May 3, 2026

Nathan Gassmann, District Ranger
Three Rivers Ranger District,
12858 US Highway 2
Troy, Montana 59935.

RE: Ripley Supplement EA

Dear Ranger Gassman,

Please accept these comments from me on behalf of the Alliance for the Wild Rockies, Council on Wildlife and Fish, Center for Biological Diversity and Native Ecosystems Council on the Ripley Supplemental EA.

Congratulations on being named the Acting Deputy Supervisor of the BDNF. How can you sign the decision when you are currently the Acting Deputy Supervisor the the BDNF? Shouldn't the responsible official be someone in the Kootenai National Forest?

The Alliance for the Wild Rockies submit the following comments to guide the development of the environmental analysis for the proposal. 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. We still belies that the Forest Service should write an EIS for the Project.

I. NECESSARY ELEMENTS FOR PROJECT EIS or that need to be answered in the SEA:

A. Disclose all Kootenai National Forest's Forest Plan requirements for logging/burning projects and explain how the Project complies with them including the desired future contains of the forest in the Forest Plan;

B. Will this project comply with forest plan big game hiding cover standards and the eastside assessment?

C. Disclose the acreages of past, current, and reasonably foreseeable logging, grazing, mining, and road building ativities within the Project area;

D. Solicit and disclose comments from the Montana Department of Fish, Wildlife, and Parks regarding the impact of the Project on wildlife habitat;

E. Solicit and disclose comments from the Montana Department of Environmental Quality regarding the impact of the Project on water quality and the municipal watershed;

F. Disclose the biological assessment for the candidate, threatened, or endangered species with potential and/or actual habitat in the Project area;

G. Disclose the biological evaluation for the sensitive and management indicator species with potential and/or actual habitat in the Project area;

H. Disclose the snag densities in the Project area, and the method used to determine those densities;

I. Disclose the current, during-project, and post-project road densities in the Project area;

J. Disclose the Kootenai National Forest's (KNF) record of compliance with state best management practices regarding stream sedimentation from ground-disturbing management activities;

K. Disclose the KNF's record of compliance with its monitoring requirements as set forth in its Forest Plan;

L. Disclose the KNF's record of compliance with the additional monitoring requirements set forth in previous DN/FONSIs and RODs on the KNF;

M. Disclose the results of the field surveys for threatened, endangered, sensitive, and rare plants in each of the proposed units;

N. Please formally consult with the US FWS on the impacts of this project on candidate, threatened, or endangered species and plants;

O. Please consult with the US FWS on the impacts of this project on lynx critical habitat and potential lynx critical habitat;

P. Will this Project exacerbate existing noxious weed infestations and start new infestations?

Q. Do unlogged old growth forest store more carbon than the wood products that would be removed from the same forest in a logging operation?

R. What is the cumulative effect of National Forest logging on U.S. carbon stores? How many acres of National Forest lands are logged every year? How much carbon is lost by that logging?

S. Is this Project consistent with "research recommendations (Krankina and Harmon 2006) for protecting carbon gains against the potential impacts of future climate change? That study recommends "[i]ncreasing or maintaining the forest area by avoiding deforestation," and states that "protecting forest from log-

ging or clearing offer immediate benefits via prevented emissions." That study also states that "[w]hen the initial condition of land is a productive old-growth forest, the conversion to forest plantations with a short harvest rotation can have the opposite effect lasting for many decades . . . ." The study does state that thinning may have a beneficial effect to stabilize the forest and avoid stand- replacing wildfire, but the study never defines thinning. In this Project, where much of the logging is clear-cutting and includes removing large trees without any diameter limit, and where the removal of small diameter surface and ladder fuels is an unfunded mandate to the tune of over $3 million dollars, it is dubious whether the prescriptions are the same type of "thinning" envisioned in Krankina and Harmon (2006).

T. Please list each visual quality standard that applies to each unit and disclose whether each unit meets its respective visual quality standard. A failure to comply with visual quality Forest Plan standards violates NFMA.

U. For the visual quality standard analysis please define "ground vegetation," i.e. what age are the trees, "reestablishes," "short term," "longer term," and "revegetate."

V. Please disclose whether you have conducted surveys in the Project area for this Project for wolverines, pine martins, northern goshawk and lynx as required by the Forest Plan.

W. Please disclose how often the Project area has been surveyed for wolverines, pine martins, northern goshawks, monarch butterflies, grizzly bears, whitebark pine and lynx.

X. Is it impossible for a wolverines, pine martins, monarch butterflies, northern goshawks, grizzly bears, whitebark pine and lynx to inhabit the Project area?

Y. Would the habitat be better for wolverines, monarch butterflies, pine martins, northern goshawks, grizzly bears, whitebark pine and lynx if roads were removed in the Project area?

Z. What is the U.S. FWS position on the impacts of this Project on wolverines, pine martins, monarch butterflies, northern goshawks, grizzly bears, whitebark pine and lynx? Have you conducted ESA consultation?

AA. Please provide us with the full BA for the wolverines, monarch butterflies, pine martins, northern goshawks, grizzly bears, whitebark pine and lynx.

BB. What is wrong with uniform forest conditions?

CC. Has the beetle kill contributed to a diverse landscape?

DD. Why are you trying to exclude stand replacement fires when these fires help aspen and whitebark pine?

EE. Please disclose what is the best available science for restoration of whitebark pine and disclose to the public what the proposed treatment are for whitebark pine and if the treatments proposed for whitebark pine regeneration are likely to fail according to the agency's only long term research study on the effects

of cutting and burning treatments on whitebark pine regeneration;

FF. Disclose the level of current noxious weed infestations in the Project area and the cause of those infestations;

GG. Disclose the impact of the Project on noxious weed infestations and native plant communities;

HH. Disclose the amount of detrimental soil disturbance that currently exists in each proposed unit from previous logging and grazing activities;

II. Disclose the expected amount of detrimental soil disturbance in each unit after ground disturbance and prior to any proposed mitigation/remediation;

JJ. Disclose the expected amount of detrimental soil disturbance in each unit after proposed mitigation/remediation;

KK. Disclose the analytical data that supports proposed soil mitigation/ remediation measures;

LL. Disclose the timeline for implementation;

MM. Disclose the funding source for non-commercial activities proposed;

NN. Disclose the current level of old growth forest in each third order drainage in the Project area;

OO. Disclose the method used to quantify old growth forest acreages and its rate of error based upon field review of its predictions;

PP. Disclose the historic levels of mature and old growth forest in the Project area;

QQ. Disclose the level of mature and old growth forest necessary to sustain viable populations of dependent wildlife species in the area;

RR. Disclose the amount of mature and old growth forest that will remain after implementation;

SS. Disclose the amount of current habitat for old growth and mature forest dependent species in the Project area;

TT. Disclose the amount of habitat for old growth and mature forest dependent species that will remain after Project implementation;

UU. 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;

VV. Disclose the amount of big game (moose and elk) hiding cover, winter range, habitat effectiveness, and security currently available in the Project area:

WW. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security during Project implementation;

XX. Disclose the amount of big game (moose and elk) hiding cover, winter range, habitat effectiveness, and security after implementation;

YY. Disclose the method used to determine big game hiding cover, winter range, and security, and its rate of error as determined by field review;

ZZ. 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;

AAA. 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;

BBB. 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;

CCC. Disclose when and how the KNF made the decision to suppress natural wildfire in the Project area and replace natural fire with logging and prescribed burning;

DDD. Disclose the cumulative impacts on the Forest-wide level of the KNF's policy decision to replace natural fire with logging and prescribed burning;

EEE. Please demonstate that the project complies with the Roadless Rule;

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

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

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

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

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;

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 approximate-

ly 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.”

Please include a complete cost benefit analysis for the project.

Please consult with the Montana State Historic Preservation Office to ensure the project complies with the National Historic Preservation Act.

Raptor nests including owls

Page 78 of the SEA states:

FW-GDL-WL-16, Raptors: Management activities on NFS lands should avoid/minimize disturbance at known active raptor nests, including owls.

Then the SEA contends, also on page 78:

There are no known currently active nests within the project area; however, a general wildlife design feature has been identified that ensure protection for active flammulated owl nests discovered during planning or project implementation. Refer to Project Design Features and Mitigation Measures and Potential Risk of Disturbance. Therefore, the Ripley Project was designed in accordance with this guideline.

The Montana District Court ruled in the South Plateau order:

The Forest Service avowing that future activities will comply with NFMA falls far short of showing that those activities do so. "Under NFMA, the Forest Service calculations need not be perfect. However, [courts] must still be able to reasonably ascertain from the record that the Forest Service is in compliance with the [Forest] Plan standard[s]." Native Ecosystems Council v. U.S. Forest Serv., 418 F.3d 953, 963 (9th Cir. 2005). That is not possible here.

The Ripley Project violates the 2012 Planning Rule, NEPA, NFMA, ESA, APA, and the Forest Plan because the Forest Service is not demonstrating that the Ripley project complies with the KNF's Forest Plan which requires the KNF to "avoid/minimize disturbance at known active raptor nests, including owls." The KNF did not do any monitoring to look for active raptor nests, including owls.

Page 78 of the SEA also states:

FW-DC-WL-02: A forest-wide system of large remote areas is available to accommodate species requiring large home ranges and low disturbances, such as some wide-ranging carnivores (e.g., grizzly bear).

Large areas of secure habitat are found within the project area that currently provide for elk also provide security for other big game species. These secure habitat areas are found in association with limited motorized access during the year. Adherence to management direction for elk (FW-GDL-WL-10, FW-OBJ-

WL-02) would continue to maintain the existing secure habitat within th project area for big game use. Refer to "Secure Habitat" in the Existing Condition. Therefore, the Ripley Project would contribute to progress toward achieving GOAL-WL-02.

Page 78 of the SEA also states:

FW-DC-WL-02: A forestwide system of large remote areas is available to accommodate species requiring large home ranges and low disturbances, such as some wide-ranging carnivores (e.g., grizzly bear).

And then states that it is complying with the Forest Plan by having:

Large blocks of remote areas are found within the project area, including three blocks of land 250 acres or greater (refer to the Big Game analysis), that provide non-motorized access during the bear year. Activity-free areas would also remain available during project implementation. Therefore, the Ripley Project would contribute toward achieving this desired condition.

Unfortunately the SEA and FONSI don't demonstrate that the project complies with the access amendment to the Forest Plan or that 250 acres is big enough to provide secure habitat for grizzly bears,

The Ripley project will not maintaining and enhancing secure grizzly habitat and will increase the potential for grizzly-human conflicts in violation of NFMA, NEPA, the APA and the ESA.

The Forest does not have a good track record of keeping closed roads closed. The Forest Service does not disclose the road mileage behind these ineffective closures; therefore it is unclear how many miles of additional open and total roads must be added to the existing condition calculations as a result of these ineffective closures.

In a meeting after the Draft Ripley Decision between myself, Steve Kelly, Ranger Gassman and Supervisor Chad Benson, Supervisor Benson stated people have been violating road closures in the Kootenai National Forest for 100 years and they will be violating road closures for the next 100 years.

In a recent Ninth Circuit Opinion, the court found that the Forest Service had failed to establish whether similar "undetermined" roads of unknown origin caused an increase above the Tobacco BORZ baseline:

The error cannot be treated as harmless in light of the ambiguity in the record as to whether the "undetermined" roads at issue were, in fact, included in the Access Amendments baseline calculation.

There are at least three problems with the KNF's record of amount of roads. First, because "undetermined" is a sub-category of "unauthorized" roads, it is possible that the particular undetermined roads at issue in this case were created—without au-

thorization from the Forest Service—in the interim between the measurement of the Access Amendments baseline and the Forest Service's survey of existing roads for the Project.

All. for the Wild Rockies v. Savage, 897 F.3d 1025, 1036, n.18 (9th Cir. 2018). In light of these circumstances that (1) road closures/barriers are regularly breached but the Forest Service conducts no systematic monitoring to determine how many miles of illegal road use are occurring behind barriers each year, and (2) the Forest Service simply ignores illegal "undetermined" roads and does not include them in its calculations for open or total roads in the annual monitoring reports, the open and total road numbers in the monitoring reports are not accurately reflecting the conditions on the ground. It is therefore reasonable to assume that the baselines in the project area regularly exceeded because the reported conditions hover at or near the baseline.

Chronic recurring road closure breaches cannot reasonably be construed as "temporary;" and illegal road use does not fall within the scope of Access Amendment "temporary" roads.

The Forest Service and FWS have acknowledge that road closure breaches (and resulting illegal road use) are not addressed in the Access Amendment. Nonetheless, the agencies argue that all road closure breaches regardless of whether they are chronically recurring and regardless of how long they last on the landscape must be construed as "temporary" road increases. Onto this premise, the agencies then bootstrap an additional argument that because certain specific types of temporary roads were ad-

dressed in the Access Amendment, that discussion must also apply to "temporary" road increases from illegal road use.

First, it is not reasonable to construe recurring illegal road use as "temporary" road density increases. The monitoring reports indicate that public users may repeatedly breach the same closure year after year. See, e.g., AR42:000059-62 (noting that boulders placed in 2015 have been removed and unauthorized users are again circumventing gate on Road 2236). Moreover, the Forest Service may take years to act on known violations. See, e.g., AR42:000061 ("The Clatter Creek gate (268) was included on the 2015 gate repair contract but after the bids came in the Clatter Creek gate was dropped due to repair costs for all gate repairs exceeding available funding. In BY2016 the gate remained damaged and ineffective."); see also AR43:000081-82 (note 2) (during planning for the Hanna Flats logging project, the Forest Service found illegal motorized use on 15.7 miles of road that were not included in the baseline but the agency postponed remedial action until implementation of the logging project; in the 2018 monitoring report, the agency concedes it has still not yet eliminated this illegal use); see also AR232:000767 (finding that four barriers did not effectively prevent motorized use but deferring any action to fix the problems).

Thus, while the Forest Service insists that all breaches are temporary, those same breaches may be recurring or may have lasted for many years prior to discovery and remedial action, resulting in a chronic situation. The situation with the BORZ is a good illustration of this problem S although the Forest Service insists that it fixes all breaches as soon as possible, nonetheless at least

four out of seven BORZ areas chronically fail to meet both the open and total road baseline conditions from the Access Amendment, as shown above in the table in Section B.

Second, even assuming that illegal road use could be construed as "temporary," it still does not have the same effect as lawful temporary road use. A breach of a closure device that results in public motorized use in effect results in an open road. The Access Amendment severely restricts temporary increases in open roads: "immediately following completion of all mechanized harvest and post- harvest slash activities requiring use of the road, to allow motorized public use during the bear summer season prior to the fall bear hunt (i.e., June 16 - August 31) for activities such as personal firewood collection. This public access would only be provided in cases where the mechanized harvest and/or post-harvest slash activities occurred during the same active bear year."

Thus, temporary increases in open roads are limited to a June 16-August 31 window, and may only occur in the same year in which logging activities have already occurred and used that particular road, presumably because grizzlies would have already been displaced from those areas. In contrast, illegal motorized use behind road closure breaches is not limited to a June 16-August 31 window, and is not limited to a single year entry on a road along and on which logging activities have already been occurring.

