at-risk community is part of the WUI (16 USC 6511(16)(b)).”

HFRA defines an “at-risk community” as an area comprised of:

An interface community as defined in the notice entitled "Wildland Urban Interface

Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire"

... (66 Fed. Reg. 753, January 4, 2001); or a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) within or adjacent to Federal

land;

With conditions conducive to a large-scale wildland fire event; and where a significant threat to human life or property exists because of a wildland fire event (16 USC 6511(16)(A)).

Madison County commissioners signed an updated CWPP in 2024 that defined the WUI “where human development meets or intermingles with wildland vegetation, such as forests, grasslands, or other natural areas. This zone is characterized by the proximity of homes, structures, and communities to potentially wildfire-prone landscapes.”

Map

3.2.1a in the CWPP (page 14) displays WUI for the county. The CWPP (page 19) contains a Community Wildfire Risk Assessment. Some of the factors used in identifying fire risk include fire regime groups, vegetation types and condition class, fire behavior, ignition risks, and transportation routes. Portions of the project area are within the CWPP defined WUI as well as within the definition of WUI under HFRA based on proximity to at-risk communities and evacuation routes 16 USC 6511(16)(b).

The number and location of subdivisions and developments have expanded in Madison County (CWPP page 21). Communities that are directly adjacent to this project are South Meadow Creek and Elk Hills, each consisting of several homes or cabins and a variety of other structures. Basic shared infrastructure includes access roads maintained by the Forest Service and Madison County and electric power distribution lines.

Wildland fuel conditions that pose significant threats to life and property are present and extensive. South Meadow Creek and Elk Hills subdivisions (and most other subdivisions in the county) have direct exposure for wildfire transmission (CWPP page 25). In addition, South Meadow Creek and Elk Hills share County Road 29 and Forest Service Road 161 as evacuation routes, as do scattered residences along Granite Creek. Portions of California Creek watershed were also considered, however homes and structures in this area are located on private land in holdings one or more miles apart and did not meet the 16 USC 6511(16)(b) definition of a community. Map Figure 8 in Appendix B displays proposed vegetation treatments and WUI mapped for the project area as defined by 16 USC 6511(16)(b).

Did the Forest Service take public comment on boundaries of the wildland urban interface as required by NEPA?

Does the wildland urban interface (WUI), as identified by the Madison County community wildfire protection plan (CWPP) meet the plan language of the WUI in the Healthy Forest Restoration Act (HFRA)? It does not appear to. Please demonstrate that the definition of the WUI that the South Tobacco Roots Project is using follows the plain language of the Healthy Forest Restoration Act.

The Forest Service failed to take a hard look at the Project's impacts to wildlife and habitat connectivity, in violation of NEPA and the APA.

The EA fails to take a hard look at the Project's impacts to lynx and lynx habitat caused by the Project's expansion of the WUI beyond the boundaries analyzed in the Forest Plan EIS and the EIS for the NRLMD.

The EA fails to take a hard look at the Project's impacts to lynx and lynx habitat caused by the Project's expansion of the WUI beyond the boundaries analyzed in the Forest Plan EIS and the EIS for the NRLMD.

Moreover, the EA fails to adequately consider how large openings and removing significant cover will impact elk displacement from public lands during hunting season, or how increased motorized access into previously secure areas will displace elk and grizzly bears, even if new roads are not open to the public.

The Forest Service's analyses, actions, and omissions regarding the cumulative impacts of the Project to wildlife and to the connectivity of important wildlife habitat across the Project area violate NEPA and the APA.

The Forest Service's use of HFRA § 6591a(d) to authorize logging and burning in occupied lynx habitat violates HFRA, NEPA, NFMA, and the APA.

Under exemptions in the NRLMD that were adopted by the Forest Plan, the Forest Service may treat winter lynx foraging habitat in the WUI for fuels reduction purposes,

but the Forest Plan makes clear that in order to utilize the exemptions, treatments must be in the WUI “as defined by HFRA.”

The Project EA states that “[t]he acres planned for treatment that utilize these exemptions meet the wildland-urban interface definition as defined by the Healthy Forest Restoration Act.”

But the South Tobacco Roots Project relies on an over inclusive WUI definition, in violation of HFRA, resulting in the Project authorizing more logging and burning in lynx habitat than permitted by the Forest Plan or contemplated by the NRLMD.

In defining the WUI for the Project, the Forest Service claimed it was basing the Project WUI on Madison County’s similarly flawed community wildfire protection plans.

Although HFRA permits logging in the WUI in order to protect people and property over other resource values, the Ninth Circuit has held that “reliance on a plainly over inclusive wildland-urban interface, without more, is the sort of ‘clear error of judgment’ that arbitrary or capricious review is meant to prevent.” *All. for the Wild Rockies*, 2023 WL 5427921, at *11 (quoting *All. for the Wild Rockies v. Petrick*, 68 F.4th 475, 494 (9th Cir. 2023)).

And “[w]hile a community plan’s definition of the wildland-urban interface need not parrot HFRA’s, if a community plan’s definition of its wildland-urban interface—on its face—deviates from HFRA and likely results in a covered area beyond what Congress authorized, the Forest Service cannot properly rely on the community plan—alone—to justify the categorical exclusion.” *Id.* (internal quotations and alterations omitted).

By relying on exemptions for areas in this overinclusive WUI, the South Tobacco Roots Project will adversely affect lynx and lynx critical habitat by removing more acres of lynx habitat, displacing lynx from more areas during the Project, and altering the ability of lynx to use greater portions of the Project area for decades due to their avoidance of clearcuts and reliance on mature, multi-story forests. 197. The full extent of such adverse impacts, however, is unknown because the Forest Service did not adequately consider the effects of expanding the WUI for the Project. The EA does not disclose the impacts to lynx that will result from removing significant portions of occupied lynx habitat from Forest Plan and NRLMD protections.

Therefore, the Forest Service failed to take a hard look at the Project’s impacts to lynx and lynx habitat because the Project-level WUI definition, mapping, and lynx-related impacts analyses that are improperly tiered to the Forest

Plan EIS are misleading and inadequate, in violation of NEPA and NFMA.

Also in violation of NFMA, the Forest Service has not demonstrated compliance with the Forest Plan's wildlife and vegetation standards for occupied lynx habitat. Because the Forest Service failed to consider the direct, indirect, and cumulative impacts from other reasonably foreseeable logging projects overlapping Project area LAUs, the EA fails to demonstrate the Project's consistency with Forest Plan and NRLMD standards that are designed to maintain connectivity and prevent more than 15% of an LAU from being clearcut, or "regenerated," in a 10-year period.

In sum, the Forest Service's failure to demonstrate compliance with provisions of HFRA and the Forest Plan, as well as its failure to properly analyze the Project's impacts to lynx and adequately inform the public of the Project's impacts to lynx and lynx habitat, are violations of HFRA, NFMA, and NEPA, and render the South Tobacco Roots Project Draft EA arbitrary and capricious, not in accordance with law, and without observance of procedures required by law, in violation of the APA.

Please see the attached University of Montana Thesis: Correlates of Canada Lynx Reproductive Success in Northwestern Montana by Megan K. Kosterman.

Kosterman finds 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. This contradicts the agency's assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery. Kosterman's study demonstrates that the Lynx Amendment standards are not adequate for lynx viability and recovery, as previously assumed by the Forest Service.

Please also find attached peer reviewed papers by Holbrook that confirm Kosterman's thesis.

Since this is now the best available science we are hereby formally requesting that the Forest Service write a supplemental EIS for the Northern Rockies Lynx Management Direction and reinitiate consultation with the FWS for the Lynx Amendment to publicly disclose and address the findings of this study, and to allow for further public comment on this important issue of lynx recovery.

The Forest Service and the FWS have no idea what the population of lynx is because they don't do lynx population monitoring. In light of the government's failure to monitor lynx population trends, it would be disingenuous for FWS to argue that "there is no evidence of population decline" because the reason that "there is no evidence" is because the government refuses to conduct monitoring. In light of the government's failure to monitor and document populations and population trends, the Forest Service and the FWS must apply the precautionary principle and assume that the effects of allowing logging that does not comply with Kosterman and Squires findings is resulting in population declines.

Since this is now the best available science we are hereby formally requesting that the Forest Service write a supplemental EIS for the Northern Rockies Lynx Management Direction and reinstate consultation with the FWS for the Lynx Amendment to publicly disclose and address the findings of this study, and to allow for further public comment on this important issue of lynx recovery.

Page 93 of the 2016 Fleecer EA states: "In July, 2013 the U.S. Fish and Wildlife Service updated the "Threatened, Endangered and Candidate Species for the Beaverhead-Deerlodge National Forest" and the Canada lynx was added to the BDNF list as "Transient; secondary/peripheral lynx habitat"; where it remains (USDI Fish and Wildlife Service 2016)."

The Forest straddles the mountains of the Continental Divide and contains nationally renowned trout streams, elk populations, and some of last wild refuges for many threatened, endangered, and sensitive fish and wildlife species.

In particular, the Forest and Project area provide habitat for grizzly bears, wolverines, Canada lynx, gray wolves, and westslope cutthroat trout.

Ruggiero et al (1999), the Forest Service's General Technical Report "Ecology and Conservation of Lynx in the United States," states that lynx are present in the Forest.

Ruediger et al (2000), the agencies' "Canada lynx conservation assessment and strategy," considers the Forest within the geographic extent of the strategy.

The Montana Department of Fish, Wildlife, and Parks has compiled a database of lynx occurrences and distribution throughout Montana from 1977 -1998. This information was mapped on pages 244 and 247 of Ruggiero et al (1999) and shows numerous occurrences in the Forest.

In Squires (2003), the Forest Service documents: "Discussions with local trappers and biologists indicate that lynx were present in the Pioneer Mountains prior to the late 1990's, and had been detected during winter track surveys as recently as 2000 (Forkan 2000). This fact is substantiated by the number of trapped lynx from this area

in the 1970s.” Elsewhere, the report notes “[f]rom 1977 to 1994, 39 lynx occurrences were recorded in the Pioneer Mountains, including 13 harvested individuals (McKelvey et al. 2000). Snow-track surveys performed as recently as 2000 indicated that lynx were present along the Scenic Byway (Forkan 2000).”

In Squires (2003), the Forest Service documented the results of winter tracking surveys. The record indicates two (2) sets of lynx tracks were found in the Forest near the Project area, within the Big Hole landscape area

(which is the analysis area for wildlife security for the Project). The report concludes that “lynx were either absent or at very low densities during our study.” (emphasis added).

The U.S. Fish and Wildlife Service’s final map (2003) for lynx shows that the Forest is within the range of both resident and dispersing lynx.

Berger (2009) found one set of potential lynx tracks in the Forest during winter tracking surveys, as well as one set outside the Forest boundary that was heading towards the Forest boundary.

In Devineau (2010), the State of Colorado Division of Wildlife documented locations of radio-collared lynx released in Colorado. The record shows

multiple lynx traveling in the Forest (approximately four (4) individuals), including at least two individual lynx

traveling in the Project area. One of the individuals inhabited the Madison Range for approximately two weeks.

In litigation over lynx critical habitat in 2010, the U.S. Fish and Wildlife Service admitted that the Forest is occupied for the purpose of designating lynx critical habitat. *Alliance for Wild Rockies v. Lyder*, 728 F.Supp.2d 1126, 1133 (D. Mont. 2010)(“Plaintiffs take exception to the Service's failure to designate the Beaver- head-Deerlodge [and certain other National Forests] as lynx critical habitat. [FN4] . . . In response, the government acknowledges the record shows such forests to be occupied”)

The Forest Service’s Fleecer Mountains Watershed Assessment (2009) indicates that lynx are “potentially” “likely to be present” in the Project area. It also states “[f]rom 1988 to 1999 there are 72 reports of lynx being trapped or observed in the Pioneers, Big Hole Mountains and Fleecer Range.”

The Project area contains agency-designated “linkage areas” for the Canada lynx: one on the north end of the Project area heading northwest to the Anaconda Mountains and Anaconda-Pintler Wilderness, and one to the southwest heading to the Pioneer Mountains.

The Project analysis and impacts on ESA-listed Canada lynx violate the ESA, NEPA, and NFMA.

The Federal District Court of Montana recently ordered the USFWS to reconsult on lynx critical habitat because they

did not base lynx critical habitat on where lynx were at the time of listing in 2000. Lynx were in the project area at the time of listing so the Forest Service needs to consult with the FWS to see if this project could effect lynx critical habitat.

The Forest Plan analysis and impacts on ESA-listed lynx violate ESA, NFMA, and NEPA.

The Forest Service's failure to take a hard look at lynx presence and the Forest Plan's potential impacts on lynx, using the best available science, including the agency's failure to assess the Forest Plan's impacts on lynx travel/linkage corridors, violates NEPA. See *Pacific Rivers Council v. U.S.*

Forest Service, --- F.3d ----, 2012 WL 336133 (9th Cir. 2012).

The Forest Service's failure to include binding legal standards aimed at conserving and recovering ESA-listed lynx on the Forest in the Forest Plan violates NFMA.

The FS approval and implementation of the Lynx Management Direction is arbitrary and capricious, violates NEPA's hard look requirement and scientific integrity mandate and fails to apply the best available science necessary to conserve lynx. The Lynx Direction contains no protection or standard for conservation of winter lynx habitat (old growth forests). This project allows the logging of thousands of acres of old growth without any

analysis of whether that forest is necessary for conservation as winter lynx habitat. Please take a hard look at this factor. By failing to include a provision to protect winter lynx habitat, the Lynx Direction fails to apply the best available science and implement the measures necessary for lynx conservation, as required by the ESA. The Lynx

Direction also arbitrarily exempts WUI lands from lynx habitat protection. If this exemption did not exist, the project could not proceed because the logging authorized by the projects violates at least one of the protections for lynx habitat.

The Lynx Amendment and its Biological Opinion/ Incidental Take Statement allow unrestricted logging in the wildland urban interface, which the agencies estimate to compose approximately 6% of the lynx habitat on National Forests. The EA nor the DN explain where the WUI is in relation to the projects and the LAUs but merely state that the entire project lies within the WUI boundary. EA p. 164, foot note 11. Also, it is not clear why the project does not utilize the Lynx Amendment wildland urban interface map to define WUI, the correct definition for WUI, but instead uses the definition in the Healthy Forest Restoration Act. If the projects were to use the correct definition of WUI, the project could not proceed. The failure to comply with logging restrictions outside the WUI violates NFMA. The failure to adequately address this issue in the EA and demonstrate compliance with the Lynx Amendment violates NEPA.

The analysis of the impacts to lynx in the EA and the DN is extremely limited and it inappropriately uses an LAU that excessively large, allowing the impacts to be minimized. The current best science suggests that female lynx home range as about 10,000 acres. The project area is almost 10 times the size. The analysis in the EA is invalid.

The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling through low cover areas in winter. The EA fails to identify the amount of non or low cover areas that will be created from the project. The project fails to use the best available science in regard to lynx habitat. The best available science is now Kosterman's masters Thesis, "Correlates of Canada Lynx Reproductive Success in Northwestern Montana" This study finds 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. This contradicts the agency's assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery. Kosterman's study demonstrates that the Lynx Amendment standards are not adequate for lynx viability and recovery, as assumed by the Forest Service

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.) 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. 2006.)

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.)

Squires et al. (2013) noted in their research report that some lynx avoided crossing highways; in their own report, they noted that only 12 of 44 radio-tagged lynx with home ranges including 2-lane highways crossed them. 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.)

Squires et al., 2010 reported that lynx winter habitat should be “abundant and spatially well-distributed across the landscape. Those authors also noted that in heavily

managed landscapes, retention and recruitment of lynx habitat should be a priority.

The Northern Rockies Lynx Management Direction is inadequate to ensure conservation and recovery of lynx. The amendments fail to use the best available science on necessary lynx habitat elements, including but not limited to, failing to include standards that protect key winter habitat. The

Endangered Species Act requires the FS to insure that the project is not likely to result in the destruction or adverse modification of critical habitat. 16 U.S.C. §1536(a)(2). Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for lynx. 74 Fed. Reg. 8644.

The Northern Rockies Lynx Management Direction (NRLMD) as applied in the project violates the ESA by failing to use the best available science to insure no adverse modification of critical habitat. The NRLMD carves out exemptions from Veg Standards S1, S2, S5, and S6. In particular, fuel treatment projects may occur in the WUI even though they will not meet standards Veg S1, S2, S5, or S6, provided they do not occur on more than 6% of lynx habitat on each National Forest. See NRLMD ROD, Attachment 1, pages 2-3. Allowing the agency to destroy or adversely modify any lynx critical habitat has the potential

to appreciably reduce the conservation value of such habitat. The agency cannot simply set a cap at 6% forest-wide without looking at the individual characteristics of each LAU to determine whether the project has the potential to appreciably reduce the conservation value. The ESA requires the use of the best available science at the site-specific level. It does not allow the agencies to make a gross determination that allowing lynx critical habitat to be destroyed forest-wide while not appreciably reduce the conservation value.

Standard S2 prohibits projects that do regenerate more than 15% of lynx habitat on NFS lands within an LAU in a 10-year period. The EA and DN do not provide the number of acres within the LAU that have been harvested within the last 10-years and fails to take previous project in account in regards to Veg Standard S2.

The FS violated NEPA by applying the above-mentioned exception without analyzing the impacts to lynx in the individual LAUs. The Project violates the NFMA by failing to insure the viability of lynx. According to the 1982 NFMA regulations, fish and wildlife must be managed to maintain viable populations of Canada lynx in the planning area. 36 C.F.R. 219.19. The FS has not shown that lynx will be well-distributed in the planning area. The FS has not addressed how the project's adverse modification of denning and foraging habitat will impact distribution. This is important because the agency readily admits that the LAUs already contain a "relatively large percentage of un-

suitable habitat.” The NRLMD ROD at 40 states that: The national forests subject to this new direction will provide habitat to maintain a viable population of lynx in the northern Rockies by maintaining the current distribution of occupied lynx habitat, and maintaining or enhancing the quality of that habitat.”

A big problem with the Forest Plan (including the NRLMD) is that it allows with few exceptions the same level of industrial forest management activities that occurred prior to Canada lynx ESA listing.

The Northern Rockies Lynx Management Direction appeal decision requires the FS to consult with the US Fish and Wildlife Service regarding LAUs and lynx critical habitat. The Wildlife Report, Frost 2017, states that the effects determination for lynx is “may affect, likely to adversely affect. This means that listed resources are likely to be exposed to the action or its environmental consequences and will respond in a negative manner to the exposure.

The project does not have a take permit from the USFWS and is in violation of the ESA, NFMA, the APA and NEPA. The ESA (Section 3) defines take as "to harass, harm, pursue, hunt, shoot, wound, trap, capture, collect or attempt to engage in any such conduct". The USFWS further defines "harm" as "significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering", and "harass" as "actions

that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering". The project will harm lynx.

Squires found that lynx avoid clearcuts for up to 50 years. A big problem with the Forest Plan and the NRLMD is that it allows with few exceptions the same level of industrial forest management activities that occurred prior to Canada lynx ESA listing. The FS approval and implementation of the NRLMD and the revised Beaverhead-

Deerlodge National Forest Forest Plan is arbitrary and capricious, violates NEPA's hard look requirement and scientific integrity mandate and fails to apply the best available science necessary to conserve lynx. The NRLMD or the revised BDNF Forest Plan contain no protection or standard for conservation of winter lynx habitat (old growth forests).

Please disclose if the FS conducted lynx occurrence surveys of habitat in the LAUs.

Please disclose if surveys target snowshoe hare occurrence data in these stands newly considered unsuitable for lynx. Also, the EA doesn't indicate if the FS surveyed any areas (proposed for logging and/or burning or not) thought to not be lynx habitat based on mapping or stand data were surveyed to confirm unsuitable habitat conditions.

The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling through low cover areas in winter. The EA fails to identify the amount of non-cover or low-cover areas that will be created from the project.

It appears the FS doesn't have a coherent strategy for recovering lynx from their Threatened status, including linking currently populated areas with each other through important linkages such as project area LAUs.

Please analyze and disclose cumulative impacts of recreational activities on lynx, such as snowmobiles. As the KNF's Galton FEIS states, "The temporal occurrence of forest uses such ... winter (skiing and snowmobiling) ... may result in a temporary displacement of lynx use of that area..."

Please quantify and disclose the cumulative effects on Canada lynx due to trapping or from use of the road and trail networks in the project area.

Please analyze and disclose how lynx habitat capacity for denning will be impaired by project activities.

The USFWS listed the Canada lynx as a threatened species under the Endangered Species Act in 2000 due to "lack of guidance for conservation of lynx and snowshoe hare habitat..." and subsequent authorization of actions that may

cumulatively adversely affect the lynx. Relatively little is known about lynx in the contiguous United States. Historically, lynx inhabited states spanning from Maine to Washington, but it is unknown how many lynx remain.

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 Peg. 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.

Lynx subsist primarily on a prey base of snowshoe hare, and survival is highly dependent upon snowshoe hare habitat, forest habitat where young trees and shrubs grow densely. In North America, the distribution and range of lynx is nearly “coincident” with that of snowshoe hares, and protection of snowshoe hares and their habitat is critical in lynx conservation strategies.

Since more often than not when the FS conducts logging projects in LAUs surveys of stands for lynx habitat result in less suitable habitat than previously assumed, the FS needs to take a few steps backward and consider that its range-wide Canada lynx suitable habitat estimations were too high.

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 importance of maintaining lynx linkage zones is also recognized by the FS's Lynx Conservation Assessment and Strategy (LCAS), as revised in 2013, which stresses that landscape connectivity should be maintained to allow for movement and dispersal of lynx.

Squires et al. (2013) noted in their research report that some lynx avoided crossing highways; in their own report, they noted that only 12 of 44 radio-tagged lynx with home ranges including 2- lane highways crossed them.

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.) 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.)

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.)

Squires et al., 2010 reported that lynx winter habitat should be “abundant and spatially well- distributed across the landscape.” Those authors also noted that in heavily managed landscapes, retention and recruitment of lynx habitat should be a priority.

The LCAS (Ruediger et al. 2000) recommends, until conclusive information is developed concerning lynx management, the agencies retain future options; that is, choose to err on the side of maintaining and restoring habitat for lynx and their prey. To err on the side of caution, the KNF would retain all remaining stem exclusion forests for recruitment into lynx winter habitat, so that this key habitat would more closely resemble historic conditions.

As early as 2000, the LCAS noted that lynx seem to prefer to move through continuous forest (1- 4); lynx have been observed to avoid large openings, either natural or created (1-4); opening and open forest areas wider than 650 feet may restrict lynx movement (2-3); large patches with low stem densities may be functionally similar to openings, and therefore lynx movement may be disrupted (2-4). Squires et al. 2006a reported that lynx tend to avoid sparse, open forests and forest stands dominated by small-diameter trees during the winter. Squires et al. 2010 again reported that lynx avoid crossing clearcuts in the winter; they generally avoid forests composed of small diameter saplings in the winter; and forests that were thinned as a silvicultural treatment were generally avoided in the winter.

Squires et al. 2010 show that the average width of openings crossed by lynx in the winter was 383 feet, while the maximum width of crossed openings was 1240 feet.

Recent scientific findings undermine the Forest Plan/NRLMD direction for management of lynx habitat. This creates a scientific controversy the FS fails to resolve, and in fact it essentially ignores it.

For one, 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 inches dbh. Young regenerating forest should occur only on 10-15% of a female lynx home range, i.e. 10-15% of an LAU. This renders inadequate the agency's assumption in the Forest Plan/NRLMD that 30% of lynx habitat can be open, and that no specific amount of mature forest needs to be conserved. Kosterman, 2014 demonstrates that Forest Plan/NRLMD standards are not adequate for lynx viability and recovery.

Also, the Forest Plan essentially assumes that persistent effects of vegetation manipulations other than regeneration logging and some intermediate treatments are essentially nil. However, 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.” (Emphasis added.) 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.

So Holbrook et al., 2018 fully contradict Forest Plan assumptions that clearcuts/regeneration can be considered useful lynx habitat as early as 20 years post-logging.

Results of a study by Vanbianchi et al., 2017 also conflict with Forest Plan/NRLMD assumptions: “Lynx used burned areas as early as 1 year postfire, which is much earlier than the 2–4 decades postfire previously thought for this predator.” The NRLMD erroneously assumes clearcutting/regeneration logging have basically the same temporal effects as stand-replacing fire as far as lynx re-occupancy.

Kosterman, 2014, Vanbianchi et al., 2017 and Holbrook, et al., 2018, Holbrook 2019 demonstrate that Forest Plan direction is not adequate for lynx viability and recovery, as the FS assumes. Holbrook 2019 such all lynx habitat must be surveyed. You have not done this.

The Forest Plan/FEIS fail to describe the quantity and quality of habitat that is necessary to sustain the viability of the Canada lynx.

Significantly, in the 2018 order, the Federal District Court explained that consultation on the Northern Rockies Lynx Management Direction, commonly referred to as the “Lynx Amendment,” was not sufficient in part because the Lynx Amendment only applies to mapped “lynx habitat” on the Forest. Id. at 1070. Thus, areas on the Forest where lynx

“may be present” that are not mapped as “lynx habitat” are not covered by the Lynx Amendment consultation. *Id.* Accordingly, the primary purpose of the 2018 remand was for the agencies to consult on the entire Forest, including areas of the Forest that are not mapped as “lynx habitat” but where lynx nonetheless “may be present.” See *id.*

On August 24, 2021, the agencies filed a second motion to dissolve the injunction. The agencies provide the Court with a new 2021 Biological Assessment and Biological Opinion for the Forest Plan. Doc. 93-9 (Biological Assessment); Doc. 93-1 (Biological Opinion). However, this new consultation suffers from the same flaw that the Court found with the Lynx Amendment consultation in its 2018 order – the analysis is incomplete because it addresses mapped “lynx habitat” where the Lynx Amendment applies, instead of all areas where lynx “may be present” on the Forest. For this reason, the motion to dissolve the injunction should be denied. Alternatively, or in addition, dissolution is not equitable at this time because the agencies have unlawfully stripped legal protections for lynx from 1.1 million acres during the remand in this case. Accordingly, this Project should not move forward until the agencies comply with their legal obligations under the ESA, NEPA, and NFMA regarding this de facto Forest Plan amendment that removed lynx protections on almost one-third of the Forest.

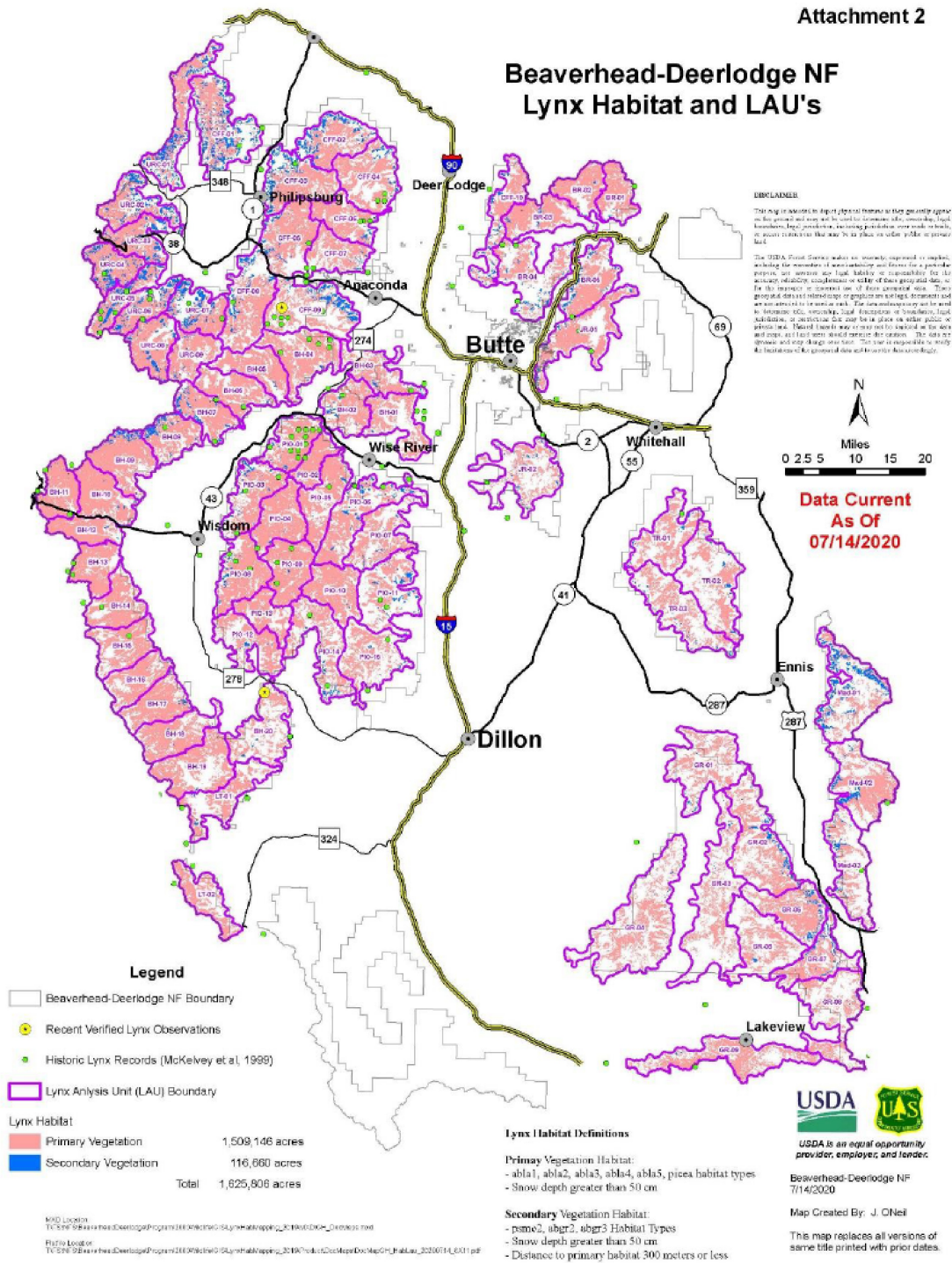
The Forest Service has effectively issued a programmatic Forest Plan amendment with its decision to strip away protections for lynx from 1.1 million acres of the Forest.

This removal of protections for lynx applies to the South Tobacco Roots Project. However, the agencies did not conduct any NEPA or NFMA analysis or ESA consultation for this de facto Forest Plan amendment.

The new Forest Plan consultation addresses effects to lynx within mapped “lynx habitat,” but does not address the effects to lynx in areas that are not mapped “lynx habitat” but where lynx “may be present,” which was the purpose of the remand.

The Beaverhead-Deerlodge National Forest covers approximately 3.4 million acres. Doc. 93-9 at 10.¹ In 2020, the agencies mapped approximately 1.5 million acres of the Forest as “lynx habitat.” Doc. 93-9 at 17 (Table 5). The agencies consider these areas of mapped “lynx habitat” to be “occupied” by lynx. Doc. 93-9 at 6. However, these areas of mapped “lynx habitat” do not directly correspond to areas of known lynx detections, both historic and recent. Doc. 93-9 at 100. The map below shows area of mapped “lynx habitat” in color, with green and yellow circles to indicate known historic and recent detections:

Beaverhead-Deerlodge NF Lynx Habitat and LAU's



As noted above, the agencies have determined that lynx “may be present” across the entire Forest. Krueger, 348 F.Supp.3d at 1068. Thus, while approximately 1.5 million acres of the Forest is mapped “lynx habitat,” Doc. 93-9 at 17, another 1.9 million acres (more than half the Forest) is not mapped “lynx habitat,” but still constitutes an area where lynx “may be present,” see Doc. 93-9 at 10; Krueger, 348 F.Supp.3d at 1068.

In its 2018 remand order in this case, this Court held:

Because there are provisions of the Forest Plan other than the Lynx Amendment that “may affect” lynx outside of the areas protected by the Lynx Amendment, and because the FWS determined that lynx “may be present” throughout the forest, a plaintiff may still bring a section 7 consultation claim to the broader Forest Plan itself. See *Native Ecosystems Council v. Marten*, 334 F.Supp.3d 1124, 1131, 2018 WL 3831339, at *4 (D. Mont. Aug. 13, 2018) (stating that “the Lynx Amendment only applies to mapped lynx habitat on National Forest System land presently occupied by Canada lynx” and holding that a forest-wide determination that lynx “may be present” arguably requires consultation of an agency action that “may affect” lynx but where “compliance with the Lynx Amendment is not required.”) Such is the case here.

The Forest Service must complete an ESA consultation for the Forest Plan that includes an analysis of how lynx may be affected on areas of this Forest that are not mapped “lynx habitat” but nonetheless are areas where lynx “may be present.” *Id.* As noted above, that area is 1.9 million

acres. The agencies have not complied with the remand order in this case because they have not yet provided this analysis.

In the January 4, 2021, Forest Plan Biological Assessment, the Forest Service uses “the 2020 updated lynx habitat model to disclose potential effects and set the current existing conditions.”

As the agency summarizes: “Impacts to lynx and their habitat have been considered in the context of the modeled lynx habitat on the Forest, vegetation conditions, anticipated amount and distribution of forest activities (e.g., timber projects, recreation expansion), and guidance within the Forest Plan and the Northern Rockies Lynx Management Direction. Since all areas of modeled lynx habitat are considered occupied, lynx are presumed to be present, including both resident or dispersing.”

Furthermore, regarding cumulative impacts, the Forest Service discloses: “[f]or this analysis, the cumulative effects boundary consists of all 2020 modeled lynx habitat both within and outside of the [Beaverhead-Deerlodge National Forest].”

Similarly, the FWS’s responsive 2021 Forest Plan Biological Opinion states: “In order to fully address effects of implementing the 2009 Revised Forest Plan, the Forest provided lynx habitat information. The information provided consists of a broad scale estimate of lynx habitat across the Forest intended to provide an overall picture of the current status of lynx habitat.” Doc. 93-1 at 9 (emphases added). FWS then summarizes the analysis of

effects to mapped lynx habitat set forth in the Forest Service Biological Assessment. FWS also provides an analysis of only those portions of existing projects that “occur within mapped lynx habitat” Doc. 93-1 at 29.

Both the Forest Plan Biological Assessment and Forest Plan Biological Opinion limit their analyses to effects to mapped lynx habitat, which is now considered to be “occupied.” However, in the Fleecer case, the federal district court remanded to the agencies to address all potential effects to lynx across the entire Forest, specifically including those areas that are not mapped as “lynx habitat.” As noted above, the areas that are not mapped as “lynx habitat” where lynx nonetheless “may be present” constitute approximately 1.9 million acres across the Forest.

The federal district court denied a motion to dissolve under similar circumstances in the Fleecer project. In that case, this Court “enjoined Defendants from proceeding with their project until Defendants conducted a site-specific biological opinion for both Canada lynx and grizzly bear.” Subsequently, the Forest Service “submitted a new biological opinion for both grizzly bear and Canada lynx. . . [and sought] dissolution of the injunction.” *Id.* This Court then held:

“The Court’s order required the new biological opinion to analyze “all logging associated activities.” . . . The new biological opinion fails to contemplate any effects on grizzly bear from the logging activity itself Defendants have failed to comply, therefore, with this Court’s order to conduct a new biological opinion that

analyzes the impacts to grizzly bears of “all logging associated activities.””

The Court further enjoined the Fleecer project until the Forest Service conducted a new biological opinion that analyzed project impacts on Canada lynx. The previous first-tier biological opinion required a site-specific biological opinion to consider whether assumptions made in the original biological opinion were valid. . . . The Forest Service failed to consider, however, whether these vegetation treatment projects are affecting lynx in the way anticipated by the 2007 Biological Opinion. Without that analysis, the second-tier Biological Opinion fails to perform the role anticipated in the first-tier biological opinion.

The same is true here. The Forest Service failed to conduct the biological opinion ordered by the Court in the Fleecer project. Thus, the motion to dissolve was denied. The agencies must prepare a consultation that analyzes potential effects on lynx on the entire 3.4 million acre Forest – not just mapped lynx habitat on less than half the Forest.

The Forest Service and the FWS have not yet analyzed effects on lynx across the entire Forest as required by the 2018 remand order; instead, their consultation addresses mapped lynx habitat. However, mapped lynx habitat is less than half of the Forest, and there are still another 1.9 million acres of Forest that are not mapped lynx habitat but nonetheless satisfy the “may be present” threshold. Thus,

the agencies have not yet provided Plaintiffs with all of the relief they seek.

