May 21. 2023

Objection against the Bayhorse Project V2

To: Objection Reviewing Officer

USDA Forest Service

Intermountain Region

324 25th Street

Ogden, Utah 84401

1. Objector's Name and Address:

Lead Objector

Mike Garrity,

Director, Alliance for the Wild Rockies (AWR),

[redacted]

[redacted]

[redacted]

And for

Sara Johnson, Director, Native Ecosystems Council (NEC),

[redacted];

And for

Katie Fite, Wildlands Defense, [redacted]

[redacted]

[redacted]

Signed this 21st day of May, 2023 for Objectors

/s/

Michael Garrity

2. Name of the Proposed Project

Bayhorse Project V2

3. Location of Project, Name and Title of Responsible Official

Project Location: The project area is set in primarily timbered stands within the Bayhorse watershed of the Salmon-Challis National Forest, Challis-Yankee Fork Ranger District, Custer County, Idaho.

Legal Description:The Bayhorse project is in Custer County approximately 10 air miles southwest of the City of Challis. The legal description of the project area is: Township 13N, Range 17E, sections 25, 35, and 36; Township 13N Range 18E, sections 17,18,19,20,21,22,23,24,25,26,27,28,29,30,31, 32;

Township 12N Range 17E, sections 1, 2,12, and 13; and Township 12N, Range 18E, sections 4, 5, 6, 7, 8, 9, and 16, 17, 18, 19, 20, Boise, Meridian, Custer County, Idaho.

Proposed actions are broken into two basic types: actions where activity locations are known and actions that could occur when certain conditions are present. The following actions have been identified to meet the purpose and need.

Roads

•Construct up to eight additional pullouts along Forest Road #40051 and #40328 by widening the one-lane roads to allow for passage of oncoming traffic(Figure 7). These pullouts are expected to be less than one acre in area.

•Address drainage issues by installing culverts, French drains, or permeable mats to reduce erosion issues and associated maintenance costs on Forest Road #40051 and #40382 at the four known spring crossings.

•Evaluate fish passage and alignment issues of existing culverts on FS #40051 and #40382. Correct deficiencies by removing, resetting, or adding instream structures.

•Reroute the approach of FS #40025 from junction with FS #40051 to the Bayhorse Creek crossing to create a more favorable grade with drainage structures. Current route is a 431-foot 12% grade drop directly into the creek with no drainage structures in place. The proposed reroute would be 6-8% grade for approximately 1,300 feet and

have maintainable drainage structures. The reconstruction is expected to be less than one acre in area.

•Decommission the old approach by ripping to break up compaction, placement of water bars, then seeding with native seed mix, on FS #40025 to the Bayhorse Creek crossing.•Either harden the ford or install a culvert of appropriate size to handle high flow and allow fish passage on FS #40025 where it crosses Bayhorse Creek.
•For the three other known ford crossings on Forest Roads FS #40025 and FS #40023, place temporary culverts and/or harden the existing fords with rock prior to any hauling of forest product.

•Construct temporary roads as needed off FS #400023 and #40025, but should not exceed over 2,000 feet in length for any single road or more than 4 miles total across the entire project

•Construct temporary roads as needed off FS #40051 and FS #40328 to move landing operations off the main roads or out of Riparian Habitat Conservation Areas (RHCA). Temporary roads should not exceed 500 feet in length and construct in a manner to take the most direct route.•Utilize existing mining road prism #U141-19BY on the west side of Bayhorse Creek as a temporary road off FS #400879. Length is approximately 1,600 feet (Figure 4).

•Restore the three-ford crossing on FS #40023 and FS #40025 to single width by placement of physical barriers, and revegetate with hydric forbs, grasses, and riparian shrubs on the user created crossings.

Timber•Focus commercial timber harvest and opportunities for personal use forest product in the four following locations shown in Figure 6 (737 acres):

Area on west side of Bayhorse Creek after crossing the Forest Boundary dissected by FS # 40879, where stand is dominated by Douglas-fir oArea on north side of FS #40051 above the ore house to administrative boundary of Bayhorse Lake recreation site, where stand is a mixture of Douglas-fir transitioning into lodgepole pine.

Area on north side of FS #40382 road to the administrative boundary with Little Bayhorse Lake recreation site, where stand is dominated by lodgepole pineoArea within ½ mile of FS #40025 and its cherry stems, FS #40022 and FS #40023 all dominated by lodgepole pine•If within the four designated areas, forest stand residual volume is more than eight hundred cubic feet (CCF) per acre and access is favorable, allow for harvest using the following silviculture treatments.

For Douglas-fir forest type, employ initiation of a shelterwood system. Shelterwood system will reduce canopy closure to a range of 40 to 60% leaving mature seed trees on a rough spacing of 27- to 33-feet apart or 40 to 60 trees per acre.oFor lodgepole pine forest types, employ a shaded fuel break by removing material from below leaving mature seed producing trees on 27 feet spacing or 60 trees per acre.•If within the four designated areas, residual volume is not more than eight CCF per acre or access for commercial harvest is not favorable, identify forest structure outlined inTable 1 (Ohara, Lathan , Heesburg, & Smith , 1996). Based on the structure phase the stand is in, employ the following options.

For structure in the stand initiation, stem exclusion open canopy, or old forest single story phases, allow stands to proceed down natural paths.oFor structure in the stem exclusion closed canopy, understory reiniation, or young forest multi-story phases, thin and/or broadcast burn or let stand continue down natural paths.

•In the area around Bayhorse and Little Bayhorse recreation sites, hand thin from below. Thin to approximately 27 feet spacing and remove ladder fuels. Material from thinning will be hand pile and burned later.

Name and Title of Responsible Official

District Ranger Heath S Perrine is the Responsible Official for this project.

4. Connection between previous comments and those raised in the Objection:

NEC, Wildlands Defense and AWR provided comments on the proposed project on April 2, 2020, on November 12, 2020 and on July 8, 2022.

1)We wrote in our comment on July 8, 2022 comments and similar comments in our previous comments.