Moreover, illegal road use would also constitute an increase in total roads. However, temporary increases in total roads are only

permitted if the roads are "effectively" gated to prevent public use during a project, (2) after project use, the roads are treated so as to "effectively prevent[] motorized access" and require no motorized access for maintenance for at least 10 years, and (3) upon project completion, the area is "returned to or below the baseline levels contained in Table 16" of the Access Amendment ROD. Obviously a road that has illegal road use is not "effectively" gated to prevent public use.

Thus, illegal road use does not comply with the restrictions set for lawful increases in temporary roads neither open nor closed in the Access Amendment and therefore cannot possibly have the same effects. It is simply implausible that unlimited illegal road use occurring at any time in any location would have the same effect on grizzly bears as Access Amendment temporary roads that are significantly restricted in both timing and location. Indeed, illegal road use is illegal precisely because the Forest Service has already closed these specific roads to protect grizzly bears. If illegal motorized use occurs on these roads that were closed to protect grizzly bears, it may displace grizzly bears from areas that they would otherwise not be displaced from.

2017 DNA sampling identified only 44 individual bears. 1 Specifically, the recent sampling identified 20 females and 24 males, with 23 bears in the Cabinets and 21 bears in the Yaak portion of the ecosystem.

Recognizing that the grizzly bear population in the Cabinets portion of the ecosystem is likely much smaller than the estimated population for the entire ecosystem, we are likely looking at a

much larger percentage of the population being seriously impacted during the life because of this project.

Because of the serious impacts to grizzly bears, please demonstrate compliance with Forest Plan standards relevant to grizzly bears, and analyze the direct, indirect, and cumulative impacts to grizzly bears.

The Forest Service must comply with National Forest Management Act ("NFMA") and its implementing regulations. NFMA requires the Forest Service to ensure that site-specific management projects are consistent with the applicable forest plan. 16 U.S.C. § 1604(i). Thus, the Forest Service must ensure that all aspects of the proposed action comply with the Kootenai Panhandle National Forests Land Management Plan.

The Grizzly Bear Access Amendment set standards for open motorized route density ("OMRD"), total motorized route density ("TMRD"), and retention of core grizzly bear habitat within the Cabinet-Yaak and Selkirk Recovery Zones bear management units. This Amendment is incorporated as a standard (FW-STD-WL-02) in the Kootenai National Forest Plan at Appendix B. The Forest Service must comply with the Access Amendment TMRD standards during and after project implementation, it not the project directly violates NFMA.

Dr. David Mattson makes the following points for our Knotty Pine objection and they also apply for the Ripley project.

The assessment of prospective effects of the this project on grizzly bears in the is premised on several critical assumptions.

First, status of the Cabinet-Yaak grizzly bear population is assumed to have improved since 2012. Second, and related, the KNF assumes that some erosion of security for grizzly bears is therefore permissible, conditioned on a related assumption that security and road access standards employed by the Kootenai National Forest (NF) are sufficient for recovery of grizzly bears in this ecosystem.

All of these assumptions are unwarranted.

Briefly:

- ***The weight of available evidence does not support concluding that population status has improved. For one, the methods used to estimate trend and current population size are beset with a host of problems. For another, the information able to be distilled from demographic data suggests that any improvement has stalled since 2014.***

- ***Variations in population size and trajectory between 1999 and 2010 are more likely attributable to variations in abundance of natural foods—berries in particular—that affect exposure of bears to humans rather than to any increased mitigations. During years of scant berries, bears likely forage more widely and more often end up in conflict situations or exposed to malicious killing.***

- ***The population of grizzly bears in the Yaak is far smaller than even the smallest size posited to be viable by any researcher. Related, the population remains acutely vulner-***

able to even the smallest increases in bear mortality that are predictably more likely to occur with any increase in road access and associated human activity.

The Knotty Pine project will not maintaining and enhancing grizzly habitat and will increase the potential for grizzly-human conflicts in violation of NFMA, NEPA, the APA and the ESA.

The Forest does not have a good track record of keeping closed roads closed. The Forest Service does not disclose the road mileage behind these ineffective closures; therefore it is unclear how many miles of additional open and total roads must be added to the existing condition calculations as a result of these ineffective closures.

In a recent Ninth Circuit Opinion, the court found that the Forest Service had failed to establish whether similar "undetermined" roads of unknown origin caused an increase above the Tobacco BORZ baseline:

The error cannot be treated as harmless in light of the ambiguity in the record as to whether the "undetermined" roads at issue were, in fact, included in the Access Amendments baseline calculation.

There are at least three problems with the KNF's record of amount of roads. First, because "undetermined" is a sub-category of "unauthorized" roads, it is possible that the particular undetermined roads at issue in this case were created—without authorization from the Forest Service—in the interim be-

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Chronic recurring road closure breaches cannot reasonably be construed as "temporary;" and illegal road use does not fall within the scope of Access Amendment "temporary" roads.

The Forest Service and FWS have acknowledge that road closure breaches (and resulting illegal road use) are not addressed in the Access Amendment. Nonetheless, the agencies argue that all road closure breaches regardless of whether they are chronically recurring and regardless of how long they last on the landscape must be construed as "temporary" road increases. Onto this premise, the agencies then bootstrap an additional argument that because certain specific types of tempo-

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Thus, while the Forest Service insists that all breaches are temporary, those same breaches may be recurring or may have lasted for many years prior to discovery and remedial action, resulting in a chronic situation. The situation with the BORZ

is a good illustration of this problem S although the Forest Service insists that it fixes all breaches as soon as possible, nonetheless at least four out of seven BORZ areas chronically fail to meet both the open and total road baseline conditions from the Access Amendment, as shown above in the table in Section B.

Second, even assuming that illegal road use could be construed as "temporary," it still does not have the same effect as lawful temporary road use. A breach of a closure device that results in public motorized use in effect results in an open road. The Access Amendment severely restricts temporary increases in open roads: "immediately following completion of all mechanized harvest and post- harvest slash activities requiring use of the road, to allow motorized public use during the bear summer season prior to the fall bear hunt (i.e., June 16 - August 31) for activities such as personal firewood collection. This public access would only be provided in cases where the mechanized harvest and/or post-harvest slash activities occurred during the same active bear year."

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Moreover, illegal road use would also constitute an increase in total roads. However, temporary increases in total roads are only permitted if the roads are "effectively" gated to prevent public use during a project, (2) after project use, the roads are treated so as to "effectively prevent[] motorized access" and require no motorized access for maintenance for at least 10 years, and (3) upon project completion, the area is "returned to or below the baseline levels contained in Table 16" of the Access Amendment ROD. Obviously a road that has illegal road use is not "effectively" gated to prevent public use.

Thus, illegal road use does not comply with the restrictions set for lawful increases in temporary roads neither open nor closed in the Access Amendment and therefore cannot possibly have the same effects. It is simply implausible that unlimited illegal road use occurring at any time in any location would have the same effect on grizzly bears as Access Amendment temporary roads that are significantly restricted in both timing and location. Indeed, illegal road use is illegal precisely because the Forest Service has already closed these specific roads to protect grizzly bears. If illegal motorized use occurs on these roads that were closed to protect grizzly bears, it may displace grizzly bears from areas that they would otherwise not be displaced from.

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males, with 23 bears in the Cabinets and 21 bears in the Yaak portion of the ecosystem.

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Because of the serious impacts to grizzly bears, please demonstrate compliance with Forest Plan standards relevant to grizzly bears, and analyze the direct, indirect, and cumulative impacts to grizzly bears.

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Appendix B. The Forest Service must comply with the Access Amendment TMRD standards during and after project implementation, it not the project directly violates NFMA.

The assessment of prospective effects of the this project on grizzly bears in the is premised on several critical assumptions. First, status of the Cabinet-Yaak grizzly bear population is assumed to have improved since 2012. Second, and related, the KNF assumes that some erosion of security for grizzly bears is therefore permissible, conditioned on a related assumption that security and road access standards employed by the Kootenai National Forest (NF) are sufficient for recovery of grizzly bears in this ecosystem.

All of these assumptions are unwarranted.

Briefly:

- ***The weight of available evidence does not support concluding that population status has improved. For one, the methods used to estimate trend and current population size are beset with a host of problems. For another, the information able to be distilled from demographic data suggests that any improvement has stalled since 2014.***

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flict situations or exposed to malicious killing.

- ***The population of grizzly bears in the Yaak is far smaller than even the smallest size posited to be viable by any researcher. Related, the population remains acutely vulnerable to even the smallest increases in bear mortality that are predictably more likely to occur with any increase in road access and associated human activity.***

In May 2019, the United Nations released a report finding that the current rate of species extinction "is already at least tens to hundreds of times higher than it has averaged over the past 10 million years."[1] The mountain caribou in the lower 48 states went extinct just a few months ago. Like the Cabinet-Yaak grizzly bear, the mountain caribou lived primarily on National Forest land, had a population of less than 50 individuals, and was threatened by logging and roads.

[1]https://www.ipbes.net/sites/default/files/downloads/spm_unedited_advance_f or_posting_htn.pdf

Alliance reiterates this point here because the agencies issued similar assurances regarding the mountain caribou that they now issue for the Cabinet-Yaak grizzly bear. For example, in litigation to protect the mountain caribou in this Court, the agencies represented that they would "meet caribou needs" by using the best available science and applying forest plan protections, and not approving logging projects unless they concluded that the project was "not likely to adversely affect" the mountain caribou. Jayne v. Sherman, 706 F.3d 994, 1001 (9th Cir.2013)(quoting FWS Biological Opinion).

In Jayne, these statements were accepted as adequate protections for the mountain caribou. Now the mountain caribou is extinct. It is not too late to avoid the same fate for the Cabinet-Yaak grizzly bear. As members of Congress stated when they passed the ESA: "The agencies of Government can no longer plead that they can do nothing about [the grizzly bear]. They can, and they must. The law is clear." Tennessee Valley Auth. v. Hill, 437 U.S. 153, 184 (1978) (quoting Congressional Record).

The preservation of endangered species takes "priority over the 'primary missions' of federal agencies." Accordingly, courts must "afford[] endangered species the highest of priorities," and act with "institutionalized caution" when reviewing ESA cases. Cottonwood Envtl. Law Ctr. v. USFS, 789 F.3d 1075, 1091 (9th Cir.2015). This Court holds that the "fundamental principle [of institutionalized caution] remains intact and will continue to guide district courts when confronted with requests for injunctive relief in ESA cases." Id. Although the district court did not apply this fundamental principle in this case, this Court may

now remedy that error by issuing a temporary injunction pending appeal to preserve the status quo until a final decision is issued on the merits.

The FS should be identifying key habitat components for grizzly bears for prioritizing road density reductions (Proctor, et al., 2020) so populations can recover.

Mattson state Proctor et al. (2017) (attached) "is highly relevant to judging the trade-off between proposed forest treatments and habitat security for grizzlies, especially vis-à-vis any prospective increase in huckleberry production and hazards associated with road access" and list "relevant recommendations from Proctor et al. (2017)."

There is no analysis in the EA regarding existing road densities located outside of and between BMUs, both at present and during project implementation. The forest plan BO states, "In BORZ, we anticipate that high linear miles of road are likely causing adverse effects on grizzly bears."

Moreover, the questionable definition of decommissioning used in this SEA also makes it impossible to tell if roads will be effectively closed or otherwise prevent public use. Even roads with berms allow public access over and above completely obliterated roads.

The Forest Plan allows "temporary" reductions in Core and "temporary" increases in road density as if the BMUs will then get reprieve from such "temporary" adverse effects. However, the Forest Plan has no genuine limitations on how much, how often and for how long these "temporary" adverse effects will occur or persist. The FS basically takes the position that upon completion of project-related activity, amount of road will be consistent with the Access Amendment. The question is, *when*? **When** will this ever be realized, if there is continuous, temporally and spatially overlapping road building and logging activities? And for how long?

So the numbers for Open Motorized Roads and Total Motorized Roads in Tables are disingenuous, misleading at best.

The FS is aware of the best Plan direction it has adopted to date, including the access amendment. It established Open Motorized Route Density (OMRD)/Total Motorized Route Density (TMRD)/Security Core indices. These are based upon the scientific information concerning security from roads and road density requirements for grizzly bears as found in Mace and Manley, 1993 and Mace et al., 1996. Also see McLellan, et al., 1988.

The EA does not demonstrate that project implementation is consistent with the best available science, so EA and Draft DN violate the ESA, NFMA, the 2012 Planning Rule and NEPA.

According to the Cabinet-Yaak Grizzly Bear Recovery Area 2011 Research and Monitoring Progress Report (Kasworm, W.F. et al, 2012): In 2011 there were 5 known mortalities, 3 (60%) of which occurred on USFS lands; in 2010 there were 4 known mortalities, 2 (50%) which occurred on USFS lands; in 2009 there were 4 known mortalities, 3 (75%) which occurred on USFS lands; in 2008 there were 4 known mortalities, none of which occurred on USFS lands; in 2007 the 1 known mortality occurred on USFS lands (100%); in 2006, 2005, and 2004 there were 8 known mortalities, none of which occurred on USFS lands; in 2002 there were 7 known mortalities, 2 (29%) of which occurred on USFS lands; in 2001 there were 4 known mortalities, 1 (25%) of which occurred on USFS lands. Thus the trend has been an increase in grizzly bear mortalities on USFS lands. This should have been disclosed and considered in the Black Ram grizzly bear analysis.

The Forest Plan Biological Opinion (BO) states:
The Revised Plan also incorporates the Guidelines of the IGBC (USFS 1986, entire). The IGBC Guidelines are applied across the grizzly bear Management Situations (MS) (1 through 5) as delineated throughout the two recovery zones in the KNF. All of the lands within each recovery zone have been delineated into one of the management situations. As information and science related to grizzly bears evolved, the USFS began managing MS1 and MS2 essentially the same on NFS lands, according to direction for MS1. Management focuses on grizzly bear habitat maintenance, improvement and minimization of grizzly- human conflict. **Management decisions will favor the needs of the grizzly bear when grizzly habitat and other land use values compete.**

(Emphasis added.) Black Ram project impacts would not consistent with the requirement to prioritize the needs of the grizzly bear for the applicable Management Situations.

Additional direction in the Interagency Grizzly Bear Guidelines (IGBG) (1986) for MS 1 habitat included the following for timber management:

Logging and/or fire management activities which will adversely affect grizzly bear populations and/or their habitat will not be permitted; adverse population effects are population reductions and/or grizzly positive conditions; adverse habitat effects are reduction in habitat quantity and/or quality.

The FS manages most of the habitat in the CYE, but instead of exercising its discretion to increase habitat security via substantial road reductions and minimizing industrial and motorized disturbance, the agency prefers to log, mine, and otherwise manipulate and disrupt the grizzly's habitat to the limits allowed by its already inadequate regulatory mechanisms. Since 2010, the FS:

- Declined the opportunity to select an Access Amendment alternative that would have provided a higher level of habitat protections

for grizzly bears and for a whole host of other wildlife species;

- Continued to neglect its duty to identify the forestwide minimum road system under the Travel Management Rule Subpart A;

- Recommended a minimum of the inventoried roadless areas in the CYE Recovery Zone (RZ) for Wilderness in the RFP; and

- Approved more major timber sales and mining in the CYE RZ.

Such actions reveal a practice and pattern of failing to prioritize the needs of the grizzly bear. The FS must undertake a full cumulative effects analysis that considers all management activities (public and private) in the CYE.

We also incorporate into these comments Louisa Willcox's commentary entitled "The Future of the Cabinet-Yaak Grizzlies" (https://www.counterpunch.org/2017/09/08/95644/).