The agencies' decision to remap "lynx habitat" in order to remove Lynx Amendment protections from 1.1 million acres on the Forest is a Forest Plan amendment under NFMA, a major federal action under NEPA, and an agency action under the ESA. Thus, NEPA analysis and ESA consultation must occur for this change in management – and the Forest Service must issue a Forest Plan amendment that complies with the 2012 NFMA planning regulations – before the South Tobacco Roots Project may move forward.

The Forest Service unlawfully stripped legal protections from lynx across 1.1 million acres of the Forest without conducting the legally required analyses. Both the District of Idaho and District of Oregon hold that the remapping of lynx habitat requires analysis under NFMA, NEPA, and/or the ESA. *Oregon Nat. Res. Council Fund v. Forsgren*, 252 F.Supp.2d 1088, 1104 (D. Or. 2003)(addressing NFMA and NEPA); *Native Ecosystems Council & All. for the Wild Rockies v. U.S. Forest Serv. ex rel. Davey*, 866 F.Supp.2d 1209, 1231 (D. Id. 2012)(addressing ESA and NEPA).

Accordingly, this Project should not move forward until the agencies comply with their legal obligations under the ESA, NEPA, and NFMA regarding this de facto Forest Plan amendment that removed lynx protections on almost one-third of the Forest during the remand in this case. This Court may address this issue in its equitable discretion.

NEPA requires an agency to prepare an EIS for all “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. §4332(2)(C). Major federal actions include “new or revised agency . . . plans, policies, or procedures” including “official documents prepared or approved by Federal agencies which prescribe alternative uses of Federal resources, upon which future agency actions will be based.” 40 C.F.R. §1508.1 (q)(2), (3) (ii).

The remapping of “lynx habitat” is a major federal action under NEPA that requires either an EIS or an EA. *Oregon Nat. Res. Council Fund*, 252 F.Supp.2d at 1104-07; *Native Ecosystems Council*, 866 F.Supp.2d at 1231.

Furthermore, ESA consultation is required for “any agency action” that “may affect” a listed species in an area where a listed species “may be present.” 16 U.S.C. §1536(c). The ESA defines agency action as “any action authorized, funded, or carried out by [a federal] agency.” 16 U.S.C. §1536(a)(2). In *Karuk Tribe of California v USFS*, the en banc Ninth Circuit held that “[t]here is ‘little doubt’ that Congress intended agency action to have a broad definition in the ESA” 681 F.3d 1006, 1020-21 (9th Cir. 2012) (citations omitted). Thus, the “‘agency action’ inquiry is two-fold. First, we ask whether a federal agency affirmatively authorized, funded, or carried out the underlying activity. Second, we determine whether the agency had some discretion to influence or change the activity for the benefit of a protected species.” *Id.* The

remapping of “lynx habitat” is an agency action that requires ESA consultation. *Native Ecosystems Council*, 866 F.Supp.2d at 1232-33.

Finally, NFMA requires a forest plan amendment for any actions that “add, modify, or remove one or more [forest] plan components, or [] change how or where one or more plan components apply to all or part of the [forest] plan area (including management areas or geographic areas).” 36 C.F.R. §219.13(a). Remapping “lynx habitat” requires a forest plan amendment. *Oregon Nat. Res. Council Fund*, 252 F.Supp.2d at 1101-04.

Regardless of whether a forest plan amendment is deemed “significant” in the NFMA context, see 16 U.S.C. §1604 (f) (4), the Forest Service must provide for public participation, public notification, and NEPA compliance in conjunction with the amendment, 36 C.F.R. §219.13(b)(2)-(3). “The appropriate NEPA documentation for an amendment may be an [EIS], an environmental assessment, or a categorical exclusion, depending upon the scope and scale of the amendment and its likely effects.” 36 C.F.R. §219.13(b)(3).

Furthermore, regardless of whether a forest plan amendment is “significant” under NFMA, any substantive protections in the 2012 NFMA planning regulations that are “directly relevant” to the forest plan amendment must be applied. 36 C.F.R. §219.13(b)(5); see *Sierra Club, Inc. v. USFS*, 897 F.3d 582, 601 (4th Cir. 2018)(remanding for application of substantive protections of the 2012 planning regulations to a non-significant forest plan amendment).

Finally, a de facto forest plan amendment cannot be lawfully categorized and dismissed as a mere “administrative change” unless it involves only “corrections of clerical errors to any part of the plan, conformance of the plan to new statutory or regulatory requirements, or changes to other content in the plan (§ 219.7(f)).” 36 C.F.R. §219.13(c). “Changes to other content in the plan” is a term of art that includes only watershed identification, the plan’s roles and contributions in the broader landscape, the monitoring program, proposed and possible actions, and potential management approaches or strategies and partnership opportunities or coordination activities.” 36 C.F.R. §219.7(f).

During the remand in the Fleecer case, the agencies determined that the Beaverhead-Deerlodge National Forest is now “occupied” by lynx. This change in status means that compliance with the Lynx Amendment is now mandatory for all site-specific projects on the Forest, but only within the lands that are mapped as “lynx habitat.”

Accordingly, in 2020, the agencies remapped “lynx habitat” on the Forest.

The result of the remapping was that the agencies removed approximately 1.1 million acres from the “lynx habitat” designation, and thereby removed the protections of the Lynx Amendment standards from those 1.1 million acres of Forest:

Table 4. Comparison of lynx habitat acres, number of lynx analysis units, and the range of habitat within lynx analysis units between mapping efforts.

Metric	2001 mapping effort	2020 mapping effort	Difference
Lynx habitat (acres)	2,711,422	1,625,806	-1,085,616
Lynx analysis units (number)	509	78	-431
Range of lynx habitat within LAUs (acres)	0-24,101	12,603 - 29,880	Minimum +12,603 Maximum +5,779

Additionally, the agencies reduced the number of “Lynx Analysis Units” from 509 to 78, and increased the size of individual Lynx Analysis Units so that more acres can be logged before the percentage limits for logging in each unit are reached..

As both the District of Idaho and District of Oregon have already held, the remapping of “lynx habitat” constitutes a major federal action under NEPA, which requires either an EA or EIS. Oregon Nat. Res. Council Fund, 252 F.Supp.2d at 1104-07; Native Ecosystems, 866 F.Supp.2d at 1231. In the South Tobacco Roots Project as well, the new mapping recategorizes thousands of acres of “lynx habitat” out of existence and thereby paves the way for future projects to authorize logging and other activities in those areas, even if those activities would have been previously prohibited in those same areas under the Lynx Amendment. This is not a minor change: instead, this changes strips away Lynx Amendment protections from approximately 1.1 million acres across the Forest. \

This significant change in management of the Forest requires a complete analysis under NEPA. Native

Ecosystems, 866 F.Supp.2d at 1231. As the District of Idaho held:

“The 2005 map was a document officially approved by the Forest Service. . . . There also seems to be little room for debate over whether the 2005 map ultimately governs “uses of Federal resources, upon which future agency actions will be based.” []. Without the adoption of the 2005 map—and the attendant elimination of nearly 400,000 acres of land within [Lynx Analysis Units] —the Project area would have been subject to the restrictions contained in the Lynx [Amendment] With the adoption of the 2005 map, the 390,900 acres of previously restricted land was opened for uses that were not available without the adoption of the map.”

The 2005 map . . . eliminated almost 400,000 acres of land that was previously subject to greater environmental restrictions under the Lynx [Amendment]. . . . the map was never subjected to independent NEPA review, which would have required an analysis of the potential [e]ffects . . . on the lynx, its habitat, and the habitat of the snowshoe hare. Such analysis is absent in this case. The absence of such analysis violates NEPA’s procedural requirements

Similarly in the BDNF, “[w]ith the adoption of the [2020] map, the [1.1 million] acres of previously restricted land was opened for uses that were not available without the adoption of the map.”. “ [T]he map was never subjected to

independent NEPA review, which would have required an analysis of the potential [e]ffects . . . on the lynx, its habitat, and the habitat of the snowshoe hare. Such analysis is absent in this case. The absence of such analysis violates NEPA's procedural requirements”

And, as the District of Oregon similarly held:

“Defendants have substantially minimized the effects of the new mapping direction. The new mapping direction was far more than the result of day-to-day inventory-taking. It significantly changed the nature and the extent of lynx habitat, and the consequences to the lynx may be far-reaching. It has been used by the [Forest Service] to reduce the recognized primary lynx habitat within the Forest by thousands of acres The Court finds Defendants, at the least, were required under NEPA to prepare an Environmental Assessment with public involvement to determine whether the new mapping direction might significantly affect the lynx in the Forest and whether Defendants should prepare an EIS.

Oregon Nat. Res. Council Fund, 252 F.Supp.2d at 1105. The same result is required in this case.”

The remapping of “lynx habitat” requires ESA consultation.

In addition to requiring NEPA analysis, the remapping of lynx habitat also requires ESA consultation. The remapping of lynx habitat on the Forest is an agency action under the ESA because it was “authorized, funded, or carried out by [a federal] agency.” 16 U.S.C. §1536(a)(2). Additionally, “the agency had some discretion to influence or change the

activity for the benefit of a protected species.” Karuk Tribe, 681 F.3d at 1021.

In *Native Ecosystems*, the District of Idaho found that ESA consultation was required to address the impacts on lynx from the remapping decision. 866 F.Supp.2d at 1231-33. The court held: “Defendants argue that, because a jeopardy determination was made for the standards contained in the Lynx [Amendment], and those standards were used in revising the [Unit] map in 2005, the agencies satisfied their obligations under the ESA. The Court does not agree.” Id. at 1232. The court found that the Lynx Amendment “biological opinion from 2007 does not assess the validity of the 2005 map” and that the agencies should have evaluated whether “the elimination of 390,900 acres of land within the boundaries of [Lynx Analysis Unit]s in the 2005 map would adversely affect the lynx or its habitat.” Id.

Similarly, in this case, the agencies must prepare an ESA consultation that evaluates whether “the elimination of [1.1 million] acres of land within the boundaries of [Lynx Analysis Unit]s in the [2020] map would adversely affect the lynx or its habitat.” See id.

The remapping of “lynx habitat” requires a Forest Plan amendment. The amendment to the BDNF Forest Plan that you added is inadequate.

The remapping of “lynx habitat” is a Forest Plan amendment that requires analysis under NFMA. More specifically, the remapping of lynx habitat “change[s] how

or where” the Lynx Amendment protections apply to this Forest because these protections no longer apply to 1.1 million acres of the Forest. Furthermore, stripping Forest Plan protections from 1.1 million acres – approximately one-third of the Forest – could not be reasonably construed as a mere “administrative change” because such an action does not fall with the narrow regulatory definition of “administrative change.” 36 C.F.R. §§219.13(c), 219.7(f).

The Forest Service’s refusal to prepare an EIS, refusal to consider a reasonable range of alternatives, and/or refusal to take a hard look at the effects of its Significant Forest Plan Amendment – that eliminated 1.1 million acres of lynx habitat protections and 431 LAUS on the Forest – violate NEPA.

The Forest Plan Amendment and/or its Biological Opinion also violate the ESA, NFMA, and/or the NFMA planning regulations because they do not apply the best available science from Olson et al (2021), they remove legally binding protections for connectivity habitat, and/or they undermine recovery of the lynx population.

NFMA REGULATIONS – BEST AVAILABLE SCIENCE. In 2012, the Forest Service issued new forest planning regulations, which are referred to as the “2012 Planning Rule.” These regulations apply to this Forest Plan Amendment. The 2012 Planning Rule requires that the Forest Service “shall use the best available scientific information” when amending a forest plan. 36 C.F.R.

§219.3. The Forest Plan Amendment violates this regulation because the Forest Service states that Olson et al (2021) is the best available science and that model maps the entire Forest as lynx habitat, but the Forest Plan Amendment does not map the entire Forest as lynx habitat.

NFMA REGULATIONS – CONNECTIVITY/
DISPERSAL HABITAT PROTECTION. Also, the 2012 Planning Rule requires that forest plans include “plan components, including standards or guidelines . . . to maintain or restore . . . function . . . and connectivity[.]” 36 C.F.R. §219.8 (a)(1). The 2012 Planning Rule defines “connectivity:” “Ecological conditions . . .that provide landscape linkages that permit the . . . the dispersal and genetic interchange between populations” 36 C.F.R. §219.19. The 2012 Planning Rule defines “ecological conditions” to include “roads” and “human uses.” 36 C.F.R. §219.19. The Forest Plan Amendment fails to address this relevant applicable regulation as required by law, and it violates this regulation because it removes the legally-binding connectivity standard NRLMD Standard ALL S1 from 431 LAUs across the Forest, and fails to provide any replacement standard that will permit the dispersal and genetic interchange in these areas between the Greater Yellowstone Area and Northern lynx populations.

NFMA REGULATIONS – RECOVERY OF ESA-LISTED SPECIES. The 2012 Planning Rule further

requires that a forest plan “provide the ecological conditions necessary to [] contribute to the recovery of federally listed threatened . . . species” 36 C.F.R. §219.9 (b)(1). The 2012 Planning Rule explains: “NFS lands are a major contributor to threatened and endangered species recovery plans and actions As part of the Forest Service mission, the actions needed to recover T&E species . . . are a high priority. . . . As did the proposed rule, the final rule requires that the plan include plan components to provide ecological conditions in the plan area necessary to contribute to the recovery of T&E species” The Forest Plan Amendment fails to meaningfully address this relevant applicable regulation as required by law, and it violates this regulation because it removes protections for 431 LAUs across the Forest, removes protections for 1.1 million acres of mapped lynx habitat across the Forest, fails to protect dispersal/connectivity habitat mapped by the Olson et al (2021) best available science, fails to disclose the failing status of the Greater Yellowstone Area lynx population, and fails to provide any discussion of how this Forest Plan Amendment may impact that population and its recovery.

ESA – BIOLOGICAL OPINION. The USFWS Biological Opinion violates the APA/ESA because it fails to consider important factors and fails to apply the best available science: it does not apply the best available science from Olson et al (2021); it provides no meaningful analysis of connectivity with, and recovery

of, the Greater Yellowstone Area lynx population; and it provides no meaningful details or analysis regarding the change from the baseline protections provided by the 2001 map and the significantly reduced protections provided by the 2020 map.

For these reasons, the Forest Plan Lynx Amendment and/or its Biological Opinion violate the law.

Please explain why there is an absence of lynx in parts of the BDNF in relation to the massive deforestation occurring in BDNF in the last half of the past century and the explosion of motorized recreation.

Please also analyze what Forest Plan Standards must be established to identify, restore and maintain linkages and connecting habitats for lynx.

The BDNF states that the FWS and FS will jointly identify 'occupied lynx habitat' as a subset of mapped lynx habitat. The identification of occupied lynx habitat will include consideration, as appropriate, of the Science Report, the LCAS, FWS's final listing decision documents, any information used to designate critical habitat, and new scientific information regarding the ecology and distribution of lynx, and population data. (BA:85).

The Lynx Conservation Assessment and Strategy identifies 17 lynx risk factors in 4 different categories - factors affecting lynx productivity, lynx mortality, lynx

movements, and other large-scale risk factors. Risk factors identified activities or existing conditions that could adversely affect either individual or groups of lynx. (BA:85).

Factors identified include timber management; wildland fire management; recreation; forest/backcountry roads and trails; livestock grazing; other human developments; trapping; predator control; incidental or illegal shooting; competition and predation as influenced by human activities; highways (vehicular collisions); highway, railroad and utility corridors; land ownership patterns; ski areas and large resorts; fragmentation and degradation of lynx refugia; lynx movement and dispersal across shrub steppe habitats; and habitat degradation by non-native invasive plant species. (BA:85).

The Final Rule listing Canada lynx as threatened was enacted in 2000.² The National Lynx Survey took place in that same time frame.³ Despite evidence that lynx persisted over historical times, the “unoccupied” status results from failing to find current evidence of lynx long after habitats have been fragmented by mines, high road density, an explosion in motorized recreation, timber and fuel reduction projects, and including habitat alteration by livestock grazing. (Where do the major areas of disturbance by invasive plants come from across the landscape except disturbance and removal of natives by livestock that lead to the invasive species?)

The problem with this concept of “occupied habitat” is that it makes optional the application of the [Northern Rockies Lynx Management Direction](#) in “unoccupied habitat”. The direction only says it “should be ‘considered’”. In our experience in such places as the Forest Service Region One and Region Four. in linkage and peripheral habitat, but habitat historically used by lynx, it is met with deflection and no analysis. Meanwhile the practices listed above as detrimental to lynx proceed apace.

As an example, after a huge amount of deforestation between about 1950 and today. A time when lynx observations were declining across much of the Rocky Mountains, and they were no longer being observed in some areas. But to recover lynx, the Forest Service needs to start protecting lynx habitat instead of continuing to destroy it and then after all of the lynx are gone claim it is not longer lynx habitat.

Kosterman finds 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. This contradicts the agency’s assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery. Kosterman’s attached study demonstrates that the Lynx Amendment standards are not

adequate for lynx viability and recovery, as previously assumed by the Forest Service.

Kosterman's Thesis says that clearcutting more than 10-15% of a lynx home range results in declines in reproduction. Many National Forests allow more clearcutting than this. The Lynx Amendment allows up to 30% clearcutting in a home range, which means that habitat has declined and is declining from the levels necessary for reproduction and therefore survival and recovery.

Kosterman's Thesis recommends conserving mature/old growth forest and maintaining 50% mature/old growth in each lynx home range. No National Forest is complying with that due to past and current logging, which means that habitat has declined and is declining from the levels necessary for reproduction and therefore survival and recovery.

Squires says that lynx avoid clearcuts. Please develop an alternative that prohibits clearcutting and also prohibits logging of mature and old growth forests in Lynx analysis units.

FWS has no idea what the population of lynx is because they don't do lynx population monitoring. In light of the government's failure to monitor lynx population trends, it would be disingenuous for FWS to argue that "there is no evidence of population decline" because the reason that "there is no evidence" is because the government refuses to conduct monitoring. In light of the government's failure to

monitor and document populations and population trends, the Forest Service and the FWS must apply the precautionary principle and assume that the effects of allowing logging that does not comply with Kosterman, Holbrook, and Squires findings is resulting in population declines.

Since this is now the best available science we are hereby formally requesting that the Forest Service also write a supplemental EIS for the Northern Rockies Lynx Management Direction and reinitiate consultation with the FWS for the Lynx Amendment to publicly disclose and address the findings of this study, and to allow for further public comment on this important issue of lynx recovery.

Page 227 of the Pintler Face EA states: “Linkage is defined as “Route that permits movement of individual plants (by dispersal) and animals from a Landscape Unit and/or habitat type to another similar Landscape Unit and/or habitat type”. Linkage areas for Canada lynx were identified for the Northern Rockies Planning Area. Linkages mapped through the Anaconda Pintler mountains. These linkages are hypothetical and not substantiated by empirical data on lynx movement.”

This is false. It is a violation of NEPA to put incorrect information in the EA.

Lynx are listed and threatened under the ESA. The duty of the federal government is to recover lynx and the ecosystems that they depend on. To recover lynx the BDNF

cannot eliminate 1.1 million acres of lynx habitat while still ensuring that lynx will be able to connect with other lynx in the greater Yellowstone ecosystem and lynx in the Bitterroot and Northern Continental Divide Ecosystem.

Page 93 of the 2016 Fleece EA states: “In July, 2013 the U.S. Fish and Wildlife Service updated the “Threatened, Endangered and Candidate Species for the Beaverhead-Deerlodge National Forest” and the Canada lynx was added to the BDNF list as “Transient; secondary/peripheral lynx habitat”; where it remains (USDI Fish and Wildlife Service 2016).”

The Forest straddles the mountains of the Continental Divide and contains nationally renowned trout streams, elk populations, and some of the last wild refuges for many threatened, endangered, and sensitive fish and wildlife species.

In particular, the Forest and Project area provide habitat for grizzly bears, wolverines, Canada lynx, gray wolves, and westslope cutthroat trout.

Ruggiero et al (1999), the Forest Service’s General Technical Report “Ecology and Conservation of Lynx in the United States,” states that lynx are present in the Forest.

Ruediger et al (2000), the agencies’ “Canada lynx conservation assessment and strategy,” considers the Forest within the geographic extent of the lynx strategy.

The Montana Department of Fish, Wildlife, and Parks has compiled a database of lynx occurrences and distribution throughout Montana from 1977 -1998. This information was mapped on pages 244 and 247 of Ruggiero et al (1999) and shows numerous lynx occurrences in the Forest.

In Squires (2003), the Forest Service documents: “Discussions with local trappers and biologists indicate that lynx were present in the Pioneer Mountains prior to the late 1990’s, and had been detected during winter track surveys as recently as 2000 (Forkan 2000). This fact is substantiated by the number of trapped lynx from this area in the 1970s.” Elsewhere, the report notes “[f]rom 1977 to 1994, 39 lynx occurrences were recorded in the Pioneer Mountains, including 13 harvested individuals (McKelvey et al. 2000). Snow-track surveys performed as recently as 2000 indicated that lynx were present along the Scenic Byway (Forkan 2000).”

In the attached, “Combining resource selection and movement behavior to predict corridors for Canada lynx at their southern range periphery,” Squires et al. 2013, the Forest Service documented the results of winter tracking surveys. The record indicates two (2) sets of lynx tracks were found in the BDNF within the Big Hole landscape area. The report concludes that “lynx were either absent or at very low densities during our study.”

Did the BDNF follow the best available science when it surveyed for lynx? Please find attached Squires et al. 2004 and Squires 2010 for the best available science on how to survey for lynx what kind of habitat they need to survive.

The U.S. Fish and Wildlife Service's final map (2003) for lynx shows that the BDNF is within the range of both resident and dispersing lynx.

Berger (2009) found one set of potential lynx tracks in the Forest during winter tracking surveys, as well as one set outside the Forest boundary that was heading towards the Forest boundary.

In Devineau (2010), the State of Colorado Division of Wildlife documented locations of radio-collared lynx released in Colorado. The record shows

multiple lynx traveling in the Forest (approximately four (4) individuals), including at least two individual lynx traveling in the BDNF. One of the individuals inhabited the Madison Range for approximately two weeks.

In litigation over lynx critical habitat in 2010, the U.S. Fish and Wildlife Service admitted that the Forest is occupied for the purpose of designating lynx critical habitat. *Alliance for Wild Rockies v. Lyder*, 728 F.Supp.2d 1126, 1133 (D. Mont. 2010) ("Plaintiffs take exception to the Service's failure to designate the Beaver-head-Deerlodge [and certain other National Forests] as lynx critical habitat.

[FN4] . . . In response, the government acknowledges the record shows such forests to be occupied”)

The Forest Service’s Fleecer Mountains Watershed Assessment (2009) indicates that lynx are “potentially” “likely to be present” in the Project area. It also states “f]rom 1988 to 1999 there are 72 reports of lynx being trapped or observed in the Pioneers, Big Hole Mountains and Fleecer Range.”

The Federal District Court of Montana ordered the USFWS to reconsult on lynx critical habitat because they did not base lynx critical habitat on where lynx were at the time of listing in 2000. Lynx were in the project area at the time of listing so the Forest Service needs to consult with the FWS to see if this project could effect lynx critical habitat.

The Forest Plan analysis and impacts on ESA-listed lynx violate ESA, NFMA, and NEPA.

Please take a hard look at lynx presence and the Forest Plan’s potential impacts on lynx, using the best available science, including the agency’s failure to assess the Forest Plan’s impacts on lynx travel/linkage corridors

Forest Service, --- F.3d ----, 2012 WL 336133 (9th Cir. 2012).

Please include binding legal standards aimed at conserving and recovering ESA-listed lynx on the Forest in the Forest

Plan. To not do so is a violation of NFMA, NEPA, the APA and the ESA.

Please include in the amendment protections or standards for conservation of winter lynx habitat (old growth forests). To not do so would allow the logging of thousands of acres of old growth without any analysis of whether that forest is necessary for conservation as winter lynx habitat. Please take a hard look at this factor as required by NEPA. If the BDNF fails to include a provision to protect winter lynx habitat, the Lynx amendment would fail to apply the best available science and implement the measures necessary for lynx conservation, as required by the ESA.

Will the amendment remove LAUs that are in WUI lands?

The Lynx Amendment and its Biological Opinion/ Incidental Take Statement allow unrestricted logging in the wildland urban interface, which the agencies estimate to compose approximately 6% of the lynx habitat on National Forests. Please explain where WUI lands are in relation to requirement to recover lynx and the ecosystems upon which they depend.

Is the Forest Service using the definition of a WUI in the Healthy Forest Restoration Act? The failure to adequately address this issue with the Lynx Amendment violates NEPA.

The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling

through low cover areas in winter. Please identify the amount of non or low cover areas that will be designated as LAUs. The best available science is now Kosterman's masters Thesis, "Correlates of Canada Lynx Reproductive Success in Northwestern Montana" Please find Kosterman attached.

This study finds 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. This contradicts the agency's assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery. Kosterman's study demonstrates that the Lynx Amendment standards for LAUs are not adequate for lynx viability and recovery, as assumed by the Forest Service.

The current best science indicates that lynx winter foraging habitat is critical to lynx persistence (Squires et al. 2010) attached, and that this habitat should be "abundant and well-distributed across lynx habitat." (Squires et al. 2010; Squires 2009.) 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. 2006.)

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.)

Squires et al. (2013) noted in their research report that some lynx avoided crossing highways; in their own report, they noted that only 12 of 44 radio- tagged lynx with home ranges including 2- lane highways crossed them. 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.)

Squires et al., 2010 reported that lynx winter habitat should be “abundant and spatially well-distributed across the landscape.” Those authors also noted that in heavily managed landscapes, retention and recruitment of lynx habitat should be a priority. Please explain how getting rid of LAUs follows the best available science.

The Northern Rockies Lynx Management Direction is inadequate to ensure conservation and recovery of lynx. The amendments fail to use the best available science on necessary lynx habitat elements, including but not limited to, failing to include standards that protect key winter

habitat. Please include an alternative to increase the amount of LAUs in the BDNF.

The Endangered Species Act requires the FS to insure that the amendment is not likely to result in the destruction or adverse modification of critical habitat. 16 U.S.C. §1536(a) (2). Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for lynx. 74 Fed. Reg. 8644. Please analyze what LAUs should be designated as lynx critical habitat.

The Northern Rockies Lynx Management Direction (NRLMD) as applied by the BDNF violates the ESA by failing to use the best available science to insure no adverse modification of critical habitat. The NRLMD carves out exemptions from Veg Standards S1, S2, S5, and S6. In particular, fuel treatment projects may occur in the WUI even though they will not meet standards Veg S1, S2, S5, or S6, provided they do not occur on more than 6% of lynx habitat on each National Forest. See NRLMD ROD, Attachment 1, pages 2-3. Allowing the agency to destroy or adversely modify any lynx critical habitat has the potential to appreciably reduce the conservation value of such habitat. The agency cannot simply set a cap at 6% forest-wide without looking at the individual characteristics of each LAU to determine whether the project has the potential to appreciably reduce the conservation value. The ESA requires the use of the best available science at the

site- spe- cific level. It does not allow the agencies to make a gross determination that allow- ing lynx critical habitat to be destroyed forest-wide while not appreciably reduce the conservation value.

Standard S2 prohibits projects that do regenerate more than 15% of lynx habitat on NFS lands within an LAU in a 10-year period. Please provide the number of acres with in the LAU that that the BDNF wants to eliminate have been harvested within the last 20-years.

The amendment will violates the NFMA and the ESA if it fails to insure the viability of lynx. How is the amendment insure the viability of lynx? Please show that lynx will be well-distributed in the BDNF. Please addressed how eliminating LAUs will impact lynx distribution. This is important because the agency readily admits that the LAUs currently contain a “relatively large percentage of unsuitable habitat.” The NRLMD ROD at 40 states that: The national forests subject to this new direction will provide habitat to maintain a viable population of lynx in the northern Rockies by maintaining the current distribution of occupied lynx habitat, and maintaining or enhancing the quality of that habitat.”

Please find attached two comment by Dr. John Carter Regarding the Canada lynx Species Status Assessment.

A big problem with the Forest Plan (including the NRLMD) is that it allows with few exceptions the same

level of industrial forest management activities that occurred prior to Canada lynx ESA listing.

Please formally consult with the FWS and get a take permit from the USFWS. To not do so is in violation of the ESA, NFMA, the APA and NEPA. The ESA (Section 3) defines take as "to harass, harm, pursue, hunt, shoot, wound, trap, capture, collect or attempt to engage in any such conduct". The USFWS further defines "harm" as "significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering", and "harass" as "actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering". The project will harm lynx.

A big problem with the Forest Plan amendment and the NRLMD is that it allows with few exceptions the same level of industrial forest management activities that occurred prior to Canada lynx ESA listing. The FS approval and implementation of the NRLMD and the revised Beaverhead-Deerlodge National Forest Forest Plan is arbitrary and capricious, violates NEPA's hard look requirement and scientific integrity mandate and fails to apply the best available science necessary to conserve lynx. The NRLMD or the revised BDNF Forest Plan contain no

protection or standard for conservation of winter lynx habitat (old growth forests).

Please disclose if and when the FS conducted lynx occurrence surveys of habitat in the LAUs.

Please disclose if surveys target snowshoe hare occurrence data in these stands newly considered unsuitable for lynx. Also, please indicate if the FS surveyed any areas thought to not be lynx habitat based on mapping or stand data were surveyed to confirm unsuitable habitat conditions.

The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling through low cover areas in winter. Please identify the amount of non-cover or low-cover areas that will be designated as LAUs.

It appears the FS doesn't have a coherent strategy for recovering lynx from their Threatened status, including linking currently populated areas with each other through important linkages such as project area LAUs.

Please analyze and disclose cumulative impacts of recreational activities on lynx, such as snowmobiles. As the KNF's Galton FEIS states, "The temporal occurrence of forest uses such ... winter (skiing and snowmobiling) ... may result in a temporary displacement of lynx use of that area..."

Please quantify and disclose the cumulative effects on Canada lynx due to trapping or from use of the road and trail networks in the project area.

Please analyze and disclose cumulative effects of eliminating LAUs.

Please demonstrate that there will be sufficient sync denning habitat occurs in the BDNF, and explain how it arrived at that conclusion.

The USFWS listed the Canada lynx as a threatened species under the Endangered Species Act in 2000 due to “lack of guidance for conservation of lynx and snowshoe hare habitat...” and subsequent authorization of actions that may cumulatively adversely affect the lynx. Relatively little is known about lynx in the contiguous United States. Historically, lynx inhabited states spanning from Maine to Washington, but it is unknown how many lynx remain.

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 Peg. 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.

Lynx subsist primarily on a prey base of snowshoe hare, and survival is highly dependent upon snowshoe hare

habitat, forest habitat where young trees and shrubs grow densely. In North America, the distribution and range of lynx is nearly “coincident” with that of snowshoe hares, and protection of snowshoe hares and their habitat is critical in lynx conservation strategies.

Since more often than not when the FS conducts logging projects in LAUs surveys of stands for lynx habitat result in less suitable habitat than previously assumed, the FS needs to take a few steps backward and consider that its range-wide Canada lynx suitable habitat estimations were too high.

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 importance of maintaining lynx linkage zones is also recognized by the FS's Lynx Conservation Assessment and Strategy (LCAS), as revised in 2013, which stresses that landscape connectivity should be maintained to allow for movement and dispersal of lynx.

Squires et al. (2013) noted in their research report that some lynx avoided crossing highways; in their own report, they noted that only 12 of 44 radio-tagged lynx with home ranges including 2- lane highways crossed them.

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.) 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.)

LAUs, 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.)

Squires et al., 2010 reported that lynx winter habitat should be “abundant and spatially well- distributed across the landscape.” Those authors also noted that in heavily managed landscapes, retention and recruitment of lynx habitat should be a priority.

The LCAS (Ruediger et al. 2000) recommends, until conclusive information is developed concerning lynx management, the agencies retain future options; that is, choose to err on the side of maintaining and restoring habitat for lynx and their prey. To err on the side of caution, the BDNF would retain all remaining stem exclusion forests for recruitment into lynx winter habitat, so that this key habitat would more closely resemble historic conditions.

As early as 2000, the LCAS noted that lynx seem to prefer to move through continuous forest (1- 4); lynx have been observed to avoid large openings, either natural or created (1-4); opening and open forest areas wider than 650 feet may restrict lynx movement (2-3); large patches with low stem densities may be functionally similar to openings, and therefore lynx movement may be disrupted (2-4). Squires et al. 2006a reported that lynx tend to avoid sparse, open forests and forest stands dominated by small-diameter trees during the winter. Squires et al. 2010 again reported that lynx avoid crossing clearcuts in the winter; they generally avoid forests composed of small diameter saplings in the winter; and forests that were thinned as a silvicultural treatment were generally avoided in the winter.

Squires et al. 2010 show that the average width of openings crossed by lynx in the winter was 383 feet, while the maximum width of crossed openings was 1240 feet.

Recent scientific findings undermine the Forest Plan/NRLMD direction for management of lynx habitat. This creates a scientific controversy the FS fails to resolve, and in fact it essentially ignores it.

For one, 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. This renders inadequate the agency's assumption in the Forest Plan/NRLMD that 30%

of lynx habitat can be open, and that no specific amount of mature forest needs to be conserved. Kosterman, 2014 demonstrates that Forest Plan/NRLMD standards are not adequate for lynx viability and recovery.

Also, the Forest Plan essentially assumes that persistent effects of vegetation manipulations other than regeneration logging and some intermediate treatments are essentially nil. However, Holbrook, et al., 2018 (attached) “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.” (Emphasis added.) 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 pre-commercial 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.

So Holbrook et al., 2017, 2018, 2019 (attached) fully contradict Forest Plan assumptions that clearcuts/regeneration can be considered useful lynx habitat as early as 20 years post-logging. Please find Holbrook attached.

Results of a study by Vanbianchi et al., 2017 also conflict with Forest Plan/NRLMD assumptions: “Lynx used burned areas as early as 1 year postfire, which is much earlier than the 2–4 decades postfire previously thought for this predator.” The NRLMD erroneously assumes clearcutting/

regeneration logging have basically the same temporal effects as stand-replacing fire as far as lynx re-occupancy.

Kosterman, 2014 (attached), Vanbianchi et al., 2017 and Holbrook, et al., 2018, Holbrook 2019 demonstrate that Forest Plan direction is not adequate for lynx viability and recovery, as the FS assumes. Holbrook 2019 such all lynx habitat must be surveyed. Have not done this?

Please describe the quantity and quality of habitat that is necessary to sustain the viability of the Canada lynx.

Please analyze how eliminating LAUs will effect climate change. The NEPA requires a “hard look” at climate issues, including cumulative effects of the “treatments” in the proposed project when added to the heat, drought, wind and other impacts associated with increased climate risk.

Regeneration/Restocking failure following wildfire, prescribed fire and/or mechanical tree-killing has not been analyzed or disclosed. There is a considerable body of science that suggests that regeneration following fire is increasingly problematic.

Please find attached Dr. John Carter’s critical comments on the BDNF’s Lynx Amendment to the Forest Plan.

Monitoring

For every project proposal, it is important that the results of past monitoring be incorporated into planning. All Interdisciplinary Team Members should be familiar with the results of all past monitoring pertinent to the project area, and any deficiencies of monitoring that have been previously committed to. For that reason, we expect that the following be included in the NEPA documents or project files:

- A list of all past projects (completed or ongoing) implemented in the proposed project area watersheds.
- The results of all monitoring done in the project area as committed to in the NEPA documents of those past projects.
- The results of all monitoring done in the proposed project area as a part of the Forest Plan monitoring and evaluation effort.
- A description of any monitoring, specified in those past project NEPA documents or the Forest Plan for proposed project area, which has yet to be gathered and/or reported.

Please disclose the names of all other past projects (implemented during the life of the Forest Plan) whose analysis area(s) encompass the areas to be “treated” under this proposal. Please disclose if the FS has performed all of the monitoring and mitigation required or recommended in any NEPA documents, and the results of the monitoring.

For the proposal to be consistent with the Forest Plan, enough habitat for viable populations of old-growth dependent wildlife species is needed over the landscape. Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero, et. al., 1994), the cumulative effects of carrying out multiple projects simultaneously across the BDNF makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992). Also, temporal considerations of the impacts on wildlife population viability from implementing something with such long duration as a Forest Plan must be considered (id.) but this has never been done by the BDNF. It is also of paramount importance to monitor population during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence i.e., population viability (Marcot and Murphy, 1992; Lacy and Clark, 1993).