“These comments are largely questions in regards to how the Bayhorse Project is going to be implemented, given that the draft EA continues to provide almost no actual information of project design or implementation. We hope the agency will provide complete and thorough responses to this request for clarification ...The specific habitat features targeted with this burning are never defined.

Instead, the only goal is to kill understory and some overstory trees."

The Forest Service did not respond.

This is a violation of NEPA.

There were no wildlife surveys. Wildlife surveys are difficult and time consuming. To have a high-quality survey, the detection probability needs to be provided to the public, as well as the decision maker, so that all these entities have some idea of how effective these surveys will be to protect and maintain wildlife habitat. In the case of the Sage Hen project, this is especially important as almost the entire project area will have wildlife habitat altered, and in general, removed. It is not clear how any reasonable level of wildlife habitat can be maintained with the entire landscape affected and habitat for most wildlife species removed.

Thus the description and mapping of where mitigation measures are required is essential public information. If these important wildlife areas are not identified based on valid wildlife surveys, then impacts are unknown, even though this information can be obtained by the agency.

It is not clear how vast acres of national forest lands can be intensively manipulated without a single wildlife management objective identified. This means that the agency cannot be meeting the NFMA requirements to

maintain a diversity of wildlife. And it also means that the stated purpose and need is invalid, and a violation of the NEPA, because vegetation and fuels management have a direct impact on wildlife, which means that wildlife management also has to be included as a purpose and need. In effect, the purpose and need of the project is to remove wildlife habitat, but this is never identified to the public, in violation of the NEPA.

The agency is violating the NEPA by using vague, unmeasureable terms to rationalize the proposed logging 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 need-ed 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.

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 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 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. DellaSala, Chief Scientist, Wild Heritage, a Project of Earth Island Institute concluded in the press release.

Fuels and wildlife habitat are one and the same.

The Forest Plan has objectives and standards for wildlife habitat. These objectives need to be included in the stated purpose and need for the Big A project. A project must comply with the entire Forest Plan, not just parts of it. There is no information in the scoping notice about the Forest Plan standards for wildlife, including for this project area. The agency the needs to identify how the project has been designed to meet these wildlife habitat needs required by the Forest Plan. The existing void between the agency's goals for the project, and wildlife habitat management required by the Forest Plan, need to be corrected. To not do so in a violation of NEPA, NFMA, the APA and the ESA.

Not only will the public be denied any specific information on project impacts on wildlife and wildlife habitat, but the public could not possibly do even a limited review of the proposed project on-the-ground. Although the project will be implemented in a piecemeal fashion, the decision will not be implemented in this piecemeal fashion. The decision will exclude any future public input on the project for the next 20 years. Eliminating public involvement is clearly a violation of the NEPA.

Remedy: Please write an Environmental Impact Statement that fully complies with NEPA, NFMA, the APA and the ESA. The agency needs to provide the public with the specific information on what they are going to do, where they are going to do it and when they are going to do it in

the project area, including a measure of detection probability for all wildlife surveys, as the NEPA requires that high-quality information be provided to the public.

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

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 re- view 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."

We wrote in our comments:
How the project will impact he habitat for the threatened bull trout, including critical habitat, is not identified. This important information needs to be identified to the public in the NEPA process, including specific information on how habitat for this threatened fish has been managed in the past; it seems highly likely that this project represents a violation of the Endangered Species Act (ESA) and the Cleanwater Act in regards to bull trout.

The EA states the project will have no effect on bull trout and ‚May Effect but not likely affect bull trout critical habitat. This make no sense. It appears the Forest Service is saying that we have already destroyed bull trout critical habitat so much that there are no bull trout there. The duty of the Forest Service is to recover bull trout critical habitat and bull trout not continue to harm bull trout critical habitat so no bull trout can ever live there again. The project is in violation of NEPA, NFMA, the APA, the ESA, and the Cleanwater Act.

Overall, it is not clear how this project has been designed with bull trout in mind.”

The introduction of sediment in excess of natural amounts can have multiple adverse effects on bull trout and their

habitat (Rhodes et al. 1994, pp. 16-21; Berry, Rubinstein, Melzian, and Hill 2003, p. 7). The effect of sediment beyond natural background conditions can be fatal at high levels. Embryo survival and subsequent fry emergence success have been highly correlated to percentage of fine material within the stream-bed (Shepard et al. 1984, pp. 146, 152). Low levels of sediment may result in sublethal and behavioral effects such as increased activity, stress, and emigration rates; loss or reduction of foraging capability; reduced growth and resistance to disease; physical abrasion; clogging of gills; and interference with orientation in homing and migration (McLeay et al. 1987a, p. 671; Newcombe and MacDonald 1991, pp. 72, 76, 77; Barrett, Grossman, and Rosenfeld 1992, p. 437; Lake and Hinch 1999, p. 865; Bash et al. 2001n, p. 9; Watts et al. 2003, p. 551; Vondracek et al. 2003, p. 1005; Berry, Rubinstein, Melzian, and Hill 2003, p. 33). The effects of increased suspended sediments can cause changes in the abundance and/or type of food organisms, alterations in fish habitat, and long-term impacts to fish populations (Anderson et al. 1996, pp. 1, 9, 12, 14, 15; Reid and Anderson 1999, pp. 1, 7-15). No threshold has been determined in which fine sediment addition to a stream is harmless (Suttle et al. 2004, p. 973). Even at low concentrations, fine-sediment deposition can decrease growth and survival of juvenile salmonids.