Grizzly bears are winter-sleepers rather than true hibernators. If high density motorized routes are known to disturb, displace, habituate, and raise mortalities among grizzlies in spring, summer, and fall, there's no logical, or scientific reason to believe they don't do the same to sleeping bears in winter. The BO states:

In the CYE and NCDE, incidental take may occur where late season snowmobiling overlaps with grizzly bear post-denning habitat. The incidental take is expected to be in the form of harassment to individual female grizzly bears and/or cubs caused by premature den emergence or premature displacement from the den site area, resulting in reduced fitness of females and cubs. We expect the amount and extent of take would be very low.

Cumulative incidental take under the revised forest plan has not

been low.

The BO also states:

The Revised Plan's desired condition for patches which includes a range of larger opening sizes may result in adverse effects if lack of cover leads to under use of foraging habitat or increased risk of human-grizzly bear conflicts causing mortality of a grizzly bear. Openings created by timber harvest, depending on site conditions, may retain features that interrupt the line of sight and provide cover for bears (J. Anderson 03/12/2012 pers. comm.).

The FS does not show that the openings to be newly created by the project don't exceed levels of allowed incidental take. The FS's July 18, 2019 "Request to Exceed 40-Acre Opening Limitation for the Black Ram Project" indicates the FS is proposing to use "even-aged silviculture" to create "21 even-aged regeneration opening made of 36 proposed harvest units totaling approximately 2,016 acres." From smallest to largest, openings would be 41, 44, 44, 48, 50, 53, 53, 60, 66, 81, 85, 94, 96, 104, 121, 123, 152, 169, 240, and 292 acres.[10] These 40+ acre clearcuts would comprise 3.15 square miles with no cover, essentially lethality zones for grizzly bears. Together with the smaller Black Ram timber project clearcuts, this would be almost 4 square miles.

As explained elsewhere in this Objection, the EA makes no meaningful distinction between the types of "regeneration" logging methods to be utilized. Although commonly known that clearcuts leave fewer trees that seed tree cuts, and seed tree cuts leave fewer trees than shelterwood cuts, this EA and DN do not require the FS to meet any measurable, numerical

[10] The FS's "Request..." document actually lists 20—not 21 openings. 63

criteria or distinctions for such cuts during implementation. The best the EA does is provide blurry forest stand pizza diagrams as copied here via screenshot:

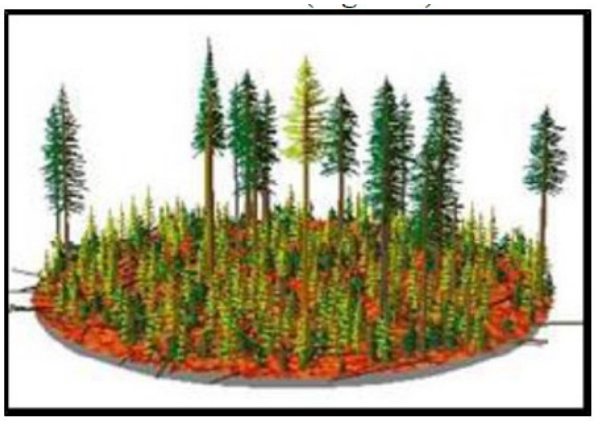


Figure 3. Simulation of a shelterwood cut.

Figure 4. Simulation of a seed-tree cut

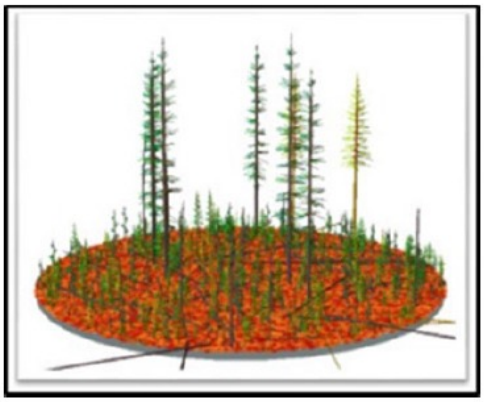


Figure 5. Simulation of a clearcut with reserves

And the pizza diagram of “Improvement Cut” isn’t much different than that of Shelterwood:

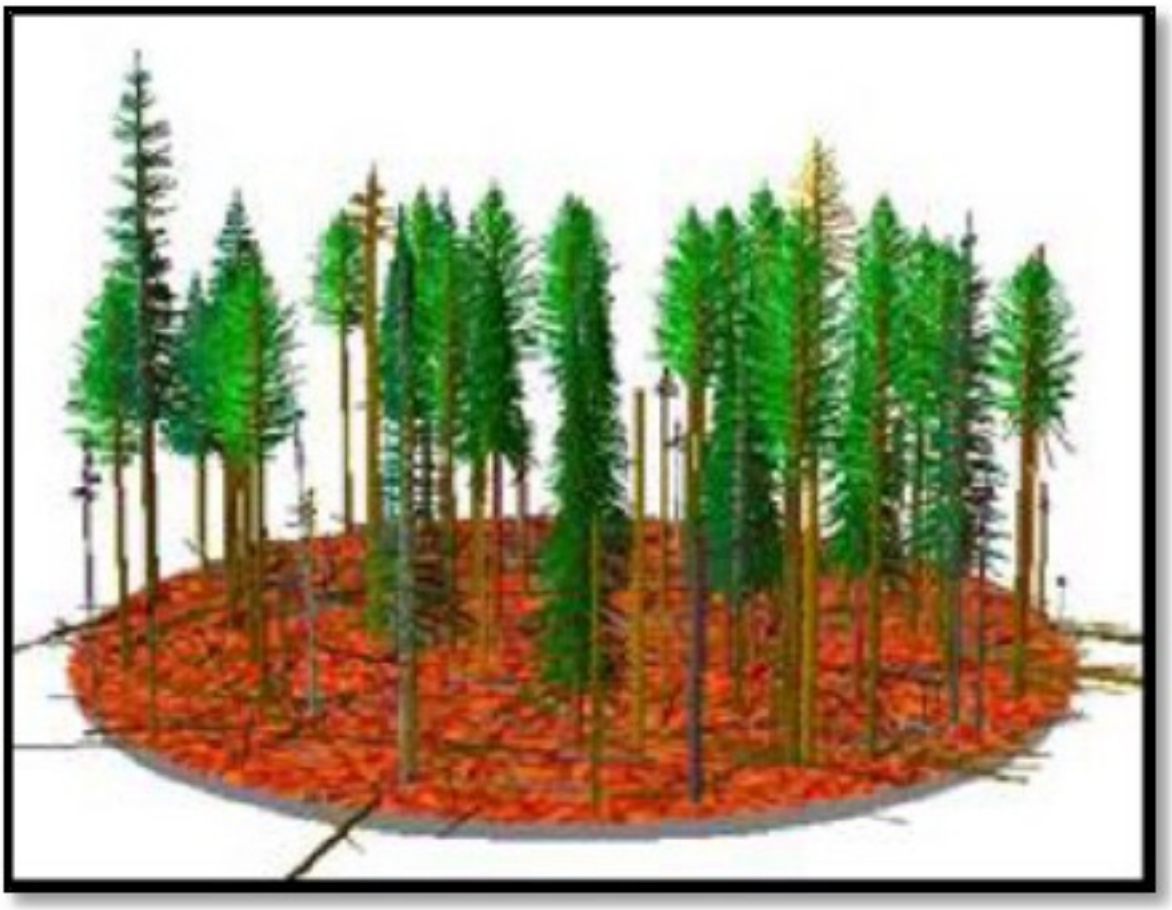


Figure 1. Simulation of an Improvement Cut

At best these diagrams represent the logged areas a number of years after cutting since they don't show the slash, burned vegetation, damage to leave trees and raw earth from machine impacts—

and this assumes overcoming regeneration challenges that increase every year due to climate change. To provide a clearer perspective, below are post-monitoring photographs of shelterwood cuts implemented for the Orogrande Community Protection Project in the Nez Perce-Clearwater National Forest:

The conditions shown immediately above better represent the lack of cover grizzly bears would face for at least 4 square miles than do the EA diagrams. And this doesn't even include the 1,262 acres of "Improvement Cuts" with poorly specified retention criteria.

In the CYE, the population size is far below the recovery goal of 100 bears (Kendall et al. 2016), with human-caused mortality being the primary factor keeping the population in peril. Any conclusion that the CYE population is stable or increasing is not based in good science.

The effects to grizzly bears from the project include potential disturbance or displacement due to human presence, road construction and use, motorized use and other mechanized equipment. The presence of these activities and the presence of roads leads grizzly bears to avoid otherwise suitable habitat.

The EA doesn't adequately analyze and disclose cumulative impacts on land of other ownerships due to their unknown duration, location, and intensity.

The FS still has not provided solid scientific basis for its assumption that an isolated small core habitat of a few acres are considered just as useful to grizzly bears as the acres in a 10,000-acre block of core.

The SEA inadequately analyzes the effectiveness of road closures, for the purpose of eliminating human access. Again, we refer to AWR's Amended Complaint for case CV-18-67-DWM for the purposes of explaining how roads affect wildlife, how pervasive are ineffective closures on national forest land, and also for forest plan consultation requirements.

Reducing roads and therefore their impacts beyond what the FS seems willing would benefit not only grizzly bears, but most other natural aspects of the ecosystem, as the Access Amendment Draft SEIS states:

- ***Alternative D Modified would convert the most roads and consequently would provide the highest degree of habitat security and a lower mortality risk to the Canada lynx. (P. 70.)***

- ***Alternative D Modified would provide a higher degree of habitat security (for gray wolves) than Alternative E Updated... (P. 74.)***

- ***Alternative D Modified ... could contribute to a cumulative increase in habitat security for black-backed woodpeckers (and pileated woodpeckers) because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in Core Areas. Newly dead trees that support wood boring beetle populations would be less likely to be removed during vegetation management activities or by woodcutters. Alternative D Modified could provide slightly more secure habitat than Alternative E Updated. (P. 84, 112.)***

- ***Alternative D Modified ... could contribute to a cumulative increase in habitat security because timber sales or other ground disturbing or vegetation management activities would be less likely to occur in Core Areas. Snags would be less likely to be removed during vegetation management activities or by woodcutters. Alternative D Modified could provide slightly more secure habitat(for Townsend's big-eared bats, flammulated owls, fringed myotis bats) than Alternative E Updated. (Pp. 85, 86, 95.)***

- ***Alternative D Modified and Alternative E Updated provide different levels of habitat security (for peregrine falcon, fisher, wolverine) based on the relative amount of wheeled motorized vehicle access. (Pp. 87, 89, 91.)***

- ***Alternative D Modified, which closes the most miles of road in suitable habitat, would be the preferred alternative for the western toad. (P. 101.)***

- ***Alternative D Modified closes the most miles of road in suitable habitat and would provide the greatest benefits for the goshawk. (P. 103.)***

- ***Alternative D Modified, which closes the most miles of road in suitable habitat, would be the best Alternative for elk. (P. 104.)***

- ***Alternative E Updated would provide some security and reduced vulnerability (for moose), but not as much as Alternative D Modified. (P. 104.)***

- ***Although Alternative D Modified and Alternative E Updated would benefit mountain goats, Alternative D Modified would improve security and reduce the risk of displacement more than Alternative E Updated. (P. 109.)***

- ***Alternative D Modified would improve security (for pine marten) more than Alternative E Updated. (P. 110.)***
  Great Bear Foundation et al., 2009 discusses in great detail how the Access Amendment Alternative eventually selected leads to a significant deterioration in an already unacceptable baseline condition for grizzly bears. The scientific discussions in Great Bear Foundation et al. 2009, as well as AWR comments on the Access Amendment DSEIS refute the FS's claim to be utilizing the best available science for the grizzly bear.
  The FS fails to recognize that Bear Management Units (BMUs) do not protect enough habitat to satisfy most individual grizzly bears' needs in the CYE.
  "Our analysis shows that grizzly bears have little or no opportunity to select home ranges with lower road density or higher percentages of core... Because grizzly bears could not have selected home ranges having more core area and lower road densities, and there has been no growth in the population, there is no basis to conclude the proposed access standards are sufficient to insure the re-

covery of the Cabinet-Yaak and Selkirk grizzly bear populations" (Merrill 2003).

The FS has no plan to provide scientifically defensible habitat protections outside the CYE that would allow for a larger protected zone and/or natural augmentation from outside the CYE. The FS has no cogent methodology that provides scientifically defensible habitat protections inside the CYE that would facilitate functional connectivity between and among BMUs. The Forest Plan fails to provide any scientific basis that baseline road densities outside the CYE can support grizzly bear population natural augmentation or recovery.

Schwartz et al. (2010) noted that management for grizzly bears requires not only the provision of security area, but control of open road densities between security areas. Otherwise, grizzly bear mortality risks will be high as bears attempt to move across highly roaded landscapes to another security area. The forest plan lacks direction regarding road densities located outside of and between security areas. The Forest Plan is not consistent with best available science on road density in grizzly bear habitat outside of Bear Management Units.

Please find Dr. Mattson's comments on the Black Ram project attached because the same issues apply here.

The project is in violation of NEPA, NFMA, the access amendment to the Forest Plan, the APA and the ESA for the reasons we mentioned above.

On November 28, 2011 the FS issued the Record of Decision for the Revised Forest Plan Amendments for Motorized Access

Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones on the Kootenai, Idaho Panhandle and Lolo National Forests (aka "Access Amendments"). AWR fully participated in the public process during the development of the Access Amendments, and incorporates its comments and appeal of that Decision within this objection. The RipleyKn project is in violation of the Revised Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones on the Kootenai, Idaho Panhandle and Lolo National Forests (aka "Access Amendments").

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 Ripley project since it is using 250 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 wellas 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 Judith Springs 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 Judith Springs project is in violation of the ESA because it does not protect grizzly bear habitat.

Is the project in compliance with the Forest Plan old growth standards? What definition of old growth are you using? What definition of old growth does the Forest Plan use?

Page 15 of the SEA states:
The project would have No Effect on Canada lynx Critical Habitat, Yellow-billed cuckoo, Spalding's catchfly, Bull Trout, Kootenai River white sturgeon and whitebark pine. There is no effect to Suckley's cuckoo bumblebee and Monarch Butterfly and both are proposed endangered species and the Ripley project is not likely to jeopardize their continued existence.

It is almost impossible for the Ripley project to have no effect on the above listed species. Please formally consult with the U.S. FWS on the effect of the project on The project would have No Effect on Canada lynx, Lynx Critical Habitat, Yellow-billed cuckoo, Spalding's catchfly, Bull Trout, Kootenai River white sturgeon, whitebark pine, Suckley's cuckoo bumblebee and Monarch Butterfly.

Elk Security

Page 78 of the SEA states: “The project would maintain the existing amount of elk security in each analysis unit because there would be no change to any motorized routes open during the firearms hunting season. As such, there would be no impact to elk security as it is defined in the 2015 Forest Plan.”

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 EIS 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.

Are all roads called for being closed under the Travel management Plans closed? If not how many miles of roads are still open that the Travel management Plan Decision authorize to be closed.

How many road closure violations have there been in the Three Rivers Ranger District of the Kootenai National Forest in the last 5 years?

Does the elk habitat effectiveness and security areas calculations take into account ineffective road closures?