The U.S. District Court in Montana ruled in *Native Ecosystems Council vs. Kimbell* on the Keystone Quartz project that the Forest Service presented no hard data to support or demonstrate the biological impact on old-growth species viability across the forest of further reducing Douglas-fir old-growth habitat below minimum forest plan standards, which themselves may be inadequate in light of more recent scientific information. Species in the Northern

Region, including the BDNF, thought to prefer old-growth habitat for breeding or feeding include northern goshawk, flammulated owl, pileated woodpecker, black-backed woodpecker (after wildfire or beetle epidemic), fisher, marten, Canada lynx, and wolverine.

For the BDNF, sensitive old-growth dependent species include the northern goshawk and flammulated owl. According to official FS policy, the BDNF “must develop conservation strategies for those sensitive species whose continued existence may be negatively affected by the forest plan or a proposed project.” FSM 2670.45. These strategies would address the forest-wide and range-wide conditions for the affected species, allowing site-specific viability analysis to be tiered to the forest-wide viability analysis, and would establish quantifiable objectives for the affected species. These strategies must be adopted prior to implementation of projects that would adversely impact sensitive species habitat. FSM 2622.01, 2670.45.

Please demonstrate that this project will leave enough snags to follow the Forest Plan requirements and the requirements of sensitive old growth species such as flammulated owls and goshawks. Loggers are required to follow OSHA safety standards. Will these standards require snags to be

cut down? After snags are cut down for safety for OSHA requirements will there still be enough snags left for old growth sensitive species?

Specifically how will the South Tobacco Roots Project affect Flammulated owls, cavity-nesters usually associated with mature stands of ponderosa pine and Douglas-fir? Among other habitat characteristics, flammulated owls benefit from an abundance of large snags and a relatively dense under-story. The flammulated owl is a sensitive species in Region One, and is largely dependent on old ponderosa pine forests. According to a 2002 Region-wide assessment, not referenced in the 2003 FEIS for the Project, such forests only occur at 12-16% of their former, pre-fire suppression/pre-logging (that is, "historic") levels, and thus species viability has been determined to be at risk. The Northern Region also recognizes that its strategy for restoring habitat for the flammulated owl and found in the Island South project that "in no way guarantees that flammulated owls will be restored to viable levels."

Snag densities recommended by experts to support cavity-nesting birds range from 2.1 to 11 snags per acre of greater than 9" dbh. Please note that the fact that more recent science has called into question the lower snag densities

cited in the earlier research, and the more recent science implies that about 4 snags per acre may be the minimum required to insure viability.

What surveys has the BDNF specifically designed to detect flammulated owls? The FS has not developed a conservation strategy for the flammulated owl in the BDNF, or in the Northern Rockies. Absent an appropriate landscape management strategy for insuring their viability, based upon the best available science, it is arbitrary and capricious to dismiss potential impacts on the ground where the FS has failed to conduct the kind of comprehensive surveys that would reveal their presence. This convenient excuse for not protecting for a species that is becoming exceedingly rare, a strategy of managing for extinction (since protection premised on detection affords greatest protection to the species that least need it) has been condemned by the FS's own leading expert in the northern region, Mike Hillis:

With the exception of the Spotted Owl..., the U.S. Forest Service has not given much emphasis to owl management. This is contrary to the National Forest Management Act of 1976 (NFMA) which mandates that all wildlife species be managed for viable populations. However, with over 500 vertebrate species this would be difficult for any organization. Recognizing the absence of detailed information on

owl habitat, the apparent association of owls with snags, mature, and old-growth timber (both rapidly declining), it seems inconsistent that the U.S. Forest Service has placed little emphasis on owl management. One might conclude that the agency's painful experiences with the Spotted Owl in Oregon and Washington have evolved into a 'hear no evil, see no evil' approach for other forest owls as well.

The NPCNF's Lolo Insect & Disease DEIS states: "The nest tree is the most important variable to estimate breeding habitat use by the pileated woodpecker (Kirk and Naylor 1996, Giese and Cuthbert 2003) ...The mean DBH of nest trees was 33 inches. ...Nest trees averaged 28 inches DBH." (Emphases added.)

Bull et al., 2007 compare the effects of natural disturbance with large-scale logging on pileated woodpeckers. Also see Bull et al., 1992, Bull and Holthausen, 1993, and Bull et al., 1997 for biology of pileated woodpeckers and the habitats they share with cavity nesting wildlife.

Lorenz et al., 2015 state:

Our findings suggest that higher densities of snags and other nest substrates should be provided for PCEs (primary cavity excavators) than generally recommended, because past research studies likely overestimated the abundance of suitable nest sites and underestimated the number of snags required to sustain PCE populations. Accordingly, the felling or removal of

snags for any purpose, including commercial salvage logging and home firewood gathering, should not be permitted where conservation and management of PCEs or SCUs (secondary cavity users) is a concern (Scott 1978, Hutto 2006).

The implication is clear: managers know little about how many snags per acre are needed to sustain populations of cavity nesting species. Only the birds themselves have the capability to decide if a tree is suitable for excavating. The EA and Forest Plan fails to recognize this scientific finding.

On the same subject, Hutto 2006, notes from the scientific literature: “The most valuable wildlife snags in green-tree forests are relatively large, as evidenced by the disproportionate number of cavities in larger snags (Lehmkuhl et al. 2003), and are relatively deteriorated (Drapeau et al. 2002).”

Spiering and Knight (2005) examined the relationship between cavity-nesting birds and snag density in managed ponderosa pine stands and examined if cavity-nesting bird use of snags as nest sites was related to the following snag characteristics (DBH, snag height, state of decay, percent bark cover, and the presence of broken top), and if evidence of foraging on snags was related to the following snag characteristics: tree species, DBH, and state of decay.

Spiering and Knight (2005) state:

“Many species of birds are dependent on snags for nest sites, including 85 species of cavity-nesting birds in

North America (Scott et al. 1977). Therefore, information of how many and what types of snags are required by cavity-nesting bird species is critical for wildlife biologists, silviculturists, and forest managers.”

“Researchers across many forest types have found that cavity-nesting birds utilize snags with large DBH and tall height for nest trees (Scott, 1978; Cunningham et al., 1980; Mannan et al., 1980; Raphael and White, 1984; Reynolds et al., 1985; Zarnowitz and Manuwal, 1985; Schreiber and deCalesta, 1992).”

Spiering and Knight (2005) found the following.

Larger DBH and greater snag height were positively associated with the presence of a cavity, and advanced stages of decay and the presence of a broken top were negatively associated with the presence of a cavity. Snags in larger DBH size classes had more evidence of foraging than expected based on abundance.

Percent bark cover had little influence on the presence of a cavity. Therefore, larger and taller snags that are not heavily decayed are the most likely locations for cavity-nesting birds to excavate cavities.

The association of larger DBH and greater height of snags with cavities is consistent with other studies (Scott, 1978; Cunningham et al., 1980; Mannan et al., 1980; Raphael and White, 1984; Reynolds et al., 1985; Zarnowitz and Manuwal, 1985; Schreiber and

deCalesta, 1992).

Spiering and Knight (2005) state that the “lack of large snags for use as nest sites may be the main reason for the low densities of cavity-nesting birds found in managed stands on the Black Hills National Forest. ...The increased proportion of snags with evidence of foraging as DBH size class increased and the significant goodness-of-fit test indicate that large snags are the most important for foraging.”

Tingley et al., 2016 note the diversity of habitats following a fire is related to the diversity of burn severities: “(W)ithin the decade following fire, different burn severities represent unique habitats whose bird communities show differentiation over time... Snags are also critical resources for many bird species after fire. Increasing densities of many bird species after fire—primarily wood excavators, aerial insectivores, and secondary cavity nesters—can be directly tied to snag densities...”

One issue that arises is the abundance of the large snags and down wood remaining from past logging, firewood gathering, and other management, following the proposed logging, and—the nuance ignored in this EA—through time as recruitment becomes practically nil after a few years in logged areas due to most or all of the large trees being removed and/or downed. Since the EA suggests that beyond the analysis area (the entire Forest and to the Region) adequate habitat values would remain, the agency

is obligated to provide the numbers and conduct a scientifically sound cumulative effects analysis—including the impacts of past logging, firewood gathering, etc. The FS has not done this. The project area was logged in the past, which obviously has affected recruitment of large snags. As we discuss above, the nesting tree needs of the pileated woodpecker is of a larger size than the FS acknowledges or analyzes. And the EA makes no commitment towards assuring retention of the largest tree habitat at the unit, project area, or any landscape scale.

Mealey, 1983 stated: “Well distributed habitat is the amount and location of required habitat which assure that individuals from demes, distributed throughout the population’s existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible.” That document also provides guidance for pileated woodpecker habitat distribution.

Northern goshawk

The EA fails to include a cumulative effects analysis considering past and ongoing impacts in a logical cumulative effects analysis area for goshawks.

Crocker-Bedford (1990) investigated changes in northern goshawk habitat utilization following logging. He 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.

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 on the Forest. Removal of any large trees in the 180-acre nesting area would contradict the Reynolds et al. (1992) guidelines.

The EA doesn't explain how the FS would be managing in considerations of Reynolds et al. (1992) scientific recommendations. Reynolds, et al. 1992, calls for protecting northern goshawk nest areas around 3 nests and 3 alternative nests against adverse impacts in each home range. However, the EA does not invoke best available science to maintain any nest areas, or accurately disclosed how the approved activities might impact such areas.

Reynolds et al. 1992 calls for ratios of (20%/20%/20%) each in the mid-aged forest, mature forest, and old forest Vegetative Structural Stage (VSS) classes for, in this case hypothetical post-fledging family areas (PFAs) and foraging areas.

In addition, Reynolds et al. 1992 calls for agency-created

openings of no more than 2 acres in size or less in the PFAs, depending on forest type, and agency-created opening of no more than 1-4 acres or less in size in the foraging areas, depending on forest type.

Along with Reynolds et al., 1992, another conservation strategy for the goshawk is Graham, et al., 1999. Research suggests that it is essential to viability of goshawks that 20-50% of old growth within their nesting areas be maintained (Suring et al. 1993, Reynolds et al. 1992). USDA Forest Service (2000b) recommends that forest opening greater than 50-60 acres be avoided in the vicinity of goshawks. At least five years of monitoring is necessary to allow for effective estimates of habitat quality (USDA Forest Service, 2000b). Research suggests that a localized distribution of 50% old growth should be maintained to allow for viability of goshawks (Suring et al. 1993).

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). . . .”

The EA fails to recognize goshawk long-term fidelity to nest stands.

Also please consider Beier and Drennan (1997), Crocker-Bedford (1990), Greenwald et al. (2005), Hayward and Escano (1989), La Sorte, et al. (2004), USDA Forest Service (2000b) and Patla (1997) as best available science for northern goshawk biology.

Please disclose the frequency and geographic extent of goshawk nest searches during the past 10 years in the project area.

The FS did not 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 FS's Samson (2006a) reports says that 110 breeding individuals (i.e. 55 pairs) are necessary for a viable goshawk population in R1. Attachment 1 is a map showing the results from the 2005 R1 region-wide goshawk survey using their Woodbridge and Hargis goshawk monitoring protocol, which is published as a USFS technical report. The 2005 detection map says there were 40 detections in 2005 in Region 1. So the results of this survey essentially show that the population in Region 1 is not viable according to the agency's own science (only 40 instead of 55). And some of the detections may have been individuals using the same nest, so the number of nests (and therefore number of breeding pairs) could be even lower than 40.

Elk and other Big game

The EA does not present an adequate quantitative or qualitative analysis of security and thermal cover.

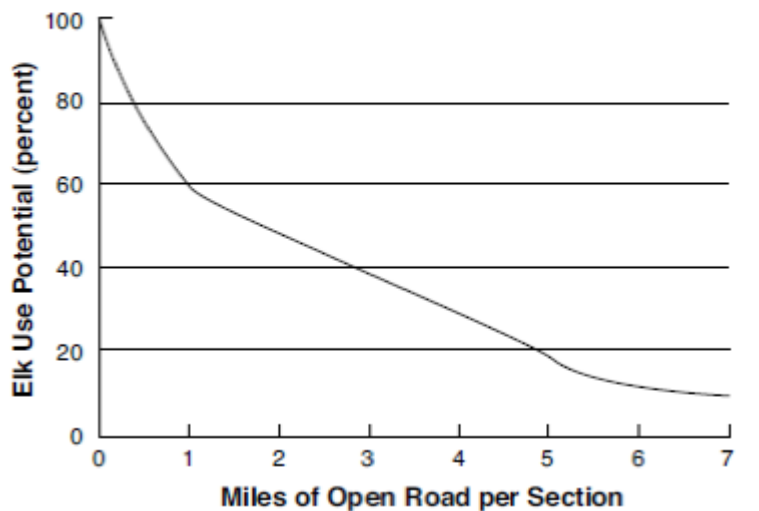
The EA does not demonstrate consistency with all forest plan direction. The EA does not present an analysis explaining how meeting the big game security direction in the Forest Plan assures that population viability is maintained, or maintains quality hunting opportunities.

The science is clear that motorized access via trail, road, or oversnow adversely impact habitat for the elk. Servheen, et

al., 1997 indicate that motorized trails increase elk vulnerability and reduce habitat effectiveness, and provide scientific management recommendations.

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

5. Levels of habitat effectiveness:



Carnefix and Frissell, 2009 make a very strong scientific rationale for including ecologically-based road density standards:

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. Road density is a useful metric or indicator of human impact at all scales broader than a single local site because it integrates impacts of human disturbance from activities that are associated with roads and their use (e.g., timber harvest, mining, human wildfire ignitions, invasive species introduction and spread, etc.) with direct road impacts. Multiple, convergent lines of empirical evidence summarized herein support two robust conclusions: 1) no truly “safe” threshold road density exists, but rather negative impacts begin to accrue and be expressed with incursion of the very first road segment; and 2) highly significant impacts (e.g., threat of extirpation of sensitive species) are already apparent at road densities on the order of 0.6 km per square km (1 mile per square mile) or less. Therefore, restoration strategies prioritized to reduce road densities in areas of high aquatic resource value from low-to-moderately-low levels to zero-to-low densities (e.g., <1 mile per square mile, lower if attainable) are likely to be most efficient and effective in terms of both economic cost and ecological benefit. By strong inference from these empirical studies of systems and species sensitive to humans’ environmental impact, with limited exceptions, investments that only reduce high road density to moderate road density are unlikely to produce any but small incremental improvements in abundance, and will not result in robust populations of sensitive species.

Black-backed woodpecker

The EA fails to consider best available science for the Sensitive black-backed woodpecker analysis, and includes inadequate cumulative effects analysis.

The EA does not analyze or disclose the quality of habitat based on prefire management activities that scientific research has found affects postfire woodpecker utilization.

The Sensitive species black-backed woodpecker is a primary cavity nester, and also the closest thing to an indicator for species depending upon the process of wildland fire in the ecosystem. Cherry (1997) states:

The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the 'healthy' forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore, the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline.

The FS manages against severely burned forests. The viability of black-backed woodpeckers is threatened by the

FS's fire suppression and other "forest health" policies which specifically attempt to prevent its habitat from developing. "Insect infestations and recent wildfire provide key nesting and foraging habitats" for the black-backed woodpecker and "populations are eruptive in response to these occurrences" (Wisdom et al. 2000). The timber sale would reduce habitat the black-backed woodpecker biologically relies on. Viability of a species cannot be assured, if habitat suppression is a forestwide policy.

Cherry (1997) notes:

Woodpeckers play critical roles in the forest ecosystem. Woodpeckers are primary cavity nesters that excavate at least one cavity per year, thus making these sites available to secondary cavity nesters (which include many species of both birds and mammals). Black-backed and three-toed woodpeckers can play a large role in potential insect control. The functional roles of these two woodpecker species could easily place them in the 'keystone' species category—a species on which other species depend for their existence.

Wickman (1965) calculated that woodpeckers may eat up to 50 larvae per day that were each about 50 mm in length. The predation on these larvae is significant. It has been estimated that individual three-toed woodpeckers may consume thousands of beetle larvae per day, and insect outbreaks may attract a many-fold increase in woodpecker densities (Steege et al. 1996). The ability of woodpeckers in to help control insect

outbreaks may have previously been underestimated.

Black-backed woodpeckers preferred foraging in trees of 34 cm (16.5 in) diameters breast height and (63 ft) 19 m height (Bull et al. 1986). Goggans et al. (1987) found the mean dbh of trees used for foraging was 37.5 cm (15 in) and the mean dbh of trees in the lodgepole pine stands used for foraging was 35 cm (14 in). Steeger et al. (1996) found that both (black-backed and three-toed) woodpecker species fed in trees from 20-50 cm (8-20 in) dbh.

Black-backed woodpeckers excavate their own cavities in trees for nesting. Therefore, they are referred to as primary cavity nesters, and they play a critical role in excavating cavities that are later used by many other species of birds and mammals that do not excavate their own cavity (secondary cavity nesters). Black-backed woodpeckers peel bark away from the entrance hole and excavate a new cavity every year. Other woodpeckers sometimes take over their cavities (Goggans et al. 1987).

Also, FS biologists Goggans et al., 1989 studied black-backed woodpecker use of unburned stands in the Deschutes NF in Oregon. They discovered that the black-backed woodpeckers used unlogged forests more than cut stands. In other words, effects to the black-backed woodpecker accrue from logging forest habitat that has not been recently burned.

FS biologists Hillis et al., 2002 note that “In northern Idaho, where burns have been largely absent for the last 60 years, black-backed woodpeckers are found amid bark beetle outbreaks, although not at the densities found in post-burn conditions in Montana.” Those researchers also state, “The greatest concerns for this species, however, are decades of successful fire suppression and salvage logging targeted at recent bark beetle outbreaks.” Hillis et al., 2002 also state:

Black-backed woodpeckers occupy forested habitats that contain high densities of recently dead or dying trees that have been colonized by bark beetles and woodborer beetles (Buprestidae, Cerambycidae, and Scolytidae). These beetles and their larvae are most abundant within burned forests. In unburned forests, bark beetle and woodborer infested trees are found primarily in areas that have undergone natural disturbances, such as wind-throw, and within structurally diverse old-growth forests (Steeger and Dulisse in press, Bull et al. 1986, Goggans et al. 1987, Villard 1994, Hoffman 1997, Weinhausen 1998).

Hutto, 1995 states: “Fires are clearly beneficial to numerous bird species, and are apparently necessary for some.” (Emphasis added.) Hutto, 1995 whose study keyed on forests burned in 1988, noted:

Contrary to what one might expect to find immediately after a major disturbance event, I detected a large number of species in forests that had undergone stand-

replacement fires. Huff et al. (1985) also noted that the density and diversity of bird species in one- to two-year-old burned forests in the Olympic Mountains, Washington, were as great as adjacent old-growth forests...

...Several bird species seem to be relatively restricted in distribution to early post-fire conditions... I believe it would be difficult to find a forest-bird species more restricted to a single vegetation cover type in the northern Rockies than the Black-backed Woodpecker is to early [first 6 years] post-fire conditions. (Emphases added.)

USDA Forest Service 2011c states:

Hutto (2008), in a study of bird use of habitats burned in the 2003 fires in northwest Montana, found that within burned forests, there was one variable that exerts an influence that outstrips the influence of any other variable on the distribution of birds, and that is fire severity. Some species, including the black-backed woodpecker, were relatively abundant only in the high-severity patches. Hutto's preliminary results also suggested burned forests that were harvested fairly intensively (seed tree cuts, shelterwood cuts) within a decade or two prior to the fires of 2003 were much less suitable as post-fire forests to the black-backed woodpecker and other fire dependent bird species. Even forests that were harvested more selectively within a decade or two prior to fire were less likely to be

occupied by black-backed woodpeckers.

Also see the agency's Fire Science Brief, 2009, which states, "Hutto found that Black-backed Woodpeckers fared best on sites unharvested before fire and poorest in the heavily harvested sites."

How will the South Tobacco Roots project effect black-backed woodpeckers?

Hutto, 2008 states, "severely burned forest conditions have probably occurred naturally across a broad range of forest types for millennia. These findings highlight the fact that severe fire provides an important ecological backdrop for fire specialists like the Black-backed Woodpecker, and that the presence and importance of severe fire may be much broader than commonly appreciated."

Hutto, 2006 states:

The profound failure of many decision makers to appreciate the ecological value of burned forests stems from their taking too narrow a view of what forests provide. ...Land managers, politicians, and the public-at-large need to gain a better appreciation of the unique nature of burned forests as ecological communities, ... and how important the legacy of standing deadwood is to the natural development of forests (Franklin et al. 2000).

Bond et al., 2012a explain the need for a conservation

strategy for the black-backed woodpecker:

In California, the Black-backed Woodpecker's strong association with recently burned forest, a habitat that is ephemeral, spatially restricted, and often greatly modified by post-fire logging, as well as the species' relative rarity, may make the woodpecker vulnerable to declines in the state. Additionally, Black-backed Woodpeckers in California are affected by the management of unburned forests – both because pre-fire stand conditions affect the suitability of post-fire habitat for the species, and because a substantial proportion of California's Black-backed Woodpeckers nest and forage at a low population density in unburned forests. Conserving the Black-backed Woodpecker in California likely requires appropriate management and stewardship of the habitat where this species reaches its highest density – recently burned forest – as well as appropriate management of 'green' forests that have not burned recently

The EA does not disclose the quantity and quality of habitat that is necessary to sustain the viability of the black-backed woodpecker, or an explanation of the FS's methodology for measuring this habitat.

Holt and Hillis, "Current Status and Habitat Associations of Forest Owls in Western Montana" (1987).

State-of-the-art conservation biology and the principles that underlie the agency's policy of "ecosystem management"

dictate an increasing focus on the landscape-scale concept and design of large biological reserves accompanied by buffer zones and habitat connectors as the most effective (and perhaps only) way to preserve wildlife diversity and viability (Noss, 1993).

The FS has stated: “Well distributed habitat is the amount and location of required habitat which assure that individuals from demes, distributed throughout the population’s existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible.” (Mealey 1983.)

The FS has acknowledged that viability is not merely a project area consideration, that the scale of analysis must be broader:

Population viability analysis is not plausible or logical at the project level such as the scale of the Dry Fork Vegetation and Recreation Restoration EA.

Distributions of common wildlife species as well as species at risk encompass much larger areas than typical project areas and in most cases larger than National Forest boundaries. No wildlife species that presently occupy the project area are at such low numbers that potential effects to individuals would jeopardize species viability. No actions proposed under the preferred alternative would conceivably

lead to loss of population viability. (Lewis and Clark NF, Dry Fork EA Appendix D at p. 9.)

The FS should firmly establish that the species that exist, or historically are believed to have been present in the analysis area are still part of viable populations. Since Forest Plan monitoring efforts have failed in this regard, it must be a priority for project analyses. Identification of viable populations is something that must be done at a specific geographic scale. The analysis must cover a large enough area to include a cumulative effects analysis area that would include truly viable populations. Analysis must identify viable populations of MIS, TES, at-risk, focal, and demand species of which the individuals in the analysis area are members in order to sustain viable populations.

Unfortunately, region-wide the FS has failed to meet Forest Plan old-growth standards, does not keep accurate old-growth inventories, and has not monitored population trends in response to management activities as required by Forest Plans and NFMA (Juel, 2003).

Please disclose how stands to be treated compare to Forest Plan or Regional old-growth criteria. In order to disclose such information, please provide all the details, in plain language, of these areas' forest characteristics (the various tree components' species, age and diameter of the various

tree components, canopy closure, snag density by size class, amounts of down logs, understory composition, etc.).

One of the biggest problems with the FS's failure to deal forthrightly with the noxious weed problem on a forest wide basis is that the long-term costs are never adequately disclosed or analyzed. The public is expected to continuously foot the bill for noxious weed treatments—the need for which increases yearly as the BDNF continues the large-scale propagation of weeds, and fails to monitor the effectiveness of all its noxious weed treatment plans to date. There is no guarantee that the money needed for the present management direction will be supplied by Congress, no guarantee that this amount of money will effectively stem the growing tide of noxious weed invasions, no accurate analysis of the costs of the necessary post-treatment monitoring, and certainly no genuine analysis of the long-term costs beyond those incurred by site specific weed control actions.

The Economic section states the project will cost taxpayers \$563,000. Does this include the cost of weed control? Does this include the money the Forest Service or the Forest Service Foundation has paid the collaborative groups to support this project?

How much has the Forest Service or the Forest Service Foundation paid the collaborative groups support this project in the last 10 years?

Our goals for the area include fully functioning stream ecosystems that include healthy, resilient populations of native trout. The highest priority management actions in the project area are those that remove impediments to natural recovery. We request the FS design a restoration/access management plan for project area streams that will achieve recovery goals. The task of management should be the reversal of artificial legacies to allow restoration of natural, self-sustaining ecosystem processes. If natural disturbance patterns are the best way to maintain or restore desired ecosystem values, then nature should be able to accomplish this task very well without human intervention (Frissell and Bayles, 1996).

Please utilize the NEPA process to clarify any roadless boundary issues. It is not adequate to merely accept previous, often arbitrary roadless inventories—unroaded areas adjacent to inventoried areas were often left out. Additionally, there is a lot of public support for adding unroaded areas as small as 1,000 acres in size to the roadless inventory. Please examine if these unroaded areas adjacent to roadless areas have wilderness qualities.

Page 24 of the South Tobacco Roots Vegetation Management Project Roadless and Recreation Effects Analysis states:

For the purposes of the South Tobacco Roots Vegetation Management project, timber cutting or removal in inventoried roadless areas would be incidental to the implementation of broadcast burning in sagebrush and grassland communities. Small diameter seedling and sapling trees would be removed by a combination of hand cutting with chainsaws and prescribed fire. Tree cutting would be on a small scale and limited to establishment of prescribed fire control lines. Non-commercial broadcast burning treatment would take place across approximately 600.5 acres of Middle Mountain IRA would restore fuels characteristics of native ecosystem structure within the range of natural variability that would be expected under natural disturbance regimes to reduce the risk of wildfire impacts to private, BLM, and State of Montana managed lands.

Please demonstrate that the area is outside the normal range of variability. The EA does not do this.

This is a violation of the roadless rule.

The Roadless Rule states in part:

Prohibition on timber cutting, sale, or removal in inventoried roadless areas.

(a) Timber may not be cut, sold, or removed in inventoried

roadless areas of the National Forest System, except as provided in paragraph (b) of this section.

(b) Notwithstanding the prohibition in paragraph (a) of this section, timber may be cut, sold, or removed in inventoried roadless areas if the Responsible Official determines that one of the following circumstances exists. The cutting, sale, or removal of timber in these areas is expected to be infrequent.

(1) The cutting, sale, or removal of generally small diameter timber is needed for one of the following purposes and will maintain or improve one or more of the roadless area characteristics as defined in § 294.11.

(i) To improve threatened, endangered, proposed, or sensitive species habitat; or

(ii) To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period;

(2) The cutting, sale, or removal of timber is incidental to the implementation of a management activity not otherwise prohibited by this subpart;

(3) The cutting, sale, or removal of timber is needed and appropriate for personal or administrative use, as provided for in 36 CFR part 223; or

(4) Roadless characteristics have been substantially altered in a portion of an inventoried roadless area due to the construction of a classified road and subsequent timber harvest. Both the road construction and subsequent timber harvest must have occurred after the area was designated an inventoried roadless area and prior to January 12, 2001. Timber may be cut, sold, or removed only in the substantially altered portion of the inventoried roadless area.

36 C.F.R. § 294.13 (2005).

219. The Roadless Rule further explains subsection (b) (2) as follows: “Paragraph

(b)(2) allows timber cutting, sale, or removal in inventoried roadless areas when incidental to implementation of a management activity not otherwise prohibited by this rule. Examples of these activities include, but are not limited to trail construction or maintenance; removal of hazard trees adjacent to classified road for public health and safety reasons; fire line construction for wildland fire suppression or control of prescribed fire; survey and maintenance of property boundaries; other authorized activities such as ski runs and utility corridors; or for road construction and

reconstruction where allowed by this rule.” 66 Fed. Reg. 3258 (Jan. 12, 2001)

For over 15 years, the Roadless Rule was the subject of litigation. See e.g. Kootenai Tribe of Idaho v. Veneman, 313 F.3d 1094, 1126 (9th Cir. 2002); California ex rel. Lockyer v. U.S. Dep't of Agric., 575 F.3d 999, 1007 (9th Cir. 2009); Wyoming v. U.S. Dep't of Agric., 661 F.3d 1209, 1272 (10th Cir. 2011); Organized Vill. of Kake v. U.S. Dep't of Agric., 795 F.3d 956, 962 (9th Cir. 2015) (en banc); Alaska v. United States Dep't of Agric., 273 F. Supp. 3d 102, 108–12 (D.D.C. 2017). Nonetheless, the Roadless Rule is still in effect.

Why is the project violating the roadless rule?

What are the habitat types of the project area?

Please show a map of all the habitat types in the project area based on Pfister and then please explain why the project area is outside the normal range of variability.

Page 8 of the Roadless and Recreation Analysis states:

Approximately 91.2 miles of NFS road, 32.5 miles of motorized and non-motorized trail, and 20.3 miles of non-system road exist in the project area. Table 5 and Table 6 summarize the existing transportation system on National Forest System, hereafter referred to as NFS lands within the project area.

Are all of the roads closed by the Travel management decision actually closed?

Page 8 of the Roadless and Recreation Analysis also states:

In use, administratively decommissioned by Travel Management decision 7.1

In use, unauthorized route 13.1 All 111.5

Page 12 of the Roadless and Recreation Analysis states:

Approximately 1.6 miles of non-system road and 0.4 miles of system road would remain within the Middle Mountain IRA boundary. Continued motorized use would retain compact soil characteristics of these routes, causing persistence of very slight degradation to the roadless characteristic for soil, water, and air resource.

Why is the Forest Service not removing all illegal roads in the project area?

Is the Forest Service counting the roads that are administratively closed but not closed on the ground and

the illegal or non-system roads as open roads in the analysis on big game, grizzlies and other wildlife?

This is big game winter range as per the Forest Plan. The EA failed to define what the specific habitat objectives are for this winter range, including hiding and thermal cover, as well as forage. Juniper and sagebrush are key forage plants for big game on winter ranges. What are the objectives for these forage species? The Forest Plan direction for this management area is binding. If the agency is going to claim that the Forest Plan is being implemented, you need to specifically define how this is being done, instead of simply claiming that juniper and shrub removal is improvement on big game winter range and sage grouse habitat. Also, the science and monitoring behind this claim need to be provided. Currently mule deer populations have been in decline across the western U.S.. We haven't seen any science that reported increases of mule deer populations following removal of juniper and shrubs on their winter ranges.

One issue that is generally ignored in the scoping document is what shrubs are present, and will be targeted for masticating and burning. Do these control efforts include sagebrush? There is extensive documentation that sagebrush is highly valuable to both elk and deer on winter ranges (Wambolt 1998, Petersen 1993). Removing sagebrush to increase grasses on winter range, as is suggested in the EA, does not promote mule deer and elk. Sagebrush has a high protein content of almost 13% in the

winter, while dormant grasses have a protein content of less than 4% (Peterson 1993). There can be no valid reason to remove sagebrush and replace it with grasses for big game winter forage. The actual replacement species the agency claims are going to be managed for are never identified. But at a minimum, the rationale for removing shrubs and replacing them with grasses on winter range needs to be documented, as is required by the NEPA.

The claim that this project will increase diversity is pure unsupported rhetoric. There is no definition as to what constitutes diversity. What criteria are being used to measure diversity, and why isn't this information provided to the public? For example, what is the criteria for a diversity of age classes in juniper woodlands or sagebrush, and what is this based on? The NEPA requires that the agency provide reliable, valid information to the public on projects. This claim that removing juniper and shrubs will improve diversity is a clear violation of the NEPA, as there is no actual basis for it. Worse, it is not clear why eliminating trees and shrubs increases diversity as per the standard definitions. What science claims that a grassland has higher habitat diversity than a woodland or forest, or shrubland? One likely factor driving the proposed project is not promotion of big game species and wildlife, but instead is being done for livestock. This may be why there is no actual discussion in the scoping notice of current livestock grazing practices in this landscape.

The claim that thinning and removing juniper will increase resiliency of this area is highly questionable. First, these

forests are not highly flammable as per the current science. Second, thinning will likely increase flammability by increasing wind speeds and vegetation drying due to a reduction of shade. Third, flammability will surely be increased over current conditions due to an increase of grasses, including exotic species as cheatgrass. The scoping notice did not provide any actual science to indicate that thinning will reduce fires, and thereby increase “resiliency” of this winter range.

The EA did not provide any monitoring data on the effect of the fire on adjacent areas for use by big game as winter range, or how this fire affected the extent of exotic vegetation, such as cheatgrass and other weeds. Since the proposed actions will be somewhat similar in effect, it would seem to be important for the agency to provide this information to the public.

The EA never provides any monitoring data, or references any current science, as to what the specific problems are in this landscape for wildlife. How did the agency determine that the current conditions are causing problems for wildlife? In general, one would not expect trees to be a problem for wildlife, especially juniper which is a highly valuable resource for wildlife, not just for forage, including berries, but as hiding and thermal cover. How has the agency determined that hiding cover are too high in this winter range? What are the objectives for hiding and thermal cover which are the target for management intervention?

The proposed action is very extensive for conclusions that it will not significantly change and degrade conditions for wildlife. It is not clear how this was determined.

The EA lacks some important information, such as what species of shrubs are going to be slashed and burned. Why aren't these shrubs being used by wildlife? There is no information as to what these plant species are, and why they will have more value to wildlife than the existing shrubs and juniper that are to be removed.

Overall, the EA is a huge violation of the NEPA because the public is provided essentially no information as to why this project will benefit wildlife. At a minimum, the agency needs to demonstrate to the public that this is in fact the case. The scoping notice also did not provide any information as to how the resource specialists determined that the project will not lead to any significant effects on wildlife. These conclusions need to be documented for the public, including criteria that were used and evaluated to measure levels of significant impact. As just one question, if the Forest Plan standard to manage this area to promote big game species on their winter range is not being followed, this would most likely trigger significant impacts. It seems like that this is Forest Plan violation to promote livestock grazing over wildlife in this landscape. Juniper removal has been a long- standing practice to promote livestock grazing, not wildlife. The scoping notice did not discuss the current grazing use of this area by livestock. This information needs to be included as important information to the public.

Overall, the EA is devoid of any useful information to the public as to why this project enhances wildlife habitat, or is needed to maintain natural ecosystem processes within an IRA. If juniper is so flammable, it is not clear why it has to be slashed before it can be burned. It is clear that this project requires much more information to be provided to the public, and much more documentation to justify vegetation management within the Elkhorn Mountain IRA. And as previously noted, the criteria which the resource specialists used to estimate the level of impact needs to be provided, as well, to the public. It seems readily apparent that this project requires at a minimum an environmental assessment in order to comply with the NEPA, including the provision of valid, reliable information to the public when the Forest Service is planning resource management activities.

Please see the attached paper by Dr. William Baker titled: “Are High-Severity Fires Burning at Much Higher Rates Recently than Historically in Dry-Forest Landscapes of the Western USA?”

Dr. Baker writes: “Programs to generally reduce fire severity in dry forests are not supported and have significant adverse ecological impacts, including reducing habitat for native species dependent on early-successional burned patches and decreasing landscape heterogeneity that confers resilience to climatic change.”

Dr. Baker concluded: “Dry forests were historically renewed, and will continue to be renewed, by sudden,

dramatic, high-intensity fires after centuries of stability and lower-intensity fires.”

The purpose of this project is to improve big game and grouse habitat and to make the forest more resilient and plan for a more historic fire regime. Based on Dr. Baker’s paper, the proposed action will not meet the purpose and need of the project.

Dr. Baker’s paper is the best available science. Please explain why this project is not following the best available science.

Please explain include a discussion of the following:

1. Baker and Shinneman. 2004. Fire rotation for high-severity fire in juniper is estimated at 400-480 years.
2. Floyd and others. 2004. Stand replacing fires in juniper 400 years or longer.
3. Bauer and Weisberg. 2009. The fire cycle in pinyon-juniper was estimated at 427 years.

What evidence do you have that shows fire has been suppressed in the area?

Baker and Shinneman (2004), Bauer and Weisberg (2009), and Floyd et al. 2004) that demonstrate that the fire cycle in juniper woodlands is very long, up to 400 years or longer, and has not been impacted by any fire suppression actions since settlement. In addition, Coop and Magee (Undated) noted that low-severity fire is not generally considered to have played an important role in shaping patterns of pre-

settlement pinyon-juniper woodland structure, where fire regimes were mostly characterized by rare stand-replacing fire; as a result, they noted that direct management interventions such as thinning or fuel reductions may not represent ecological restoration.