Aquatic systems are complex interactive systems, and isolating the effects of sediment to fish is difficult (Castro

and Reckendorf 1995d, pp. 2-3). The effects of sediment on receiving water ecosystems are complex and multi-dimensional, and further compounded
by the fact that sediment flux is a natural and vital process for aquatic systems (Berry, Rubinstein, Melzian, and Hill 2003, p. 4). Environmental factors that affect the magnitude of sediment impacts on salmonids include duration of exposure, frequency of exposure, toxicity, temperature, life stage of fish, angularity and size of particle, severity/ magnitude of pulse, time of occurrence, general condition of biota, and availability of and access to refugia (Bash et al. 2001m, p. 11). Potential impacts caused by excessive suspended sediments are varied and complex and are often masked by other concurrent activities (Newcombe 2003, p. 530). The difficulty in determining which environmental variables act as limiting factors has made it difficult to establish the specific effects of sediment impacts on fish (Chapman 1988, p. 2). For example, excess fines in spawning gravels may not lead to smaller populations of adults if the amount of juvenile winter habitat limits the number of juveniles that reach adulthood. Often there are multiple independent variables with complex inter-relationships that can influence population size.

The ecological dominance of a given species is often determined by environmental variables. A chronic input of sediment could tip the ecological balance in favor of one species in mixed salmonid populations or in species communities composed of salmonids and nonsalmonids

(Everest et al. 1987, p. 120). Bull trout have more spatially restrictive biological requirements at the individual and population levels than other salmonids (USFWS (U.S. Fish and Wildlife Service) 1998, p. 5). Therefore, they are especially vulnerable to environmental changes such as sediment deposition.

Aquatic Impacts

• Classify and analyze the level of impacts to bull trout and westslope cutthroat trout in streams, rivers and lakes from sediment and other habitat alterations:

Lethal: Direct mortality to any life stage, reduction in egg-to-fry survival, and loss of spawning or rearing habitat. These effects damage the capacity of the bull trout to produce fish and sustain populations.

Sublethal: Reduction in feeding and growth rates, decrease in habitat quality, reduced tolerance to disease and toxicants, respiratory impairment, and physiological stress. While not leading to immediate death, may produce mortalities and population decline over time.

Behavioral: Avoidance and distribution, homing and migration, and foraging and predation. Behavioral effects change the activity patterns or alter the kinds of activity usually associated with an unperturbed environment. Behavior effects may lead to immediate death or population decline or mortality over time.

Direct effects:

Gill Trauma - High levels of suspended sediment and turbidity can result in direct mortality of fish by damaging and clogging gills (Curry and MacNeill 2004, p. 140).

Spawning, redds, eggs - The effects of suspended sediment, deposited in a redd and potentially reducing water flow and smothering eggs or alevins or impeding fry emergence, are related to sediment particle sizes of the spawning habitat (Bjornn and Reiser 1991, p. 98).

Indirect effects:
Macroinvertebrates - Sedimentation can have an effect on bull trout and fish populations through impacts or alterations to the macroinvertebrate communities or populations (Anderson, Taylor, and Balch 1996, pp. 14-15).

Feeding behavior - Increased turbidity and suspended sediment can affect a number of factors related to feeding for salmonids, including feeding rates, reaction distance, prey selection, and prey abundance (Barrett, Grossman, and Rosenfeld 1992, pp. 437, 440; Henley, Patterson, Neves, and Lemly 2000, p. 133; Bash et al. 2001d, p. 21).

Habitat effects - All life history stages are associated with complex forms of cover including large woody debris, undercut banks, boulders, and pools. Other habitat characteristic important to bull trout include channel and hydrologic stability, substrate composition,

temperature, and the presence of migration corridors (Rieman and McIntyre 1993, p. 5).

Physiological effects - Sublethal levels of suspended sediment may cause undue physiological stress on fish, which may reduce the ability of the fish to perform vital functions (Cederholm and Reid 1987, p. 388, 390).

Behavioral effects - These behavioral changes include avoidance of habitat, reduction in feeding, increased activity, redistribution and migration to other habitats and locations, disruption of territoriality, and altered homing (Anderson, Taylor, and Balch 1996, p. 6; Bash et al. 2001t, pp. 19-25; Suttle, Power, Levine, and McNeely 2004, p. 971).

• How will this project affect native fish? What is the current condition in the riparian areas?
How will this project protect rather than adversely impact fish habitat and water quality? No logging or road building should be done in riparian areas. There should not be any stream crossings. Roads should be decommissioned and removed, not upgraded and rebuilt.
• Hauer, et al. (1999) found that bull trout streams in wilderness habitats had consistent ratios of large to small and attached to unattached large woody debris. However, bull trout streams in

watersheds with logging activity had substantial variation in these ratios. They identified logging as creating the most substantive change in stream habitats.

“The implications of this study for forest managers are twofold: (i) with riparian logging comes increased unpredictability in the frequency of size, attachment, and stability of the LWD and (ii) maintaining the appropriate ratios of size frequency, orientation, and bank attachment, as well as rate of delivery, storage, and transport of LWD to streams, is essential to maintaining historic LWD characteristics and dynamics. Our data suggest that exclusion of logging from riparian zones may be necessary to maintain natural stream morphology and habitat features. Likewise, careful upland management is also necessary to prevent cumulative effects that result in altered water flow regimes and sediment delivery regimes. While not specifically evaluated in this study, in general, it appears that patterns of upland logging space and time may have cumulative effects that could additionally alter the balance of LWD delivery, storage, and transport in fluvial systems.

These issues will be critical for forest managers attempting to prevent future detrimental environmental change or setting restoration goals for degraded bull trout spawning streams.”

Muhlfeld, et al. (2009) evaluated the association of local habitat features (width, gradient, and elevation), watershed characteristics (mean and maximum summer water temperatures, the number of road crossings, and road density), and biotic factors (the distance to the source of hybridization and trout density) with the spread of hybridization between native westslope cutthroat trout Oncorhynchus clarkii lewisi and introduced rainbow trout O. mykiss in the upper
Flathead River system in Montana and British Columbia.

They found that hybridization was positively associated with mean summer water temperature and the number of upstream road crossings and negatively associated with the distance to the main source of hybridization. Their results suggest that hybridization is more likely to occur and spread in streams with warm water temperatures, increased land use disturbance, and proximity to the main source of hybridization.

If the Forest Service wants to fix their inadequate anaylsis, They must write an EIS that uses the best available science to analyze how logging riparian habitat will impact native fish and water quality.