Does the elk habitat effectiveness and security areas calculations take into account roads that are still open that the Travel Plan says are closed?

The purpose and need of the project is to "Promote resilient vegetation conditions by managing for landscape-level vegetation patterns, structure, patch size, fuel loading, and species composition."

In dozens of places the SEA uses the word "resilient" or "resilience" in terms of how the project increases it, or how it's chasing Forest Plan DCs by increasing the "resilience" of the ecosystem or some aspect of it. The Forest Plan defines "resilience" as: "The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change." The Forest Plan defines "restoration" in part, as "the process of assisting the recovery of resilience." And the Forest Plan defines Forest Health as "An ecological perspective that looks at the resiliency of an ecosystem and its ability to be sustainable."

However, the Ripley SEA provides absolutely no operational definition of resilience that would allow anybody to actually measure the resilience of the ecosystem as it stands now, or measure the change in resilience following project activities. An essential

component of an operational definition is measurement. A simple and accurate definition of measurement is the assignment of numbers to a variable in which we are interested. In this case, the variable in which we are interested is resilience, and how the FS measures it in these ecosystems.

What is your definition of resilience?

How can you measure if the project area is more resilient when the project is done?

Resilience is a scientific term that may be used to characterize forest ecosystems. However, mostly what we read about resilience from the EA and Forest Plan is that it's what happens when the forest is managed (i.e., mostly logged or prescribe burned), and the more the forest is logged and burned, the more resilient it becomes. Also we read that nothing that happens naturally, without management, will increase resilience. In other words, from the FS's perspective, resilience can only be manufactured, engineered, or imposed by management. So the term "resilience" as used by the FS is invalid, rendering much of the analyses confusing and misleading.

The fact that, "the entire Kootenai National Forest" was designated by the FS as "insect and disease threats" (KNF's Cover Letter for the Purple Marten Proposed Action) further illustrates the illegitimacy of the FS's entire management approach. The KNF has been claiming for decades that its timber sales are managing to prevent excessive insect and disease impacts, so if anything, this forest wide designation stands as the agency's own admission of its failure.

There is a need to "Improve big game winter range conditions and promote forage opportunities" but such a need is not validated. It is merely thinly veiled justification for logging.

Openings greater than 40 acres.

Page 10 of the SEA states: ***There will be 22 openings over 40 acres, either as individual units or in combination. The units range in size from 42 to 323 acres for a total of 2,860 acres of regeneration harvest units over 40 acres.***

When are you going to ask people to comment on the openings great than 40 acres? The Forest Service is required to open a 60 day comment period on openings greater than 40 acres.

The SEA fails to show that the openings to be newly created by the project don't exceed levels of current incidental take.

The current management strategy allows "temporary" reductions in Core and "temporary" increases in road density as if the habitat would then get reprieve from such "tempo- rary" adverse effects. However, the FS recognizes no gen- uine limitations on how much, how often and for how long these "temporary" current protections by allowing such harmful activities in Security Core as the opening of roads to public motorized uses like firewood gathering, unlimited amounts of non-motorized trails and

human activity, and logging projects that reduce Security Core for half a decade.

Moreover, excusing logging roads from limits on Total Motorized Route Density even though they have not been decommissioned, have not been removed from the road system, and are instead being "stored" for future logging— which also makes them more vulnerable to continued use as trails.

The analysis of large openings includes no actual analysis as to why large openings will not significantly disrupt wildlife habitat, including elk and MIS. There was also no analysis as to where these large openings will be created as per suitable and unsuitable timberlands. What would resource benefits be for large openings on unsuitable timberlands?

What would fish and wildlife benefits be for large openings on unsuitable timberlands?

What would fish and wildlife benefits be for large openings on unsuitable timberlands?

The project is in violation of NFMA, the Forest Plan, NEPA, and the APA for not getting approval from the Regional Office for openings larger than 40 acres.

CANADA LYNX VIABILITY

Page 6 of the SEA states” Claim 5: Plaintiff is entitled to summary judgment on its ESA claim related to the lynx.

The SEA obviously does not comply with the Court’s order by finding the the project has no effect on Canada Lynx and Lynx critical habitat. The SEA and FONI are in violation of the ESA, NEPA, NFMA, the Forest Plan and the APA.

Please find attached “Correlates of Canada Lynx Reproductive Success in Northwestern Montana” by Megan K. Kosterman and “Understanding and predicting habitat for wildlife conservation: the case of Canada lynx at the range periphery” by HOLBROOK et al which confirms Kosterman’s findings.

Does the action alternative comply with Kosterman and Holbrook’s recommendations?

1) USFS needs to take a hard look at impacts to lynx under NEPA, apply the lynx conservation measures and standards of the NRLMD, and consult on lynx via section 7 of the ESA b/c the best available science -- including recent tracking surveys conducted by WTU -- confirm lynx's presence and use of the area;

(3) USFS has failed to survey for lynx as required by the Biological Opinion on the Northern Rockies Lynx Management Direction (NRLMD).

In order to meet the requirements of the FS/USFWS Conservation Agreement, the FS agreed to insure that all project activities are consistent with the Lynx Conservation Assessment and Strategy (LCAS).

LCAS requirements include:

Project planning—standards.
1. Within each LAU, map lynx habitat. Identify potential denning habitat and foraging habitat (primarily snowshoe hare habitat, but also habitat for important alternate prey such as red squirrels), and topographic features that may be important for lynx movement (major ridge systems, prominent saddles, and riparian corridors). Also identify non-forest vegetation (meadows), shrub-grassland communities, etc.) adjacent to and intermixed with forested lynx habitat that may provide habitat for alternate lynx prey species.

2. Within a LAU, maintain denning habitat in patches generally larger than 5 acres, comprising at least 10 percent of lynx habitat. Where less than 10 percent denning habitat is currently present within a LAU, defer any management actions that would delay development of denning habitat structure.

3. Maintain habitat connectivity within and between LAUs.

Programmatic planning-standards.

1. Conservation measures will generally apply only to lynx habitat on federal lands within LAUs.

2. Lynx habitat will be mapped using criteria specific to each geographic area to identify appropriate vegetation and environmental conditions. Primary vegetation includes those types necessary to support lynx reproduction and survival. It is recognized that other vegetation types that are intermixed with the primary vegetation will be used by lynx, but are considered to contribute to lynx habitat only where associated with the primary vegetation. Refer to glossary and description for each geographic area.

3. To facilitate project planning, delineate LAUs. To allow for assessment of the potential effects on an individual lynx, LAUs should be at least the size of area used by a resident lynx and contain sufficient year-round habitat.
4. To be effective for the intended purposes of planning and monitoring, LAU boundaries will not be adjusted for individual projects, but must remain constant.
5. Prepare a broad-scale assessment of landscape patterns that compares historical and current ecological processes and vegetation patterns, such as age-class distributions and patch size characteristics. In the absence of guidance developed from such an assessment, limit disturbance within each as follows: if more than 30 percent of lynx habitat within an LAU is currently in unsuitable condition, no further reduction of suitable conditions shall occur as a result o vegetation management activities by federal agencies.

Project planning-standards.
1. Management actions (e.g., timber sales, salvage sales) shall

not change more than 15 percent of lynx habitat within a LAU to an unsuitable condition within a 10- year period.

Programmatic planning-standards.
1. Identify key linkage areas that may be important in providing landscape connectivity within and between geographic areas, across all ownerships.
2. Develop and implement a plan to protect key linkage areas on federal lands from activities that would create barriers to movement. Barriers could result from an accumulation of incremental projects, as opposed to any one project.

Please demonstrate that project activities are consistent with above and all other applicable programmatic and project requirements.

The U.S. Court of Appeals for the Ninth Circuit hold 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 (9thCir. 1985). If the biological assessment concludes that the proposed action "may affect" but will "not adversely affect" a threatened or endangered species, the action agency must consult informally with the appropriate expert agency. 50 C.F.R. §§ 402.14 (b)(1), 402.12(k)(1).

Canada lynx are listed under the ESA.

Canada lynx may be present in the project area and the proposed project may affect lynx and lynx critical habitat by temporarily increasing road density, removing vegetative cover, and engaging in mechanized activities that could displace lynx.

Please complete a biological assessment for lynx and formally consult with USFWS regarding the project's potential impacts on lynx and lynx critical habitat.

Grizzly Bears

In May 2019, the United Nations released a report finding that the current rate of species extinction "is already at least tens to hundreds of times higher than it has averaged over the past 10 million years."[1] The mountain caribou in the lower 48 states went extinct just a few months ago. Like the Cabinet-Yaak grizzly bear, the mountain caribou lived primarily on National Forest land, had a population of less than 50 individuals, and was threatened by logging and roads.

Alliance reiterates this point here because the agencies issued similar assurances regarding the mountain caribou that they now issue for the Cabinet-Yaak grizzly bear. For example, in litigation to protect the mountain caribou in this Court, the agencies represented that they would "meet caribou needs" by using the best available science and applying forest plan protections, and not approving logging projects unless they concluded that the project was "not likely to adversely affect" the mountain caribou. Jayne v. Sherman, 706 F.3d 994, 1001 (9th Cir.2013)(quoting FWS Biological Opinion).

In Jayne, these statements were accepted as adequate protections for the mountain caribou. Now the mountain caribou is extinct. It is not too late to avoid the same fate for the Cabinet-Yaak grizzly bear. As members of Congress stated when

[1]https://www.ipbes.net/sites/default/files/downloads/sp-m_unedited_advance_f or_posting_htn.pdf

they passed the ESA: "The agencies of Government can no longer plead that they can do nothing about [the grizzly bear]. They can, and they must. The law is clear." Tennessee Valley Auth. v. Hill, 437 U.S. 153, 184 (1978) (quoting Congressional Record).

The preservation of endangered species takes "priority over the 'primary missions' of federal agencies." Accordingly, courts must "afford[] endangered species the highest of priorities," and act with "institutionalized caution" when reviewing ESA cases. Cottonwood Envtl. Law Ctr. v. USFS, 789 F.3d 1075, 1091 (9th Cir.2015). This Court holds that the "fundamental principle [of institutionalized caution] remains intact and will continue to guide district courts when confronted with requests for injunctive relief in ESA cases." Id. Although the district court did not apply this fundamental principle in this case, this Court may now remedy that error by issuing a temporary injunction pending appeal to preserve the status quo until a final decision is issued on the merits.

The Wildlife report states:

Project activities in themselves are likely to adversely affect grizzly bears. Within the Kootenai National Forest portions of the Cabinet-Yaak Recovery Zone, all bear management units (BMUs) have not yet achieved the wheeled motorized access management measures established in the Forest Plan. Furthermore, the BMU in which this project is planned is small,

densely roaded, and a large portion is in private, residential ownership. This project also proposes activities that temporarily impact motorized route densities and core measures. Nonetheless, implementation of this project would continue to meet the BMU standards for open motorized route density, total motorized route density, and core. Thus, the project may affect, and is likely to adversely affect the grizzly bear. However, projects that are consistent with the 2015 Forest Plan are not likely to jeopardize the continued existence of grizzly bears across the recovery zone.

The Access Amendment is the product of years of public interest litigation on behalf of the imperiled Cabinet-Yaak grizzly bear. The well-established scientific consensus is that roads pose the most imminent risk to this grizzly population. Ninety percent of this population's Recovery Zone habitat is located on public National Forest lands. Thus, the federal government has the power to limit road density for grizzly bear protection on the vast majority of its habitat and thereby prevent the extinction of this grizzly population. Ostensibly, this is the purpose of the Access Amendment.

However, since the Access Amendment was approved in 2011, the U.S. Forest Service has prepared multiple years of monitoring reports regarding its implementation of road closures in grizzly habitat. These monitoring reports establish that these road closures are routinely violated and therefore ineffective: members of the public regularly ignore signs, drive around gates

or earthen berms, remove obstructions such as boulders or logs, or simply create their own new motorized routes.

Although these monitoring reports are only required for the Recovery Zone, there are incidental observations in these reports regarding closure violations found in grizzly habitat outside of the Recovery Zone, in the government-designated “Bears Outside Recovery Zone” or “BORZ” areas.

In 2017, Alliance hired its own investigators to determine whether there were road closure violations in these areas.

Due to time and funding constraints, this initial investigation was limited in scope to the Tobacco and Clark Fork “Bears Outside Recovery Zone” areas. As a result of one visit to each required closure device in these two areas, the investigatorsdiscovered numerous failed closure devices, roads that were categorized as closed but were open upon inspection, and illegal user-created roads that were simply unaccounted for in the Forest Service road databases. Thus, the independent investigation confirms the fact that these road closures are routinely violated both inside and outside the Recovery Zone.

The recurring problem of road closure failures undermines the foundation of the Access Amendment management regime, 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 Access Amendment. The

agencies must also address this problem and its impact in an updated ESA consultation and in the Knotty Pine project and is another reason that an EIS should be written for the Knotty Pine Project.

The EA states that you are proposing to build 1.2 miles of temporary roads. When the KNF can not ensure that close roads remain closed, will this project just increase the miles of motorized roads in grizzly bear habitat?

How does the FP complies with the "best available science" on grizzly recovery, or the 2012 Planning Rule that required Forest to emphasize "Connectivity?"

The majority of the Cabinet-Yaak Grizzly Bear Ecosystem – 90% – is National Forest land, managed by the Forest Service. 64 Fed. Reg. 26725, 26728 (May 17,1999). In terms of all of the human uses that affect grizzly bears, "[r]oads probablypose the most imminent threat to grizzly habitat today []. The management of roads is one of the most powerful tools available to balance the needs of people with the needs of bears." Accordingly, the U.S. Fish & Wildlife Service (FWS) states: "It is strongly recommended that road management be given the highest priority within all recovery zones." Roads pose a threat to grizzly bears because roads provide humans with access into grizzly bear habitat, which leads to direct bear mortality from accidental shootings and intentional poachings.

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 habitatassociated with closed roads.” Both open and closed roadsdisplace 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-roaded and closed-roaded 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."

Current peer-reviewed science still finds that roads have the most significant impact on grizzly bear survival: "[o]f all the covariates we examined, the amount of secure habitat and the density of roads in nonsecure habitat on public lands had thegreatest effect on grizzly bear survival."

In 1999, FWS found that the Cabinet-Yaak grizzly population was "in danger of extinction" due in part to the habitat alteration and human intrusion related to the cumulative impacts of timber harvest and its associated road construction. 64 Fed. Reg. 26732. Today, twenty years later, the Cabinet-Yaak grizzly population is still facing the same threats and still warranted for uplisting from "threatened" to"endangered." All. for the Wild Rockies v. Zinke, 265 F.Supp.3d 1161, 1182 (D. Mont. 2017).

Roads, even if nominally "temporary," can still have long-lasting generational displacement effects on grizzly bears because females teach their cubs to avoid these areas.

These roads can therefore result in direct mortality, indirect mortality, and reduced cub survival. When applied to an extremely small, endangered[2] population of fewer than 50 individuals that is already experiencing high mortality rates, failing recovery tar-

gets, and hovering at less than half the numbers needed for viability, these harms are amplified and create a great cause for concern for Alliance's members. Neither the "imminent harm" posed by roads nor the dire status of this population are acknowledged by the agencies.