We request a careful analysis of the impacts to fisheries and water quality, including considerations of sedimentation, increases in peak flow, channel stability, risk of rain-on-snow events, and increases in stream water temperature. Please disclose the locations of seeps, springs, bogs and other sensitive wet areas, and the effects on these areas of the project activities. Where livestock are permitted to graze, we ask that you assess the present condition and continue to monitor the impacts of grazing activities upon vegetation diversity, soil compaction, stream bank stability and subsequent sedimentation. This watershed has been proposed as bull trout critical habitat. How will the project effect native fish and their habitat?

Please disclose in the NEPA document the results of up-to-date monitoring of fish habitat and watershed conditions and how this project will affect the fish in the project area.

It is extremely important the FS disclose the environmental baseline for watersheds. Generally, this means their condition before development or resource exploitation was initiated. For example, the baseline condition of a stream means the habitat conditions for fish and other aquatic species prior to the impacts of road building, logging, livestock grazing, etc. Therefore, proper disclosure of baseline conditions would mean estimates of stream stability, pool frequency conditions, and water temperature range—essentially the values of Riparian Management Objectives along with such parameters as sediment levels. When such information is provided, comparison with the current conditions (after impacts of development) will aid in the assessment of cumulative effects of all alternatives.

Please include a map in the EIS or EA depicting the overlap between proposed project activities and impaired waterbodies along with a map depicting all waterbodies in the project and surrounding area, including any perennial,

intermittent and ephemeral streams, wetlands, springs, riparian areas, and shallow aquifers.

In addition, please discuss how proposed actions may potentially exacerbate existing water impairments. For example, the NEPA document might consider that vehicle traffic in the project area has the potential to increase concentrations of heavy metals in waterbodies due to tire and brake lining residue.¹¹ Thus, the impacts of metal contaminants on waterbodies from proposed activities should not be excluded from analysis, as suggested on page 29 of the supplementary Aquatic Resource Effects Analysis. Clearcutting, which is a part of the proposed action, can initiate erosion processes which may lead to nutrient leaching, increased debris flow, and sedimentation. Likewise, existing vegetation along riparian systems may limit sedimentation in water sources within the project area by filtering soil particles, preventing runoff and erosion, and stabilizing riverbanks. Because riparian vegetation allows for the uptake and denitrification of excess nitrate, removal of riparian vegetation has the potential to modify water chemistry in other ways as well. The EPA in their comments on this project recommend mitigating these impacts through additional BMPs, design features, and mitigations and specifying what exactly these mitigation measures would involve. For example, it is unclear how the proposed construction of 137 feet of new temporary road within riparian conservation areas discussed on page 32 of the draft EA could be mitigated so that it would not have a “measurable effect on surface waters within the project

area.” The EPA also suggests developing an Environmentally Preferable Alternative which reduces these potential impacts by avoiding certain project activities in or near waterbodies. For instance, an Environmentally Preferable Alternative might not include the construction of a new crossing of an intermittent stream and new temporary road within the riparian conservation areas.

Page 31 of the draft EA estimates that sedimentation would be reduced by 35% from road reconstruction and maintenance and non-system road decommissioning. The same page of the draft EA also states this effect would be most significant on “NFS roads 1237, 1224, 1249, and 161 which, combined, would reduce sedimentation from the current 15,749 pounds per year to 5,934 pounds per year” and refers to Table 11 for modeled sediment input to streams from road surface erosion. However, the information regarding sediment input conveyed in Table 11 is difficult to follow. Columns 4 and 5 of Table 11 are entitled “Sediment delivery in pounds per year during implementation modeled for haul routes with BMPs” and “Sediment delivery in pounds per year after implementation modeled for haul routes with BMPs,” respectively. The EPA recommends modifying these column names or supplementing the surrounding discussion to clarify the changes in sediment input as a result of the proposed action. If one sums the entries under Column 5 corresponding to rows for NFS roads 1237, 1224, 1249, and 161, the result is 5,934 pounds per year, which is the suggested sedimentation reduction on page 31 of the draft

EA. However, the draft EA does not explicitly discuss why sedimentation during project implementation is not considered in this analysis, what the BMPs in question are, and whether the USFS has committed to using these BMPs at this stage of project planning. The EPA recommends supplementing the discussion to address these issues.

Page 33 of the draft EA notes that: “Even if localized water yield changes [in Granite Creek] are observed they are not expected to degrade aquatic habitat or stream morphology (Bosch and Hewlet 1982, Safeeq et al. 2020).” The EPA recommends discussing why changes in water yield would not degrade aquatic habitat or stream morphology.

Likewise, even if this claim is accurate when impacts are considered in isolation, the EPA recommended that the NEPA document evaluate whether this claim is accurate in light of cumulative effects that have impacted water quality in and downstream of the project area, including impairments to aquatic habitat.

Finally, the EPA recommended that the USFS provide the basis and rationale for concluding that encroaching conifers have reduced riparian conditions in the project area on page 30 of the draft EA

Mechanical treatments may adversely affect soil productivity. NFMA requires the FS to “not allow significant or permanent impairment of the productivity of the land.” [36 C.F.R. § 219.27(a)(1).] NFMA requires the

Forest Service to “ensure that timber will be harvested from National Forest System lands only where—soil, slope, or other watershed conditions will not be irreversibly damaged.” [16 U.S.C. 1604 (g)(3)(E).]

The Sheep Creek Salvage FEIS (USDA Forest Service, 2005a) states at p. 173:

Noxious weed presence may lead to physical and biological changes in soil. Organic matter distribution and nutrient flux may change dramatically with noxious weed invasion. Spotted knapweed (*Centaurea biebersteinii* D.C.) impacts phosphorus levels at sites (LeJeune and Seastedt, 2001) and can hinder growth of other species with allelopathic mechanism. Specific to spotted knapweed, these traits can ultimately limit native species’ ability to compete and can have direct impacts on species diversity (Tyser and Key 1988, Ridenour and Callaway 2001).

Please disclose how the productivity of the land been affected in the project area and forestwide due to noxious weed infestations, and how that situation is expected to change in the coming years and decades.

Harvey et al., 1994 state:

The ...descriptions of microbial structures and processes suggest that they are likely to provide highly critical conduits for the input and movement of materials within soil and between the soil and the plant. Nitrogen and carbon have been mentioned and are probably the most important. Although the movement and cycling of many others are mediated by microbes, sulfur phosphorus, and iron compounds are important examples.

The relation between forest soil microbes and N is striking. Virtually all N in eastside forest ecosystems is biologically fixed by microbes... Most forests, particularly in the inland West, are likely to be limited at some time during their development by supplies of

plant-available N. Thus, to manage forest growth, we must manage the microbes that add most of the N and that make N available for subsequent plant uptake.

(Internal citations omitted.)

Lacy, 2001 examines the importance of soils for ecosystem functioning and points out the failure of most regulatory mechanisms to adequately address the soils issue. From the Abstract:

Soil is a critical component to nearly every ecosystem in the world, sustaining life in a variety of ways—from production of biomass to filtering, buffering and transformation of water and nutrients. While there are dozens of federal environmental laws protecting and addressing a wide range of natural resources and issues of environmental quality, there is a significant gap in the protection of the soil resource. Despite the critical importance of maintaining healthy and sustaining soils, conservation of the soil resource on public lands is generally relegated to a diminished land management priority. Countless activities, including livestock grazing, recreation, road building, logging, and mining, degrade soils on public lands. This article examines the

roots of soil law in the United States and the handful of soil-related provisions buried in various public land and natural resource laws, finding that the lack of a public lands soil law leaves the soil resource under protected and exposed to significant harm. To remedy this regulatory gap, this article sketches the framework for a positive public lands soil protection law. This article concludes that because soils are critically important building blocks for nearly every ecosystem on earth, an holistic approach to natural resources protection requires that soils be protected to avoid undermining much of the legal protection afforded to other natural resources.

The article goes on:

Countless activities, including livestock grazing, recreation, road building, logging, mining, and irrigation degrade soils on public lands. Because there are no laws that directly address and protect soils on the public lands, consideration of soils in land use planning is usually only in the form of vaguely conceived or discretionary guidelines and monitoring requirements. This is a major gap in the effort to provide ecosystem-level protection for natural resources.

The rise of an “ecosystem approach” in environmental and natural resources law is one of the most significant aspects of the continuing evolution of this area of law and policy. One writer has observed that there is a

fundamental change occurring in the field of environmental protection, from a narrow focus on individual sources of harm to a more holistic focus on entire ecosystems, including the multiple human sources of harm within ecosystems, and the complex social context of laws, political boundaries, and economic institutions in which those sources exist.

As federal agencies focus increasingly on addressing environmental protection from an holistic perspective under the current regime of environmental laws, a significant gap remains in the federal statutory scheme: protection of soils as a discrete and important natural resource. Because soils are essential building blocks at the core of nearly every ecosystem on earth, and because soils are critical to the health of so many other natural resources—including, at the broadest level, water, air, and vegetation—they should be protected at a level at least as significant as other natural resources. Federal soil law (such as it is) is woefully inadequate as it currently stands. It is a missing link in the effort to

protect the natural world at a meaningful and effective ecosystem level.

... This analysis concludes that the lack of a public lands soil law leaves the soil resource under-protected and exposed to significant harm, and emasculates the environmental protections afforded to other natural resources.

(Emphasis added.) The problems Lacy (2001) identifies of regulatory mechanisms exist in Regional and Forest-level standards and other guidance applicable for the proposed project.

Please provide estimates of current detrimental disturbance in all previously established activity areas in the watersheds affected by the proposal.

Please disclose the link between current and cumulative soil disturbance in project area watersheds to the current and cumulative impacts on water quantity and quality. Please disclose if there are any WQLS streams or TMDL streams in the project area.

Please disclose measures of, or provide scientifically sound estimates of, detrimental soil disturbance or soil productivity losses (erosion, compaction, displacement, noxious weed spread) attributable to off-road vehicle use.

Please disclose the results monitoring of weed treatments on the BDNF that have been projected to significantly reduce noxious weed populations over time, or prevent spread. This is an ongoing issue of land productivity.

Please disclose how the proposed “treatments” would be consistent with Graham, et al., 1994 recommendations for fine and coarse woody debris, a necessary consideration for sustaining long-term soil productivity.

It has been well-established that site-specific Biological Evaluations (BEs) or Biological Assessments (BAs) must be prepared for all actions such as this. Further, the Forest Service Manual requires that BEs/BAs consider cumulative effects. The Forest Service Manual states that project BEs/BAs must contain “a discussion of cumulative effects resulting from the planned project in relationship to existing conditions and other related projects” [FSM 2672.42(4)]. “Existing conditions” obviously are the current conditions of the resources as a result of past actions.

Published scientific reports indicate that climate change will be exacerbated by logging due to the loss of carbon storage. Additionally, published scientific reports indicate that climate change will lead to increased wildfire severity (including drier and warmer conditions that may render obsolete the proposed effects of the Project). The former indicates that the Pintler Project may have a significant adverse effect on the environment, and the latter undermines the central underlying purpose of the Project. Therefore, the Forest Service must candidly disclose, consider, and fully discuss the published scientific papers discussing climate change in these two contexts. At least the Forest Service should discuss the attached following studies:

- Depro, Brooks M., Brian C. Murray, Ralph J. Alig, and Alyssa Shanks. 2008. Public land, timber harvests, and climate mitigation: quantifying carbon sequestration potential on U.S. public timberlands. *Forest Ecology and Management* 255: 1122-1134.
- Harmon, Mark E. 2001. Carbon sequestration in forests: addressing the scale question. *Journal of Forestry* 99:4: 24-29.

- Harmon, Mark E, William K. Ferrell, and Jerry F. Franklin. 1990. Effects of carbon storage of conversion of old-growth forest to young forests. *Science* 247: 4943: 699-702
- Harmon, Mark E, and Barbara Marks. 2002. Effects of silvicultural practices on carbon stores in Douglas-fir – western hemlock forests in the Pacific Northwest, USA: results from a simulation model. *Canadian Journal of Forest Research* 32: 863-877.
- Homann, Peter S., Mark Harmon, Suzanne Remillard, and Erica A.H. Smithwick. 2005. What the soil reveals: potential total ecosystem C stores of the Pacific Northwest region, USA. *Forest Ecology and Management* 220: 270-283.
- McKenzie, Donald, Ze'ev Gedalof, David L. Peterson, and Philip Mote. 2004. Climatic change, wildfire, and conservation. *Conservation Biology* 18:4: 890-902.

We continuously hear from the FS and politicians, the suggestion that beetle kill is causing larger wildfires. But the scientific evidence suggests otherwise. At least in my

experience many collaborates also seldom challenge the FS assertions that we need to thin or log lodgepole pine forests to reduce beetle kill and/or remove beetle kill trees due to the presumed increase in wildfires that might result. Yet if you look at the research on this subject, you will find that beetle kill is unlikely to affect fire and in some cases may reduce fire spread.

In the paper: Relative importance of climate and mountain pine beetle outbreaks on the occurrence of large wildfires in the western US

Authors

Nathan Mietkiewicz,

Dominik KulakowskiAbstract

Abstract: Extensive outbreaks of bark beetles have killed trees across millions of hectares of forests and woodlands in western North America. These outbreaks have led to spirited scientific, public and policy debates about consequential increases in fire risk, especially in the wildland-urban interface (WUI), where homes and communities are at particular risk from wildfires. At the

same time, large wildfires have become more frequent across this region. Widespread expectations that outbreaks increase extent, severity and/or frequency of wildfires are based partly on visible and dramatic changes in foliar moisture content and other fuel properties following outbreaks, as well as associated modeling projections. A competing explanation is that increasing wildfires are driven primarily by climatic extremes, which are becoming more common with climate change. However, the relative importance of bark beetle outbreaks versus climate on fire occurrence has not been empirically examined across very large areas and remains poorly understood. The most extensive outbreaks of tree-killing insects across the western United States have been of mountain pine beetle (MPB; *Dendroctonus ponderosae*), which have killed trees over > 650,000 km², mostly in forests dominated by

lodgepole pine (*Pinus contorta*). Here we show that outbreaks of MPB in lodgepole pine forests of the western United States have been less important than climatic variability for the occurrence of large fires over the past 29 years. In lodgepole pine forests in general, as well as those in the WUI, occurrence of large fires was determined in co-occurrence of wildfires and outbreaks are due to a common climatic driver rather than interactions between these disturbances. Reducing wildfire risk hinges on addressing the underlying climatic drivers, rather than treating beetle-affected forests.

Why is the Forest Service ignoring the Kosterman threshold for clearcutting (no more than 15% per LAU) and

the mature forest conservation requirement (conserve it all including at least 50% per LAU)?

Kosterman finds 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. This contradicts the agency's assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery. Kosterman's study demonstrates that the Lynx Amendment standards are not adequate for lynx viability and recovery, as previously assumed by the Forest Service.

Kosterman's Thesis says that clearcutting more than 10-15% of a lynx home range results in declines in reproduction. Many National Forests allows more clearcutting than this. The Lynx Amendment allows up to 30% clearcutting in a home range, which means that habitat has declined and is declining from the levels necessary for reproduction and therefore survival and recovery.

Kosterman's Thesis recommends conserving mature/old growth forest and maintaining 50% mature/old growth in each lynx home range. No National Forest is complying with that due to past and current logging, which means that habitat has declined and is declining from the levels

necessary for reproduction and therefore survival and recovery. Please find Kosterman attached.

Did the BDNF remove any Lynx Analysis Units (LAUs) in the project area. If so did the BDNF follow NEPA and take public comment before it removed the LAUs? Please disclose the number of acres and location of LAUs that were removed from the BDNF without going through NEPA

Squires says that lynx avoid clearcuts.

FWS has no idea what the population of lynx is because they don't do lynx population monitoring. In light of the government's failure to monitor lynx population trends, it would be disingenuous for FWS to argue that "there is no evidence of population decline" because the reason that "there is no evidence" is because the government refuses to conduct monitoring. In light of the government's failure to monitor and document populations and population trends, the Forest Service and the FWS must apply the precautionary principle and assume that the effects of allowing logging that does not comply with Kosterman and Squires findings is resulting in population declines.

Since this is now the best available science we are hereby formally requesting that the Forest Service write a supplemental EIS for the Northern Rockies Lynx Management Direction and reinstate consultation with the FWS for the Lynx Amendment to publicly disclose and address

the findings of this study, and to allow for further public comment on this important issue of lynx recovery.

Page 93 of the 2016 Fleecer EA states: “In July, 2013 the U.S. Fish and Wildlife Service updated the “Threatened, Endangered and Candidate Species for the Beaverhead-Deerlodge National Forest” and the Canada lynx was added to the BDNF list as “Transient; secondary/peripheral lynx habitat”; where it remains (USDI Fish and Wildlife Service 2016).”

The Forest straddles the mountains of the Continental Divide and contains nationally renowned trout streams, elk populations, and some of last wild refuges for many threatened, endangered, and sensitive fish and wildlife species.

In particular, the Forest and Project area provide habitat for grizzly bears, wolverines, Canada lynx, gray wolves, and westslope cutthroat trout.

Ruggiero et al (1999), the Forest Service’s General Technical Report “Ecology and Conservation of Lynx in the United States,” states that lynx are present in the Forest.

Ruediger et al (2000), the agencies’ “Canada lynx conservation assessment and strategy,” considers the Forest within the geographic extent of the strategy.

The Montana Department of Fish, Wildlife, and Parks has compiled a database of lynx occurrences and distribution

throughout Montana from 1977 -1998. This information was mapped on pages 244 and 247 of Ruggiero et al (1999) and shows numerous occurrences in the Forest.

In Squires (2003), the Forest Service documents: “Discussions with local trappers and biologists indicate that lynx were present in the BDNF prior to the late 1990’s, and had been detected during winter track surveys as recently as 2000 (Forkan 2000). This fact is substantiated by the number of trapped lynx from this area in the 1970s.” Elsewhere, the report notes “[f]rom 1977 to 1994, 39 lynx occurrences were recorded in the Pioneer Mountains, including 13 harvested individuals (McKelvey et al. 2000). Snow-track surveys performed as recently as 2000 indicated that lynx were present along the Scenic Byway (Forkan 2000).”

In Squires (2003), the Forest Service documented the results of winter tracking surveys. The record indicates two (2) sets of lynx tracks were found in the Forest near the Project area (which is the analysis area for wildlife security for the Project). The report concludes that “lynx were either absent or at very low densities during our study.” (emphasis added).

The U.S. Fish and Wildlife Service’s final map (2003) for lynx shows that the Forest is within the range of both resident and dispersing lynx.

Berger (2009) found one set of potential lynx tracks in the Forest during winter tracking surveys, as well as one set

outside the Forest boundary that was heading towards the Forest boundary.

In Devineau (2010), the State of Colorado Division of Wildlife documented locations of radio-collared lynx released in Colorado. The record shows

multiple lynx traveling in the Forest (approximately four (4) individuals), including at least two individual lynx traveling in the Project area. One of the individuals inhabited the Madison Range for approximately two weeks.

In litigation over lynx critical habitat in 2010, the U.S. Fish and Wildlife Service admitted that the Forest is occupied for the purpose of designating lynx critical habitat. *Alliance for Wild Rockies v. Lyder*, 728 F.Supp.2d 1126, 1133 (D. Mont. 2010)(“Plaintiffs take exception to the Service's failure to designate the BeaverheadDeerlodge [and certain other National Forests] as lynx critical habitat. [FN4] . . . In response, the government acknowledges the record shows such forests to be occupied”)

The Project analysis and impacts on ESA-listed Canada lynx violate the ESA, NEPA, and NFMA.

The Federal District Court of Montana recently ordered the USFWS to reconsult on lynx critical habitat because they did not base lynx critical habitat on where lynx were at the time of listing in 2000. Lynx were in the project area at the time of listing so the Forest Service needs to consult with

the FWS to see if this project could effect lynx critical habitat.

The Forest Plan analysis and impacts on ESA-listed lynx violate ESA, NFMA, and NEPA.

The Forest Service's failure to take a hard look at lynx presence and the Forest Plan's potential impacts on lynx, using the best available science, including the agency's failure to assess the Forest Plan's impacts on lynx travel/linkage corridors, violates NEPA. See *Pacific Rivers Council v. U.S.*

Forest Service, --- F.3d ----, 2012 WL 336133 (9th Cir. 2012).

The Forest Service's failure to include binding legal standards aimed at conserving and recovering ESA-listed lynx on the Forest in the Forest Plan violates NFMA.

The FS approval and implementation of the Lynx Management Direction is arbitrary and capricious, violates NEPA's hard look requirement and scientific integrity mandate and fails to apply the best available science necessary to conserve lynx. The Lynx Direction contains no protection or standard for conservation of winter lynx habitat (old growth forests). This project allows the logging of thousands of acres of old growth without any analysis of whether that forest is necessary for conservation as winter lynx habitat. Please take a hard look at this factor. By failing to include a provision to protect winter lynx habitat,

the Lynx Direction fails to apply the best available science and implement the measures necessary for lynx conservation, as required by the ESA. The Lynx

Direction also arbitrarily exempts WUI lands from lynx habitat protection. If this exemption did not exist, the project could not proceed because the logging authorized by the projects violates at least one of the protections for lynx habitat.

The Lynx Amendment and its Biological Opinion/Incidental Take Statement allow unrestricted logging in the wildland urban interface, which the agencies estimate to compose approximately 6% of the lynx habitat on National Forests. The EA did not explain where the WUI is in relation to the projects and the LAUs but merely state that the entire project lies within the WUI boundary. Also, it is not clear why the project does not utilize the Lynx Amendment wildland urban interface map to define WUI, the correct definition for WUI, but instead uses the definition in the Healthy Forest Restoration Act. If the projects were to use the correct definition of WUI, the project could not proceed. The failure to comply with logging restrictions outside the WUI violates NFMA. The failure to adequately address this issue in the EA and demonstrate compliance with the Lynx Amendment violates NEPA.

The analysis of the impacts to lynx in the EA and the DN is extremely limited and it inappropriately uses an LAU that

excessively large, allowing the impacts to be minimized. The current best science suggests that female lynx home range as about 10,000 acres. The project area is almost 10 times the size. The analysis in the EA is invalid.

The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling through low cover areas in winter. The EA fails to identify the amount of non or low cover areas that will be created from the project. The project fails to use the best available science in regard to lynx habitat. As stated in AWR's comments, the best available science is now Kosterman's masters Thesis, "Correlates of Canada Lynx Reproductive Success in Northwestern Montana" This study finds 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 inches dbh. This contradicts the agency's assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery. Kosterman's study demonstrates that the Lynx Amendment standards are not adequate for lynx viability and recovery, as assumed by the Forest Service

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.) 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. 2006.)

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.)

Squires et al. (2013) noted in their research report that some lynx avoided crossing highways; in their own report, they noted that only 12 of 44 radio-tagged lynx with home ranges including 2-lane highways crossed them. 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.)

Squires et al., 2010 reported that lynx winter habitat should be “abundant and spatially well-distributed across the landscape. Those authors also noted that in heavily managed landscapes, retention and recruitment of lynx habitat should be a priority.

The Northern Rockies Lynx Management Direction is inadequate to ensure conservation and recovery of lynx. The amendments fail to use the best available science on necessary lynx habitat elements, including but not limited to, failing to include standards that protect key winter habitat. The

Endangered Species Act requires the FS to insure that the project is not likely to result in the destruction or adverse modification of critical habitat. 16 U.S.C. §1536(a)(2). Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for lynx. 74 Fed. Reg. 8644.

The Northern Rockies Lynx Management Direction (NRLMD) as applied in the project violates the ESA by failing to use the best available science to insure no adverse modification of critical habitat. The NRLMD carves out exemptions from Veg Standards S1, S2, S5, and S6. In particular, fuel treatment projects may occur in the WUI even though they will not meet standards Veg S1, S2, S5, or S6, provided they do not occur on more than 6% of lynx habitat on each National Forest. See NRLMD ROD, Attachment 1, pages 2-3. Allowing the agency to destroy or adversely modify any lynx critical habitat has the potential to appreciably reduce the conservation value of such habitat. The agency cannot simply set a cap at 6% forest-wide without looking at the individual characteristics of

each LAU to determine whether the project has the potential to appreciably reduce the conservation value. The ESA requires the use of the best available science at the site-specific level. It does not allow the agencies to make a gross determination that allowing lynx critical habitat to be destroyed forest-wide while not appreciably reduce the conservation value.

Standard S2 prohibits projects that do regenerate more than 15% of lynx habitat on NFS lands within an LAU in a 10-year period. The EA and DN do not provide the number of acres within the LAU that have been harvested within the last 10-years and fails to take previous project in account in regards to Veg Standard S2.

The FS violated NEPA by applying the above-mentioned exception without analyzing the impacts to lynx in the individual areas. The Project violates the NFMA by failing to insure the viability of lynx. According to the 1982 NFMA regulations, fish and wildlife must be managed to maintain viable populations of Canada lynx in the planning area. 36 C.F.R. 219.19. The FS has not shown that lynx will be well-distributed in the planning area. The FS has not addressed how the project's adverse modification of denning and foraging habitat will impact distribution. This is important because the agency readily admits that the LAUs already contain a "relatively large percentage of unsuitable habitat." The NRLMD ROD at 40 states that: The national forests subject to this new direction will provide habitat to maintain a viable population of lynx in the

northern Rockies by maintaining the current distribution of occupied lynx habitat, and maintaining or enhancing the quality of that habitat.”

A big problem with the Forest Plan (including the NRLMD) is that it allows with few exceptions the same level of industrial forest management activities that occurred prior to Canada lynx ESA listing.

The Northern Rockies Lynx Management Direction appeal decision requires the FS to consult with the US Fish and Wildlife Service regarding lynx and lynx critical habitat. The Wildlife Report, Frost 2017, states that the effects determination for lynx is “may affect, likely to adversely affect. This means that listed resources are likely to be exposed to the action or its environmental consequences and will respond in a negative manner to the exposure.

The project does not have a take permit from the USFWS and is in violation of the ESA, NFMA, the APA and NEPA. The ESA (Section 3) defines take as "to harass, harm, pursue, hunt, shoot, wound, trap, capture, collect or attempt to engage in any such conduct". The USFWS further defines "harm" as "significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering", and "harass" as "actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior

patterns which include, but are not limited to, breeding, feeding or sheltering". The project will harm lynx.

Squires found that lynx avoid clearcuts for up to 50 years. A big problem with the Forest Plan and the NRLMD is that it allows with few exceptions the same level of industrial forest management activities that occurred prior to Canada lynx ESA listing. The FS approval and implementation of the NRLMD and the revised Beaverhead-Deerlodge National Forest Forest Plan is arbitrary and capricious, violates NEPA's hard look requirement and scientific integrity mandate and fails to apply the best available science necessary to conserve lynx. The NRLMD or the revised BDNF Forest Plan contain no protection or standard for conservation of winter lynx habitat (old growth forests).

Please disclose if the FS conducted lynx occurrence surveys of habitat in the LAUs.

Please disclose if surveys target snowshoe hare occurrence data in these stands newly considered unsuitable for lynx. Also, the EA doesn't indicate if the FS surveyed any areas (proposed for logging and/or burning or not) thought to not be lynx habitat based on mapping or stand data were surveyed to confirm unsuitable habitat conditions.

The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling through low cover areas in winter. The EA fails to identify the amount of non-cover or low-cover areas that will be created from the project.

It appears the FS doesn't have a coherent strategy for recovering lynx from their Threatened status, including linking currently populated areas with each other through important linkages such as project area LAUs.

Please analyze and disclose cumulative impacts of recreational activities on lynx, such as snowmobiles. As the KNF's Galton FEIS states, "The temporal occurrence of forest uses such ... winter (skiing and snowmobiling) ... may result in a temporary displacement of lynx use of that area..."

Please quantify and disclose the cumulative effects on Canada lynx due to trapping or from use of the road and trail networks in the project area.

Please analyze and disclose how lynx habitat capacity for denning will be impaired by project activities.

The USFWS listed the Canada lynx as a threatened species under the Endangered Species Act in 2000 due to "lack of guidance for conservation of lynx and snowshoe hare habitat..." and subsequent authorization of actions that may cumulatively adversely affect the lynx. Relatively little is known about lynx in the contiguous United States.

Historically, lynx inhabited states spanning from Maine to Washington, but it is unknown how many lynx remain.

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 Peg. 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.

Lynx subsist primarily on a prey base of snowshoe hare, and survival is highly dependent upon snowshoe hare habitat, forest habitat where young trees and shrubs grow densely. In North America, the distribution and range of lynx is nearly “coincident” with that of snowshoe hares, and protection of snowshoe hares and their habitat is critical in lynx conservation strategies.

Since more often than not when the FS conducts logging projects in LAUs surveys of stands for lynx habitat result in less suitable habitat than previously assumed, the FS needs to take a few steps backward and consider that its range-wide Canada lynx suitable habitat estimations were too high.

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 importance of maintaining lynx linkage zones is also recognized by the FS's Lynx Conservation Assessment and Strategy (LCAS), as revised in 2013, which stresses that landscape connectivity should be maintained to allow for movement and dispersal of lynx.

Squires et al. (2013) noted in their research report that some lynx avoided crossing highways; in their own report, they noted that only 12 of 44 radio-tagged lynx with home ranges including 2-lane highways crossed them.

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.) 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.)

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.)

Squires et al., 2010 reported that lynx winter habitat should be “abundant and spatially well- distributed across the landscape.” Those authors also noted that in heavily managed landscapes, retention and recruitment of lynx habitat should be a priority.

The LCAS (Ruediger et al. 2000) recommends, until conclusive information is developed concerning lynx management, the agencies retain future options; that is, choose to err on the side of maintaining and restoring habitat for lynx and their prey. To err on the side of caution, the KNF would retain all remaining stem exclusion forests for recruitment into lynx winter habitat, so that this key habitat would more closely resemble historic conditions.

As early as 2000, the LCAS noted that lynx seem to prefer to move through continuous forest (1- 4); lynx have been observed to avoid large openings, either natural or created (1-4); opening and open forest areas wider than 650 feet may restrict lynx movement (2-3); large patches with low stem densities may be functionally similar to openings, and therefore lynx movement may be disrupted (2-4). Squires et al. 2006a reported that lynx tend to avoid sparse, open forests and forest stands dominated by small-diameter trees during the winter. Squires et al. 2010 again reported that lynx avoid crossing clearcuts in the winter; they generally avoid forests composed of small diameter saplings in the winter; and forests that were thinned as a silvicultural treatment were generally avoided in the winter.

Squires et al. 2010 show that the average width of openings crossed by lynx in the winter was 383 feet, while the maximum width of crossed openings was 1240 feet.

Recent scientific findings undermine the Forest Plan/NRLMD direction for management of lynx habitat. This creates a scientific controversy the FS fails to resolve, and in fact it essentially ignores it.

For one, 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 inches dbh. Young regenerating forest should occur only on 10-15% of a female lynx home range, i.e. 10-15% of an LAU. This renders inadequate the agency's assumption in the Forest Plan/NRLMD that 30% of lynx habitat can be open, and that no specific amount of mature forest needs to be conserved. Kosterman, 2014 demonstrates that Forest Plan/NRLMD standards are not adequate for lynx viability and recovery.

Also, the Forest Plan essentially assumes that persistent effects of vegetation manipulations other than regeneration logging and some intermediate treatments are essentially nil. However, 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.” (Emphasis added.) 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.

So Holbrook et al., 2018 fully contradict Forest Plan assumptions that clearcuts/regeneration can be considered useful lynx habitat as early as 20 years post-logging.

Results of a study by Vanbianchi et al., 2017 also conflict with Forest Plan/NRLMD assumptions: “Lynx used burned areas as early as 1 year postfire, which is much earlier than the 2–4 decades postfire previously thought for this predator.” The NRLMD erroneously assumes clearcutting/regeneration logging have basically the same temporal effects as stand-replacing fire as far as lynx re-occupancy.

Kosterman, 2014, Vanbianchi et al., 2017 and Holbrook, et al., 2018, Holbrook 2019 demonstrate that Forest Plan direction is not adequate for lynx viability and recovery, as the FS assumes. Holbrook 2019 such all lynx habitat must be surveyed. You have not done this.

The Forest Plan/FEIS fail to describe the quantity and quality of habitat that is necessary to sustain the viability of the Canada lynx.

Significantly, in the 2018 order, this Court explained that consultation on the Northern Rockies Lynx Management Direction, commonly referred to as the “Lynx Amendment,” was not sufficient in part because the Lynx Amendment only applies to mapped “lynx habitat” on the Forest. Id. at 1070. Thus, areas on the Forest where lynx

“may be present” that are not mapped as “lynx habitat” are not covered by the Lynx Amendment consultation. *Id.* Accordingly, the primary purpose of the 2018 remand was for the agencies to consult on the entire Forest, including areas of the Forest that are not mapped as “lynx habitat” but where lynx nonetheless “may be present.” See *id.*

On August 24, 2021, the agencies filed a second motion to dissolve the injunction. The agencies provide the Court with a new 2021 Biological Assessment and Biological Opinion for the Forest Plan. Doc. 93-9 (Biological Assessment); Doc. 93-1 (Biological Opinion). However, this new consultation suffers from the same flaw that the Court found with the Lynx Amendment consultation in its 2018 order – the analysis is incomplete because it addresses mapped “lynx habitat” where the Lynx Amendment applies, instead of all areas where lynx “may be present” on the Forest. For this reason, the motion to dissolve the injunction should be denied. Alternatively, or in addition, dissolution is not equitable at this time because the agencies have unlawfully stripped legal protections for lynx from 1.1 million acres during the remand in this case. Accordingly, this Project should not move forward until the agencies comply with their legal obligations under the ESA, NEPA, and NFMA regarding this de facto Forest Plan amendment that removed lynx protections on almost one-third of the Forest.

As set forth below in more detail, this case is similar to Native Ecosystems in that the agencies engaged in a new ESA consultation on remand, but the consultation does not

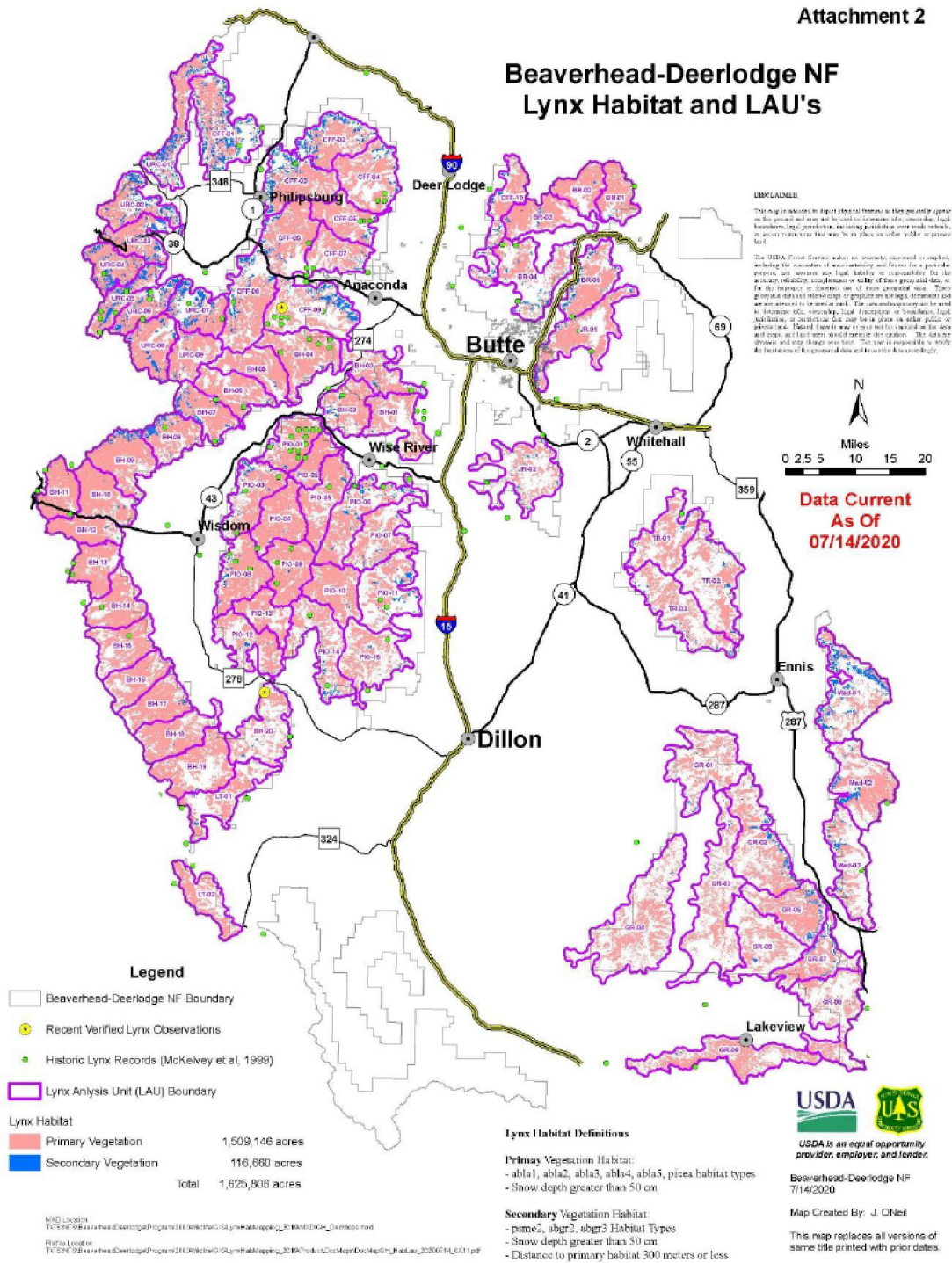
contain the analysis ordered by the Court in its 2018 remand order. Thus, in this case, as in *Native Ecosystems*, the motion to dissolve the injunction should be denied. Furthermore, during the remand for this case, the Forest Service has effectively issued a programmatic Forest Plan amendment with its decision to strip away protections for lynx from 1.1 million acres of the Forest. This removal of protections for lynx applies to the Fleecer Project. However, the agencies did not conduct any NEPA or NFMA analysis or ESA consultation for this de facto Forest Plan amendment. Thus, for this additional reason, dissolution of the injunction may be denied because the dissolution is not equitable under these circumstances.