The following article from the 9/25/15 Missoulian disagrees with the Forest Service and says it is habitat destruction causing bull trout declines.

http://missoulian.com/news/local/montana-fwp-biologist-despite-successes-bull-trout-populations-still-in/article_2798e4c6-0658-522f-be4c-4274f903129e.html

Montana FWP biologist: Despite successes, bull trout populations still in peril Ladd Knotek is disturbed by the lack of attention being paid to the many western Montana streams where bull trout populations are struggling to survive.

The fisheries biologist with Montana Fish, Wildlife and Parks knows people love to latch on to the success stories from streams like Fish Creek and several Blackfoot tributaries, where bull trout populations are viable.

"But what nobody talks about is all these other populations that, 50 years ago, these were all viable populations,"
he said Tuesday as part of a presentation on bull trout in Rattlesnake Creek. "You know, Gold Creek, Belmont Creek,
Trout Creek, there's a whole list of them. There's a whole bunch of them that are just basically on the verge of disappearing. And what we like to talk about are the ones that are doing OK. But in places like Lolo Creek and some
Bitterroot tributaries, bull trout there are just barely hanging on."

Bull trout have faced a long, slow decline over the past century, to the point where they are now listed as a threatened species under the Endangered Species Act. Success is a relative term even in the places where they are doing well.

"They're nowhere near what they were historically," Knotek said of the tributaries where the populations are relatively healthy. "But they have a fair number of adult spawners coming in. People see them in the fishery. But we need to start looking at all these other tributaries that used to be bull trout spawning tributaries and recognize what's going on in the bigger picture. We're just looking at a very thin slice instead of looking at the whole thing. A lot of this stuff is just symptoms of what's going on at the larger scale.

Bull trout are the canary. They're very susceptible to environmental change, whether it's temperature, whether it's physical, whether it's sediment. There's something going on in these drainages and the symptoms we're seeing are the bull trout distribution is shrinking, we're losing populations and we're seeing expansion of nonnatives."

Bull trout – which are native to the Columbia River Basin and are only found west of the Continental Divide in Montana – need clear, cold mountain waters to spawn and require clean gravel beds, deep pools, complex cover, good in-stream flows in the fall and large systems of interconnected waterways for their migrations. Rising temperatures and falling water levels trigger their migration to spawning tributaries in June, and they hang out until they spawn in the fall. They are much more susceptible to warming temperatures and habitat change than nonnative species such as brown and rainbow trout.

Knotek was the featured presenter Friday for a discussion on restoration efforts and the importance of Rattlesnake Creek as a bull trout habitat. The event was organized by the Clark Fork Coalition, a nonprofit in Missoula that aims to protect water quality for the 22,000-square-mile Clark Fork River Basin.

Knotek explained that because Rattlesnake Creek is south-facing and doesn't have much groundwater recharging, it

has much less of a buffer against a warming climate than other streams.

"The water temperatures are significantly higher than they were 10 years ago," he said. "The types of temperatures we're seeing in late summer and early fall, we never saw those 10 to 15 years ago. Water temperature is driving a lot of what we're talking about. It's definitely stressful on fish. It doesn't spell good news for bull trout."

Knotek said it's a common misconception that brown trout and rainbows are driving out bull trout, and he explained that those nonnative species are simply moving in because the native species is dying off.

"It's replacement rather than displacement," he said.

In Rattlesnake Creek, biologists have conducted redd counts of the migratory population in the lower reaches since 1999. There is a healthy resident population in the upper reaches, but researchers are more interested in the fish that actually migrate to the Clark Fork River.

The results have been disturbing.

They found a high of 36 in 2006 and 24 in 2008, before Milltown Dam was removed. There was an expected drop to
just four redds – spawning beds – after the dam was removed in 2009, because of the massive disturbance. However, the number of redds has not bounced back since,
and researchers found just six last year.

"That tells us that it wasn't just the dam removal that caused it, because they should be recovering by now," Knotek said. "And there are lots of populations like this stream that are not doing well but need more attention. We've got a problem here, but it's not inconsistent with other tributaries. There's something bigger going on."

Knotek said that Rattlesnake Creek was historically braided before the area was developed, and that eliminated a lot of the back channels the juvenile fish need to grow.

"You need complexity," he said. "When you have a straight
ditch in a system that used to be braided, it ain't good."

He's also seen much more algae growth in the upper sections, something that is obviously related to higher temperatures and added nutrients.

"We have browns and rainbows progressing upstream, and we attribute that to water temperature," he said. "That's consistent with other streams, too. It's very obvious something is going on here."

Knotek believes that a "ramping up" of current conservation work is the only thing that can save bull trout populations. Fish screens, the removal of dams, awareness of anglers and water conservation – especially by people using stream irrigation to water their lawns – is crucial.

"Bull trout are the canary," he said. "But there are a lot of other species that we could be looking at as indicators as well. A lot of research needs to be done. There's a lot of species being affected."

As Knoteck pointed out, bull trout need clear, cold mountain waters to spawn and require clean gravel beds, deep pools, complex cover, good in-stream flows in the fall and large systems of interconnected waterways for their migrations.

The project is in violation of the Clearwater Act, NFMA, NEPA, the ESA, the Forest Plan and the APA because it the project is not working to recover bull trout and bull trout critical habitat. Sediment and stream degradation from the on going grazing is not addresses and the project will put more sediment into bull trout habitat.

Critical habitat receives protection under section 7 of the Endangered Species Act through the prohibition against destruction or adverse modification of critical habitat with regard to actions carried out, funded, or authorized by a Federal agency. There is no exception for the short run.

The EA does not characterize or evaluate the project area watersheds based on the Watershed Condition Framework or the baseline condition developed for bull trout. We do not know what the current condition of streams are in the project area, i.e., are they functioning acceptably, at risk or at unacceptable risk? And for what ecosystem parameters? How will this project affect stream function, i.e., degrade, maintain, restore?

- The project relies on BMPs to protect water quality and fish habitat. First, there is no evidence that application of BMPs actually protects fish habitat and water quality.
- Second, BMPs are only maintained on a small percentage of roads or when there is a logging project.