It is misleading to state that this population is merely "threatened." The District of Montana vacated FWS's rule finding that endangered status was not warranted and "reinstate[d] the FWS's November 2013 warranted but precluded finding." All. for the Wild Rockies v. Zinke, 265 F. Supp. 3d 1161, 1181 (D. Mont. 2017). Thus, the population is currently warranted for listing as an endangered species, but it is still on the waiting list.

Page 303 of the Black Ram EA states: On NFS lands, the objectives of land management within grizzly bear habitat "are to maintain and enhance habitat and to minimize potential for grizzly-human conflicts" (Interagency Grizzly Bear Committee Taskforce, Mealey, U.S. Department of Interior, U.S. National park Service, & U.S. Bureau of land Management, 1986). Nearly all of BMU 14, over 99 percent, is classified as MS-1. The Garver BMU is about 86 percent MS-1 and 14 percent MS-3. The MS-3 portion reflects human settlement and occupation in and around the community of Yaak.

The Ripley project will not maintaining and enhancing grizzly habitat and will increase the potential for grizzly-human conflicts in violation of NFMA, NEPA, the APA and the ESA.

The Forest does not have a good track record of keeping closed roads closed. The Forest Service does not disclose the road

mileage behind these ineffective closures; therefore it is unclear how many miles of additional open and total roads must be added to the existing condition calculations as a result of these ineffective closures.

In a recent Ninth Circuit Opinion, the court found that the Forest Service had failed to establish whether similar "undetermined" roads of unknown origin caused an increase above the Tobacco BORZ baseline:

The error cannot be treated as harmless in light of the ambiguity in the record as to whether the "undetermined" roads at issue were, in fact, included in the Access Amendments baseline calculation.

There are at least three problems with the KNF's record of amount of roads. First, because "undetermined" is a sub-category of "unauthorized" roads, it is possible that the particular undetermined roads at issue in this case were created—without authorization from the Forest Service—in the interim between the measurement of the Access Amendments baseline and the Forest Service's survey of existing roads for the Project.

All. for the Wild Rockies v. Savage, 897 F.3d 1025, 1036, n.18 (9th Cir. 2018). In light of these circumstances that (1) road closures/barriers are regularly breached but the Forest Service conducts no systematic monitoring to determine how many miles of illegal road use are occurring behind barriers each year, and (2) the Forest Service simply ignores illegal "undetermined" roads and does not include them in its calculations for open or total roads in the annual monitoring reports, the open and total road

numbers in the monitoring reports are not accurately reflecting the conditions on the ground. It is therefore reasonable to assume that the baselines in the project area regularly exceeded because the reported conditions hover at or near the baseline.

Chronic recurring road closure breaches cannot reasonably be construed as "temporary;" and illegal road use does not fall within the scope of Access Amendment "temporary" roads.

The Forest Service and FWS have acknowledge that road closure breaches (and resulting illegal road use) are not addressed in the Access Amendment. Nonetheless, the agencies argue that all road closure breaches regardless of whether they are chronically recurring and regardless of how long they last on the landscape must be construed as "temporary" road increases. Onto this premise, the agencies then bootstrap an additional argument that because certain specific types of temporary roads were addressed in the Access Amendment, that discussion must also apply to "temporary" road increases from illegal road use.

First, it is not reasonable to construe recurring illegal road use as "temporary" road density increases. The monitoring reports indicate that public users may repeatedly breach the same closure year after year. See, e.g., AR42:000059-62 (noting that boulders placed in 2015 have been removed and unauthorized users are again circumventing gate on Road 2236). Moreover, the Forest Service may take years to act on known violations. See, e.g., AR42:000061 ("The Clatter Creek gate (268) was included on the 2015 gate repair contract but after the bids came in the Clatter Creek gate was dropped due to repair costs for all gate re-

pairs exceeding available funding. In BY2016 the gate remained damaged and ineffective."); see also AR43:000081-82 (note 2) (during planning for the Hanna Flats logging project, the Forest Service found illegal motorized use on 15.7 miles of road that were not included in the baseline but the agency postponed remedial action until implementation of the logging project; in the 2018 monitoring report, the agency concedes it has still not yet eliminated this illegal use); see also AR232:000767 (finding that four barriers did not effectively prevent motorized use but deferring any action to fix the problems).

Thus, while the Forest Service insists that all breaches are temporary, those same breaches may be recurring or may have lasted for many years prior to discovery and remedial action, resulting in a chronic situation. The situation with the BORZ is a good illustration of this problem S although the Forest Service insists that it fixes all breaches as soon as possible, nonetheless at least four out of seven BORZ areas chronically fail to meet both the open and total road baseline conditions from the Access Amendment, as shown above in the table in Section B.

Second, even assuming that illegal road use could be construed as "temporary," it still does not have the same effect as lawful temporary road use. A breach of a closure device that results in public motorized use in effect results in an open road. The Access Amendment severely restricts temporary increases in open roads: "immediately following completion of all mechanized harvest and post- harvest slash activities requiring use of the

road, to allow motorized public use during the bear summer season prior to the fall bear hunt (i.e., June 16 - August 31) for activities such as personal firewood collection. This public access would only be provided in cases where the mechanized harvest and/or post-harvest slash activities occurred during the same active bear year."

Thus, temporary increases in open roads are limited to a June 16-August 31 window, and may only occur in the same year in which logging activities have already occurred and used that particular road, presumably because grizzlies would have already been displaced from those areas. In contrast, illegal motorized use behind road closure breaches is not limited to a June 16-August 31 window, and is not limited to a single year entry on a road along and on which logging activities have already been occurring.

Moreover, illegal road use would also constitute an increase in total roads. However, temporary increases in total roads are only permitted if the roads are "effectively" gated to prevent public use during a project, (2) after project use, the roads are treated so as to "effectively prevent[] motorized access" and require no motorized access for maintenance for at least 10 years, and (3) upon project completion, the area is "returned to or below the baseline levels contained in Table 16" of the Access Amendment ROD. Obviously a road that has illegal road use is not "effectively" gated to prevent public use.

Thus, illegal road use does not comply with the restrictions set for lawful increases in temporary roads neither open nor closed

in the Access Amendment and therefore cannot possibly have the same effects. It is simply implausible that unlimited illegal road use occurring at any time in any location would have the same effect on grizzly bears as Access Amendment temporary roads that are significantly restricted in both timing and location. Indeed, illegal road use is illegal precisely because the Forest Service has already closed these specific roads to protect grizzly bears. If illegal motorized use occurs on these roads that were closed to protect grizzly bears, it may displace grizzly bears from areas that they would otherwise not be displaced from.

2017 DNA sampling identified only 44 individual bears. 1 Specifically, the recent sampling identified 20 females and 24 males, with 23 bears in the Cabinets and 21 bears in the Yaak portion of the ecosystem.

Recognizing that the grizzly bear population in the Cabinets portion of the ecosystem is likely much smaller than the estimated population for the entire ecosystem, we are likely looking at a much larger percentage of the population being seriously impacted during the life because of this project.

Becasue od the serious impacts to grizzly bears, please demonstrate compliance with Forest Plan standards relevant to grizzly bears, and analyze the direct, indirect, and cumulative impacts to grizzly bears.

The Forest Service must comply with National Forest Management Act ("NFMA") and its implementing regulations. NFMA

requires the Forest Service to ensure that site-specific management projects are consistent with the applicable forest plan. 16 U.S.C. § 1604(i). Thus, the Forest Service must ensure that all aspects of the proposed action comply with the Kootenai Panhandle National Forests Land Management Plan.

The Grizzly Bear Access Amendment set standards for open motorized route density ("OMRD"), total motorized route density ("TMRD"), and retention of core grizzly bear habitat within the Cabinet-Yaak and Selkirk Recovery Zones bear management units. This Amendment is incorporated as a standard (FW-STD-WL-02) in the Kootenai National Forest Plan at Appendix B. The Forest Service must comply with the Access Amendment TMRD standards during and after project implementation, it not the project directly violates NFMA.

Dr. David Mattson makes the following points.

The assessment of prospective effects of the this project on grizzly bears in the is premised on several critical assumptions. First, status of the Cabinet-Yaak grizzly bear population is assumed to have improved since 2012. Second, and related, the KNF assumes that some erosion of security for grizzly bears is therefore permissible, conditioned on a related assumption that security and road access standards employed by the Kootenai National Forest (NF) are sufficient for recovery of grizzly bears in this ecosystem.

All of these assumptions are unwarranted.

Briefly:

- ***The weight of available evidence does not support concluding that population status has improved. For one, the methods used to estimate trend and current population size are beset with a host of problems. For another, the information able to be distilled from demographic data suggests that any improvement has stalled since 2014.***

- ***Variations in population size and trajectory between 1999 and 2010 are more likely attributable to variations in abundance of natural foods—berries in particular—that affect exposure of bears to humans rather than to any increased mitigations. During years of scant berries, bears likely forage more widely and more often end up in conflict situations or exposed to malicious killing.***

- ***The population of grizzly bears in the Yaak/Yahk is far smaller than even the smallest size posited to be viable by any researcher. Related, the population remains acutely vulnerable to even the smallest increases in bear mortality that are predictably more likely to occur with any increase in road access and associated human activity.***

1

- ***Malicious and other unjustified killing by humans remains the dominant cause of death for grizzly bears in the Cabinet-Yaak Ecosystem. These kinds of killings are predictably associated with roads. As a result, levels of road access need to be substantially reduced and related levels of habitat security substantially increased rather than the opposite, as is being proposed for the Knotty Pine Project.***

- ***Road density and habitat security standards used by the Kootenai NF are patently deficient, partly because they are based on research that conflates behavioral phenomena such as avoidance and displacement with demographic phenomena, notably survival. The scale is wrong as well, given that exposure to mortality hazards logically accrues over years as a consequence of cumulative annual movements of bears vis-à-vis hazardous environs. As a corollary, the fact that standards on the Kootenai NF are***

more lax than standards on the Flathead NF is self- evidently nonsensical given that grizzly bears in the Cabinet-Yaak Ecosystem remain in a much more precarious status compared to grizzly bears in the Northern Continental Divide Ecosystem.

- ***There is little or no evidence that food abundance is a significantly limiting factor for grizzly bears in the Cabinet-Yaak Ecosystem—especially as manifest in reproduction. On the other hand, there is ample evidence that human-caused mortality had governed and continues to govern the fate of this population, with food effects manifest primarily in the extent to which grizzly bears are exposed to human-related hazards during years when berries are in shorter supply.***

- ***Compounding prospective problems with the project, proposed activities are concentrated in an area that is vital for facilitating movement of grizzly bears between core habitats. Project activities will diminish rather than enhance security needed not only to facilitate transit of bears, but also increase odds that exposed bears will survive.***
  In short, the Knotty Pine project promises to harm grizzly bears in the Cabinet-Yaak Ecosystem.

A. Weight of Evidence Does Not Support Concluding that Status of the Cabinet-Yaak Population has Improved Since 2012

A.1. The 2.1% Per Annum Growth Rate for the Cabinet-Yaak Population is Not Justified or Applicable

Use of a 2.1% per annum growth rate to project total size of the Cabinet-Yaak population from the Kendall et al. (2016) 2012 point estimate, as was done by Kasworm et al (2018), is not defensible. Such use is, moreover, guaranteed to produce spurious results that cannot legitimately be used to reach conclusions of management relevance. There are several unambiguous reasons.

A.1.a. The growth rate is not representative of the total population

First, the estimated 2.1% per annum growth rate only applies to an unknown fraction of the total Cabinet-Yaak grizzly bear population. Vital rates used to estimate this growth rate were based solely on "native" or "natural" research-trapped bears, and expressly excluded bears captured because of conflicts or part of the augmentation program (Kasworm et al. 2018: 10). The growth rate, moreover, applies almost exclusively to the Yaak portion of the population given that 95% of the data used to estimate survival rates and 85% of the data used to estimate reproductive rates came from this subpopulation (ibid: 36)—protestations by the authors notwithstanding (ibid: 36). On top of this, the 2.1% per annum rate was estimated only for the female portion of this high-grade (ibid: 10), which is of consequence even though female survival is disproportionately important in determining growth rate, as such.

In other words, the 2.1% per annum growth rate can only be legitimately applied to females residing in the Yaak subpopulation that were not trapped and marked as a result of conflicts nor part of the augmentation program. Put another way, management-trapped bears, augmentation bears, and males would need to be represented in a modeling framework if any estimated population growth rate were to be prima facie representative of the total population. Moreover, if the fates of all such bears were to be considered, estimated population growth rate would almost certainly be lower given that survival rates of males, augmentation bears, and management bears are substantially less than survival rates of the females used to estimate the 2.1% per annum growth rate (ibid: 33-35).

If a growth rate were to be used to project a total population estimate, comparable to the Kendall et al. 2012 point estimate of 49 bears (95% CI = 44-62), then such a growth rate would need to represent birth and death rates of the total population, and apply specifically to the period of interest (e.g., 2012-2017) rather than a longer period of time that masks the relevant trajectory (see my point below).

A.1.b. The growth rate does not represent 2012-2017

The 2.1% per annum growth rate used by Kasworm et al to project 2017 population size was calculated using data that span 1983-2017 and so, therefore, axiomatically represent a generalized growth rate for Yaak females during this lengthy 35-year period. Put another way, the 2.1% per annum growth is not an estimate of growth for the period 2012-2017. For it to be so, the rate would have necessarily been estimated only using data from the approximate 2012-2017 period.

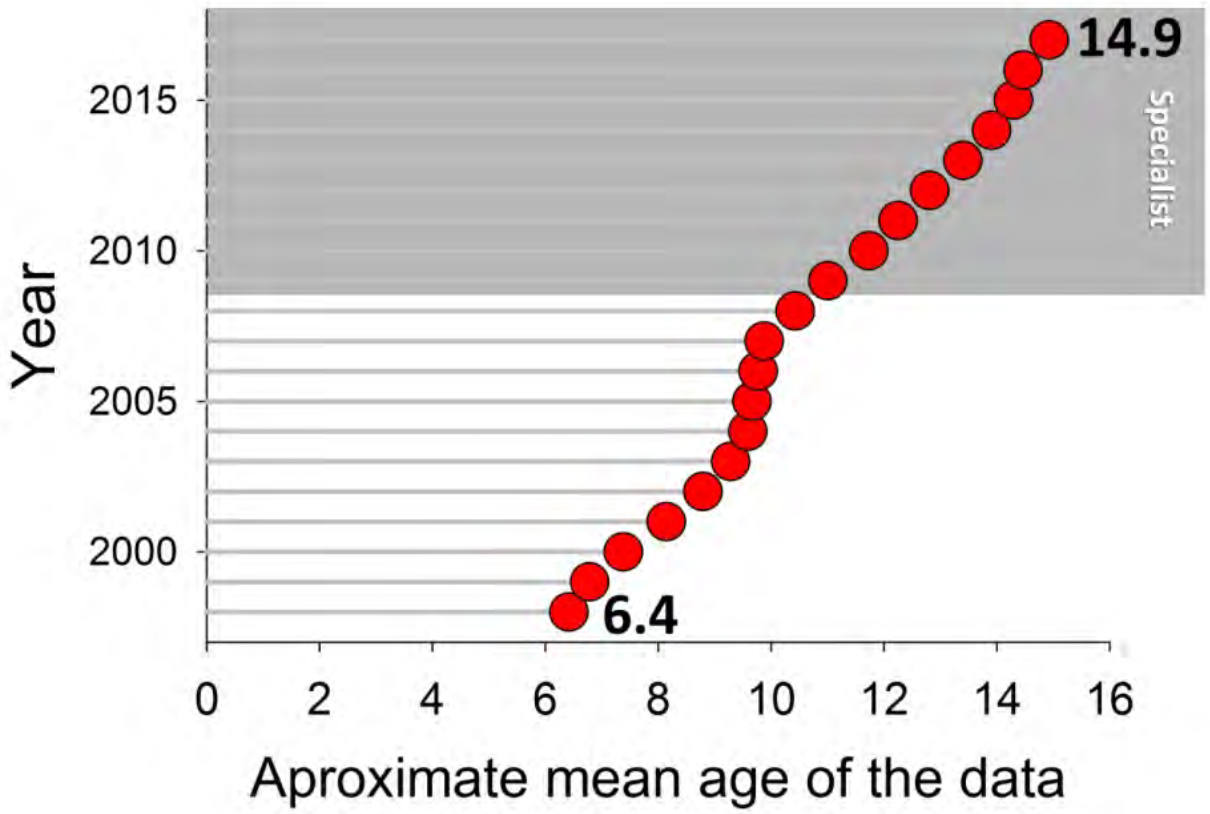
More to the point, estimates of growth for the Yaak female population are increasing back-weighted by inclusion of data that are, on average, increasingly old. Figure 1 (herein) shows the approximate average age of data used to calculate vital rates with the passage of time (from ibid: Table 17, 40-42). Notice that average age has increased from around 6-7 years in 1998 to nearer 15 years in 2017. In other words, with the progression of time estimates of population growth for the female segment of the Yaak population have become increasingly irrelevant to judging current population trajectory.