The new Forest Plan consultation addresses effects to lynx within mapped “lynx habitat,” but does not address the effects to lynx in areas that are not mapped “lynx habitat” but where lynx “may be present,” which was the purpose of the remand.

The Beaverhead-Deerlodge National Forest covers approximately 3.4 million acres. Doc. 93-9 at 10.¹ In 2020, the agencies mapped approximately 1.5 million acres of the Forest as “lynx habitat.” Doc. 93-9 at 17 (Table 5). The agencies consider these areas of mapped “lynx habitat” to be “occupied” by lynx. Doc. 93-9 at 6. However, these areas of mapped “lynx habitat” do not directly correspond to areas of known lynx detections, both historic and recent. Doc. 93-9 at 100. The map below shows area of mapped

“lynx habitat” in color, with green and yellow circles to indicate known historic and recent detections:

Beaverhead-Deerlodge NF Lynx Habitat and LAU's



As noted above, the agencies have determined that lynx “may be present” across the entire Forest. Krueger, 348 F.Supp.3d at 1068. Thus, while approximately 1.5 million acres of the Forest is mapped “lynx habitat,” Doc. 93-9 at 17, another 1.9 million acres (more than half the Forest) is not mapped “lynx habitat,” but still constitutes an area where lynx “may be present,” see Doc. 93-9 at 10; Krueger, 348 F.Supp.3d at 1068.

In its 2018 remand order in this case, this Court held:

Because there are provisions of the Forest Plan other than the Lynx Amendment that “may affect” lynx outside of the areas protected by the Lynx Amendment, and because the FWS determined that lynx “may be present” throughout the forest, a plaintiff may still bring a section 7 consultation claim to the broader Forest Plan itself. See *Native Ecosystems Council v. Marten*, 334 F.Supp.3d 1124, 1131, 2018 WL 3831339, at *4 (D. Mont. Aug. 13, 2018) (stating that “the Lynx Amendment only applies to mapped lynx habitat on National Forest System land presently occupied by Canada lynx” and holding that a forest-wide determination that lynx “may be present” arguably requires consultation of an agency action that “may affect” lynx but where “compliance with the Lynx Amendment is not required.”) Such is the case here.

The Forest Service must complete an ESA consultation for the Forest Plan that includes an analysis of how lynx may be affected on areas of this Forest that are not mapped “lynx habitat” but nonetheless are areas where lynx “may be present.” *Id.* As noted above, that area is 1.9 million

acres. The agencies have not complied with the remand order in this case because they have not yet provided this analysis.

In the January 4, 2021, Forest Plan Biological Assessment, the Forest Service uses “the 2020 updated lynx habitat model to disclose potential effects and set the current existing conditions.”

As the agency summarizes: “Impacts to lynx and their habitat have been considered in the context of the modeled lynx habitat on the Forest, vegetation conditions, anticipated amount and distribution of forest activities (e.g., timber projects, recreation expansion), and guidance within the Forest Plan and the Northern Rockies Lynx Management Direction. Since all areas of modeled lynx habitat are considered occupied, lynx are presumed to be present, including both resident or dispersing.”

Furthermore, regarding cumulative impacts, the Forest Service discloses: “[f]or this analysis, the cumulative effects boundary consists of all 2020 modeled lynx habitat both within and outside of the [Beaverhead-Deerlodge National Forest].”

Similarly, the FWS’s responsive 2021 Forest Plan Biological Opinion states: “In order to fully address effects of implementing the 2009 Revised Forest Plan, the Forest provided lynx habitat information. The information provided consists of a broad scale estimate of lynx habitat across the Forest intended to provide an overall picture of the current status of lynx habitat.” Doc. 93-1 at 9 (emphases added). FWS then summarizes the analysis of

effects to mapped lynx habitat set forth in the Forest Service Biological Assessment. FWS also provides an analysis of only those portions of existing projects that “occur within mapped lynx habitat” Doc. 93-1 at 29.

Both the Forest Plan Biological Assessment and Forest Plan Biological Opinion limit their analyses to effects to mapped lynx habitat, which is now considered to be “occupied.” However, in the Fleecer case, the federal district court remanded to the agencies to address all potential effects to lynx across the entire Forest, specifically including those areas that are not mapped as “lynx habitat.” As noted above, the areas that are not mapped as “lynx habitat” where lynx nonetheless “may be present” constitute approximately 1.9 million acres across the Forest.

The federal district court denied a motion to dissolve under similar circumstances in the Fleecer project. In that case, this Court “enjoined Defendants from proceeding with their project until Defendants conducted a site-specific biological opinion for both Canada lynx and grizzly bear.” Subsequently, the Forest Service “submitted a new biological opinion for both grizzly bear and Canada lynx. . . [and sought] dissolution of the injunction.” *Id.* This Court then held:

“The Court’s order required the new biological opinion to analyze “all logging associated activities.” . . . The new biological opinion fails to contemplate any effects on grizzly bear from the logging activity itself Defendants have failed to comply, therefore, with this Court’s order to conduct a new biological opinion that

analyzes the impacts to grizzly bears of “all logging associated activities.””

The Court further enjoined the Fleecer project until the Forest Service conducted a new biological opinion that analyzed project impacts on Canada lynx. The previous first-tier biological opinion required a site-specific biological opinion to consider whether assumptions made in the original biological opinion were valid. . . . The Forest Service failed to consider, however, whether these vegetation treatment projects are affecting lynx in the way anticipated by the 2007 Biological Opinion. Without that analysis, the second-tier Biological Opinion fails to perform the role anticipated in the first-tier biological opinion.

The same is true here. The Forest Service failed to conduct the biological opinion ordered by the Court in the Fleecer project. Thus, the motion to dissolve was denied. The agencies must prepare a consultation that analyzes potential effects on lynx on the entire 3.4 million acre Forest – not just mapped lynx habitat on less than half the Forest.

The Forest Service and the FWS have not yet analyzed effects on lynx across the entire Forest as required by the 2018 remand order; instead, their consultation addresses mapped lynx habitat. However, mapped lynx habitat is less than half of the Forest, and there are still another 1.9 million acres of Forest that are not mapped lynx habitat but

nonetheless satisfy the “may be present” threshold. Thus, the agencies have not yet provided Plaintiffs with all of the relief they seek.

The agencies’ decision to remap “lynx habitat” in order to remove Lynx Amendment protections from 1.1 million acres on the Forest is a Forest Plan amendment under NFMA, a major federal action under NEPA, and an agency action under the ESA. Thus, NEPA analysis and ESA consultation must occur for this change in management – and the Forest Service must issue a Forest Plan amendment that complies with the 2012 NFMA planning regulations – before the South Tobacco Roots Project may move forward.

The Forest Service unlawfully stripped legal protections from lynx across 1.1 million acres of the Forest without conducting the legally required analyses. Both the District of Idaho and District of Oregon hold that the remapping of lynx habitat requires analysis under NFMA, NEPA, and/or the ESA. *Oregon Nat. Res. Council Fund v. Forsgren*, 252 F.Supp.2d 1088, 1104 (D. Or. 2003)(addressing NFMA and NEPA); *Native Ecosystems Council & All. for the Wild Rockies v. U.S. Forest Serv. ex rel. Davey*, 866 F.Supp.2d 1209, 1231 (D. Id. 2012)(addressing ESA and NEPA).

Accordingly, this Project should not move forward until the agencies comply with their legal obligations under the ESA, NEPA, and NFMA regarding this de facto Forest Plan amendment that removed lynx protections on almost one-third of the Forest during the remand in this case. This Court may address this issue in its equitable discretion.

However, if it declines to do so, Plaintiffs will file a new action and request injunctive relief in that action.

NEPA requires an agency to prepare an EIS for all “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. §4332(2)(C). Major federal actions include “new or revised agency . . . plans, policies, or procedures” including “official documents prepared or approved by Federal agencies which prescribe alternative uses of Federal resources, upon which future agency actions will be based.” 40 C.F.R. §1508.1 (q)(2), (3) (ii).

The remapping of “lynx habitat” is a major federal action under NEPA that requires either an EIS or an EA. Oregon Nat. Res. Council Fund, 252 F.Supp.2d at 1104-07; Native Ecosystems Council, 866 F.Supp.2d at 1231.

Furthermore, ESA consultation is required for “any agency action” that “may affect” a listed species in an area where a listed species “may be present.”

16 U.S.C. §1536(c). The ESA defines agency action as “any action authorized, funded, or carried out by [a federal] agency.” 16 U.S.C. §1536(a)(2). In *Karuk Tribe of California v USFS*, the en banc Ninth Circuit held that “[t]here is ‘little doubt’ that Congress intended agency action to have a broad definition in the ESA” 681 F.3d 1006,1020-21 (9th Cir.2012)(citations omitted). Thus, the “‘agency action’ inquiry is two-fold. First, we ask whether a federal agency affirmatively authorized, funded, or carried out the underlying activity. Second, we determine

whether the agency had some discretion to influence or change the activity for the benefit of a protected species.” Id. The remapping of “lynx habitat” is an agency action that requires ESA consultation. *Native Ecosystems Council*, 866 F.Supp.2d at 1232-33.

Finally, NFMA requires a forest plan amendment for any actions that “add, modify, or remove one or more [forest] plan components, or [] change how or where one or more plan components apply to all or part of the [forest] plan area (including management areas or geographic areas).” 36 C.F.R. §219.13(a). Remapping “lynx habitat” requires a forest plan amendment. *Oregon Nat. Res. Council Fund*, 252 F.Supp.2d at 1101-04.

Regardless of whether a forest plan amendment is deemed “significant” in the NFMA context, see 16 U.S.C. §1604 (f) (4), the Forest Service must provide for public participation, public notification, and NEPA compliance in conjunction with the amendment, 36 C.F.R. §219.13(b)(2)-(3). “The appropriate NEPA documentation for an amendment may be an [EIS], an environmental assessment, or a categorical exclusion, depending upon the scope and scale of the amendment and its likely effects.” 36 C.F.R. §219.13(b)(3).

Furthermore, regardless of whether a forest plan amendment is “significant” under NFMA, any substantive protections in the 2012 NFMA planning regulations that are “directly relevant” to the forest plan amendment must be applied. 36 C.F.R. §219.13(b)(5); see *Sierra Club, Inc. v. USFS*, 897 F.3d 582, 601 (4th Cir. 2018)(remanding for

application of substantive protections of the 2012 planning regulations to a non-significant forest plan amendment).

Finally, a de facto forest plan amendment cannot be lawfully categorized and dismissed as a mere “administrative change” unless it involves only “corrections of clerical errors to any part of the plan, conformance of the plan to new statutory or regulatory requirements, or changes to other content in the plan (§ 219.7(f)).” 36 C.F.R. §219.13(c). “Changes to other content in the plan” is a term of art that includes only watershed identification, the plan’s roles and contributions in the broader landscape, the monitoring program, proposed and possible actions, and potential management approaches or strategies and partnership opportunities or coordination activities.” 36 C.F.R. §219.7(f).

During the remand in the Fleecer case, the agencies determined that the Beaverhead-Deerlodge National Forest is now “occupied” by lynx. This change in status means that compliance with the Lynx Amendment is now mandatory for all site-specific projects on the Forest, but only within the lands that are mapped as “lynx habitat.”

Accordingly, in 2020, the agencies remapped “lynx habitat” on the Forest.

The result of the remapping was that the agencies removed approximately 1.1 million acres from the “lynx habitat” designation, and thereby removed the protections of the

Lynx Amendment standards from those 1.1 million acres of Forest:

Table 4. Comparison of lynx habitat acres, number of lynx analysis units, and the range of habitat within lynx analysis units between mapping efforts.

Metric	2001 mapping effort	2020 mapping effort	Difference
Lynx habitat (acres)	2,711,422	1,625,806	-1,085,616
Lynx analysis units (number)	509	78	-431
Range of lynx habitat within LAUs (acres)	0-24,101	12,603 - 29,880	Minimum +12,603 Maximum +5,779

Additionally, the agencies reduced the number of “Lynx Analysis Units” from 509 to 78, and increased the size of individual Lynx Analysis Units so that more acres can be logged before the percentage limits for logging in each unit are reached..

The remapping of “lynx habitat” requires an EA or EIS under NEPA.

The Forest Service violated NEPA by failing to prepare a stand-alone NEPA analysis, either an EA or an EIS, for the 2020 remapping of lynx habitat and LAUs on the Beaverhead-Deerlodge National Forest.

The Forest Service violated NEPA by unlawfully tiering the Project EA and DN/FONSI to the 2020 remapping of lynx habitat and removal of LAUs. It appears that there is no stand-alone NEPA analysis for the agency’s 2020 decision to remove over 1.1 million acres of mapped lynx habitat and 431 LAUs from the Forest.

The Project EA does not supply the missing NEPA analysis for the agency's 2020 decision to remove over 1.1 million acres of mapped lynx habitat and 431 LAUs from the Forest.

Furthermore, even if the Project EA had supplied the missing analysis, which it did not, the law requires a project-level EIS for tiering to a non-NEPA programmatic document.

The Project EA's application of/reliance on the 2020 remap and removal of habitat and LAUs violates NEPA because it constitutes improper tiering. There must be either a programmatic EIS or a Project EIS analysis that analyzes the direct, indirect, and cumulative effects from the Forest Service's 2020 decision to remap and remove 1.1 million acres of lynx habitat and 431 LAUs. The agency's failure to do either renders the Project decision arbitrary, capricious, and in violation of NEPA and the APA.

The federal district court of Montana recently addressed the same or similar issue in *AWR v. USFS* on the neighboring Custer-Gallatin National Forest: "Because Canfield (2016)[the 2019 remapping for the Custer-Gallatin National Forest] has not undergone NEPA review and is not an EIS, tiering to this document would

be categorically improper under NEPA's implementing regulations; thus, Kern provides the relevant framework. Under Kern, the Forest Service could not rely on Canfield (2016)'s lynx habitat map without first reviewing Canfield (2016) under NEPA—either separately or as part of the Project EIS. In other words, the agency could still tier to Canfield (2016) if the agency were to provide the relevant NEPA review as part of the Project EIS.” *All. for the Wild Rockies v. United States Forest Serv.*, 2023 WL 5427921, at *7 (D. Mont. Aug. 23, 2023).

The same analysis applies here, and the Project decision must therefore be set aside and remanded for additional analysis in an EIS. The Forest Service's failure to prepare an EIS for the Project violates NEPA.

As Federal District Courts of Idaho, District of Montana and District of Oregon have already held, the remapping of “lynx habitat” constitutes a major federal action under NEPA, which requires either an EA or EIS. *Oregon Nat. Res. Council Fund*, 252 F.Supp.2d at 1104-07; *Native Ecosystems*, 866 F.Supp.2d at 1231. In the South Tobacco Roots Project as well, the new mapping recategorizes thousands of acres of “lynx habitat” out of existence and thereby paves the way for future projects to authorize logging and other activities in those areas, even if those activities would have been previously prohibited in those same areas under the Lynx Amendment. This is not a minor

change: instead, this changes strips away Lynx Amendment protections from approximately 1.1 million acres across the Forest.

This significant change in management of the Forest requires a complete analysis under NEPA. Native Ecosystems, 866 F.Supp.2d at 1231. As the District of Idaho held:

“The 2005 map was a document officially approved by the Forest Service. . . . There also seems to be little room for debate over whether the 2005 map ultimately governs “uses of Federal resources, upon which future agency actions will be based.” []. Without the adoption of the 2005 map—and the attendant elimination of nearly 400,000 acres of land within [Lynx Analysis Units] —the Project area would have been subject to the restrictions contained in the Lynx [Amendment] With the adoption of the 2005 map, the 390,900 acres of previously restricted land was opened for uses that were not available without the adoption of the map.”

The 2005 map . . . eliminated over 400,000 acres of land that was previously subject to greater environmental restrictions under the Lynx [Amendment]. . . . the map was never subjected to independent NEPA review, which would have required an analysis of the potential [e]ffects . . . on the lynx, its habitat, and the habitat of the snowshoe hare. Such analysis is absent in this case. The absence of such analysis violates NEPA’s procedural requirements

Similarly in the BDNF, “[w]ith the adoption of the [2020] map, the [1.1 million] acres of previously restricted land was opened for uses that were not available without the adoption of the map.”. “[T]he map was never subjected to independent NEPA review, which would have required an analysis of the potential [e]ffects . . . on the lynx, its habitat, and the habitat of the snowshoe hare. Such analysis is absent in this case. The absence of such analysis violates NEPA’s procedural requirements”

And, as the District of Oregon similarly held:

“Defendants have substantially minimized the effects of the new mapping direction. The new mapping direction was far more than the result of day-to-day inventory-taking. It significantly changed the nature and the extent of lynx habitat, and the consequences to the lynx may be far-reaching. It has been used by the [Forest Service] to reduce the recognized primary lynx habitat within the Forest by thousands of acres The Court finds Defendants, at the least, were required under NEPA to prepare an Environmental Assessment with public involvement to determine whether the new mapping direction might significantly affect the lynx in the Forest and whether Defendants should prepare an EIS.

Oregon Nat. Res. Council Fund, 252 F.Supp.2d at 1105. The same result is required in this case.”

The remapping of “lynx habitat” requires ESA consultation.

In addition to requiring NEPA analysis, the remapping of lynx habitat also requires ESA consultation. The remapping of lynx habitat on the Forest is an agency action under the ESA because it was “authorized, funded, or carried out by [a federal] agency.” 16 U.S.C. §1536(a)(2). Additionally, “the agency had some discretion to influence or change the activity for the benefit of a protected species.” *Karuk Tribe*, 681 F.3d at 1021.

In *Native Ecosystems*, the District of Idaho found that ESA consultation was required to address the impacts on lynx from the remapping decision. 866 F.Supp.2d at 1231-33. The court held: “Defendants argue that, because a jeopardy determination was made for the standards contained in the Lynx [Amendment], and those standards were used in revising the [Lynx Analysis Unit] map in 2005, the agencies satisfied their obligations under the ESA. The Court does not agree.” *Id.* at 1232. The court found that the Lynx Amendment “biological opinion from 2007 does not assess the validity of the 2005 map” and that the agencies should have evaluated whether “the elimination of 390,900 acres of land within the boundaries of [Lynx Analysis Unit]s in the 2005 map would adversely affect the lynx or its habitat.” *Id.*

Similarly, in this case, the agencies must prepare an ESA consultation that evaluates whether “the elimination of [1.1 million] acres of land within the boundaries of [Lynx Analysis Unit]s in the [2020] map would adversely affect the lynx or its habitat.” *See id.*

The remapping of “lynx habitat” requires a Forest Plan amendment.

Finally, the remapping of “lynx habitat” is a Forest Plan amendment that requires analysis under NFMA. Removing Forest Plan Lynx Amendment protections from approximately 1.1 million acres, reducing the number of Lynx Analysis Units on the Forest from 509 to 78, and increasing the size of individual Lynx Analysis Units so that more acres can be logged before the Lynx Amendment percentage limits for logging in each unit are reached, are changes that “add, modify, or remove one or more [forest] plan components, or [] change how or where one or more plan components apply to all or part of the [forest] plan area (including management areas or geographic areas).” 36 C.F.R. §219.13(a).

More specifically, the remapping of lynx habitat “change[s] how or where” the Lynx Amendment protections apply to this Forest because these protections no longer apply to 1.1 million acres of the Forest. Furthermore, stripping Forest Plan protections from 1.1 million acres – approximately one-third of the Forest – could not be reasonably construed as a mere “administrative change” because such an action does not fall with the narrow regulatory definition of “administrative change.” 36 C.F.R. §§219.13(c), 219.7(f).

The District of Oregon held that remapping lynx habitat requires a forest plan amendment:

“the revision of the [Lynx Conservation Assessment Strategy] and the new mapping direction were not merely

part of the day-to-day operations of the FS like the less substantial actions taken by the FS and BLM in the cases on which Defendants primarily rely. The court's concerns in *Prairie Woods Products* regarding the absence of discernible limits to the discretion of the FS to forego or to forestall formal amendment procedures with their concomitant public involvement also are concerns in this case. . . . Whether based on a theory of a de facto amendment or a failure to act to amend, therefore, the Court concludes an order compelling the public involvement required by NFMA is warranted as to these timber sales.

Oregon Nat. Res. Council Fund, 252 F.Supp.2d at 1101. The court further found that the Forest Service's action violated the substantive provisions of the NFMA planning regulations.”

Similarly, in *House v. USFS*, the Eastern District of Kentucky found that changes to management direction for the Indiana bat constituted a forest plan amendment under NFMA. 974 F.Supp. 1022, 1034 (E.D. Ky. 1997). The court found: “these policies may not be implemented until the Forest Plan has been properly amended to include the same.”

Likewise, in *Klamath Siskiyou Wildlands Ctr. v. Boody*, the Ninth Circuit found that changes to management direction for the red tree vole constituted an amendment of a Bureau of Land Management Resource Management Plan under the Federal Land Policy and Management Act. 468 F.3d 549, 558 (9th Cir. 2006). The court held: “if BLM can

modify the protection afforded a species under a resource management plan as dramatically as it has here — without complying with [the amendment regulation] — BLM could ultimately remove all the Survey and Manage designations without ever conducting another EA or EIS, and without providing public disclosure. Such steps would undoubtedly run contrary to both the goals and language of [Federal Land Policy and Management Act.]” Id.

Here too, if the Forest Service “can modify the protection afforded [lynx] under a [forest] plan as dramatically as it has here—without complying with [the amendment regulation] — [the Forest Service] could ultimately remove all the [lynx habitat] designations without ever conducting another EA or EIS, and without providing public disclosure. Such steps would undoubtedly run contrary to both the goals and language of [NFMA].” The preparation of a Forest Plan amendment is not an empty procedural exercise because all relevant substantive protections from the 2012 NFMA planning regulations must be applied to a forest plan amendment. More specifically, for each amendment, the Forest Service must “[d]etermine which specific substantive requirement(s) within §§219.8 through 219.11 are directly related to the plan direction being added, modified, or removed by the amendment and apply such requirement(s) within the scope and scale of the amendment.” 36 C.F.R. §219.13(b)(5); see *Sierra Club*, 897 F.3d at 601 (remanding for application of substantive protections of the 2012 planning regulations to a non-significant forest plan amendment). The application of these substantive regulatory protections may ultimately

result in a decision that alters – and is more protective of lynx – than the current 2020 remapping of “lynx habitat.”

For all of these reasons, the agencies must complete NEPA, ESA, and NFMA analysis for the 2020 remapping of “lynx habitat” on the Forest. Until those analyses are completed in a lawful manner, the Tobacco Roots Project cannot go forward because the Project analysis is unlawfully premised upon the acceptance and implementation of the new map of lynx habitat “like a house of cards built on an unsound foundation.” Native Ecosystems, 866 F.

ELK

The Project and Forest Plan analysis and impacts on elk violate NFMA and NEPA.

In a NEPA analysis, the Forest Service must assess direct, indirect, and cumulative effects of a proposed action.

In a project analysis, the Forest Service must apply the best available science.

The Revised Forest Plan and best available science define “elk security area” as “comprised of contiguous 250 acre blocks of forested habitat .5 miles or more from open roads with these blocks encompassing 30% or more of the area.”

The 2016 EA does not comply with this definition in the analysis of elk.

As the Montana District Court wrote in the order on the Fleecer case:

Christensen et al. (1993) does not support the exclusion of temporary roads. See Native Ecosystems Council, 848 F. Supp. 2d at 1219. While the study does not speak specifically to "temporary" roads except to advise that the Forest Service "[i]dentify temporary roads where they are an option," temporary roads are not excepted from Christensen's conclusion that "[a]ny motorized vehicle use on roads

will reduce habitat effectiveness." BDNF:L- 055:4 (emphasis added). The definition section of the FEIS does not support the exclusion of temporary roads either. "Road density" is defined as the "[n]umber of miles of open road per square mile." BDNF:A1-40:1463. While "open road" may suggest that restricted-use roads are not included in the definition, Defendants have admitted that administrative and permitted roads are, in fact, included in the definition. A "temporary road" is listed as one type of "road." *Id.* It is defined as a "road[] authorized by contract, permit, lease, other written authorization, or emergency operation not intended to be part of the forest transportation system and not necessary for long-term resource management," *id.*, and as "[a] road or trail necessary for emergency operations, or authorized by contract, permit, lease, or other written authorization that is not a forest road or trail that is not included in the Forest Transportation Atlas (36 CFR 212.1 (2005) Transportation System),"

id. at 1464. In other words, a temporary road may be an administrative or permitted road, which Defendants say are included in the tables.

Neither the Forest Plan nor the FEIS discuss what effect temporary roads will have on elk viability. In their briefing for the Fleecer case the Forest Service argued that including temporary roads would be nonsensical in areas where the road density objectives are lower than the actual road density at the time the Plan was adopted. In these areas, they assert, no management activities requiring temporary roads would ever be allowed. While this may be true, the Forest Service failed to develop its analysis in the record for the Forest Plan itself, and provided no explanation for its departure from the best available science or from the definitions contained in the FEIS. It "entirely failed to consider an important aspect of the problem," *Lands Council I*, 537 F.3d at 993, and must address this issue on remand in a supplemental EIS.

The EA did not adequately explain the effect of temporary roads on elk viability as the court ordered for the Fleecer EA.

Road Impacts

The proposed action would involve constructing 14 miles of new National Forest System and temporary roads. In addition, the proposed action would involve maintaining and reconstructing 36.7 miles of National Forest System roads. The EPA noted in their comments *that roads through forests can have a wide range of negative effects, such as increasing the spread of*

invasive species, impacting the behavior and habitat of wildlife, affecting waterbodies by increasing sedimentation, and so on.¹⁵ Since concerns regarding invasive species, listed wildlife species, and impaired waterbodies are potentially applicable in the project area, the EPA recommends developing an Environmentally Preferable Alternative which limits the construction of new National Forest System and temporary roads within the project area to the extent feasible to avoid significant impacts. For example, it is unclear if, or why, a new crossing of an intermittent stream or temporary road within the riparian conservation areas is needed and so whether one or more alternatives without these additions would be reasonable.

The Forest Service assumptions in the Travel Plans that all closures would be effective has proven false. How many road closure violations have occurred in the Madison Ranger District in the last 5 years? If there have been violations of road closures, for this reason, you cannot tie to the analysis in the Travel Plan because it is invalid.

Please update your open road density calculations to include all roads receiving illegal use.

It is fair to assume that there are many more violations that regularly occur and are not witnessed and reported. It is also fair to assume that you have made no effort to request this available information from your own law enforcement officers, much less incorporate it into your analysis.

Considering your own admissions that road density is the primary factor that degrades elk and grizzly habitat, this is a material and significant omission from your analysis— all of your ORD and HE calculations are wrong without this information.

The veracity of the FS's inventory of system and nonsystem (“undetermined” or “unauthorized”) roads is at issue here also. This is partly because the FS basically turns a blind eye to the situation with insufficient commitment to monitoring, and also because violations are not always remedied in a timely manner.

The project would violate the Forest Plan/Access standards, a violation of NFMA because of road closure violations.

Please disclose how many years the existing core areas have provided the habitat benefits assumed under the Forest Plan. As pointed out, some has been lost (due to “private infrastructure development”) and we’re not told of other likely and foreseeable reductions.

Please take a hard look as road closure violations.

Additionally, your emphasis on elk populations across entire hunting districts is disingenuous and has little relevance to whether you are meeting your Forest Plan obligations to maintain sufficient elk habitat on National

Forest lands. As you note, the Forest Plan estimated that 70% of elk were taken on National Forest lands in 1986. What percentage of elk are currently taken on National Forest lands?

Have you asked Montana Department of Fish, Wildlife and Parks for this information? Any honest biologist would admit that high elk population numbers do not indicate that you are appropriately managing National Forest elk habitat; to the contrary, high elk numbers indicate that you are so poorly managing elk habitat on National Forest lands that elk are being displaced to private lands where hunting is limited or prohibited. Your own Forest Service guidance document, Christensen et al 1993 states: “Reducing habitat effectiveness should never be considered as a means of controlling elk populations.”

What is the existing condition of linear motorized route density on National Forest System lands in the action area and what would it increase to during implementation.

Do your open road density calculations include the “non-system” i.e. illegal roads in the Project area?

Do your open road density calculations include all of the recurring illegal road use documented in your own law enforcement incident reports?

Has the BDNF closed or obliterated all roads that were promised to be closed or obliterated in the your Travel Plans in the Madison Ranger District? Or, are you still waiting for funds to close or obliterate those roads? This distinction matters because you cannot honestly claim that you are meeting road density standards promised by the Travel Plan if you have not yet completed the road closures/obliterations promised by the Travel Plan.

Furthermore, as noted above, you have a major problem with recurring, chronic violations of the road closures created by the Travel Plan, which means that your assumptions in the Travel Plan that all closures would be effective has proven false. For this reason, you cannot tie to the analysis in the Travel Plan because it is invalid. You

must either complete new NEPA analysis for the Travel Plan on this issue or provide that new analysis in the NEPA analysis for this Project. Either way, you must update your open road density calculations to include all roads receiving illegal use.

Christensen et al (1993) states: “Any motorized vehicle use on roads will reduce habitat effectiveness. Recognize and deal with all forms of motorized vehicles and all uses, including administrative use.” Please disclose this to the public and stop representing that roads closed to the public should not be included in habitat effectiveness calculations. The facts that (a) you are constructing or reconstructing over 40 miles of road for this project, (b) you have problems with recurring illegal use, and (c) you already admit that you found another 25 miles of illegal roads in the project area that you have not committed to obliterating, means that your conclusion that this Project will have no effect on open road density or habitat effectiveness is implausible to the point of being disingenuous. You cannot exclude these roads simply because you say they are closed to the public. Every road receiving motorized use must be included in the HE calculation. You must consider all of

this road use in order to take a hard look that is fully and fairly informed regarding habitat effectiveness. In the very least you must add in all “non-system” roads, i.e. illegal roads, as well as recurring illegal road use (violations) in your ORD calculations. Also, as a side note, your calculations in

Christensen et al 1993 finds: “Areas where habitat effectiveness is retained at lower than 50 percent must be recognized as making only minor contributions to elk management goals. If habitat effectiveness is not important, don't fake it. Just admit up front that elk are not a consideration.”

Will the project comply with Forest Plan Management Area C Goal states: “Maintain or enhance existing elk habitat by maximizing habitat effectiveness as a primary management objective. Emphasis will also be directed toward management of indigenous wildlife species. Commodity resource management will be practiced where it is compatible with these wildlife management objectives.” Also – MA C Standard: “Habitat effectiveness will be positively managed through road management and other necessary controls on resource activities.” Also – “Elk

habitat effectiveness will be maintained.” Please demonstrate that the project will comply with all of these provisions for all of the above-stated reasons.

Please examine how this project could affect grizzly bears, lynx, wolverines, whitebark pine and other species listed under the Endangered Species Act. Are you complying with lynx critical habitat requirements? Please examine how this project will affect all MIS and sensitive species.

The current best science indicates that connectivity between the Yellowstone and Glacier ecosystems are necessary for the long term genetic health of both populations, especially bears in the Yellowstone ecosystem. The project area lies within an identified linkage zone for grizzly bears as well as lynx. However, there are no management standards for either species to ensure connectivity is maintained, based on the current best science as required by the ESA. This requires limits on open road densities, limits on travel barriers, and retention of at least 50% dense, older forest habitats for lynx. The NRLMD (2007) does not require any specific features for connectivity for lynx, and the RFP does not require any minimum impacts from open roads to grizzly bears. Grizzly bears are known to be expanding into this landscape, and it is also historic habitat for lynx. Since lynx occupied this area at the time of listing as a threatened species, this landscape may qualify as critical habitat. It's

suitability for lynx must therefore be retained until a final decision is made on critical habitat. And suitability for grizzly bear use must also be retained/restored.

The Forest Plan analysis and impacts on ESA-listed grizzly bear violate ESA, NFMA, and NEPA.

The Forest Service did not prepare a biological assessment and consult with U.S. Fish and Wildlife Service regarding the impact of the Revised Forest Plan on the threatened grizzly bear in all areas across the Forest where grizzly bears may be present.

The biological opinion for the Revised Forest Plan apparently is based on grizzly bear distribution in 2004, which is eight year old data that no longer represents the best available science on where grizzly bears may be present on the Forest.

There is no scientifically sound incidental take statement for the Revised Forest Plan for the threatened grizzly bear that includes reasonable and prudent measures for all areas where grizzly bears may be present across the Forest.

The agencies' failure to promulgate an adequate biological assessment, Biological Opinion, and Incidental Take Statement for the Revised Forest Plan that addresses all grizzly bears across the Forest violates the ESA.

The Forest Service's failure to take a hard look and include appropriate standards for ESA-listed grizzly bears within the Forest Plan, in a supplemental NEPA process, violates

NEPA. See *Pacific Rivers Council v. supplemental NEPA analysis for the Forest Plan*.

The Forest Service's failure to amend the Forest Plan to include binding legal standards aimed at recovering and conserving the ESA-listed grizzly bear on the Forest violates NFMA.

The Forest Service must complete a biological assessment for grizzly bears for the Project because the U.S. Fish and Wildlife Service states that both resident and transient grizzly bears may be present on the Forest.

Grizzly bears are present on across the BDNF. Grizzly bears have been documented in the project area.

Please find attached a paper titled, "Predicted connectivity pathways between grizzly bear ecosystems in Western Montana," by Sells et al. 2023, which explains the importance of the Tobacco Roots as a travel corridor for grizzlies between the NCDE and the Greater Yellowstone Ecosystem

The Project analysis and impacts on ESA-listed grizzly bears violate ESA, NEPA and NFMA.

The U.S. Court of Appeals for the Ninth Circuit holds that "[o]nce an agency is aware that an endangered species may be present in the area of its proposed action, the ESA requires it to prepare a biological assessment"

Thomas v. Peterson, 753 F. 2d 754, 763 (9 Cir. 1985).

Because there are endangered species present and will be effect, the Forest Service must complete an EIS. The Project EIS and BA/BiOp must disclose and apply the best available science on recommended open motorized route density, total motorized route density, and core habitat thresholds for NCDE grizzly bears.

The best available science on NCDE grizzly bears requires no more than 19% open motorized route density over 1.0 mi./sq.mi. and 19% total motorized route density over 2.0 mi./sq.mi., and no less than 68% core habitat for NCDE grizzly bears (19/19/68).

The following article in the November 3, 2017 NY Times mentions the importance of corridors between the Northern Continental Divide population and the Yellow- stone grizzly population. It also mentions that grizzly bears from the Northern Continental Divide population have almost connected with the Yellowstone population since there is a grizzly bear in the mountains, 70 miles from the Yellowstone population. Sells et al. 2023 shows that there are grizzlies in the Tobacco Roots just a few miles from the Greater Yellowstone Ecosystem.