BMPs fail to protect and improve water quality because of the allowance for "naturally occurring degradation." In Montana, "naturally-occurring degradation" is defined in ARM 16.20.603(11)
as that which occurs after application of "all reasonable land, soil and water conservation practices have been applied." In other words, damage caused directly by sediment (and other pollution) is acceptable as long as BMPs are applied. The result is a never-ending, downward spiral for water quality and native fish.
Here's how it works:

- Timber sale #1 generates sediment damage to a bull trout stream, which is "acceptable" as long as BMPs are applied to project activities.
- "Natural" is then redefined as the stream condition after sediment damage caused by Timber Sale #1.
- Timber sale #2 – in the same watershed – sediment damage would be acceptable if BMPs are
applied again – same as was done before.
- "Natural" is again redefined as the stream condition after sediment damage caused by Timber
Sale#2.

The downward spiral continues with disastrous cumulative effects on bull trout, westslope cutthroat trout and most aquatic life. BMPs are not "reasonable." Clearly, beneficial uses are not being protected. In Montana, state water quality policy is not being followed. § 75-5-101 et seq. and ARM 16.20.701 et seq.

• The EA does not include an analysis of climate change and how that will impact the project.
• The Purpose and Need for this project is solely to prop up the timber industry at the expense of
wildlife, fish and water quality. This project is a money-loser, the logging portion should be
dropped and the road decommissioning in Alternative 4 should be implemented.

The U.S. Fish and Wildlife Service found that bull trout are exceptionally sensitive to the direct, indirect, and cumulative effects of roads. Dunham and Rieman demonstrated that disturbance from roads was associated with reduced bull trout occurrence. They concluded that conservation of bull trout should involve protection of larger, less fragmented, and less disturbed (lower road density) habitats to maintain important strongholds and sources for naturally recolonizing areas where populations have been lost. (USFS 2000, page 3-82.

Hitt and Frissell showed that over 65% of waters that were rated as having high aquatic biological integrity were found within wilderness-containing subwatersheds.

Trombulak and Frissell concluded that the presence of roads in an area is associated with negative effects for both terrestrial and aquatic ecosystems including changes in species composition and population size. (USFS 2000, pages 3-80-81).

"High integrity [forests] contain the greatest proportion of high forest, aquatic, and hydrologic integrity of all are dominated by wilderness and roadless areas [and] are the least altered by management. Low integrity [forests have] likely been altered by past management are extensively roaded and have little wilderness." (USFS 1996a,

pages 108, 115 and 116).

"Much of this [overly dense forest] condition occurs in areas of high road density where the large, shade-intolerant, insect-, disease- and fire-resistant species have been harvested over the past 20 to 30 years. Fires in unroaded areas are not as severe as in the roaded areas because of less surface fuel, and after fires at least some of the large trees survive to produce seed that regenerates the area. Many of the fires in the unroaded areas produce a forest structure that is consistent with the fire regime, while the

fires in the roaded areas commonly produce a forest structure that is not in sync with the fire regime. In general, the effects of wildfires in these areas are much lower and do not result in the chronic sediment delivery hazards exhibited in areas that have been roaded." (USFS 1997a, pages 281-282).

"Increasing road density is correlated with declining aquatic habitat conditions and aquatic integrity An intensive review of the literature concludes that increases in sedimentation [of streams] are unavoidable even using the most cautious roading methods." (USFS 1996b, page 105).

"This study suggests the general trend for the entire Columbia River basin is toward a loss in pool habitat on managed lands and stable or improving conditions on unmanaged lands." (McIntosh et al 1994).

"The data suggest that unmanaged systems may be more structurally intact (i.e., coarse woody debris, habitat diversity, riparian vegetation), allowing a positive interaction with the stream processes (i.e., peak flows, sediment routing) that shape and maintain high-quality fish habitat over time." (McIntosh et al 1994).

"Although precise, quantifiable relationships between long-term trends in fish abundance and land-use practices are difficult to obtain (Bisson et al. 1992), the body of literature concludes that land-use practices cause the simplification of fish habitat.” (McIntosh et al 1994).

"Land management activities that contributed to the forest health problem (i.e., selective harvest and fire suppression) have had an equal or greater effect on aquatic ecosystems.

If we are to restore and maintain high quality fish habitat, then protecting and restoring aquatic and terrestrial ecosystems is essential." (McIntosh et al 1994).

"Native fishes are most typically extirpated from waters that have been heavily modified by human activity, where native fish assemblages have already been depleted, disrupted, or stressed []." (Moyle et al 1996).

"Restoration should be focused where minimal investment can maintain the greatest area of high-quality habitat and diverse aquatic biota. Few completely roadless, large watersheds remain in the Pacific Northwest, but those that continue relatively undisturbed are critical in sustaining sensitive native species and important ecosystem processes

(Sedell, et. al 1990; Moyle and Sato 1991; Williams 1991; McIntosh et al. 1994;

Frissell and Bayles 1996). With few exceptions, even the least disturbed basins have a road network and history of logging or other human disturbance that greatly magnifies the risk of deteriorating riverine habitats in the watershed." (Frissell undated). Also please see the attached comments by Frissell on the bull trout recovery plan.

"[A]llocate all unroaded areas greater than 1,000 acres as Strongholds for the production of clean water, aquatic and riparian-dependent species. Many unroaded areas are isolated, relatively small, and most are not protected from road construction and subsequent timber harvest, even in steep areas. Thus, immediate protection through allocation of the unroaded areas to the production of clean water, aquatic and riparian-dependent resources is necessary to prevent degradation of this high quality habitat and should not be postponed." (USFWS et al 1995).

"Because of fire suppression, timber harvest, roads, and white pine blister rust, the moist forest PVG has experienced great changes since settlement of the project

area by Euroamericans. Vast amounts of old forest have converted to mid seral stages."(USFS/BLM 2000, page 4-58).