The Government retort to these contentions would probably be that the data from such a short period of time would be so sparse as to preclude a usefully accurate estimate. That is almost certainly the case, and a commentary in its own right on the profound limitations imposed by intrinsically small sample sizes. Nonetheless, this does not negate the point that the 2.1% per annum growth rate for 1983-2017 is spurious when applied to the 2012-2017 period. As Figure 11 clearly suggests (ibid: 37), population growth rate has almost certainly varied over time, albeit in largely indeterminate ways (see my following point).

Figure 1. Trend in mean age of data used to calculate vital rates of Cabinet-Yaak grizzly bears with passage of years from 1998 to 2017. Mean age has more than doubled, with trend towards increased aging accelerating since deployment of a conflict management specialist in the ecosystem. Increasing age renders estimated vital rates increasingly irrelevant to current conditions.

A.1.c. Uncertainty of the growth rate as currently (or even ideally) calculated debars use

Small sample sizes impose very real constraints on the precision and accuracy of all demographic rates being used by Cabinet-Yaak researchers and managers. These constraints follow ineluctably from the small size of the Cabinet-Yaak grizzly bear population, which is a non-negotiable feature of this ecosystem.



As a practical upshot, all of the population growth rates calculated to date have uncertainty intervals (e.g., 95% confidence intervals) that not only substantially overlap zero (i.e., no growth) but also, over time, each other. More specifically, de-

spite purporting to show trend in cumulative growth rate over time, the confidence intervals shown in Figure 10 (ibid: 37) all overlap—most almost completely (see also Figure 2A herein). Because of this, there is little or no basis for concluding that growth rate has varied with time. Likewise, taking a precautionary approach, there is little or no justifiable basis for concluding that growth rate is currently positive, despite statements in Kasworm el al. such as "The probability that the population was stable or increasing was 73%" (ibid: 36), especially in light of the fact that the point estimate of 2.1% per annum is a cumulative rate spanning 1983-2016 with little or no known relationship to current rate of population increase or decline.

Moreover, when the totality of point estimates and uncertainty is taken into consideration for the period 1998-2017, there is a cumulative 62% probability that the population was declining during these 19 years, consistent with the 2017 estimate of population size for Yaak females still being around 52% less than the estimate of population size for 1998 (Figure 2A and 2B herein).

The implications of uncertainty are thrown into relief by examining the specifics of projecting population size forward in time from 1983 to 2017 using the 1.021 (95% CI = 0.949-1.087) growth rate, noting up front that uncertainty in annual growth rate magnifies exponentially over time when manifest in population size. For example, after back-casting to obtain a plausible 1983 population starting point, deterministic projections of population size using the upper and lower confidence intervals of growth allow for a current population

(2017) of anywhere between 3 and 256. Stochastic projections, e.g., using the software RISKMAN, generate a similar and not particularly useful range of 4 to 154 individuals.

The point here is that the raw cumulative uncertainty is huge, especially when dealing with a time period as long as 1983-2017. It is also important to note that this exercise takes the 1.021 estimate of lambda at face value, which, as per my previous points, is unwarranted.

Related to this last point, the current basis for modeling population growth rate using Booter (ibid: 10- 11) is egregiously simplistic given the self-evident structural complexity of grizzly bear population demography in the Cabinet-Yaak Ecosystem. For any estimate of growth rate to be realistic, explanatory, relevant, and accurate, all of the main structure needs to be accommodated. More specifically, a relevant demographic model would ideally include source-sink structures accounting for management- trapped versus research-trapped bears, bears in the Yaak area versus the Cabinet Mountains, augmentation bears versus in situ bears—in addition to accounting for the male segment as well as inter-annual variation attributable to variation in key food resources (see later). The model described in Kasworm et al. does none of this.

Again, the probable retort would be that sample sizes are too small to support estimating the many rates required for such a model. But that is, indeed, the point. And no amount of hand-waving or protest will make it otherwise nor redeem the deficiencies in current estimates of demographic rates. The uncertainty is real and unavoidable, and should be acknowledged in management decision-making.

A.2. Even taking estimated growth rate at face value, current population status is problematic

Even taking the population growth rate estimated by Kasworm et al. at face value, the most defensible conclusions would be, first, that status of the population has worsened during 2014-2017 compared to 2006-2013, and, second, that numbers are still substantially less than the presumed peak reached around 1998. These conclusions are based on trend in population growth rate over time (as per ibid: 37), and trend in population size estimated by projections using year-specific cumulative population growth rates (e.g., projecting population size for 1998 using the 1983-1998 growth rate estimate, and then doing the same for each successive year, with 1983 the starting year throughout).

Figure 2 (herein) shows seminal results. In Figure 2A I've identified three periods typified by trends in population growth: rapid decline of 2% per annum during 1998-2006, coincident with the berry famine (see below); a nearly as rapid 1.1% rate of improvement during 2006-2014; followed by stalling in the rate of improvement to around 0.2% per annum since 2014—an 82% decline in rate of change— coincident with population growth rate finally reaching positive territory. Importantly, this refers to the per annum rate of deterioration or improvement in population trajectory, which is perhaps the most relevant information to be gleaned from the estimates of population growth rate presented by Kasworm et al.

Finally, Figure 2B (herein) shows trend in estimated size of the Yaak female population, both as a central tendency (dark green line) as well as bounding uncertainty (light green band, based on projections using the upper and lower confidence intervals for each cumulative estimate of growth rate). Parenthetically, I transformed the values to a natural log scale in Figure 2B to visually emphasize trends given that the bounds of uncertainty explode with projections increasingly farther forward in time. The take-away point is that, according to these values, population size peaked during 1998, reached a nadir during the height of the berry famine in 2006, increased through 2014, and then stalled during 2015-2017 at a size that was still around 52% less than peak numbers reached during 1998.

The key points here are that improvement in status of the female segment of the Yaak population stalled beginning in 2014 at numbers that were still approximately 52% less than the peak reached during 1998. Having said this, both of these conclusions remain severely compromised by the intrinsic uncertainties, lack of relevance, and bias of methods used by Kasworm et al.

A.3. Conclusion

The upshot of all this is that there is no legitimate basis for estimating current population size (e.g., 55- 60) by applying a biased 1983-2017 growth rate—based on high-graded data representing only a fraction of the population—to a point population estimate made during 2012. Moreover, even taken at face value, the current cumulative population growth rate shows

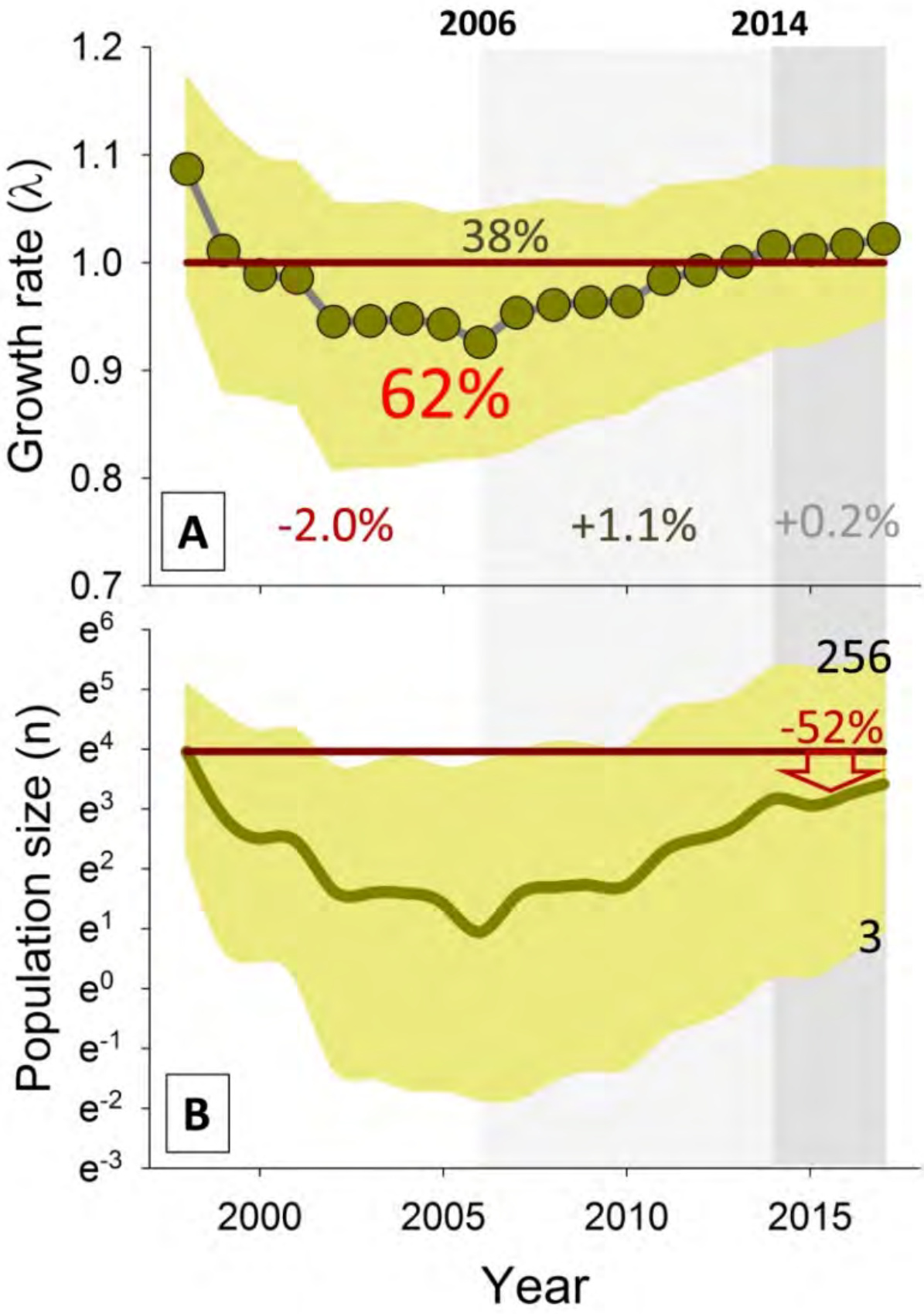
stalled improvement in population status and a population still substantially less than peak numbers reached during 1998.

The best that can be perhaps be invoked is a contrast between the presumed minimum estimate of 35 bears during 2014-2017 (ibid: 27) and the 2012 estimate of 49 (44-62) bears reported by Kendall et al.

(2016). The estimate of 35 for 2014-2016 is self-evidently less than the lower bound of the 2012 confidence interval, more consistent with a static or even declining population than with an increasing one. Of greater relevance to the draft EIS, this general conclusion also holds for comparisons specific to the Cabinet population (a current minimum of 13 bears compared to lower confidence intervals of around 20 reported by Kendall et al. for 2012).

Figure 2. Trend in estimated population growth rate (A) and related estimated total population size (B) for Cabinet-Yaak grizzly bears, with the notable proviso that both sets of estimates are based almost wholly on data obtained from female grizzly bears in the Yaak population. Dark green dots or lines denote central tendencies, large green bands bounds of uncertainty. The horizontal dark red line in (A) denotes no growth, with any values above leading to increase and any values below leading to decline. The red line in (B) corresponds with estimated population size in 1998. In (A) I also show the cumulative weight of evidence for population declines versus increases for 1998-2017 along with average annual rates of change in lambda during three periods characterized by non-

stationary shifts in dynamics. The numbers at right in (B) correspond to the range in estimated population size given uncertainties in growth rate (3-256), as well as the deviance in current estimated population size from the 1998 benchmark.


2006
2014
1.2
1.1
1.0
0.9
0.8
0.7
Growth rate (λ)
38%
62%
A
-2.0%
+1.1%
+0.2%
e6
e5
e4
e3
e2
e1
e0
e-1
e-2
e-3
Population size (n)
256
-52%
3
B
2000
2005
2010
2015
Year

B. Comparison of Pooled Survival Rates in Kasworm et al. (2018) is Not Legitimate

As ancillary support for the proposition that size of the Cabinet-Yaak population has increased between 1999-2006 and 2007-2017, Kasworm et al state that "Grizzly bear survival of all sex and age classes decreased from 0.899 during 1983–1998 to 0.792 during 1999–2006 and then rose to 0.934" (ibid: 34), and then summarize these same numbers in Table 13 (ibid: 34).

Most of the problems and associated bias noted above applies to this comparison. Note, first, that the 95% confidence intervals reported in Table 13 for pooled estimates from all three time periods overlap, which precludes confidently concluding there is any difference in mean rates. Moreover, note the restriction to "native" bears, which excludes any consideration of conflict-trapped or augmentation bears, which were very much a component of the 2012 point estimate of population size.

The other problematic aspect of this comparison is that data from all bear sex and age-classes were pooled, without any apparent attempt to determine whether this collapse of data preserves representation of the population at large. Are males over- or under-represented?...likewise subadults versus adults? Some sort of weighting scheme reflective of current or even stable population structure could provide some remedy, but without compensating for other biases.

The other interesting aspect of this data-pooling is the extent to which it is at odds with other results and commentary in Kasworm et al. More specifically, this aggregation of data ignores the disproportionate importance of subadult females to population dynamics. This importance is evident in the near 85% variance in estimated population trend attributed to survival of subadult and adult female bears in Booter calculations (but with 60% attributable to subadult female survival, Table 15; ibid: 37), as well as the different contextual emphasis placed by the authors on female survival on Pages 32 ("...it is important to consider the rate of female mortality") and 37.

The implication of all this is that the comparison of survival rates estimated from pooled data presented by Kasworm et al on Pages 33 and 34 does not mitigate the many fatal problems with their estimates of population growth rate.