Yellowstone Grizzlies May Soon Commingle With Northern Cousins

https://www.nytimes.com/2017/11/03/science/grizzly-bears-yellowstone-genes.html?_r=0

HELENA, Mont. — To make the plains and mountains safe for the great herds of cattle that were brought to the West at the end of the 19th century, grizzly bears were routinely shot as predators by bounty hunters and ranchers.

Ever since, the bears in Yellowstone National Park, protected from hunting, have been cut off from the rest of their kind. Their closest kin prowl the mountains some 70 miles north, in and around Glacier National Park.

In a new paper, biologists say that as grizzly populations increase in both Glacier and Yellowstone, more adventurous males from both parks are journeying farther to stake out territory, winding up in places where they have not been seen in a century or more.

If they keep roaming and expanding, the two populations will likely reconnect, perhaps as soon as five or 10 years from now.

“It’s very encouraging for the long-term future of the bear,” said Frank van Manen, leader of the Interagency Grizzly Bear Study Team in Bozeman, Mont., which oversees research into Yellowstone’s bears.

A mingling of the separate populations would go a long way toward bolstering the genetics of the isolated Yellowstone grizzlies.

The bears in the Greater Yellowstone ecosystem, in and around the park, are healthy now, and they have increased to at least 700 today from fewer than 150 in 1975, when they were listed as endangered.

But a genetic lifeline from Glacier bears, which are also related to the grizzlies of Canada, will mean a good deal more diversity to help assure the bears' future. It's so important that researchers have talked about trucking grizzly bears from the north to add to the Yellowstone gene pool.

“Because Yellowstone is a bit lower in genetic diversity, hundreds of years from now they might be less able to adapt to changing conditions — changing climate, changing food sources and disease resistance,” Dr. van Manen said.

While no one knows what advantageous traits the Glacier grizzlies might have in their genes, increasing diversity is the best way to assure resilience against those types of hazards.

Currently, the nearest interloper from the Northern Continental Divide Ecosystem has bridged the 70-mile gap by working his way south. That grizzly is in the

moun- tains near Butte, Mont., some 50 miles from the perimeter of the Yellowstone ecosystem.

!!

Biologists and conservationists are rooting for a natural reunion between the two

largest populations of grizzlies in the country, Dr. van Manen said.

In a study published in Ecosphere, researchers tracked grizzly bears from the northern and southern populations as they moved through western Montana, including the rugged Big Belt mountains near this city, which sits between the two national parks.

Photo !!



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A grizzly on a road near Mammoth, Wyo. Scientists say if bears keep roaming

from Yellowstone and Glacier National Park, the two populations will likely re- connect. Credit David Grubs/ The Billings Gazette, via Associated Press

The effort to follow these nomadic bears was aided by satellite data collars and new, more powerful data analysis techniques. Some 124 males were monitored from 2000 to 2015, some for more than one year.

GPS collars can track a bear almost in real time, providing richly detailed information on the corridors and habitats they use that need to be protected.

While much of the land between the two parks is publicly owned and wild, it becomes a gauntlet in some places as bears migrate into towns, cities, ranches and farms.

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The bears are likely to seek out dog food, beehives, garbage, chickens and even apple trees, getting into trouble that may require trapping and relocating them. Highway crossings, especially on I-90 and I-15, pose a serious risk.

Conservation groups and biologists say it's a race against time to protect some of the open land between the two parks and to assure permanent transit routes for wildlife through land purchases or conservation easement.

Residential housing development north of Yellowstone around Bozeman, for example, is soaring.

"Even one house per square mile can be a problem for bears," said Jodi Hilty, a wildlife biologist in Canmore, Canada. "At the same time, this is one of the most intact mountain ecosystems in the world."

Dr. Hilty heads the group Yellowstone to Yukon, which seeks to link bears and other Yellowstone wildlife with populations in Glacier National Park and in vast tracts of

wilderness in Canada. Protecting migration corridors between Yellowstone, Glacier and Canada would benefit not just bears, she said, but cougars, wolverines and other animals.

The Fish and Wildlife Service has removed the protections afforded under the Endangered Species Act from the Yellowstone grizzly because the population has grown so large. Dr. van Manen said that the number of grizzlies may exceed 1,000.

Environmentalists have sued the agency over its decision. They argue that climate change is a wild card that might someday cause the Yellowstone bear population to collapse.

With the bears delisted, some are concerned about plans by Montana officials to allow the hunting of Yellowstone grizzlies. Dr. David Mattson, a retired wildlife biologist, said that there is a good chance that “Montana will institute a more lethal regime, whether by sport hunting or by other means, that will compromise these prospects.”

The state has said it would not allow hunting in areas where the two populations might reconnect.

As bears explore far beyond their core habitats, people not accustomed to grizzlies need to be educated about bear-proofing garbage cans and sealing off beehives and chicken coops with electric fencing, Dr. van Manen said.

Carrying pepper spray has already become indispensable for hikers, hunters and others in many parts of Montana, Idaho and Wyoming.

In 2016, four grizzlies were killed after confronting hunters in “defense of life” scenarios. Recently, a game warden near Cody, Wyo., shot and killed a female grizzly when it charged at him, leaving her cubs orphans.

Generally, though, the news for the big bear is good, said Dr. van Manen.

“There is strong scientific evidence that the recovery process that was put into place starting in the mid 1970s has paid off,” he said. “It’s an extraordinary effort

for recovery of a species that has ability to kill people. For the American people to support it is a remarkable achievement.”

The project FEIS does not address what the level of security, OMARD, and TMARD are recommended for grizzly bears in the NCDE, and how these compare to those available in the project area. This comparison would demonstrate compatibility of existing and planned management of grizzly bears to the general public.

There is no analysis of TMARD before or after project completion. Decommissioning of roads will reduce OMARD, but will not reduce TMARD. The road would have to be completely obliterated, and no future use can be

planned (IGBC 1998). The claim that all new temporary roads will be obliterated, and thus no add to TMARD after the projects are completed, is never actually verified in the project FEIS. There is no actual identification of the individual new temporary roads to be constructed, how long they will be left in place, the timeline for obliteration, as well as where the money for obliteration will come from. The project FEIS does not define why future management activities will not be required on these new roads in harvest units, such as future harvests in partial logging units, and precommercial thinning of the vast clearcut acreage that will be created by the project.

There is no analysis on how the project as to how the clearcutting existing cover, including openings up to large clearcuts, will affect grizzly bear movement through this landscape.

In a project analysis, the Forest Service must apply the best available science.

The BiOp for the BDNF revised Forest Plan, and the scoping notice for the South Tobacco Roots project, also do not use the current best science by identifying limits to TMARD or security. Security is the key factor that is proposed for management outside the Recovery Zones for grizzly bears (RFP Appendix G at 48).

The suggestion by the USFWS that the RFP OMRTD direction will prevent undue impacts on grizzly bears is meaningless as well. The RFP direction does not have to be met within any specific project area, including the project, but rather within huge landscape areas. The key linkage zone in the South Tobacco Roots project could increase roads by over 55 miles and still meet the RFP “goal” for OMARD “after” the project is completed. This goal does not apply to activities during project implementation (RFP glossary at corrected 295).

The incidental take allowed on the BDNF and in the project for current as well as planned levels of disturbance are illegal because there is no actual means of measuring take by the allowed construction of up to 70 miles of new roads across the entire BDNF, which consists of 3, 380,000 acres (RFP 2).

The South Tobacco Roots project violates existing conservation direction for grizzly bears because habitat connectivity is not being managed to contribute to wildlife linkage zones (RFP at 45); secure habitat needed to facilitate grizzly bear habitat will be decreased for over 10 years, during which bear movements will be reduced.

The Forest Plan Biological Opinion for grizzly bears is arbitrary and capricious because its grizzly bear effects analysis relies on a definition of secure habitat that includes patches of habitat as small as 10 acres, and there is no science to support that definition.

In 2025, USFWS issued a new Biological Opinion on grizzly bears for the Forest Plan.

The Forest Plan Biological Opinion emphasizes secure habitat as the most important way to analyze grizzly bear habitat.

However, the Forest Plan Biological Opinion uses a definition of secure habitat that includes patches of habitat as small as 10 acres.

There is no scientific support for defining “secure habitat” as patches of land as small as 10 acres.

The Interagency Grizzly Bear Conservation Strategy documents do not provide a scientific basis for the Fish and Wildlife Service’s adoption of the 10-acre patch size for secure habitat.

Similarly, Schwartz et al (2010) does not provide any i for a 10-acre patch size.

In contrast, in the Northern Continental Divide Ecosystem (NCDE), secure habitat is defined as areas at least 2,500 acres in size.

The former Grizzly Bear Recovery Coordinator, Chris Servheen, was recently interviewed for an article in

Mountain Journal, and clarified: “nobody ever thought you could have a grizzly living on 10 acres for a month and a half. That’s not what was intended.” Regarding the use of patches as small as 10 acres for Greater Yellowstone grizzlies when science supports the use of 2,500 acre blocks for NCDE grizzlies, Servheen stated: “I think this really unravels the whole habitat standard for the Greater Yellowstone Grizzly Bear Conservation Strategy It’s a big screwup. You have two systems with completely different numbers.”

Thus, by including patches of lands as small as 10 acres in the secure habitat calculation for the 2025 Beaverhead-Deerlodge Forest Plan Biological Opinion, USFWS thus commits the same “big screwup” as it did in the the 2022 Custer- Gallatin Forest Plan Biological Opinion.

In relying on a 10-acre patch size to define grizzly bear secure habitat in the absence of any scientific evidence showing that such acreage provides adequate habitat, the Fish and Wildlife Service failed to use the “best available science” in violation of the ESA.

The Project violates the Forest Plan. The Project does not meet Forest Plan Desired Condition because it fails to ensure “connectivity,” as that term is defined by the regulations, between the NCDE and Yellowstone grizzly populations. There are an insufficient number of secure habitat blocks, and even those habitat blocks that do exist

are likely inaccessible and therefore useless to grizzly bears due to high road densities between habitat blocks.

Please find attached some relevant studies on the secure habitat needs for grizzly bears (pertaining to a certain distance from motorized routes and patch size) Mattson 1993, Gibeau 2002, Proctor 2018, Proctor 2018a, and Schwartz 2010.

Please also find attached the 1994 and 1998 IGCB grizzly reports and the 2011 ROD for Forest Plan Amendment for Motorized Access in the Selkirk/Cabinet-Yaak ecosystem.

Please also find attached Dr. David Mattson's declaration about the 10 acre secure grizzly habitat not being big enough for grizzlies and therefore apply to the South Tobacco Roots project since it is using one acre secure grizzly habitat.

Mattson concluded:

14.1. It is my expert opinion that the US Forest Service analysis of the SPLAT project is not a valid basis for supporting its conclusions regarding how and to what extent individual grizzly bears, as well as the grizzly bear population in the contiguous U.S., will likely be affected because: (1) the grizzly bear population is not yet genetically and evolutionarily viable, despite Recovery Criteria having been met within the Greater Yellowstone PCA; (2) the 1998 baseline used to assess levels of habitat security within the PCA is premised on invalid assumptions; (3) the methods used to calculate habitat security produce inflated – if not altogether meaningless – estimates of true habitat security for grizzly bears; (4) the assessment of connectivity issues related to the project and achievement of population viability was arbitrary and capricious; and (5) the analysis of impacts on grizzly bear habitat quality and security within project boundaries was deficient for numerous reasons.

14.2. Given the facts of this declaration, it is my expert opinion that the following conclusion reported in the SPLAT Wildlife Report and EA understates the magnitude and duration of more local impacts on grizzly bears: "...secure habitat would be temporarily reduced below the already degraded secure habitat baseline in the Madison #2 and Henry's Lake #2

Subunits, the Proposed Action may affect, and is likely to adversely affect the grizzly bear.”

14.3. Given the facts of this declaration, it is my expert opinion that the following conclusion reported in the SPLAT Wildlife Report as a basis for the Finding of No Significant Impact is not valid, defensible, or precautionary: “The effects described...do not represent a significant adverse effect on this species because they would largely be temporary, would provide for diverse food resources and forest structure in the long term, and would meet all Forest Plan standards related to grizzly bear and their habitat.”

15. As currently proposed, it is my expert opinion that the South Plateau Landscape Area Treatment Project will not only harm numerous individual grizzly bears, but also adversely affect recovery and ultimate long-term viability of grizzly bears, not only in the Greater Yellowstone Ecosystem, but also the contiguous United States.

The Forest Service is also not counting logging roads as open. The 1998 baseline is old and based on outdated science in violation of NEPA, NFMA, the APA and the ESA as Dr. Mattson points out

The project will increase road density which causes grizzlies to leave the area.

Bears leave if there is more than one mile per square mile. The South Tobacco Roots Project is in violation of NEPA, NFMA, the APA, and the ESA. The Revised Forest Plan’s direction for grizzly bears is in violation of NEPA because it is so compacted that the public can not understand it. The South Tobacco Roots project is in violation of the ESA because it does not protect grizzly bear habitat. The Revised Forest Plan also needs to be amended to count open logging roads as open.

The Forest Service and the USFWS will violate the ESA, the NEPA, and the NFMA if the project is implemented, due to the following:

- the BDNF is not maintain habitat connectivity for grizzly bears in the South Tobacco Roots project area.
- the analysis of direct impacts for the project area do not use the current best science for grizzly bear security areas in the NDDE.
- the ability of grizzly bears to traverse through the project area is never evaluated.
- the current best science, including levels of grizzly bear security, open and total road densities, was not used in evaluating project impacts on grizzly bear during as well as after implementation.
- mitigation measures cited by both the Forest Service and the USFWS for grizzly bears as per landscape levels of OMRTD are invalid as direct effects are washed out.
- mitigation measures as per OMRTD at the landscape level do not apply to project implementation, and do therefore no mitigate disturbance impacts to grizzly bears from motorized routes during project activities.
- the cumulative effects of proposed activities on the beaverhead-Deerlodge National Forest are not evaluated.

- the conclusions as to project effects as per the ESA of the proposed project on grizzly bears is never identified in the draft ROD or FEIS.
- the report provided by the USFWS in regards to project impacts on grizzly bears, and terms and conditions of the project, were never provided to the public in the draft ROD or FEIS.
- the conclusions regarding project impacts on grizzly bears in the project FEIS were invalid due to a lack of supporting documentation.
- there is no analysis of the loss of extensive, large blocks of hiding cover on grizzly bear movement through the project area.
- there was no action alternative that would restore grizzly bear habitat in the project area to improve habitat connectivity.
- the FS and the USFWS provided invalid, unsupported definitions of “temporary impacts”.

Grizzlies

We wrote in our comments:

How many road closure violations have there been in the last 5 years in the Hebgen Ranger district?

It is fair to assume that there are many more violations that regularly occur and are not witnessed and reported. It is

also fair to assume that you have made no effort to request this available information from your own law enforcement officers, much less incorporate it into your analysis.

Considering your own admissions that road density is the primary factor that degrades elk and grizzly habitat, this is a material and significant omission from your analysis— all of your ORD and HE calculations are wrong without this information.

Moreover, in light of the fact that eliminated hiding cover standards in the revised Forest Plan which were designed to protect and conserve elk habitat, there are no protections left for elk and grizzly habitat. Chronic, illegal road use is reasonably foreseeable and must be addressed in the cumulative effects analysis.

Additionally, your emphasis on elk populations across entire hunting districts is disingenuous and has little relevance to whether you are meeting your Forest Plan obligations to maintain sufficient elk habitat on National Forest lands. As you note, the Forest Plan estimated that 70% of elk were taken on National Forest lands in 1986. What percentage of elk are currently taken on National Forest lands? Have you asked Montana FWP for this information? Any honest biologist would admit that high elk population numbers do not indicate that you are appropriately managing National Forest elk habitat; to the contrary, high elk numbers indicate that you are so poorly managing elk habitat on National Forest lands that elk are being displaced to private lands where hunting is limited or prohibited. Your own

Forest Service guidance document, Christensen et al 1993 states: “Reducing habitat effectiveness should never be considered as a means of controlling elk populations.”

The recurring problem of road closure failures undermines the foundation of the Forest Plan’s wildlife security standards, which relies on these road closures to achieve certain densities of open and total roads both inside and outside the Recovery Zone. The agencies must address this problem and its impacts in an updated ESA consultation for the Forest Plan and this project.

Roads pose a threat to big game and grizzly bears because roads provide humans with access into big game and grizzly bear habitat, which leads to direct bear mortality from accidental shootings and intentional poachings. Big game flee onto private lands during hunting season. Human access also leads to indirect bear mortality by creating circumstances in which bears become habituated to human food and are later killed by wildlife managers. Human access also results in indirect mortality by displacing grizzly bears from good habitat into areas that provide sub-optimal habitat conditions.

Displacement may have long term effects: “Females who have learned to avoid roads may also teach their cubs to avoid roads. In this way, learned avoidance behavior can persist for several generations of bears before they again utilize habitat associated with closed roads.” Both open and closed roads displace grizzly bears: grizzlies avoided

roaded areas even where existing roads were officially closed to public use.

Females with cubs remained primarily in high, rocky, marginal habitat far from roads. Avoidance behavior by bears of illegal vehicular traffic, foot traffic, and/or authorized use behind road closures may account for the lack of use of areas near roads by female grizzly bears in this area. This research demonstrated that a significant portion of the habitat in the study area apparently remained unused by female grizzlies for several years. Since adult females are the most important segment of the population, this lack of use of both open-road and closed-road areas is significant to the population.

In addition to having a significant impact on female grizzly bears, displacement may also negatively impact the survival rates of grizzly cubs: “survivorship of the offspring of females that lived in unroaded, high elevation habitat was lower than that recorded in other study areas in the [Northern Continental Divide Ecosystem]. The majority of this mortality was due to natural factors related to the dangers of living in steep, rocky habitats. This is important in that the effects of road avoidance may result not only in higher mortality along roads and in avoidance of and lack of use of the resources along roads, but in the survival of young when their mothers are forced to live in less favorable areas away from roads.

Please clarify what percent of roads that projects call to be closed will actually be closed. What percentage of roads that are called for to be closed will not be closed because

you still waiting for funds to close or obliterate those roads? This distinction matters because you cannot honestly claim that you are meeting road density standards promised by the Travel Plans' EIS and Decision if you have not yet completed the road closures/ obliterations promised by the Travel Plans. Furthermore, as noted above, you have a major problem with recurring, chronic violations of the road closures created by the Travel Plan, which means that your assumptions in the Travel Plan that all closures would be effective has proven false. For this reason, you cannot tie to the analysis in the Travel Plan because it is invalid. You must either complete new NEPA analysis for the Travel Plan on this issue or provide that new analysis in the NEPA analysis for this Project. Either way, you must update your open road density calculations to include all roads receiving illegal use.

The project is in Violation of the ESA – failure to address and evaluate effects to grizzly bears in the lower-48 States or grizzly bear recovery. Section 7 of the ESA requires the Forest Service to consult with FWS on how the revised forest plan may affect listed species, including grizzly bears, which are listed as a single, threatened species in the lower-48 States.

The project and the Forest Plan are not following the best available science for grizzly bears. The project defines secure grizzly bear habitat as being 10 acres or greater in size. Proctor et al 2020 conclude:

Motorized access has been shown to influence grizzly bears at the individual and population levels. People in

motorized vehicles affect grizzly bear habitat use, home-range selection, movements, population fragmentation, and demography including survival and reproduction, which ultimately affects bear density, population trends, and conservation status. Integrating habitat quality into road management improves the efficiency and effectiveness in reaching management goals, such as managing for few or no roads within 500 m of habitats containing late summer and autumn hyperphagia food resources, such as major berry fields, salmon streams where bears can effectively catch fish, and high-quality white- bark pine stands. Further, in populations with moderate habitat quality and close to human settlements, road densities near 0.6 km/km^2 with $>60\%$ secure habitat (i.e., $>500 \text{ m}$ from an open road) are meaningful thresholds that, if not exceeded, may allow female grizzly bears to have sustainable survival rates. In other areas, population- specific thresholds may be appropriate, such as where conservation is a major concern, because poor habitat quality limits reproductive rates and very little human- caused mortality can be sustained. In areas that are further from human population centers and have large patches of high-quality habitat, the bear population could tolerate higher overall road densities provided large, high-quality patches have no roads.

Our consensus of prioritizing the use of motorized access management across occupied grizzly bear terrain was that “Threatened” populations, or populations of conservation concern (documented or suspected population declines, excessive reported mortality, and areas

with high human footprints), were a first priority. Next, we conclude that habitat quality is an integral part of understanding grizzly bear responses to roads and, if integrated, will increase the efficiency and effectiveness of road management programs. Therefore, managers should allow for habitat security with zero or low road densities in high-quality foraging habitats where major summer–autumn hyperphagia energy-rich food sources are used heavily. This could entail maintaining low road densities in currently safe habitats (where habitat quality is high and mortality risk is low) and applying motorized access controls in areas of sink habitats (where habitat quality and road densities are high).

Why is the project not following the best available science. Please find Proctor et al attached.

Please find attached Dr. David Mattson’s declaration for our South Plateau objection which also defined grizzly secure habitat as being 10 acres in size and 500 meters from a road.

Dr. David Mattson stated in his attached declaration that, “The best available science shows that grizzly bears in the contiguous United States are not genetically or evolutionarily viable.”

Mattson also stated: “Managing for grizzly bear habitat security using a static 1998 baseline defined solely by

distance from roads and developed areas within the Primary Conservation Area (PCA) is a bureaucratic artifact.”

Mattson concluded:

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basis for supporting its conclusions regarding how and to what extent individual grizzly bears, as well as the grizzly bear population in the contiguous U.S., will likely be affected because: (1) the grizzly bear population is not yet genetically and evolutionarily viable, despite Recovery Criteria having been met within the Greater Yellowstone PCA; (2) the 1998 baseline used to assess levels of habitat security within the PCA is premised on invalid assumptions; (3) the methods used to calculate habitat security produce inflated – if not altogether meaningless – estimates of true habitat security for grizzly bears; (4) the assessment of connectivity issues related to the project and achievement of population viability was arbitrary and capricious; and (5) the analysis of impacts on grizzly bear habitat quality and security within project boundaries was deficient for numerous reasons.

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SPLAT Wildlife Report and EA understates the magnitude and duration of more local impacts on grizzly bears:

“...secure habitat would be temporarily reduced below the already degraded secure habitat baseline in the Madison #2 and Henry’s Lake #2 Subunits, the Proposed Action may affect, and is likely to adversely affect the grizzly bear.”

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The project will have 3 or more miles per square mile of roads which causes grizzlies to leave the area.

Bears leave if there is more than one mile per square mile. The South Plateau landscape Area Treatment Project is in violation of NEPA, NFMA, the APA, and the ESA. The Revised Forest Plan's direction for grizzly bears is in violation of NEPA because it is so compacted that the public can not understand it. The Revised Forest Plan's direction for grizzly bears also is in violation of the ESA because it does not protect grizzly bear habitat. The Revised Forest Plan also needs to be amended to count open logging roads as open.

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Please also find attached the 1994 and 1998 IGCB grizzly reports and the 2011 ROD for Forest Plan Amendment for Motorized Access in the Selkirk/Cabinet-Yaak ecosystem.

Openings Greater than 40 acres.

How will the openings bigger than 40 acres affect grizzlies, wolverines, and lynx?

How will the openings bigger than 40 acres affect birds?
Birds are sensitive to high temperatures. Openings bigger than 40 acres can raise the temperature of the forest.

The NEPA requires a “hard look” at climate issues, including cumulative effects of the “treatments” in the proposed project when added to the heat, drought, wind and other impacts associated with increased climate risk. Regeneration/Restocking failure following wildfire, prescribed fire and/or mechanical tree-killing has not been analyzed or disclosed. There is a considerable body of science that suggests that regeneration following fire is increasingly problematic.

NEPA requires disclosure of impact on “the human environment.” Climate risk presents important adverse impacts on cultural, economic, environmental, and social aspects of the human environment. – people, jobs, and the economy – adjacent to and near the project area.

Challenges in predicting responses of individual tree species to climate are a result of species competing under a never-before-seen climate regime – one forests may not have experienced before either.

In an uncertain future of rapid change and abrupt, unforeseen transitions, adjustments in management approaches will be necessary and some actions will fail. However, it is increasingly evident that the greatest risk is posed by continuing to implement strategies inconsistent with and not informed by current understanding of our novel future....

Achievable future conditions as a framework for guiding forest conservation and management, *Forest Ecology and Management* 360 (2016) 80–96, S.W. Golladay et al.
(Please, find attached)

Stands are at risk of going from forest to non-forest, even without the added risk of “management” as proposed in the project area. The project is currently in violation of NEPA, NFMA, and the APA.

The EA does not analyze or disclose the body of science that implicates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. The EA fails to provide estimates of the total amount of carbon dioxide (CO₂) or other greenhouse gas emissions caused by FS management actions and policies

—forest-wide, regionally, or nationally. Agency policymakers seem comfortable maintaining a position that they need not take any leadership on this issue, and obfuscate via this EA to justify their failures.

The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmospheric CO₂. Unsurprisingly the EA doesn't state that simple fact.

The BDNF has not yet accepted that the effects of climate risk represent a significant issue, and eminent loss of forest resilience already, and a significant and growing risk into the “foreseeable future?”

It is now time to speak honestly about unrealistic expectations relating to desired future condition. Forest managers have failed to disclose that at least five common tree species, including aspen and four conifers, are at great risk unless atmospheric greenhouse gases and associated temperatures can be contained at today's levels of concentration in the atmosphere. (See attached map). This cumulative (“reasonably foreseeable”) risk must not continue to be ignored at the project-level, or at the programmatic (Forest Plan) level.

Global warming and its consequences may also be effectively irreversible which implicates certain legal consequences under NEPA and NFMA and ESA (e.g., 40 CFR § 1502.16; 16 USC §1604(g); 36 CFR §219.12; ESA Section 7; 50 CFR §§402.9, 402.14). All net carbon emissions from logging represent “irretrievable and irreversible commitments of resources.”

It is clear that the management of the planet’s forests is a nexus for addressing this largest crisis ever facing humanity. Yet the EA and Draft Decision Notice fails to even provide a minimal quantitative analysis of project- or agency-caused CO₂ emissions or consider the best available science on the topic. This is immensely unethical and immoral. The lack of detailed scientific discussions in the EA and Draft Decision Notice concerning climate change is far more troubling than the document’s failures on other topics, because the consequences of unchecked climate change will be disastrous for food production, sea level rise, and water supplies, resulting in complete turmoil for all human societies. This is an issue as serious as nuclear annihilation (although at least with the latter we’re not already pressing the button).

The EA provided a pittance of information on climate change effects on project area vegetation. The FS has the responsibility to inform the public that climate change is and will be bringing forest change.

The South Tobacco Roots Project-level Supplement to the ***“Forest Carbon Assessment for the Beaverhead-Deerlodge National Forest in the Forest Service’s Northern Region”*** states:

Motorized equipment used to implement the proposed action would emit greenhouse gases. The impact of these emissions on the atmospheric carbon dioxide concentration are difficult to determine and would be speculative because it is dependent on the final decision for this project.

This is not a hard look. The purpose of an EA or EIS is to take a hard look at the effect of the different alternatives.

We agree with the EPA when they wrote in their comments:

Section IV(I) of the CEQ GHG Guidance, Special Considerations for Biological GHG Sources and Sinks, states:

“In NEPA reviews, for actions involving potential changes to biological GHG sources and sinks, agencies should include a comparison of net GHG emissions and carbon stock changes that are anticipated to occur, with and without implementation of the Proposed Action and

reasonable alternatives. The analysis should consider the estimated GHG emissions (from biogenic and fossil-fuel sources), carbon sequestration potential, and the net change in relevant carbon stocks in light of the Proposed Actions and timeframes under consideration and explain the basis for the analysis.”

Therefore, the EPA recommends that the USFS utilize the CEQ GHG Guidance to quantify GHG emissions due to fossil fuel use associated with project activities, such as GHGs emitted from the use of heavy equipment. The EPA also recommends analyzing the cumulative effects of the project on carbon stock changes in combination with any other ongoing and planned USFS projects in the region.

The Carbon Summary of the draft EA makes a comparison between the area affected by the proposed action and total forestland on page 83, stating that “This equates to the proposed action affecting... 0.3 percent of total carbon from forestland.” An inference is then made on the same page that “...the proposed action would be insignificant when compared to the no action alternative due to the scale of the project in the context of the greater land document avoid relying on percentage comparisons between project-level and forestland-scale emissions, which can inappropriately minimize the significance of planning-level GHG emissions. The EPA also recommends avoiding inferences or statements that may be perceived as downplaying the climate-related impacts and GHG emissions from the proposed action. When considered in isolation, climate-related impacts and GHG

emissions from the proposed action may seem small and insignificant. However, since all individual sources of GHG emissions contribute to the collectively profound threat of climate change, most actions will be affected by climate change, and federal land management agencies, including the Forest Service, are planning many additional projects that will affect carbon stocks on forestland, it is important to consider impacts to and from climate change in agency decision-making. All reductions in GHG emissions and increases in GHG sequestration are critical for our ability to address the climate crisis and prevent the most catastrophic effects of climate change.

The EA fails to consider that the effects of climate change on the project area, including that the “desired” vegetation conditions will likely not be achievable or sustainable. The EA fails to provide any credible analysis as to how realistic and achievable its desired conditions are in the context of a rapidly changing climate, along an unpredictable but changing trajectory.

The Forest Plan does not provide meaningful direction on climate change. Nor does the EA acknowledge pertinent and highly relevant best available science on climate change. This project is in violation of NEPA.

The EA does not analyze or disclose the body of science that implicates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. The EA fails to provide estimates of the total amount of carbon dioxide (CO₂) or other greenhouse gas emissions caused by FS management actions and policies—forest-wide, regionally, or nationally. Agency policy-makers seem comfortable maintaining a position that they need not take any leadership on this issue, and obfuscate via this EA to justify their failures.

The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmospheric CO₂. Unsurprisingly the FSEIS doesn't state that simple fact.

The EA fails to present any modeling of forest stands under different management scenarios. The FS should model the carbon flux over time for its proposed stand management scenarios and for the various types of vegetation cover found on the BDNF.

The EA also ignores CO₂ and other greenhouse gas emissions from 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, and recreational motor vehicles. The FS is simply ignoring the climate impacts of these management and other authorized activities.

The Committee of Scientists, 1999 recognize the importance of forests for their contribution to global climate regulation. Also, the 2012 Planning Rule recognizes, in its definition of Ecosystem services, the “Benefits people obtain from ecosystems, including: (2) Regulating services, such as long term storage of carbon; climate regulation...”

We have no more time to prevaricate, and it's not a battle we can afford to lose. We each have a choice: submit to status quo for the profits of the greediest 1%, or empower ourselves to limit greenhouse gas emissions so not just a couple more generations might survive.

The District Court of Montana ruled in Case 4:17-cv-00030- BMM that the Federal government did have to evaluate the climate change impacts of the federal government coal pro- gram. Please find the order attached.

In March 2019, U.S. District Judge Rudolph Contreras in Washington, D.C., ruled that when the U.S. Bureau of Land

Management (BLM) auctions public lands for oil and gas leasing, officials must consider emissions from past, present and foreseeable future oil and gas leases nationwide. The case was brought by WildEarth Guardians and Physicians for Social Responsibility.

In March of 2018 the Federal District Court of Montana found the Miles City (Montana) and Buffalo (Wyoming) Field Office's Resource Management Plans unlawfully overlooked climate impacts of coal mining and oil and gas drilling. The case was brought by Western Organization of Resource Councils, Montana Environmental Information Center, Powder River Basin

Resource Council, Northern Plains Resource Council, the Sierra Club, and the Natural Resources Defense Council.

The project is in violation of NEPA, NFMA, the APA, the ESA for not examining the impacts of the project on climate change. The project will eliminate the forest in the project area. Forests absorb carbon. The project will destroy soils in the project area. Soils are carbon sinks.

Please see the following article that ran in the Missoulian on March 11, 2019.

Fire study shows landscapes such as Bitterroot's Sapphire Range too hot, dry to restore trees

ROB CHANEY rchaney@missoulain.com Mar 11, 2019

Burned landscapes like this drainage in the Sapphire Mountains hasn't been able to grow new trees since the Valley Complex fire of 2000, due to lack of soil moisture, humidity and seed trees, as well as excess heat during the growing season. University of Montana students Erika Berglund and Lacey Hankin helped gather samples for a study showing tree stands are getting replaced by grass and shrubs after fire across the western United States due to climate change.

Courtesy Kim Davis



Fire-scarred forests like the Sapphire Range of the Bitterroot Valley may become grasslands because the growing seasons have become

too hot and dry, according to new research from the University of Montana.

“The drier aspects aren’t coming back, especially on north-facing slopes,” said Kim Davis, a UM landscape ecologist and lead investigator on the study. “It’s not soil sterilization. Other vegetation like grasses are re-sprouting. It’s too warm. There’s not enough moisture for the trees.”

Davis worked with landscape ecologist Solomon Dobrowski, fire paleoecologist Philip Higuera, biologist Anna Sala and geoscientist Marco Maneta at UM along with colleagues at the U.S. Forest Service and University of Colorado-Boulder to produce the study, which was released Monday in the Proceedings of the National Academy of Sciences journal.

“What’s striking is if you asked scientists two decades ago how climate warming would play out, this is what they expected we’d see,” Higuera said. “And now we’re starting to see those predictions on the impact to ecosystems play out.”

The study concentrated on regrowth of Ponderosa pine and Douglas fir seedlings in Montana, Idaho, Colorado, New Mexico,

Arizona and northern California. Field workers collected trees from 90 sites, including 40 in the northern Rocky Mountains, scattered within 33 wildfires that had occurred within the past 20 years.

“We did over 4,000 miles of road-tripping across the West, as well as lots of miles hiking and backpacking,” Davis said. The survey crews brought back everything from dead seedlings to 4-inch-diameter tree rings; nearly 3,000 samples in total. Then they analyzed how long each tree had been growing and what conditions had been when it sprouted.

Before the 1990s, the test sites had enough soil moisture, humidity and other factors to recruit new seedlings after forest fires, Dobrowski said.

“There used to be enough variability in seasonal conditions that seedlings could make it across these fixed thresholds,” Dobrowski said. “After the mid-‘90s, those windows have been closing more often. We’re worried

we'll lose these low-elevation forests to shrubs or grasslands. That's what the evidence points to."

After a fire, all kinds of grasses, shrubs and trees have a blank slate to recover. But trees, especially low-elevation species, need more soil moisture and humidity than their smaller plant cousins. Before the mid-90s, those good growing seasons rolled around every three to five years. The study shows such conditions have evaporated on virtually all sites since 2000.

"The six sites we looked at in the Bitterroots haven't been above the summer humidity threshold since 1997," Higuera said. "Soil moisture hasn't crossed the threshold since 2009."

The study overturns some common assumptions of post-fire recovery. Many historic analyses of mountain forests show the hillsides used to hold far fewer trees a century ago, and have become overstocked due to the efforts humans put at controlling fire in the woods. Higuera explained that some higher elevation forests are returning to their more sparse historical look due to increased fires.

“But at the lower fringes, those burn areas may transition to non- forest types,” Higuera said, “especially where climate conditions at the end of this century are different than what we had in the early 20th Century.”

The study also found that soil sterilization wasn’t a factor in tree re- growth, even in the most severely burned areas. For example, the 2000 Sula Complex of fires stripped forest cover in the southern end of the Bitterroot Valley. While the lodgepole pine stands near Lost Trail Pass have recovered, the lower- elevation Ponderosa pine and Douglas firs haven’t.

Another factor driving regeneration is the availability of surviving seed trees that can repopulate a burn zone. If one remains within 100 meters of the burned landscape, the area can at least start the process of reseeding.

Unfortunately, the trend toward high-severity fires has reduced the once-common mosaic patterns that left some undamaged groves mixed into the burned areas.

Higuera said he hoped land managers could use small or prescribed fires to make landscapes more resilient, as well as restructure tree- planting efforts to boost the chances of heavily burned places.

Rob Chaney

Natural Resources & Environment Reporter

Natural Resources Reporter for The Missoulian.

The NFMA requires in the face of increasing climate risk, growing impacts of wildfire and insect activity, plus scientific research findings, the FS must disclose the significant trend in post-fire regeneration failure. The forest has already experienced considerable difficulty restocking on areas that have been subjected to prescribed fire, clear-cut logging, post-fire salvage logging and other even-aged management “systems.”