"Old forests have declined substantially in the dry forest PVG []. In general, forests showing the most change are those that have been roaded and harvested. Large trees, snags, and coarse woody debris are all below historical levels in these areas."

(USFS/BLM 2000, page 4-65).

"High road densities and their locations within watersheds are typically correlated with areas of higher watershed sensitivity to erosion and sediment transport to streams. Road density also is correlated with the distribution and spread of exotic annual grasses, noxious weeds, and other exotic plants. Furthermore, high road densities are correlated with areas that have few large snags and few large trees that are resistant to both fire and infestation of insects and disease. Lastly, high road densities are correlated with areas that have relatively high risk of fire occurrence (from human caused fires), high hazard ground

fuels, and high tree mortality." (USFS 1996b, page 85, parenthesis in original).

In simpler terms, the Forest Service has found that there is no way to build an environmentally benign road and that roads and logging have caused greater damage to forest ecosystems than has the suppression of wildfire alone. These findings indicate that roadless areas in general will take adequate care of themselves if left alone and unmanaged, and that concerted reductions in road densities in already roaded areas are absolutely necessary.

Indeed, other studies conducted by the Forest Service indicate that efforts to “manage" our way out of the problem are likely to make things worse. By "expanding our efforts in timber harvests to minimize the risks of large fire, we risk expanding what are well established negative effects on streams and native salmonids. The perpetuation or expansion of existing road networks and other activities might well erode the ability of [fish] populations to respond to the effects of large scale storms and other disturbances that we clearly cannot change." (Reiman et al 1997).

The following quotes demonstrate that trying to restore lower severity fire regimes and forests through logging and other management activities may make the situation worse, compared to allowing nature to reestablish its own equilibrium. These statements are found in “An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins, Volume 3 (ICBEMP):

“Since past timber harvest activities have contributed to degradation in aquatic ecosystems, emphasis on timber harvest and thinning to restore more natural forests and fire regimes represent risks of extending the problems of the past.” (ICBEMP page 1340).

“Proposed efforts to reduce fuel loads and stand densities often involve mechanical treatment and the use of prescribed fire. Such activities are not without their own drawbacks -- long-term negative effects of timber harvest activities on aquatic ecosystems are well documented (see this chapter; Henjum and others 1994; Meehan 1991; Salo and Cundy 1987).” (ICBEMP page 1340).

“Species like bull trout that are associated with cold, high elevation forests have probably persisted in landscapes that were strongly influenced by low frequency, high severity fire regimes. In an evolutionary sense, many native fishes are likely well acquainted with large, stand-replacing fires.” (ICBEMP page 1341).

“Attempts to minimize the risk of large fires by expanding timber harvest risks expanding the well-established negative effects on aquatic systems as well. The perpetuation or expansion of existing road networks and other activities might well erode the ability of populations to respond to the effects of fire and large storms and other disturbances that we cannot predict or control (National Research Council 1996). (ICBEMP page 1342).

“Watersheds that support healthy populations may be at greater risk through disruption of watershed processes and degradation of habitats caused by intensive management than through the effects of fire.” (ICBMP page 1342).

"Timber harvest, through its effects on forest structure, local microclimate, and fuels accumulation, has increased fire severity more than any other recent human activity. If

not accompanied by adequate reduction of fuels, logging (including salvage of dead and dying trees) increases fire hazard by increasing surface dead fuels and changing the local microclimate. Fire intensity and expected fire spread rates thus increase locally and in areas adjacent to harvest". (USFS 1996c, pages 4-61-72).

"Logged areas generally showed a strong association with increased rate of spread and flame length, thereby suggesting that tree harvesting could affect the potential fire behavior within landscapes...As a by-product of clearcutting, thinning, and other tree-removal activities, activity fuels create both short- and long-term fire hazards to ecosystems. Even though these hazards diminish over time, their influence on fire behavior can linger for up to 30 years in dry forest ecosystems of eastern Oregon and Washington". (Huff et al 1995).

The answer, therefore, is not to try managing our way out of this situation with more roads and timber harvest/ management. In summary:

• Roads have adverse effects on aquatic ecosystems. They facilitate timber sales which can reduce riparian cover,

increase water temperatures, decrease recruitment of coarse woody debris, and disrupt the hydrologic regime of watersheds by changing the timing and quantity of runoff. Roads themselves disrupt hydrologic processes by intercepting and diverting flow and contributing fine sediment into the stream channels which clogs spawning gravels. High water temperatures and fine sediment degrade native fish spawning habitat.

According to the U.S. Forest Service 82% of all bull trout populations and stream segments range-wide are threatened by degraded habitat conditions. Roads and forest management are a major factor in the decline of native fish species on public lands in the Northern Rockies and Pacific Northwest.

Please find Frissell's comments on the bull trout recovery plan attached.

REMEDY

Withdraw the Draft Decision and write an EIS that fully complies with the law or choose the No Action alternative.

We wrote in our July 2022 comments:

“It appears that treatment in this IRA is the dominant purpose of this project. This IRA is 7,716 acres o9f the 9,049-acre project area, or is 85% of the proposal treatment area. It appears that the agency is targeting IRAs in direct conflict with the Roadless Area Conservation Rule.”

Use of an EA for this project is also invalid because the proposed vegetation treatments would occur within Inventoried Roadless Areas (IRA). This qualifies as an extraordinary circumstance that invalidates use of a EA. It is the existence of a cause- effect relationship between a proposed action and the potential effects on these resource conditions and if such a relationship exists, the degree of the potential effects of a proposed action on these resource conditions that determine whether extraordinary circumstances exist (36 CFR 220.g(b).

In relevant part, regarding the prohibition on tree cutting, the Roadless Rule mandates:

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;
36 C.F.R. §294.13 (2005).

The Roadless Rule further explains the meaning of the phrase “incidental to” in subsection (b)(2) above 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.

Tree-cutting is not “incidental to” another management activity; it is the management activity. The Forest Service fails to acknowledge that the Roadless Rule provides a narrow definition of the phrase “incidental to” in the (b)(2) exemption:

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.