C. Comparison of Annual Average Deaths in Kasworm et al. (2018) is Uninformative

Kasworm et al. (2018) present information on grizzly bear deaths in the Cabinet-Yaak Ecosystem in terms of numerous contrasts and adjustments presumably designed to be of relevance to various management deliberations. On pages 15-16 a running average of annual mortalities is related to recovery criteria; on pages 16-18 a full list of deaths with ancillary details is provided; and on pages 31- 33 mortality is summarized in multiple ways presumably relative to different management considerations. Throughout, the parsing, categories, and nomenclature are confusing, obfuscated, and confounded. As a result, I needed to reconstruct much of the analysis of mortalities presented by

Kasworm from the raw data on pages 16-18. The contrast among time periods presented in Table 11 (ibid: 33) was a particular focus.

C.1. Table 11 in Kasworm et al. (2018) is a Tangled Mess

The totals in the column farthest right in Table 11 of Kasworm et al. (2018) include all mortalities— human-caused, natural, within 16-km of the Recovery Area boundary, in the US as well as Canada—plus the estimated unrecorded human-caused mortalities. For some inexplicable reason, and unlike in the NCDE and GYE, natural mortalities and mortalities of unknown cause were not accounted for in estimations of unrecorded mortalities.

The upshot is that the row totals in Table 11 represent a mishmash of natural, human-caused, and estimated unrecorded human-caused mortalities, without any straight-forward connection to judging overall population status. In fact, the inattention and even outright dismissal in this context of natural mortality as a factor in judging population status is mystifying given that a dead bear, for whatever reasons, matters in assessing the toll taken by mortality.

C.2. Comparison of 'rates' between 1999-2006 and 2007-2017 is Uninformative

By contrast, the comparison of annually-averaged human-caused mortality between 1999-2006 and 2007-2017 on Page 32 of Kasworm et al. only considers human-caused mortality, but without including any of the estimated unrecorded human-

caused mortality included in Table 11—and without any cogent explanation. The confusion implicit to this inexplicable parsing is compounded by use of the term 'rate' in reference to an annual average, in context of 'rate' being used elsewhere in reference to survival and reproductive rates referenced to fates of individual bears. On top of this, a typo was made in reference to the 2007-2017 'rate,' which should be 2.2, not 2.1. This error amplified the potential for confusion arising from comparing '2.1' with '2.25' and calling the first value an increase over the second.

Reducing this chaos to something comprehensible: the annually averaged number of known and probable human-caused deaths during 1999-2006 was 2.13. Using all currently available data, for 2007- 2018 the average was 2.08. When the estimate of unreported human-caused deaths is included, the average for 1999-2006 was 2.75 (95% CI 1.6-3.9). For 2007-2018 it was 3.2 (95% CI 2.2-4.2). Considering total known-probable mortality plus estimated unreported human-caused mortality—but without any correction for unreported natural deaths—the annual averages for 1999-2006 and 2007-2018 were virtually identical: 3.9 and 3.8.

The important point is, here again, that rote statistical uncertainty debars any conclusion about increase, stasis, or decrease in numbers of human-caused deaths. The confidence intervals of annual averages overlap substantially, which is not surprising given the small sample of years and dead bears. This statistical uncertainty is amplified by uncertainty attached to detecting any bear death other than that of an actively radio-monitored animal. Considering only human-caused

deaths, this certainly holds for poached bears, deaths 'under investigation,' and deaths from unknown (but human-related) causes. A back-of-the-envelope calculation suggests that such deaths need to be increased by around 70 to 120% in year-end tallies.

In the face of such irrefutable uncertainty, Kasworm et al resort to focusing on and then emphasizing female mortality, which reduces the absolute values of calculated averages even further. When an estimate of unreported human-caused female mortalities is added to known mortalities (using the long-term proportion of F:M deaths=0.4), the result is an annual average of 1.75 (95% CI 0.83-2.67) female deaths for 1999-2006 and 0.80 (95% CI 0.34-1.54) female deaths for 2007-2018. All of the reported differences in mean values are so far within the range of statistical uncertainty as to render these comparisons a bit absurd.

C.3. Conclusion

Again, researchers and managers in this ecosystem might argue that small samples prevent any degree of certainty about conclusions, but this does not obviate the obligation to acknowledge uncertainty. Nor does it eliminate the practical consequences of small sample sizes and the compromising effects of chance processes—highlighted recently by a jump in recorded deaths from 1 in 2017 to 3 in 2018, a tripling in just one year. More certainly, it recommends humility and precaution in the face of such statistical ambiguities.

But all of this still leaves open the question of why natural mortalities as well as mortalities that cannot be definitively ascribed to human causes are not accounted for in assessing population status. This question is especially relevant given that Kasworm et al comment in several places on the extent to which variation in abundance of key natural foods likely drives population dynamics, often through the 'natural' death of dependent young (see below). Or, even, why, when considering only human-caused mortality, adjustments to account for unrecorded deaths were not included. This is all a bit mystifying as well as prima facie unjustified.

D. Status of the Cabinet-Yaak Population Remains Highly Precarious

The current vulnerability of the Cabinet-Yaak population can be illustrated through a simple exercise, even without accounting for spatial structure of the Cabinet and Yaak subpopulations. I input vital rates into a commonly-used risk management program named RISKMAN (currently being proposed for management of grizzly bear mortality in the NCDE). Using the stochastic function, I was able to reconstruct the c. 2.1% growth rate reported by Kasworm et al (2018) for 1983-2017. More specifically, the cumulative geometric mean growth rate (lambda) varied from a maximum of 1.035 to a minimum of 1.008. Accounting for variation in vital rates, the median ending population size at year 34 was 43, although the upper and lower 95% percentiles of simulated trajectories produced ending populations as small as 4 and as large as 154.

I then simulated what would have happened if just one additional female died each year. In this scenario, the geometric

cumulative mean growth rate dropped from 0.952 (already much less than 1) to an astounding 0.202 at year 34 of the simulation (Figure 3 herein). Median total population size had reached 0 by year 23, with an upper 95th percentile of only 11 animals at the end of simulations. Results were not much improved when an additional 1 female was lost only once every 2 or 3 years. This is not presented as any definitive modeling result, but rather illustrative of how little the margin of error is, and how vulnerable this population is to even the smallest increased increments of mortality (e.g., Kendall et al. 2016). This point is especially germane given that one adult female was killed by humans each of the last two years, during 2018 and 2019. And this does not account for adult females that died and were not documented.

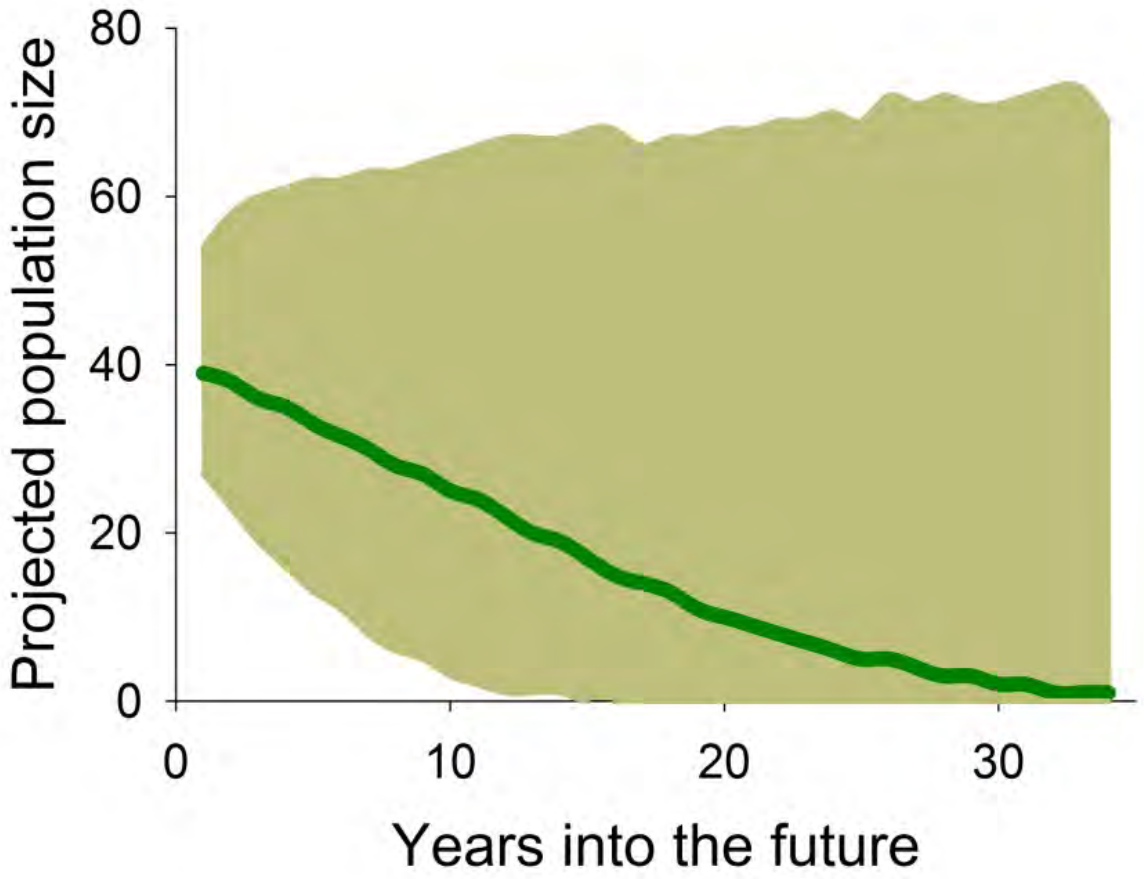
Figure 3. Results of RISKMAN projections for the Cabinet-Yaak population using vital rates reported by Kasworm et al. (2018), but introducing the death of an additional female grizzly bear once every 2 years. The thick green line represents the median trend of projections; the dusky green band above and below the variability of projections.

E. Weight of Available Evidence Emphasizes the Continued Importance of Malicious Killing

The extent to which poaching, malicious killing, or other suspect circumstances are associated with human-caused deaths is also instructive regarding the overall effectiveness of conflict mitigation efforts during 1999-2017 to offset the problematic effects of road-access and poaching. By its nature, malicious killing/poaching is a criminal act undertaken by criminals.

Such behavior is rooted in attitudes and outlooks that are notoriously unresponsive to education and 'outreach'. The phenomenon is about willful malfeasance. As such, limitations on road access coupled with improved law enforcement and successful prosecutions are logically the most appropriate redress—not, for example, conflict mitigation by a specialist who is not tasked primarily with law enforcement.

Before pursuing this any farther, some clarification of obfuscations in the dead bear database is needed. During 1999-2017 a number of deaths were ascribed to 'Undetermined' human causes, 'Poaching' or listed as 'Under investigation'. The first and last categories are not explicit, but nonetheless strongly suggestive. Certainly, 'Under investigation' suggests that the death occurred under suspicious circumstances warranting investigation—with a strong likelihood of either poaching or other



unwarranted lethal action by the involved people. Such suspicions are rarely definitively resolved. 'Undetermined' is also more suggestive of malfeasance rather than innocence on the part of the involved people. Given the alternatives, such deaths are more defensibly allocated to causes more resistant than not to mitigation.

With all of this as context, there were a total of 7 known-probable deaths during 1999-2006 attributed to either poaching or undetermined causes, representing 58% of total human-caused deaths. During 2007-2018 there were a total of 13 deaths either under investigation or ascribed to poaching, representing

a nearly identical 59% of the total known-probable human-caused deaths. These are major fractions in their own right, but leave estimated numbers of unreported deaths unaccounted for. As Kasworm et al make clear (ibid: 33), their estimate of 'unreported' deaths did not apply to bears that were radio-collared or removed by managers, which leaves this unreported estimate levied almost entirely against malicious or otherwise suspect causes. When these unreported estimates are added to the known-probable toll taken by poaching, unknown causes, or suspicious circumstances, the percentage increases to around 70% during 1999-2006 and approximately 77% during 2007-2016.

Taken together, these figures support concluding that (1) malicious or otherwise suspect causes account for a large portion—if not majority—of grizzly bear deaths in the Cabinet-Yaak Ecosystem; (2) the fraction and even total numbers of deaths attributable to such causes did not decrease from 1999-2006 to 2007-2018; and (3) that aggressive limitations to road access by the USFS are needed, especially in areas with concentrations of productive habitat (Proctor et al. 2015, 2017).

F. Access Management is Critical to Limiting Malicious & Other Unjustified Killing

The consensus of relevant research is unambiguous about the link between road access and grizzly bear mortality. The more access, the more dead bears there are, with disproportionate concentrations near roads (Brannon et al. 1988; Benn & Herrero 2002; Nielsen et al. 2004; Wakkinen & Kasworm 2004; Boulanger & Stenhouse 2014; McLellan 2015; Proctor et al. 2017, 2018). Dead bears tend to be concentrated within 100 to

500 m of roads, averaging around 300 m (± 195 m) among studies where distance was noted.

Unfortunately, there is a common conflation of the extent to which radio-marked grizzly bears spatially avoid roads with the geospatial configuration of mortality risk and, even more important, decrements in survival and population growth. These parameters are not synonymous. Even though a bear might underuse habitats within a certain distance of roads, this does not translate into a 1:1 correlation with exposure to risk of human-related mortality during a bear's lifetime. Conflation of avoidance with mortality risk has led to the unstated assumption that the former can be used to set standards for the latter. Such is the case for road density and habitat security standards set by the Kootenai National Forest based on the results of Wakkinen & Kasworm (1997).

Taking 300 m as a ballpark figure, road densities of roughly 0.6 km/km^2 translate into areas remote from where human-caused mortality is concentrated that amount to only 84 ha (208 acres), which is trivially small for a grizzly bear. This sort of geospatial buffer still means that grizzly bears are frequently exposed to hazards of human-caused death to the predictable extent that they must and will move from one presumably secure area to another—even assuming that these bears exhibit "average" avoidance of human features such as roads. In other words, the level of buffering from human-caused mortality offered by road density and related security standards invoked in the KNF is guaranteed to be inadequate.

The inadequacy and inappropriateness of road density and security standards used by the Kootenai National Forest in application to the Knotty Pine Project are highlighted in contrast to standards applied in the Northern Continental Divide Ecosystem (NCDE), as well as in contrast to trajectories of populations in the NCDE and Greater Yellowstone Ecosystem. The populations of already relatively numerous grizzly bears in the NCDE and GYE have increased substantially since the early 1990s to 2000s, in contrast to in the Cabinet-Yaak where precariously few bears have fared poorly (see my Points A-D, herein). Tellingly, Wilderness Areas and Inventoried Roadless Areas where road access is not allowed comprise around 56% of the NCDE and GYE. In the Cabinet-Yaak Ecosystem this figure is less than half as much, nearer 21%. This difference alone can explain much of the corresponding difference in fates of grizzly bear populations.

Despite these telling differences in fates and trajectories of grizzly bear populations, the road density and habitat security standards applied by the Kootenai National Forest are more lax, not less, than those applied on the Flathead National Forest. On the Kootenai, areas allowed with >1 mile/mile2 of roads are 1.7-times greater; areas with >2 miles/mile2 of roads are 1.4-times greater; and extents of secure habitat nearly 20% less compared to what is ostensibly allowed on the Flathead NF. These disparities are perverse and not able to be explained on the basis of differences in the extent of movements by grizzly bears. If anything, bears range more widely in the Cabinet-Yaak Ecosystem compared to the NCDE (Kasworm et al. 2018).