NFMA (1982) regulation 36CFR 219.27(C)(3) implements the NFMA statute, which requires restocking in five years.

Forest managers must analyze and disclose the fact that the Beaverhead-Deerlodge National Forest can no longer “insure that timber will be harvested from the National Forest system lands only where...there is assurance that such lands can be restocked within five years of harvest?” (NFMA§6(g)(3)(E)(ii)).

The project goals and expectations are not consistent with NFMA's "adequate restocking" requirement. Scientific research can no longer be ignored.

"At dry sites across our study region, seasonal to annual climate conditions over the past 20 years have crossed these thresholds, such that conditions have become increasingly unsuitable for regeneration. High fire severity and low seed availability further reduced the probability of post-fire regeneration. Together, our results demonstrate that climate change combined with high severity fire is leading to increasingly fewer opportunities for seedlings to establish after wildfires and may lead to ecosystem transitions in low-elevation ponderosa pine and Douglas-fir forests across the western United States."

Wildfires and climate change push low-elevation forests across a critical climate threshold for tree regeneration, PNAS (2018), Kimberley T. Davis, et al. (Please, find attached)

Forests are already experiencing emissions-driven deforestation on both the post-fire and post-logging acreage. Areas where the cumulative effects of wildfire, followed by salvage logging on the same piece of ground

are error upon error, with decades of a routine that can rightfully be described as willful ignorance and coverup.

Where is the reference to restocking? Monitoring data and analysis? If monitoring has been done there is no disclosure documenting the scope and probability of post-fire regeneration failures in the project area. NFMA requires documentation and analysis that accurately estimates climate risks driving regeneration failure and deforestation – all characteristic of a less “resilient” forest.

“In the US Rocky Mountains, we documented a significant trend of post-fire tree regeneration, even over the relatively short period of 23 years covered in this analysis. Our findings are consistent with the expectation of reduced resilience of forest ecosystems to the combined impacts of climate warming and wildfire activity. Our results suggest that predicted shifts from forest to non-forested vegetation.” Evidence for declining forest resilience to wildfires under climate change, Ecology Letters, (2018) 21: 243–252, Stevens-Ru- mens et al. (2018). (Please find attached)

The Forest Plan is based on assumptions largely drawn from our past. These assumptions must be challenged, and

amended, where overwhelming evidence demonstrates a change of course is critically important. It is time to take a step back, assess the future and make the necessary adjustments, all in full public disclosure to the Congress and the American people.

The EA fails to acknowledge the likelihood that “...high seedling and sapling mortality rates due to water stress, competing vegetation, and repeat fires that burn young stands,” which will likely lead to a dramatic increase in non- forest land acres. Many acres of (conifers) trees already fail to regenerate. (Emphasis added). A map of these areas is required. In many areas, conifers haven’t shown “resilience” enough to spring back from disturbance.

Looking to the Future and Learning from the Past in our National Forests: Posted by Randy Johnson, U.S. Forest Service Research and Development Program, on November 1, 2016 at 11:00 AM <http://blogs.usda.gov/2016/11/01/looking-to-the-future-and-learning-from-the-past-in-our-national-forests/>

Excerpt:

Forests are changing in ways they've never experienced before because today's growing conditions are different from anything in the past. The climate is changing at an unprecedented rate, exotic diseases and pests are present, and landscapes are fragmented by human activity often occurring at the same time and place.

When replanting a forest after disturbances, does it make sense to try to reestablish what was there before? Or, should we find re-plant material that might be more appropriate to current and future conditions of a changing environment?

Restoration efforts on U.S. Forest Service managed lands call for the use of locally adapted and appropriate native seed sources. The science-based process for selecting these seeds varies, but in the past, managers based decisions on the assumption that present site conditions are similar to those of the past.”

“This may no longer be the case.

The selected scientific research presented above is only a

sampling of the growing body of evidence that supports the need to disclose the consequences of the proposed action in a proper context – a hotter forest environment, with more frequent drought cycles. This evidence brings into question the Purpose and Need for the project. It also requires the FS to reconsider the assumptions, goals and expected desired future condition expressed in the existing Forest Plan. Plan expectations must be amended at the programmatic level before proceeding with proposed project-level action(s). According to best available science, implementing the project will most likely accomplish the opposite of the desired future condition. We can adjust as we monitor and find out more. However, to willfully ignore what we do know and fail to disclose it to the public is a serious breach of public trust and an unconscionable act. Climate risk is upon us. A viable alternative to the proposal is not only reasonable and prudent, but it is the right thing to do.

The South Tobacco Roots project is in violation of NEPA, NFMA, the Clean Water Act, the ESA and the APA because the project will adversely affect biological diversity, is not following the best available science and the purpose and need will not work.

The NFMA requires in the face of increasing climate risk, growing impacts of wildfire and insect activity, plus scientific research findings, the FS must disclose the significant trend in post-fire regeneration failure. The forest has already experienced considerable difficulty restocking on areas that have been subjected to prescribed fire, clear-cut logging, post-fire salvage logging and other even-aged management “systems.”

NFMA (1982) regulation 36CFR 219.27(C)(3) implements the NFMA statute, which requires restocking in five years.

Forest managers must analyze and disclose the fact that the Beaverhead-Deerlodge National Forest can no longer “insure that timber will be harvested from the National Forest system lands only where...there is assurance that such lands can be restocked within five years of harvest?” (NFMA§6(g)(3)(E)(ii)).

The project goals and expectations are not consistent with NFMA’s “adequate restocking” requirement. Scientific research can no longer be ignored.

“At dry sites across our study region, seasonal to annual climate conditions over the past 20 years have crossed these thresholds, such that conditions have become

increasingly unsuitable for regeneration. High fire severity and low seed availability further reduced the probability of post-fire regeneration. Together, our results demonstrate that climate change combined with high severity fire is leading to increasingly fewer opportunities for seedlings to establish after wildfires and may lead to ecosystem transitions in low-elevation ponderosa pine and Douglas-fir forests across the western United States.”

Wildfires and climate change push low-elevation forests across a critical climate threshold for tree regeneration, PNAS (2018), Kimberley T. Davis, et al. (Please, find attached)

Both RPA and NFMA mandate long-range planning which impose numerous limitations on commodity production, including grazing, timber harvesting practices and the amount of timber sold annually.

These long-range plans are based on assumptions, which are based on data, expert opinion, public participation and other factors that all, well almost all, view from a historical perspective. Assumptions that drove forest planning

guidance decades ago, when climate risk was not known as it is today, are obsolete today.

Present and future climate risk realities demand new assumptions and new guidance.

A proper reexamination of the assumptions relating to resilience and sustainability contained in the Forest Plan is necessary. Scientific re- search supporting our comments focus on important data and analy- sis. A full discussion and disclosure of the following is required: 1) trends in wildfires, insect activity and tree mortality, 2) past regeneration success/failure in the project area, and 3) climate-risk science – some of which is cited below. Our comments, and supporting scientific re- search clearly “demonstrates connection between prior specific written comments on the particu- lar proposed project or activity and the content of the objection...”

The project is in violation of NEPA, NFMA, the Forest Plan and the APA.

Sec. 6. of the National Forest Management Act states:

(g) As soon as practicable, ... the Secretary shall ... promulgate reg- ulations, under the principles of the Multiple-Use, Sustained-Yield Act of 1960...

The regulations shall include, but not be limited to-

(3) specifying guidelines for land management plans developed to achieve the goals of the Program which-

(E) insure that timber will be harvested from National Forest System lands only where-

(i) soil, slope, or other watershed conditions will not be irreversibly damaged;

NFMA regulations at 36 C.F.R. § 219.27 (Management requirements) state:

(a) Resource protection. All management prescriptions shall—

(1) Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land;

(b) Vegetative manipulation. Management prescriptions that involve vegetative manipulation of tree cover for any purpose shall--

(5) Avoid permanent impairment of site productivity and ensure conservation of soil and water resources;

The project-level, and programmatic-level (Forest Plan) fail to publicly disclose the current and future impacts of climate risk to our national forests. NEPA requires cumulative effects analysis at the programmatic level, and at the project-level. The failure to assess and disclose all risks associated with vegetative-manipulation (slash and burn) units in the project area in the proper climate-risk context/scenario violates the NFMA, NEPA and the APA.

In the face of increasing climate risk, growing impacts of wildfire and insect activity, plus scientific research findings, NEPA analysis and disclosure must address the well-documented trend in post-fire regeneration failure. The project has already experienced difficulty restocking on areas that burned in the 1988 wildfire. NFMA (1982) regulation 36 CFR 219.27(c)(3) implements the NFMA statute, which requires adequate restocking in five years.

Given the forest's poor history of restocking success and its failure to employ the best available science, the adequacy of the site specific and programmatic NEPA/NFMA process begs for further analysis and disclosure of the reality of worsening climate conditions which threaten – directly and cumulatively – to turn forest into non-forest- ed vegetation, or worse. The desired future condition described in the

Purpose and Need, or in the Forest Plan is not deforestation.

The Forest Plan is based on assumptions largely drawn from our past. These assumptions must be challenged, and amended, where overwhelming evidence demonstrates a change of course is critically important. It is time to take a step back, assess the future and make the necessary adjustments, all in full public disclosure to the Congress and the American people.

The EA fails to acknowledge the likelihood that, “...high seedling and sapling mortality rates due to water stress, competing vegetation, and repeat fires that burn young stands,” which will likely lead to a dramatic increase in non- forest land acres. Many acres of (conifers) trees already fail to regenerate. (Emphasis added). A map of these areas is required. In many areas, conifers haven’t shown “resilience” enough to spring back from disturbance.

Please amend the Forest Plan to establish standards and guidelines which acknowledge the significance of climate risk to other multiple-uses. Amendments must not only analyze forest-wide impacts, but the regional, national and global scope of expected environmental changes. Based on

scientific research, the existing and projected irretrievable losses must be estimated. Impacts caused by gathering climate risk (heat, drought, wind) and its symptoms, including wildfire, insect activity, and regeneration failure and mature tree mortality must be analyzed cumulatively.

The selected scientific research presented above is only a sampling of the growing body of evidence that supports the need to disclose the consequences of the proposed action in a proper context – a hotter forest environment, with more frequent drought cycles. This evidence brings into question the Purpose and Need for the project. It also requires the FS to reconsider the assumptions, goals and expected desired future condition expressed in the existing Forest Plan. Plan expectations must be amended at the programmatic level before proceeding with proposed project-level action(s). According to best available science, implementing the project will most likely accomplish the opposite of the desired future condition. We can adjust as we monitor and find out more. However, to willfully ignore what we do know and fail to disclose it to the public is a serious breach of public trust and an unconscionable act. Climate risk is

upon us. A viable alternative to the proposal is not only reasonable and prudent, but it is the right thing to do.

The EA provides no analysis as to the veracity of the project's objectives, goals, or desired conditions in violation of the 2012 Planning Rule, NEPA, NFMA, and the APA.

The best available science, Christensen et al (1993), recommends elk habitat effectiveness of 70% in summer range and at least 50% in all other areas where elk are one of the primary resource considerations. According to Figure 1 in Christensen et al (1993), this equates to a maximum road density of approximately 0.7 mi/sq mi. in summer range and approximately 1.7 mi/sq mi. in all other areas.

Do any of the 6th Code watersheds in the Project area meet either of these road density thresholds? It appears the Project area as a whole also far exceeds these thresholds. Please disclose this type of Project level or watershed analysis on road density.

Christensen et al (1993) state that if an area is not meeting the 50% effectiveness threshold of 1.7 mi/sq mi, the agency should admit that the area is not being managed for elk: "Areas where habitat effectiveness is retained at lower than 50 percent must be recognized as making only minor contributions to elk management goals. If habitat effectiveness is not important, don't fake it. Just admit up

front that elk are not a consideration.” The Project EA does not make this admission.

The Forest Service should provide an analysis of how much of the Project area, Project area watersheds, affected landscape areas, or affected Hunting Districts provide “elk security area[s]” as defined by the best available science, Christensen et al (1993) and Hillis et al (1991), to be comprised of contiguous 250 acre blocks of forested habitat 0.5 miles or more from open roads with these blocks encompassing 30% or more of the area.

Please provide a rational justification for the deviation from the Hillis security definition and numeric threshold that represent the best available science on elk security areas. We believe that best available science shows that Commercial Logging does not reduce the threat of Forest Fires. What best available science supports the action alternatives?

Please analyze how much the increase in road density will increase poaching?

Page 7-8 of the EA states:

The purpose of the South Tobacco Root Vegetation Management project aims to improve overall forest health and resilience by moving the project area to desired conditions identified in the Forest Plan. These include:

• Ecological processes, which affect the chemical, physical, and biological components of the aquatic and terrestrial ecosystems and fully support designated beneficial uses, are present and functioning to provide the diversity of forest, shrub land, grassland, riparian, and aquatic communities;*South Tobacco Roots Vegetation Management Project Draft Environmental Assessment, Madison Ranger District*

• Conditions for self-sustaining or viable populations of native and desired non-native plant and animal species are supported within the natural capability of the ecosystem; and

• Natural disturbance processes are recognized and accepted as essential to the health of ecological communities at various spatial scales. Fire is allowed to play its natural role where appropriate and desired. Life, investments, and valuable resources are protected using the full range of responses to wildland fire.

In alignment with 7 CFR§1b.5(c)(1), the need for the project is to:

Reduce Wildfire Risk

Objective 1: Reduce the potential of wildfire on NFS lands spreading to adjacent private and public lands and resources as identified by the Madison County Community Wildfire Protection Plan (CWPP).

Existing Condition: Lack of disturbance has created vegetation conditions that are conducive to crown fire

initiation and spread that contribute to long range spotting of one-half mile or more. Fire management personnel and public safety, private homes and infrastructure, and adjacent Bureau of Land Management and State of Montana managed lands are at risk due to these vegetative conditions and resulting fire behavior.

Desired Condition and Need for Management Action: It is desirable to prevent wildfires originating on NFS lands from spreading to adjacent private and public lands. To achieve this condition, fuel loading and connectivity need to be manipulated to reduce crown fire potential and increase the potential for fire response resources to engage in and manage wildfire incidents safely and successfully.

Manage Timber Stands

Objective 2: Where lands suitable for timber production occur within the project area, bring to, and continue to manage stands in a condition that meets the Forest Plan.” (EA, page 6).

Please find attached a paper titled, “Three-decade record of contiguous-U.S. national forest wildfires indicates increased density of ignitions near roads” by Aplet et al. 2026. The project is violating the 2012 planning rule because it is not following the best available science and also not meeting the purpose and need of the project.

Please see the paper by Baker et al. 2023. This landmark study found a pattern of "Falsification of the Scientific Record" in government-funded wildfire studies.

Dr. Baker's paper is the best available science. Please explain why this project is not following the best available science. The Draft Decision Notice is in violation of NEPA.

This unprecedented **study** was published in the peer-reviewed journal Fire, exposing a broad pattern of scientific misrepresentations and omissions that have caused a "falsification of the scientific record" in recent forest and wildfire studies funded or authored by the U.S. Forest Service with regard to dry forests of the western U.S. Forest Service related articles have presented a falsified narrative that historical forests had low tree densities and were dominated by low-severity fires, using this narrative to advocate for its current forest management and wildfire policies.

However, the new study comprehensively documents that a vast body of scientific evidence in peer-reviewed studies that have directly refuted and discredited this narrative were either misrepresented or omitted by agency publications. The corrected scientific record, based on all of the evidence, shows that historical forests were highly variable in tree density, and included "open" forests as well as many dense forests. Further, historical wildfire severity was mixed and naturally included a substantial component of high-severity fire, which creates essential snag forest

habitat for diverse native wildlife species, rivaling old-growth forests.

These findings have profound implications for climate mitigation and community safety, as current forest policies that are driven by the distorted narrative result in forest management policies that reduce forest carbon and increase carbon emissions, while diverting scarce federal resources from proven community wildfire safety measures like home hardening, defensible space pruning, and evacuation assistance.

"Forest policy must be informed by sound science but, unfortunately, the public has been receiving a biased and inaccurate presentation of the facts about forest density and wildfires from government agencies," said Dr. William Baker in their press release announcing the publication of their paper.

Please find Calkin et al. 2023 attached, which explains focusing on hardening structures makes more sense than logging forests more than 100 feet away from homes.

"The forest management policies being driven by this falsified scientific narrative are often making wildfires spread faster and more intensely toward communities, rather than helping communities become fire-safe," said Dr. Chad Hanson, research ecologist with the John Muir Project in the same press release. "We need thinning of small trees adjacent to homes, not backcountry management."

"The falsified narrative from government studies is leading to inappropriate forest policies that promote removal of mature, fire-resistant trees in older forests, which causes increased carbon emissions and in the long-run contributes to more fires" said, Dr. Dominick A. DellaSala, Chief Scientist, Wild Heritage, a Project of Earth Island Institute concluded in the press release.

Please also see the attached paper by Della-Sala 2022.

Please see the column below by Dr. Chad Hanson.

<https://thehill.com/blogs/congress-blog/energy-environment/590415-logging-makes-forests-and-homes-more-vulnerable-to>

Logging makes forests and homes more vulnerable to wildfires
The West has seen some really big forest fires recently, particularly in California's Sierra Nevada and the Cascade Mountains of Oregon. Naturally, everyone is concerned and elected officials are eager to be seen as advancing solutions. The U.S. Senate is negotiating over the Build Back Better bill, which currently contains nearly \$20 billion in logging subsidies for "hazardous fuel reduction" in forests. This term contains no clear definition but is typically employed as a euphemism for "thinning", which usually includes commercial logging of mature and old-growth trees on public lands. It often includes clearcut logging that harms forests and streams and intensifies wildfires. Logging interests stand poised to profit, as they tell the public and Congress that our forests are overgrown from years of neglect. Chainsaws and bulldozers are their remedy. Among these interests are agencies like the U.S. Forest Service that financially benefits from selling public timber to private logging companies.

In this fraught context, filled with a swirling admixture of panic, confusion, and opportunism, the truth and scientific evidence are all too often casualties. This, unfortunately, can lead to regressive policies that

will only exacerbate the climate crisis and increase threats to communities from wildfire. We can no longer afford either outcome.

Many of the nation's top climate scientists and ecologists recently urged Congress to remove the logging subsidies from the Build Back Better bill. Scientists noted that logging now emits about as much carbon dioxide each year as does burning coal. They also noted that logging conducted under the guise of "forest thinning" does not stop large wildfires that are driven mainly by extreme fire-weather caused primarily by climate change. In fact, it can often make fires burn faster and more intensely toward vulnerable homes. Unprepared towns like Paradise and Grizzly Flats, Calif., unfortunately burned to the ground as fires raced through heavily logged surroundings.

Nature prepares older forests and large trees for wildfires. As trees age, they develop thick impenetrable bark and drop their lower limbs, making it difficult for fire to climb into the tree crowns. Older, dense forests used by the imperiled Canada lynx in [mixed intensities](#) that is good for the lynx and hundreds of species that depend on these forests for survival. Our national parks and wilderness areas also burn in [lower](#) fire intensities compared to heavily logged areas.

Occasionally even some of the largest trees will succumb to a severe fire but their progeny are born again to rapidly colonize the largest and most [severe burn patches](#). Dozens of cavity-nesting birds and small mammals make their homes in the fire-killed trees. Soon after fire in these forests, nature regenerates, reminiscent of the mythical phoenix, aided by scores of pollinating insects and seed carrying birds and mammals.

Wildfires are highly variable, often depending on what a gust of wind does at a given moment, and even the biggest fires are primarily comprised of lightly and moderately-burned areas where most mature trees survive. By chance, in any large fire there will always be some areas that were thinned by loggers that burned less intense compared to unthinned areas. Before the smoke fully clears, logging interests find those locations and take journalists and politicians to promote their agenda.

What they fail to disclose are the many examples where managed forests burned hotter while older, unmanaged forests did the opposite.

This sort of self-serving show boating occurred after the 2020 Creek Fire in the Sierra National Forest in California, as news stories echoed the logging industry's "overgrown forests" narrative based on a single low-intensity burn area. When all of the data across the entire fire were [analyzed](#), it turned out that logged forests, including commercial "thinning" areas, actually burned the most intensely.

In Oregon, The Nature Conservancy has been conducting intensive commercial thinning on its Sycan Marsh Preserve.

Based on satellite imagery, the northern portion of the 414,000-acre Bootleg Fire of 2021 swept through these lands. Within days, TNC began promoting its logging program, focusing on a single location around Coyote Creek, where a "thinned" unit burned lightly. They failed to mention that nearly all of the dense, unmanaged forests burned lightly too in that area. Well-intentioned environmental reporters were misled by a carefully picked example.

Billions of dollars are being wasted to further this false logging industry narrative—funds that instead should be used to prepare communities for more climate-driven wildfires. Congress can instead redirect much needed support to damaged communities so they can build back better and adopt proven fire safety measures that harden homes and clear flammable vegetation nearest structures.

The path forward is simple, with two proven remedies that work. Protect forests from logging so they can absorb more carbon dioxide from the atmosphere and moderate fire behavior, and [adapt](#) communities to the new climate-driven wildfire era.

Chad Hanson, Ph.D., is a research ecologist with the John Muir Project and is the author of the 2021 book, "Smoke-screen: Debunking Wildfire Myths to Save Our Forests and Our Climate." Dominick DellaSala, Ph.D., is chief scientist with Wild Heritage and the author of Conservation Science and Advocacy for a Planet in Peril: Speaking Truth to Power.

Please see the article below about Logging and wildfire by Dr.

Chad Hanson.

October 5, 2022

“Fuel Reduction” Logging Increases Wildfire Intensity

A large and growing body of scientific evidence and opinion concludes that commercial thinning and post-fire logging/clearcutting makes wildfires spread faster and/or burn more severely, and this puts nearby communities at greater risk.

Morris, W.G. (U.S. Forest Service). 1940. Fire weather on clearcut, partly cut, and virgin timber areas at Westfir, Oregon. Timberman 42: 20-28.

“This study is concerned with one of these factors - the fire-weather conditions near ground level - on a single operation during the first summer following logging. These conditions were found to be more severe in the clear-cut area than in either the heavy or light partial cutting areas and more severe in the latter areas than in virgin timber.”

Countryman, C.M. (U.S. Forest Service). 1956. Old-growth conversion also converts fire climate. Fire Control Notes 17: 15-19. “Although the general relations between weather factors, fuel moisture, and fire behavior are fairly well known, the importance of these changes following conversion and their combined effect on fire behavior and control is not generally recognized. The term ‘fireclimate,’ as used here, designates the environmental conditions of weather and fuel moisture that affect fire behavior. It does not consider fuel created by slash because regardless of what forest managers do with slash, they still have to deal with the new fireclimate. In fact, the changes in wind, temperature, humidity, air structure, and fuel moisture may result in greater changes in fire behavior and size of control job than does the addition of more fuel in the form of slash.”

“Conversion which opens up the canopy by removal of trees permits freer air movement and more sunlight to reach the ground. The increased solar radiation in turn results in higher temperatures, lower humidity, and lower fuel moisture. The magnitude of these changes can be illustrated by comparing the fireclimate in the open with that in a dense stand.”

“A mature, closed stand has a fireclimate strikingly different from that in the open. Here nearly all of the solar radiation is intercepted by the crowns. Some is reflected back to space and the rest is converted to heat and distributed in depth through the crowns. Air within the stand is warmed by contact with the crowns, and the ground fuels are in turn warmed only by contact with the air. The temperature of fuels on the ground thus usually approximates air temperature within the stand.”“Temperature profiles in a dense, mixed conifer stand illustrate this process (fig. 2). By 8 o'clock in the morning, air within the crowns had warmed to 68° F. Air temperature near the ground was only 50°. By 10 o'clock temperatures within the crowns had reached 82° and, although the heat had penetrated to lower levels, air near the surface at 77° was still cooler than at any other level. At 2:00 p.m., air temperature within the stand had become virtually uniform at 87°. In the open less than one-half mile away, however, the temperature at the surface of pine litter reached 153° at 2:00 p.m.”

“Because of the lower temperature and higher humidity, fuels within the closed stand are more moist than those in the open under ordinary weather conditions. Typically, when moisture content is 3 percent in the open, 8 percent can be expected in the stand.”

“Moisture and temperature differences between open and closed stands have a great effect on both the inception and the behavior of fire. For example, fine fuel at 8-percent moisture content will require nearly one-third more heat for ignition than will the same fuel at 3-percent moisture content. Thus, firebrands that do not contain enough heat to start a fire in a closed stand may readily start one in the open.”

“When a standard fire weather station in the open indicates a temperature of 85° F., fuel moisture of 4 percent, and a wind velocity of 15 m.p.h.--not unusual burning conditions in the West--a fire starting on a moderate slope will spread 4.5 times as fast in the open as in a closed stand. The size of the suppression job, however, increases even more drastically.”“Greater rate of spread and intensity of burning require control lines farther from the actual fire, increasing the length of fireline. Line width also must be increased to contain the hotter fire. Less production per man and delays in getting addi-

tional crews complicate the control problem on a fast-moving fire. It has been estimated that the size of the suppression job increases nearly as the square of the rate of forward spread. Thus, fire in the open will require 20 times more suppression effort. In other words, for each man required to control a surface fire in a mature stand burning under these conditions, 20 men will be required if the area is clear cut."

"Methods other than clear cutting, of course, may bring a less drastic change in fireclimate. Nevertheless, the change resulting from partial cutting can have important effects on fire. The moderating effect that a dense stand has on the fireclimate usually results in slow-burning fires. Ordinarily, in dense timber only a few days a year have the extreme burning conditions under which surface fires produce heat rapidly enough to carry the fire into the crowns. Partial cutting can increase the severity of the fireclimate enough to materially increase the number of days when disastrous crown fires can occur."

SNEP (co-authored by U.S. Forest Service). 1996. Sierra Nevada Ecosystem Project, Final Report to Congress: Status of the Sierra Nevada. Vol. I: Assessment summaries and management strategies. Davis, CA: University of California, Davis, Center for Water and Wildland Resources.

"Timber harvest, through its effects on forest structure, local microclimate, and fuel accumulation, has increased fire severity more than any other recent human activity."

"[I]n areas where the larger trees (greater than 12 inches in diameter breast height) have been removed, stand-replacing fires are more likely to occur."

Beschta, R.L.; Frissell, C.A.; Gresswell, R.; Hauer, R.; Karr, J.R.; Minshall, G.W.; Perry, D.A.; Rhodes, J.J. 1995. Wildfire and salvage logging. Eugene, OR: Pacific Rivers Council.

"We also need to accept that in many drier forest types throughout the region, forest management may have set the stage for fires larger and more intense than have occurred in at least the last few hundred years."

"With respect to the need for management treatments after fires, there is generally no need for urgency, nor is there a universal, ecologically-based need to act at all. By acting quickly, we run the risk of creating new problems before we

solve the old ones.”

“[S]ome argue that salvage logging is needed because of the perceived increased likelihood that an area may reburn. It is the fine fuels that carry fire, not the large dead woody material. We are aware of no evidence supporting the contention that leaving large dead woody material significantly increases the probability of reburn.”

Chen, J., et al. (co-authored by U.S. Forest Service). 1999. Microclimate in forest ecosystem and landscape ecology: Variations in local climate can be used to monitor and compare the effects of different management regimes. BioScience 49: 288–297.

When moving from open forest areas, resulting from logging, and into dense forests with high canopy cover, “there is generally a decrease in daytime summer temperatures but an increase in humidity...”

The authors reported a 5 C difference in ambient air temperature between a closed-canopy mature forest and a forest with partial cutting, like a commercial thinning unit (Fig. 4b), and noted that such differences are even greater than the increases in temperature predicted due to anthropogenic climate change.

Dombeck, M. (U.S. Forest Service Chief). 2001. How Can We Reduce the Fire Danger in the Interior West. Fire Management Today 61: 5-13.

“Some argue that more commercial timber harvest is needed to remove small-diameter trees and brush that are fueling our worst wildlands fires in the interior West. However, small-diameter trees and brush typically have little or no commercial value. To offset losses from their removal, a commercial operator would have to remove large, merchantable trees in the overstory. Overstory removal lets more light reach the forest floor, promoting vigorous forest regeneration. Where the overstory has been entirely removed, regeneration produces thickets of 2,000 to 10,000 small trees per acre, precisely the small-diameter materials that are causing our worst fire problems. In fact, many large fires in 2000 burned in previously logged areas laced with roads. It seems unlikely that commercial timber harvest can solve our forest health problems.”

Morrison, P.H. and K.J. Harma. 2002. Analysis of Land Own-

ership and Prior Land Management Activities Within the Rodeo & Chediski Fires, Arizona. Pacific Biodiversity Institute, Winthrop, WA. 13 pp.

Previous logging was associated with higher fire severity. Donato DC, Fontaine JB, Campbell JL, Robinson WD, Kauffman JB, Law BE. 2006. Science 311: 352.

“In terms of short-term fire risk, a reburn in [postfire] logged stands would likely exhibit elevated rates of fire spread, fireline intensity, and soil heating impacts...Postfire logging alone was notably incongruent with fuel reduction goals.”

Hanson, C.T., Odion, D.C. 2006. Fire Severity in mechanically thinned versus unthinned forests of the Sierra Nevada, California. In: Proceedings of the 3rd International Fire Ecology and Management Congress, November 13-17, 2006, San Diego, CA.

“In all seven sites, combined mortality [thinning and fire] was higher in thinned than in unthinned units. In Keen of seven sites, fire-induced mortality was higher in thinned than in unthinned units...Mechanical thinning increased fire severity on the sites currently available for study on national forests of the Sierra Nevada.”

Platt, R.V., et al. 2006. Are wildfire mitigation and restoration of historic forest structure compatible? A spatial modeling assessment. Annals of the Assoc. Amer. Geographers 96: 455-470.

“Compared with the original conditions, a closed canopy would result in a 10 percent reduction in the area of high or extreme fireline intensity. In contrast, an open canopy [from thinning] has the opposite effect, increasing the area exposed to high or extreme fireline intensity by 36 percent. Though it may appear counterintuitive, when all else is equal open canopies lead to reduced fuel moisture and increased midflame windspeed, which increase potential fireline intensity.”

Thompson, J.R., Spies, T.A., Ganio, L.M. (co-authored by U.S. Forest Service). 2007. Reburn severity in managed and unmanaged vegetation in a large wildfire. Proceedings of the National Academy of Sciences of the United States of America 104: 10743–10748.

“Areas that were salvage-logged and planted after the initial fire burned more severely than comparable unmanaged areas.”

Cruz, M.G, and M.E. Alexander. 2010. Assessing crown fire potential in coniferous forests of western North America: A critique of current approaches and recent simulation studies. Int. J. Wildl. Fire. 19: 377–398.

The fire models used by the U.S. Forest Service falsely predict effective reduction in crown fire potential from thinning:

“Simulation studies that use certain fire modelling systems (i.e. NEXUS, FlamMap, FARSITE, FFE-FVS (Fire and Fuels Extension to the Forest Vegetation Simulator), Fuel Management Analyst (FMAPlus), BehavePlus) based on separate implementations or direct integration of Rothermel’s surface and crown rate of fire spread models with Van Wagner’s crown fire transition and propagation models are shown to have a significant underprediction bias when used in assessing potential crown fire behaviour in conifer forests of western North America. The principal sources of this underprediction bias are shown to include: (i) incompatible model linkages; (ii) use of surface and crown fire rate of spread models that have an inherent underprediction bias; and (iii) reduction in crown fire rate of spread based on the use of unsubstantiated crown fraction burned functions. The use of uncalibrated custom fuelmodels to represent surface fuelbeds is a fourth potential source of bias.”

Thompson, J., and T.A. Spies (co-authored by U.S. Forest Service). 2010. Exploring Patterns of Burn Severity in the Biscuit Fire in Southwestern Oregon. Fire Science Brief 88: 1-6.

“Areas that burned with high severity...in a previous wildfire (in 1987, 15 years prior) were more likely to burn with high severity again in the 2002 Biscuit Fire. Areas that were salvage-logged and planted following the 1987 fire burned with somewhat higher fire severity than equivalent areas that had not been logged and planted.”

Graham, R., et al. (U.S. Forest Service). 2012. Fourmile Canyon Fire Findings. Gen. Tech. Rep. RMRS-GTR-289. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 110 p.

Thinned forests “were burned more severely than neighboring

areas where the fuels were not treated”, and 162 homes were destroyed by the Fourmile Canyon Fire (see Figs. 45 and 46). DellaSala et al. (2013) (letter from over 200 scientists):

“Numerous studies also document the cumulative impacts of post-fire logging on natural ecosystems, including...accumulation of logging slash that can add to future fire risks...”

DellaSala et al. (2015) (letter from over 200 scientists): “Post-fire logging has been shown to eliminate habitat for many bird species that depend on snags, compact soils, remove biological legacies (snags and downed logs) that are essential in supporting new forest growth, and spread invasive species that outcompete native vegetation and, in some cases, increase the flammability of the new forest. While it is often claimed that such logging is needed to restore conifer growth and lower fuel hazards after a fire, many studies have shown that logging tractors often kill most conifer seedlings and other important re-establishing vegetation and actually increases flammable logging slash left on site. Increased chronic sedimentation to streams due to the extensive road network and runoff from logging on steep slopes degrades aquatic organisms and water quality.”

North, M.P., S.L. Stephens, B.M. Collins, J.K. Agee, G. Aplet, J.F. Franklin, and P.Z. Fule (co-authored by U.S. Forest Service). 2015. Reform forest fire management. Science 349: 1280- 1281.

“...fire is usually more efficient, cost-effective, and ecologically beneficial than mechanical treatments.”

Bradley, C.M. C.T. Hanson, and D.A. DellaSala. 2016. Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western USA? Ecosphere 7: article e01492. In the largest study on this subject ever conducted in western North American, the authors found that the more trees that are removed from forests through logging, the higher the fire severity overall:

*“We investigated the relationship between protected status and fire severity using the Random Forests algorithm applied to 1500 fires affecting 9.5 million hectares between 1984 and 2014 in pine (*Pinus ponderosa*, *Pinus jeffreyi*) and mixed-conifer forests of western United States, accounting for key topographic and climate variables. We found forests with high-*

er levels of protection [from logging] had lower severity values even though they are generally identified as having the highest overall levels of biomass and fuel loading.”

Lesmeister, D.B., et al. (co-authored by U.S. Forest Service). 2019. Mixed-severity wildfire and habitat of an old-forest obligate. Ecosphere10: Article e02696.

Denser, older forests with high canopy cover had lower fire severity.

Dunn, C.J., et al. 2020. How does tree regeneration respond to mixed-severity fire in the western Oregon Cascades, USA? Ecosphere 11: Article e03003.

Forests that burned at high-severity had lower, not higher, overall pre-fire tree densities.

Meigs, G.W., et al. (co-authored by U.S. Forest Service). 2020. Influence of topography and fuels on fire refugia probability under varying fire weather in forests of the US Pacific Northwest. Canadian Journal of Forest Research 50: 636-647.

Forests with higher pre-fire biomass are more likely to experience low-severity fire.

Moomaw et al. (2020) (letter from over 200 scientists: <https://johnmuirproject.org/2020/05/breaking-news-over-200-top-u-s-climate-and-forest-scientists-urge-congress-protect-forests-to-mitigate-climate-crisis/>):

“Troublingly, to make thinning operations economically attractive to logging companies, commercial logging of larger, more fire-resistant trees often occurs across large areas. Importantly, mechanical thinning results in a substantial net loss of forest carbon storage, and a net increase in carbon emissions that can substantially exceed those of wildfire emissions (Hudiburg et al. 2013, Campbell et al. 2012). Reduced forest protections and increased logging tend to make wildland fires burn more intensely (Bradley et al. 2016). This can also occur with commercial thinning, where mature trees are removed (Cruz et al. 2008, Cruz et al. 2014). As an example, logging in U.S. forests emits 10 times more carbon than fire and native insects combined (Harris et al. 2016). And, unlike logging, fire cycles nutrients and helps increase new forest growth.” Moomaw et al. (2021) (letter from over 200 scientists: <https://bit.ly/3BFtIAg>):

“[C]ommercial logging conducted under the guise of “thin-

ning” and “fuel reduction” typically removes mature, fire-resistant trees that are needed for forest resilience. We have watched as one large wildfire after another has swept through tens of thousands of acres where commercial thinning had previously occurred due to extreme fire weather driven by climate change. Removing trees can alter a forest’s microclimate, and can often increase fire intensity. In contrast, forests protected from logging, and those with high carbon biomass and carbon storage, more often burn at equal or lower intensities when fires do occur.”