Every one of these examples shows that the management activity itself is not any form of vegetation management, i.e. tree-cutting – instead the management activities are things like trail management, road management, firefighting, land surveys, ski runs, utility corridors, or lawful road construction. In contrast, here the management activity itself is vegetation management, i.e. tree-cutting.

The Forest Service's interpretation of exemption (b)(2) is contrary to the explanation of "incidental to" in the Roadless Rule, and if adopted, would swallow the rule. The Forest Service could simply avoid the tree-cutting ban by labeling every tree-cutting activity in a Roadless Area as something other than tree-cutting – such as "restoration" – and thereby circumvent the ban with euphemisms. This is clearly not the intent of the Roadless Rule. 66 Fed. Reg. 3258. Accordingly, the (b)(2) exemption does not apply here.

The Montana federal district court recently addressed a similar issue. Hunters v. Marten, 470 F.Supp.3d 1151, 1167-1169 (D. Mont. 2020). The Court held: "It is simply not true that the Forest Service had no duty to communicate its transportation plan to the public. NEPA imposes upon the agency the duty to take a 'hard look' when it plans its

actions and ‘to provide for broad dissemination of relevant environmental information.’” Id. The Court further held:

“[Plaintiffs] contend that the final EIS is inadequate because it is misleading. [].The Court agrees with the latter. Having already discussed at length why the Forest Service’s treatment of the roadwork in the final EIS is inadequate and indicates bad faith, there is little more to say on the second issue. On remand, the Forest Service will be required to thoroughly develop its plan to bring heavy machinery into the roadless area.”

The EA does not give any reason for violating the roadless rule.

There is no scientific analysis that shows that the National Forest System lands in the project area are departed from the natural range of variability.

The Forest Service did not respond to our comments.

Remedy

Choose the No action Alternative or withdraw the draft Decision Notice and write an EIS that fully complies with the law.

The Bayhorse Project V2 is in violation of NEPA, NFMA, the APA and the ESA. The Forest Service consulted with

the Fish and Wildlife Service when whitebark pine were a proposed species, Now that they are listed, the Salmon Challis National Forest has to reconsult on the effect of the project and the Forest Plan on whitebark pine. Whitebark pine are now listed as threatened. This is new information that was not available at the time we submitted our comments.

Please see the attached paper by Six et al 2021 Whitebark Genetics 2021. Six et at found:

"Anthropogenic change is creating or enhancing a number of stressors on forests. To aid forests in adapting to these stressors, we need to move beyond traditional spacing and age- class prescriptions and take into account the genetic variability within and among populations and the impact our actions may have on adaptive potential and forest trajectories. Because so little is known about the genetic diversity in most forest trees, and because it is key to effective conservation, studies of genetic diversity and structuring in forest trees should be a top priority in forest adaptation and conservation efforts."

Six et al conclude: Growth rate was the best predictor of survivorship with survivors growing significantly slower than beetle-killed trees over their lifetimes although growth rates converged in years just prior to increased beetle activity. Overall, our results suggest that P. albicaulis forests show considerable divergence among populations and within-population genetic sub-

structuring, and that they may contain complex mosaics of adaptive potentials to a variety of stressors including D. ponderosae. To protect the ability of this tree to adapt to increasing pressure from beetles, blister rust, and climate change, a top priority should be the maintenance of standing genetic diversity and adaptive shifts in allele frequencies.

The project is not following the best available science and is not meeting the purpose and need. Since Whitebark pine are now listed under the ESA, you must formally reconsult 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 Forest Service is incorrect when it states that the project will have "No significant effects would result from this project or cumulatively with other activities on National Forest or adjacent lands that would affect at-risk plant species' ability to persist on the landscape."

Since you have done no surveys of whitebark pine what is the basis of the "No effect" statement?

Thank you for formally consult with the FWS on the impact of the project on Whitebark pine but since the consolation could change the design of the project, the draft decision should be withdrawn and a supplemental EA or EIS written to give the public a change too comment on the new design and new information.

Since whitebark pine are very slow growing trees and take years to mature, what scientific evidence to you have to back up the following statement on page 29? “Some immature trees may be lost, but this would not result in a trend toward federal listing.”

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. 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 per-cent 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. Although prescribed burning can be useful to reduce areas of high-density subalpine fir and spruce and can create favorable ecological conditions for whitebark pine regeneration and growth, in

the absence of sufficient seed source for natural re-generation maintaining the viability and function of whitebark pine would not be achieved through burning. Please find Keane and Arno attached. 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?

It appears that you won't do surveys until after the decision is signed in violation of NEPA, NFMA and the APA. 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 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?

Whitebark pine is a listed species with full ESA protection. The Salmon Challis NF was so anxious to inject into this project, under the provisions of Revised Forest Plan and the NFMA 2012 Forest Planning Rule. Well,

now the Plan is outdated, and needs to be amended. New management standards must be added based upon USFWS consultation, a new biological opinion (BO) and terms and conditions designed to mandate forest management standards that contribute to the recovery of the listed whitebark pine in the project area, and forest-wide.

Anything less is unacceptable under the legal requirements of the ESA and NEPA.

Whitebark pine promotes community diversity and community stability in high mountain ecosystems. Ecological conditions and processes lead to an increase in cone-bearing trees, particularly in areas projected to be suitable under future climates, and a decrease in susceptibility to succession to more shade tolerant conifers, mountain pine beetle, wildland fire and blister rust.

Whitebark pine is a keystone species with direct and indirect, interrelated ecological links to the health of the ecosystem(s) upon which grizzly bears, squirrels, mountain pine beetle and Clark's nutcracker depend. Emphasis added.

NEPA and the ESA require that these "significant" ecosystem relationships between these four species be maintained and improved in order to recover, and eventually remove from the ESA list whitebark pine and

grizzly bears. Emphasis added. “Daylighting” selected whitebark pine using industrial machines and man-induced fire will upset the delicate balance already at play in the ecosystem – with no material assistance from man and man’s “brilliant” imagination. Leave Creation to the ultimate expert, leave it to Mother Nature.