As a bottom line, existing and proposed access management in the KNF has jeopardized and will continue to jeopardize grizzly bears.

G. More Grizzly Bear Deaths Are Occurring On USFS Jurisdictions Now Compared to During 1999-2006

The argument for more aggressive management to prevent human-caused grizzly bear mortality on USFS jurisdictions is given greater weight by differences in locations of bear deaths between 1999-2006 and 2007-2018. Data from Kasworm et al. (2018) and Kasworm (2018)show an increase in the proportion of grizzly bear deaths on USFS lands from 25% (95% CI = 0.5-49.5%) during 1999-2006 to 56.5% (36.3-76.8%) during 2007-2018. Although sample sizes are small, confidence intervals large, and overlap of the intervals non-trivial (17%), these results do not support concluding that hazards for grizzly bears have remained constant or declined on USFS lands. Rather, by weight of evidence, the better supported conclusion is that hazards have increased and, because of that, imperatives to control mortality on public lands have likewise increased. As per my point F, above, the most efficacious means available to the USFS for addressing this imperative is through providing increased rather than diminished habitat security, axiomatically through reducing road access in the Project area.

Activities of the KNF Are Problematic in a Larger Geospatial Context

Please examine the cumulative effects of this project.

Please evaluate the impacts of proposed activities on grizzly bears in a larger geospatial context. Mattson & Merrill (2004)

and Proctor et al. (2015) are perhaps most relevant to such an evaluation. The former research mapped existing core habitat as well as higher-probability source habitats in the Cabinet-Yaak

Moreover, with the Cabinet-Yaak Recovery Area as a logical unit of analysis, any assessment of cumulative effects needs to account for other on- going and planned human activities associated with forest treatments and harvest in this Ecosystem, as well as foreseeable impacts associated with the proposed Rock Creek and Montanore Mines; as well as on-going and foreseeable impacts associated with the human transportation infrastructure (e.g., railways and associated highways that already fragment grizzly bear distribution in this Ecosystem, Mattson et al. [2019b]), all with the potential to amplify impacts arising from the Project.

K. A Devil's Bargain Will Not Rescue This Small Population

K.1. The Cabinet-Yaak Population is Not Viable and Remains Acutely Vulnerable to Increased Mortality

The Cabinet-Yaak grizzly bear population is smaller than the smallest census population size ever posited as being viable. The Yaak/Yahk subpopulation has limited connectivity with grizzly bear populations elsewhere, and the Cabinet Mountains subpopulation is more isolated yet (Apps et al. 2016; Kendall et al. 2016; Proctor et al. 2012, 2015). Such isolation is well-

known to magnify risk. The degree of this risk is evident in the fact that fates of populations as small of that of the Cabinet-Yaak grizzlies can be dictated solely by chance variation in birth and death rates, known as demographic variation. Yet demographic variation is a relatively minor stressor compared to environmental variation, catastrophes, negative deterministic trends, and loss of genetic diversity—all of which are documented or potential factors in the Cabinet-Yaak. The contemporary consensus of researchers is that populations of large mammals such as grizzly bears need to consist of thousands of animals to withstand all of these stochastic and deterministic threats over meaningful periods of time.

The Yaak and Cabinet grizzly bear populations remain acutely vulnerable to even small changes in levels of mortality. Under such circumstances, a precautionary approach to managing spatial hazards and habitat security is not only advisable, but mandatory. Unfortunately, there is no evidence of caution or even meaningful recognition of threats to the Cabinet population.

K.2. Variation in Population Trajectory Has Likely Been Driven by Exposure to Humans

As a hypothetical, it is worth taking claims regarding an improvement in status of the Cabinet-Yaak grizzly bear population between 1999-2006 and 2007-2018 at face value. Again, the emphasis here is on the hypothetical given all of the compromising or even fatal flaws in analyses and conclusions reported in Kasworm et al. More specifically, if an improvement did occur, what was (were) the likely driver(s)?

Causation is notoriously hard to establish with any reliability or confidence. Nonetheless, even taking comments in Kasworm et al (again) at face value, one can establish how these authors ascribed causation based on the balance of their comments. The relevant quotes include:

"The increase in total known mortality beginning in 1999 may be linked to poor food production during 1998-2004 (Fig. 9). Huckleberry production during these years was about half the long term average...Poor nutrition may not allow females to produce cubs in the following year and cause females to travel further for food, exposing young to greater risk of mortality from conflicts with humans, predators, or accidental deaths." (emphasized in Figure 10; ibid: 32; see Fig. 6, herein).

"Some of this decrease [in survival] in the 1999-2006 period could be attributed to an increase in natural mortality probably related to poor berry production during 1998-2004. Mortalities on private lands within the U.S. increased during this period, suggesting that bears were searching more widely for foods to replace the low berry crop." (ibid: 34).

In reference to a probable increase in size of the Cabinet Mountains subpopulation from around <15 (possibly 5-10) in 1988 to around 22-24 in 2012: "These data indicate the Cabinet Mountains population has increased 2-4 times since 1988, but this increase is largely a product of the augmentation effort with reproduction from that segment." (ibid: 36).

L. Conclusion

Reiterating my conclusion in the Introduction to these comments, the Project as described in the scoping notice promises to harm grizzly bears in the Cabinet-Yaak Ecosystem. The Forest Service could unequivocally benefit grizzly bears in this area by the closure and retirement of roads.

Benn, B., & Herrero, S. (2002). Grizzly bear mortality and human access in Banff and Yoho National Parks, 1971-98. Ursus, 13, 213-221.

Boulanger, J., & Stenhouse, G. B. (2014). The impact of roads on the demography of grizzly bears in Alberta. PloS One, 9(12), e115535.

Brannon, R. D., Mace, R. D., & Dood, A. R. (1988). Grizzly bear mortality in the northern Continental Divide ecosystem, Montana. Wildlife Society Bulletin, 16(3), 262-269.

Eberhardt, L. L., Blanchard, B. M., & Knight, R. R. (1994). Population trend of the Yellowstone grizzly bear as estimated from reproductive and survival rates. Canadian Journal of Zoology, 72(2), 360-363.

Garshelis, D. L., Gibeau, M. L., & Herrero, S. (2005). Grizzly bear demographics in and around Banff National Park and Kananaskis country, Alberta. The Journal of Wildlife Management, 69(1), 277-297.

Harris, R. B., Schwartz, C. C., Haroldson, M. A., & White, G. C. (2006). Trajectory of the Yellowstone grizzly bear population under alternative survival rates. Wildlife Monographs, (161), 44-55.

Hovey, F. W., & McLellan, B. N. (1996). Estimating population growth of grizzly bears from the Flathead River drainage using computer simulations of reproduction and survival rates. Canadian Journal of Zoology, 74(8), 1409-1416.

Kasworm , W. F., Radant, T. G., Tesiberg, J. E., Welander, A., Proctor, M., & Cooley, H. (2018). Cabinet- Yaak Recovery Area 2017 research and monitoring progress report. US Fish & Wildlife Service, Missoula, Montana.

Kasworm, W. (2018). Selkirk/Cabinet-Yaak IGBC Subcommittee, meeting notes: 2018 research/monitoring update. http://igbconline.org/wp- content/uploads/2018/11/181108_SCYE_Mtg_Summary.pdf

Kendall, K. C., Macleod, A. C., Boyd, K. L., Boulanger, J., Royle, J. A., Kasworm, W. F., ... & Graves, T. A. (2016). Density, distribution, and genetic structure of grizzly bears in the Cabinet-Yaak Ecosystem. The Journal of Wildlife Management, 80(2), 314-331.

Ladle, A., Avgar, T., Wheatley, M., Stenhouse, G. B., Nielsen, S. E., & Boyce, M. S. (2018). Grizzly bear response to spatio-temporal variability in human recreational activity. Journal of Applied Ecology.

Mace, R. D., Carney, D. W., Chilton-Radandt, T., Courville, S. A., Haroldson, M. A., Harris, R. B., ... & Schwartz, C. C. (2012). Grizzly bear population vital rates and trend in the Northern Continental Divide Ecosystem, Montana. The Journal of Wildlife Management, 76(1), 119-128.

Mattson, D. J. (2019a). Effects of pedestrians on grizzly bears: An evaluation of the effects of hikers, hunters, photographers, campers, and watchers with reference to the proposed Pacific Northwest Trail. Grizzly Bear Recovery Project, Report GBRP-2019-3.

Mattson, D. J. (2019b). Effects of trains and railways on grizzly bears: An evaluation of the effects of increased train traffic on the Burlington Northern Santa Fe and Montana Rail-Link Railways, Montana- Idaho. Grizzly Bear Recovery Project, Report GBRP-2019-1.

Mattson, D. J., & Merrill, T. (2004). A model-based appraisal of habitat conditions for grizzly bears in the Cabinet–Yaak region of Montana and Idaho. Ursus, 15(1), 76-90.

McCall, B. S., Mitchell, M. S., Schwartz, M. K., Hayden, J., Cushman, S. A., Zager, P., & Kasworm, W. F. (2013). Combined use of mark-recapture and genetic analyses reveals response of a black bear population to changes in food productivity. The Journal of Wildlife Management, 77(8), 1572-1582.

McLellan, B. N., & Hovey, F. W. (2001). Habitats selected by grizzly bears in a multiple use landscape. The Journal of Wildlife Management, 65(1), 92-99.

McLellan, B. N. (2015). Some mechanisms underlying variation in vital rates of grizzly bears on a multiple use landscape. The Journal of Wildlife Management, 79(5), 749-765.

Proctor, M. F., Paetkau, D., Mclellan, B. N., Stenhouse, G. B., Kendall, K. C., Mace, R. D., ... & Wakkinen, W. L. (2012). Population fragmentation and inter-ecosystem movements of

grizzly bears in western Canada and the northern United States. Wildlife Monographs, 180(1), 1-46.

Proctor, M. F., Nielsen, S. E., Kasworm, W. F., Servheen, C., Radandt, T. G., Machutchon, A. G., & Boyce, M. S. (2015). Grizzly bear connectivity mapping in the Canada–United States trans-border region. The Journal of Wildlife Management, 79(4), 544-558.

Proctor, M. F., Lamb, C. T., & MacHutchon, A. G. (2017). The grizzly dance between berries and bullets: relationships among bottom-up food resources and top-down mortality risk on grizzly bear populations in southeast British Columbia. Transborder Grizzly Bear Project, Kaslo, British Columbia, Canada, http://transbordergrizzlybearproject.ca/research/publications.html.

Proctor, M. F., McLellan, B. N., Stenhouse, G. B., Mowat, G., Lamb, C. T., & Boyce, M. S. (2018). Resources roads and grizzly be4ars in British Columbia and Alberta, Canada. Transborder Grizzly Bear Project, Kaslo, British Columbia, Canada, http://transbordergrizzlybearproject.ca/research/publications.html.

Wakkinen, W. L., & Kasworm, W. (1997). Grizzly bear and road density relationships in the Selkirk and Cabinet-Yaak recovery zones. US Fish and Wildlife Service, Kalispell, Montana.

Wakkinen, W. L., & Kasworm, W. F. (2004). Demographics and population trends of grizzly bears in the Cabinet–Yaak and

Selkirk Ecosystems of British Columbia, Idaho, Montana, and Washington. Ursus, 15(1), 65-76.

Waller, J. S., & Mace, R. D. (1997). Grizzly bear habitat selection in the Swan Mountains, Montana. The Journal of Wildlife Management, 61(4), 1032-1039.

1. Will the Forest Service be considering binding legal standards for noxious weeds in its Land Management Plan?

2. Has the State Historic Preservation Office signed off that this project complies with the Historic Preservation Act? The project is involution of the National Historic Preservation Act if this is not done.

5. How effective has the Forest Service been at stopping (i.e. preventing) new weed infestations from starting during logging and road building operations?

6. Is it true that new roads are the main cause of new noxious weed infestations?

7. Is it true that noxious weeds are one of the top threats to biodiversity on public lands?

8. How can the Forest Service be complying with NFMA's requirement to maintain biodiversity if it has no legal standards that address noxious weeds?

9. How will the decreased elk security affect wolverines?

Wolverines generally scavenge for ungulates along valley bottoms and forage and den in remote, high-elevation areas (Hornocker and Hash 1981; Morgan and Copeland 1998). Thus if mangers wished to provide habitat for wolverines, they could pay particular attention in the planning process to ungulates winter range and other aspects of habitat quality for ungulates to provide a consistent supply of carcasses for wolverine to scavenge. In addition, wolverines generally avoid areas of human activity. To limit the threat of human-caused disturbance or mortality, managers could restrict access to portions of the landscape where wolverines are most likely to occur.

In order to meet this viability mandate, the 1982 NFMA planning regulations require that the Forest Service select "management indicator species" whose "population changes are believed to indicate the effects of management activities." 36 C.F.R. § 219.19 (1) (2000). 253.

The 1982 NFMA planning regulations require the Forest Service to monitor the population trends of these species and to state and evaluate land management alternatives

"in terms of both amount and quality of habitat and of animal population trends of the management indicator species." 36 C.F.R. § 219.19 (2),(6) (2000).

The wolverine was recently determined to be warranted for listing under the ESA. 75 Fed. Reg.78030 (Dec. 14, 2010). It is currently a proposed species, waiting for work to be completed on other species before it is officially listed. The USFWS found that "[s]ources of human disturbance to wolverines include . . . road corridors, and extractive industry such as logging . . .." .The Forest Service admits that the wolverine and/or its habitat are present within the project area and would be impacted by the project. The Forest Service must go through ESA consultation for the wolverine for this project.

10. How will the project affect Monarch butterflies?

Please prepare a Biological Assessment and formally consult with the U.S. Fish and Wildlife Service on the impact of the project on Monarch butterflies. The western monarch population is facing a dire situation and could blink into extinction without significant action. Once numbering over one million, there were only 1,914 monarchs across 246 sites according to a recent count.

THE AGENCIES MUST COMPLETE A BIOLOGICAL ASSESSMENT, BIOLOGICAL OPINION, INCIDENTAL TAKE STATEMENT, AND MANAGEMENT DIRECTION AMENDMENT FOR THE
RMP FOR THE MONARCH BUTTERFLY.

The agencies do not have in place any forest plan biological assessment, biological opinion, incidental take statement, and management direction amendment for the Monarch Butterfly.

Did the Forest Service survey for Monarch Butterfly in the project area? Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area.

11. How will the project affect Whitebark pine?

Please prepare a Biological Assessment and formally consult with the USFWS as required by law.

THE AGENCIES MUST COMPLETE A BIOLOGICAL ASSESSMENT, BIOLOGICAL OPINION, INCIDENTAL TAKE STATEMENT, AND MANAGEMENT DIRECTION AMENDMENT FOR THE
RMP FOR THE Whitebark Pine.

The agencies do not have in place any forest plan biological assessment, biological opinion, incidental take statement, and management direction amendment for whitebark pine.

THE AGENCIES MUST CONDUCT ESA CONSULTATION FOR THE
WHITEBARK PINE.

Whitebark may be present in the Project area. The agencies' failure to conduct ESA consultation for a species that may be present and may be affected by the Project violates the ESA. Whitebark Pine are currently proposed for listing under the ESA.

Did the Forest Service survey for whitebark pine in the project area? Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area.

Thank you for your time.

Sincerely yours,

Mike Garrity

Executive Director

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