Lesmeister, D.B., et al. (co-authored by U.S. Forest Service). 2021. Northern spotted owl nesting forests as fire refugia: a 30-year synthesis of large wildfires. Fire Ecology 17: Article 32.

More open forests with lower biomass had higher fire severity, because the type of open, lower-biomass forests resulting from thinning and other logging activities have “hotter, drier, and windier microclimates, and those conditions decrease dramatically over relatively short distances into the interior of older forests with multi-layer canopies and high tree density...”

Stephens, S.L., et al. (co-authored by U.S. Forest Service). 2021. Forest Restoration and Fuels Reduction: Convergent or Divergent? BioScience 71: 85-101. While the authors continued to promote commercial thinning, they acknowledged that commercial thinning causes wildfires to move faster and become larger more quickly:

“Interestingly, surface fire rate of spread increased after restoration and fuel treatments [commercial thinning] relative to the untreated stand. This increased fire rate of spread following both treatment types is due to a combination of higher mid-flame wind speeds and a greater proportion of grass fuels, which result from reductions to canopy cover.”

Hanson, C.T. 2021. Is “Fuel Reduction” Justified as Fire Management in Spotted Owl Habitat? Birds 2: 395-403.

“Within the forest types inhabited by California Spotted Owls, high-severity fire occurrence was not higher overall in unmanaged forests and was not associated with the density of pre-fire snags from recent drought in the Creek Fire, contrary to expectations under the fuel reduction hypothesis. Moreover, fuel-reduction logging in California Spotted Owl habitats was

associated with higher fire severity in most cases. The highest levels of high-severity fire were in the categories with commercial logging (post-fire logging, private commercial timberlands, and commercial thinning), while the three categories with lower levels of high-severity fire were in forests with no recent forest management or wildfire, less intensive noncommercial management, and unmanaged forests with re-burning of mixed-severity wildfire, respectively.”Hanson, C.T. 2022. Cumulative severity of thinned and unthinned forests in a large California wildfire. Land 11: Article 373.

“Using published data regarding the percent basal area mortality for each commercial thinning unit that burned in the Antelope fire, combined with percent basal area mortality due to the fire itself from post-fire satellite imagery, it was found that commercial thinning was associated with significantly higher overall tree mortality levels (cumulative severity).”

Baker, B.C., and C.T. Hanson. 2022. Cumulative tree mortality from commercial thinning and a large wildfire in the Sierra Nevada, California. Land 11: Article 995.

“Similar to the findings of Hanson (2022) in the Antelope Fire of 2021 in northern California, in our investigation of the Caldor Fire of 2021 we found significantly higher cumulative severity in forests with commercial thinning than in unthinned forests, indicating that commercial thinning killed significantly more trees than it prevented from being killed in the Caldor Fire...Despite controversy regarding thinning, there is a body of scientific literature that suggests commercial thinning should be scaled up across western US forest landscapes as a wildfire management strategy. This raises an important question: what accounts for the discrepancy on this issue in the scientific literature? We believe several factors are likely to largely explain this discrepancy. First and foremost, because most previous research has not accounted for tree mortality from thinning itself, prior to the wildfire-related mortality, such research has underreported tree mortality in commercial thinning areas relative to unthinned forests. Second, some prior studies have not controlled for vegetation type, which can lead to a mismatch when comparing severity in thinned areas to the rest of the fire area given that thinning necessarily oc-

curs in conifer forests but unthinned areas can include large expanses of non-conifer vegetation types that burn almost exclusively at high severity, such as grasslands and chaparral. Third, some research reporting effectiveness of commercial thinning in terms of reducing fire severity has been based on the subjective location of comparison sample points between thinned and adjacent unthinned forests. Fourth, reported results have often been based on theoretical models, which subsequent research has found to overestimate the effectiveness of thinning. Last, several case studies draw conclusions about the effectiveness of thinning as a wildfire management strategy when the results of those studies do not support such a conclusion, as reviewed in DellaSala et al. (2022).” (internal citations omitted)

Prichard, S.J., et al. (co-authored by U.S. Forest Service). 2021. Adapting western US forests to wild-fires and climate change: 10 key questions. Ecological Applications 31: Article e02433.

In a study primarily authored by U.S. Forest Service scientists, and scientists funded by the Forest Service, the authors state that “There is little doubt that fuel reduction treatments can be effective at reducing fire severity...” yet these authors repeatedly contradict their own proposition, acknowledging that thinning can cause “higher surface fuel loads,” which “can contribute to high-intensity surface fires and elevated levels of associated tree mortality,” and mastication of such surface fuels “can cause deep soil heating” and “elevated fire intensities.” The authors also acknowledge that thinning “can lead to increased surface wind speed and fuel heating, which allows for increased rates of fire spread in thinned forests,” and even the combination of thinning and prescribed fire “may increase the risk of fire by increasing sunlight exposure to the forest floor, drying vegetation, promoting understory growth, and increasing wind speeds.”

Despite these admissions, contradicting their promotion of thinning, the authors cite to several U.S. Forest Service-funded studies for the proposition that thinning can effectively reduce fire severity, but a subsequent analysis of those same studies found that the results of these articles do not support that conclusion, and often contradict it, as detailed in Section

5.2 of DellaSala et al. (2022) (see below).

DellaSala, D.A., B.C. Baker, C.T. Hanson, L. Ruediger, and W.L. Baker. 2022. Have western USA fire suppression and megafire active management approaches become a contemporary Sisyphus? *Biological Conservation* 268: Article 109499. With regard to a previous U.S. Forest Service study claiming that commercial thinning effectively reduced fire severity in the large Wallow fire of 2011 in Arizona, DellaSala et al. (2022, Section 5.1) conducted a detailed accuracy check and found that the previous analysis had dramatically underreported high-severity fire in commercial thinning units, and forests with commercial thinning in fact had higher fire severity, overall.

DellaSala et al. (2022, Section 5.2) also reviewed several U.S. Forest Service studies relied upon by Prichard et al. (2021) for the claim that commercial thinning is an effective fire management approach and found that the actual results of these cited studies did not support that conclusion.

Bartowitz, K.J., et al. 2022. Forest Carbon Emission Sources Are Not Equal: Putting Fire, Harvest, and Fossil Fuel Emissions in Context. *Front. For. Glob. Change* 5: Article 867112. The authors found that logging conducted as commercial thinning, which involves removal of some mature trees, substantially increases carbon emissions relative to wildfire alone, and commercial thinning “causes a higher rate of tree mortality than wildfire.”

Evers, C., et al. 2022. Extreme Winds Alter Influence of Fuels and Topography on Megafire Burn Severity in Seasonal Temperate Rainforests under Record Fuel Aridity. *Fire* 5: Article 41.

The authors found that dense, mature/old forests with high biomass and canopy cover tended to have lower fire severity, while more open forests with lower canopy cover and less biomass burned more severely. USFS (U.S. Forest Service) (2022). Gallinas-Las Dispensas

Prescribed Fire Declared Wildfire Review. U.S. Forest Service, Office of the Chief, Washington, D.C.

“A thinning project in the burn area opened the canopy in some areas, allowing more sunlight which led to lower fuel moistures. Heavy ground fuels resulting from the construction

of fireline for the burn project added to the fuel loading. This contributed to higher fire intensities, torching, spotting, and higher resistance-to-control.”

The only effective way to protect homes from fire is home-hardening and defensible space pruning within 100 to 200 feet of homes or less.

Cohen, J.D. (U.S. Forest Service). 2000. Preventing disaster: home ignitability in the wildland- urban interface. Journal of Forestry 98: 15-21.

The only relevant zone to protect homes from wildland fire is within approximately 135 feet or less from each home—not out in wildland forests.

Gibbons P, van Bommel L, Gill MA, Cary GJ, Driscoll DA, Bradstock RA, Knight E, Moritz MA, Stephens SL, Lindenmayer DB (2012) Land management practices associated with house loss in wildfires. PLoS ONE 7: Article e29212.

Defensible space pruning within less than 130 feet from homes was effective at protecting homes from wildfires, while vegetation management in remote wildlands was not. A modest additional benefit for home safety was provided by prescribed burning less than 500 meters (less than 1641 feet) from homes.

Syphard, A.D., T.J. Brennan, and J.E. Keeley. 2014. The role of defensible space for residential structure protection during wildfires. Intl. J. Wildland Fire 23: 1165-1175.

Vegetation management and removal beyond approximately 100 feet from homes provides no additional benefit in terms of protecting homes from wildfires.

Tree removal is not necessary prior to conducting prescribed fire as an additional community safety buffer.

Decades of scientific studies have proven that, even in the densest forests that have not experienced fire in many decades, prescribed fire can be applied without prior tree removal, as demonstrated in the following studies:

Knapp EE, Keeley JE, Ballenger EA, Brennan TJ. 2005. Fuel reduction and coarse woody debris dynamics with early season and late season prescribed fire in a Sierra Nevada mixed conifer forest. Forest Ecology and Management 208: 383–397.

Knapp, E.E., and Keeley, J.E. 2006. Heterogeneity in fire severity within early season and late season prescribed burns in a mixed-conifer forest. Int. J. Wildland Fire 15: 37–45.

Knapp, E.E., Schwilk, D.W., Kane, J.M., Keeley, J.E., 2007. Role of burning on initial understory vegetation response to prescribed fire in a mixed conifer forest. Canadian Journal of Forest Research 37: 11–22.

van Mantgem, P.J., A.C. Caprio, N.L. Stephenson, and A.J. Das. 2016. Does prescribed fire promote resistance to drought in low elevation forests of the Sierra Nevada, California, USA? Fire Ecology 12: 13-25.

van Mantgem, P.J., N.L. Stephenson, J.J. Battles, E.K. Knapp, and J.E. Keeley. 2011. Long-term effects of prescribed fire on mixed conifer forest structure in the Sierra Nevada, California. Forest Ecology and Management 261: 989–994.

Schoennagel et al (2004) states: “we are concerned that the model of historical fire effects and 20th-century fire suppression in dry ponderosa pine forests is being applied uncritically across all Rocky Mountain forests, including where it is inappropriate.”

Schoennagel et al (2004) states: “High-elevation subalpine forests in the Rocky Mountains typify ecosystems that experience infrequent, high-severity crown fires []. . . The most extensive subalpine forest types are composed of Engelmann spruce (*Picea engelmannii*), subalpine fir (*Abies lasiocarpa*), and lodgepole pine (*Pinus contorta*), all thin-barked trees easily killed by fire. Extensive stand-replacing fires occurred historically at long intervals (i.e., one to many centuries) in subalpine

forests, typically in association with infrequent high-pressure blocking systems that promote extremely dry regional climate patterns.” Schoennagel et al (2004) states: “it is unlikely that the short period of fire exclusion has significantly altered the long fire intervals in subalpine forests. Furthermore, large, intense fires burning under dry conditions are very difficult, if not impossible, to suppress, and such fires account for the majority of area burned in subalpine forests.

Schoennagel et al (2004) states: “Moreover, there is no consistent relationship between time elapsed since the last fire and fuel abundance in subalpine forests, further undermining the idea that years of fire suppression have caused unnatural fuel buildup in this forest zone.”

Schoennagel et al (2004) states: “No evidence suggests that spruce–fir or lodgepole pine forests have experienced substantial shifts in stand structure over recent decades as a result of fire suppression. Overall, variation in climate rather than in fuels appears to exert the largest influence on the size, timing, and severity of fires in subalpine forests []. We conclude that large, infrequent stand replacing fires are

‘business as usual’ in this forest type, not an artifact of fire suppression.”.

Schoennagel et al (2004) states: “Contrary to popular opinion, previous fire suppression, which was consistently effective from about 1950 through 1972, had only a minimal effect on the large fire event in 1988 [].

Reconstruction of historical fires indicates that similar large, high-severity fires also occurred in the early 1700s [].

Given the historical range of variability of fire regimes in high-elevation subalpine forests, fire behavior in Yellowstone during 1988, although severe, was neither unusual nor surprising.”

Schoennagel et al (2004)(emphasis added) states: “Mechanical fuel reduction in sub- alpine forests would not represent a restoration treatment but rather a departure from the natural range of variability in stand structure.”

Schoennagel et al (2004) states: “Given the behavior of fire in Yellowstone in 1988, fuel reduction projects probably will not substantially reduce the frequency, size, or severity of wildfires under extreme weather conditions.”Schoennagel et al (2004) states: “The Yellowstone fires in 1988 revealed that variation in fuel conditions, as measured by stand age and density, had only minimal influence on fire behavior. Therefore, we expect fuel reduction treatments in high-elevation forests to be generally unsuccessful in reducing fire frequency, severity,

and size, given the overriding importance of extreme climate in controlling fire regimes in this zone. Thinning also will not restore subalpine forests, because they were dense historically and have not changed significantly in response to fire suppression. Thus, fuel reduction efforts in most Rocky Mountain sub-alpine forests probably would not effectively mitigate the fire hazard, and these efforts may create new ecological problems by moving the forest structure outside the historic range of variability.”

Likewise, Brown et al (2004) states: “At higher elevations, forests of subalpine fir, Engelmann spruce, mountain hemlock, and lodgepole or whitebark pine predominate. These forests also have long fire return intervals and contain a high proportion of fire sensitive trees. At periods averaging a few hundred years, extreme drought conditions would prime these forests for large, severe fires that would tend to set the forest back to an early successional stage, with a large carry-over of dead trees as a legacy of snags and logs in the regenerating forest natural ecological dynamics are largely preserved because fire suppression has been effective for less than one natural fire cycle. Thinning for restoration does not appear to be appropriate in these forests. Efforts to manipulate stand structures to reduce fire hazard will not only be of limited effectiveness but may also move systems away from pre-1850 conditions to the detriment of wildlife and watersheds.” “Fuel levels

may suggest a high fire ‘hazard’ under conventional assessments, but wildfire risk is typically low in these settings.”

Likewise, Graham et al (2004) states: “Most important, the fire behavior characteristics are strikingly different for cold (for example, lodgepole pine, Engelmann spruce, subalpine fir), moist (for example, western hemlock, western red cedar, western white pine), and dry forests. Cold and moist forests tend to have long fire-return intervals, but fires that do occur tend to be high-intensity, stand-replacing fires. Dry forests historically had short intervals between fires, but most important, the fires had low to moderate severity.”

According to Graham et al (2004), thinning may also increase the likelihood of wildfire ignition in the type of forests in this Project area: “The probability of ignition is strongly related to fine fuel moisture content, air temperature, the amount of shading of surface fuels, and the occurrence of an ignition source (human or lightning caused) There is generally a warmer, dryer microclimate in more open stands (fig. 9) compared to denser stands. Dense stands (canopy cover) tend to provide more shading of fuels, keeping relative humidity higher and air and fuel temperature lower than in more open stands. Thus, dense stands tend to maintain higher surface fuel moisture contents compared to more open stands. More open stands also tend to allow higher wind speeds that tend to dry fuels compared to

dense stands. These factors may increase probability of ignition in some open canopy stands compared to dense canopy stands.”

A new study soon to be published by Dominick A. DellaSala et. al. found that re-viewed 1500 wildfires between 1984 and 2014 found that actively managed forests had the highest level of fire severity. While those forests in protected areas burned, on average, had the lowest level of fire severity. In other words, the best way to reduce severe fires is to protect the land as wilderness, not “manage” it.

The Project will violate the NEPA if there are no valid snag surveys done for the project area both within and outside proposed harvest units. The project will violate the NEPA if there are no valid surveys for old growth habitat within each project area, as identified by Green et al. 1992; old growth types need to be defined and quantified by timber types, such as lodgepole pine, Douglas-fir, mixed conifer, spruce, subalpine fir, and limber pine.

The project will likely violate the NEPA if the mitigation measures for MIS, sensitive species, and Montana Species of Concern (birds, mammals including bats) are not clearly defined, and demonstrated to be effective as per the current best science.

Whitebark pine

Whitebark pine seedlings, saplings and mature trees, present in subalpine forests proposed for burning, would experience mortality from project activity. Whitebark pine is fire intolerant (thin bark). Fire favors whitebark pine regeneration (through canopy opening and reducing competing vegetation) only in the presence of adequate seed source and dispersal mechanisms (Clarks Nutcracker or humans planting whitebark pine seedlings).

White pine blister rust, an introduced disease, has caused rapid mortality of whitebark pine over the last 30 to 60 years. Keane and Arno (1993) reported that 42 percent of whitebark pine in western Montana had died in the previous 20 years with 89 percent of remaining trees being infected with blister rust. The ability of whitebark pine to reproduce naturally is strongly affected by blister rust infection; the rust kills branches in the upper cone bearing crown, effectively ending seed production.

Montana is currently experiencing a mountain pine beetle epidemic. Mountain pine beetle prefer large, older whitebark pine, which are the major cone producers. In some areas the few remaining whitebark that show the potential for blister rust resistance are being attacked and killed by mountain pine beetles, thus accelerating the loss of key mature cone-bearing trees.

Are whitebark pine seedlings and saplings present in the subalpine forests proposed for burning and logging? In the absence of fire, this naturally occurring whitebark pine regeneration would continue to function as an important part of the subalpine ecosystem. Since 2005, rust resistant seed sources have been identified in the Northern Rockies (Mahalovich et al 2006). Due to the severity of blister rust infection within the region, natural whitebark pine regeneration in the project area is

What surveys have been conducted to determine presence and abundance of white-bark pine re-generation? If whitebark pine seedlings and saplings are present, what measures will be taken to protect them? Please include an alternative that excludes logging in the presence of whitebark pine regeneration. Will restoration efforts include planting whitebark pine? Will planted seedling be of rust-resistant stock? Is rust resistant stock available? Would enough seedlings be planted to replace white-bark pine lost to fire activities? Have white pine blister rust surveys been accomplished? What is the severity of white pine blister rust in proposed action areas?

Since Whitebark pine are now listed under the ESA, you must formally consult with the FWS on the impact of the project on whitebark pine. To do this the Forest Service will need to have a complete and recent survey of the entire

project area for whitebark pine and consider planting whitebark pine as the best available science by Keene et al. states is the only way to get new whitebark pine to grow.

The Project area includes whitebark pine.

The project will be a NFMA violation because it will promote the demise of aspen stands by burning out conifers without providing protection from livestock browsing.

To save aspen some national forests limit cattle utilization of aspen to 20%. What is the current cattle utilization of aspen?

The agency is violating the NEPA by claiming that conifer encroachment needs to be removed to promote aspen, when livestock grazing is almost always the problem with aspen failure to regenerate.

The agency is violating the NEPA by promoting fuel reduction projects as protection of the public from fire, when this is actually a very unlikely event; the probability of a given fuel break to actually have a fire in it before the fuels reduction benefits are lost with conifer regeneration are extremely remote; forest drying and increased wind speeds in thinned forests may increase, not reduce, the risk of fire.

The agency is violating the NEPA by providing false reasons for prescribed burning to the public by claiming that insects and disease in forest stands are detrimental to the forest by reducing stand vigor (health) and increasing fire risk. There is no current science that demonstrates that insects and disease are bad for wildlife, including dwarf mistletoe, or that these increase the risk of fire once red needles have fallen.

The agency is violating the NEPA by claiming that prescribed burning is needed to create a diversity of stand structures and age classes.

The agency is violating the NEPA by using vague, un-measurable terms to rationalize the proposed burning to the public. How can the public measure “resiliency?” What are the specific criteria used to define resiliency, and what are the ratings for each proposed logging unit before and after treatment? How is the risk of fire as affected by the project being measured so that the public can understand whether or not this will be effective? How is forest health to be measured so that the public can see that this is a valid management strategy? What specifically constitutes a diversity of age classes, how is this to be measured, and how are proposed changes measured as per diversity? How are diversity measures related to wildlife (why is diversity needed for what species)? If the reasons for logging cannot be clearly identified and measured for the public, the agency is not meeting the NEPA requirements for transparency.

The agency is violating the NEPA by claiming that prescribed burning will benefit wildlife; the scoping document does not identify what habitat objectives will be addressed with burning, so the public is unable to understand how to comment on this claim.

The fundamental objective of NEPA is to ensure that an “agency will not act on incomplete information only to regret its decision after it is too late to correct.” *Marsh v. Or. Natural Resources Council*, 490 U.S. 360, 371 (1990) (citation omitted). In order to take the “hard look” required by NEPA, The BDNF must assess impacts and effects that include: “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative.” 40 C.F.R. § 1508.8.

Further, both data and analyses must be disclosed to the public in order to permit the “public scrutiny” that is considered “essential to implementing NEPA.” 40 C.F.R. § 1500.1(b). The Forest Service’s guidelines reiterate that making data and methods available to the public permits independent reanalysis by qualified members of the public. In this regard, NEPA “guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decision making process and the implementation of that decision.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 349. NEPA not only requires that Forest Service have detailed information on significant environmental impacts,

but also requires that the agency make this information available to the public for comment. *Inland Empire Public Lands Council v. U.S. Forest Service*, 88 F.3d 754, 757 (9th Cir. 1996).

Intentional burning or prescribed burning, produces massive amounts of deadly air pollution. Please see the attached paper by Maji et al. 2024 concluded America's "prescribed burns" annually cause about 10,000 premature deaths and \$100 billion in health costs, about the same as from wildfires.

How many premature deaths will this project cause and how much will it increase health care costs?

Please see the attached comments by Dr. Brian Moench about the negative effects of the South Tobacco Roots Project.

Please find attached a paper titled, "Smoke from US wildfires, prescribed burns caused premature deaths, billions in health damage."

Please find attached a paper by Reid et al. 2005 titled, "A review of biomass burning emissions part II: intensive physical properties of biomass burning particles"

The project area must have the specificity to both inform the public and ensure that BDNF took a hard look and made fully informed decisions in authorizing vegetation manipulation activities on the affected federal public lands.

The Forest Service should include accurate and detailed baseline information on each of the affected resources within the project area. This should include fine scale mapping of the following resources:

- Sage-grouse seasonal habitats (leks, with status; nesting; early and late brood rearing; winter) • Sage-grouse habitat management areas
- Pygmy rabbit populations and habitat
- All existing livestock infrastructure (fences, water developments, tanks, corrals, pipelines, troughs, etc.)
- All existing livestock exclosures
- Springs, seeps, and wet meadows with current condition
- Waterways and water quality designations (e.g. impaired waterways)
- Vegetation communities and past treatments
- Sensitive or special status plants
- Invasive plant species occurrences (including medusahead, Ventenata, cheatgrass, and noxious weeds)

2. Special Status Species

ESA-listed species:

According to US Fish and Wildlife Service Information for Planning and Consultation (IPAC) database, the species below occur or have the potential to be affected by the proposed action:

- ● Canada lynx - Listed Threatened

- ● Grizzly bear - Listed Threatened
- ● Monarch butterfly - Candidate for Listing
- ● Rufa Red Knot - Listed Threatened
- ● Wolverine - Listed Threatened
- ● Ute Ladies Tresses - Listed Threatened
- ● Whitebark Pine - Listed Threatened

Land management agencies need to be cautious when considering the use of tiering to older Environmental Impact Statements (EIS) or Environmental Assessments (EA) in situations involving Endangered Species Act (ESA) listed species. Unlike the National Environmental Policy Act (NEPA), which applies to both minor and major federal actions without demanding a specific result, the ESA is an action-forcing statute that focuses on the identified prohibited consequences of government action.

Livestock grazing management is widely recognized throughout the West as a factor in the same negative conditions this project is trying to rectify. Therefore, determining the stressors causing the degradation of understory functional groups in this case, particularly in

sagebrush grasslands where cattle concentrate, is an essential part of the Purpose and Need for the agency action and the development of Alternatives. Failing to consider a major impact like livestock not only results in incomplete analysis; it also precludes the reduction of livestock as a remedy for degraded vegetation communities. Understory functional groups can be improved in many instances by reducing or removing livestock grazing, which would meet the purpose and need for the project.

This suggestion is not “outside the scope” of the Proposed Action. It meets the stated purposes and needs for the project.

There is a need to reduce wildfire risk.

Objective 1: Reduce the potential of wildfire on National Forest System (NFS) lands spreading to adjacent private and public lands and resources as identified by the Madison County Community Wildfire Protection Plan.

Existing Condition: Lack of disturbance has created vegetation conditions that are conducive to crown fire initiation and spread that contribute to long range spotting of one-half mile or more. Fire management personnel and public safety, private homes and infrastructure, and adjacent Bureau of Land Management and State of Montana managed lands are at risk due to these vegetative conditions and resulting fire behavior.

Desired Condition and Need for Management Action: It is desirable to prevent wildfires originating on NFS lands

from spreading to adjacent private and public lands. To achieve this condition, fuel loading and connectivity need to be manipulated to reduce crown fire potential and increase the potential for fire response resources to engage in and manage wildfire incidents safely and successfully.

Please see the attached paper by Baker et al. 2023. This landmark study found a pattern of "Falsification of the Scientific Record" in government-funded wildfire studies.

This unprecedented **study** was published in the peer-reviewed journal Fire, exposing a broad pattern of scientific misrepresentations and omissions that have caused a "falsification of the scientific record" in recent forest and wildfire studies funded or authored by the U.S. Forest Service with regard to dry forests of the western U.S. Forest Service related articles have presented a falsified narrative that historical forests had low tree densities and were dominated by low-severity fires, using this narrative to advocate for its current forest management and wildfire policies.

However, the new study comprehensively documents that a vast body of scientific evidence in peer-reviewed studies that have directly refuted and discredited this narrative were either misrepresented or omitted by agency publications. The corrected scientific record, based on all of the evidence, shows that historical forests were highly variable in tree density, and included "open" forests as well as many dense forests. Further, historical wildfire severity was mixed and naturally included a substantial component

of high-severity fire, which creates essential snag forest habitat for diverse native wildlife species, rivaling old-growth forests.

These findings have profound implications for climate mitigation and community safety, as current forest policies that are driven by the distorted narrative result in forest management policies that reduce forest carbon and increase carbon emissions, while diverting scarce federal resources from proven community wildfire safety measures like home hardening, defensible space pruning, and evacuation assistance.

"Forest policy must be informed by sound science but, unfortunately, the public has been receiving a biased and inaccurate presentation of the facts about forest density and wildfires from government agencies," said Dr. William Baker in their press release announcing the publication of their paper.

"The forest management policies being driven by this falsified scientific narrative are often making wildfires spread faster and more intensely toward communities, rather than helping communities become fire-safe," said Dr. Chad Hanson, research ecologist with the John Muir Project in the same press release. "We need thinning of small trees adjacent to homes, not backcountry management."

"The falsified narrative from government studies is leading to inappropriate forest policies that promote removal of mature, fire-resistant trees in older forests, which causes

increased carbon emissions and in the long-run contributes to more fires" said, Dr. Dominick A., Chief Scientist, Wild Heritage, a Project of Earth Island Institute concluded in the press release.

The project is therefor in violation of NEPA, NFMA and the APA .

The Economic analysis says the project will lose over \$1.5 million. How is this a good use of taxpayer dollars? Please explain in more detail all of the costs of the project, e.g., does the economic analysis include all of the costs of the Forest Service employees salaries that have worked and will work on this project? Does it include the cost of fully obliterating all of the temporary roads? Does it include the costs of transporting Forest Service employees to the project area?

A new study by Dominick A. DellaSala et al. found that reviewed 1500 wildfires between 1984 and 2014

found that actively managed forests had the highest level of fire severity. Please find DellaSala et al.

attached. While those forests in protected areas burned, on average, had the lowest level of fire severity. In other words, the best way to reduce severe fires is to

protect homes from the Home out in the Home Ignition Zone, not log forests outside the home ignition zone, therefore the purpose and need of the project is not valid.

The best available science shows that Commercial Logging does not reduce the threat of Forest Fires. What best available science supports the action alternatives?

Please find Schoennagel et al (2004) attached.

Schoennagel states: “we are concerned that the model of historical fire effects and 20th-century fire suppression in dry ponderosa pine forests is being applied incorrectly across all Rocky Mountain forests, including where it is inappropriate.

Schoennagel et al (2004) states: “High-elevation subalpine forests in the Rocky Mountains typify

ecosystems that experience infrequent, high-severity crown fires []. . . The most extensive subalpine forest types are composed of Engelmann spruce (*Picea engelmannii*), subalpine fir (*Abies lasiocarpa*), and lodgepole pine (*Pinus contorta*), all thin-barked trees easily killed by fire. Extensive stand-replacing fires occurred historically at long intervals (i.e., one to many centuries) in subalpine forests, typically in association with infrequent high-pressure blocking systems that promote extremely dry regional climate patterns.”

Schoennagel et al (2004) states: “it is unlikely that the short period of fire exclusion has significantly altered the long fire intervals in subalpine forests.

Furthermore, large, intense fires burning under dry conditions are very difficult, if not impossible, to suppress, and such fires account for the majority of area burned in subalpine forests.

Schoennagel et al (2004) states: “Moreover, there is no consistent relationship between time elapsed since the last fire and fuel abundance in subalpine forests, further undermining the idea that years of fire suppression have caused unnatural fuel buildup in this forest zone.”

Schoennagel et al (2004) states: “No evidence suggests that spruce–fir or lodgepole pine forests have experienced substantial shifts in stand structure over recent decades as a result of fire suppression. Overall, variation in climate rather than in fuels appears to exert the largest influence on the size, timing, and severity of fires in subalpine forests []. We conclude that large, infrequent stand replacing fires are ‘business as usual’ in this forest type, not an artifact of fire suppression.”.

Schoennagel et al (2004) states: “Contrary to popular opinion, previous fire suppression, which was consistently effective from about 1950 through 1972,

had only a minimal effect on the large fire event in 1988 []. Reconstruction of historical fires indicates that similar large, high-severity fires also occurred in the early 1700s []. Given the historical range of variability of fire regimes in high-elevation subalpine forests, fire behavior in Yellowstone during 1988, although severe, was neither unusual nor surprising.”

Schoennagel et al (2004)(emphasis added) states:

“Mechanical fuel reduction in sub-alpine forests would not represent a restoration treatment but rather a departure from the natural range of variability in stand structure.”

Schoennagel et al (2004) states: “Given the behavior of fire in Yellowstone in 1988, fuel reduction projects probably will not substantially reduce the frequency, size, or severity of wildfires under extreme weather conditions.”

Schoennagel et al (2004) states: “The Yellowstone fires in 1988 revealed that variation in fuel conditions, as measured

by stand age and density, had only minimal influence on fire behavior. Therefore, we expect fuel- reduction treatments in high-elevation forests to be generally unsuccessful in reducing fire frequency, severity, and size, given the overriding importance of extreme climate in controlling fire regimes in this zone.

Logging also will not restore subalpine forests, because they were dense historically and have not changed significantly in response to fire suppression. Thus, fuel-reduction efforts in most Rocky Mountain sub- alpine forests probably would not effectively mitigate the fire hazard, and these efforts may create new ecological problems by moving the forest structure outside the historic range of variability.”

Likewise, Brown et al (2004) states: “At higher elevations, forests of subalpine fir, Engelmann spruce, mountain hemlock, and lodgepole or whitebark pine predominate. These forests also have long fire return intervals and contain a high proportion of fire sensitive trees. At periods averaging a few hundred years, extreme drought conditions would prime these forests for large, severe fires that would tend to set the forest back to an early successional stage, with a large carry-over of dead trees as a legacy of snags and logs in the regenerating forest natural ecological dynamics are largely preserved because fire suppression has been effective for less than one natural fire cycle.

Thinning for restoration does not appear to be appropriate in these forests. Efforts to manipulate stand structures to reduce fire hazard will not only be of limited effectiveness but may also move systems away

from pre-1850 conditions to the detriment of wildlife and water- sheds.” “Fuel levels may suggest a high fire ‘hazard’ under conventional assessments, but wildfire risk is typically low in these settings.”

Likewise, Graham et al (2004) states: “Most important, the fire behavior characteristics are strikingly different for cold (for example, lodgepole pine, Engelmann spruce, subalpine fir), moist (for example, western hemlock, western redcedar, western white pine), and dry forests. Cold and moist forests tend to have long fire- return intervals, but fires that do occur tend to be high- intensity, stand-replacing fires. Dry forests historically had short intervals between fi- res, but most important, the fires had low to moderate severity.”

According to Graham et al (2004), thinning may also increase the likelihood of wildfire ignition in the type of forests in this Project area: “The probability of ignition is strongly related to fine fuel moisture content, air temperature, the amount of shading of surface fuels, and the occurrence of an ignition source (human or lightning caused) There is generally a warmer, dryer microclimate in more open stands (fig. 9) compared to denser stands. Dense stands (canopy cover) tend to provide more shading of fuels, keeping relative humidity higher and air and fuel temperature lower than in more open stands. Thus, dense stands tend to maintain higher surface fuel moisture contents compared to more open stands. More open stands also tend to allow higher wind speeds that tend to dry fuels compared to dense stands. These factors may increase

probability of ignition in some open canopy stands compared to dense canopy stands.”

The Forest Plan weakened grizzly bear habitat protections by allowing new roadbuilding throughout the BDNF, without meaningful and permanent reclamation of other roads elsewhere in the Forest to compensate for the new road construction. This new management direction is a significant departure from former Forest Plan Amendment 19, which required the Forest Service to reclaim roads according to stringent requirements such that a reclaimed road would “no longer function as a road or trail.” Amendment 19 EA, app. D at 2.

Please find Proctor 2023, Proctor 2020, and Proctor 2019 attached for how to manage grizzly habitat.

Proctor 2020 concluded:

To achieve a balanced approach between human use and bear conservation, we recommend a place-based management plan developed by first identifying areas where bear foods are minimal versus abundant, allowing greater open road densities in poorer habitats, and reducing access to areas with high-quality food resources. Especially for bear populations where conservation

management or recovery is a priority, we recommend backcountry road densities be maintained, on average, below approximately 0.6 km/km² and secure habitat of >60% (as per Proctor et al. 2019). We further recommend restricting motorized human access in areas of high-quality food resources, clustered to ensure sufficiently large areas for bears separated from motorized access areas. Larger patches of secure habitat are beneficial to avoid small habitat patches (<5–10km²) sometimes created by clustered or evenly spaced roads. We found benefit to bears from huckleberry patches larger than 5 ha. Industrial activities such as timber harvest and prescribed burning that open forest canopy may also increase huckleberry supply if other factors align (e.g., appropriate soil, slope, precipitation, solar incidence), but our results suggest that benefits of increased bear foods are not fully realized unless access to the associated roads is restricted. Specific to our focal area, targets for access management to optimize the amount of secure habitat include the Yahk, and portions of the South Selkirk, Central Purcell, and Central Selkirk population units where road densities are high and huckleberry patches are present.

This project is now following Proctor and therefore is not following the best available science and is in violation of NEPA, NFMA, the ESA and the APA.

New roadbuilding in the Forest without meaningful reclamation to ensure no net increase in the road system presents a significant threat to grizzly bears, because motor vehicle users and other recreationists can trespass on the supposedly “impassable” roads and thus encroach on grizzly bear habitat. Further, even unused roads cause detrimental impacts to grizzly bear survival and reproduction, because grizzly bears are displaced from roaded habitat, regardless of whether the roads receive public or administrative use. However, in concluding that the Forest Plan will not jeopardize the species, FWS’s Revised Biological Opinion failed to adequately examine adverse impacts to grizzly bears from unauthorized motorized use on roads closed according to the Forest Plan’s weaker closure standards; failed to consider the displacement impacts caused by roads even when they do not receive motorized use; and failed to account for increased roadbuilding enabled by the Forest Service’s abandonment of stringent road-reclamation requirements.

Please find attached the paper titled, “The importance of natural forest stewardship in adaptation planning in the United States” by Faison et al 2023 which found that protecting more forests with natural stewardship is a cost effective way to harness the inherent adaptation and mitigation powers in forests and ensure that they are at their most functional to regulate planetary processes. Which is the opposite of the purpose and need of this project.

Air quality

Please evaluate whether project activities could affect air quality, and determine what measures are needed to prevent or reduce impacts. Given the proximity of a Class I Area and towns to the project area, the EPA also recommends identifying all sensitive receptors in the vicinity, such as population centers, non-attainment areas, Class I Areas, and Class II Areas with sensitive resources, and noting regional air quality trends and air quality trends at nearby Class I Areas over the past several years.

Please examine how the burning will affect people and wildlife, especially birds.

Does the project comply with the Migratory Bird Treaty Act?

Thank you for your consideration of our concerns.

Sincerely yours,

Mike Garrity

/s/

Executive Director

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