There is no cumulative effects analysis in the Final EA, and no disclosure of the number of individual, stands, acres or any other estimate of the number of whitebark pine that will be killed in the project area. There is no estimate of the number of whitebark pine killed in

previous projects, including those permanently lost to clearcutting and permanent and temporary roads over decades of active timber management. These cumulative effects are significant, and yet, unquantified and undisclosed.

This is a violation of NEPA, NFMA, the APA and the ESA, 16 U.S.C. §§ 1531 et seq., to ensure that its actions do not adversely affect whitebark pine and that their actions promote conservation and

recovery of these species. The federal agencies’ (USFS-USDA and USFWS) mandate is to protect and recover imperiled species and their habitats.

The project will harm whitebark pine in unknown numbers, with unknown adverse cumulative impacts.

Since Whitebark pine are now listed under the ESA, the USFS-USDA must formally reconsult with the USFWS 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 the presence of whitebark pine and consider planting whitebark pine as the best available science. Keene et al. states that the only way to get new whitebark pine is to grow (seedlings) them (submitted in our DEA comments).

Hundreds of acres of clearcutting and burning threaten individual whitebark pine trees in the project area, including miles and miles of new roads, and including clearings around individual whitebark pines. The Forest Service fails to disclose the level of “take” and the incredibly high failure rate of these practices as a technique for natural restoration, regeneration and recovery of whitebark pine under these conditions.

The Forest Service does not disclose or address the results of its 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 Project EIS. 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 40%)." 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."

Therefor the project's plan to log burn the project area whitebark pine will take whitebark pine. This is a violation of NEPA, NFMA, the APA and the ESA.

Please see the attached memo from the FWS about requirements for consulting with the FWS about whitebark pine now that they are listed as threatened.

For whitebark pine, spring or fall burning may kill seedlings susceptible to fire. For mature whitebark pine trees, the bark is relatively thin compared to other species such as ponderosa pine and susceptible to scorching from fire. Fires that approach the tree trunks may scorch the

bark, diminishing the bark's protective properties from other stressors. Depending on the fireline intensity and residence time of lethal temperatures, the heat from the fire may also penetrate the bark, killing the underlying cambium layer. Harm to the bark and cambium may reduce individual tree vigor and also increase susceptibility to infections such as white pine blister rust or infestations by the mountain pine beetle.Whitebark pine seed banks and fine roots may also be impacted should fire move through an area when fuels and soil moisture is conducive to longer residence time of lethal temper- atures. Seeds are buried by Clark's nutcrackers generally within one inch of the soil

surface and may be susceptible to longer res- idence time of lethal temperatures. Fine roots located near the soil surface serve as the primary water absorbing roots for trees and may be harmed or killed with longer residence times of lethal temperatures when soil moisture is low which would lead to an increase in the penetration depth of lethal temperatures. In general, the proposed prescription would attempt to achieve a low severity surface fire in which shrubs, needle cast and upper duff layers would be consumed. In some instances, including dense stands in which commercial or non-commercial thinning is not feasible, higher severity fire effects may be preferred to achieve the desired condition for those forested stands.In the long term, broadcast burning in the vicinity of living whitebark pine stands may improve the habitat suitability

for seed caching by Clark's nutcracker; seed germination; and whitebark pine seedling establishment. Clark's nutcrackers prefer to cache seeds in recently burned areas as fire removes understory plants and creates soils surfaces that are easier to penetrate for seed caching. In addition, in the long term, broadcast burning may reduce the vigor of other species that would compete with whitebark pine seedlings for sunlight, soil water, and nutrients."

Whitebark pine are now a threatened species and the project is in violation of the ESA.

On December 2, 2020, the U.S. Fish and Wildlife Service issued a rule proposing to list whitebark pine (Pinus albicaulis) under the Endangered Species Act. The South Plateau Project area includes whitebark pine. The

whitebark pine present in the project area represents a major source within the larger geographic area. The Project proposes tree cutting and burning across thousands of acres where whitebark pine may be present. Regardless of whether individual activities are intended to im-pact whitebark pine, whitebark pine may be affected

by damage from equipment and equipment trails, cutting, soil compaction and disturbance, mortality from prescribed burning, scorching from jackpot burning, trampling of seedlings and saplings, and removal of necessary microclimates and nursery trees needed for sapling survival. Additionally, thousands of acres of whitebark pine

habitat manipulation are proposed for the Project, including intentionally cutting and burning Whitebark pine trees. No discussion on the success rate of natural regeneration under these conditions is provided. No discussion of the success rate of planting seedlings in clearcuts is provided. There have been no surveys for whitebark pine in violation of the ESA, NEPA, NFMA, and the APA.

The Forest Service admits that whitebark pine is known to be present in the area and that the Project "may impact individuals. . . ." The Forest Service further admits: "some ad- verse impacts are possible." The Forest Service further admits that "implementation of the project may cause incidental loss of whitebark pine seedlings and

saplings . . . ." Crucially, the Forest Service does not disclose or address the re- sults of its 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 ob- served on these plots." See U.S. Forest Service, General Technical Report RMRS-GTR-232 (January 2010). More specifically: "the whitebark pine regeneration that was expected to result from this [seed] caching [in new open- ings] has not yet materialized.

Nearly all sites contain very few or no whitebark pine seedlings." Thus, even ten years after cut- ting and burning, regeneration was "marginal." Moreover, as the Forest Service notes on its website: "All burn treatments result- ed in high mortality in both whitebark pine and subalpine fir (over 40%)." 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."

Please find attached "Restoring Whitebark Pine Ecosystems in the Face of Climate Change
Robert E. Keane, Lisa M. Holsinger, Mary F. Mahalovich, and Diana F. Tomback" and "Restoring Whitebark Pine Forests of the Northern Rocky Mountains, USA Robert E. Keane and Russell a. Parsons."

REMEDY

Withdraw the draft Decision Notice, formally consult with the FWS and then write an EIS that fully complies with the law. Or choose the No Action alternative.